Roland

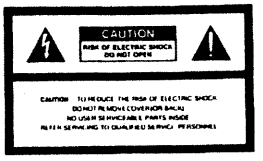
MIDI DIGITAL SAMPLER

S-330

Owner's Manual

GUIDE BOOK

SOUND LIBRARY



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 product.

INSTRUCTIONS PERTAINING TO A RISK OF FIRE, ELECTRIC SHOCK OR INJURY TO PERSONS.

IMPORTANT SAFETY INSTRUCTIONS

WARNING When using electric products, basic precautions should always be followed, including the following;

1. Read all the instructions before using the product.
2. Do not use this product near water- for example, near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool, or the like.
3. This product should be used only with a cart or stand that is recommended by the manufacturer.
4. This product, either alone or in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss.
   Do not operate for a long period of time at a high volume level or at level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
5. The product should be located so that its location or position does not interfere with its proper ventilation.
6. The product should be located away from heat sources such as radiators, heat registers or other products that produce heat.
7. The product should avoid using in where it may be effected by dust.
8. The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.
9. The power-supply cord of the product should be unplugged from the outlet when left unused for a long period of time.
10. Do not tread on the power-supply cord.
11. Do not pull the cord but hold the plug when unplugging.
12. When setting up with any other instruments, the procedure should be followed in accordance with instruction manual.
13. Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
14. The product should be serviced by qualified service personnel when:
    - A: The power-supply cord or the plug has been damaged; or
    - B: Objects have fallen, or liquid has been spilled into the product; or
    - C: The product has been exposed to rain; or
    - D: The product does not appear to operate normally or exhibits a marked change in performance: or
    - E: The product has been dropped, or the enclosure damaged.
15. Do not attempt to service the product beyond that described in the user-maintenance instructions. All other servicing should be referred to qualified service personnel.

SAVE THESE INSTRUCTIONS

WARNING

THIS APPARATUS MUST BE EARTH GROUNDED.

The three conductors of the mains lead attached to this apparatus are identified with color as shown in the table below, together with the matching terminal on the UK type power plug. When connecting the mains lead to a plug, be sure to connect each conductor to the correct terminal, as indicated.

"This instruction applies to the product for United Kingdom."

MAINS LEADS		PLUG
Conductor	Color	Mark on the matching terminal
Live	Brown	Red or letter L
Neutral	Blue	Black or letter N
Grounding	Green-Yellow	Green, Green-Yellow, letter E or symbol

For Canada

CLASS B NOTICE

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

CLASSE B AVIS

Cet appareil numérique ne dépasse pas les limites de la classe B au niveau des émissions de bruits radioélectriques fixés dans le Règlement des signaux parasites par le ministère canadien des Communications.

Bescheinigung des Herstellers /Importeurs

Hiermit wird bescheinigt, daß der/die/das

ROLAND DIGITAL SAMPLER S-330

(Genat Typ Bezeichnung)

in Übereinstimmung mit den Bestimmungen der

Amtsbl. Vfg 1046 / 1984

(Amtsblattverfügung)

funk entstört ist.

Der Deutschen Bundespost wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeraumt.

Roland Corporation Osaka / Japan

Name des Herstellers/Importeurs

RADIO AND TELEVISION INTERFERENCE

"Warning - This equipment has been verified to comply with the limits for a Class B computing device, pursuant to Subpart J, of Part 15, of FCC rules. Operation with non-certified or non verified equipment is likely to result in interference to radio and TV reception."

The equipment described in this manual generates and uses radio-frequency energy. If it is not installed and used properly, that is, in strict accordance with our instructions, it may cause interference with radio and television reception.

This equipment has been tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J, of Part 15, of FCC Rules. These rules are designed to provide reasonable protection against such a interference in a residential installation. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to try to correct the interference by the following measure:

- Disconnect other devices and their input-output cables one at a time. If the interference stops, it is caused by either the other device or its I-O cable.
  These devices usually require Roland designated shielded I-O cables. For Roland devices, you can obtain the proper shielded cable from your dealer. For non Roland devices, contact the manufacturer or dealer for assistance.
  If your equipment does cause interference to radio or television reception, you can try to correct the interference by using one or more of the following measures:
- Turn the TV or radio antenna until the interference stops.
- Move the equipment to one side or the other of the TV or radio.
- Move the equipment farther away from the TV or radio.
- Plug the equipment into an outlet that is on a different circuit than the TV or radio. (That is, make certain the equipment and the radio or television set are on circuits controlled by different circuit breakers or fuses.)
- Consider installing a rooftop television antenna with coaxial cable lead in between the antenna and TV.

If necessary, you should consult your dealer or an experienced radio/television technician for additional suggestions. You may find helpful the following booklet prepared by the Federal Communications Commission:

"How to Identify and Resolve Radio-TV Interference Problems."

This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402. Stock No. 004-000-00345-4

Please read the separate volume "MIDI", before reading this owner's manual.

The S−330, 16 voice polyphonic sampler module, can record (sample and record into computer memory) all sorts of sounds, then play these sounds. It adopts the expanded 16 bit system that processes all signals digitally and therefore creates sounds of excellent quality. It features a maximum sampling time of 14.4 seconds at 30kHz sampling, and a memory capacity of 32 Tones, and 16 Patches.

FEATURES

- The S−330's digital filter circuits allow you to record all sorts of sounds without affecting the quality of the sounds.

- The S−330's digital editing functions including the newly developed TVF (Time Variant Filter) can modify the sampled voice without reducing the sound quality.

- The S−330 can select a sampling frequency of 30 or 15kHz.

- Each of the two Wave Banks can store up to 7.2 seconds of data when the 30kHz sampling frequency is selected.

- The Multi Patch Play function allows the S−330 to simultaneously play up to eight Patches using eight individual receive channels.

- 16 voices can be assigned to the eight Individual Output Jacks in 24 different ways. This enables you to play Patches or Tones separately through the eight output jacks.

- The S−330 can be set up with a CRT color monitor display featuring an RGB input or a home TV set featuring a video connector, or a black and white display for a computer. Moreover, using the optional Mouse you can perform all the necessary operations, watching the display without touching the buttons on the panel.

- The entire data (sound data, function data and MIDI data) programmed in the S−330 can be saved onto 3.5" floppy disks for future use.

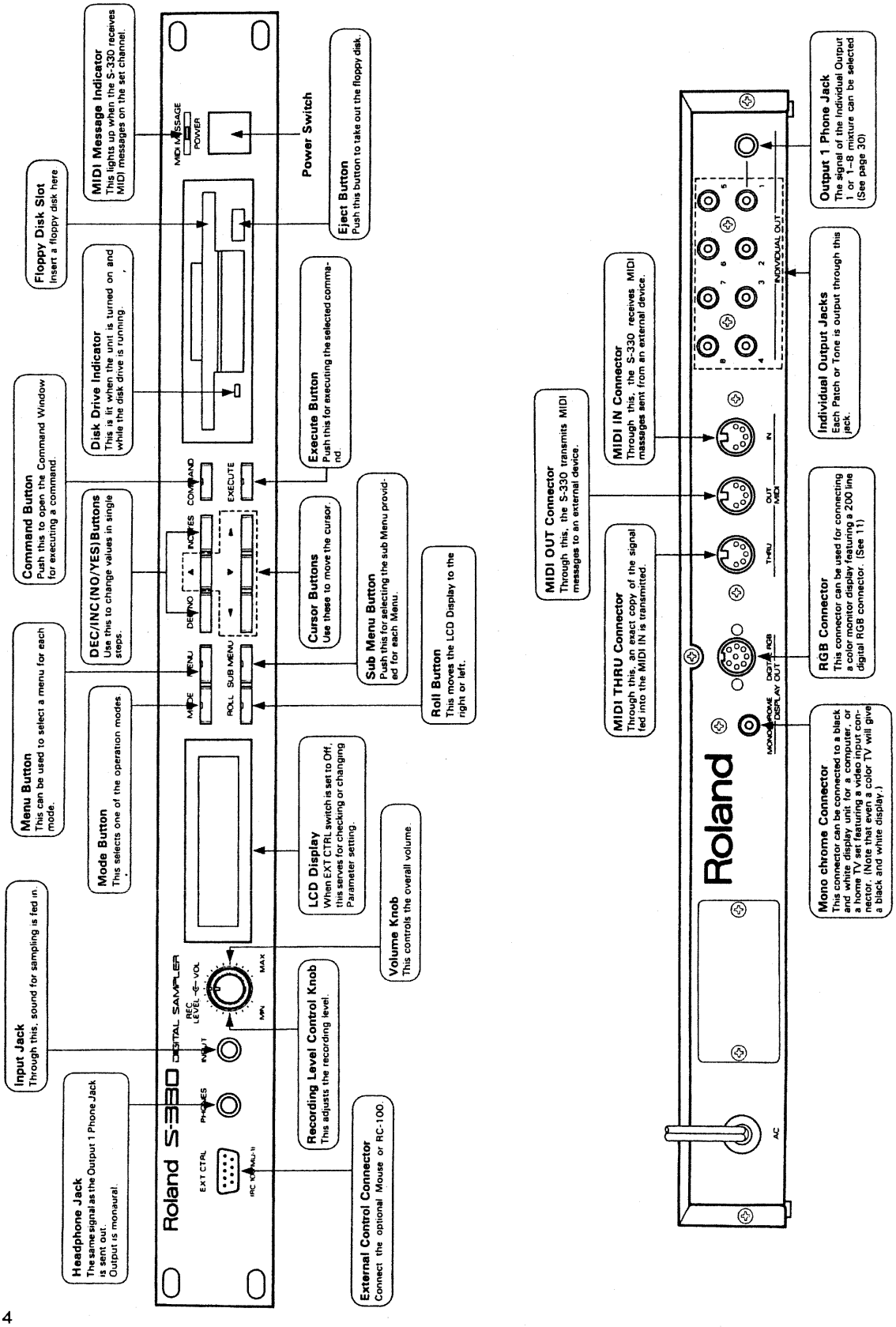
- The optional Remote Controller RC−100 allows you to control the S−330 without hardly using the front panel. The Alpha dial, Ten key pad or Mode Buttons serve for quicker and easier operation.

* It is possible to load a data disk programmed by the S−50 or a Sound Library disk of the S−50 into the S−330 with the Convert Load function. Also, an S−50 disk can be converted into an S−330 disk with the Convert Disk function.

* Data on the S−550's disk can be loaded into the S−330 without converting it.

CONTENTS

PANEL DESCRIPTION



IMPORTANT NOTES

★Basically, to operate the S−330, a CRT Display is necessary. CRT Displays compatible with the S−330 are listed and explained on page 11.

★The optional Sound Libraries L−501 to L−509 contain data for S−50.To use these with the S−330, execute "Convert Disk" (page.145)

★The S−330 determines the volume by directly controlling the digital data, therefore, the dynamic range is automatically increased by raising the volume, creating delicate and natural volume alteration. So, it may be a good idea to set the volume on the S−330 as high as possible and adjust the volume on a mixer or amplifier.

★The S−330 is fully controlled by a computer system, therefore, like any computer controlling unit, it may get into trouble suddenly. If so, switch the unit off, and swtich it on again. (When this happens, data in the internal memory will be lost.)

★The S−330 is 16 voice polyphonic. This, however, may be decreased depending on the conditions.

★Noise or hum may be heard in the following conditions. Simply change the positions of the units.

- When the CRT Display is mounted on the S−330 or placed close to it.
- When the S−330 is placed close to a large−power consuming device such as a power amplifier.

★When sampling a wave or editing a sample, you should monitor the sound using voice module A. The sound to be monitored is affected by how the parameters of the Patch assigned to voice module A are set, so please check the following points.

①Check the receive channel of voice module A in the Play mode, then set the channel of the connected MIDI controller (or the channel of the data if using the Sequencer Software) to the same number.

②Raise the Level of voice module A in the Play mode.

③Check the Patch assinged to voice module A in the Play mode, then call that Patch at Patch PRM menu in the Edit mode. Raise the Level in Patch Parameters.

★This unit does not work if the version number (=the number put to the software) of the system disk does not match that of the utility disk. If they are not the same number, the data loaded so far will be reset (erased).
The vesrion number can be seen in the Display while the unit is being booted.
To use the system disk and utility disk of different version numbers, you need to save the system with the Save SYS function and change the version numbers.

＊Version numbers of the supplied system disk and utility disk are set to the same number. However, the above should be observed when you use a different data disk.

< How to handle the S-330 >

- Switching the S-330 off will erase all the data programmed in the S-330. Be sure that the Power switch is not touched accidentally, or the power cord is not disconnected.

- The appropriate power supply for this unit is shown on its name plate. Please make sure that the line voltage in your country meets the requirement.

- Do not use the same socket used for any noise generating device (such as a motor or variable lighting system).

- This unit might not work properly if turned on immediately after being turned off. If this happens, simply turn it off, and turn it on again after waiting a few seconds.

- When turning the S-330 on or off, be sure the disk drive is empty.

- When disconnecting the cord from a jack, do not pull the cord but hold the plug.

- If this unit is not to be used for a long period of time, be sure to disconnect the power cord from the socket.

- It is normal for this unit to get hot while being operated.

- Avoid using this unit in excessive heat or humidity, or where it may be affected by direct sunlight or dust.

- Place this unit in a steady, horizontal place. If it is inclined upward at more than 10 degrees or downward at more than 20 degrees, the disk drive may not function properly.

- Use a soft cloth, and clean only with a mild detergent.

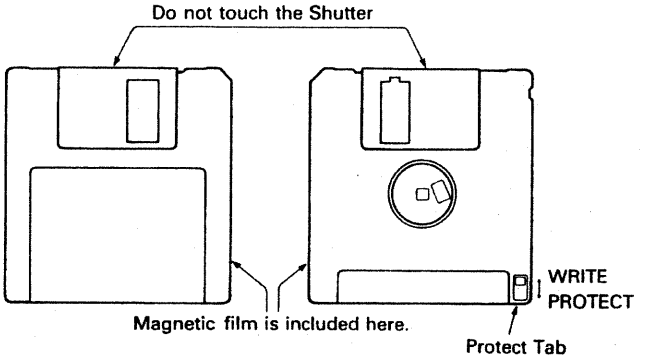
- Do not use solvents such as paint thinner.

- When moving the unit, avoid sudden bumps or shocks.

If this unit happens to fail to function properly, turn it off once, then turn it on again.

< How to handle the Floppy Disks>

Floppy disks are delicate and can be ruined if not handled properly.

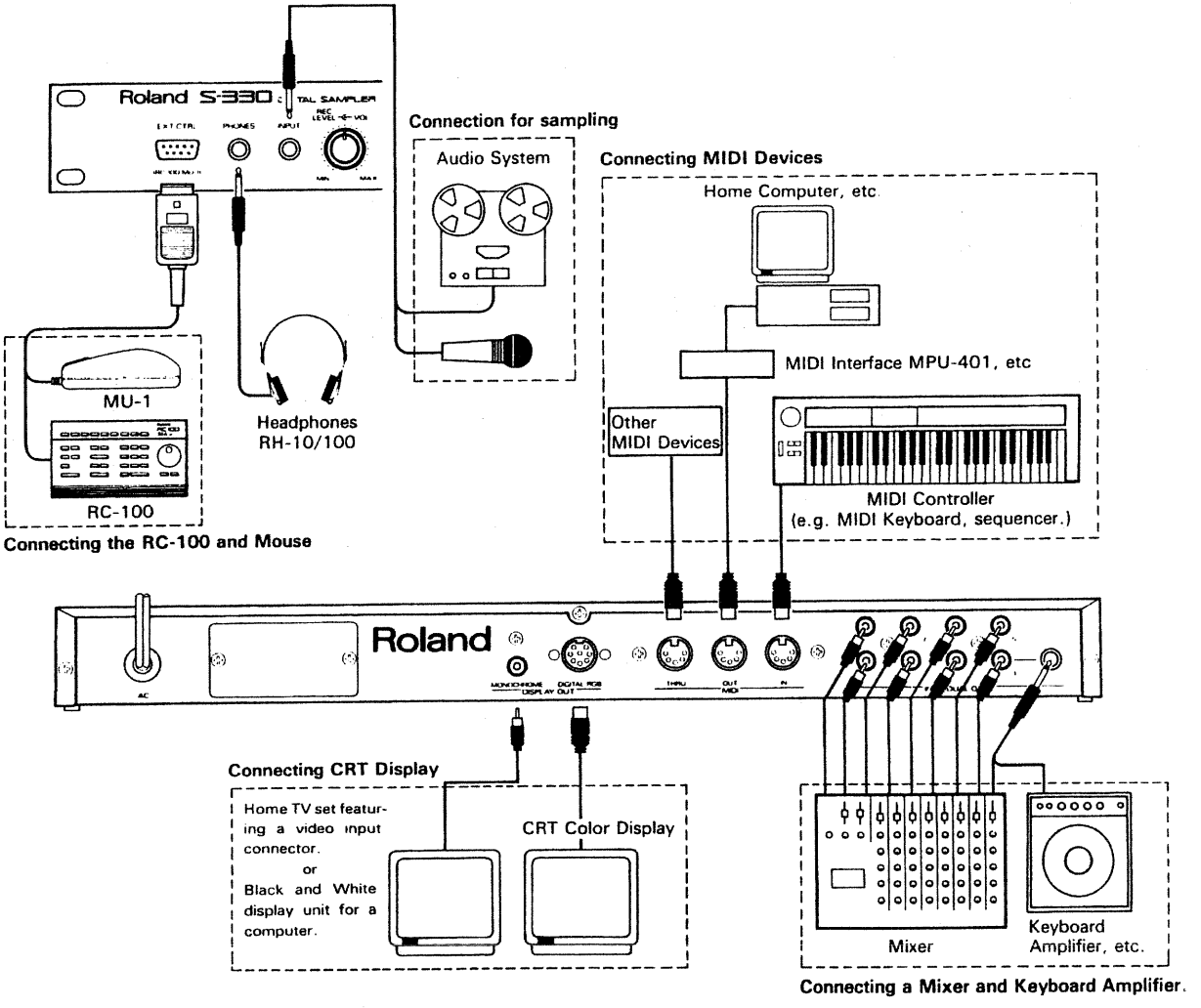


* To prevent accidental loss of data, be sure to set the Protect Tab to the PROTECT position except when writing (recording) data.

- Do not expose the disk to strong magnetic fields such as a TV set or speakers.
- Please do not touch the shutter that covers the magnetic film. The magnetic field can be easily damaged, even by a slight amount of grease.
- Keep the disk away from extremely hot or cold temperatures, direct sunlight or dust.
- To prevent accidental loss of data, be sure to set the Protect Tab to the PROTECT position, except when writing (recording) data.
- Never remove or insert the disk, or switch the unit off, while the disk is running (the disk drive indicator is alight), or the disk may be permanently damaged. And while the disk drive is running, do not give a strong shock to the unit, or the data may not be properly read from the disk.
- In transit, remove the disk from the disk drive, or the disk and the disk drive may be damaged.

CONNECTIONS

Make sure all the units are turned off, then connect as follows.



[Setup with a MIDI Controller]

The S−330 is played by MIDI messages sent from an external MIDI device. Be sure to connect a MIDI keyboard or sequencer.

[Setup with a mixer, keyboard amplifier etc.]

To enjoy the full quality of the S−330, use an amplifier and speakers that feature wide frequency response and dynamic range, e.g. a keyboard amplifier.

The Individual Output Jacks are used for distributing the sound form the eight individual MIDI channels.

Through the Output1 Phone Jack and Headphone jack , exactly the same signal as the Individual Output Jack1 is send out.Through the Output1 Jack, the total sound of all the jacks can be send out.(See page 29.)

[Connecting the Mouse and RC−100 or not]

Operate the S−330 without connecting the Mouse or RC−100 :

When no controller is connected to the S−330 (="Off"condition),the S−330's Display can be used as well as the CRT Display.

Turn the S−330 on while holding the button "◀" down on booting.

Use the optional Mouse (MU−1) :

By connecting the optional Mouse to the EXT CTRL Connector, nearly all the operations can be performed by the Mouse. The Mouse also allows you to set points of an envelope or draw a waveform.

Turn the S−330 on while holding the button "▼"down on booting.

***The optional Mouse (MU−1) is designed specifically for the S−330 and S−550. Do not connect it to any other device.**

Use the optional remote controller (RC−100) :

By connecting the optional remote controller RC−100 to the EXT CTRL Connector, the distant S−330 can be controlled by operating the RC−100. The Mouse can also be connected to the RC−100.

Turn the S−330 on while holding the butoon "▶" down on booting.

***Before using the RC−100, be sure to push the Reset Switch.**

***Connect the Mouse or RC−100 to the EXT CTRL Connector without bending it.**

***Do not connect the EXT CTRL Connector to any other device but the optional Mouse (MU−1) and the RC−100.**

***If the RC−100 does not work, push the Reset Switch.**

[Connecting a CRT Display]

For operating the S−330, a CRT Display is essential.

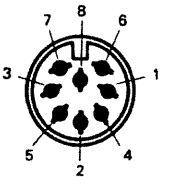
***The LCD Display window on the S−330 is adequate for playing the programmed data, checking or changing values, or executing commands. The LCD Display window can be used at EXT CTRL switch = Off. Turn the unit on while holding the "◀" button down.**

To connect a 200 line black and white display for a computer, or a home TV set featuring a video input jack, use the connector for a Monochrome monitor display (MONOCHROME).

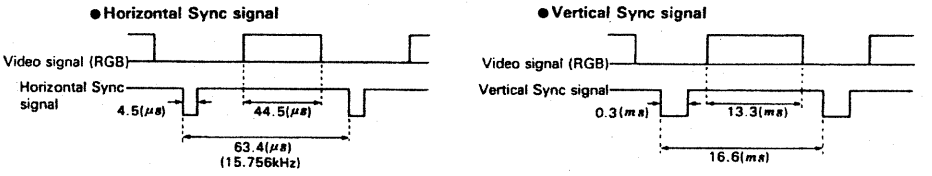
Before connecting a color display to the S−330, please make sure that the monitor's input matches the output of the S−330. If not, do not use the monitor with the S−330. The output of the S−330's RGB Connector matches the TTL RGB 200 lines.

***Do not place a CRT Display on the S−330.**

PIN No	Signal		Spec
1	+5V	+5V power output	
2	GND	Earth	
3		Open	
4	HSYNC	Horizontal Sync signal	TTL level negative
5	VSYNC	Vertical Sync signal	
6	R	Video signal (red)	
7	G	Video signal (green)	TTL level positive
8	B	Video signal (blue)	

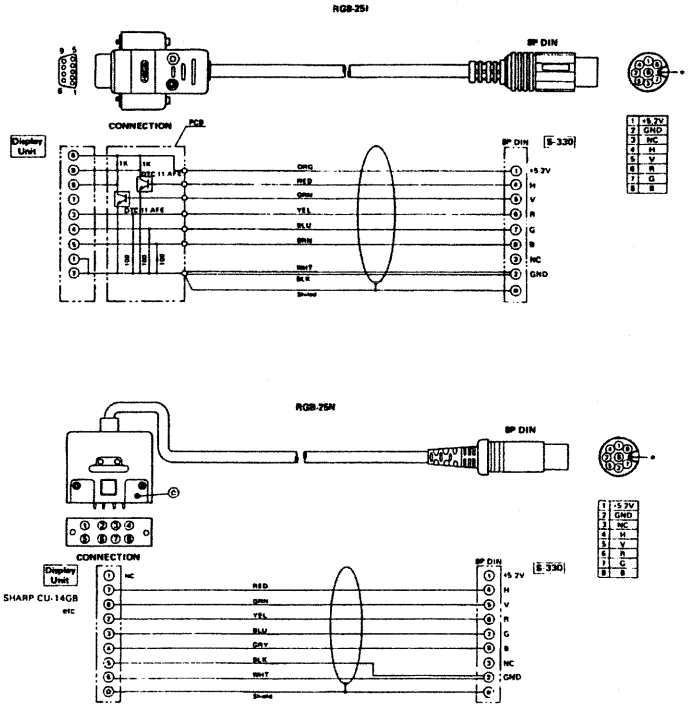


■ Timing Chart of RGB Output of the S−330



For connecting the S−330 to the monitor display, use the Roland RGB−25N connection cable. Please do not use a cable that has a different number or different positions of the pins. (The impedance of the S−330's RGB output is 100 Ω.)

RGB CABLE



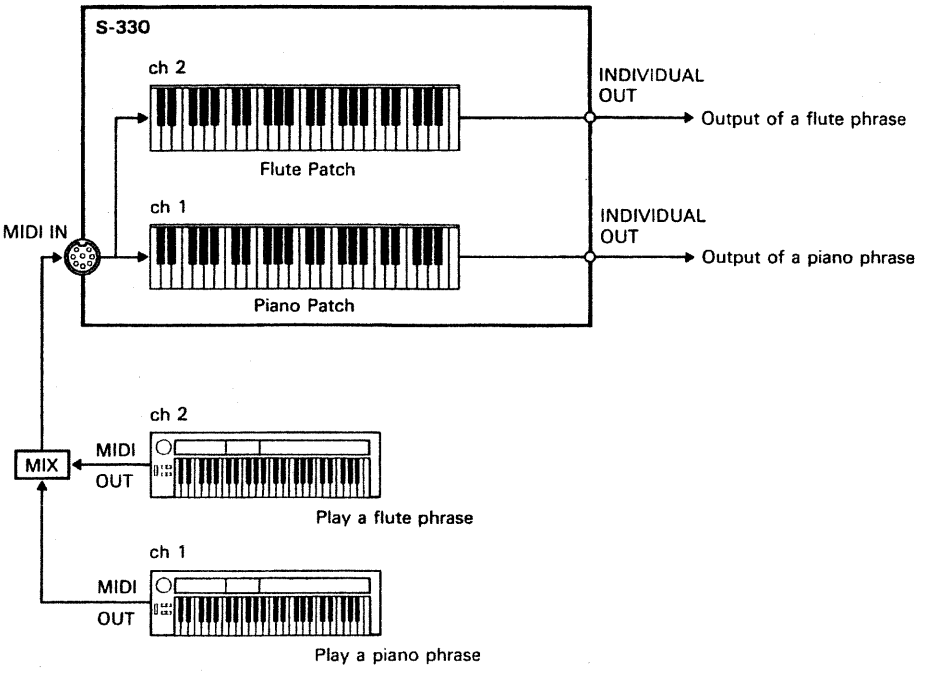
OUTLINE

The S−330 can be played in 16 voice polyphony by MIDI messages sent from the controller connected to the MIDI IN.

The S−330 can have eight receive channels and therefore can receive eight different messages separately and play them.

The S−330 receives 109 key (C0 to C9) Note messages and plays them with any of the 32 Tones. This function can be effectively used for assigning different samples (instrument samples) to different sound ranges, resolving unnatural sounds caused by pitch difference, or for assigning a drum voice or special effect to each key. Each Tone assigned to a key is called a Patch. The S−330 can store up to 16 Patches in the internal memory.

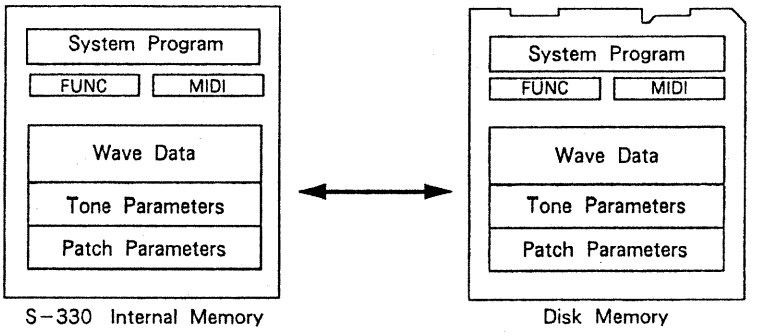
The S−330 can set eight receive channels, therefore, up to eight different Patches can be played simultaneously, allowing you to enjoy orchestration by using only one S−330.



(fig. Play two Patches)

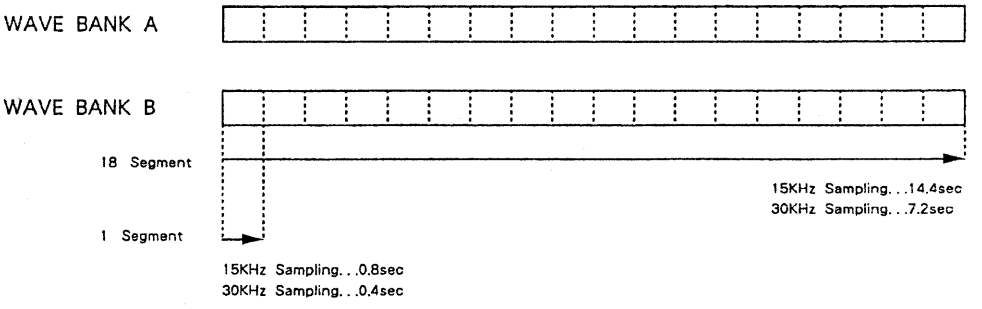
1. Data Programming and Saving

Data programmed on the S-330 consists of Sound data (Wave data, Tone Parameters, Patch Parameters), Function data (Parameters on the PLAY Mode, and FUNC Mode) and MIDI data (Parameters on the MIDI Mode,). All of them can be saved onto a floppy disk or loaded back to the S-330.



a. Wave Data

A sample is stored in a Wave Bank (A or B) as Wave data. Up to 14.4 seconds of Wave data (at 30kHz sampling frequency) can be stored.

