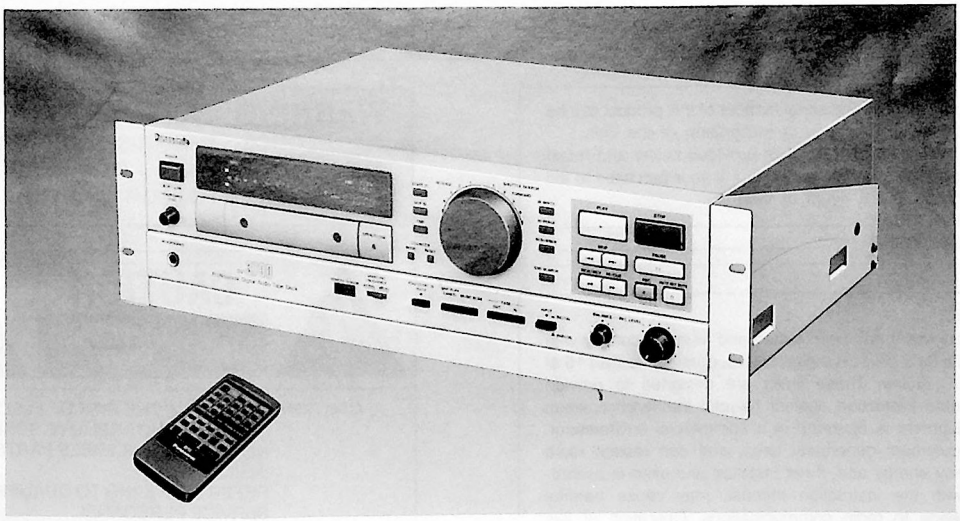
Chop

Operating Instructions

Professional Digital Audio Tape Deck

MODEL NO. SV-3700



Panasonic®

Before operating this unit, please read these instructions completely.

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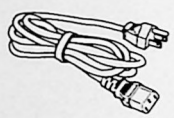
Contents

- Accessories 2
- Suggestions for Safety 3
- Features 4
- Installation 4
- Connections 5
- Remote Control Transmitter 6
- Location of Controls 7
- Basic Operations for Recording and Playback 12
- Playback 16
- Before Recording 22
- Recording 24
- Indexing 29
- DIP Switch Settings 35
- Remote Control 36
- Operation Notes 37
- Maintenance 38
- About DAT Cassette Tape 39
- Troubleshooting 40
- Specifications 41
- Limited Warranty 42

Accessories

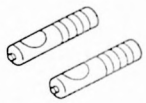
- AC power supply cord 1



- Coaxial cable 1

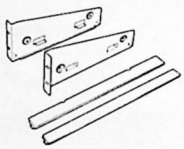
- Remote control transmitter 1

- Batteries 2



- Cleaning tape 1

- Rack mount kit 1



- Screws 8

The model number and serial number of this product can be found on either the back or the bottom of the unit. Please note them in the space provided below and retain this booklet as a permanent record of your purchase to aid identification in the event of theft.

MODEL NUMBER _____

SERIAL NUMBER _____

Note:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

NOTE:

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

WARNING:

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

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

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

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

Suggestions for Safety

Before using this unit, be sure to carefully read the applicable items of these operating instructions and the safety suggestions. Afterwards keep them handy for future reference. Take special care to follow the warnings indicated on the unit itself, as well as in the operating instructions.

1. **Water and Moisture**—Do not use the unit near any source of water or in excessively moist environments.

2. **Object and Liquid Entry**—Care should be taken so that objects do not fall, and liquids are not spilled, into the enclosure through openings.

3. **Ventilation**—When installing the unit in a rack or any other location, be sure there is adequate ventilation. Improper ventilation will cause overheating, and can damage the unit.

4. **Heat**—The unit should be situated away from heat sources such as radiators, heat registers, stoves, or other equipment that produce heat.

5. **Power Sources**—The unit should be connected to a power supply only of the type described in the operating instructions, or as marked on the unit.

6. **Power Cord Protection**—AC 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. Pay particular attention to cords at plugs, convenience receptacles, and the point where they exit from the unit. Never take hold of the plug or cord if your hand is wet. Always grasp the plug body when connecting or disconnecting it.

7. **Grounding of the plug**—This unit is equipped with a 3-wire grounding type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the purpose of the grounding-type plug.

8. **Carts and Stands**—The unit should be used only with a cart or stand that is recommended by the manufacturer. The unit and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the unit and cart combination to overturn.

9. **Wall or Ceiling Mounting**—The unit should be mounted to a wall or ceiling only as recommended by the manufacturer.

10. **Cleaning**—The unit should be cleaned only as recommended by the manufacturer.

11. **Nonuse Periods**—The AC power supply cord of the unit should be unplugged from the AC outlet when left unused for a long period of time.

12. **Damage Requiring Service**—The unit should be serviced by qualified service personnel when:
    (a) The AC power supply cord or the plug has been damaged; or
    (b) Objects have fallen or liquid has been spilled into the unit; or
    (c) The unit has been exposed to rain; or
    (d) The unit does not operate normally or exhibits a marked change in performance; or
    (e) The unit has been dropped, or the enclosure damaged.

13. **Servicing**—The user should not attempt to service the unit beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

Features

The SV-3700 is a fourth-generation Pro-DAT machine, designed specifically for professional applications. It features an enhanced dynamic range, instrumentation quality input and output analog interfaces for extended linearity and reduced distortion.

Analog-to-Digital Conversion:

One-bit A-to-D Converters offer dramatically improved performance and linearity when compared to conventional successive-approximation PCM converters. One-bit ADCs with 64-times oversampling filtering significantly reduce both signal and zero-cross distortion, producing cleaner, clearer audio signal at low as well as high recording levels. The result is an accuracy in the spectral balance, ambience and "space" around instruments that form a vital part of natural musical sounds.

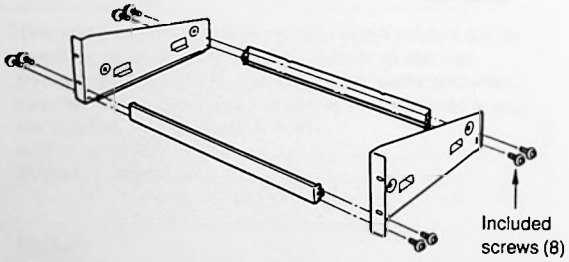
Digital-to-Analog Conversion:

High resolution D-to-A converter systems ensure optimum replay quality, by effectively removing zero-cross distortion and enhancing linearity at low signal levels.

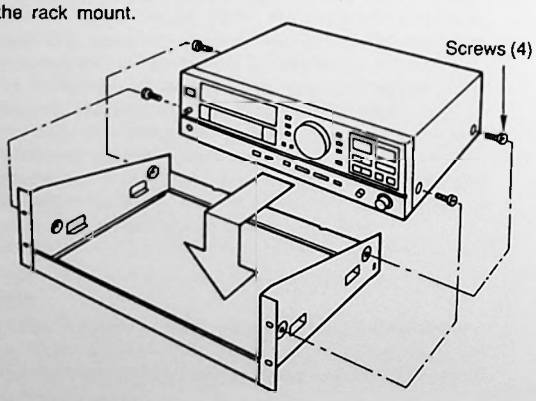
Installation

Installation of rack mount kit

1. Assemble the rack ears and panel, and tighten with included screws.



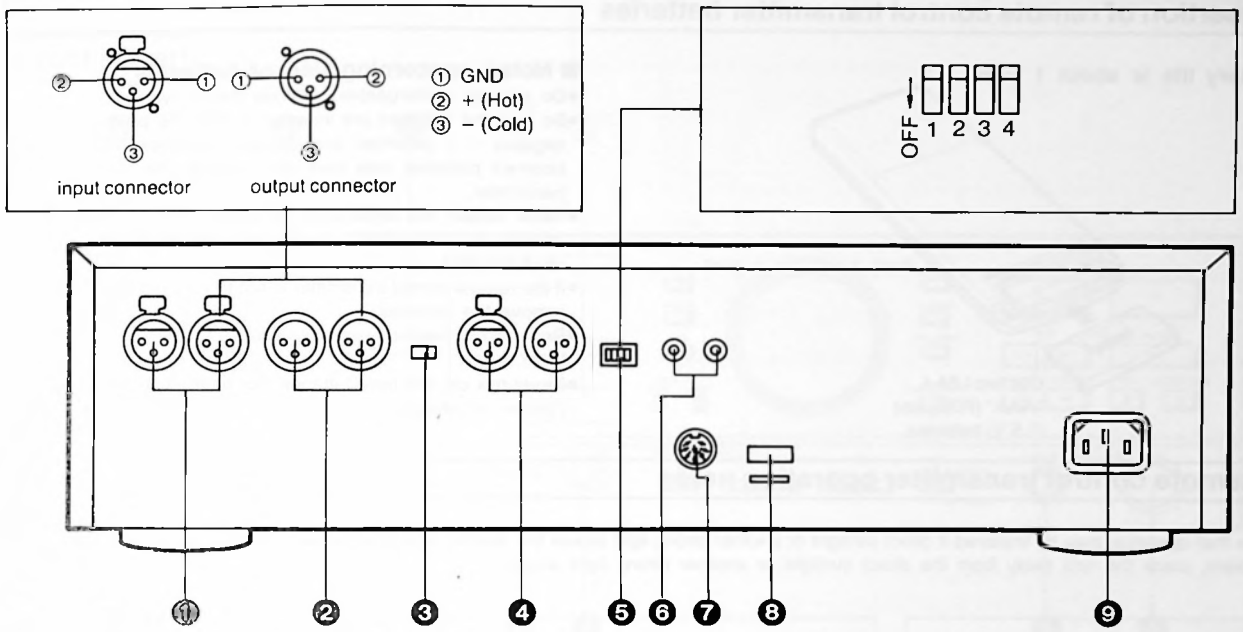
2. Remove the 4 screws on side enclosure, and attach the unit to the rack mount.



Notes on placement

- **Place on a flat, level surface so that the front-rear inclination does not exceed 15°.**
- **Avoid places such as the following:**
- •Near any equipment or device that generates strong magnetism.
- •On any heat-generating equipment or device, or in any place where the temperature is high (40°C or higher).
- •Extremely cold places (5°C or below).
- •Near an AM/FM tuner or TV.
  (It may produce noise in the broadcast, or disturb the TV picture.)
- •For long periods of time in direct sunlight.
- •In dusty or smoky locations.
- •In locations prone to vibrations.
- •In locations where the rear panel is less than 10 cm (about 4") away from the wall or back of an audio rack.
- •Within reach of children.
- **Do not place heavy objects, other than system components, on top of the unit.**
- **When carrying or storing the unit, handle it with care so it is not subjected to any strong bumps.**
- **To avoid problems due to vibration.**
- •Do not place a book or similar object under this unit.
- •Do not route the connection cables (of this or other units) across the operation panel, across the top, or under the unit.

Connections



⑪ ANALOG IN terminals
These are balanced analog audio XLR input connectors.

② ANALOG OUT terminals
These are balanced analog audio XLR output connectors.

③ OUTPUT LEVEL selector (+4 dBu/–10 dBu)
Select the nominal output level (nominal level for a peak level meter display of –18 dB).

④ AES/EBU terminals (IN/OUT)
These terminals are for input or output of signals for the professional digital interface.

⑤ DIP switch settings
These are used for the following settings:
- Digital Input Selection (IEC TYPE II or AES/EBU)
- SCMS ID 6 Status for AES/EBU Input
- Blank Skip Mode in Program Search

For further details, see page 35.

⑥ IEC TYPE II (IEC 958) jacks (IN/OUT)
These terminals are for input or output of digital signals from/to a consumer unit.

⑦ REMOTE CONTROL jack (PARALLEL)
See page 36.

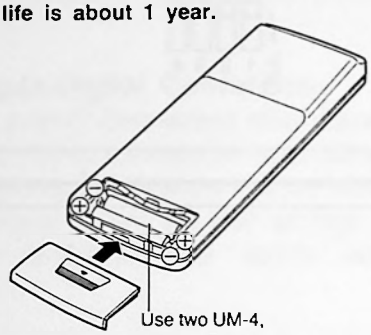
⑧ Hour meter (5000H)
Shows the number of hours of head usage in recording and playback.

⑨ AC IN jack
Connect to the grounded AC outlet with the included AC power supply cord.

Remote Control Transmitter

Insertion of remote control transmitter batteries

Battery life is about 1 year.



Use two UM-4, "AAA" (R03) size (1.5 V) batteries.

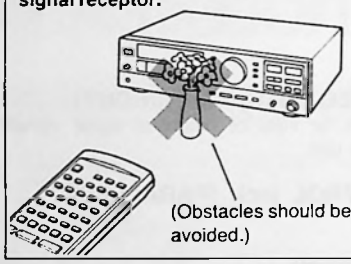
■ Notes concerning use of batteries

- Do not use rechargeable batteries (Ni-Cd type).
- Be sure the batteries are inserted so that the positive (+) and negative (−) polarities are correct. Batteries installed with incorrect polarities may leak and damage the remote control transmitter.
- Never subject the batteries to excessive heat of flame; do not attempt to disassemble them; and be sure they are not short-circuited.
- If the remote control transmitter is not to be used for a long time, remove the batteries.
- Remove old, weak or worn-out batteries promptly and dispose of them.
- Never mix old and new batteries, nor batteries of different types (carbon or alkaline).

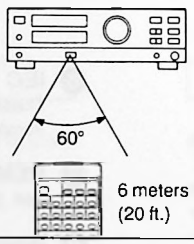
Remote control transmitter operation notes

Note that operation may be impaired if direct sunlight or another strong light strikes the remote control signal receptor part of this unit. If there is a problem, place the unit away from the direct sunlight or another strong light source.

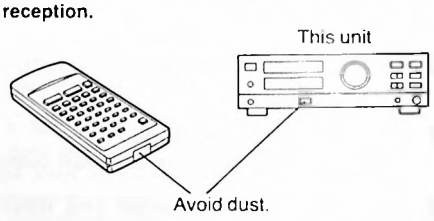
Face it toward the remote control signal receptor.



Use the remote control transmitter within 6 meters.



Be sure the transmitter part of the remote control and the receptor part of this unit are free from dust. Excessive dust might prevent reception.