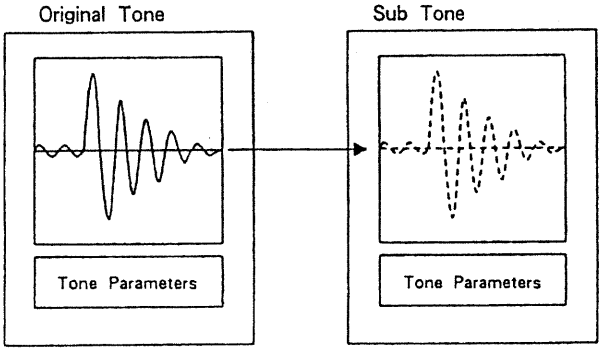


The sampled Wave can be truncated, cutting away un-needed portions of a wave or two waves can be mixed, or filtered in the Digital Filter, etc. (This is called Wave Data Editing.) The edited wave is also stored in a Bank.

b. Tone Parameters

The Wave data written in a Bank can be read and reconstructed with a set of Tone Parameters. The combination of a wave and a set of Tone Parameters creates an original Tone. In other words, an original Tone can be made of an intact sampled wave, or edited wave, plus a set of Tone Parameters set at values you like.

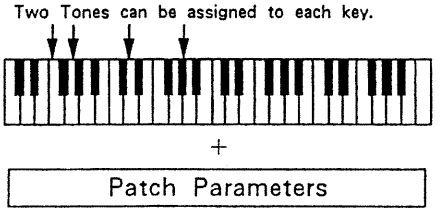
The S−330 allows you to borrow the Wave data from an original Tone and make a different Tone (= Sub Tone) with different values of Tone Parameters.



Therefore, up to 32 Tones can be programmed in the entire memory.

c. Patches

Any two of the 32 Tones can be assigned to a different key. The key assignment of the Tones, and the performance controlling functions (Patch Parameters) are combined, making a Patch. Up to 16 Patches can be programmed in the S−330.



d. Function Data and MIDI Data

The function parameters set in the Play or Func mode are written in memory as Function data. MIDI functions (MIDI receive functions) are written as MIDI data.

The data programmed on the S−330 can be written in the internal memory. Data in memory, however, will be erased when the unit is turned off. To retain the data even after the unit is switched off, save it onto a floppy disk.

A brand new disk or a disk used for other than the S−330 cannot be used for saving the data in the S−330, unless it is formatted (see page 135 "Format"). Using the Backup function, a disk is automatically formatted then data is saved onto a floppy disk.

2. The S−550's Six Modes

Using the Mode Selector Buttons, any of the following six modes can be selected.

● PLAY Mode

By switching the unit on then inserting the disk, the unit is automatically turned to the Play mode.

● EDIT Mode

This mode allows you to edit parameters for making a Tone, and assign a Tone to a Note Number.

● UTILITY Mode

To activate this mode, the utility system program should be read from the utility disk. Use this mode for sampling or editing wave data, etc.

● FUNCTION Mode

This mode can set the Master Tune , initialize parameters and select a controller to be used.

● MIDI Mode

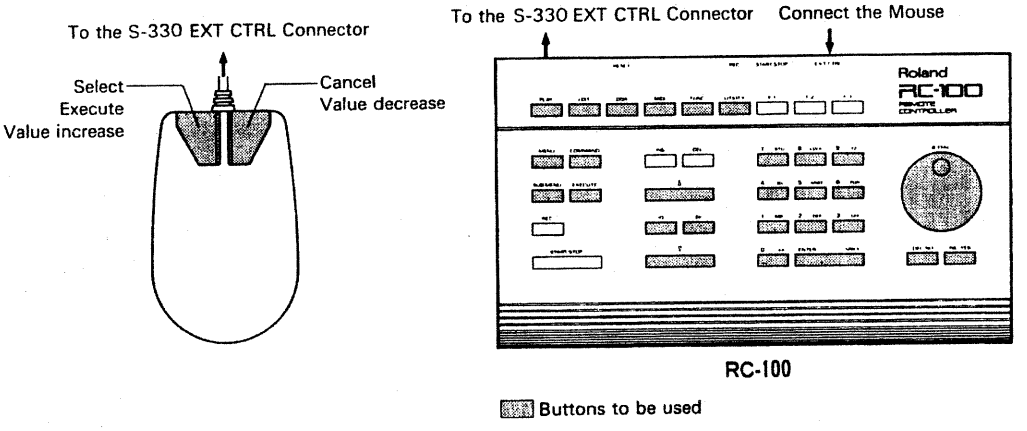
This mode is for setting the MIDI functions, e.g. MIDI channel, or monitoring the messages received from the external MIDI controller.

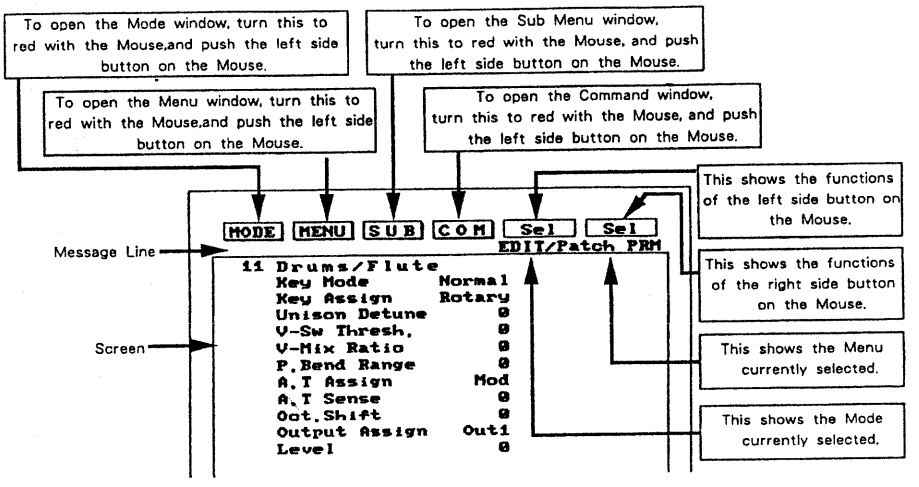
● DISK Mode

This mode is for saving the data in the S−330's memory to a 3.5" floppy disk, or loading the data from the disk to the S−330.

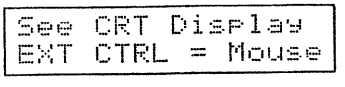
3. Basic Procedure

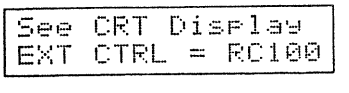
The S−330 can be controlled by using the panel switches of the unit, the optional Mouse (MU−1), or the Remote Controller (RC−100). The EXT CTRL Switch selects whitch of the three controllers shold be used. To set it at power−up,see page 23, to change the setteing durring operation,see page 111, and to write the setting on a disk,see page 138.





When the Mouse or the RC−100 is being used, the Display responds as below, showing that the S−330's Display dose not function.



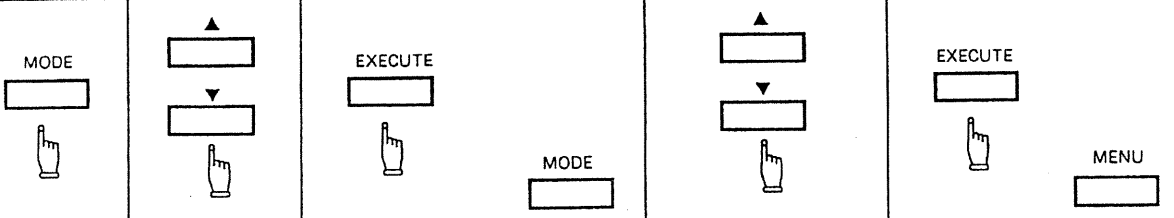


MODE and MENU Selection

Each mode has various menus. The selected mode and menu are shown at the right corner on the Message Line.

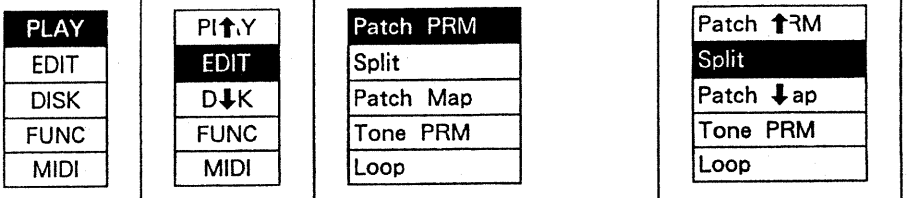
S-330 Panel

Step



Open the Mode window.	Select the Mode.	Open the Menu Window.	(Exit)	Select the Menu.	Execute	(Exit)

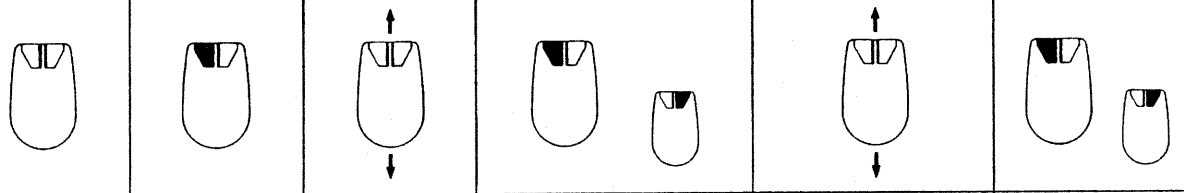
CRT Display



LCD Display

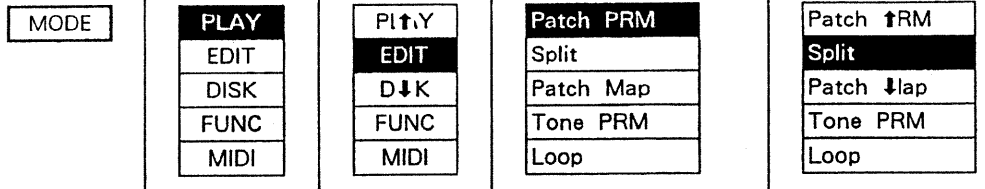
MU-1

Step



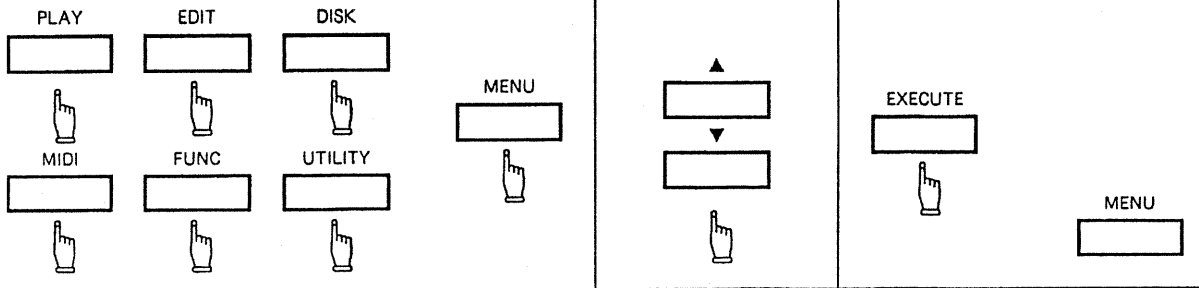
Lit in red	Open the Mode window.	Select the Mode.	Open the Menu Window.	(Exit)	Select the Menu.	Execute	(Exit)

CRT Display



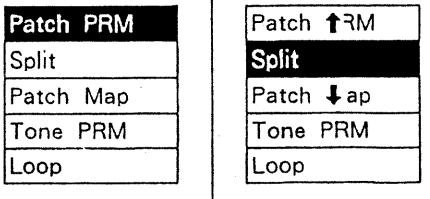
RC-100

Step



Select a mode using the appropriate Mode Button. If you want the c same mode, open the Menu Window with the Menu Button.	Select the Menu.	Execute	(Exit)

CRT Display

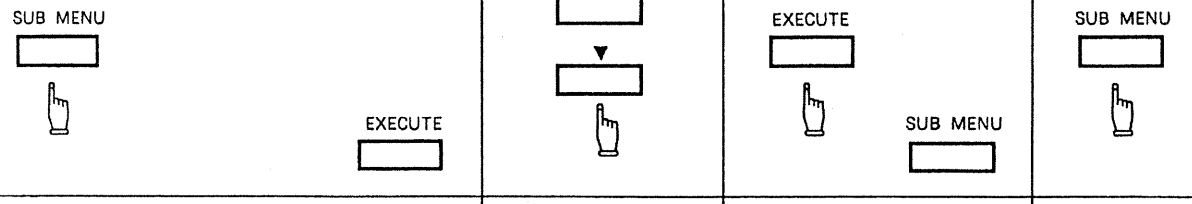


Sub Menu

By using the Sub Menu, you can choose Patch or Tone watching the list. The Patch or Tone previously selected is shown at the left of the ➡ mark on the Mesaage Line.

S—330 Panel

Step

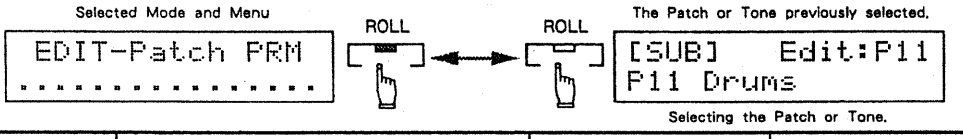


Open the list.	(Push EXECUTE to change the list.)	Select the Patch or Tone	Decide and change the list.	(Exit)	Return to a normal display.

CRT Display

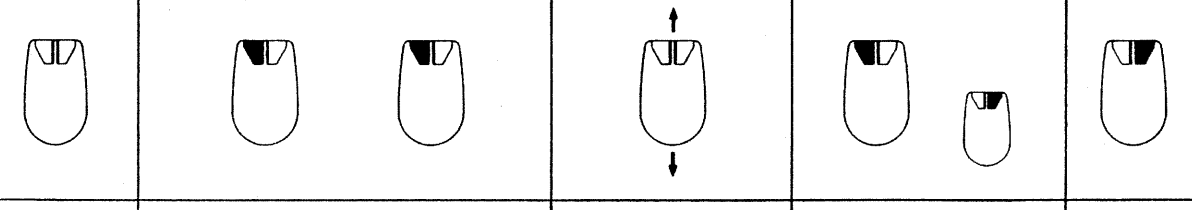
P11 Drums	P11 Drums	P11 Drums
P12 Bass	P12 Bass	P12 Bass
P13 Brass	P13 Brass	P13 Brass
P14 Alto Sax	P14 Alto Sax	P14 Alto Sax
P15 E.Piano	P15 E.Piano	P15 E.Piano

LCD Display



MU—1

Step



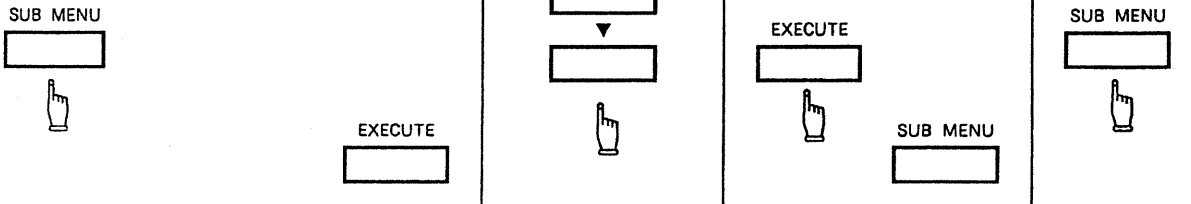
Lit in red.	Open the list.	(Push again to change the list.)	Select the Patch or Tone	Decide and change the list.	(Exit)	To a normal display.

CRT Display

SUB	P11 Drums	P11 Drums	P11 Drums
	P12 Bass	P12 Bass	P12 Bass
	P13 Brass	P13 Brass	P13 Brass
	P14 Alto Sax	P14 Alto Sax	P14 Alto Sax
	P15 E.Piano	P15 E.Piano	P15 E.Piano

RC—100

Step



Open the list.	(Push EXECUTE to change the list.)	Select the Patch or Tone	Decide and change the list.	(Exit)	Return to a normal display.

CRT Display

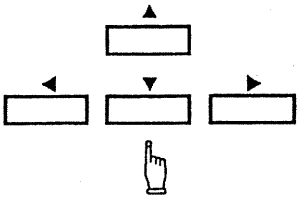
P11 Drums	P11 Drums	P11 Drums
P12 Bass	P12 Bass	P12 Bass
P13 Brass	P13 Brass	P13 Brass
P14 Alto Sax	P14 Alto Sax	P14 Alto Sax
P15 E.Piano	P15 E.Piano	P15 E.Piano

Value Entry

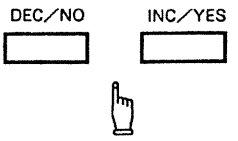
Move the cursor to the parameter to be changed and enter a value.

S-330 Panel

Step



Move the cursor



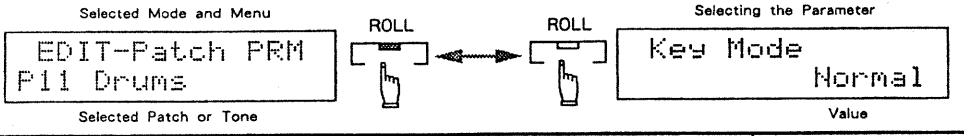
Increases or decreases a number .

CRT Display

Key Mode	Normal
Key Assign	↑tary
Unison Detune	-12
V-SW Thresh.	↓ 65
V-Mix Ratio	0

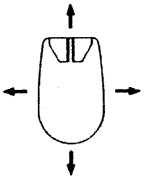
Key Mode	Normal
Key Assign	Rotary
Unison Detune	-12
V-SW Thresh.	65
V-Mix Ratio	0

LCD Display

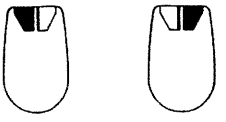


MU-1

Step



Move the cursor



Increases or decreases a number .

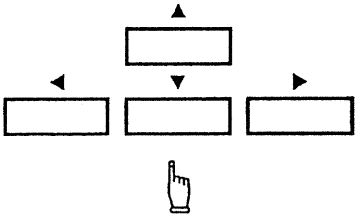
CRT Display

Key Mode	Normal
Key Assign	↑tary
Unison Detune	-12
V-SW Thresh.	↓ 65
V-Mix Ratio	0

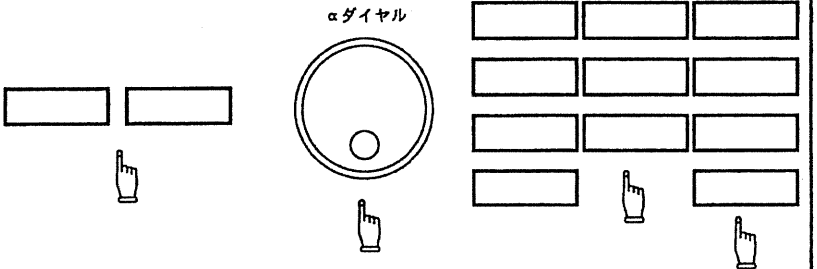
Key Mode	Normal
Key Assign	Rotary
Unison Detune	-12
V-SW Thresh.	65
V-Mix Ratio	0

RC-100

Step



Move the cursor



Increases or decreases a number .

Using the Ten Key Pad, push the ENTER to set.

CRT Display

Key Mode	Normal
Key Assign	↑tary
Unison Detune	-12
V-SW Thresh.	↓ 65
V-Mix Ratio	0

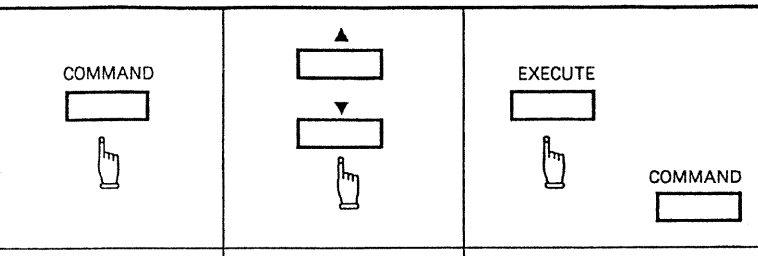
Key Mode	Normal
Key Assign	Rotary
Unison Detune	-12
V-SW Thresh.	65
V-Mix Ratio	0

Executing a Command

To execute a command , such as sampling, wave processing, data saving or loading, you should open the Command Window.

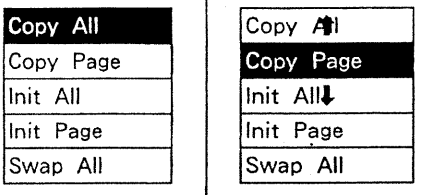
S—330 Panel

Step

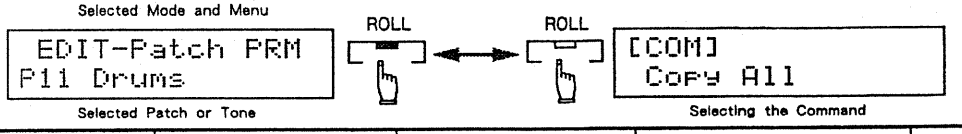


Open the Command Window	Select the Command	Execute	(Exit)

CRT Display

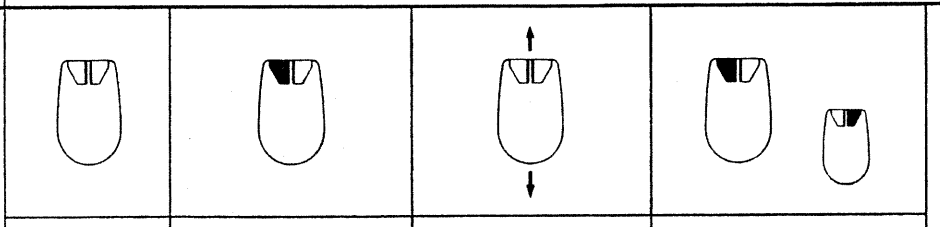


LCD Display



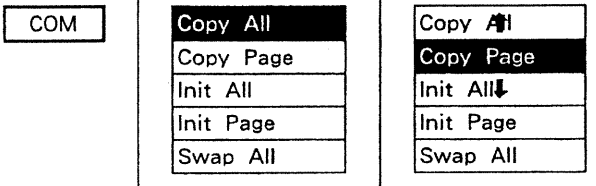
MU—1

Step



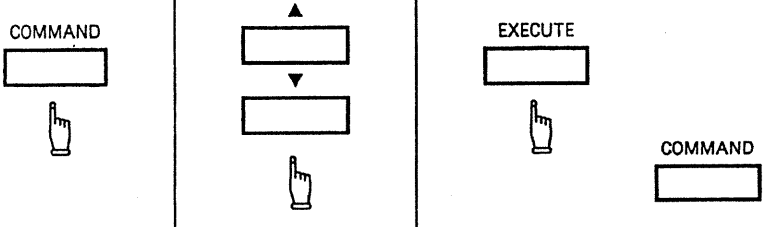
Lit in red	Open the Command Window	Select the Command	Execute	(Exit)

CRT Display



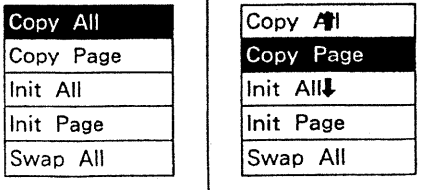
RC—100

Step



Open the Command Window	Select the Command	Execute	(Exit)

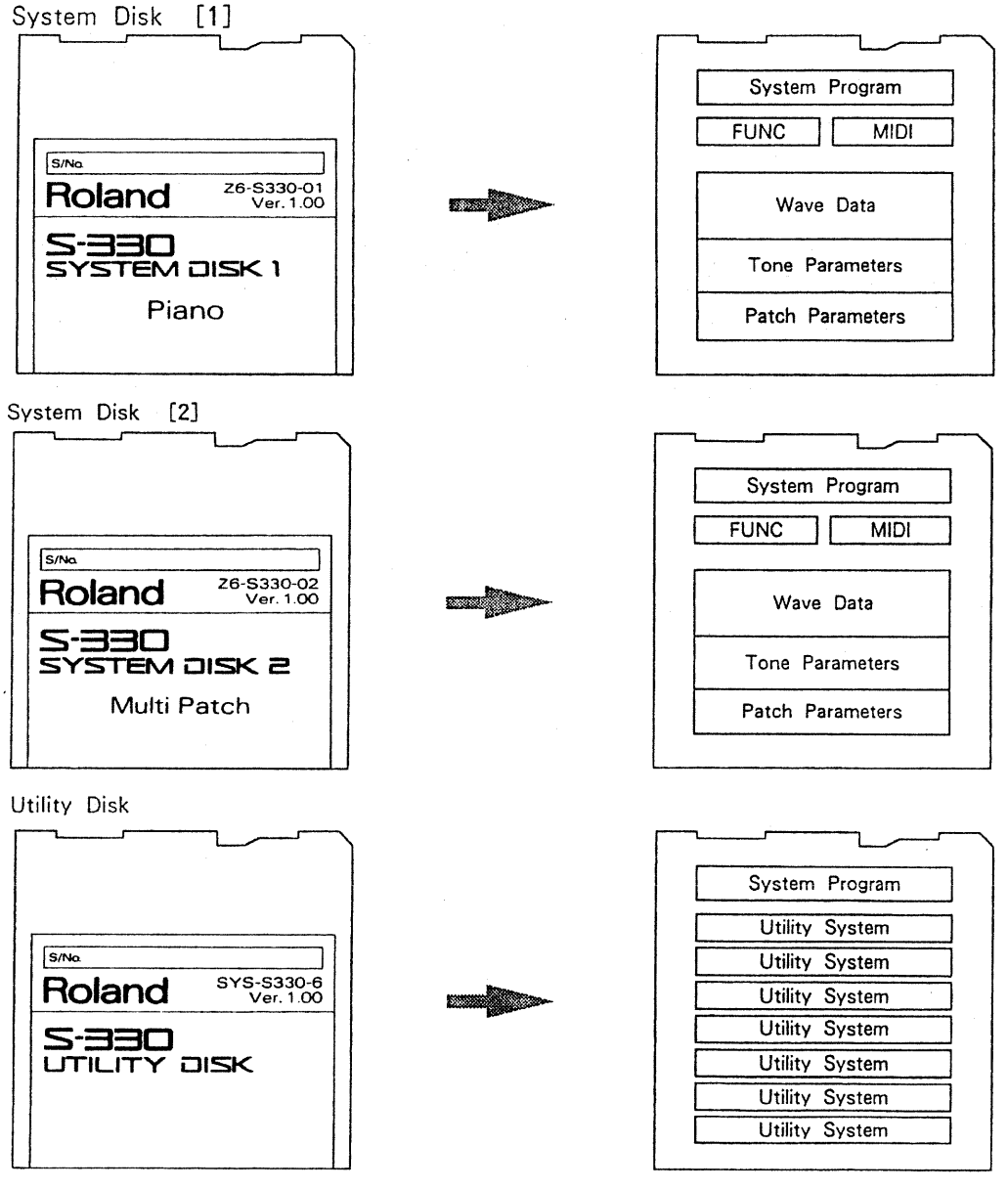
CRT Display



PREPARATION FOR PLAYING

1. Checking the Supplied Three Disks

The following three disks are provided with the S−330.
Two System Disks
One Utility System Disk



These two System Disks contain the basic system program and the S−330's sound libraries, Sound data, Function Data and MIDI data.
The Utility System Disk contains the system programs necessary for sampling and editing wave data, etc.

2. Power—up and Booting

The S—330 cannot be played immediately after being turned on. The program on a supplied system disk should be transferred to the S—330 to operate it as a sampler module. This procedure is called Booting. For booting, either of the supplied System Disks can be used, but here, let's boot with the Disk I. After reading the program from the system disk, the S—330 continues to read the Sound Data stored on the same disk.

Before switching the S—330 on, check if :

(1) the S—330 is properly set up with the other units

(2) nothing is inserted in the Disk Drive.

Step 1 **Turn the S—330 on as outlined below.**

To use the optional Mouse or the RC—100, turn the S—330 on while taking the following procedure, and the EXT CTRL Switch is automatically turned on.

To use the optional Mouse (MU—1) :

Turn the S—330 on while holding " ▼" down.

To use the optional remote controller (RC—100) :

Turn the S—330 on while holding " ▶" down.

***Before using the RC—100, be sure to push the Reset Switch.**

To operate the S—330 without connecting the Mouse or RC—100 :

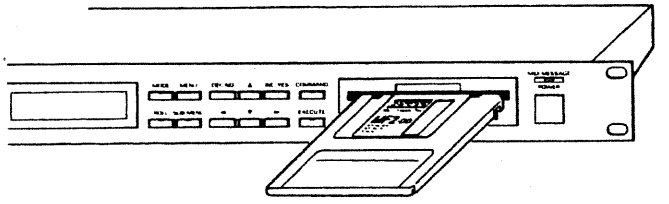
Turn the S—330 on while holding " ◀" down.

***If you turn the S—330 on without holding any Ten Key down, the status written on the disk is given priority. The supplied system disk will default to "Off". How to write data onto a disk is explained on page 138.**

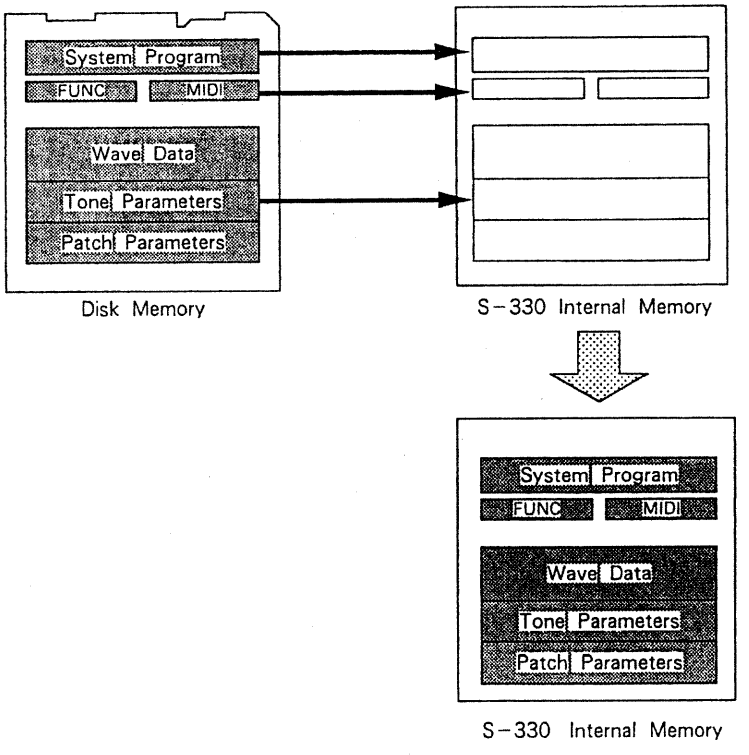
NOTE : **When the "RC—100" or "Mouse" mode is selected but the RC—100 or the Mouse is not connected to the S—330, the buttons on the S—330's panel do not work properly.**

Now, the Display shows **"Please Insert System Disk"**, and the Disk Drive Indicator lights up.

Step 2 **Insert the System Disk into the Disk Drive until it clicks.**



The system program is loaded first, then the sound data.



The number counts down to 00, and booting is completed, automatically returning to the Play mode.

***Do not take out the floppy disk or switch the unit off from the moment the disk is inserted until the loading is completed.**

3. Back-up of the System Disks

Floppy disks will become erased naturally after a certain length of time. To avoid the loss of important data, make it a rule to make a few back-up disks. The S-330's Backup function allows you to load the entire data on a disk.

Please use a 2-DD type floppy disk (3.5" double sided, double density, double track micro floppy disk) such as a Roland MF2-DD.

It may be a good idea to make a backup of your own programs.

If the supplied system disk happens to be erased or damaged, consult your local Roland service center.

System Disk Backup

Boot the S-330 with a System Disk, then make a backup without changing the contents.

Step 1 **Take out the system disk from the Disk Drive, set the Protect Tab on the floppy disk for backup to the WRITE position, and insert in the Disk Drive.**

Step 2 **Push the MODE button.**

Step 3 **Using the Cursor Buttons, select "DISK", and push the EXECUTE button.**

Step 4 **Using the Cursor Buttons, select "Backup", and push the EXECUTE button.**

Step 5 **Push the COMMAND button, and push the EXECUTE button to start the procedure.**

The Display shows "Formatting", then "Now Saving", and finally "Now Saving...0". Now, the System Disk's backup is prepared.

Step 6 **Push the Eject Button to take out the floppy disk from the Disk Drive, and set the Protect Tab to the PROTECT position.**

Turn the unit off,boot the unit with second disk, then similarly prepare the backup of the second disk.

Utility Disk Backup

Step 1 Insert the Utility disk into the Disk Drive.

Step 2 Push the MODE button.

Step 3 Using the Cursor Buttons, select "UTIL", then push the EXECUTE button.

Wait a few minutes to open the Menu Window.

Step 4 Select "UTIL Backup" using the cursor buttons, then push the EXECUTE button.

Step 5 Push the COMMAND button, then push the EXECUTE button.

The Display shows "Now Loading", then the number counts down to 0, and finally " Change Disk" is displayed.

Step 6 Push the Eject button to take out the floppy disk from the Disk Drive, and set the Protect Tab on the floppy disk to the "WRITE" position, then insert it into the Disk Drive.

The Display shows "Formatting", then "Now Saving", then the number counts down to 0.. Now, the Utility Disk's Backup is prepared.

Step 7 Push the Eject Button and take out the floppy disk from the Disk Drive, then return the Protect Tab on the disk to the "PROTECT" position.

The backup procedure for the Utility Disk erases any sound data in the internal memory. So, boot the unit again with the System Disk.

3. S—Series Disks compatible with the S—330

It is possible to load a data disk programmed by the **S—50 (Ver.1.0, 2.0)**, **SYS—503 TYPE—A—Disk** or **a Sound Library disk of the S—50** into the S—330 with the Convert Load function (P.143). Also, an S—50 disk can be converted into an S—330 disk with the Convert Disk function (P.145).

Data on the S—550's disk can be loaded into the S—330 without converting it.(P.122)

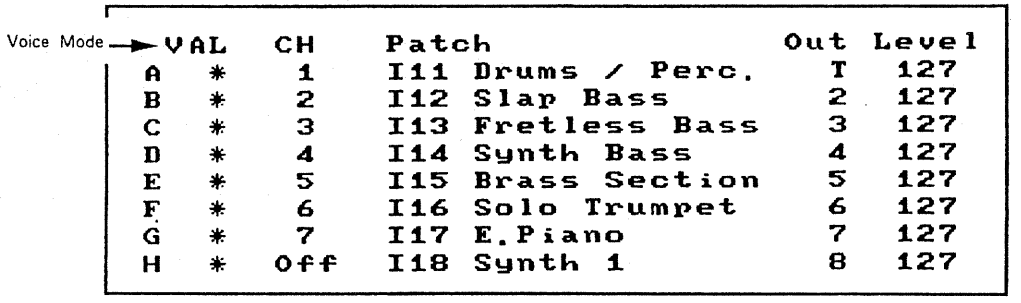
[1] Playing

When the S−330 is booted, it is automatically turned to the Play mode that plays Patches by MIDI messages sent from an external device.

The S−330 can simultaneously play eight different Patches by eight individual MIDI channels.

[Voice Mode]

The S−330 is 16 voice polyphonic. (This may be decreased depending on the conditions.) You can select one of the following Voice Modes that determine how these 16 voices are played.

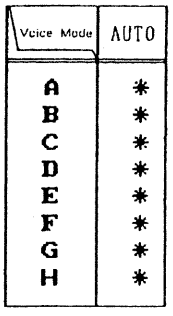


[VAL] (Last Note Priority Auto Mode)

When the VAL mode is selected, **"Last Note Priority"** is shown on the Message Line. You can set as many as eight receive channels and assign Patches to these channels. Patches are played by Note messages received on the relevant channels. If the received Note messages exceed 16 voices, the older sounds are sacrificed.

Note : **The S−330 allows you to set the Receive Channels for Voice Groups A to H to the same channel number (s). This however, will cause slight delays in starting the sounds, in particular, when the voice mode=VAL (Last Note Priority Auto mode).**

[VAF] (First Note Priority Auto Mode)



When the VAF mode is selected, **"First Note Priority"** is shown on the Message Line. You can set as many as eight receive channels and assign Patches to these channels. Patches are played by Note messages received on the relevant channels. If the received Note messages exceed 16 voices, the later messages are ignored.

[V 1] to [V22] (Voice Fixed Mode)

This mode divides 16 voices into up to 8 voice groups as shown below. You can set a receive channel for each group and assign a Patch to each channel. If the received Note messages exceed the maximum number of voices which can sound, the later sounds are sacrificed.

Voice Mode	1	2	3	4	5	6	7	8	9	10	11
A	16	14	12	12	10	10	10	8	8	8	8
B	0	2	4	2	6	4	2	8	6	4	4
C	0	0	0	2	0	2	2	0	2	4	2
D	0	0	0	0	0	0	2	0	0	0	2
E	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0
G	0	0	0	0	0	0	0	0	0	0	0
H	0	0	0	0	0	0	0	0	0	0	0

Voice Mode	12	13	14	15	16	17	18	19	20	21	22
A	8	6	6	6	6	6	4	4	4	4	2
B	2	6	6	4	4	2	4	4	4	2	2
C	2	4	2	4	2	2	4	4	2	2	2
D	2	0	2	2	2	2	4	2	2	2	2
E	2	0	0	0	2	2	0	2	2	2	2
F	0	0	0	0	0	2	0	0	2	2	2
G	0	0	0	0	0	0	0	0	0	2	2
H	0	0	0	0	0	0	0	0	0	0	2

[Change the Output Mode]

When the cursor is moved to [MIX], [OUT] or [MIX] can be selected.

[OUT] (Individual out)

Signal is sent through the Individual Output Jack set in each Patch. Exactly the same signal as sent through the Output 1 is sent through the Output 1 phone jack and the Headphone Jack.
Here, you can check and change the Output set in each Patch. If this is set so that each Tone is Output separately (page 103), "T" is indicate.

***If the value changed here, the value of the Patch Parameter will also change.**

[MIX] (Mix out)

Mixed signal is sent through the Output 1 Phone, Headphone and Individual Output 1 Jacks. Other Individual Output Jacks do not send any signal.

[Other Parameters]

CH (Receive Channel)

This is the receive channel of each voice group. When it is set to Off, no MIDI message is received, therefore no sound is generated. To minimize the delays, turn off the voice groups which are not in use.

When editing a Tone or Patch, set the transmit channel of the connected MIDI device to the same as the receive channel of voice group A. In this way, you can hear the sound of the Patch or Tone being edited.

Patch (Patch played by a Voice Group)

This is the Patch played by each voice group.

***You can select a Patch you like by using Program Change messages sent from an external MIDI device. To do this, set the Receive Switch [P.Chg] to "On" in [Message] menu of the MIDI mode. How the Program Change numbers correspond to the Patch numbers can be checked and changed, if you like, with [Prog #] of MIDI mode.**

Level (Volume of a Voice Group)

This sets the volume of the voice group.

***You can change this parameter with the volume messages sent from an external MIDI device. To do so, set the receive switch [Vol] to "On" with [Message] menu in the MIDI mode.**

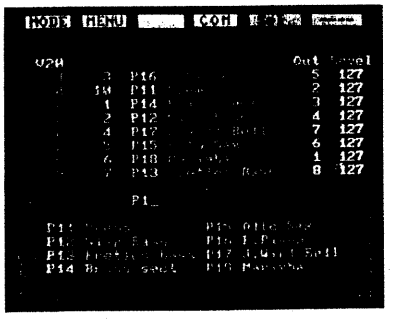
***There are some more parameters related to volume control. The volume of each key is determined by the following six parameters.**

1. **Position of the Volume Knob**
2. **Voice group level set here (Received MIDI Volume)**
3. **Level of the Patch assigned to the voice group (see page 103)**
4. **Level of the Tone assigned in the Patch (see page 73)**
5. **TVA Envelope level of the Tone assigned in the Patch (see page 93)**
6. **Strength of keyboard playing (see page 94 "Level Curve")**

All volume controlling is done by directly affecting digital data, therefore raising the volume automatically widens the dynamic range, allowing delicate and realistic volume changes. Set the output volume of the S−330 as high as possible and adjust it on the mixer or amplifer.

Standard

This is the display currently called. In this display, the sound source works faster.



Display [P1_]、 [P2_]、[T1_] ~ [T4_]

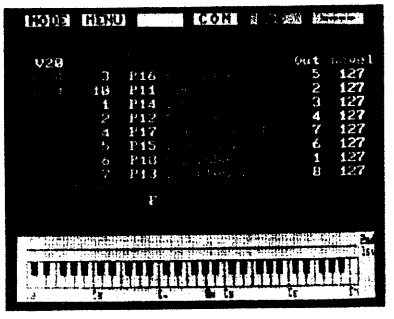
The Patch or Tone List selected at "Display" is shown at the bottom of the Display.

[P1_] : Patch numbers P 11 to P 18
[P2_] : Patch numbers P 21 to P 28
[T1_] : Tone numbers T 11 to T 18
[T2_] : Tone numbers T 21 to T 28
[T3_] : Tone numbers T 31 to T 38
[T4_] : Tone numbers T 41 to T 48

You can load data from the disk by opening the Command Window.This Function is as same as "Load" of DISK mode. See P.122.

Split Disp

Open the Menu Window then select [Split Disp].



Display **[A] to [H] and [ALL]**

The messages of the voice group selected by [Display] are shown on the 61 key keyboard at the bottom of the Display.

○The split point of the 1st and 2nd Tones in the Patch assigned to this voice group.

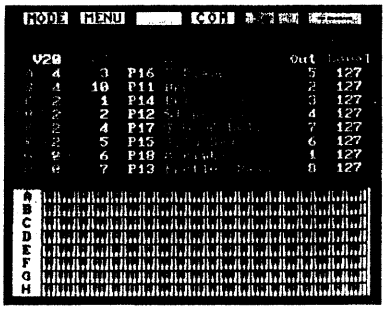
○When this voice group is played by receiving Note messages, a mark appears at the relevant key.

***The S−330 can receive Note messsages of 109 keys, C0 to C9, and play them. When the Note messages exceed the 61 keys, an arrow appears at the left and/or right side.**

***When [ALL] is selected, any voice group note is indicated on the keyboard, and the marks of the split points disappear.**

8 Key Disp

Open the Menu Window and select [8 Key Disp].



At the lower part of the Display, eight 109 key keyboards (that can cover all Note numbers received by the S−330) are shown.

When note messages are received and played by each voice group, the relevant keys will flash.

2 Sampling

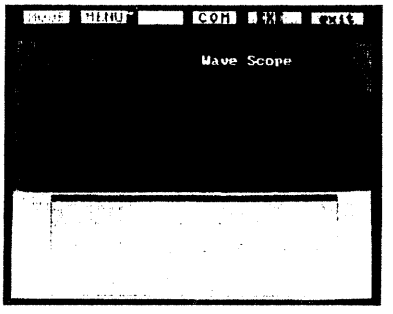
There are two menus provided for sampling.

[Setup for Sampling]

Connect the output of the microphone, or audio equipment, etc. to the Input Jack of the S−330.

Wave Scope

In this menu, the input signal can be shown as a waveform.



Preparation 1 **Insert the Utility Disk into the Disk Drive.**

Preparation 2 **Open the Mode Menu and select UTIL, to open the UTILITY menu.**

Preparation 3 **Select [Wave Scope], and the Command Window will open.**

Push EXECUTE or the left side button on the Mouse. The Display shows **"START"** and the S−330 is ready for signal input.

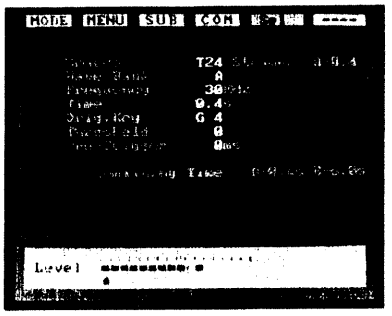
A moving wave appears when a voice signal is fed.

Pushing the EXECUTE or the left side button on the Mouse will first show **"STOP"**, then stop the movement and show a stationary waveform.

If you wish to see the moving wave again, push the EXECUTE or the left side button on the Mouse.

＊You can enter another mode or menu only from the "STOP"condition.

Sampling



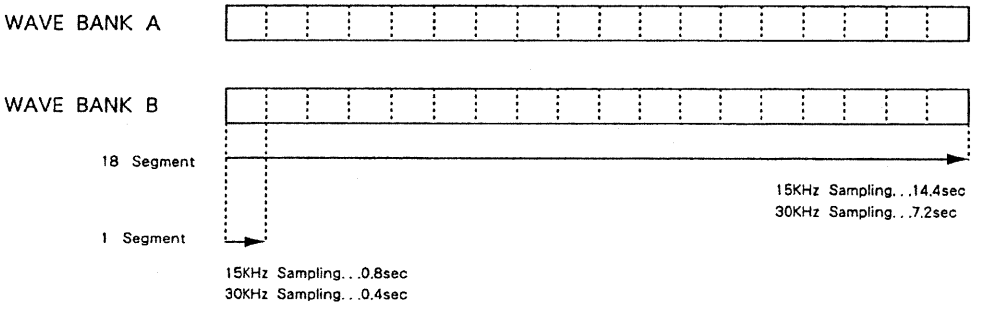
Preparation 1 Insert the Utility Disk into the Disk Drive.

Preparation 2 Open the Mode Menu and select UTIL, to open the UTILITY menu.

Preparation 3 Select [Sampling].

The S−330 can record sound into computer memory. A computer can accept information only as digital signals, so the S−330 converts audio signals into digital . It does this by examining (sampling) the incoming signal level a great many times a second, and sequentially recording these different levels in computer memory. This digital recording process is called SAMPLING.

The S−330 has two Wave Banks, A and B where the samples are stored. Each wave bank can sample up to 7.2 seconds at 30kHz sampling and 14.4 seconds at 15kHz. A wave bank is divided into 18 segments, which are 0.4 seconds long at 30kHz sampling, and 0.8 seconds at 15kHz sampling.



[Selecting a Destination Tone Number for Writing a sample]

Source

You can select a Tone Number where the sample is to be written. Any of the 32 Tone Numbers can be selected.

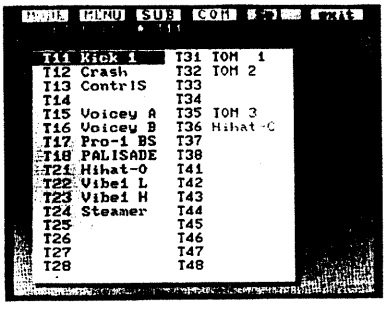
When a Sub Tone is selected as a new location, it will become an Original Tone and the Tone Parameters are initialized.

When an Original Tone is selected as a new location, the following will happen.

- **The Wave data that is contained in the selected Tone is erased (it is erased when the Command Window is open before actually sampling), making an empty space (increasing the Remaining Time).**
- **The new Wave data sampled takes the empty space.**
- **Tone parameters are initialized.**
- **A Sub Tone that uses the erased Wave data is deleted, becoming an unused Tone.**

[Tone List Display]

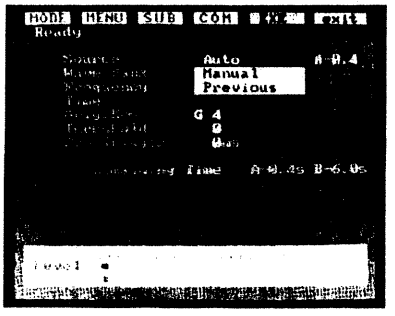
Opening the Sub Menu will call the Tone List. This display will help you in selecting a [Source] Tone Number.



The name of an Original Tone is displayed in black, and a SubTone in red.

To change to the display that shows the contents of the Wave data of a Tone, move the cursor to [Name/Time] at the lower rigt corner of the Display, then push the EXECUTE button or the left side button on the Mouse.

When you finish selecting a Tone number, push the SUB MENU button or the right side button on the Mouse to return the normal display.



A-0.8	Original Tone	Wave Bank : A, Sampling Time : 0.8 seconds (30kHz sampling)
A-0.8x2	Original Tone	Wave Bank : A, Sampling Time : 0.8 seconds x 2 (15kHz sampling)
Sub 11	Sub Tone	This borrows Wave data from Original Tone 11
Sub --	Deleted Tone	A deleted Tone or a Sub Tone that does not borrow Wave data

Wave Bank [A/B]

This selects the Wave Bank A or B where the sample is to be written.

[Checking sampling space]

When there is no space left for sampling in the destination Wave Bank, "Cannot Execute" is shown when you try to execute, and sampling cannot be executed.

When the remaining space is insufficient for sampling, the Wave data will be cut.

*The remaining time of each Wave Bank is shown in seconds at a 30kHz sampling frequency. When sampling in 15kHz, multiply it by 2.

*If there is not enough space, you should delete some un-needed data to increase the remaining time. You may either delete a Tone with [DELETE] in the EDIT mode, or cut off un-needed portions of a wave with [TRUNCATE] in the Utility mode.

[Checking Input Level]

As you feed an audio signal, set the level as high as possible without causing the Display to show "OVER", using the Recording Level Knob on the front panel.

The audio signal fed into the S−330 is sent through the Individual Out 1 and Output Phone Jacks, and therefore can be monitored through the connected amplifer.

***When sampling from a microphone, you may hear a howling noise. If so, turn down the volume of the amplifier and monitor through headphones.**

[Setting Parameters for Sampling]

Frequency (Sampling Frequency)

This selects the sampling frequency.

[30] This records a sound with 30kHz sampling frequency.

[15] This records a sound with 15kHz sampling frequency.

Time (Sampling Time)

This sets the sampling time (0.4 sec steps). You can select up to the maximum sampling time. When 15kHz sampling frequency is selected, please multiply the sampling time by 2.

If the maximum sampling time is longer than that of the sample, select a longer sampling time, so that sampling can be more successful. You can truncate the wave later in the Utility mode [TRUNCATE].

Orig. Key (Original Key) **[C0] to [C8]**

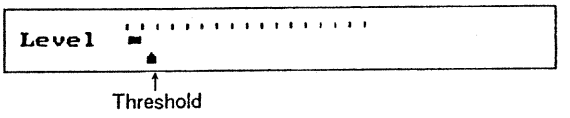
The Original Key represents the key at which the original sample was played.
When sampling from a musical instrument, you may have to set a Key number that matches the pitch of the sampled sound. Middle C is shown as the C4 key, and a semi−tone as #.

A Key number can also be entered by assigning the corresponding MIDI Note number with the Ten Key Pad on thr RC−100. C4=Note number 60.

***The highest pitch which can be played on the S−330 is 2 octaves above the sampled sound. Higher pitches cannot be played.**

Threshold (Sampling Threshold) **[0] to [127]**

AUTO sampling starts the moment a signal of a certain level (=threshold level) is fed in. When the threshold level is set to zero, sampling does not start until sampling is executed.



Pre-Trigger

Pre-trigger allows you to record the Wave data even before it exceeds the threshold level (before the sampling is executed when the threshold level is set to zero.) In the other words, this function begins sampling a little earlier, and therfore, saves the beginning of the sample from being cut off.

[10ms]

About 0.01 of a second before the Wave data reaches the threshold level, sampling starts.

[50ms]

About 0.05 of a second before the Wave data reaches the threshold level, sampling starts.

[100ms]

About 0.1 of a second before the Wave data reaches the threshold level, sampling starts.

[0ms]

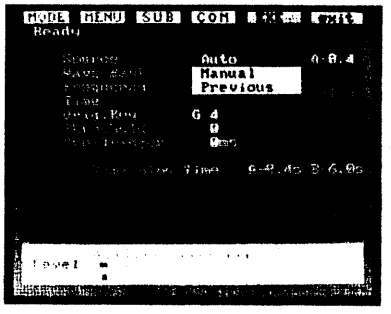
The moment the Wave data reaches the threshold level, sampling starts.

***When the sampling frequency 15kHz is selected, the Pre-trigger time is always shown with x2.**

[Executing Sampling]

Here, check and see the Display to make sure that you have proceeded correctly so far. Then open a Command Window.

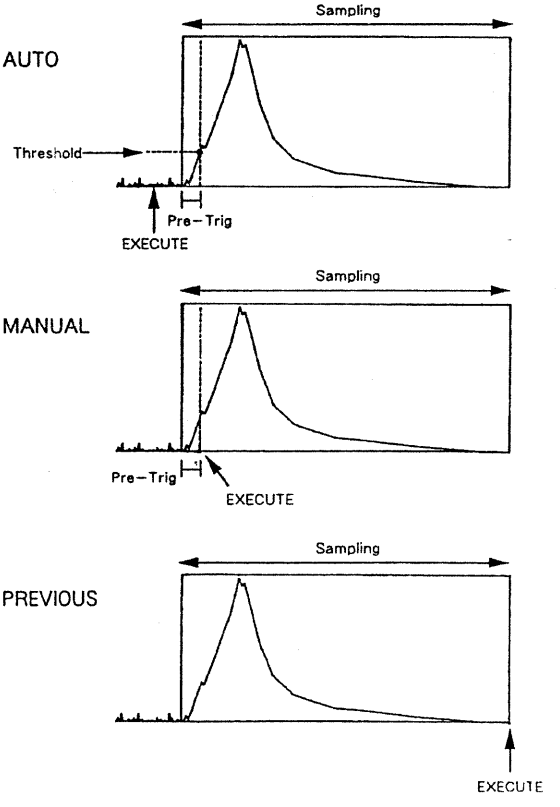
When an Original Tone is selected as a [source] Tone Number, opening the Command Window will erase the previous Wave data, adding the emptied space to the Remaining time, the Display responding with "**Working**". This, however, does not apply to sampling which is done without changing the Tone number, Wave Bank or Time.



When "READY" is shown at the Message Line, sampling can be executed.

The moment "READY" appears, the internal memory starts recording the signal being fed for Pre-trigger or Previous Sampling.

Three Methods for Sampling



AUTO (Auto Sampling)

Auto sampling can retain the sample (Wave data) from a certain time (Pre-trigger time) before the signal fed into the S-330 actually exceeds the threshold level.

Step 1 **Push the EXECUTE button or the left side button on the Mouse.**
The Display shows "Wait Trigger" until a signal exceeding the threshold level is fed in.

Step 2 **Feed the sound to be sampled. When the level exceeds the threshold level, the Display changes to "Start".**

When the S-330 has sampled as long as the set sampling time, it automatically stops sampling.

To stop sampling in the middle, push EXECUTE on the S-330. Cancelling sampling, however, does not shorten the sampling time.

MANUAL (Manual Sampling)

Manual sampling can retain the sample (Wave data) from the moment the EXECUTE button is pressed. The total sampling time is kept unchanged.

Step 1 **Push the EXECUTE button or the left side button on the Mouse, and feed the signal to be sampled simultaneously.**

"Start" is shown at the Message Line.

When the S-330 has sampled as long as the set sampling time, it automatically stops sampling. The threshold level has nothing to do with Manual Sampling, and is therefore ignored.

To stop sampling in the middle, push EXECUTE on the S-330. Cancelling sampling, however, does not shorten the sampling time.

PREVIOUS (Previous Sampling)

Previous Sampling retains the Wave data for the set sampling time, that occurs before Step 1 is done. NOTE: The S−330 continuously examines the incoming data stream, and is always sampling. This is very useful for monitoring what you want to sample, and then sample after the fact. (e.g. monitoring a television show and sampling what you have heard.)

Step 1 **When the signal to be sampled is fed into the S−330, push the EXECUTE button or the left side button on the Mouse.**

After a sound is sampled, the Display shows "Working" for a while. The sampled sound cannot be played while "Working" is being shown.

[Monitoring the sampled Wave]

Before making a Tone with the sampled Wave data and the Tone Parameters, you may wish to play it on the MIDI keyboard to hear what it sounds like. Also, in the Display, the waveform and the sampling parameters can be seen.

● Waveform Display

All the Wave data sampled in the Wave Bank is shown in the Display. When using a color display, the following three colors are seen :

Blue ·····Wave data previously sampled

Red·····Wave data you have just sampled.

Green·····Empty space, which has not yet been used.

● Remaining Time Display

This shows the remaining time of each Wave Bank in 30kHz sampling time.

＊Sampling will initialize all the Tone Parameters except for the Orig Key, therefore, after sampling, you need to truncate un−needed portions (See page 46), then set these parameters (See page 69).

(The default values of the Tone Parameters are shown on page 114.)

3 Editing Wave Data

Wave data editing changes the shape of the sample, and each process is entirely digital.

The following are menu for Wave data editing. With a menu called, set the receive channel of voice group A to the transmit channel of a MIDI device, and you can hear the Source tone if it is before the menu is executed, and the edited Tone if it is after execution.

***If the Patch Level (P.103) of the Patch assigned to Voice Group A is set too low, you cannot hear any sound while editing.**

[Selecting a Destination Tone]

This is the location (the number of a Tone) where the edited Wave data is to be written. Any of the 32 Tone numbers, except for the one selected for the source Tone, can be selected.

***If you select the Tone number of a source Tone as a destination, "Cannot Execute" appears in the Display when you try to execute it, and it is not executed.**

If a Sub Tone is selected as a destination, the edited Wave is written into it, and it therefore becomes an Original Tone.

When an Original Tone is selected as a destination, the following will occur in the S−330.

○The previous Wave data is erased making a space (=increasing the Remaining Time)

○Edited Wave data is written into the empty space in the selected Wave Bank.

○A Sub Tone that uses the erased Wave data is deleted, becoming an unused Tone.

***The new Wave Data is written in the Wave Bank of the same Block as the selected destination Tone.**

When there is no space left for writing in the destination Wave Bank, "Cannot Execute" is shown when you try to execute, and writing cannot be executed.