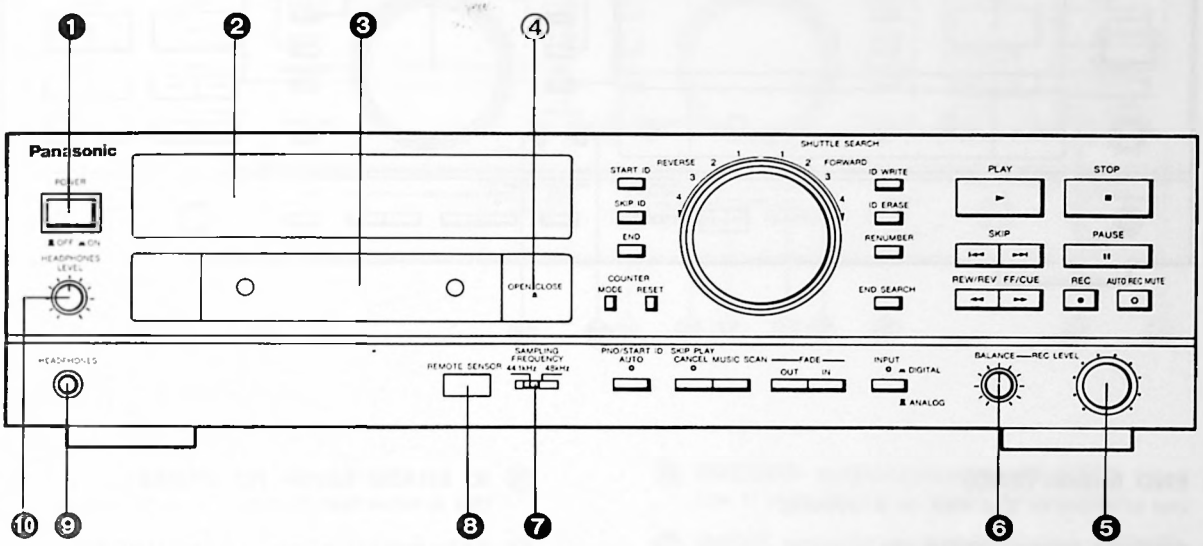
Notes:

- The control panel of the remote control transmitter may be covered by a clear protective sheet. This sheet may be removed if desired.
- If this unit is installed in a rack with glass doors, the glass door's thickness or color might make it necessary to use the remote control transmitter closer to the unit.
- Do not use a remote control transmitter for a TV set, VCR or other component at the same time as this unit's remote control transmitter, because this could result in an operation error.

Location of Controls

The functions indicated by the black numbers (with white background, ④ etc.) can also be activated using the remote control transmitter.

Front panel



⑪ **POWER switch (POWER)**

⑫ **Display panel**
See page 10.

⑬ **Cassette holder**

④ **OPEN/CLOSE button (⏏ OPEN/CLOSE)**

⑤ **REC LEVEL control (REC LEVEL)**
Use to adjust the recording level of left and right channels.

⑥ **REC BALANCE control (BALANCE)**
Use to adjust recording balance between left and right channels.

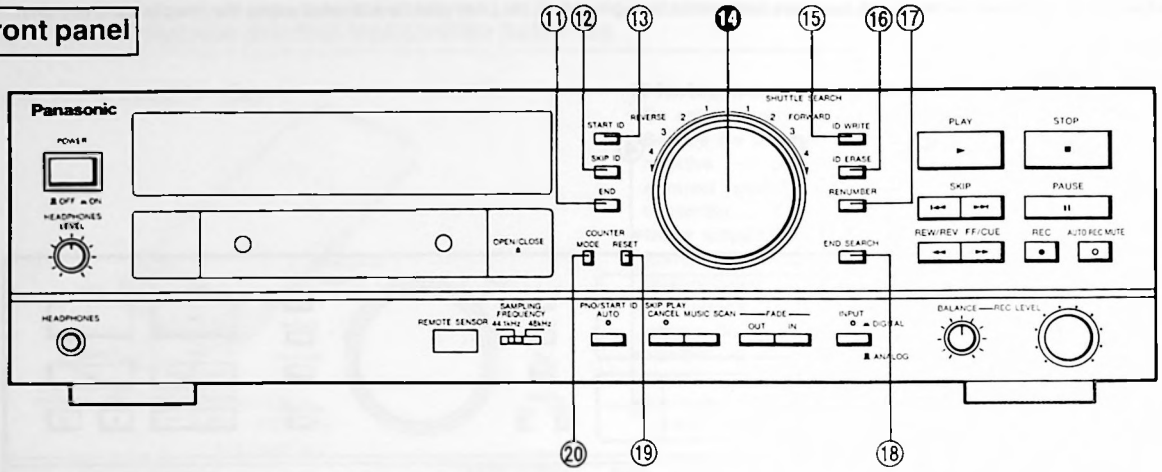
⑦ **SAMPLING FREQUENCY selector**
Select the sampling frequency when making analog recordings. (44.1 kHz or 48 kHz)

⑧ **Remote control signal sensor (REMOTE SENSOR)**

⑨ **Phones jack (HEADPHONES)**
A ¼" connector for standard stereo headphones.

⑩ **Phone level control (HEADPHONES LEVEL)**
Use this control to adjust the output level to the headphones.

Front panel



⑪ END button (END)
Use to record an End Mark on a recording.

⑫ SKIP ID button (SKIP ID)
Use to enter the Skip ID mode.

⑬ START ID button (START ID)
Use to enter the Start ID mode.

⑭ SHUTTLE SEARCH dial (SHUTTLE SEARCH)
Use to locate specific places on the tape during play and pause modes at high speed, in either forward or reverse directions.

⑮ ID WRITE button (ID WRITE)
Use to record Start or Skip ID's during indexing*.

*Indexing allows certain DAT subcode data that has been recorded on the tape to be changed without affecting to the actual program recording.
With this unit, the following types of indexing are possible.
1. Recording or erasure of Start ID's at the beginning of a program
2. Recording or erasure of Skip ID's
3. Renumber function

⑯ ID ERASE button (ID ERASE)
Use to erase Start or Skip ID's during indexing.

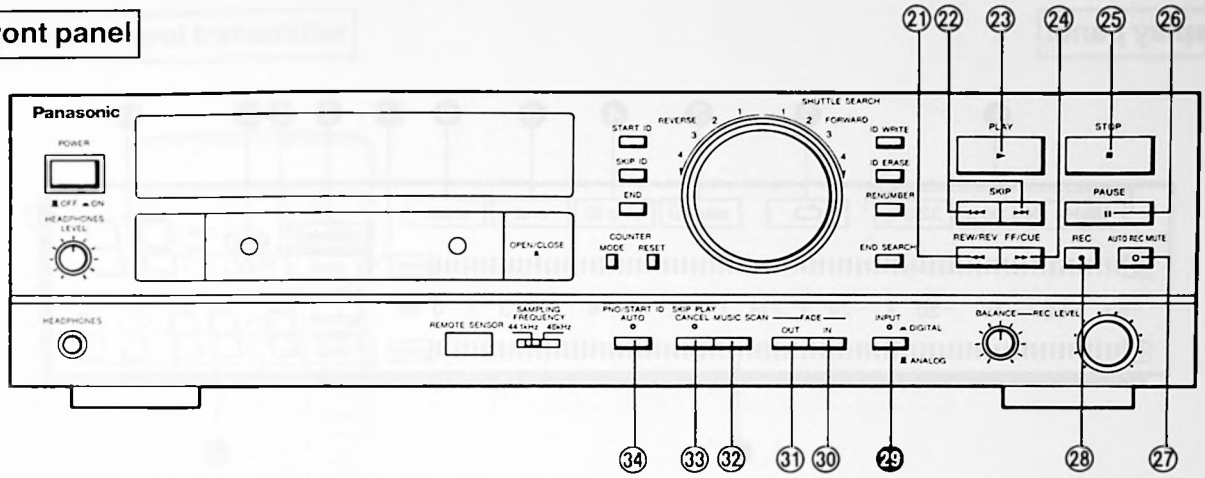
⑰ RENUMBER button (RENUMBER)
Use to assign program numbers (01, 02, 03...) to Start ID's recorded during indexing.

⑱ END SEARCH button (END SEARCH)
Use to advance at high speed to the end of the recorded portion of the tape.
Use also to continue recording from the last recorded position, or to find the total number of programs or total time recorded on the tape (in the case of tapes where absolute time and program numbers have been recorded).

⑲ COUNTER RESET button (COUNTER RESET)
Use to reset the tape counter to "0000" (when the display mode is set to tape counter).

⑳ COUNTER MODE button (COUNTER MODE)
Use to select the desired counter mode, between Absolute time, Program time, Time Remaining, TOC and tape counter.

Front panel



㉑ REW/REV button (◁◁ REW/REV)
Use to rewind the tape, or for audible high-speed search in play mode (review).

㉒ SKIP buttons (⏮◁ • ▷⏭ SKIP)
Use the skip buttons to advance to the desired program.
The ▷⏭ button skips the program forward
The ⏮◁ button skips the program backward
Repeated pressing of the Skip buttons causes the unit to skip forwards or backwards several programs.

㉓ PLAY button/indicator (▶ PLAY)
Use to initiate recording or playback mode.
Use also to record program numbers manually.

㉔ FF/CUE button (▶▶ FF/CUE)
Use to advance the tape rapidly, or for audible high-speed search (cue).

㉕ STOP button (■ STOP)
Use to stop all functions.
This button also clears the program memory.

㉖ PAUSE button/indicator (❚❚ PAUSE)
Use to temporarily interrupt playback or recording mode.

㉗ AUTO REC MUTE button (◯ AUTO REC MUTE)
Use to automatically insert a silent passage approximately four seconds long during a recording.

㉘ RECORD button/indicator (● REC)
Use to place the unit in record standby mode.

㉙ INPUT selector button/indicator (INPUT)
Use to select digital or analog recording input.

㉚ FADE IN button (FADE IN)
Use to start recording and increase the sound level gradually for approx. 2½ seconds, until full record level is reached.

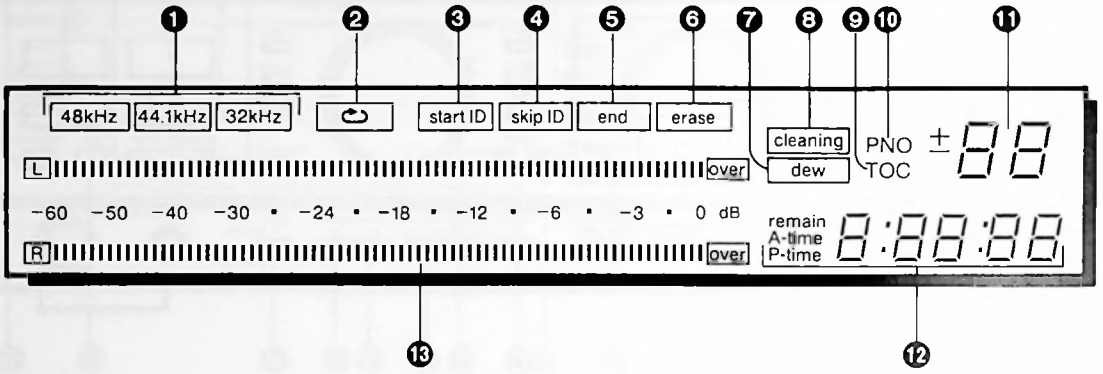
㉛ FADE OUT button (FADE OUT)
Use to end a recording by gradually reducing the recorded sound level for approx. 5 seconds.

㉜ MUSIC SCAN button (MUSIC SCAN)
Use to play back the beginning of each recorded program on the tape for about 15 seconds.
This is useful for quick identification of program contents.

㉝ SKIP PLAY CANCEL button/indicator (SKIP PLAY CANCEL)
Use to release skip mode.

㉞ PNO/START ID AUTO button/indicator (PNO/START ID AUTO)
Use to automatically record program numbers or Start ID's during recording or indexing by detecting the beginning of signal after a blank position.

Display panel



❶ Sampling frequency indicators
Displays sampling frequency of digital signals during recording or playback.
Changes automatically depending on input signal.

❷ Repeat indicator
This indicator is used for repeat loop-play function.
Indicates that all programs or memorized programs can be played back repeatedly ( ).

❸ start ID indicator
Indicates that a Start ID is being or has been recorded.

❹ skip ID indicator
Indicates that a Skip ID is being or has been recorded.

❺ end indicator
Indicates that an End Mark is being or has been recorded.

❻ erase indicator
Indicates that a Start ID or Skip ID is being erased.

❼ dew indicator
Indicates the formation of dew within the unit.

❽ cleaning indicator
Indicates that the DAT heads need cleaning.
(See page 38.)

❾ TOC (table of contents) indicator
Indicates the total program count and tape length of a tape onto which the TOC information has been recorded.

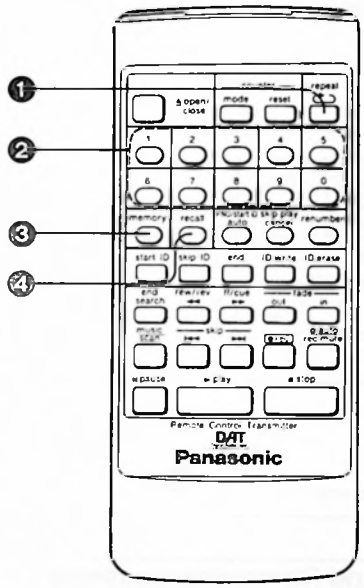
❿ PNO (program number) indicator
Indicates the number of the current program.

⓫ Program number display
Displays the TOC information when TOC indicator appears.
Displays the number of the program when PNO indicator appears.

⓬ Counter display panel
The following are displayed according to the setting of the counter mode button:
1) absolute time
   This display is always shown when power is first switched on.
2) program time
3) remaining time
4) TOC information
5) tape counter

⓭ Peak level meter
Recording level in recording and playback level during playback are indicated by a bar graph. Standard I/O level of +4/−10 dBu is shown at −18 dB.

Remote control transmitter



1 Repeat button (↻)
Use to repeat playback of a tape or a programed sequence.

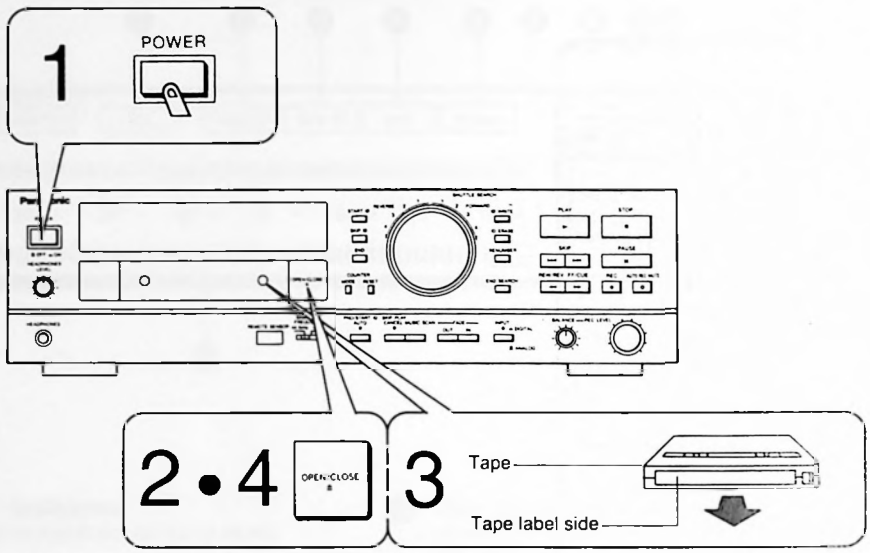
2 Program buttons
Use to select program numbers, to cue to a desired program, etc.

3 Memory button (memory)
Use to program a random playback sequence.

4 Recall button (recall)
Use to display and check program numbers that have been memorized.

Unnumbered buttons on the remote control transmitter function identically to their corresponding parts on the unit.

Basic Operations for Recording and Playback

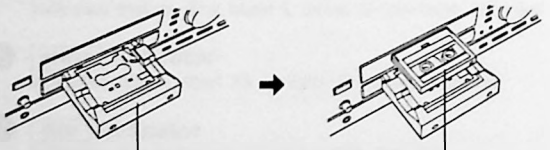


1 Press the POWER Switch to switch on power.

2 Press the OPEN/CLOSE button.
The cassette holder will open.

Notes:
- During recording, this button does not operate.
- When removing tape, first press STOP button and then press this button in the recording or playback mode.