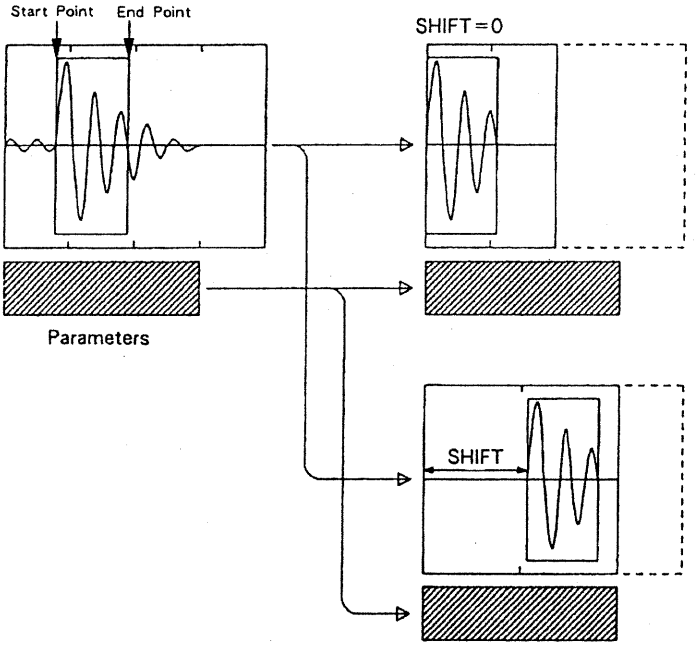
When the remaining space is unsufficient for writing, the Wave data will be cut.

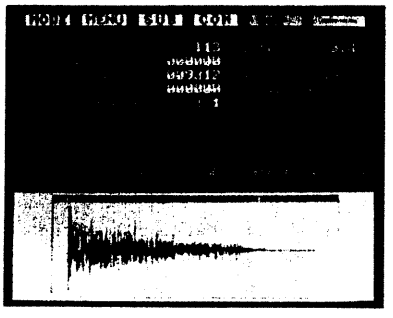
***The remaining time of each Wave Bank is shown in seconds at a 30kHz sampling frequency. When sampling at 15kHz, multiply it by 2.**

***If there is not enough space, you should delete some un−needed data to increase the remaining time. You may either delete a Tone with [DELETE] in the EDIT mode, or cut off un−needed portions of a wave with [TRUNCATE] in the Utility mode.**

Truncate

This menu allows you to remove the unneeded portions of a Wave, and transfer some portions elsewhere. If a space is made at the end of the Wave data, and it is larger than one segment , that space will be erased and added to the remaining time.





Preparation 1 Insert the Utility disk into the Disk Drive.

Preparation 2 Open the Mode Menu and select UTIL, to open the Utility menu.

Preparation 3 Select [Truncate].

[Selecting a Tone Number to be Truncated]

Source

Select an Original Tone to be truncated. (Here, a Sub Tone cannot be used.) The Wave data of the selected Tone is directly edited. If you wish to retain the original waveform, copy the Tone (page 65).

***Opening the Sub Menu will display the Tone List which you can watch while selecting a Tone. When you finish selecting a Tone number, push the SUB MENU button or the right side button on the Mouse to return the normal display. See "Tone List Display" on pages 37 and 38.**

***When Truncate is executed, any Sub Tone that used that particular Wave is deleted. If you wish to retain the Sub Tone, call it with [Tone PRM] in the Edit mode (page 70) and replace the Original Tone, from which it borrows Wave data, with another Tone.**

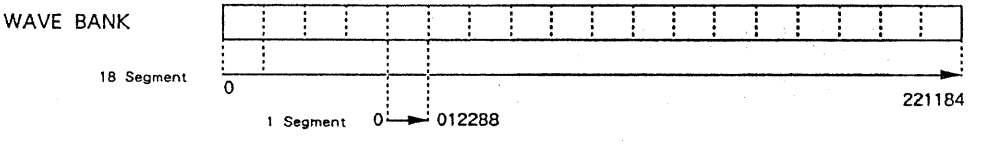
[Setting Points]

Start Point (the beginning address of the needed portion of a wave)

End Point (the end address of the needed portion of a wave)

Set the needed portions of the Wave with the Start and the End points. You can actually listen to the sound while setting these points.

The very beginning of Wave data is address zero. The end of the Wave data that uses one segment (see page 36) is address 012288 (0.4 seconds at 30kHz sampling) and that of the whole Wave Bank is address 221184 (7.2 seconds at 30kHz sampling).



To enter an address, use the DEC and INC buttons, or the buttons on the Mouse. The amount of the change caused by one push can be selected with the following Search Mode.

***The addresses of the Start and the End points set here are identical to those set with [LOOP] in the Edit mode. This means that changing addresses here will automatically change those set in the Loop Set mode.**

If you wish to enlarge a particular portion of the Wave, use the three types of Displays in the [LOOP] menu to set the addresses.

Search Mode

The amount of change caused by one push can be selected as follows.

[±1] Address changes in one step.

[±114] Address changes in 114 steps.

[Peak] Address advances from one peak to another.

[Shift]

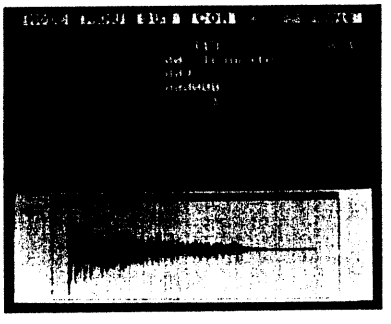
Shift

The Wave data between the Start and the End points can be shifted forward or backward. Set the address to which the current Start point is to be shifted. When address 0 is set, the Start point will be shifted to the very begining of the memory area assigned to that data.

[Executing Truncate]

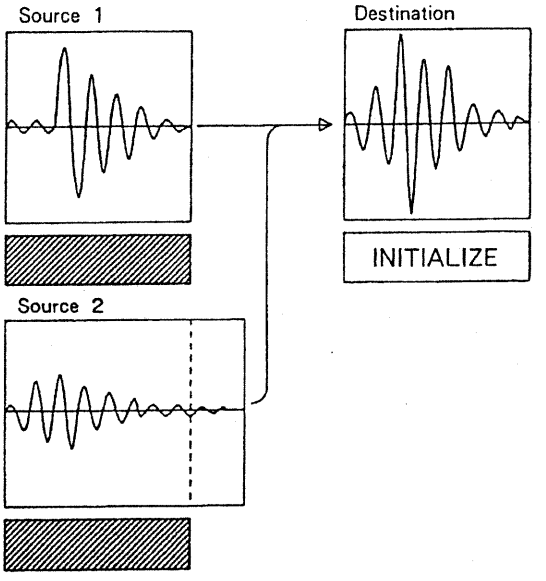
Now, open the command window.

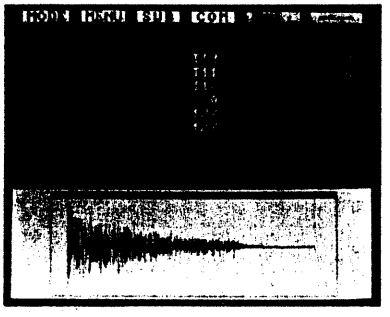
Push the EXECUTE button or the left side button on the Mouse to execute.



Mix

This function mixes two Waves to make a new Original Tone.





Preparation 1 Insert the Utility disk into the Disk Drive.

Preparation 2 Open the Mode Menu and select UTIL, to open the Utility menu.

Preparation 3 Select [Mix].

[Selecting Tones to be mixed]

Source1
Source2

Select two Original Tones to be mixed. (Sub Tones cannot be mixed.) The length of the new Tone is the same as Source 1's, so select the longer Tone for Source 1.

***When the cursor indicates Source 1, the Wave data of Source 1 is shown in the Display, and the Source 1 Tone can be played. Moving the cursor to Source 2 displays the wave data of Source 2, and the Source 2 Tone can be played.**

***The two waves are always mixed from address zero, so you may need to truncate the waves to match the wave heads. (See [Truncate] on page 46.)**

[Selecting a Destination Tone]

The mixture of Source 1 and Source 2 is written to the destination Tone, and all the Tone Parameters are initialized.(See page 45 [Selecting a Destination Tone].)

Opening the Sub Menu will call a Tone List which you can use for selecting Source 1, Source 2 or Destination. After the Source 1 Tone is selected by pressing the EXECUTE or the left side button on the Mouse, push the same button again to change to a Tone List for source 2.
When you finish selecting a Tone number, push the SUB MENU button or the right side button on the Mouse to return the normal display.
See "Tone List Display" on pages 37 and 38.

[Selecting a Wave Bank of the Destination Tone]

Wave Bank **[A/B]**

This selects the Bank, A or B, where the mixed Wave data is to be written.

[Level Setting]

Source 1 Level **[0 to 127]**

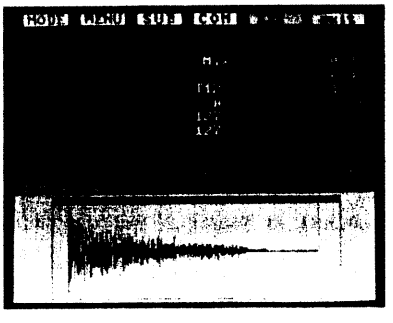
This sets the level of the Source 1 Tone in MIX. At 127, the waveform is exactly the same as the sample. While changing the level, you cannot hear the change.

Source 2 Level **[0 to 127]**

This sets the level of the Source 2 Tone in MIX. At 127, the waveform is exactly the same as the sample. While changing the level, you cannot hear the change.

***The sound may be distorted if both levels are set high.**

[Executing Mix]

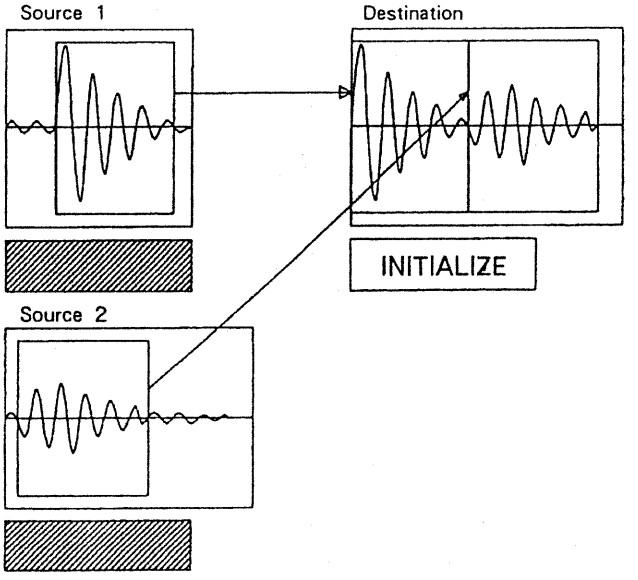


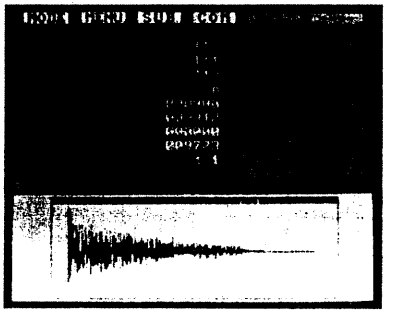
When all the necessary settings are done, open the command window and execute.

Push the EXECUTE button or the left side button on the Mouse to execute.

Combine

This function Combines two Waves to make a new Original Tone. The End point of Source 1 is directly joined to the Start point of Source 2. Here, the Tone Parameters are initialized.





Preparation 1 Insert the Utility disk into the Disk Drive.

Preparation 2 Open the Mode Menu and select UTIL. to open the Utility menu.

Preparation 3 Select [Combine].

[Selecting Tones to be combined]

Source1
Source2 Select two Original Tones to be combined. (Sub Tones cannot be combined.)

* When the cursor indicates Source 1, the Wave data of Source 1 is shown in the Display, and the Source 1 Tone can be played. Moving the cursor to Source 2 displays the wave data of Source 2, and the Source 2 Tone can be played.

[Selecting a Destination Tone]

Destination

The combined data of Source 1 and Source 2 is written to the destination Tone, and all the Tone Parameters are initialized.(See page 45 [Selecting a Destination Tone]).

Opening the Sub Menu will call a Tone List which you can use for selecting Source 1, Source 2 or Destination. After the Source 1 Tone is selected by pressing the EXECUTE or the left side button on the Mouse, push the same button again to change to a Tone List for source 2.
When you finish selecting a Tone number, push the SUB MENU button or the right side button on the Mouse to return the normal display.
See "Tone List Display" on pages 37 and 38.

[Selecting a Wave Bank of the Destination Tone]

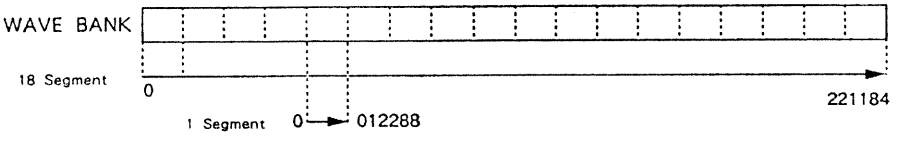
Wave Bank **[A], [B]**

This selects the Bank, A or B, where the combined Wave data is to be written.

[Setting Points]

Source 1 **Start Point (the beginning address of the needed portion of a wave)**
End Point (the end address of the needed portion of a wave)

Source 2 **Start Point (the beginning address of the needed portion of a wave)**
End Point (the end address of the needed portion of a wave)



Set the needed portions of the Wave with the Start and the End points. You can actually listen to the sound while setting these points.

The very beginning of Wave data is address zero. The end of the Wave data that uses one segment (see page 36) is address 012288 (0.4 seconds at 30kHz sampling) and that of the whole Wave Bank is address 221184 (7.2 seconds at 30kHz sampling).

To enter an address, use the DEC and INC buttons, or the buttons on the Mouse. The amount of change caused by one push can be selected with the following Search Mode.

*The addresses of the Start and the End points set here are identical to those set with [LOOP] in the Edit mode. This means that changing addresses here will automatically change those set in the Loop Set mode.

If you wish to enlarge a particular portion of the Wave, use the three types of Displays in the [LOOP] menu to set the addresses.

Search Mode

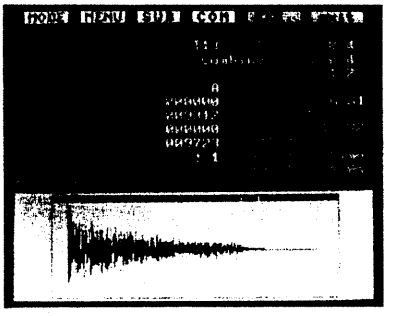
The amount of the change caused by one push can be selected as follows.

[±1] Address changes in one step.

[±114] Address changes in 114 steps.

[Peak] Address advances from one peak to another.

[Executing Combine]

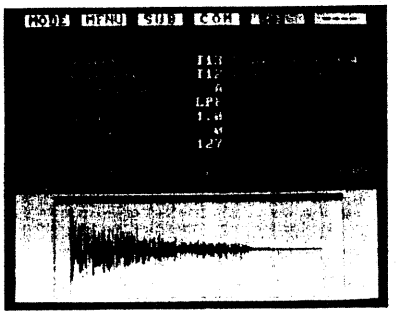


When all the necessary settings are done, open the command window and execute.

Push the EXECUTE button or the left side button on the Mouse to execute.

D.FILTER

With this function, the Wave data is processed by a Digital Filter. And if DC (Direct Current) content (=Low range noise) is mixed with the sample, causing unclear sound, you can cut the DC content from the wave data.



Preparation 1 **Insert the Utility disk into the Disk Drive.**

Preparation 2 **Open the Mode Menu and select UTIL, to open the Utility menu.**

Preparation 3 **Select [D.FILTER].**

[Selecting a Tone to be Digital-filtered]

Source

Select the source Tone which is to be filtered.(A Sub Tone cannot be used.)

[Selection a Destination Tone]

Destination

The source is processed by the Digital Filter and is written into the Destination Tone. The Tone Parameters are copied.

See "Selecting a Destination Tone" on page 45.

Opening the Sub Menu will call a Tone List which you can use for selecting Source or Destination. After the Source Tone is selected by pressing the EXECUTE or the left side button on the Mouse, push the same button again to change to a Tone List for Destination.
When you finish selecting a Tone number, push the SUB MENU button or the right side button on the Mouse to return the normal display.
See "Tone List Display" on pages 37 and 38.

[Selecting a Wave Bank of the Destination Tone]

Wave Bank [A, B]

Select wave bank A or B, where the filtered Wave Data is to be written.

[Selecting a Filter Mode]

Mode

[LPF] (Low-pass Filter)

This filter passes lower frequencies and cuts higher frequencies.

[HPF] (High-pass Filter)

This filter passes higher frequencies and cuts lower frequencies.

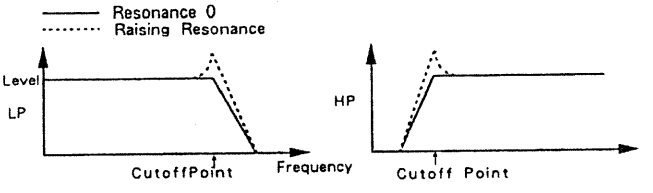
You can select one of the above two filters : -12dB/Octave Lowpass Filter or Highpass Filter, where cutoff frequency and resonance can be set. By executing D.Filter twice, -24dB/Octave, and three times, -36dBm/Octave filtering effects can be obtained.

Frequency (Cutoff Frequency) **[0.1] to [10.0]**

This sets the cutoff frequency from 0.1kHz to 10.0kHz.

Resonance **[0 to 127]**

At higher values, the harmonic content at the set cutoff frequency is emphasized.



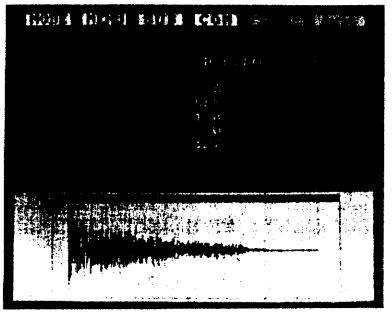
Level Adjust **[0 to 127]**

At 127, the original Wave data is sent to the filter. If the sound is distorted, adjust the level here.

***Digital filtering is processing the wave by computer, and therefore, the filtered sound cannot be heard while setting the digital filter parameters. So, you may have to repeat the filtering process to obtain the optimum result.**

***When the Level Adjust is set to around 127, the sound may be distorted. If so, lower the level, and repeat.**

[Executing Digital Filter]



When all the necessary settings for filtering are made, open the command window and execute.

Open the command window, and select "D. Filter"

Push the EXECUTE button or left side button on the Mouse.

[Executing DC-Cut]

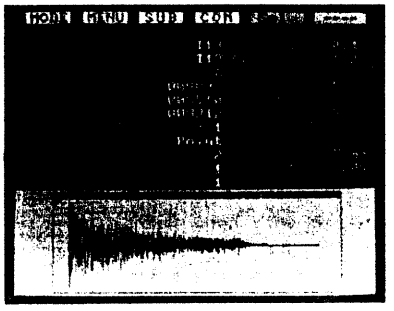
If DC (Direct Current) content (=Low range noise) is mixed with the sample, causing unclear sound, you can cut the DC content from the wave data.

Open the command window, and select "DC-Cut"

Push the EXECUTE button or left side button on the Mouse.

Wave Loop

By reading a loop (=a part of wave data from the loop point to end point) repeatedly, you can make a longer tone. (See page 75.) Sampled waves, however, often have complicated waveforms, therefore it is very difficult to find out the loop points and end points where the waves are connected smoothly. The Smoothing function of the S−330 changes the shape of the wave from the loop to the end points so that loops can be connected smoothly.



Preparation 1 Insert the Utility disk into the Disk Drive.

Preparation 2 Open the Mode Menu and select UTIL, to open the Utility menu.

Preparation 3 Select [Wave Loop].

[Selecting a Tone to be looped]

Source Select the source Tone to be looped.(A Sub Tone cannot be selected.)

[Selecting a Destination Tone]

Destination Select a destination Tone where the edited wave data is written. Tone parameters are copied from the Source Tone, but the Loop mode is set to [Forward].

See "Selecting a Destination Tone" on page 45.

If the space of the destination Tone is shorter than the source Tone, "Cannot Execute" is shown and data cannot be written.

Opening the Sub Menu will call a Tone List which you can use for selecting Source or Destination. After the Source Tone is selected by pressing the EXECUTE or the left side button on the Mouse, push the same button again to change to a Tone List for Destination.
When you finish selecting a Tone number, push the SUB MENU button or the right side button on the Mouse to return the normal display.
See "Tone List Display" on pages 37 and 38.

[Selecting a Wave Bank of the Destination Tone]

Wave Bank [A, B]

Select wave bank A or B, where the edited Wave Data is to be written.

[Setting a Loop Point]

Start Point
Loop Point
End Point

The wave between the loop point and the end point set here is processed so as to be connected smoothly.

***If you open the Command Window and execute Auto Loop first, then Smoothing, more natural loop will be created. See page 81 "Auto Loop".**

***The address of each point set here is the same as that set with [Loop] in the Edit mode. In other words, changing addresses here will change the addresses of the Source Tone set with Loop Set.**

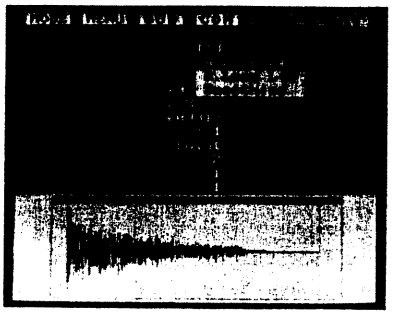
Search Mode
Loop Edit
Screen Type
Zoom Time
Zoom Level

(See page 78.)

***The Smoothing function cannot be executed if the length between the start point and the loop point is less than 228 addresses.**

[Executing Smoothing]

Smoothing

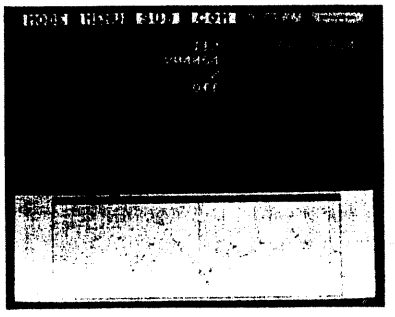


Push the EXECUTE button or the left side button on the Mouse.

***The Smoothing is processing the wave by computer, and therefore, the processed sound cannot be heard while setting the smoothing parameters. So, you may have to repeat the smoothing process to obtain the optimum result.**

Wave Draw

In this menu, you can draw a waveform using the Mouse.



Preparation 1 Insert the Utility disk into the Disk Drive.

Preparation 2 Open the Mode Menu and select UTIL, to open the Utility menu.

Preparation 3 Select [Wave Draw].

[Selecting a Tone for drawing a wave]

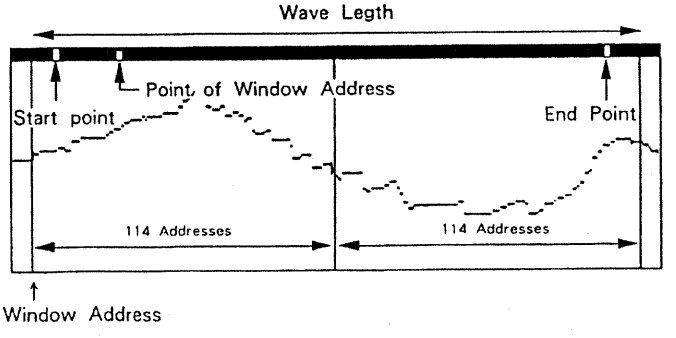
Source

Select an Original Tone where you wish to draw a waveform. The wave data of the selected Tone is directly edited. So if you wish to retain the original waveform, copy the Tone.(See page 65.) Here, you cannot select a Sub Tone.

***Opening the Sub Menu will display the Tone List which you can watch while selecting a Tone. When you finish selecting a Tone number, push the SUB MENU button or the right side button on the Mouse to return the normal display. See "Tone List Display" on pages 37 and 38.**

[Selecting the position (address) of the Wave data to be edited]

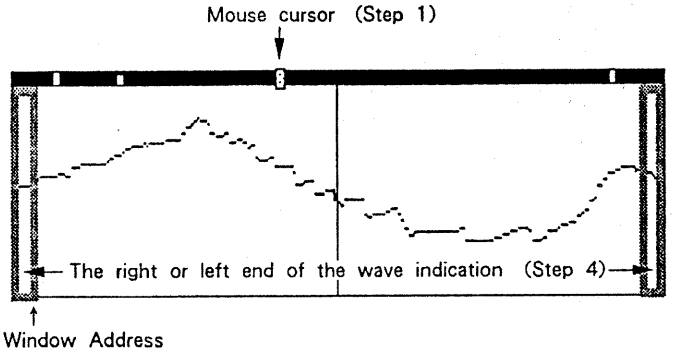
Normally, you want to edit a part of the Wave data. The position you want can be assigned with Mouse or using the panel switches on the S-330. The blue belt shown above the wave indication represents the whole length of the Wave data. The small white square on the blue belt represents the position (=Window Address) of the Wave data which you can edit. The wave data at the Window Address is enlarged and shown under the blue belt as much as 228 addresses.



■ Assigning Window Address using the Mouse

Step 1 Move the Mouse cursor (red triangle) onto the blue belt, and the cursor becomes a white square.

Step 2 Move the Mouse cursor to the position (Window Address) you want.



Step 3 Pushing the left side button on the Mouse will show the wave data at the assigned position (=Window Address).

Step 4 Move the cursor (now red triangle) outside the right or left end of the wave indication, and the cursor becomes an arrow.

Step 5 Pushing the left side button on the Mouse scrolls the wave indication in 114 steps to the right or left.

■ Assigning Window Address on the S−330's panel or RC−100

Step 1 Move the cursor to the Window Address parameter in the Display using the Cursor Button.

Step 2 Pushing the INC or DEC button will scroll the wave data to the right or left in 114 address steps. On the RC−100, the address you want can be directly set by using the Ten Key Pad.

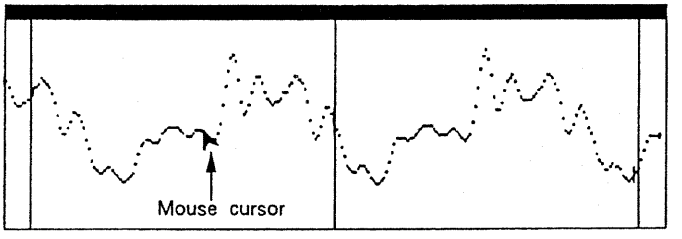
[Zoom Level]

Zoom Level

The wave display can be enlarged in the vertical direction (7 levels).

At [1], the entire wave can be seen, and at [7], the waveform is the largest.

[Drawing a Waveform]



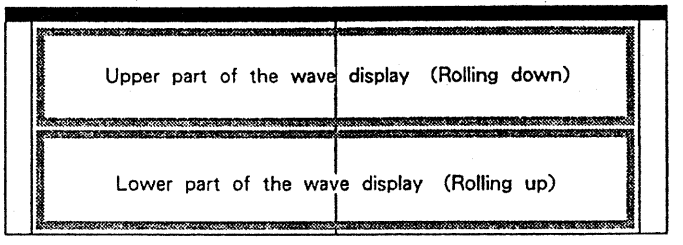
Step 1 **Move the cursor to where you wish to draw the waveform, and draw a wave while holding down the left side button on the Mouse.**

The wave you have drawn is shown in red.

Step 2 **Release the button.**

[Rolling up and down]

You can roll up or down the wave display.



Move the cursor to the upper part of the wave display screen, then push the right side button on the Mouse, and the wave display will be rolled down. Move the cursor to the lower part to roll up.

***When the Zoom Level is set to [1], the entire wave is already shown, therefore, it cannot be rolled down or up.**

***For successful wave drawing, select Zoom Level [1], and draw the waveform roughly first, then select [7], roll up or down the wave display and draw a finer line.**

To return the cursor to the parameter display, push the right side button on the Mouse in any position except the [Rolling up and down] area, for example, while on the blue line.

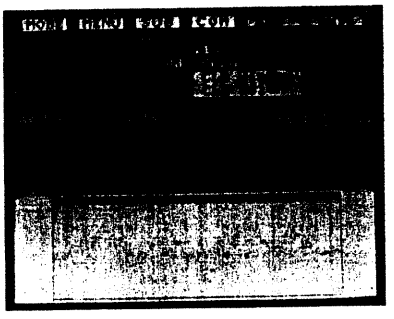
[Window Loop]

Window Loop **[ON/OFF]**

The 228 addresses (accessible by Window Address) are actually such short sounds that they cannot be monitored, but by looping them they can then be monitored.

W.LOOP "On" always sets Start point = address 0, Loop Point = Window address (the vertical line at the left end) and End point = Window address + 228 (the vertical line at the right end). With KEY ON message, the wave data is read from address 0, and the loop from the Window address to that plus 288 is repeated. When "On", it is possible to draw a waveform while listening to a sound.
When "Off", the original Start point, Loop point and End point are retrieved. If you move to another menu with W. LOOP "On", the original points will be automatically rewritten.

[Executing the Command]



Open the Command Window, select what you want to execute, and push the EXECUTE button or the left side button on the Mouse to execute the following commnds.

COPY

This can copy the 228 addresses of wave data shown in the Display to the succeeding data (up to the Wave End).

CLR WINDOW

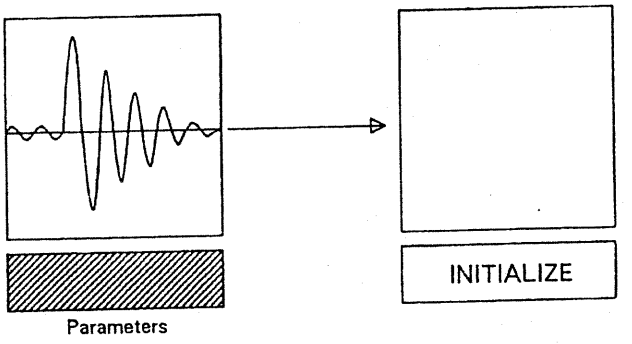
This erases the 228 addresses of wave data shown in the Display.

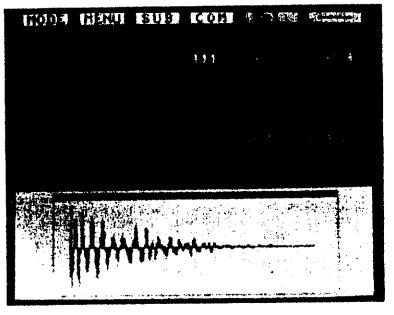
CLR ALL

The entire Wave data from the Wave Top to the Wave End can be erased.

Delete

This menu allows you to delete a Tone or a Wave Bank (consists of several Tones) that is not needed.





Preparation 1 Open the Mode Menu and select EDIT, to open the Edit menu.

Preparation 2 Select [Delete].

[Deleting an unneeded Tone]

To delete a Tone, call the Tone to the Source position.

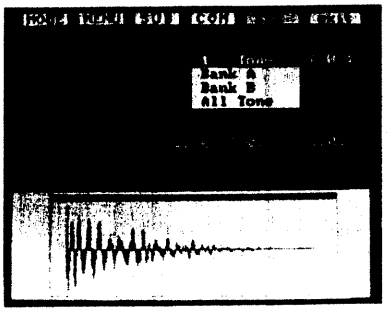
***Opening the Sub Menu will display the Tone List which you can watch when selecting a Tone. When you finish selecting a Tone number, push the SUB MENU button or the right side button on the Mouse to return the normal display. (See "Tone List Display" on pages 37 and 38.)**

■Deleting an Original Tone Deleting an Original Tone naturally erases the Wave data included in that Tone. The space created is added to the Remaining Time. Also,the Tone Parameters are initialized. By deleting an Original Tone, any Sub Tone that borrows Wave data from it will also be deleted. In other words, the space is regarded as being an empty Sub Tone.

■Deleting a Sub Tone Deleting a Sub Tone will initialize the Tone Parameters. This, therefore, is regarded as an empty Sub Tone, one that does not have an Original Tone. Deleting a Sub Tone, however, does not erase the Original Tone data used by the Sub Tone.

When you have selected the Tone to be deleted, open the command window and execute [1 Tone].

[Deleting a Wave Bank]



This allows you to delete a Wave Bank which contains several Tones.

This erases the entire sampling data of that Wave Bank, initializing all the Tone Parameters of the Tones, changing them to empty Sub Tones that do not have Original Tones. The Sub Tones which were using those data will be initialized, becoming empty Sub Tones.

Bank A

This deletes the Tone data of the Wave Bank A.

Bank B

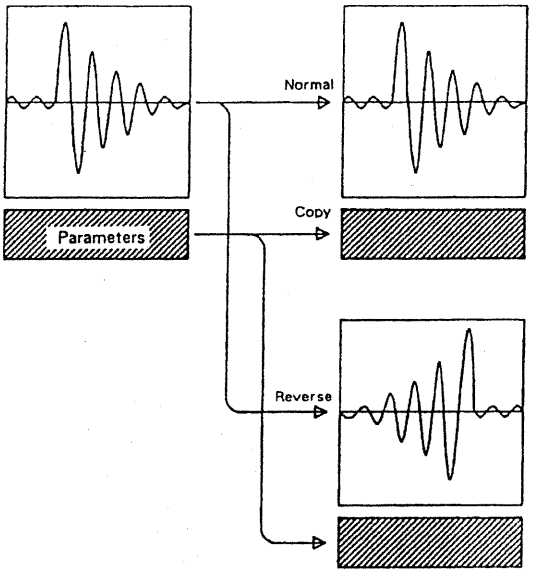
This deletes the Tone data of the Wave Bank B.

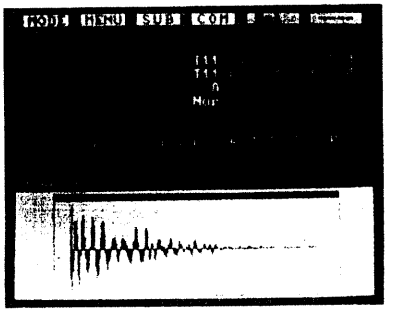
ALL Tone

This deletes the entire Tone data in the internal memory.

Copy/Move

In this menu, you can copy the entire Wave data and the Tone Parameters, at the same time. Also, Reverse Copy makes a reversed copy of the source Wave.





Preparation 1 **Open the Mode Menu and select EDIT to open the Edit menu.**

Preparation 2 **Select [Copy/Move].**

[Selecting a Tone to be copied (moved)]

Source Select the Tone you wish to copy or move to the other location.(A Sub Tone cannot be used.)

[Selecting a new location for the Tone]

Destination Select a new location (destination Tone) as explained on page 45.

Opening the Sub Menu will call a Tone List which you can use for selecting Source or Destination. After the Source Tone is selected by pressing the EXECUTE or the left side button on the Mouse, push the same button again to change to a Tone List for Destination.
When you finish selecting a Tone number, push the SUB MENU button or the right side button on the Mouse to return the normal display.
See "Tone List Display" on pages 37 and 38.

[Selecting a Wave Bank]

Wave Bank [A, B]

Select wave bank A or B, where the copied Wave Data is to be written.

[Setting the Copy Mode]

This selects Normal or Reverse Copy Mode.

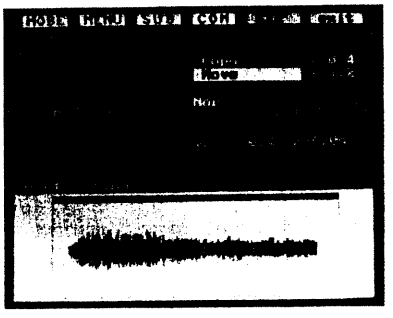
NORMAL

An exact copy of the Wave data can be made.

REVERSE

A reversed copy of the Wave data can be made.

[Executing Copy (move)]



When you have set all the necessary parameters for copying, open the command window and execute.

Push the EXECUTE button or the left side button on the Mouse.

Copy

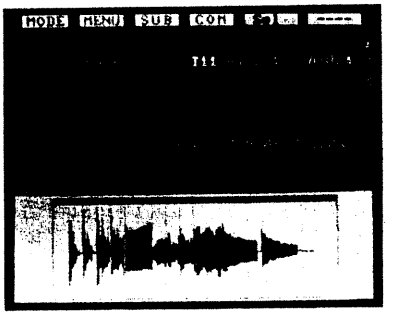
This copies the source Tone to the destination Tone, leaving the source Tone at the original location.

Move

This copies the source Tone to the destination Tone, erasing the source Tone from the original location.

Disp. Wave

In this menu, the entire Bank to which the Tone currently in use belongs, is shown.



Preparation 1 **Open the Mode Menu and select EDIT to open the Edit menu.**

Preparation 2 **Select [Disp Wave].**

[Monitoring Wave]

To monitor the wave of one Tone, select the relevant Tone to the Source position.

***Opening the Sub Menu will display the Tone List which you can watch when selecting a Tone. When you finish selecting a Tone number, push the SUB MENU button or the right side button on the Mouse to return the normal display. (See "Tone List Display" on pages 37 and 38.)**

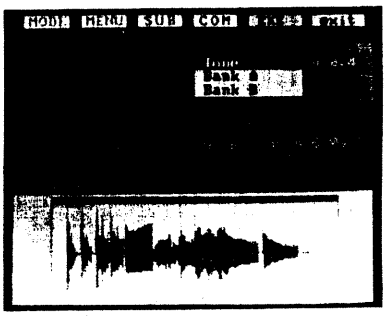
The entire Wave Bank to which the selected Tone belongs is shown. If an Original Tone is selected, the selected Tone is shown in red and the other Tones are shown in blue.

***When a Sub Tone is in use, the wave data of the Original Tone that is used in the Sub Tone is shown in red.**

***If the selected Tone has already been deleted, Wave Bank A is shown. In this case, red wave indication is not shown.**

***When you have selected the Tone to be monitored, open the command window and select [Tone], then push the EXECUTE button or the left side button on the Mouse.**

[Monitoring the entire Wave Bank]



The command window also contains the function of monitoring the entire Wave Bank.

Push the EXECUTE button or the left side button on the Mouse.

Bank A

This shows the wave data of the Wave Bank A.

Bank B

This shows the wave data of the Wave Bank B.

4 Setting Tone Parameters

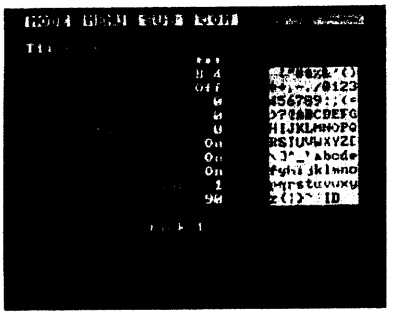
Tone Parameters involve how the recorded Wave data is read and reconstructed. Wave data is not transformed by editing Tone Parameters, therefore the Tone Parameters may be edited as many times as you like without affecting the Wave data itself.

If you wish to listen to the Tone while editing a Tone Parameter, set the receive channel of Voice Group A to the same number as the transmit channel of the external MIDI device.

***If the Patch Level (P.103) of the Patch assigned to Voice Group A is set too low, you cannot hear any sound while editing.**

Tone PRM

Here, the most important Tone Parameters are set.



Preparation 1 Open the Mode Menu and select EDIT, to open the Edit menu.

Preparation 2 Select [Tone PRM].

[Calling the Tone to be edited]

The number and the name of the selected Tone is shown at the upper left of the Display. Some more information of the Tone is shown at the right of the Tone name.

A-0.8	Original Tone.	Wave Bank : A, Sampling Time : 0.8seconds (30kHz sampling)
A-0.8x2	Original Tone	Wave Bank : A, Sampling Time : 0.8seconds x 2 (15kHz sampling)
Sub 11	Sub Tone	This borrows Wave data from Original Tone 11
Sub --	Deleted Tone	A deleted Tone or a Sub Tone that does not borrow Wave data

***Opening the Sub Menu will display the Tone List which you can watch when selecting a Tone. When you finish selecting a Tone number, push the SUB MENU button or the right side button on the Mouse to return the normal display. (See "Tone List Display" on pages 37 and 38.)**

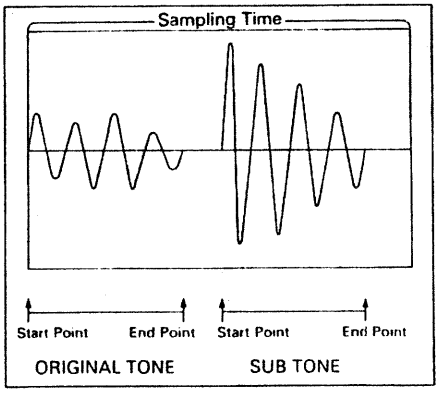
[Making a Sub Tone]

Original Tone **[T11 to T48] / [***]**

The S−330 allows you to borrow the Wave data from an Original Tone and make a different Tone (=Sub Tone) with different values of Tone Parameters. A Sub Tone does not sound unless Wave data is borrowed from an Original Tone.

Call a Sub Tone or unused Tone in the Tone List Display, then here, select the Original Tone from which Wave data is borrowed. When an Original Tone is selected, Tone Parameters that are involved with looping are copied to that Tone. And the Wave data is read from that Tone by playing the keyboard.

You can make a Sub Tone which is completely different from the Original Tone which shares the same Wave data. For instance, you can add vibrato or change the envelope to make a sound of different nuance. Two sounds can be created from one Wave data by connecting two waves using Truncate (page 46) and Combine (page 51), then setting two different Start and End points. This makes the Wave Banks more useful. The system disk contains many Tones made in this way.



An Original Tone has its own Wave data. When an Original Tone is called, "" is shown and this cannot be changed.**

***If a Sub Tone is selected, "———" is shown and no sound is heard.**

***When there is no empty Tone, erase an unneeded Tone with the Delete function (page 63), then call the Tone number of the deleted Tone.**

[Tone Parameter Setting]

Orig. Key (Original Key Number) **[C0 to C8]**

This changes the original key number of a sample (page 39). Playing the key selected here will make sound in the pitch of the sampled sound. Middle C is represented by C4, and a semi-tone by #.

***The S-330 can play up to two octaves higher than the pitch of the sampled sound. Any pitch that exceeds that does not sound.**

Pitch Follow **[On/Off]**

When Pitch Follow is [On], different pitches are played by different keys, but when [Off], the pitch of the Original Key will sound whatever key is played.

Shift **[-24 to +24]**

This sets the pitch when the above Pitch Follow is set to [Off]. At [0], the original pitch of the sampled sound is obtained. At [+1], the pitch is a semi-tone higher than the Original Key, and at [-1], a semi-tone lower.

Fine Tune **[-64 to 0 to 63]**

This adjusts the pitch of Tone subtly. ± 50 is about half a semi-tone.

P. LFO Depth (LFO Depth of Pitch Modulation)

This sets the depth of the LFO that controls the pitch modulation. The LFO parameters are set in [LFO] on page 82.

P. Bender (Pitch Bender On/Off) **[On/Off]**

When this is set to [On], the pitch of this Tone changes with the Bender messages received. When [Off], the pitch is not affected by the Bender messages.

Aftertouch (Aftertouch On/Off) **[On/Off]**

When it is set to [On], Aftertouch effects are obtained with the aftertouch messages (Aftertouch Sens and Aftertouch Assign) set in the Patch. At [Off], the Tone is not affected by receiveing the aftertouch messages.

TVF (TVF On/Off) **[On/Off]**

When the TVF (Time Variant Filter) is set to [On], the cutoff points of the Digital Filter change as set in [TVF] menu.(See page 86.)

Output Assign (Assigning Tones to Output Jacks) **[1 to 8]**

Tones are output from the output jacks assigned in [Output Assign] = [Tone] (page 103) and the jacks set in this parameter.

Level (Tone Level) **[0 to 127]**

This adjusts the volume of each Tone.

Name (Tone Name)

Up to eight letters can be used for naming a Tone.

On the S−330, a Tone name is entered by using the INC and DEC buttons. For moving the cursor, use the Cursor Buttons.

On the RC−100, a Tone name can also be entered with the Ten Key Pad. Each push of the number key will call a letter in the sequence shown below.

1	→A→B→C	7	S→T→U→
2	→D→E→F	8	→V→W→X
3	→G→H→I	9	→Y→Z→/
4	→J→K→L	0	→+→−→×
5	→M→N→O	ENT	Space
6	→P→Q→R		

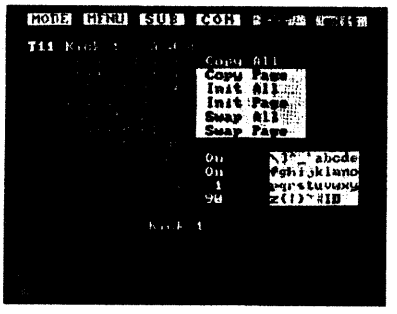
The Mouse allows you to use letters in the Palette for writing a Tone name. Move the cursor to the position where you wish to write a letter and push the button at the left side, and the cursor appears in the Palette. Select a letter you want and push the button at the left to enter it. "I" is for inserting a space, and "D" is for deleting. To return the cursor from the Palette, push the button at the right side.

[Executing Commands]

● Initializing, Copying and Swapping Parameters

INT initializes the Parameters of the Tone currently called. COPY copies the Parameters of a source Tone to the Tone currently called. SWAP swaps the Parameters of a source Tone with the Tone currently called.

To assign the source Tone for COPY or SWAP, open the Sub Menu. Then without moving the Cursor, push the Execute Button or the left side button on the Mouse to change the Tone List for selecting a source Tone for COPY or SWAP command.



Opening the command window, the Source Tone appears on the Message Line.

COPY ALL This copies all the parameters of the Source Tone to the Tone currently selected.

COPY PAGE This copies only the parameters of the Source Tone which are shown in this Display to those of the Tone currently selected.

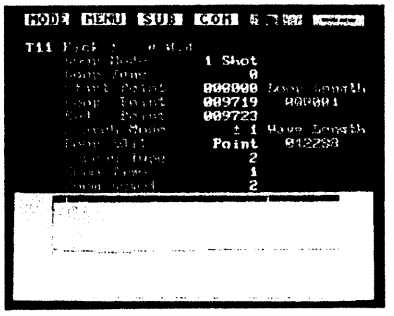
INT ALL This initializes all the parameters of the Tone currently called.

INT PAGE This initializes only the parameters which are shown in this Display.
☞**The default values of the parameters are shown on page 114.**

SWAP ALL This swaps all the parameters of the Tone currently called with those of the source Tone.

SWAP PAGE This swaps only the parameters shown in the Display with those of the Source Tone.

Loop

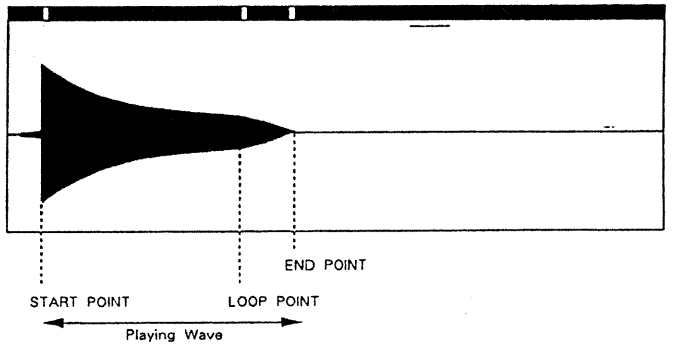


Preparation 1 **Open the Mode Menu and select EDIT, to open the Edit menu.**

Preparation 2 **Select [Loop].**

One Shot is playing a sample only once, therefore the sound disappears instantaneously. Reverse is playing a sample once in a reverse direction. If you wish the sample to be played longer than just once, Looping lets the wave data or a part of the wave data play as long as you push a key. One Shot may be good for percussive sounds, and Looping is ideal for flute or violin.

The sampled wave can have a Start Point, End Point and Loop Point. The Start Point is where the S−330 starts playing the sample, and the End Point is where playback ends. When you play a key, the sample plays normally until it reaches the End point then it goes back to the Loop point and re−plays through the loop. The Looping process continues for as long as the key is pressed.



In this menu, you can set the Start Point, End Point, Loop Point, and other parameters for looping and Auto Loop that opens a command window to let the S−330 detect the Loop Point itself.

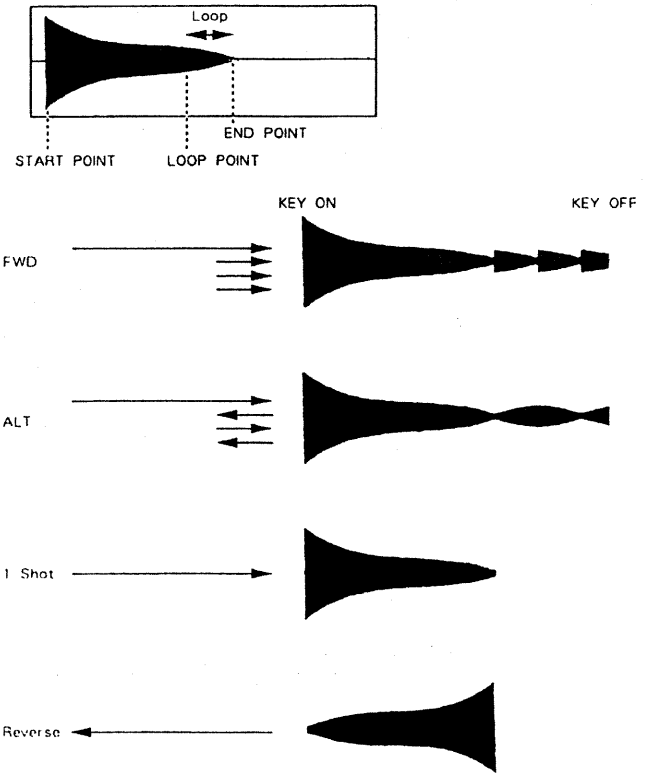
[Calling the Tone to be edited]

The number and the name of the selected Tone is shown at the upper left of the Display.

***Opening the Sub Menu shows the Tone List display which you can watch while selecting a Tone. When you finish selecting a Tone number, push the SUB MENU button or the right side button on the Mouse to return the normal display. (See pages 37 and 38.)**

[Setting Loop Mode]

Loop Mode



FWD (Forward)

When you play a key, the sample plays until it reaches the End point, then repeats playing from the Loop point to the End point.

ALT (Alternate)

The sample plays until it reaches the End point, and repeats playing between the Loop point and the End point.

1Shot (One Shot)

The sample is played from the Start point to the End point once.

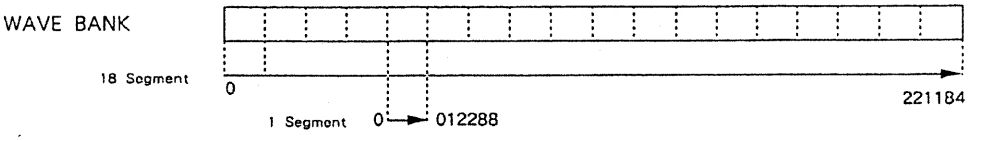
Reverse

The sample plays in a reverse direction (from the End point to the Start point) only once.

[Setting Points]

Start Point
Loop Point
End Point

The points are represented with the positions in memory. This is called Address. The beginning of the wave data is address 0. The last point of the wave of the shortest sampling time (0.4 sec at 30kHz sampling) is 012288 address. The last point of the wave data that uses the entire Wave Bank is 221184 address (7.2 seconds at 30kHz sampling).



The address can be set with the INC and DEC buttons or the buttons on the Mouse. How the address is actually changed by pushing the INC and DEC buttons or the buttons on the Mouse is determined by the following Search modes.

Search Mode

This selects how the address actually changes by one push of the button.

[±1] Address changes in single steps.

[±114] Address changes in 114 steps.

[Peak] The S−330 searches the peaks of waves, advancing from one peak to another.

Loop Edit

This selects one of the two methods of loop setting.

[Point]

The Loop point and the End point can be separately set.

[Length]

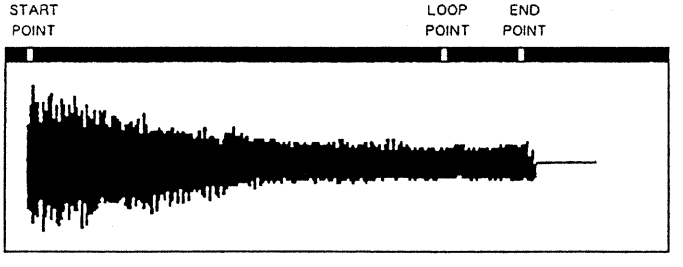
Moving the End point changes the Loop point together with the End point, but the Loop length is not affected. This is useful to change the place of the wave for looping in the FWD Loop Mode.

Screen Types

Three screens are provided for setting the Start Point, Loop Point and the End Point. As you play the keyboard, set the points using these three screens.

TYPE1

The entire shape of the waveform can be seen in this screen. Whether the wave is long or short, the entire wave is shown all over the Display. The Start point, Loop point and the End point are shown as small digits on the belt line above the wave display. Here, you may set the points roughly.

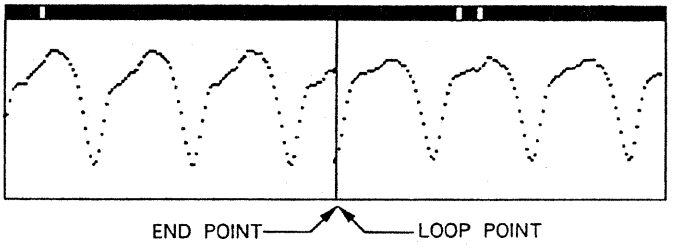


TYPE2

In this screen, you can make a loop. You can make a stable sustain sound more successfully if using the continuation of similar waves.

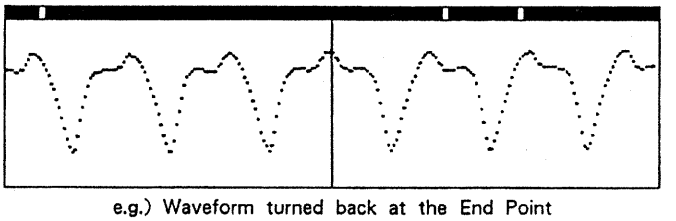
When the Loop Mode FWD (Forward) is selected, the left side of the center line shows the waveform up to the End point, and the right side shows the waveform from the Loop point. By connecting waves deftly on this line, a natural sustain sound can be obtained.

FWD



In the Loop Mode ALT (Alternate), the center line becomes the Loop point when the cursor is put on the Loop position. Therefore, you can see the waveform turned back at the Loop point. When the cursor is on the End position, the waveform is turned back at the End point. In this mode, though, looping is normally quite difficult.

ALT

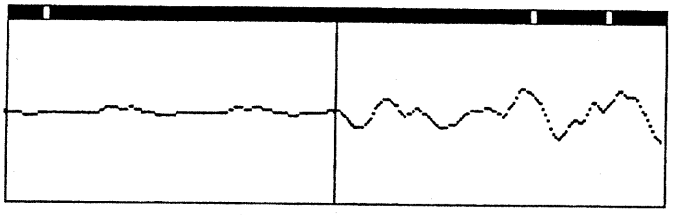


e.g.) Waveform turned back at the End Point

TYPE3

In this screen, each point can be finely seen.

When the cursor is positioned at the Start, the center line becomes the Start point, at the Loop, the same line is the Loop point, and at the End, it is the End point.



e.g.) Setting Start Point

Zoom Time

This can enlarge or diminish the wave in [TYPE2] and [TYPE3] screens in the direction of Time.

Zoom Level

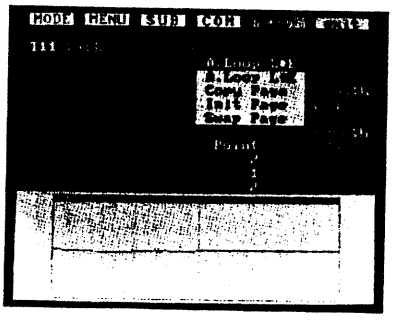
This can enlarge or diminish the wave in [TYPE2] and [TYPE3] screens in the direction of Level.

[Setting Loop Tune]

Loop Tune **[−64 to 0 to 63]**

Before entering a loop and after leaving the loop, the pitch may differ. If so, adjust the pitch of a loop here.

[Executing the Commands]



INT initializes the display's Parameters of the Tone currently called. COPY copies the Parameters of a source Tone to the Tone currently called. SWAP swaps the Parameters of a source Tone with the Tone currently called.

● Auto Loop

It is possible to make the S−330's internal computer find out the Loop point and the End point for FWD looping. This is called Auto Looping. The Auto Loop function can find out the new Loop point and the End point between the Loop point and the End point currently set.

A.Loop L→E

This mode searches through the loop from the Loop point to the End point.

A.Loop L←E

This mode searches through the loop from the End point to the Loop point.

***The Auto Loop may not be able to find a loop when the range of the loop you set is too short or the waveform is not consistent. Set the loop fairly long and try with a different loop length.**

***Auto Loop searches only for a FWD loop, therefore, executing the Auto Loop automatically turns the Loop Mode to FWD.**

● Initializing, Copying and Swapping Parameters

INT initializes the Parameters of the Tone currently called. COPY copies the Parameters of a source Tone to the Tone currently called. SWAP swaps the Parameters of a source Tone with the Tone currently called.

To assign the source Tone for COPY or SWAP, open the Sub Menu. Then without moving the Cursor, push the Execute Button or the left side button on the Mouse to change the Tone List for selecting a source Tone for COPY or SWAP command.

Opening the command window, the Source Tone appears on the Message Line.

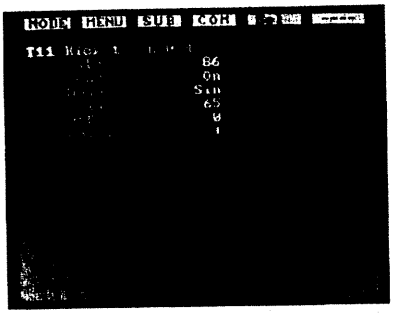
COPY PAGE This copies only the parameters of the Source Tone which are shown in this Display to those of the Tone currently selected.

INT PAGE This initializes only the parameters which are shown in this Display.
☞The default values of the parameters are shown on page 114.

Swap Page This swaps only the parameters of the Source Tone which are shown in this Display with those of the Tone currently selected.

LFO

The LFO controls pitch modulation, TVF and TVA.



Preparation 1 Open the Mode Menu and select EDIT, to open the Edit menu.

Preparation 2 Select [LFO].

[Calling the Tone to be edited]

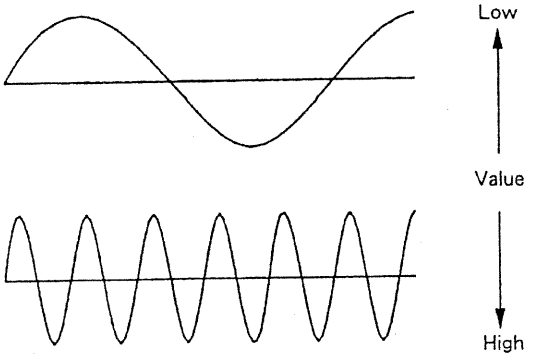
The number and the name of the selected Tone is shown at the upper left of the Display.