3 Insert a cassette tape.
Insert the tape gently into the opening.



Cassette holder

Insert a cassette correctly so that the tape reels are visible.

Note:
Do not force the cassette holder.

4 Press the OPEN/CLOSE button
The cassette tape will be loaded automatically into the rotating mechanism. While the cassette holder is being opened or closed, the counter display panel will flash. When the display is flashing, the control buttons will not operate.

Inserting and Removing Cassette Tapes

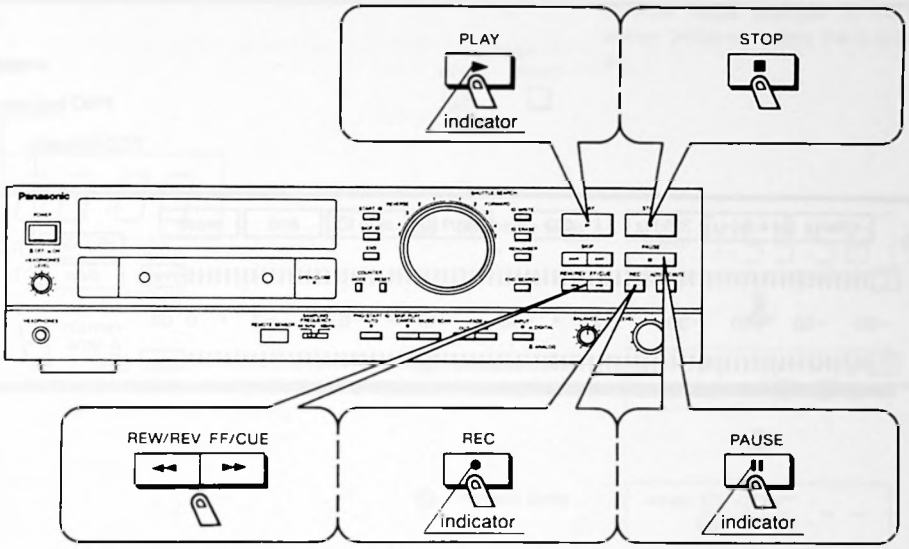
When inserting and removing tapes, the time on the counter display panel or the tape counter display may flicker, but this is not a malfunction.

- When the cassette tape has been inserted, counter display panel shows:

- When the cassette tape has not been inserted, no display will be shown.

Counter mode on display panel

- When the power is switched on with a cassette tape in the unit, absolute time is not displayed on the panel.
- If recording operations are carried out in this mode, continuous recordings cannot be mode in absolute time. In this case, first operate the PLAY button, perform an end search, or rewind tape to the end to convert the display to absolute time. Then, carry out normal recording operations.



To Begin Recording or Playback:

Press the PLAY button.
The play indicator illuminates, and play begins.

Press the REC button and then press the PLAY button.
The rec and play indicators illuminate, and recording starts.

To Interrupt Recording or Playback Temporarily:

Press the PAUSE button.
The pause indicator illuminates, and recording or playback stops temporarily.

To Stop Recording or Playback:

Press the STOP button.
Recording or playback stops.
In the case of programmed play, the memory is also cleared.

If the unit is not going to be used for extended periods, rewind the cassette tape back to the beginning, remove it and turn off the power.

Rewind Play, Fast-Forward Play (During playback)

When the FAST-FORWARD button or REWIND button is kept depressed:
Advances or reverses the tape during playback at about 3 times normal speed, with reduced level audio output (does not operate during recording).

Rewind, Fast-Forward (During stop mode)

When pressed once, advances/reverses tape at about 250 times normal speed; when pressed twice, advances/reverses tape at about 400 times normal speed. Each subsequent press causes alternate switching between the 250 times and 400 times speeds.

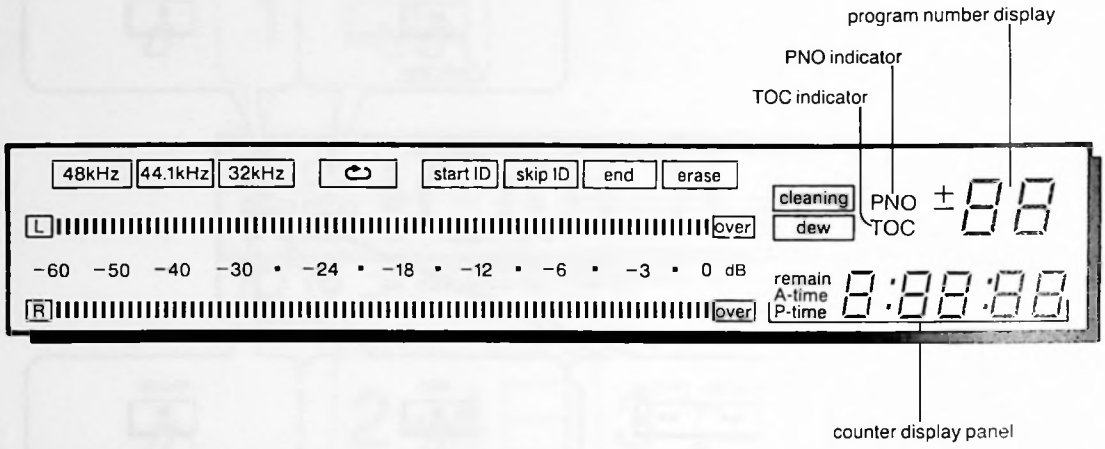
Note:
When operating the "Cue" or "Review", the monitor sounds will contain some chatter noise causing by the head crossing over the recorded track on the helical slant, but it is not a malfunction. Reduce the volume of the monitor amplifier to optimum level. (Take special care during playback with digital output signals.)

This unit is also provided with a shuttle-search function; the shuttle dial can thus be used to perform rewind play and fast-forward play. For details, see page 31.

Learning search function

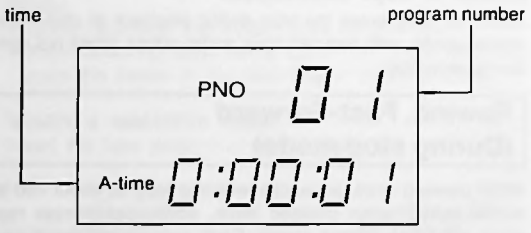
This unit comes with a learning function which memorizes once-passed program positions either by normal playback or by fast forwarding or rewinding at 250 times normal tape speed.
Therefore, when a once-passed program number has been assigned, the function will automatically search a program at up to 400 times normal tape speed.
(If, however, the program to be searched is located close to the present tape position, the tape will not be accelerated up to 400 times normal tape speed.)

Counter Display



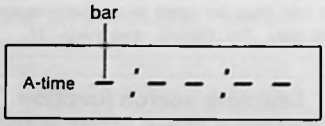
When the subcodes are recorded on the tape

The following information appears on the counter display.



When the subcodes are not recorded on the tape (when a brand-new tape is used)

The bar moves from left to right.
(The bar moves from right to left during review or rewind modes.)

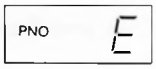


The bar also appears during the following cases:

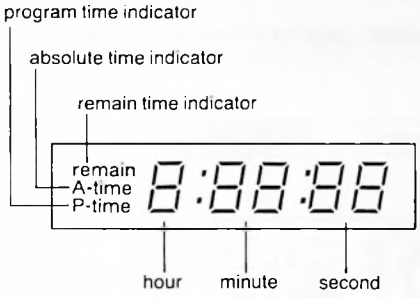
- When searching 400 times normal speed.
- The program time is not identified.
- The remain time is being calculated.

When the tape comes to the end

" E " appears on the program number display.



Counter display mode



❶ **absolute time**
This is the total time recorded on the tape from the beginning. If this time is not recorded when a recording is made, it will not be displayed during playback.

❷ **program time**
This is the elapsed time for each program.

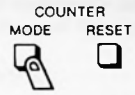
❸ **remain time**
This is the time remaining on the tape.

❹ **TOC (Table of Contents)**
This is the total time of the recorded programs. Timing information is displayed only when the TOC data is entered.
- When the sampling frequency indicator flashes, digital recording cannot be performed.

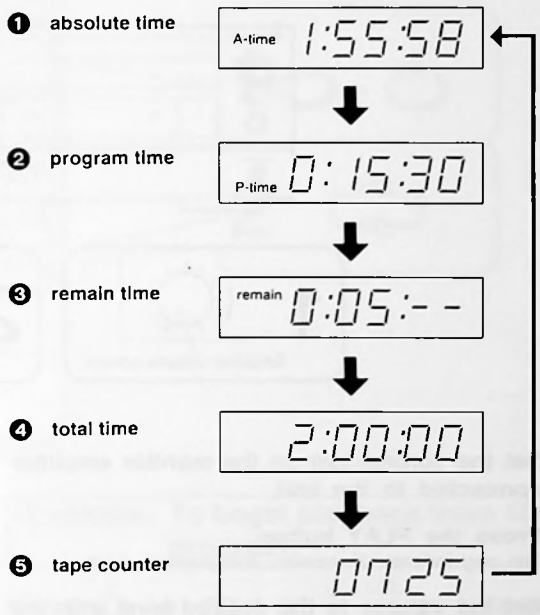
❺ **tape counter**
This is a number corresponding to the number of revolutions of the tape reel.

To change counter display mode

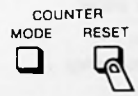
counter mode



Counter mode changes in the order as shown below each time the button is pressed.



Tape counter

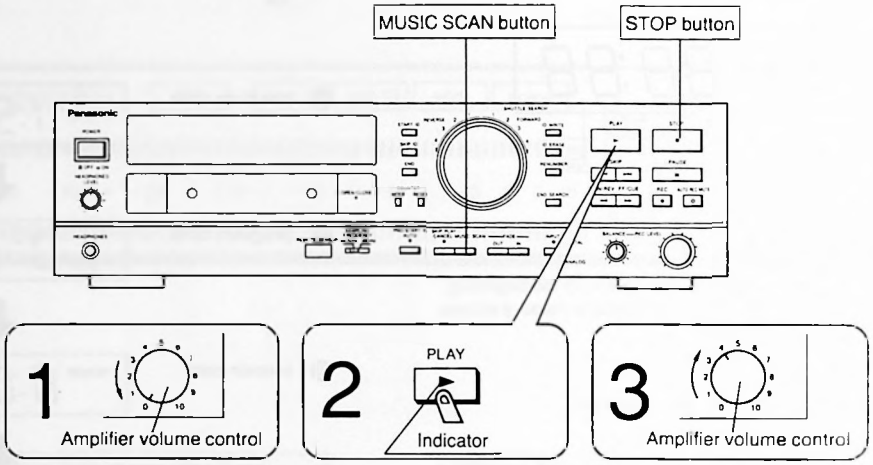


Use to reset the tape counter to "0000" (when the display is set to tape counter).

Playback

To Play the Tape from the Beginning

First perform the operations described in "Basic Operations for Recording and Playback", page 12.



1 Set the volume low on the monitor amplifier connected to the unit.

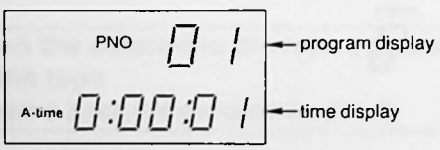
2 Press the PLAY button.
The play indicator illuminates, and playback begins.

3 Set the volume to the desired level with the monitor volume control.

The tape runs, and when it comes to the end

The sign " E " (end) is displayed on the program number display as shown in the diagram below.

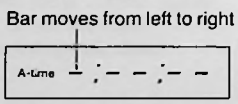
- When absolute time, program times and program numbers have been recorded on the tape, times are displayed on the counter display panel, and program numbers during playback are displayed on the program number display panel.



- In the above diagram, one second of the first tune has elapsed (when counter mode is absolute time).
- For tapes where absolute time or program times have not been recorded, time codes are not displayed.
  In these cases, play the tape using the tape counter.

If Absolute Time is not Recorded on the Tape:

The bar display below shows that absolute time has not been recorded.



To Identify the Contents of Each Program Recorded on the Tape (Music Scan Play):

Press MUSIC SCAN button.

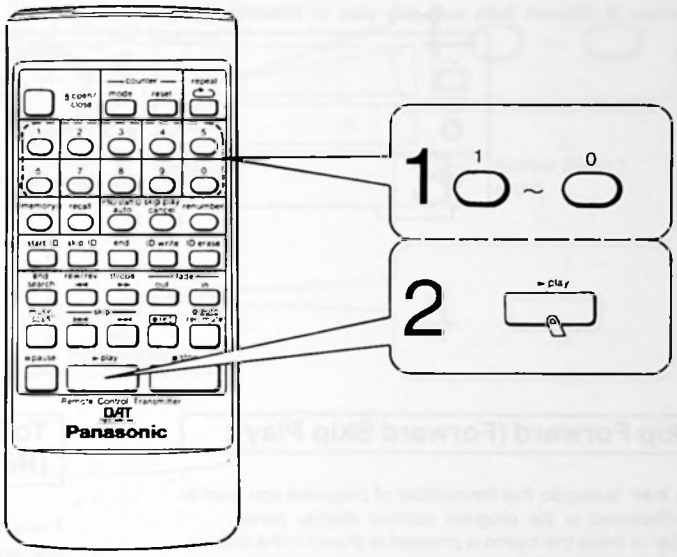
- The beginning of each audio segment from which MUSIC SCAN button is pressed will be played for approx. 15 sec, and the play indicator will flash.
- To interrupt the scan, press the STOP button.
- If a desired audio segment is found during scanning, press the PLAY button to continue playback.
  When the unit is changed to the playback mode, the play indicator will illuminate.

Note:
Music scan does not function during program play.

Playback of any Desired Segment (Access Play)

By specifying a segment and pressing the play button, playback will begin from that location.
This page explains how to do this starting from the stop mode when the tape is at the beginning.

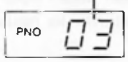
Notes:
- This operation cannot be performed with tapes which have no program numbers recorded on them.
- It may not be possible to find short segments less than 1 minute long.



1 Select the desired program number with the program button (1 ~ 0) on the Remote Control.

The program number will appear on the program number display.

When the 3 button is pressed



2 Press the play button.

The play indicator illuminates, and play begins from the specified program number.
While the program number is being searched, the play indicator will flash.

TO CUE THE MACHINE TO A DESIRED SEGMENT

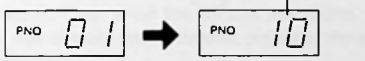
- If a desired audio segment is specified and the pause button is pressed, the specified program number is searched and the unit enters the pause mode.
  While the tape is searching for each segment, the pause indicator will flash.
  To begin playback, press the play button.
- In this access play mode, programs are searched at approx. 200 times normal speed.
  At the beginning or near the end of the tape, however, the speed drops to approx. 100 times normal speed.

Example: To begin playback from 10th program:

Press 1 ➡ 0 ➡ play buttons in that order.

- The unit searches for the specified program, playback begins and the program is displayed on the program number display.

10th program

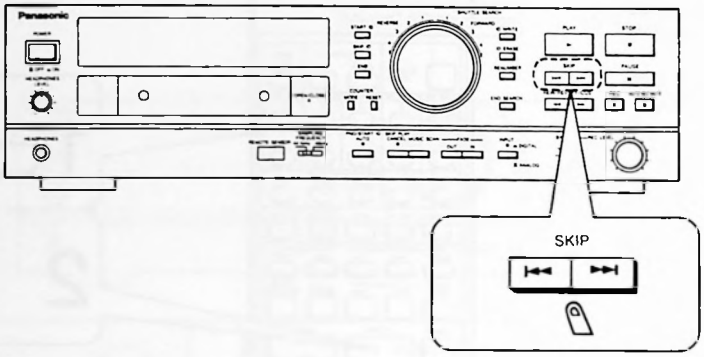


To change a specified program (only effective in stop mode):

Press the 0 button twice, then press the correct button for the desired selection.

To Skip Programs (Skip Play)

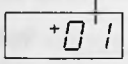
Notes:
- This function may not operate correctly in the case of very short audio segments (about 30 sec or less).
- This function is different from auto-skip play in indexing.



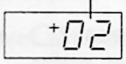
To Skip Forward (Forward Skip Play):

Press the ▶▶| button so that the number of programs you want to skip are displayed in the program number display panel.
The number of times the button is pressed is shown in the display.
When the ▶▶| button is pressed, a "+" sign is also displayed.

When the button is pressed once



When the button is pressed twice

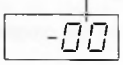


Each time the button is pressed, the tape advances to the beginning of the next audio segment. Play will then begin from that audio segment. (During pause mode, the unit then returns to pause mode.)

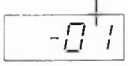
To Skip Backward (Reverse Skip Play):

Press the |◀◀ button so that the number of programs you want to skip are displayed in the program number display panel.
The number of times the button is pressed is shown in the display.
When the |◀◀ button is pressed, a "−" sign is also displayed.

When the button is pressed once



When the button is pressed twice



Each time the button is pressed, the tape skips back to the beginning of the segment being played, then to the beginning of the previous segment. Play will then begin from that section. (During pause mode, the unit then returns to pause mode.)

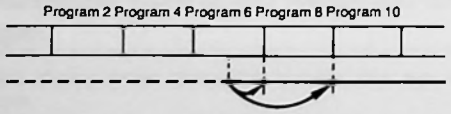
Note:
During reverse skip, the segment now being played is counted as one skip.

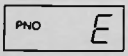
Skip During Program Play:

- Each time the skip button is pressed during program play, the program sequence changes and is displayed.

Forward Skip

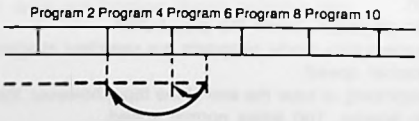
If the 2nd, 4th, 6th, 8th and 10th programs have been memorized, for example, and the ▶▶| button is pressed while the 6th selection is being played, the tape advances to the 8th selection. If the button is pressed again, it advances to the 10th selection, and so on.



In forward skip, if no further programs have been memorized, the sign  is displayed.

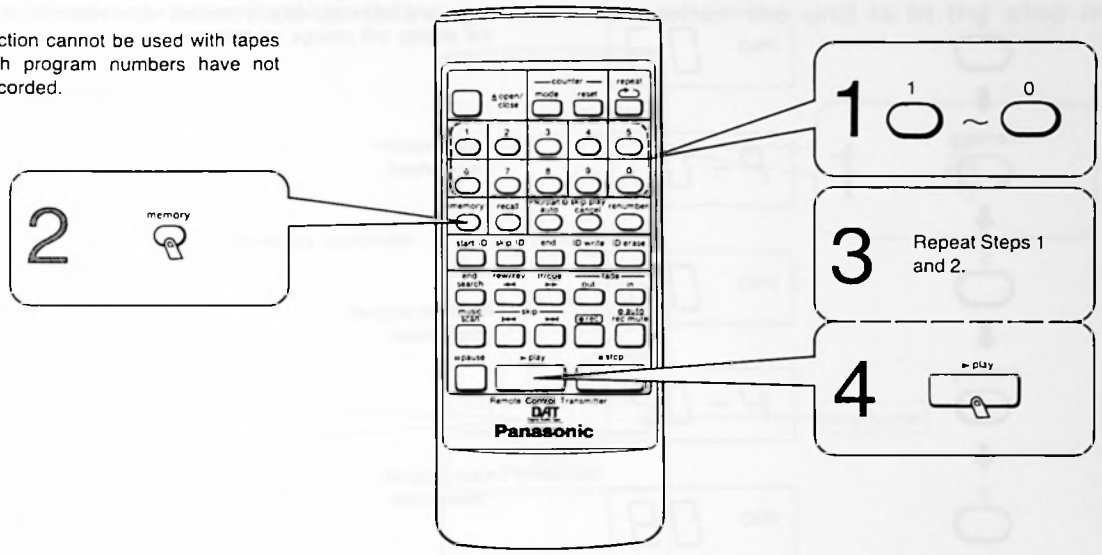
Reverse Skip

If the 2nd, 4th, 6th, 8th and 10th programs have been memorized, for example, and the |◀◀ button is pressed while the 6th selection is being played, the tape goes back to the beginning of the 6th selection. If the button is pressed again, the tape goes back to the beginning of the 4th selection.



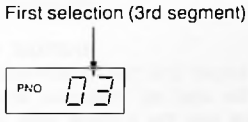
To Playback Segments in any Desired Order (Program Play)

Note:
This function cannot be used with tapes on which program numbers have not been recorded.

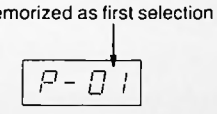


Procedure When Unit is in Stop Mode:

1 Select the desired segments with the program buttons (1 ~ 0) on the Remote Control.
The sections selected will appear in the program number display panel.



2 Press the memory button to memorize specified segment.



3 Repeat Steps 1 and 2 to memorize segments in desired order.
A total of 32 steps can be memorized in this way.

4 Press the play button.
Playback begins from the first selection.
When the tape is searching for the beginning of selections, the play indicator flashes.
After memorizing, if the pause button is then pressed, the first selection is searched and the unit enters the pause mode.

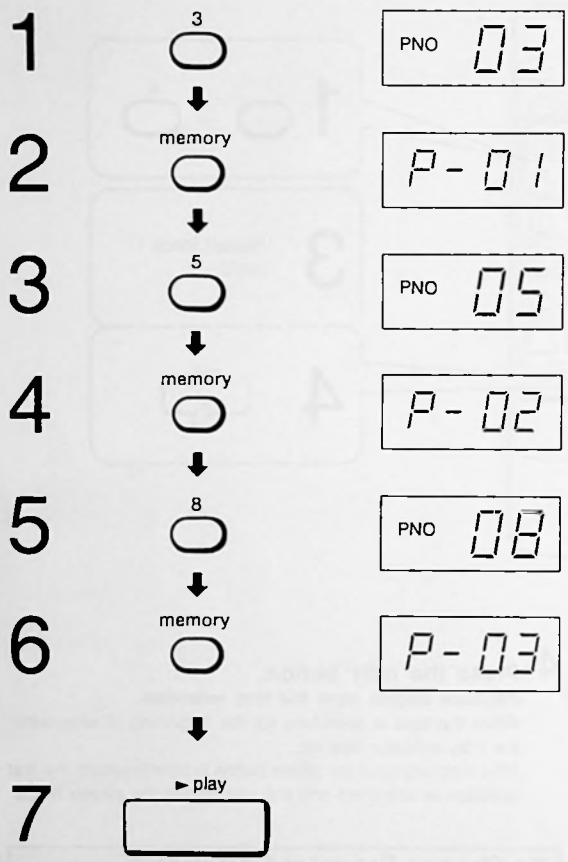
To Change Program Selections:

If it is desired to change some selections and the memory button has not yet been pressed, press the 0 button twice to cancel the incorrect selections. Then enter the correct selections. When the memory button has already been pressed, pressing the stop button cancels all selections.

To Interrupt Program Play:

Press the stop button.

To play segments 3, 5 and 8 in that order

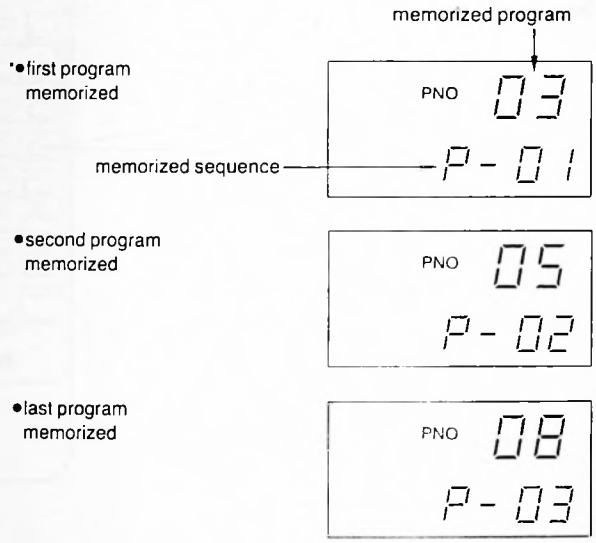


- When the last program has been played, the unit enters the stop mode.

Note:
If there is an unrecorded space of 2 seconds or more on the tape, the tape will automatically advance to the next programmed selection when the DIP switch SW4 is set to ON; see page 35.

To Confirm Memorized Program Selections

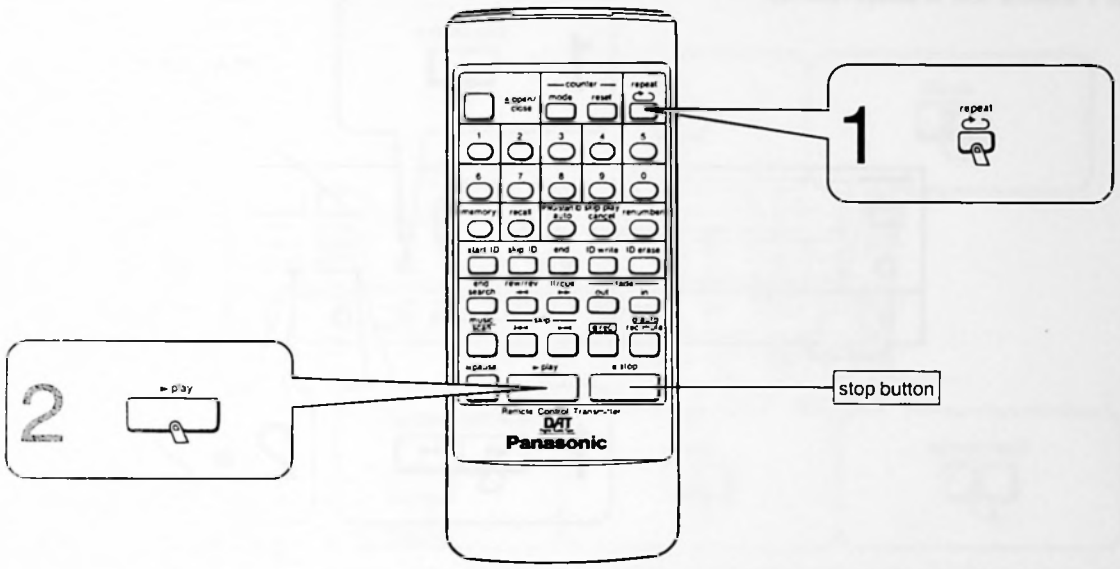
If for example, segments 3, 5 and 8 have been memorized in that order, and the recall button is pressed while segment 3 is playing, the display will change as follows:



- after last memorized program is displayed, display returns to original display

To Play Tape Repeatedly (Repeat Play)

(The operations described on this page start from when the unit is in the stop mode).



To play all segments or only memorized segments repeatedly:

All segments, or in program play only memorized segments, may be played repeatedly up to a maximum of 16 times.

1 Press the repeat button.
The ⟲ indicator illuminates.

2 Press the play button.
The play indicator illuminates, and play begins.
Unless the function is cancelled, the tape will be played repeatedly 16 times, after which it will stop automatically.

Note:
If all the segments are to be played repeatedly and an end mark is detected, the tape will return to the beginning and playback will begin again.

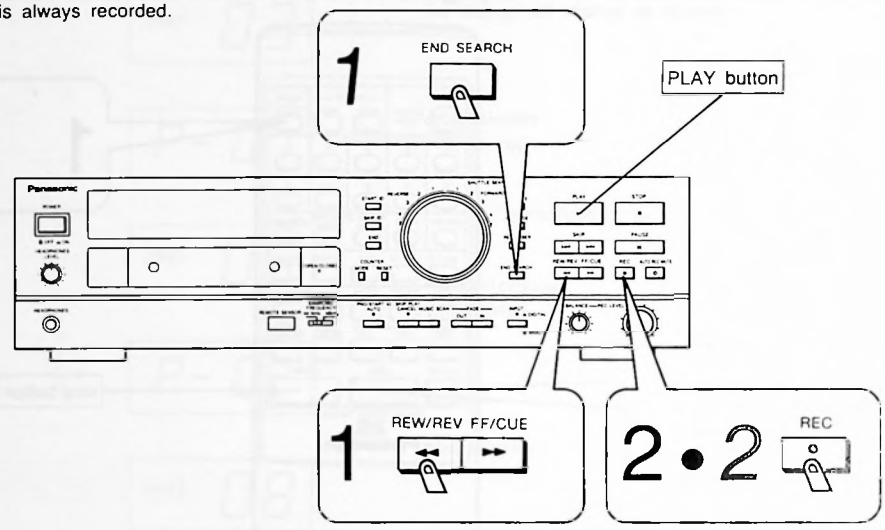
To Cancel Repeat Play:

- **Press the repeat button.**
  The ⟲ indicator turns off and the unit returns to the original playback mode.
- **If the stop button is pressed, repeat play is cancelled, and the tape stops.**

Before Recording

To Record Absolute Time

It is very convenient for playback or making consecutive recordings if absolute time is always recorded.



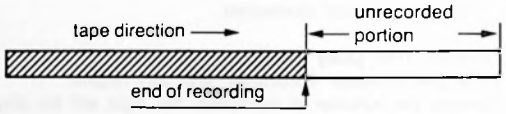
To Record from the Beginning of a Tape: (for recording on new tapes or recording while erasing previously recorded tapes).

1 Press the REW/REV button.
The tape is rewound to the beginning.

2 Press the REC button.
The rec and play indicators illuminate for about 4 sec, and the pause indicator flashes. (This is because the previous recording is being erased.) The play indicator then turns off, and the pause indicator will turn on steadily, indicating record standby mode. At this point, pressing the PLAY button initiates record mode.

To Record on the Unrecorded Portion of a Tape which has already been Partially Recorded:

1 Press the END SEARCH button.
The end of the last recording on the tape is searched at high speed, and the tape stops.



While the end search is being carried out "E E" appears on the program number display.

Note:
In the case of tapes with a very short recorded portion (one minute or less), this function may not operate correctly.