***Opening the Sub Menu shows the Tone List display which you can watch while selecting a Tone. When you finish selecting a Tone number, push the SUB MENU button or the right side button on the Mouse to return the normal display. (See pages 37 and 38.)**

[LFO Setting]

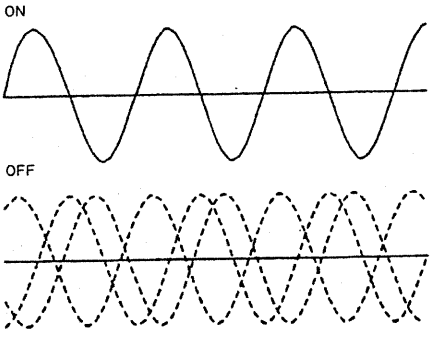
Rate **[0 to 127]**

This sets the speed of the LFO modulation. Higher values increase the speed.



Sync **[On/Off]**

To start the LFO modulation at zero phase, set this to [On].



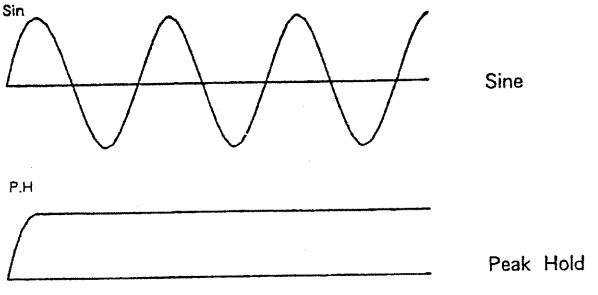
Mode

[Sin] (Sine)

Waveform of the LFO modulation is a sine wave.

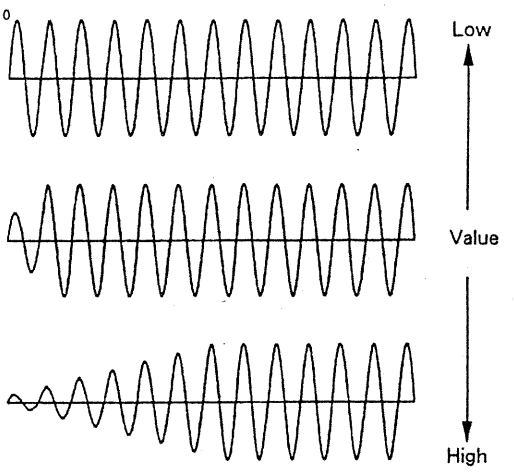
[P.H] (Peak Hold)

When the LFO wave reaches its peak, it is sustained.



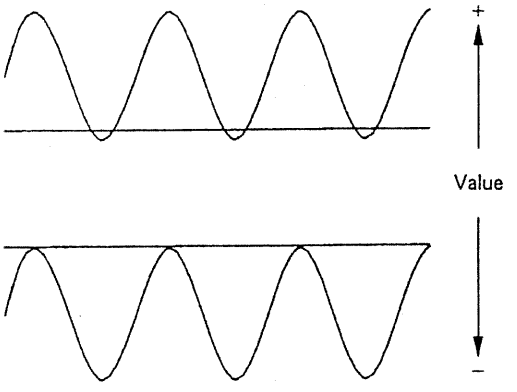
Delay **[0 to 127]**

This can increase the width of the LFO wave gradually. Higher values make the time needed for the wave to reach the set depth longer.



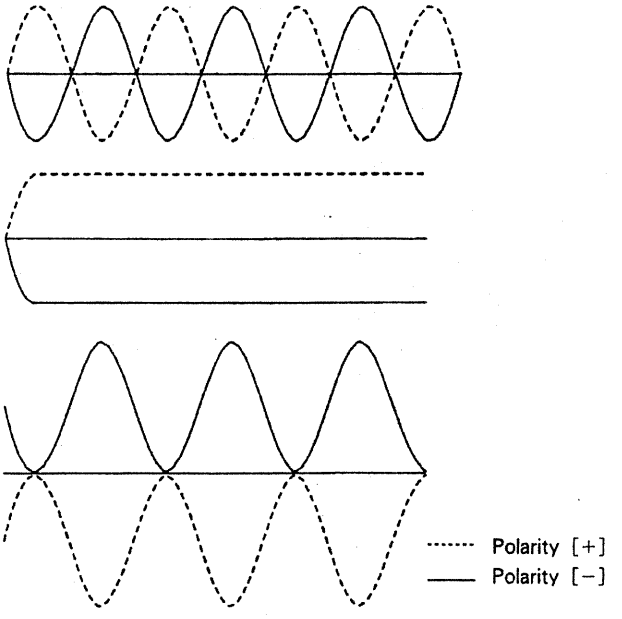
Offset **[−64 to 0 to 63]**

The LFO wave can be moved up or down in pitch.



Polarity [+/−]

[−] setting makes reversed wave.

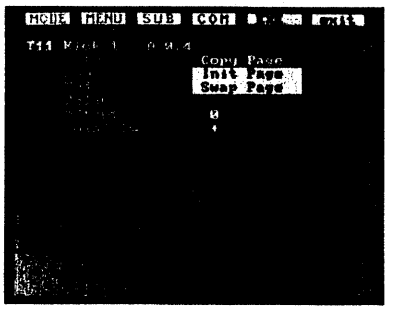


LFO Depth can be set for each Pitch modulation, TVF and TVA.

Pitch Modulation LFO Depth →Page 72
TVF LFO Depth →Page 87
TVA LFO Depth→ Page 92

[Executing the Commands]

● Initializing, Copying and Swapping Parameters

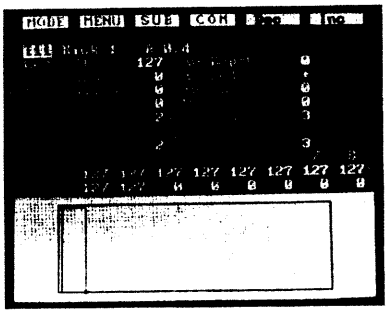


INT initializes the display's Parameters of the Tone currently called. COPY copies the Parameters of a source Tone to the Tone currently called. SWAP swaps the Parameters of a source Tone with the Tone currently called.

The contents of the Commands are exactly the same as those prepared for [Loop] menu. Refer to page 81 .

TVF

Unlike the static digital filter in the UTILITIES section, the TVF can change the tone of the sample through time.
The TVF determines the depth and the time of the effect obtained in the digital Lowpass filter. Set the Tone Parameter [TVF] to [On] (page 73) to activate the TVF.



Preparation 1 Open the Mode Menu and select EDIT, to open the Edit menu.

Preparation 2 Select [TVF].

[Calling the Tone to be edited]

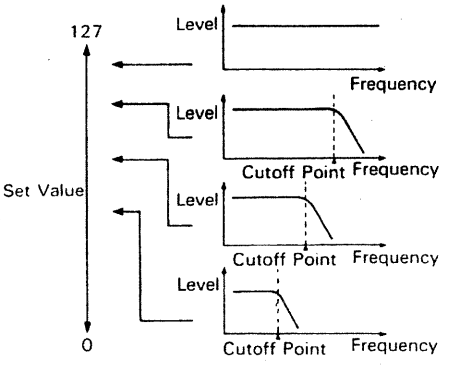
The number and the name of the selected Tone is shown at the upper left of the Display.

***Opening the Sub Menu shows the Tone List display which you can watch while selecting a Tone. When you finish selecting a Tone number, push the SUB MENU button or the right side button on the Mouse to return the normal display. (See pages 37 and 38.)**

[Setting TVF]

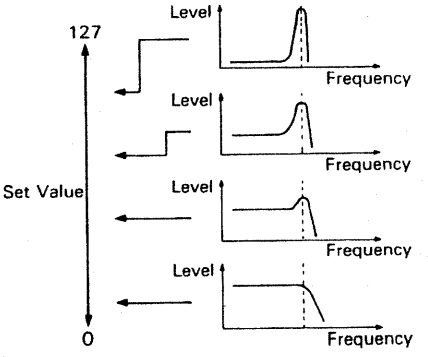
Cutoff (Cutoff Frequency) **[1 to 127]**

This sets the basic cutoff point of the TVF. As you lower the value, higher frequencies are removed and the waveform gradually become an approximation of a sine wave, then the sound will finally fade out.



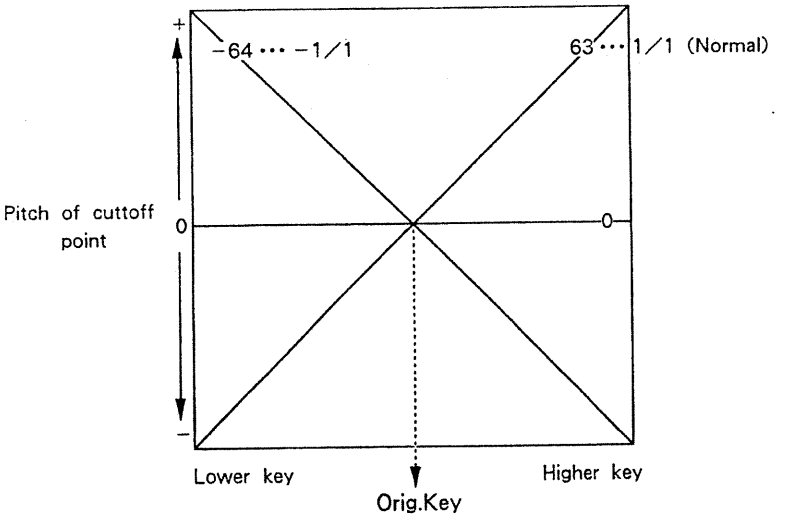
Resonance **[0 to 127]**

This boosts the cutoff point. As you increase the value, specific harmonics are emphasized and the sound will become more unusual, more electronic in nature.



Key Follow (of Cutoff Point) **[−64 to 0 to 63]**

Key Follow can change the cutoff point depending on the key played, based on the pitch of the Original key.



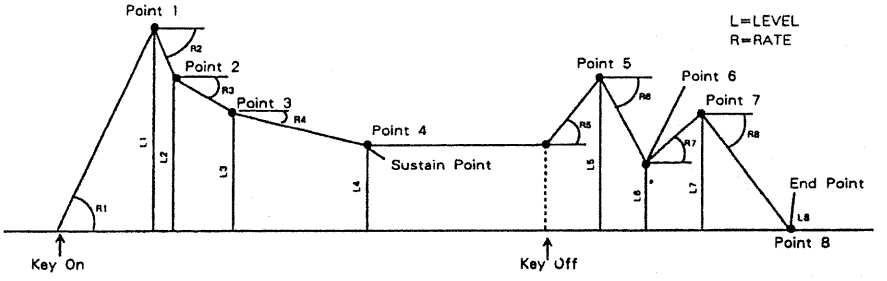
[TVF Modulation Control]

LFO Depth (TVF) **[0 to 127]**

If you wish to modulate cutoff frequencies by using the LFO, set the depth of LFO here. How the cutoff frequencies actually change is determined by the [LFO] menu.

[TVF EG Break Points]

Up to eight break points (rates and levels) can be set for making an envelope curve that controls the cutoff point of the Lowpass filter.



Rate **[1 to 127]**

This is a slide from a break point to the next one. Higher values make steeper slopes.

Level **[0 to 127]**

This sets the cutoff point of a break point.

SUS (Sustain Point) **[1 to 7]**

This sets the cutoff point to be sustained until the key is released.

***It is not possible to set this after the end point.**

END (End Point) **[2 to 8]**

This is the end of the curve.

***It is not possible to set this before the sustain point.**

[Enlarging the Envelope Display]

Disp Zoom

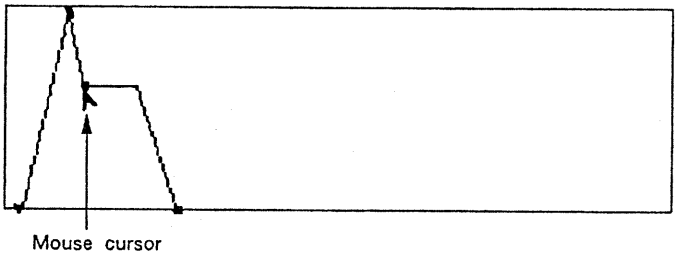
This can enlarge or diminish the envelope display in the direction of time.

[Setting Break Points with the Mouse]

Using the Mouse, you can set the Break points directly.

Preparation **Set the Sustain point and End point.**

Step 1 **Move the cursor to the Break point which is to be rewritten, and push the left side button on the Mouse.**



The Break point changes to red.

Step 2 **Move the cursor to the new position, and push the left side button on the Mouse again.**

If the new Break point is positioned beyond the Break points previously set, they will be moved further to the right.

Pushing the right side button on the Mouse will return the Break points to the previous positions.

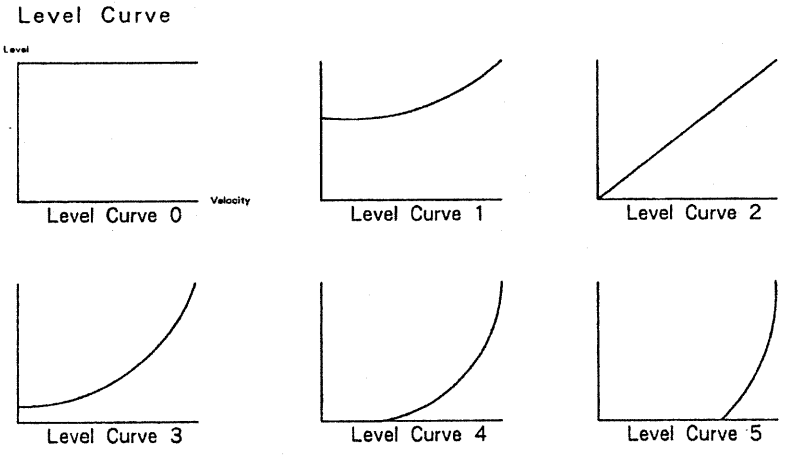
***The new Break point cannot be positioned to the left of an existing break point.**

***When you push the button on the Mouse to set a new Break point, the set point may be slightly different to the cursor position. This happens because the resolution is 1/128 for Level, and 1/127 for Rate.**

[Setting TVF EG Controls]

Level Curve **[0 to 5]**

This curve controls the cutoff point of the envelope by the style of playing the keyboard.

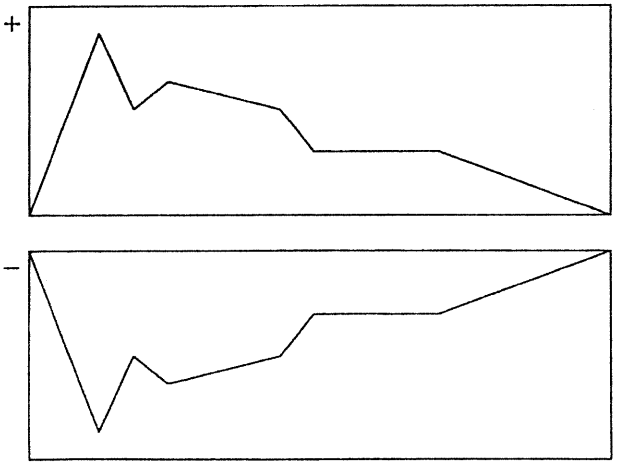


EG Depth (TVF EG Depth) **[0 to 127]**

This determines the depth of the envelope control on the cutoff point.

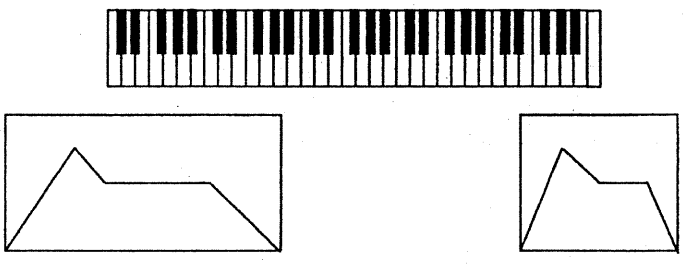
EG Pol (TVF EG Polarity) [+/−]

[−] reverses the envelope curve.



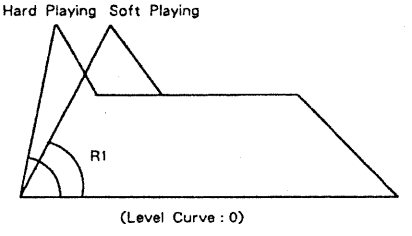
Key–Rate **[0 to 127]**

This can change the curve of the envelope depending on which key is played. Higher values make a steeper curve, and lower values a mild curve.



Vel–Rate (Velocity Rate) **[0 to 127]**

This can change R1 of the envelope curve. At higher values, the curve becomes steeper by harder playing, and at lower values, the curve is milder.



[Executing the Commands]

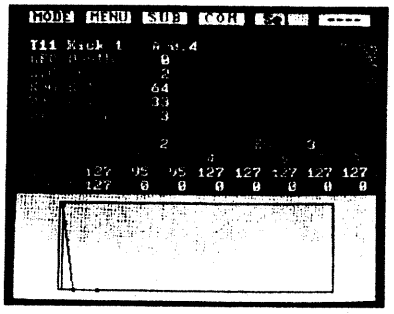
● Initializing, Copying and Swapping Parameters

INT initializes the Parameters of the Tone currently called in the Display. COPY copies the Parameters of a source Tone to the Tone currently called. SWAP swaps the Parameters of a source Tone with the Tone currently called.

The contents of the Commands are exactly the same as those prepared for [Loop] menu. Refer to page 81.

TVA

TVA contains various elements that control the volume.



Preparation 1 Open the Mode Menu and select EDIT, to open the Edit menu.

Preparation 2 Select [TVA].

[Calling the Tone to be edited]

The number and the name of the selected Tone is shown at the upper left of the Display. If you wish to edit a Tone other than the one displayed, change the Tone numbers.

***Opening the Sub Menu shows the Tone List display which you can watch while selecting a Tone. When you finish selecting a Tone number, push the SUB MENU button or the right side button on the Mouse to return the normal display. (See pages 37 and 38.)**

[Setting the TVA Modulation Control]

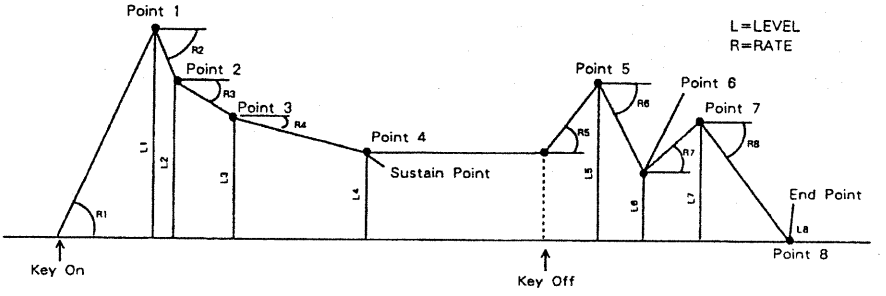
LFO Depth (TVA LFO Depth) **[0 to 127]**

If you wish to modulate volume by using the LFO, set the depth of LFO here. How the volume actually changes is determined by [LFO] menu.

[TVA EG Break Points]

By setting the Break point of an envelope curve, wave data can be read (played back) in different volumes. For instance, the attack of a sound can be purposely delayed, or a decaying effect can be added to a loop. However, the volume of the sampled sound is the maximum, therefore, it is not possible to make the attack quicker than the sampled waveform, or increase the volume, or sustain a one-shot sound.

Up to eight break points (rates and levels) can be set for making an envelope curve that controls the cutoff point of the Lowpass filter.



Rate **[1 to 127]**

This is a slide from a break point to the next one. Higher values make steeper slopes.

Level **[0 to 127]**

This sets the level of a break point.

SUS (Sustain Point) **[1 to 7]**

This sets the level to be sustained until the key is released.

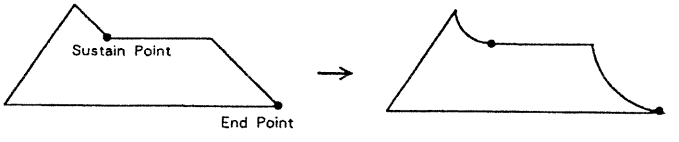
***It is not possible to set this after the end point.**

END (End Point) **[2 to 8]**

This is the end of the curve.

***It is not possible to set this before the sustain point.**

***The Rate before the Sustain point and End point actually draws an exponential curve.**



[Setting Break Points with the Mouse]

Using the Mouse, you can set the Break points directly. The necessary procedure is exactly the same as for the TVF envelope. (See page 89.)

[Enlarging the Envelope Display]

Disp Zoom

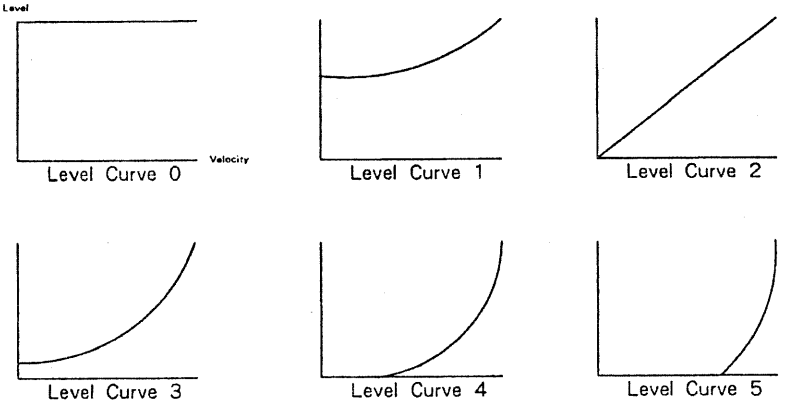
This can enlarge or diminish the envelope display in the direction of time.

[Setting TVA EG Controls]

Level Curve **[0 to 5]**

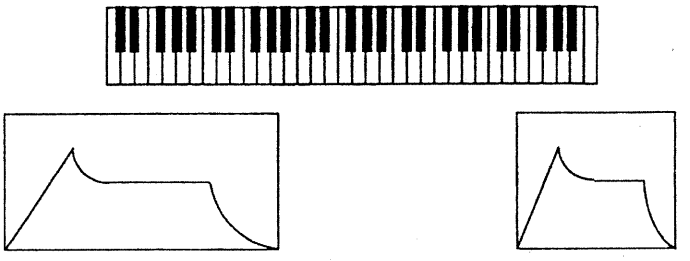
This curve controls the dynamics caused by the style of playing the keyboard.

Level Curve



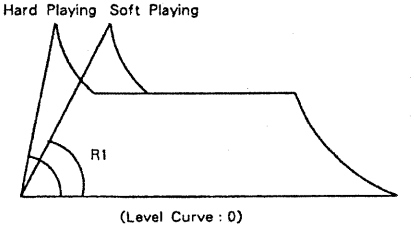
Key–Rate **[0 to 127]**

This can change the curve of the envelope depending on which key is played. Higher values make a steeper curve, and lower values a mild curve.



Vel–Rate (Velocity Rate) **[0 to 127]**

This can change R1 of the envelope curve. At higher values, the curve becomes steeper by playing harder, and at lower values, the curve is milder.



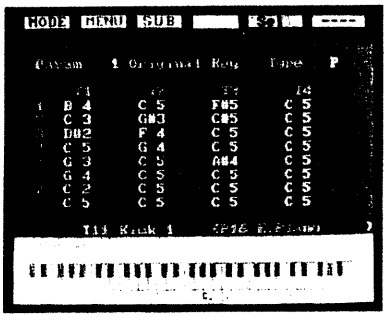
[Executing the Commands]

● Initializing, Copying and Swapping Parameters

INT initializes the Parameters of the Tone currently called in the Display. COPY copies the Parameters of a source Tone to the Tone currently called. SWAP swaps the Parameters of a source Tone with the Tone currently called.

The contents of the Commands are exactly the same as those prepared for [Loop] menu. Refer to page 81.

Tone Map



Preparation 1 Open the Mode Menu and, select EDIT, to open the Edit menu.

Preparation 2 Select [Tone Map].

Call the parameter to be edited in the Display (at the upper left), and move the cursor to the Tone to be changed.

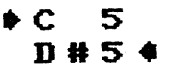
1 Original Key
2 Pitch Follow
3 Pitch Shift
4 Fine Tune
5 P. LFO Depth
6 Pitch Bender
7 After Touch
8 TVF
9 Output Assign
10 Level
11 LFO Rate
12 LFO Sync
13 LFO Mode
14 LFO Delay
15 LFO Offset
16 LFO Polarity
17 TVF Cutoff
18 TVF Resonance
19 TVF Key Fol.
20 TVF LFO Depth
21 TVF L. Curve
22 TVF EG Depth
23 TVF EG Pol.
24 TVF Key-Rate
25 TVF Vel-Rate
26 TVA LFO Depth
27 TVA L. Curve
28 TVA Key-Rate
29 TVA Vel-Rate

[Patch Play with the Tone Map]

Type (Type for Playing) [P/T]

[P] (Patch) type allows you to play the Patch currently called and edit the Tone Parameter.

When a key is played, an arrow lights up on the value of the Tone (s) assigned to that key. Depending on the direction of the arrow, you can tell which of the 1st or 2nd Tone is indicated.



··· 1st Tone assigned to the KEY-ON key.
··· 2nd Tone assigned to the KEY-ON key.

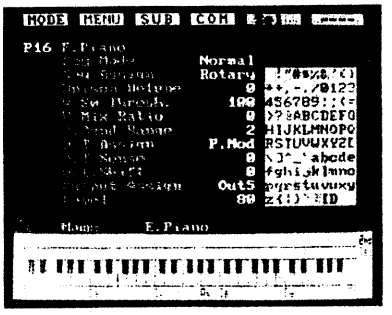
[T] (Tone) type allows you to actually play the Tone which is now indicated with the cursor, and edit the Tone Parameter.

5 Making a Patch

Any two of the 32 Tones can be assigned to a different keyboard range. A combination of the key assignment of Tones and the performance controlling functions (Patch Parameters) makes a Patch.

Patch PRM

In this menu, you can set the controlling performance parameters of a Patch, and open a command window for copying or swapping parameters, or initializing.



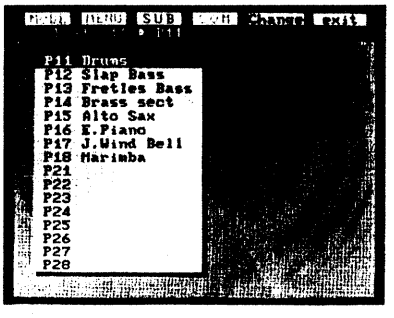
Preparation 1 Open the Mode Menu and select EDIT, to open the Edit menu.

Preparation 2 Select [Patch PRM].

[Calling a Patch]

The Patch currently selected is shown at the upper left corner of the Display. If you wish to call a different Patch, change the numbers.

***Opening the Sub Menu will show the Patch List Display which you can watch for selecting the Patch to be edited. When you finish selecting a Patch number, push the SUB MENU button or the right side button on the Mouse to return the normal display.**



[Parameter Setting]

Key Mode

One of the following five Key Modes can be selected.

The S−330 allows you to assign two Tones (the 1st and 2nd Tones) to any key you like in the Split Set display (page 105). The Key mode selection can also be done in the Split Set display.

***In any Key mode, each Tone will sound with a set level curve (see page 94) depending on how hard you play the key.**

[Normal]

The S−330 sounds the 1st Tone assigned.

[Unison]

The S−330 sounds the 1st Tone assigned (two modules). It is possible to detune one of the sounds slightly.
In this mode, the possible sounding voices are half of the Normal mode.

[V−SW] (Velocity Switch)

The S−330 sounds the 1st or 2nd Tones assigned.
Playing the key harder than a certain level (=Velocity Switch Threshold) will sound the 2nd Tone, weaker will sound the 1st Tone.

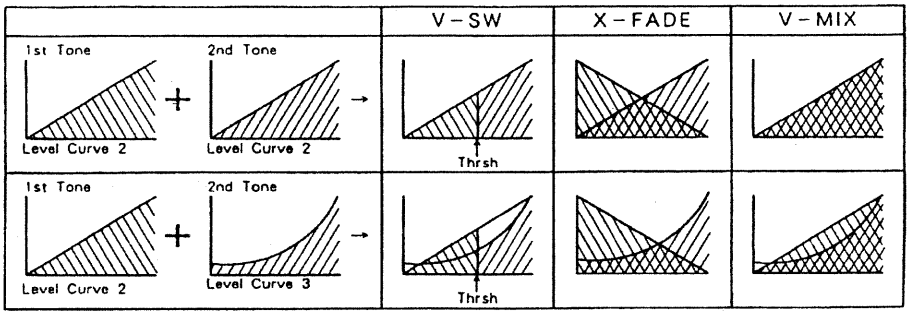
[X−Fade] (Velocity Cross Fade)

The S−330 sounds the 1st and 2nd Tones assigned.
Depending on how hard you play the key, the volume balance of the 1st and the 2nd Tones differs. The level curve of the 1st Tone is inverted.
In this mode, the possible sounding voices are half of the Normal mode.

[V−MIX] (Velocity Mix)

The S−330 sounds the 1st and 2nd Tones assigned.
The 1st and the 2nd Tones are played simultaneously.
In this mode, the possible sounding voices are half of the Normal mode.

***For playing in stereo, such as a compact disk, laser disk or DAT, you must sample right and left separately, match the start points, then play in the V−Mix mode. You should set the Patch Parameter, [Output Assign], so that each Tone is separately output from the assigned output jack. This way, the 1st and 2nd Tones are sent separately.**



Key Assign **[Rotary/Fix]**

When the S−330 receives a sequence of Note messages, it plays different voice modules sequentially. However, if set to [Fix], the S−330 plays the same module only when receiving the Note messages of the same number. In other words, [Fix] plays the next sound without keeping the previous decaying sound, and therefore can be effective for creating the nuance of a percussive trill effect.

Unison Detune **[−64 to 63]**

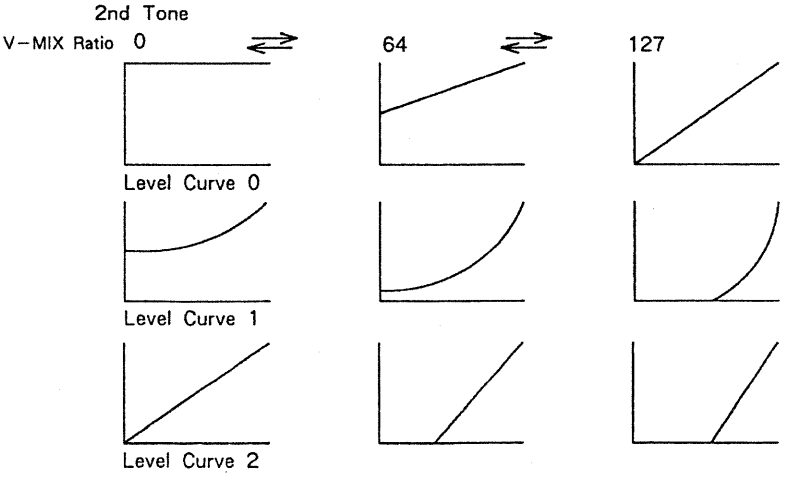
When the Unison Key Mode is selected, one of the sounds can be slightly detuned. 50 is roughly half of a semi−tone.

V−SW Thresh (Velocity Switch Threshold) **[0 to 127]**

When the V−SW Key Mode is selected, this determines the threshold level for the two Tones. Higher values require harder playing to sound a different Tone.

V−MIX Ratio (Velocity Mix Ratio) **[0 to 127]**

When the V−MIX Key Mode is selected, the level curve of the 2nd Tone can be changed as shown in the picture. At zero, the volume obtained is exactly as in the set level curve.



P. Bend Range **[0 to 12]**

This sets the maximum pitch alteration caused by moving the bender/ modulation lever to the right or left extremes. Each number represents a semi−tone : 2 is major 2nd, 3 is minor 3rd, 4 is major 3rd, 7 is perfect 5th and 12 is one octave.

***Remember that the pitch cannot exceed the original pitch by more than 2 octaves, this applies to the pitch bend lever as well.**

***If you wish the S−330 to receive Bender and Bend Range messages, set the Receive Switch of [Bend] and [B.Rng] to [On] in the [Message] menu in the MIDI mode.**

A.T. Assign (Aftertouch Assign)

This can select one of the following four effects caused by Aftertouch.

***Aftertouch is the effect obtained on the MIDI keyboard that features the aftertouch function by pushing the key harder after playing it in a normal manner.**

***If you wish the S−330 to receive Aftertouch messages, set the Receive Switch of [A.T] to [On] in the [Message] menu in the MIDI mode.**

[P.Mod] (Modulation)

Aftertouch controls the vibrato effect.

[Volume]

Aftertouch controls the volume of the sound.

[Cut−off]

Aftertouch controls the Cut−off point of the sound.

[Bend +] (Bend Up)

Aftertouch increases the pitch of the sound.

[Bend −] (Bend Down)

Aftertouch lowers the pitch of the sound.

***The pitch bend range of Bend + and Bend − is determined by both A.T. Sense and Bend Range.**

A.T. Sense (Aftertouch Sensitivity) **[0 to 127]**

This sets the sensitivity of the aftertouch effect. At 127, the effect is at its maximum.

Oct Shift (Octave Shift) **[−2, −1, 0, 1, 2]**

This can shift the pitch of the entire keyboard from −2 to 2 octaves in an octave step.

Output Assign (Assignment of the Output Jacks) **[Out 1 to Out 8, Tone]**

[Out 1] to [Out 8] : The Patch currently in use is sent out from the selected output jack (1 to 8).

[Tone] : Tones are sent out from the output jacks separately as set with the relevant Tone Parameter in each Tone.(Page 73)

***In the [Tone] mode, the maximum number of voices to be output is decreased.**

Level (Patch Level) **[0 to 127]**

This can set the output level of each Patch separately. At 127, each Tone assigned to the Patch is played at its set level.

Name (Patch Name)

Up to 12 letters can be used for naming a Patch.

On the S−330, a Patch name is entered by using the INC and DEC buttons. For moving the cursor, use the Cursor Buttons.

On the RC−100, a Patch name can also be entered with the Ten Key Pad. Each push of the number key will call a letter in the sequence shown below.

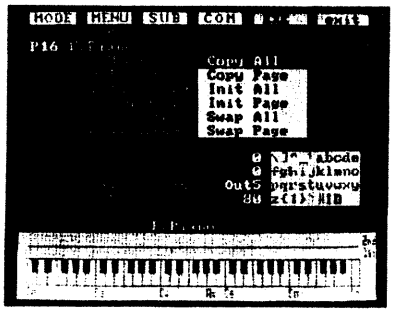
1	→A→B→C	7	S→T→U→
2	→D→E→F	8	→V→W→X
3	→G→H→I	9	→Y→Z→/
4	→J→K→L	0	→+→−→×
5	→M→N→O	ENT	Space
6	→P→Q→R		

The Mouse allows you to use letters in the Palette for writing a Patch name. Move the cursor to the position where you wish to write a letter and push the button at the left side, and the cursor appears in the Palette. Select a letter you want and push the button at the left to enter it. "I" is for inserting a space, and "D" is for deleting. To return the cursor from the Palette, push the button at the right side.

[Executing the Commands]

In this menu, you can initialize the Parameters of the Patch currently called, copy the Parameters of another Patch, or swap.

To assign the source Patch for COPY or SWAP, open the Sub Menu. Then without moving the Cursor, push the Execute Button or the left side button on the Mouse to change the Patch List for selecting a source Patch for COPY or SWAP command.



Opening the Command Window will show the selected source Patch on the Message Line.

Copy All This copies all the parameters included in the source Patch to the selected Patch.

Copy Page Only the parameters of the source Patch shown in this Display are copied to the selected Patch.

Init ALL This initializes all the parameters of the selected Patch.

Init PAGE This initializes only the parameters of the selected Patch shown in this Display.

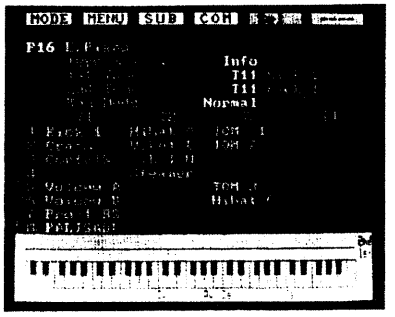
☞**The default values of the parameters are shown on page 114.**

Swap ALL This swaps all the parameters of the selected Patch with those of the source Patch.

Swap Page Only the parameters of the selected Patch shown in this Display are swapped with the source Patch.

Split

Tones in each Patch can be assigned to the Note Numbers you like.



Preparation 1 Open the Mode Menu and select EDIT, to open the Edit menu.

Preparation 2 Select [Split].

[Calling a Patch to be edited]

The Patch currently selected is shown at the upper left corner of the Display. If you wish to call a different Patch, change the numbers.

***Opening the Sub Menu will show the Patch List Display which you can watch for selecting the Patch to be edited. When you finish selecting a Patch number, push the SUB MENU button or the right side button on the Mouse to return the normal display.**

[Check and change of the Key Mode]

Key mode

The Key mode of the Patch currently used can be checked and changed.

■ In the Normal or Unison Key Mode

The 1st Tone assigned is played in the Key Mode currently selected. The 2nd Tone is irrelevant for the performance.

■ In the V−SW, X−Fade or V−MIX Key Mode

Both the 1st and the 2nd Tones assigned are played in the current Key Mode.

***In the lower part of the Display (keyboard indication), Split Points are shown as vertical lines.**

[Monitoring Tone Assignment (Info)]

When [Info] Type is selected, you can monitor the Tones (1st and 2nd Tones) assigned to each key.

○ Monitor by receiving Key On messages

The Tone numbers, Tone names of the 1st and 2nd Tones assigned to the received Key Number can be monitored. The 1st Tone is represented by ➡, and the 2nd Tone by ⬅.

○ Monitor by indicating the key in the Display with Mouse

Indicate the key in the Display with the Mouse, then push the left side button on the Mouse, and the Tone numbers Tone names of the 1st and 2nd Tones assigned can be monitored. The 1st Tone is represented by ➡, and the 2nd Tone by ⬅.

***To return the cursor to the position where the Parameters are indicated, push the right side button on the Mouse.**

[Tone Assignment] (Set)

Two Tones, the 1st and 2nd Tones are assigned to each key. To change the assignment of both Tones, select [1st&2nd] of the "Type Select", to change only the 1st Tone, select [1st], and to change only the 2nd Tone select [2nd]. When [Off] is selected, no sound is heard.

1st Tone **[T11 to T48]**

Call the 1st Tone to be assigned in the Display.

2nd Tone **[T11 to T48]**

Call the 2nd Tone to be assigned in the Display.

○Assigning the Tone by receiving Key On messages

When the Key On messages are received, the Tone is assigned to the corresponding Key number. When a MIDI keyboard is connected, the Tone is assigned to the keys pressed, the sound of the new Tone just assigned is heard.

○Assigning the Tone by indicating the key in the Display with the Mouse

Indicate the key in the Display with the Mouse, then push the left side button on the Mouse, and the tone is assigned to that key.

***To return the cursor to the position where the Parameters are indicated, push the right side button on the Mouse.**

[Octave Shift of the Display]

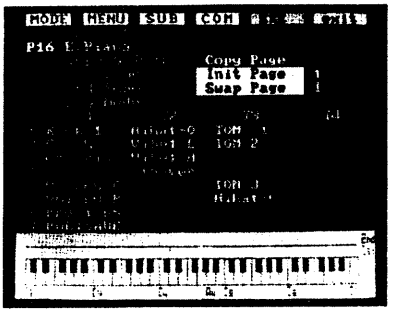
Oct Shift **[−2, −1, 0, 1, 2]**

The S−330 can be played from C0 to C9. (The highest pitch, however, is two octave above the Original Key). Using the Mouse, the pitch range of the keyboard shown in the Display can be shifted up or down. Make the cursor triangle shape, by moving it to the right or left of the keyboard end, then push the button on the left side on the Mouse. This shifts the keyboard by one octave.

[Executing the Commands]

In this menu, you can initialize the Parameters of the Patch for split setting currently called, copy the Parameters of another Patch, or swap.

To assign the source Patch for COPY or SWAP, open the Sub Menu. Then without moving the Cursor, push the Execute Button or the left side button on the Mouse to change the Patch List for selecting a source Patch for COPY or SWAP command.



Opening the Command Window will show the selected source Patch on the Message Line.

Copy Page Only the parameters of the source Patch shown in this Display are copied to the selected Patch.

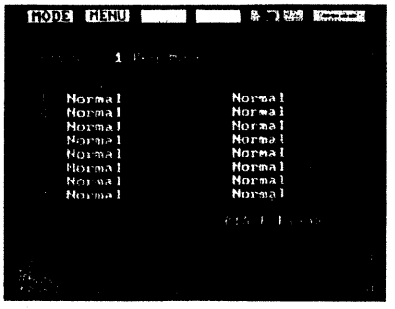
Init PAGE This initializes only the parameters of the selected Patch shown in this Display.

☞**The default values of the parameters are shown on page 114.**

Swap Page Only the parameters of the source Patch shown in this Display are swapped with the selected Patch.

Patch Map

In this menu, you can call each one of the Patch Parameters and set the values of all Patches.



Preparation 1 **Open the Mode Menu and select EDIT, to open the Edit menu.**

Preparation 2 **Select [Patch Map].**

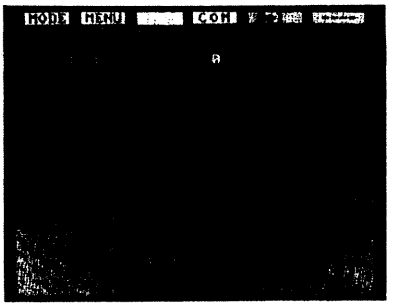
Call the parameter you wish to edit at the upper left corner of the Display, then move the cursor to the value of the parameter and change it.

1 Key Mode
2 Key Assign
3 Unison Detune
4 V-Sw Thresh
5 V-Mix Ratio
6 P. Bend Range
7 A.T Assign
8 A.T Sense
9 Output Assign
10 Level

6 S-330's Function Mode

The Function mode allows you to set the basic functions of the S-330 and initialize the Parameters other than the Tone Parameters.

Master



Preparation 1 Open the Mode Menu and select FUNC, to open the Func menu.

Preparation 2 Select [Master].

[Setting the Master Tune]

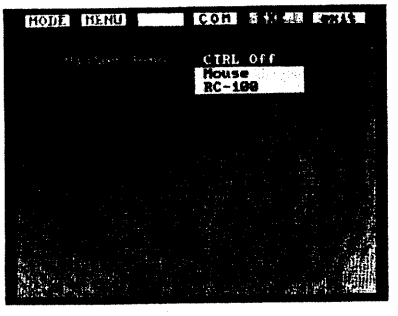
Master Tune **[−64 to 0 to 63]**

This does the overall tuning of the S−330. At zero, the pitch of the sound is exactly the same as set with the relevant Tone Parameters.

[Selecting the EXT CTRL Switch]

The S−330 can be controlled with the buttons on the panel, the optional Mouse or the controller RC−100. Depending on the controller you use, the functions to be used on the S−330 differ. Therefore, it is necessary to set the appropriate Controller mode depending on which of the controllers you use.

To use the Mouse or RC−100, open the Command Window, then connect the unit to the S−330. Also, when changing the connected devices, such as disconnecting the Mouse for connecting the RC−100, be sure to open the Command Window before changing connections.



The Command Window shows the following commands.

The EXT CTRL setting is not saved on a disk as a Function Prameter. To save it on a disk, execute "Save SYS" as explained on page 138.

PROCEDURE

■When using the S-330 on its own

[CTRL OFF]

Step 1 Select [OFF].

The Display shows "Don't Connect EXT CTRL".

Step 2 Make sure that nothing is connected to the EXT CTRL jack.

Step 3 Push the EXECUTE button on the S-330 (the Command Window closes), and the S-330 can be operated with the buttons on its front panel.

■When connecting the Mouse to the S-330

[Mouse]

Step 1 Select [Mouse].

The Display shows "Connect Mouse to EXT CTRL".

Step 2 Connect the Mouse to the EXT CTRL jack.

Step 3 Push the EXECUTE button on the S-330's panel (the Command Window closes), and the S-330 can be controlled with the Mouse.

■When connecting the RC-100 to the S-330

[RC-100]

Step 1 Select [RC-100].

The Display shows "Connect RC-100 to EXT CTRL. And push RESET On RC-100".

Step 2 Connect the RC-100 to the EXT CTRL Jack.

Step 3 If you wish to use the Mouse, connect the optional Mouse to the EXT CTRL jack on the RC-100.

*Do not connect or disconnect the Mouse while the RC-100 is being operated.

Step 4 Push the RESET button on the RC-100.

Step 5 Push the EXECUTE button on the S-330 (the Command Window closes), and the S-330 can be controlled with the RC-100.

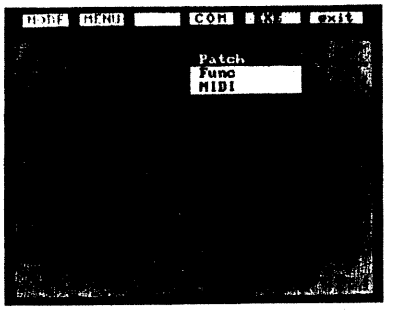
NOTE

If the [Mouse] or [RC-100] mode is selected but neither the Mouse nor the RC-100 is connected to the S-330, the S-330 does not operate properly with the buttons on its panel.

It is possible to perform this Controller mode selection at power-up. See page 23.

Initialize

This resets the parameters to the default values.



Preparation 1 Open the Mode Menu and select FUNC, to open the Func menu.

Preparation 2 Select [Initialize].

The default values of the parameters are shown in the table below.

● Patch Parameter

Key Mode ..... Normal
Key Assign ..... Rotary
Unison Detune 0
V-Sw Tresh. 64
V-Mix Ratio 0
P. Bend Range 2
A. T. Assign ..... P.Mod.
A. T. Sense 0
Oct. Shift 0
Output Assign Out1
Level 127
Name ..... Space

● Function Parameter

Voice Mode ..... VAL
RX-CH ..... 1~8
Patch ..... P11~18
Level 127
Master Tune 0
OUT/MIX ..... OUT

● MIDI Parmeter

RX-CH ..... 1~8
P. Chg ..... On
Bend ..... On
B. Rng ..... Off
Mod ..... On
Hold ..... On
A. T ..... Off
Vol. ..... Off
Exclusive ..... Off
Device ID 1
Prog # (P11~28) ..... 1~16

● Tone Parameter

Original Key C5
Pitch Follow ..... On
Pitch Shift 0
Fine Tune 0
P. LFO Depth 0
Pitch Bender ..... On
Afeter Touch ..... On
TVF ..... On
Output Assign 1
Level 127
Name (Page) ..... Space
(All) i
(Sampling) ..... s
Loop Mode 1Shot
Start 000000
Loop 000000
End ..... (Last Address)
(Dlete) 000000
Loop Tune 0
LFO Rate 88
LFO Sync ..... On
LFO Mod ..... Sin
LFO Delay 0
LFO Offset 0
LFO Polarity ..... +
TVF Cutoff 127
TVF Resonance 0
TVF EG Sustain 2
TVF EG End 3
TVF EG Rate 1 127
TVF EG Level 1 127
TVF EG Rate 2 127
TVF EG Level 2 127
TVF EG Rate 3 127
TVF EG Level 3 0
TVF EG Rate 4 127
TVF EG Level 4 0
TVF EG Rate 5 127
TVF EG Level 5 0
TVF EG Rate 6 127
TVF EG Level 6 0
TVF EG Rate 7 127
TVF EG Level 7 0
TVF EG Rate 8 127
TVF EG Level 8 0
TVF Key Fol. 0
TVF LFO Depth 0
TVF L.Curve 2
TVF EG Depth 0
TVF EG Pol. ..... +
TVF Key-Rate 0
TVF Vel-Rate 0
TVA EG Sustain 2
TVA EG End 3
TVA EG Rate 1 127
TVA EG Level 1 127
TVA EG Rate 2 127
TVA EG Level 2 127
TVA EG Rate 3 127
TVA EG Level 3 0
TVA EG Rate 4 127
TVA EG Level 4 0
TVA EG Rate 5 127
TVA EG Level 5 0
TVA EG Rate 6 127
TVA EG Level 6 0
TVA EG Rate 7 127
TVA EG Level 7 0
TVA EG Rate 8 127
TVA EG Level 8 0
TVA LFO Depth 0
TVA L. Curve 2
TVA Key-Rate 0
TVA Vel-Rate 0

The following commands are prepared for selecting which parameters are to be initialized.

[**Patch**] This initializes all the Patch parameters.

[**FUNC**] This initializes the parameters set in the Function mode and PLAY mode.

[**MIDI**] This initializes the parameters set in the MIDI mode.

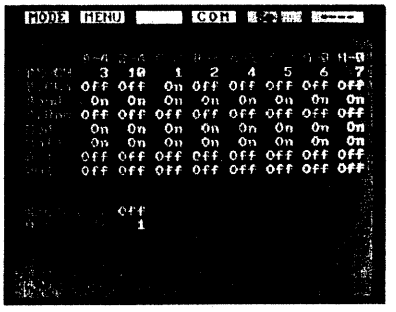
You can initialize the Tone Parameters by using the Command at the Loop, LFO, TVF, TVA menu.

7 MIDI Setting and Monitoring Receive Messages

This mode allows you to set the MIDI parameters or monitor the received MIDI messages.

Message

In this menu, you can set how the MIDI messages in each voice group are received by the S−330.



Preparation 1 **Open the Mode Menu and select MIDI to open the MIDI menu.**

Preparation 2 **Select [Message].**

[Setting MIDI Receive Channel]

RX−CH (Receive Channel) **[1 to 16, Off]**

This sets the receive channel. When set to [Off], no MIDI message is received. This Parameter can be set in the Play mode.

[MIDI Receive Switch]

P.Chg (Program Change) **[On/Off]**

This selects whether to receive the Program Change messages or not.

***When this is set to [On], the Program Change messages sent from an external device select Patches on the S−330. How the Patch numbers correspond with the Program Change numbers can be set in [Prog #] menu.**

Bender **[On/Off]**

This selects whether to receive the Bender messages or not.

Bend Range **[On/Off]**

This selects whether to receive the Bend Range (Control Change RPC No.0) messages or not.

Mod.(Modulation) **[On/Off]**

This selects whether to receive the Modulation (Control Change No. 1) message or not.

Hold **[On/Off]**

This selects whether to receive the Hold (Control Change No.64) messages or not.

A.Touch (Aftertouch) **[On/Off]**

This selects whether to receive the Aftertouch messages or not.

Volume **[On/Off]**

This selects whether to receive the Volume (Control Change No.7) messages or not.

[System Exclusive]

Data strored in the S−330's internal memory can be transferred via Roland MIDI System Exclusive messages.

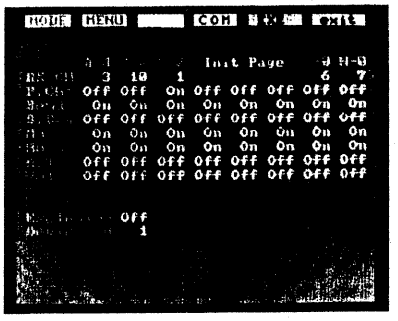
Exclusive **[On/Off]**

This selects whether or not to transfer data using the System Exclusive.

Device ID **[1 to 16]**

Before transferring data, match the number of the Device ID on the relevant devices.

***See MIDI Implimentation at the back of this manual.**

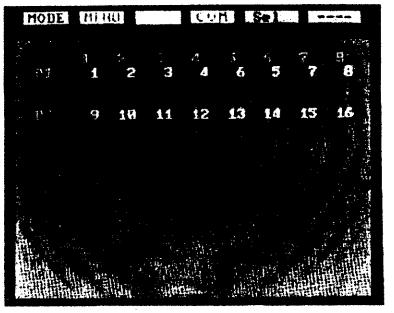


In this menu, you can initialize the Parameters shown in this display

☞The default values of the parameters are shown on page 114.

Prog. Number

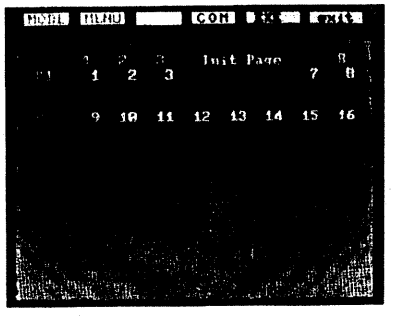
This sets how each Program Change number corresponds to a Patch number from 1 to 128.



Preparation 1 **Open the Mode Menu and select MIDI to open the MIDI menu.**

Preparation 2 **Select [Prog #].**

***Be careful not to assign the same Program Change number to more than one Patch. If so, the smaller Patch number will be given priority.**

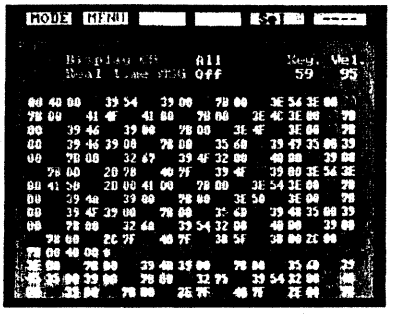


In this menu, you can initialize the Parameters shown in this display

☞**The default values of the parameters are shown on page 114.**

Monitor

In this menu, MIDI messages received at the MIDI IN Connector are displayed in real time as hexadicimal data.



Preparation 1 **Open the Mode Menu and select MIDI to open the MIDI menu.**

Preparation 2 **Select [Monitor].**

Display CH (Channel to be monitored) **[1 to 16, ALL]**

This parameter assigns the channel which you wish to monitor. With [ALL], messages of all channels can be monitored.

Real Time MSG (On/Off of real time messages) **[On/Off]**

By setting this to [On], real time messages can also be displayed.

Red Number·····Status

White Number·····Data

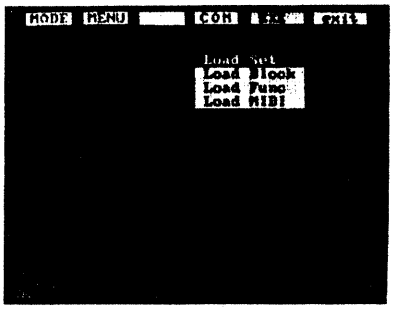
See "MIDI Implementation" at the back of the manual to study the contents of Status and Data.

8 Loading Data From a Disk

The Disk mode allows you to load the data saved on a disk into the S−330, or call the directory of the data stored on the disk.

Load

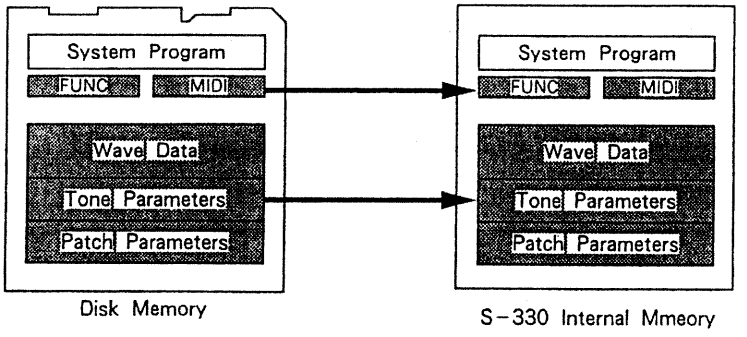
The entire data saved on a disk can be loaded into the internal memory of the S−330.



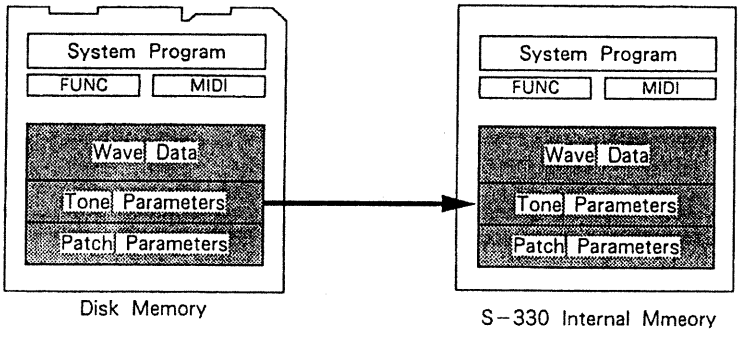
Preparation 1 **Open the Mode Menu and select DISK, to open the Disk menu.**

Preparation 2 **Select [Load] to open the Command Window.**

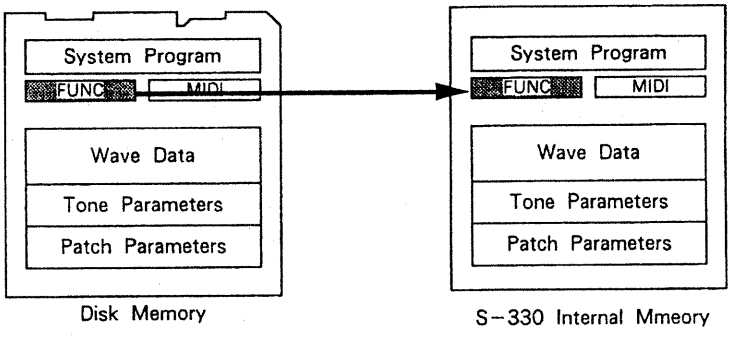
Load Set This loads the entire sound data of one disk.



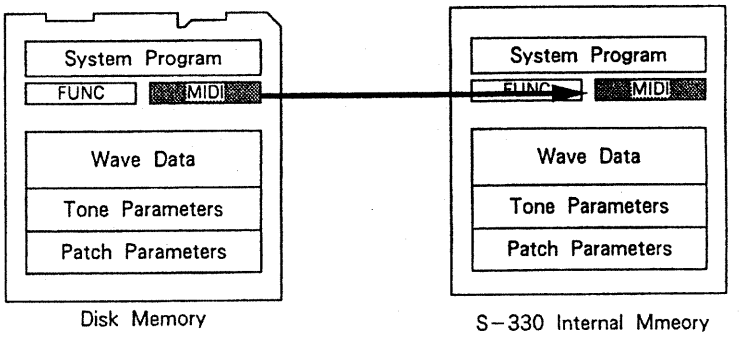
Load Block This loads sound data except for MIDI data and FUNC data.