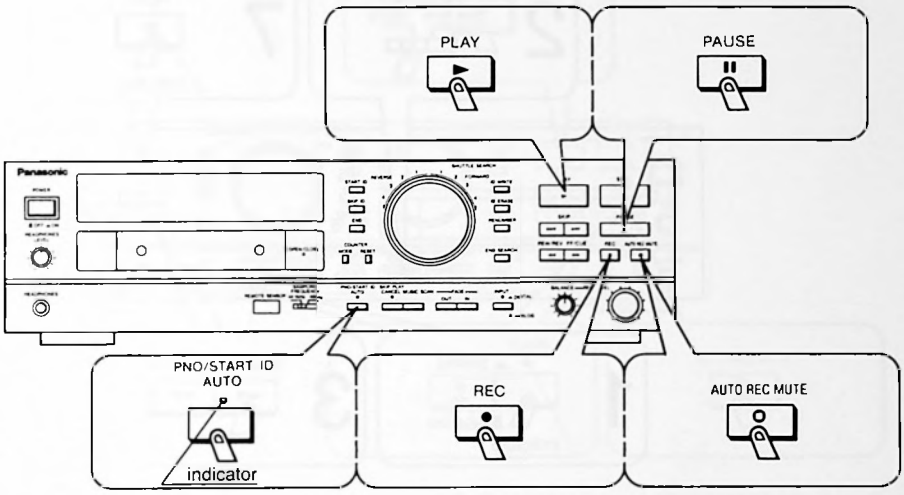
2 Press the REC button.
The rec and pause indicators illuminate, and absolute time will then be recorded once the PLAY button is pressed.

Note:
Even with new blank tapes, the tape must be rewound once or end search performed, otherwise absolute time will not be recorded.

To Record Program Numbers

If program numbers are placed on the tape during recording, program play or access play can easily be performed during playback. There are two ways of recording program numbers:

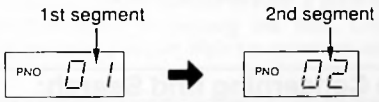
a) Automatic
b) Manual



a) Automatic recording of program numbers:

1 Press the PNO/START ID AUTO button.
The pno/start ID auto indicator illuminates.

2 Perform recording operation.
When recording has started, program numbers are recorded automatically when the sound begins, or after a silent space of about 2 seconds or more. On all subsequent occasions when this condition is satisfied, program numbers are recorded in order (segment 01, 02, 03...), and are indicated in the program number display.



To Cancel the Automatic Program Numbering Function:

Press the PNO/START ID AUTO button.

b) Manual Recording of Program Numbers:

1 Make sure the PNO/START ID AUTO indicator goes out.
Press the PNO/START ID AUTO button if the indicator is illuminated.

2 Press the REC button.
The rec and pause indicators illuminate, and the unit enters the record standby mode.

3 Press the PLAY button to start recording.
The pause indicator goes out, and the play indicator illuminates.
A program number is recorded where recording begins.

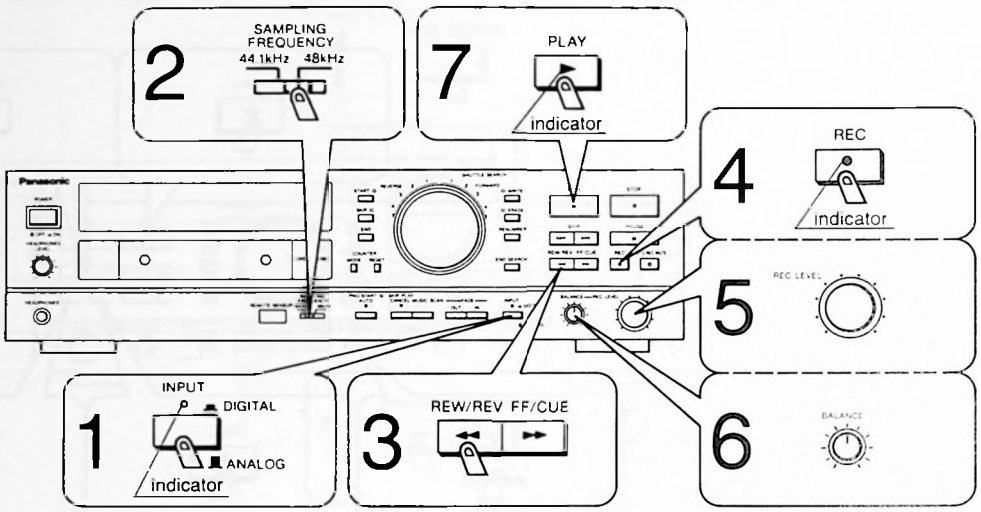
4 Press the PLAY button where you want to record a program number during recording.
Each time this operation is performed, a program number (1, 2, 3 etc...) is recorded on the tape.
If the tape is stopped temporarily with the PAUSE button or AUTO REC MUTE button, and recording is started again by pressing the PLAY button, a program number is recorded at that point.
These program numbers may be checked on the program number display.

Recording

Note:
Please be sure to read "To Record Absolute Time" and "To Record Program Numbers" before reading this section.

To Make Analog Recordings

Follow the procedure described in "Basic Operations for Recording and Playback", page 12.



To Record from the Beginning of the Tape:

1 **Release the INPUT selector button.**
The input selector indicator goes out.

2 **Select the desired sampling frequency (44.1 kHz or 48 kHz).**

3 **Press the REW/REV button.**
Be sure to rewind the tape even if a brand-new tape is used.

4 **Press the REC button.**
The rec and play indicators illuminate for approx. 4 seconds, and the pause indicator flashes. (This is because the previous recording is being erased.)
The rec and pause indicators then illuminate, the play indicator goes out, and the unit enters the record standby mode.

5 **Input the audio source that is to be recorded, and adjust the recording level with the REC LEVEL control. (see page 26.)**

6 **The rec balance control should be in the center detent position.**

7 **Press the PLAY button.**
The play indicator illuminates, and recording begins. The pause indicator goes out.

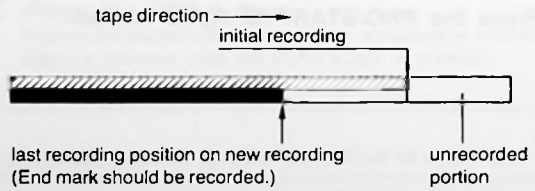
To Record from the Middle of the Tape:

Instead of Step 3 above, press the END SEARCH button. After the last recording position on the tape has been found, the tape will stop (end search function). Then perform Steps 4, 5, 6 and 7 as described above.

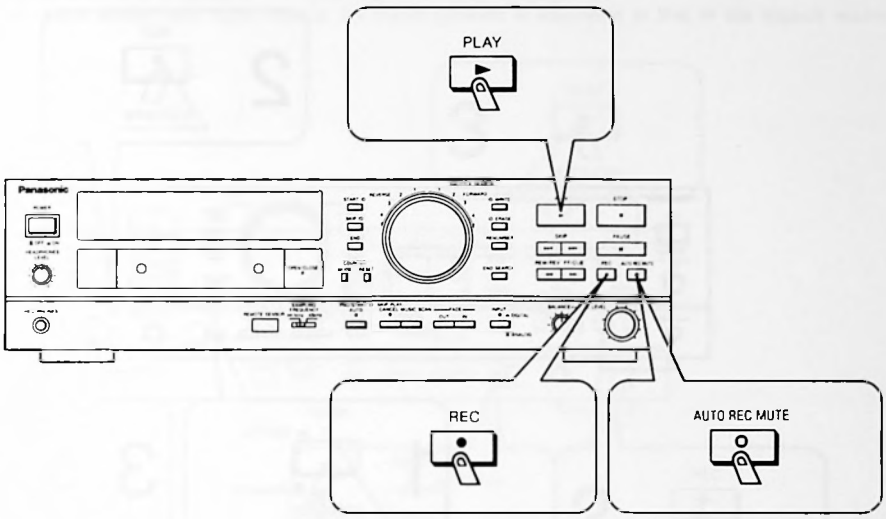
Notes:
- The end search function may not operate correctly for tapes that contain a recording lasting only for 1 minute or so.
- If the end mark was recorded from the middle to the end when the tape was re-recorded (recording erase), end search will stop at the end mark, unlike the case when nothing has been recorded.
- In end search mode the tape may stop at a position very slightly before from the last recording position.

Note Concerning End Search:

When a new recording is made on a tape and program numbers were already recorded beyond the end of the new recording, the end mark should be recorded at the end of new recording.



How to Make Silent Spaces on Tape/How to Erase



To Make Silent Spaces on the Tape where Recording Begins:

By inserting a silent space, a new recording can be clearly distinguished from the previous one. Press the REC button. After the unit enters record standby mode, press the AUTO REC MUTE button. A silent space of approx. 4 seconds will then be recorded on the tape.
During these 4 seconds, the pause indicator will flash and the play indicator will illuminate.

To Ensure Accurate Program Play:

After a recording has finished, be sure to insert a silent space of 4 seconds before stopping or pausing the tape. Consecutive recording and program play will then be performed accurately.

To Insert a Silent Space in a Recording: (Auto Rec Mute Function)

- To eliminate unwanted sections during a recording, press the AUTO REC MUTE button while the unit is in record mode. A silent space of approx. 4 seconds will be automatically inserted on the tape, and the unit will then enter the record standby mode.
- To begin recording again, press the PLAY button.

To Make the Silent Space Shorter or Longer:

■ Making It Shorter (Less the 4 Seconds):

Press the AUTO REC MUTE button, then press the PAUSE button or PLAY button within 4 seconds (when the PAUSE button is pressed, the unit enters the pause mode; when the PLAY button is pressed, recording begins).

■ Making It Longer (Greater than 4 Seconds):

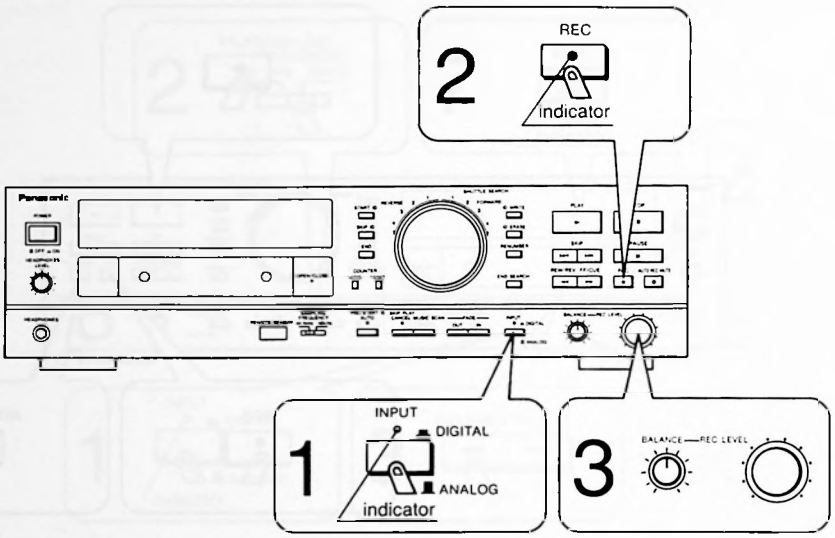
Press the AUTO REC MUTE button as long as necessary. When the button is released, the unit enters the record standby mode. To resume recording, press the PLAY button.

To Erase a Recorded Tape:

- Reset the accidental erasure prevention tabs to the correct position to permit recording.
- When a tape is recorded again, any previous recording is erased automatically. To erase only the recording (without erasing absolute time), set the rec level control to the minimum position, and record up to the end of the tape (check the peak level meter does not move).

Note:
When end search is performed on a tape that has been erased up to the end by the above method, the unit runs to the end of the tape. (Although the previous recording is erased, absolute time is not, and this is viewed as a silent recording by the end search function.)

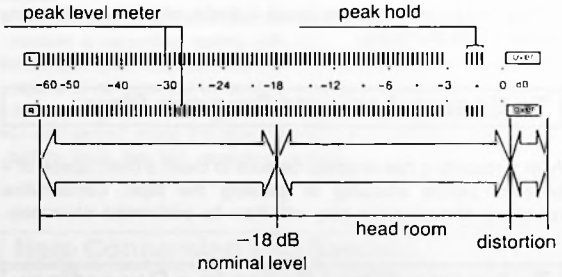
To Adjust Recording Level (for Analog Inputs)



1 Release the INPUT selector button.
The input selector indicator goes out.

2 Press the REC button to put the unit in the record standby mode.
The rec and pause indicators illuminate.

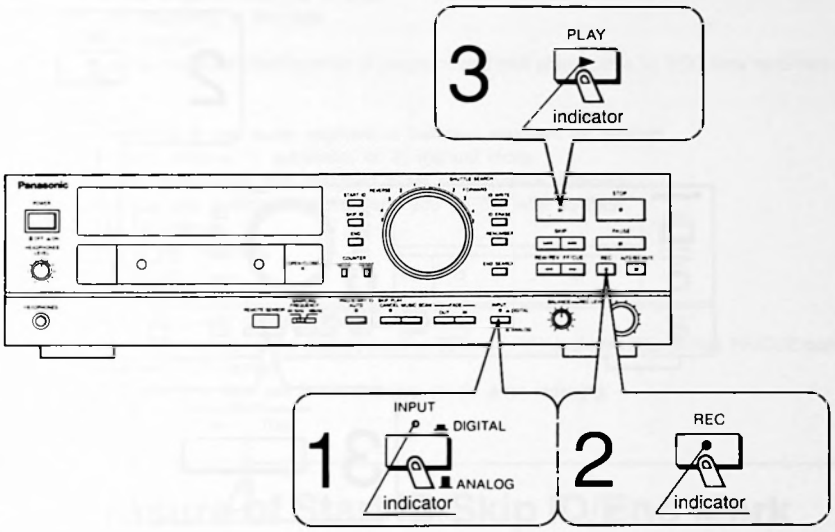
3 Adjust the level with the REC LEVEL Control.
First supply +4 dBu (reference level) analog signals and then adjust the recording level so that a peak level of −18 dB is indicated. Then supply the signals of the audio material which is to be recorded. If the peak level is not appropriate (if it is too high or too low), re-adjust to the desired recording level while making sure that the over indicator does not light.



Note:
Since this unit uses digital-drive peak level meters, the recording signals will not be distorted provided that the level has been adjusted so that the over indicator does not light.

To Make Digital Recordings (input must be connected to digital terminals)

- First follow the procedure described in "Basic Operation for Recording and Playback", page 12.
- Because digital recordings are made directly from digital signals, the sound obtained is equivalent to that of the original source.



Before making digital recordings, check the following settings:
- type of digital audio interface (AES/EBU or IEC TYPE II)
- value of ID6 SCMS status (only for AES/EBU I/O recordings)

For further details, see page 35.
After the required settings have been made, follow the procedures described below.

1 Make sure the INPUT selector indicator is illuminated.
If the indicator is extinguished, press the INPUT selector button.

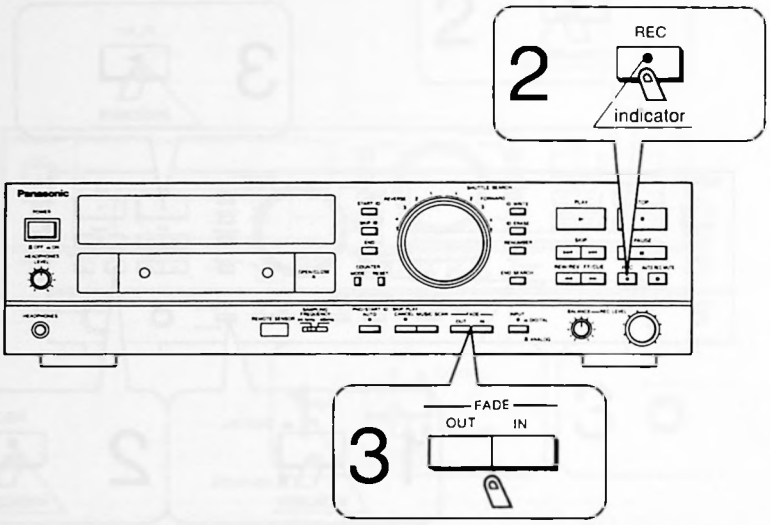
2 Press the REC button.
The unit enters record standby mode (rec indicator and pause indicator illuminates.)

3 Press the PLAY button.
The pause indicator goes out.
The play indicator illuminates, and reocrding begins.

4 Play the digital source that is to be recorded.
The digital input can be monitored through the analog output, or via headphones.

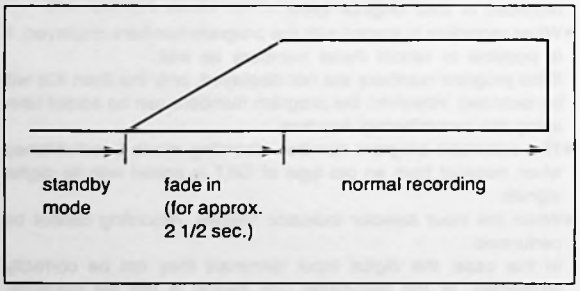
Notes:
- When making digital recordings, rec level and rec balance adjustments cannot be made.
- The Start IDs and Skip IDs stored on the playback tape can be recorded in their original form.
- When recording is started with the program numbers displayed, it is possible to record these numbers as well.
  If the program numbers are not displayed, only the Start IDs will be recorded. However, the program numbers can be added later using the renumbering function.
- The automatic program number recording mode is established when material from an old type of DAT is edited with its digital signals.
- When the input selector indicator flashes, recording cannot be performed.
  In this case, the digital input terminals may not be correctly connected, or the rear-panel DIP switch is not set correctly. (Refer to page 35.) Connections, signals and DIP switch setting should therefore be re-checked.

To Make Fade In/Fade Out Recordings



Fade In

fade in; Once the recording begins, the level of the sound gradually increases.



1 **Follow the procedures described in "Before Recording" and "Recording", according to the Source of the Sound.**

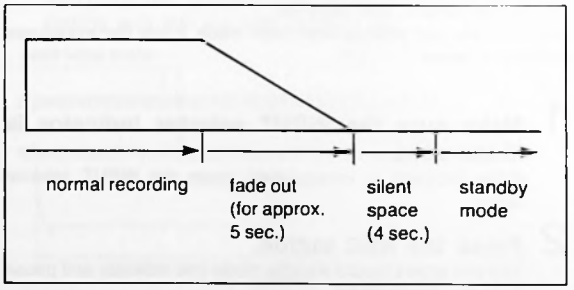
2 **Press the REC button.**

3 **Press the FADE IN button.**
Recording begins after approx. 2 1/2 seconds fade in.

Note:
Digital signals cannot be modified by using Fade in function.

Fade Out

fade out; The recording level is gradually reduced.



Press the FADE OUT button during recording.
After approx. 5 seconds of fade out, approx. 4 seconds silent space is recorded, and then the unit enters record standby mode.

Note:
Digital signals cannot be modified by using Fade out function.

Indexing (Procedure to be followed during playback).

Indexing allows certain DAT subcode information, excluding End Mark, to be recorded without affecting any audio material that already exists on the tape.

The following subcodes are available with the SV-3700;

- start ID; indicating the beginning of the program
- skip ID; causing the unit to go into fast-forward mode until the next Start ID is reached, in order to skip unwanted material
- end mark; indicating the end of the last recording on the tape
- program number (PNO); the number of the program recorded on tape
- absolute time; the elapsed time from the beginning of the tape
- program time; the elapsed time for each program
- table of contents (TOC, for read only); Used to display the total number of programs and total playing time by TOC data recorded on commercially produced media

1. A Start ID can be recorded at the beginning of any audio segment or between segment as desired. The Start ID can be recorded by choosing either a 1) automatic, or 2) manual mode.
2. Recorded Start ID's can be automatically recalculated and assigned a set of sequence numbers.
3. Skip ID's can be recorded to automatically skip over parts of the tape you do not wish to hear.
4. Recorded Start ID's and Skip ID's can be erased.
5. End mark can be recorded at the end of the recording.

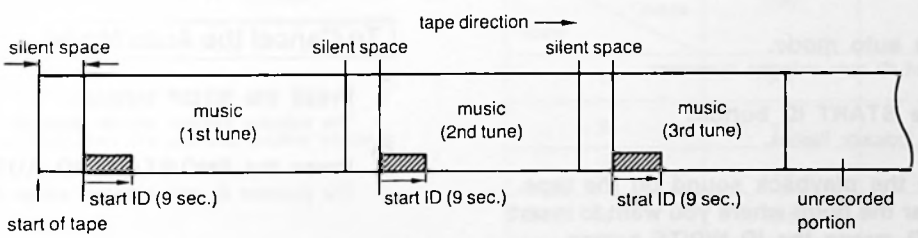
Notes:

- Reset the accidental erasure prevention tabs so that the tape can be recorded.
- To index the tape in stop or pause mode, advance the tape to the desired position by means of the shuttle search dial, FF/CUE button or REW/REV button, and then stop it with the PAUSE or STOP button.
  If indexing is carried out from the stop mode, the tape will be in the stop mode after indexing.

Recording and Erasure of Start ID/Skip ID/End Mark

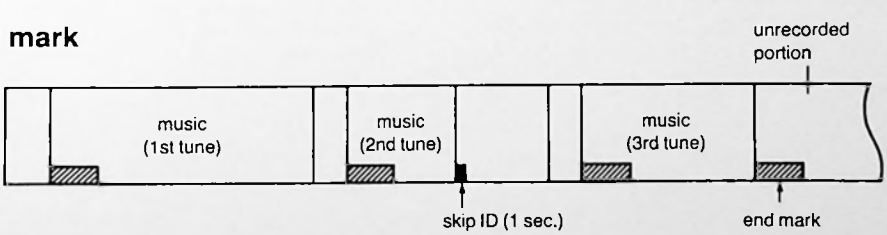
During recording, Start ID, program number, absolute time and program time can be recorded automatically by setting the PNO/START ID AUTO button. Program numbers can be corrected by indexing. By recording Start ID's and Skip ID's, the desired tape can be made for playback.

1) Start ID



1. Program number is recorded in the segment's order.
2. Start ID can be manually recorded at the required position.
3. Start ID can be searched by using search function, and also erased.
4. After editing Start ID's, program number can be rearranged in Start ID order.

2) Skip ID/End mark



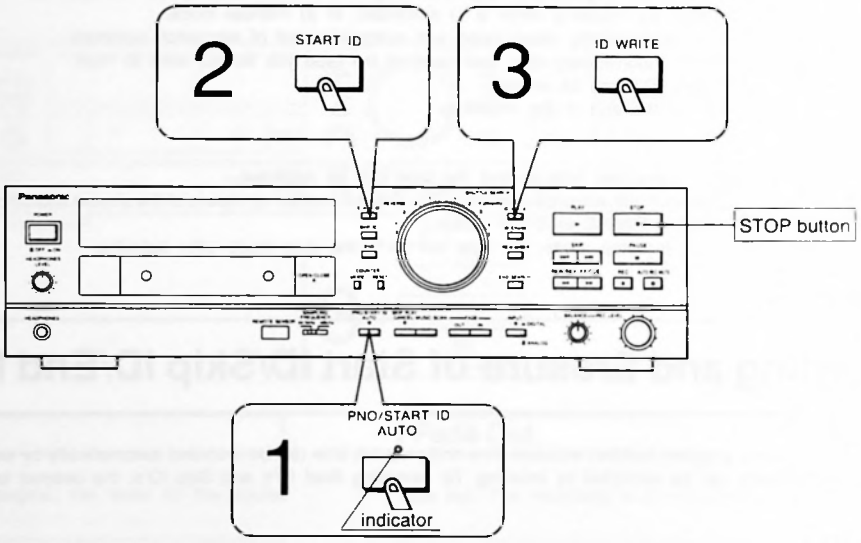
1. Skip ID can be manually recorded at the required position.
2. Skip ID can be erased.
3. End mark can be recorded at the end of the recording. The continue recording is available by using end search function.
4. End mark can be searched by using end search function and erased.

Note:
If the OPEN/CLOSE button is pressed and the cassette tape is removed during indexing, the index mode will be cancelled.

To Record Start ID's (During Playback)

1) Automatic Recording

In this method, a Start ID is automatically recorded on the tape by detecting whether or not there is audio on the tape. When the Start ID button and then ID WRITE button are pressed, a Start ID is recorded at the beginning of each segment on tapes where program numbers have not been recorded. In the case of tapes that already contain Start ID's, the previous recording is erased and a Start ID is recorded where the audio begins. As long as these Start ID's are recorded, you will be able to make full use of access play and program play functions.



1 Enter the auto mode.
The pno/start ID auto indicator illuminates.

2 Press the START ID button.
The [start ID] indicator flashes.

3 Listen to the playback sound on the tape. Then, near the point where you want to insert a Start ID, press the ID WRITE button.
The [start ID] indicator will flash, a Start ID will be recorded where the sound begins, and the indicator will illuminate. In this automatic program number recording mode, Start ID's about 9 seconds long will also be automatically recorded one after another where sound begins.

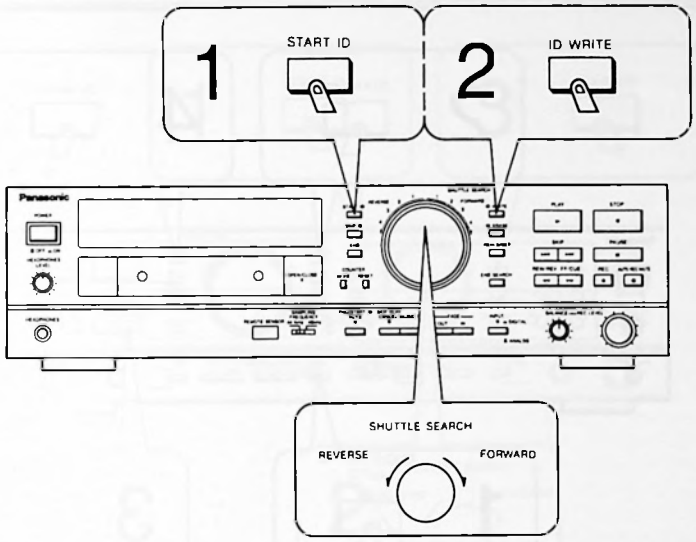
To Cancel the Auto Mode:

1 Press the STOP button.
The indexing function will be released.

2 Press the PNO/START ID AUTO button.
The pno/start ID auto indicator will go out.

2) Manual Recording

In this method, Start ID's can be recorded on the tape at any desired positions.



Check the pno/start ID auto indicator is not illuminated. If it is, press the PNO/START ID AUTO button to cancel.

1 Press the START ID button.

The [start ID] indicator illuminates.

2 Listen to the playback sound on the tape. Then, at the point where you want to insert a Start ID, press the ID WRITE button.

The [start ID] indicator illuminates, flashes and then goes out. A Start ID (approx. 9 sec.) will be recorded at the point where the button was pressed.

Then the unit is ready for inserting the next Start ID.

■ Repeat Step 2 to insert Start ID's one after another wherever desired.

Note:

Do not press the STOP button when the [start ID] indicator is illuminated (approx. 9 sec.). In both Automatic/Manual Recording. If the STOP button is pressed, the Start ID will not be recorded long enough to be detected upon playback.

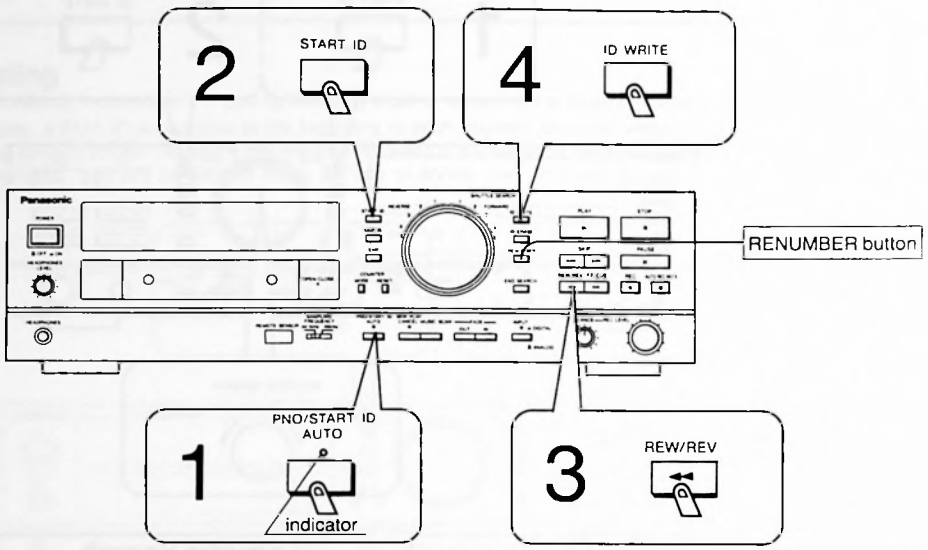
Shuttle Search

This function allows you to search rapidly forward or backward on the tape for specific sections with a high degree of accuracy while listening to the material recorded on the tape.

Search play speed (four steps)

Operation mode / Scale	Play	Pause
1	×3	×½
2	×5	×1
3	×9	×2
4	×15	×3

To Assign Sequence Numbers to Recorded Start ID's



After recording of Start ID's, press the RENUMBER button.

The tape will rewind to the beginning, the unit searches for the recorded Start ID's, and assigns program numbers to them in sequence starting from 01. When the tape reaches the end the renumber function is complete, and the tape is rewound to the beginning again.

While the tape is running, the play indicator flashes.

Each time the tape comes to a position where a Start ID has been recorded, the [start ID] indicator illuminates.

Note:

If the renumbering function is used with the PNO/START ID AUTO button set to ON, the Start ID and program number will move to the position where a fade-in is first started if the Start ID is located midway through a fade-in section.

To Record Absolute Time with the Index Function:

Even on tapes where absolute time has not been recorded, it can be recorded while indexing is being carried out.

1 **Enter the auto mode.**
The pno/start ID auto indicator will illuminate.

2 **Press the START ID button to put the unit in automatic program number recording mode.**
The [start ID] indicator will flash.

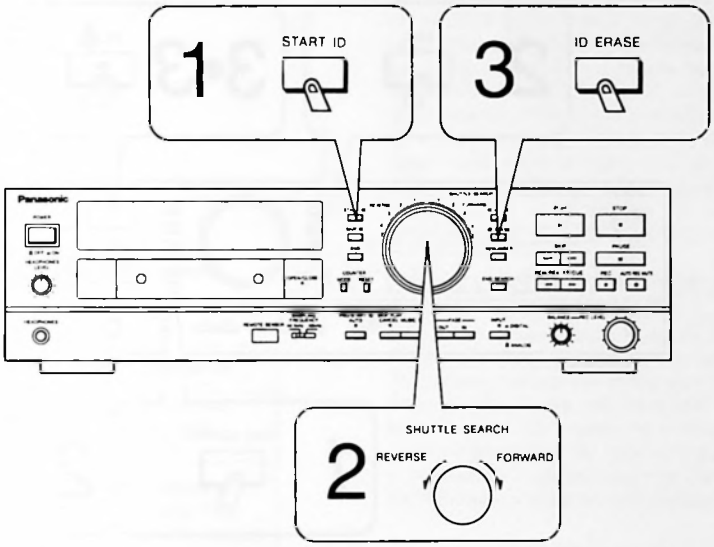
3 **Press the REW/REV button to rewind the tape to the beginning.**

4 **Press the ID WRITE button.**
Start ID's will be recorded on the tape automatically, together with absolute time.

Note:

If program numbers, Start ID's, Skip ID's and End Mark have been recorded in any part of the tape, they are all erased during a new recording.

To Erase Recorded Start ID's (During Playback)



To Erase a Start ID

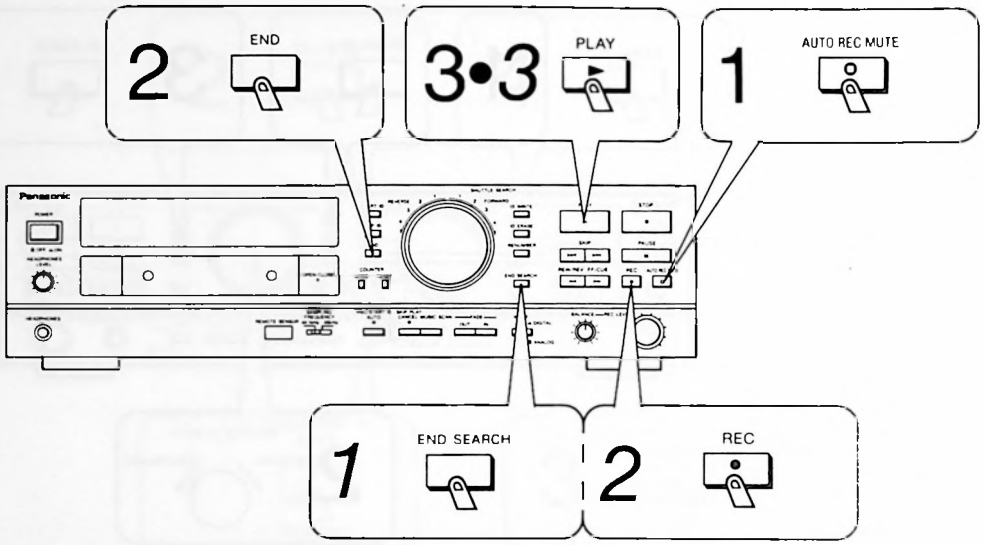
1 Press the START ID button.
The [start ID] indicator flashes.

2 Turn the shuttle search dial to run the tape to the point where you want to erase a start ID.
When the tape reaches the position at which a Start ID was recorded, the [start ID] indicator illuminates to show the presence of a Start ID.

3 Press the ID ERASE button.
The [erase] indicator illuminates.
The tape is then rewound to find the Start ID and erasure begins just before the beginning of the Start ID. (During this time, the [erase] indicator illuminates, and the [start ID] indicator flashes.) After erasure, both indicators go out, and playback continues.

4 Repeat Step 2~3 to erase subsequent ID's, if necessary.

To Record and Erase the End Mark



To Record the End Mark

1 After recording (in recording standby mode), press the AUTO REC MUTE key.
After approx. 4 seconds of silence will be recorded, and the unit enters recording standby mode.

2 Press the END button.
The [end] indicator flashes.

3 Press the PLAY button.
The [end] indicator lights.

While the end mark is being recorded (for approx. 9 seconds), "EE" appears on the program number display.
Recorded music data on the end mark is erased.

After the end mark is recorded, the tape is rewound at the beginning of the end mark, and the unit enters stop mode.

Indexing mode of the end mark will be released automatically.

To Erase the end Mark

1 Press the END SEARCH button.
After the tape is rewound to the beginning automatically, the end mark will be searched, and the unit enters recording standby mode.

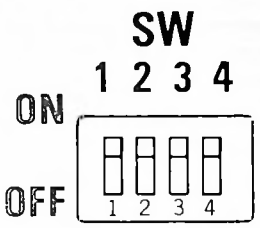
2 Press the REC button.
The rec and pause indicators illuminate.

3 Press the PLAY button.
Recording starts and the end mark will be erased.

During the normal recording, the end mark will be automatically erased, so that recording can be continued.

DIP Switch Settings

DIP Switch on the Rear Panel



Following settings can be made by using DIP switches.

Switch Setting		Function (UP=1; DOWN=0)
1	Digital Input Selection	CONSUMER Professional 1=IEC 958 0=AES/EBU
2 3	SCMS ID6 Status for AES/EBU Input	*SW2* *SW3* *ID* *Meaning* 0 — 00 Copy Free 1 0 10 No further copies 1 1 11 One copy allowed
4	Blank Skip Mode in Program Search	1=ON 0=OFF SV-3700 will advance to the next selection on Program Play mode, if approximately two seconds of silence are encountered.

Note:
IEC 958 is shown as IEC TYPE II on the rear panel of SV-3700.
CONSUMER

SCMS Copy Protection

The Serial Copy Management System (SCMS) is designed to control digital-to-digital DAT copying that a consumer can perform on various digital audio material, including Compact Discs, pre-recorded DAT tapes, and other material via IEC 958 "consumer use" digital audio interfaces (also commonly referred to as "S/P DIF" and EIAJ CP-340). SCMS does not affect the ability to make copies using a DAT recorder's analog inputs and outputs, nor does it apply to digital-to-digital copies made via the AES/EBU professional digital audio interface.

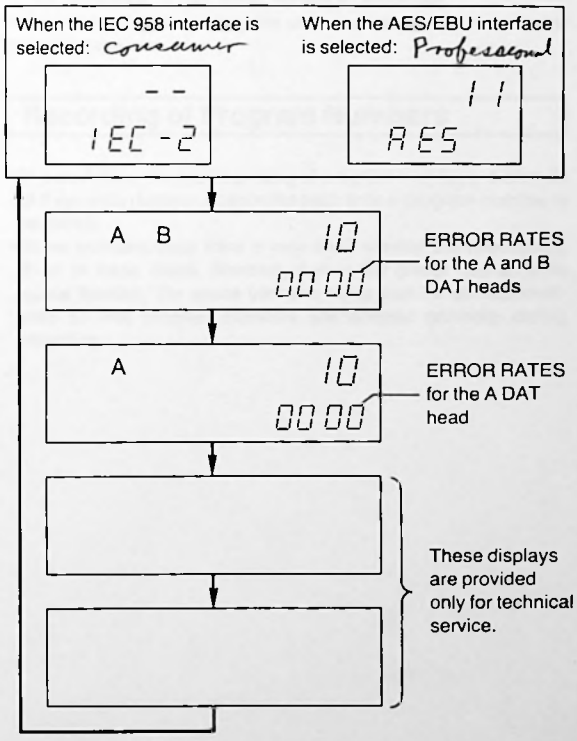
Only one serial (or generational) digital-to-digital copy can be made from a copyright protected source, such as a commercial CD or pre-recorded DAT. Serial Copy Management System labels are generated onto tape each time an SCMS-equipped consumer DAT machine records an audio signal to tape, no matter whether the source is from the analog or digital inputs.

Technically, the SCMS labels for DAT are encoded into the SubCode sections of the main digital data area, specifically "ID6". The SV-3700's rear-panel DIP switches allow the user to preset the SCMS status bits of ID6 onto the DAT recording. For legal reasons, the ID6 bits are only modified if the source input is the AES/EBU Digital I/O; during digital copying via the IEC "consumer use" input, the SV-3700 simply copies across the current status of SCMS codes indicated by the Channel Status. To prevent a master DAT tape being copied on a consumer deck, for example, you might select switch setting for "ID6=10", which would prevent any further digital copying of this copyrighted cassette via a consumer DAT. Alternatively, you might select "ID6=00", so that any number of digital copies could be made on a consumer deck. Selection of "ID6=11" will designate a final copyright protected pre-recorded product, which would behave the same way on consumer SCMS-equipped DAT decks as a normal commercial release.

DISPLAYING SCMS STATUS AND ERROR RATES

The SCMS status of a DAT recording can be displayed on the SV-3700 by simultaneously pressing the front-panel COUNTER MODE, RESET and PAUSE buttons. Now shown within the normal Time Display window will be the type of digital interface that has been selected via the rear-panel DIP switch—AES/EBU or IEC 958 "consumer use"—while the PNO display now shows the ID6 value of the recording: 00, 10 or 11. If the COUNTER MODE button is pressed for a second time, the SV-3700 will display ERROR RATES; the mode can be cancelled by hitting the RESET button.

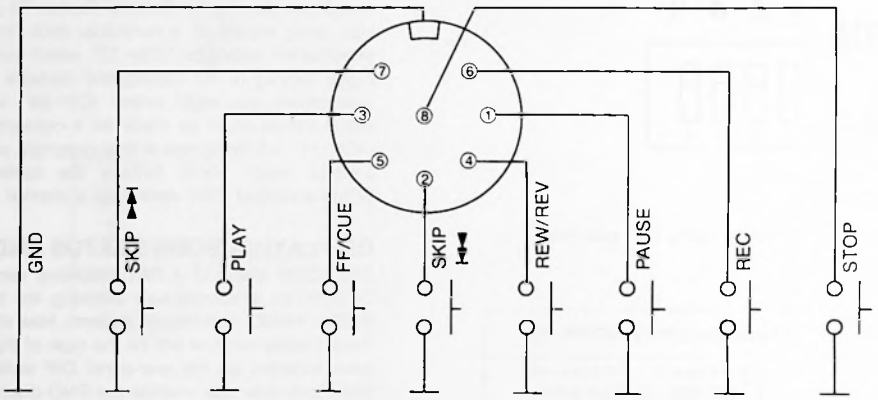
Each time the COUNTER MODE button is pressed, the display changes as follows:



Remote Control

This unit has two systems for remote control operation, using either the parallel input terminals or the infra-red remote sensor. By connecting the following circuits, the SV-3700 can be operated by remote control using normal switches.

Parallel Input Terminals



Operation Notes

Condensation

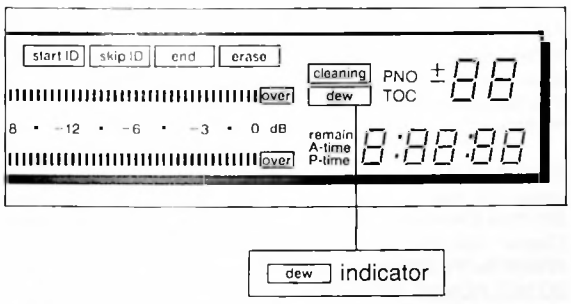
In winter, moisture droplets may form on the window panes of a heated room. This phenomenon is called condensation. Condensation may occur with this unit or with cassette tape in the following situations:

- in a room where a heater has just been turned on
- in a room where steam or excessive moisture are present
- when the unit is brought in suddenly from a cold place to a warm room
- when the unit is directly in the path of cold air from an air conditioner, etc.

In such cases, the unit will not operate correctly, and even if it does operate, the tape may be damaged.
In particular, if moisture condenses on the rotating heads, the tape will stick. This will prevent the tape from running properly, and might damage it.

If Condensation Occurs

To protect the tape, this unit contains a built-in device so that when condensation occurs, the dew indicator on the display panel flashes. While the dew indicator is flashing, apart from the OPEN/CLOSE function, buttons on the unit will not operate.



If a cassette tape is loaded in the unit, remove it and leave the power switched on. Wait until the indicator goes out. The time required for moisture to evaporate will vary according to the environment, but it may be 60 minutes or longer if humidity is high. Condensation usually sets in gradually, so the indicator may not flash for the first 10~15 minutes. If room temperature or humidity changes abruptly, therefore, wait for about 20 minutes before switching on power to check that the indicator is not flashing.

Unloading Function

If 12 hours time elaspses when the unit is in the stop, pause or record standby modes, the cassette tape will be released automatically from the rotating mechanism.

Operating the Unit

■ Always keep the cassette holder closed.

If it is left open, dust will accumulate in the mechanism and cause tape playback or recording performance to deteriorate. Do not touch the inside of the cassette holder.

■ If the unit is not used for extended periods, remove the cassette tape.

■ The top of the deck will become hot during use, but this is perfectly normal.

■ Keep the replay volume low.

With DAT (Digital Audio Taperecorder) cassettes, there is much less noise than with compact cassettes and a wider dynamic range.
There will be a sudden burst of sound when the audio material begins. As this may damage the speakers, due care should be taken.
Be especially careful when using headphones.

Dynamic Range
Dynamic range is the difference between the lowest sound level and highest sound level, and is expressed in decibels (dB). The greater this difference, the more dynamic the recording.

■ When carrying or storing the unit, take care not to subject it to any severe shocks.

When storing or transporting the unit, also be sure to remove the cassette tape.

Recording of Program Numbers

- In automatic or manual recording of program numbers, a start ID of 9 seconds duration is recorded each time a program number is recorded.
- Some compact discs have a very short interval between tunes. Even in these cases, however, if your CD player has an auto space function, the space between tunes can be set automatically so that program numbers are entered correctly during recording.

When Making Digital IN/OUT Connections

If the connections to the following equipment are set incorrectly, a loop may be set up where the output of the unit is connected to its recording input. This will not only set up an oscillation but may also damage the monitor speakers. Attention should therefore be paid to the following points:

1) When recording or playing back through the unit's DIGITAL IN/OUT terminals, be sure to connect these terminals to the DIGITAL PLAYBACK (IN)/DIGITAL REC OUT (OUT) terminals of other equipment.
2) If the monitor amplifier has no DIGITAL PLAYBACK OR DIGITAL REC OUT terminals, this unit (DAT) can be used for only for playback through the ordinary DIGITAL INPUT terminals on the amplifier.
3) If connections are made as in 2) and it is desired to record, do not on any account set the INPUT SELECTOR of the amplifier to "DIGITAL".

Maintenance

To clean this unit, use a soft, dry cloth. If the surfaces are extremely dirty, use a soft cloth, dipped into a soap-and-water solution or a weak detergent solution. Wring the cloth well before wiping the unit. Wipe once again with a soft, dry cloth.
Never use alcohol, paint thinner, benzine, nor a chemically treated cloth to clean this nuit.
Such chemicals may damage the finish of your unit.

Importance of Cleaning DAT Heads

As with any tape-based recorder, it is essential that the SV-3700 Pro-DAT's heads are kept perfectly clean. A Panasonic DAT Head Cleaning Tape (part number RT-RCLP, included) is available for your local dealer that automatically removes the dirt, dust and shed tape particles that gradually build up on the DAT heads.

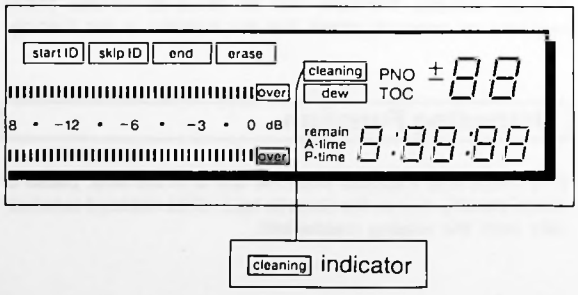
But how do you know that the heads need cleaning? In extreme conditions the audio output will mute, but long before that happens, the slow build up of dirt and oxide will "mask" the sound, and diminish the full 16-bit audio quality from this DAT machine by causing record as well as replay errors.

An ideal solution is to make yourself a "DAT Test Tape" whose error rate you can monitor on a daily or weekly basis (depending on how often you use the SV-3700). To prepare a Test Tape, first select a high-quality DAT cassette and then record a series of music selections. Rewind the DAT cassette and monitor the Error Rates during the first several minutes of tape.

Panasonic brand DAT tapes used high-quality formulations, binders, backings and calendaring process, to provide minimum abrasiveness with maximum stability of metal particles on the tape. It is specifically designed to maximize head life of your DAT machine.

Check the Error Rates at several points in the tape and average the values. (On how to display error rates on the SV-3700, see page 35.) If the Error Rates increase to around 300, a Panasonic Head Cleaner Tape can be used as follows: Play the cleaning tape through the SV-3700 for approximately 15 seconds, and remove it. DO NOT REWIND the cleaning tape, since this action might very well spread previously removed dirt and dust onto an otherwise clean head and transport. After the Head Cleaner Tape has been used up, dispose of it properly and start to use a new one.

If the DAT heads become very contaminated with dirt and dust, the CLEANING indicator within the display panel will flash. In this case, use a Head Cleaner Tape as described above.

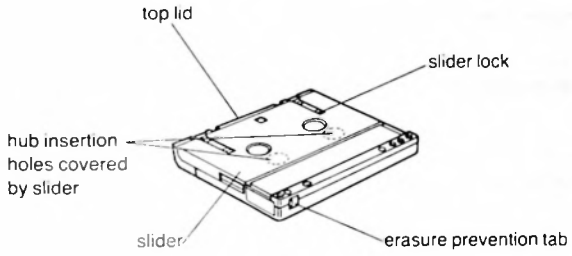


- If playback quality improves after cleaning, but then deteriorates immediately after recording or playing back several times, the cassette tape has probable reached its useful lifetime. In this case, use a new tape.
- If sound quality does not improve even after cleaning, consult your dealer.
- Cleaning tapes cannot be used for recording or playback (be sure to read also the operating instructions supplied with the tape).

About DAT Cassette Tape

About DAT Cassette Tape

DAT tape can be recorded and played on only one side.
DAT cassette tapes, unlike compact cassettes, are completely sealed. Also, the tape and hub holes are protected by a top lid and slider.
The cassette is so designed that, apart from when it is loaded, dust or foreign particles cannot enter the cassette housing to cause dropout (digital signal losses). Dropout is the main reason for impairment of quality in digital recording.



Handling DAT Cassette Tapes

- Moisture may condense on a tape that is carried suddenly from a cold place into a warm room, so wait about 20 minutes before using it.
  If the tape is used with moisture on its surface, it will be damaged.
- Do not attempt to dry a cassette tape with moisture on its surface by using a hair dryer or other appliance.
- Do not open the top lid of the cassette, pull the tape out or touch it.
- Take care not to drop the cassette, hit it or subject it to violent vibration.
- The cassette mechanism has been assembled very precisely. It should on no account be disassembled.
- The cassette cannot be used on the reverse side.

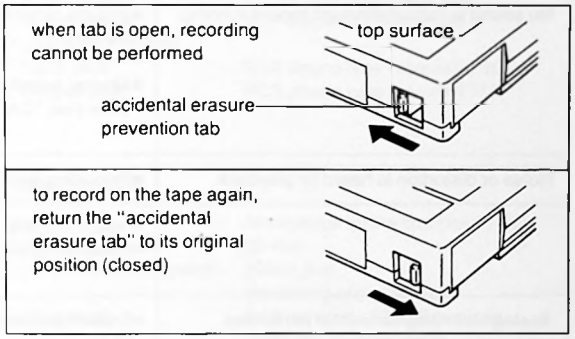
Storing DAT cassette Tapes

- Store the cassette in its case to prevent the entry of dust.
- Do not leave or store the cassette in the following locations:
  1. Near objects with strong magnetic fields (speakers, televisions, transformers, motors or magnets).
  2. Places with excessive humidity (over about 80%) or dust.
  3. Places with high temperatures (over about 35°C).
  4. Places exposed to direct sunlight or heat from heating appliances.
     The cassette should never be left in a car dashboard or near the rear window.
  5. After use, rewind the tape to the beginning. If rewinding is interrupted, it may lead to creases in the tape and affect sound quality on playback.

Using DAT Cassette Tapes

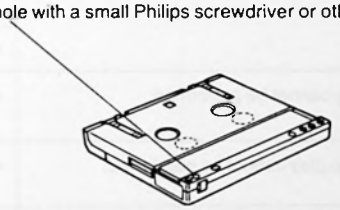
•To avoid accidental erasure of valuable recordings
Recorded tapes you want to keep can be protected by sliding the "accidental erasure prevention tab" open towards the center of the cassette with the aid of a small screwdriver as in the diagram. It will then be impossible to record on the tape, and valuable recordings will not be erased by accident.

•Method of using accidental erasure prevention tab



Cassette Tapes with no Accidental Erasure Prevention Tab

Break open the hole with a small Philips screwdriver or other tool.



With this method, however, the tape cannot be returned to its original condition, and it cannot therefore be recorded again.

Troubleshooting

Before requesting professional servicing, check all of the following points as well as connections and control positions of all equipment connected to it. If the problem is not solved, or if there is a fault not shown in the table below, contact your dealer.

Fault	Main Cause	Remedy
Unit does not record or play cassettes even though power is switched on.	•There is condensation inside unit.	•Wait until the [dew] indicator goes out.
Cassette holder does not close when a cassette tape is loaded even if the open/close button is pressed.	•Cassette tape is not properly loaded.	•Load the cassette tape in the proper direction.
No sound is output although tape is running.	•Volume control on monitor amplifier is set at minimum.	•Adjust volume using amplifier volume control.
	•Monitor amplifier selector is set at a position other than "DAT" or "TAPE".	•Set the input selector position to either "DAT" or "TAPE" depending on the connections to the unit.
Noise or distortion is heard on playback.	•Recording level was too high or too low.	•Record the tape again at the optimum level.
	•Heads are dirty. •Cassette tape is worn out.	•Clean the heads with a DAT cleaning tape and record the tape again. •Use a new cassette tape.
Analog recording cannot be performed.	•Erasure prevention tab on cassette tape is open.	•Close erasure prevention tab.
	•Unit is not connected properly to studio equipment.	•Connect unit properly.
	•Recording level control is set at "0".	•Adjust recording (input) level with recording level control.
	•Input indicator is illuminated.	•Press input selector button.
Indexing cannot be performed.	•Erasure prevention tab on cassette tape is open.	•Close erasure prevention tab.
Auto skip play cannot be performed.	•SKIP PLAY CANCEL indicator is illuminated.	•Press SKIP PLAY CANCEL button to turn off the indicator.
Digital signals cannot be recorded.	•Input selector indicator goes out.	•Press input selector button.
	•Digital input/output connections on rear of unit are not correct.	•Make proper digital input/output connections.
	•The type of digital input/output connections do not correspond with the settings of the DIP switch.	•Set the DIP switch correctly referring to page 35.
Search function does not operate properly.	•Start ID has not been recorded properly.	•Record the start ID, using the auto ID function.
Program time is not displayed properly.	•Program numbers have not been recorded properly.	•Add serial numbers to recorded start IDs.
	•Cassette tape has been inserted midway through a program.	•Press rewind button and rewind to start of program.
Unit does not playback, record or operate properly.	•Unit was not operated in accordance with instructions.	•Switch off power, and operate again correctly in accordance with instructions.

Specifications

Signaling Format

Tape recording system:	Rotary head type DAT
Sampling frequencies:	
For recording:	48 kHz/44.1 kHz (analog/digital input) 32 kHz (digital input only)
For playback:	48 kHz/44.1 kHz/32 kHz (selected automatically)
No. of quantizing bits:	16-bit linear
No. of channels:	2 (stereo)

Audio Parameters (Recording and Playback System)

Frequency response:	
For 48 kHz:	10 Hz~22 kHz (±0.5 dB)
For 44.1 kHz:	10 Hz~20 kHz (±0.5 dB)
Signal to noise ratio: (dynamic range)	Greater than 92 dB. DIN audio weighted (22.4 Hz to 22.4 kHz bandpass)
Total harmonic distortion:	Less than 0.05% (1 kHz, +4 dBu) Less than 0.007% (1 kHz, +22 dBu)
Wow and flutter:	Unmeasurable

General

Power supply:	120 V AC, 60 Hz
Power consumption:	35 W
External dimensions: (W×H×D)	43×12.2×31.5 cm (16⅞"×4¾"×12⅜")
Weight:	6.14 kg (13½ pounds)

Input/Output Jacks

Analog	
Input jacks:	XLR-3 type
Nominal input level/ Input impedance:	+4 dBu (−18 dB rec level)/ 10 kΩ balanced
Output jacks:	XLR-3 type
Nominal output level/ Output impedance:	+4 dBu/−10 dBu (switch selectable)/ 75Ω balanced
Phones output:	Max. 30 mW/32Ω (matching impedance 8~600Ω)
Digital (AES/EBU type)	
Input jacks:	XLR-3 type/100Ω balanced
Output jacks:	XLR-3 type/20Ω balanced
Digital (IEC TYPE II)	
Input jack:	RCA phono type (coaxial)/75Ω
Output jack:	RCA phono type (coaxial)/75Ω

Mechanism

Heads:	Amorphous ferrite composite type
Cylinder diameter:	30 mm
Cylinder rotation speed:	2000 r.p.m. (recording and playback)
Tape speed:	8.15 mm/sec., 12.225 mm/sec. (selected automatically)
Search speed:	Up to 250 times normal playback speed
FF/Rewind speed:	Up to 400 times nomal playback speed
FF/Rewind time:	Approx. 27 sec. (2 hours DAT tape)

LIMITED WARRANTY

Panasonic Communications & Systems Company or Panasonic Sales Company (collectively referred to as "Panasonic") will repair this product with new or rebuilt parts, free of charge, in the U.S.A. or Puerto Rico in the event of a defect in materials or workmanship as follows:

1. **Parts:** New or rebuilt parts in exchange for defective parts for one (1) year after original purchase.**
   Labor: Carry-in or mail-in service for one (1) year after original purchase.**

   **Exceptions: Audio Head Cylinder—90 days Parts/Labor

2. Carry-in or mail-in service in the continental U.S.A. can be obtained during the warranty period from a Panasonic Regional Servicenter listed in the Servicenter Directory. Or call 800-526-6610, toll free, to locate an authorized Panasonic Servicenter. Carry-in or mail-in service in Puerto Rico can be obtained during the warranty period by calling the telephone numbers listed in the Servicenter Directory.

This warranty is extended only to the original purchaser. A purchase receipt or other proof of date of original purchase will be required before warranty performance is rendered.
This warranty only covers failures due to defects in materials or workmanship which occur during normal use and does not cover damage which occurs in shipment or failures which are caused by products not supplied by Panasonic or failures which result from accident, misuse, abuse, neglect, mishandling, misapplication, faulty installation, set-up adjustment, improper maintenance, alteration, inadequate signal pick-up, maladjustment of user controls, line power surges, modification of the product, or service by anyone other than a Panasonic Regional Servicenter or authorized Panasonic Servicenter or damage that is attributable to acts of God.

LIMITS AND EXCLUSIONS

There are no express warranties except as listed above.

PANASONIC SHALL NOT BE LIABLE FOR SPECIAL, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES, INCLUDING, WITHOUT LIMITATION, DAMAGE TO TAPES, RECORDS, OR DISCS, LOSS OF GOODWILL, OR ANY ASSOCIATED EQUIPMENT, DOWNTIME COSTS, OR CLAIMS OF ANY PARTY DEALING WITH PURCHASER FOR SUCH DAMAGES, RESULTING FROM THE USE OF THIS PRODUCT OR ARISING FROM BREACH OF WARRANTY OR CONTRACT, NEGLIGENCE OR ANY OTHER LEGAL THEORY. ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED TO THE APPLICABLE WARRANTY PERIOD SET FORTH ABOVE.
Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions or limitations may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

If a problem with this product develops during or after the warranty period, you may contact your dealer or Servicenter. If the problem is not handled to your satisfaction, then write to the Consumer Affairs Division at the company address indicated on the Panasonic Servicenter list.

Panasonic Industrial Service...

For Audio/Video Products

in the **U.S.A.**
PANASONIC COMMUNICATIONS & SYSTEMS COMPANY DIVISION OF MATSUSHITA ELECTRIC CORPORATION OF AMERICA

in **PUERTO RICO**
PANASONIC SALES COMPANY
(PSC)

The exact standards observed in the design and manufacture of your Panasonic product ensure that it will need an absolute minimum of necessary maintenance. However, should your unit ever require service, a nationwide system of AUTHORIZED INDEPENDENT SERVICENTERS is maintained by Panasonic in support of your warranty.

Panasonic also has its own SERVICENTERS for Panasonic audio/video products in the U.S. and Puerto Rico.

If service is not available in your community at this time, carefully pack the unit, preferably in the original cartons, and ship the product, prepaid and insured, to the most convenient SERVICENTER.

Terms of the warranty require that the original bill of sale, or other proof of the date of purchase must be presented when applying for In-Warranty service.

To Locate a Convenient Authorized Servicenter (In The U.S.A.)

DIAL TOLL FREE (Anytime): **800-526-6610**

For proper assistance, tell the toll free operator you have a Panasonic INDUSTRIAL Product

For your added convenience...in the U.S.A.

Panasonic Industrial Factory Servicenters

CALIFORNIA
6550 Katella Avenue
Cypress, Calif. 90630
714-373-7450

GEORGIA
4245 International Blvd., Suite B
Norcross, Georgia 30093
404-717-6855

ILLINOIS
425 E. Algonquin Road
Arlington Heights, Illinois 60005
312-640-2539

MARYLAND
54 W. Gude Drive
Rockville, Maryland 20850
301-762-5125

NEW JERSEY
43 Hartz Way
Secaucus, New Jersey 07094
201-348-7466

TEXAS
4500 Amon Carter Blvd.
Fort Worth, Texas 76155
817-685-1065

MASSACHUSETTS
1800 West Park Drive
Westboro, MA 01581
508-836-2655

In the unlikely event you expericence a service problem requiring assistance from Panasonic regarding repairs, Please write to:

A/VSG Customer Service Department
Panasonic Communications & Systems Company
Division of Matsushita
Electric Corporation of America
50 Meadowland Parkway 2A-3
Secaucus, N.J. 07094

Panasonic Service in Hawaii...
Please contact the dealer from whom you purchased this product to obtain service information.

Panasonic Service in Puerto Rico...
MATSUSHITA ELECTRIC of PUERTO RICO INC.
PANASONIC SALES COMPANY
Ave. 65 De Infanteria km. 9.5
San Gabriel Industrial Park
Carolina Puerto Rico 00630
809-750-5135

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