Load Func This loads only Function data (Parameters set in the Play and Func mode) of a disk.



Load MIDI This loads only MIDI data (Parameters set in the MIDI mode).



Executing Loading

Step 1 **Insert the disk that contains the data to be loaded.**

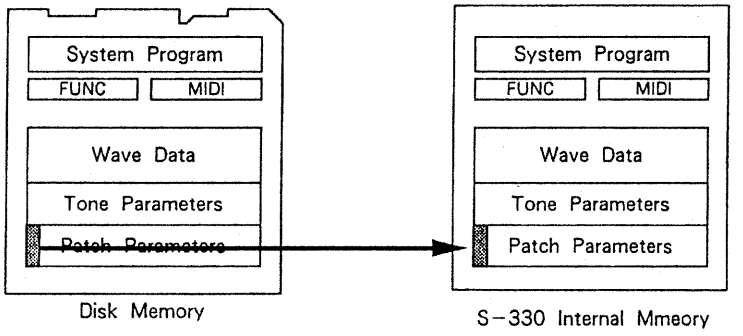
Step 2 **Select the Command you wish to execute, then push the EXECUTE button or the left side button on the Mouse.**

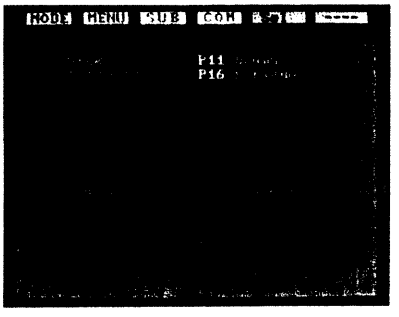
"Now Loading" is shown on the Message Line.

When the number counts down to 00, and **"Complete"** is shown on the message line, loading is completed.

Load P. PRM

Any one of the Patches (Only Patch Parameters) saved on a disk can be loaded into the S−330.





Preparation 1 **Open the Mode Menu and select DISK to open the Disk menu.**

Preparation 2 **Select [Load P.PRM].**

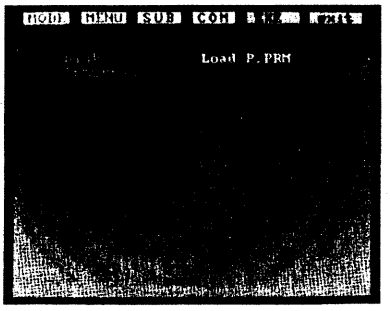
Disk

Open the Sub Menu, select DISK, then select which Patch on the disk is to be loaded.

Internal

This parameter assigns the Patch Number of the destination Patch in the internal memory.

Opening the Sub Menu will call a Patch List which you can use for selecting Disk Patch and Internal Patch. After the Disk Patch is selected by pressing the EXECUTE or the left side button on the Mouse, push the same button again to change to a Patch List for Internal Patch.
When you finish selecting a Patch number, push the SUB MENU button or the right side button on the Mouse to return the normal display.



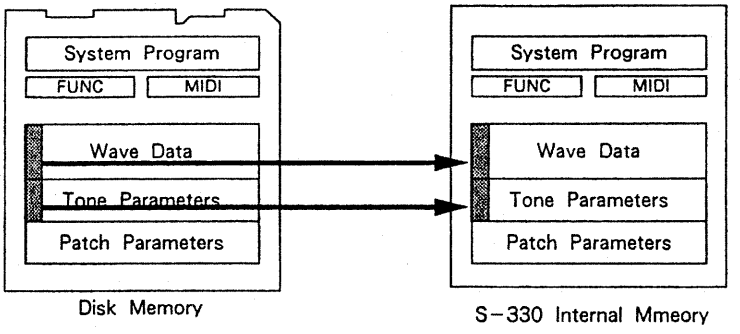
Step 1 **Insert a disk into the Disk Drive.**

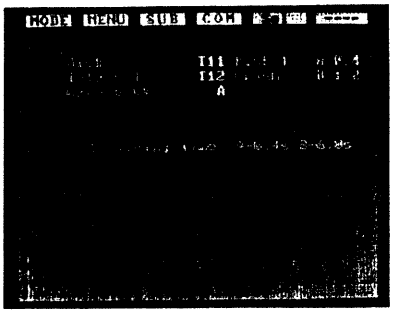
Step 2 **Open the Command Window, then push the EXECUTE button or the left side button on the Mouse.**

When finished, "**Complete**" is shown on the message line.

Load Tone

You can select any one of the Original Tones saved on a disk, and load the Wave data and the Tone Parameters of that Tone into the S−330.





Preparation 1 **Open the Mode Menu and select DISK to open the Disk menu.**

Preparation 2 **Select [Load Tone].**

Disk Open the Sub Menu, select DISK, then, watching the Tone List display, select which Tone on the disk is to be loaded. (See "Tone List Display" on pages 37 and 38.)

Internal This selects a Tone number where the loaded data is to be written. Any of the 64 Tone numbers can be selected.

If a Sub Tone is selected as a destination, the loaded Wave is written into it, and it therefore becomes an Original Tone.

When an Original Tone is selected as a destination, the following will occur in the S−330.

- ○The previous Wave data is erased making a space (=increasing the Remaining Time)
- ○The loaded Wave data is written into the empty space in the selected Wave Bank.
- ○The loaded Tone Parameters are copied.
- ○A Sub Tone that uses the erased Wave data is deleted, becoming an unused Tone.

Opening the Sub Menu will call a Tone List which you can use for selecting Disk Tone and Internal Tone. After the Disk Tone is selected by pressing the EXECUTE or the left side button on the Mouse, push the same button again to change to a Tone List for Internal Tone.
When you finish selecting a Tone number, push the SUB MENU button or the right side button on the Mouse to return the normal display.
See "Tone List Display" on pages 37 and 38.

[Selecting the Wave Bank of the Destination Tone]

Wave Bank **[A/B]**

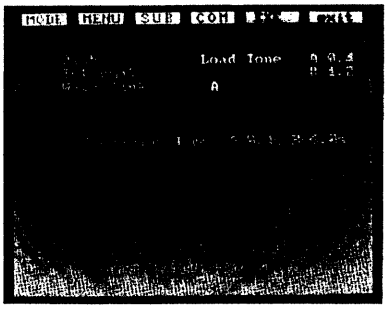
Select wave bank A or B, where the loaded Wave Data is to be written.

[Checking the Remaining Space for Writing]

When there is no space left for writing in the destination Wave Bank, **"Cannot Execute"** is shown when you try to execute, and writing cannot be executed. When the remaining space is insufficient for writing, the excess will be ignored, therefore the Wave data will be cut.

***The remaining time of each Wave Bank is shown in seconds at a 30kHz sampling frequency. When sampling in 15kHz, multiply it by 2.**

***If there is not enough space, you should delete some unneeded data to increase the remaining time. You may either delete a Tone with [DELETE] in the EDIT mode, or cut off un-needed portions of a wave with [TRUNCATE] in the Utility mode.**



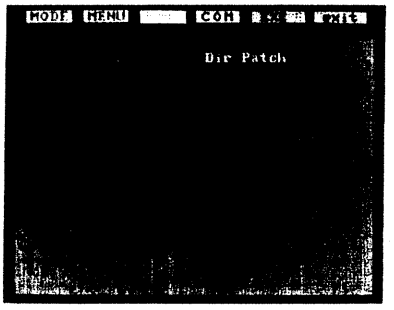
Step 1 **Insert a disk into the Disk Drive.**

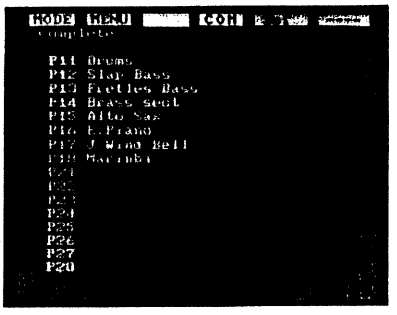
Step 2 **Open the Command Window, then push the EXECUTE button or the left side button on the Mouse.**

When finished, **"Complete"** is shown on the message line.

DIR Patch

You can see the list of the Patch names saved on a disk.





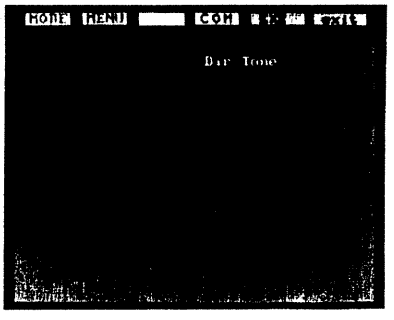
Step 1 Open the Mode Menu and select DISK, to open the Disk menu.

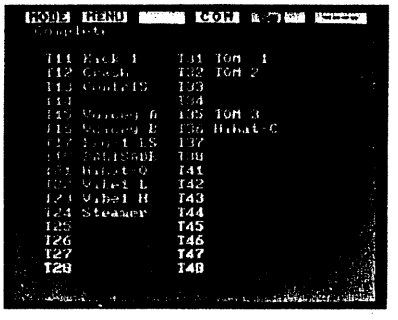
Step 2 Select [DIR Patch], and the Command Window will open.

Step 3 Push the EXECUTE button or the left side button on the Mouse to dispaly Patch List.

DIR Tone

You can see the list of the Tone names saved on a disk.





Step 1 Open the Mode Menu and select DISK, to open the Disk menu.

Step 2 Select [DIR Tone], and the Command Window will open.

Step 3 Push the EXECUTE button or the left side button on the Mouse to display the Tone List.

9 Saving

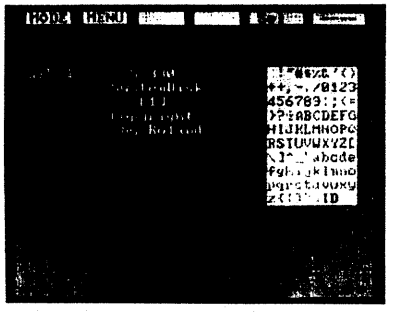
The data written in the internal memory of the S−330 can be saved onto a disk.

The Protect Tab on a disk serves to protect the data from accidental erasure. To save data onto a disk, be sure to set the tab to the WRITE position first. Then insert it into the disk drive. When the Protect Tab is set to the PROTECT position, the data cannot be saved. After saving is completed, be sure to return the tab to the PROTECT position.

A brand new floppy disk, or a disk being used for any device other than the S−330, should be formatted (initialized) first, then save the data. Otherwise, the data cannot be saved.

Label Set

In this menu, you can set the Disk Label which can be saved together with Block data. Up to 60 letters can be used for a Disk Label.



Preparation 1 **Open the Mode Menu and select DISK to open the Disk menu.**

Preparation 2 **Select [Label Set].**

On the S−330, a letter is entered by using the INC and DEC buttons. For moving the cursor, use the Cursor Buttons.

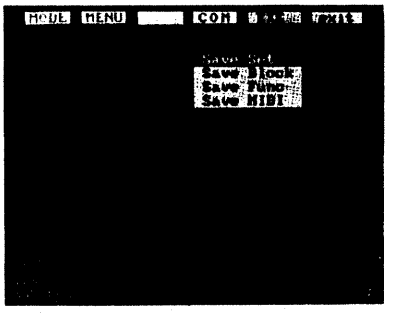
On the RC−100, a letter can also be entered with the Ten Key Pad. Each push of the number key will call a letter in the sequence shown below.

1	→A→B→C	7	S→T→U→
2	→D→E→F	8	→V→W→X
3	→G→H→I	9	→Y→Z→/
4	→J→K→L	0	→+→−→×
5	→M→N→O	ENT	Space
6	→P→Q→R		

The
Mouse allows you to use letters in the Palette for writing a letter. Move the cursor to the position where you wish to write a letter and push the button at the left side, and the cursor appears in the Palette. Select a letter you want and push the button at the left to enter it. "I" is for inserting a space, and "D" is for deleting. To return the cursor from the Palette, push the button at the right side.

Save

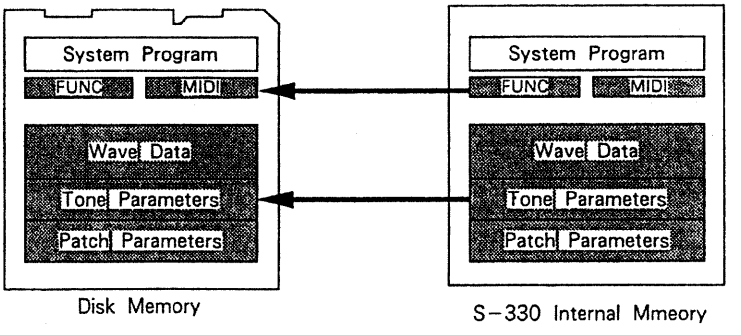
The entire sound data in the internal memory of the S−330 can be saved onto a disk.



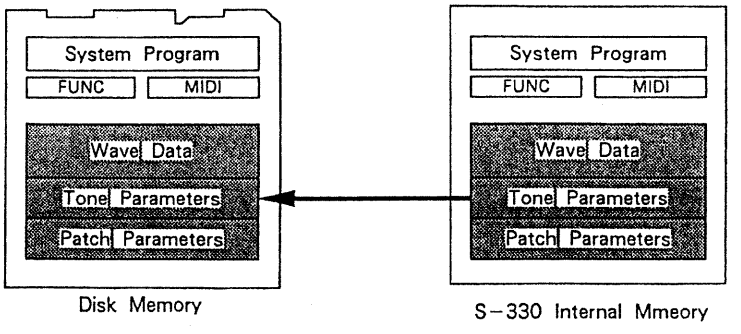
Preparation 1 Open the Mode Menu and select DISK, to open the Disk menu.

Preparation 2 Select [Save].

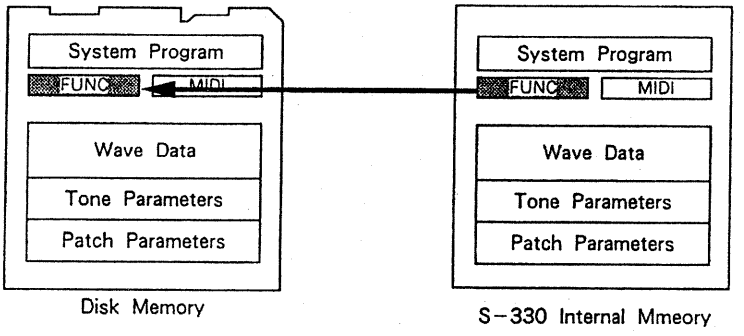
Save Set This saves sound data onto a disk.



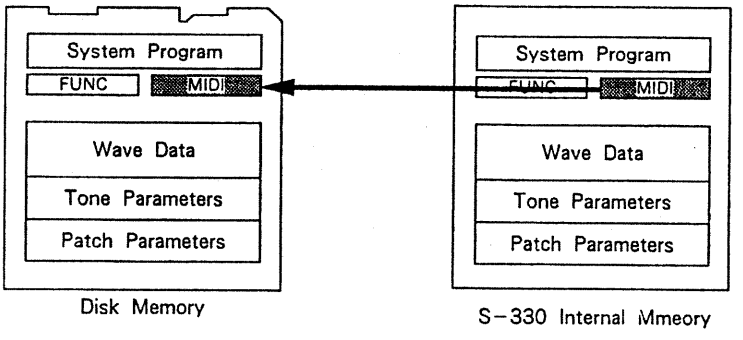
Save Block This saves sound data (exept for MIDI and FUNC data) onto a disk.



Save Func This saves only Function data (Parameters set in the Play and Func mode) onto a disk.



Save MIDI This saves only MIDI data (Parameters set in the MIDI mode) onto a disk.



Executing Saving

Step 1 **Set the Protect Tab on a disk to the WRITE position, and insert the disk into the Disk Drive.**

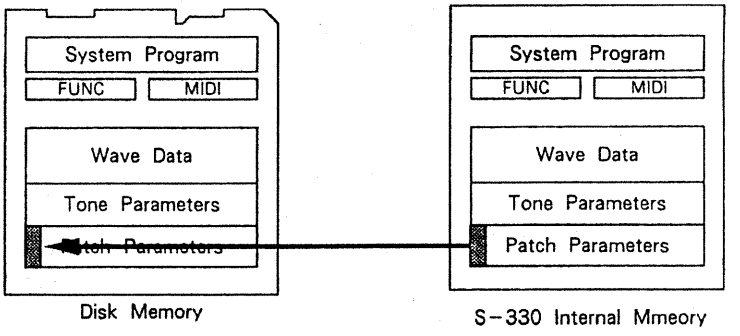
Step 2 **Open the Command Window and select the Command you wish to execute, then push the EXECUTE button or the left side button on the Mouse.**

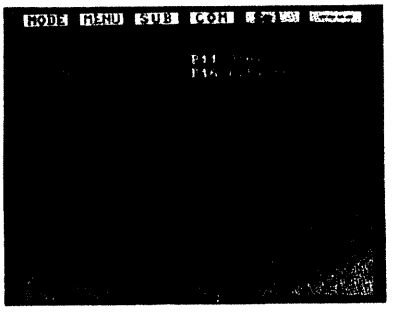
"Now Saving" is shown on the Message Line.

When the number counts down to 00, and **"Complete"** is shown on the message line, saving is completed.

Save P. PRM

Any Patch (=only Patch Parameters) in the internal memory can be saved onto a disk.





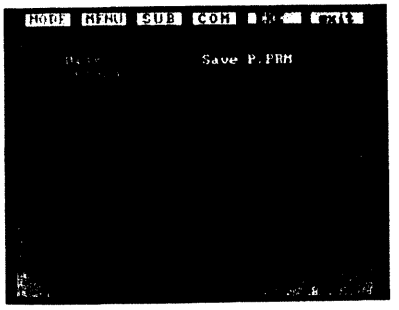
Preparation 1 **Open the Mode Menu and select DISK, to open the Disk menu.**

Preparation 2 **Select [Save P.PRM].**

Internal This parameter assigns the source Patch Number which is to be saved onto a disk.

Disk Open the Sub Menu, select DISK, then assign the destination Parameter number on a disk where the Patch you select from the internal memory is to be saved.

Opening the Sub Menu will call a Patch List which you can use for selecting Disk Patch and Internal Patch. After the Disk Patch is selected by pressing the EXECUTE or the left side button on the Mouse, push the same button again to change to a Patch List for Internal Patch.
When you finish selecting a Patch number, push the SUB MENU button or the right side button on the Mouse to return the normal display.



Step 1 Set the Protect Tab on the disk to the WRITE position, then insert it in the Disk Drive.

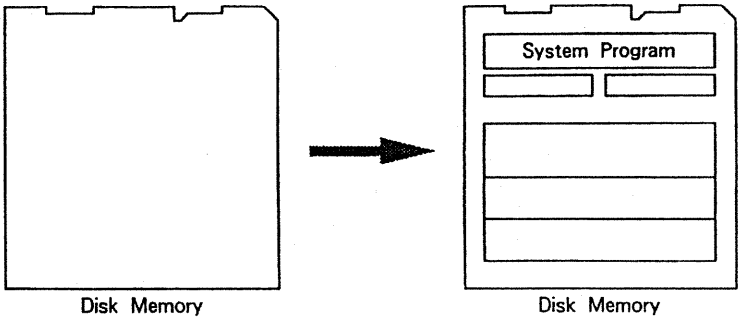
Step 2 Open the Command Window, then push the EXECUTE button or the left side button the Mouse.

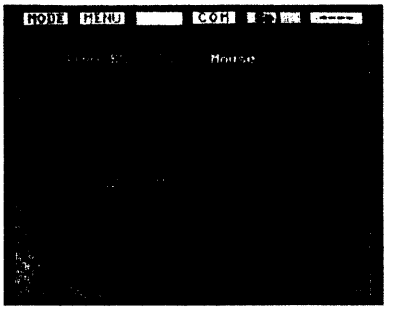
When finished, "**Complete**" is shown on the message line.

Format

This formats the disk for the S−330, and saves the system program loaded in the internal memory of the S−330.

The data in the S−330 cannot be saved onto a brand new disk, or a disk which has been used for a device other than the S−330, unless it is formatted.



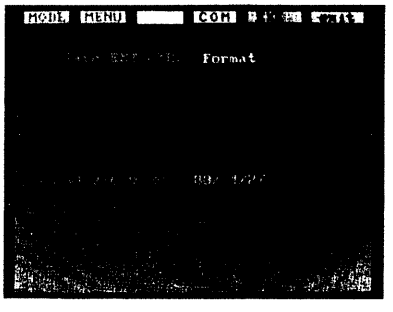


Preparation 1 **Open the Mode Menu and select DISK, to open the Disk menu.**

Preparation 2 **Select [Format].**

Save EXT CTRL **[Off, Mouse, RC−100]**

A parameter for selecting a controller to be used. This is saved onto the disk with the system program.



Step 1 **Set the Protect Tab on the disk to the WRITE position, then insert it in the Disk Drive.**

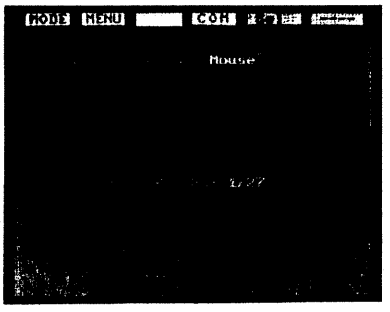
Step 2 **Open the Command Window, then push the EXECUTE button or the left side button on the Mouse.**

"Formatting" is shown on the message line. When it counts down to 00, and "**Complete**" is shown, FORMAT is completed.

Backup

The entire data in the internal memory of the S−330 can be saved onto a disk.
BACKUP includes both the [**Format**] and [**Save Set**] functions.

How to make a backup of the Utility Disk is explained on page 140.



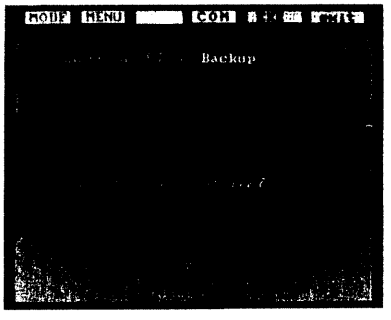
Preparation 1 **Open the Mode Menu and select DISK, to open the Disk menu.**

Preparation 2 **Select [Backup].**

***When you wish to make a copy of a disk, boot up the S−330 with the original disk and then using a disk for copying, execute Backup without editing the data.**

Save EXT CTRL **[Off, Mouse, RC−100]**

A parameter for selecting a controller to be used. This is saved onto the disk with the system program.

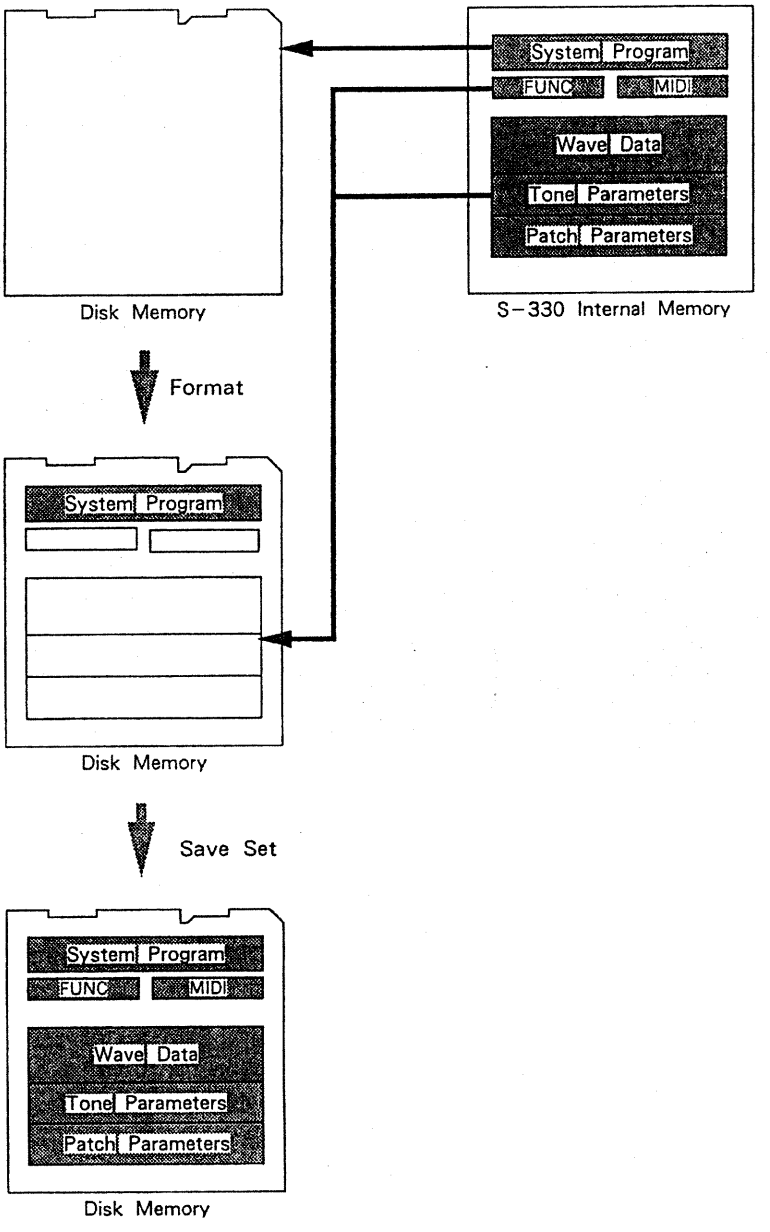


Step 1 **Set the Protect Tab on the disk to be used for Backup to the WRITE position, and insert the disk to the Disk Drive.**

Step 2 **Open the Command Window, then push the EXECUTE button or the left side button on the Mouse.**

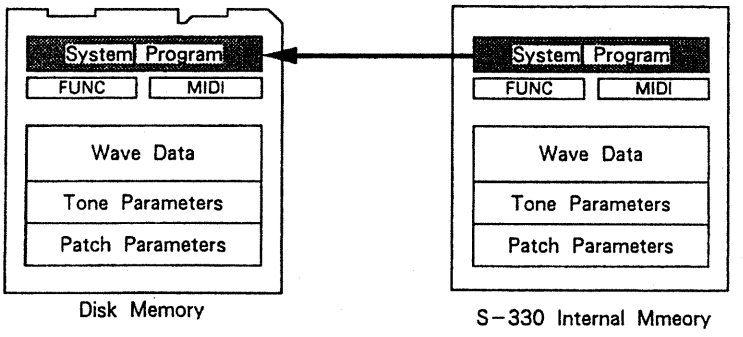
"Formatting" then **"Now Saving"** is shown on the Message Line.

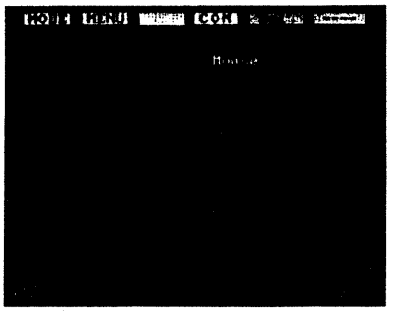
When finished, **"Complete"** is shown on the Message Line.


System Program
FUNC
MIDI
Wave Data
Tone Parameters
Patch Parameters
S-330 Internal Memory
Disk Memory
Format
System Program
Disk Memory
Save Set
System Program
FUNC
MIDI
Wave Data
Tone Parameters
Patch Parameters
Disk Memory

Save SYS

The system program loaded in the internal memory can be saved onto a disk.



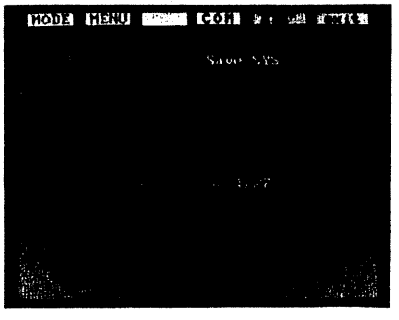


Preparation 1 **Open the Mode Menu and select DISK, to open the Disk menu.**

Preparation 2 **Select [Save SYS].**

Save EXT CTRL **[Off, Mouse, RC-100]**

A parameter for selecting a controller to be used. This is saved onto the disk with the system program.



Step 1 **Set the Protect Tab on the disk to be used for saving to the WRITE position, and insert the disk to the Disk Drive.**

Step 2 **Open the Command Window, then push the EXECUTE button or the left side button on the Mouse.**

"Saving System" is shown on the Message Line.

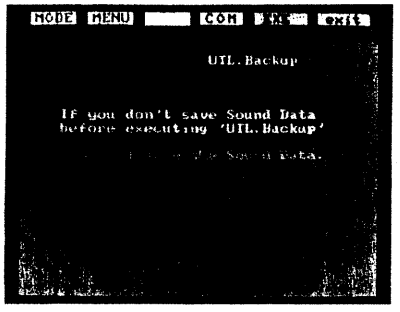
When finished, **"Complete"** is shown.

10 Other Useful Functions

UTL. Backup

The entire data on the Utility disk can be copied to make a backup.

***The Utility Backup will erase any data stored in the internal memory of the S−330. If you wish to retain the data, save it onto a disk before doing the Utility Backup.**



Preparation 1 Insert the Utility disk into the Disk Drive.

Preparation 2 Open the Mode Menu and select UTIL, to open the UTIL menu.

Preparation 3 Select [UTL.Backup].

Save EXT CTRL [Off, Mouse, RC−100]

A parameter for selecting a controller to be used. This is saved onto the disk with the system program.

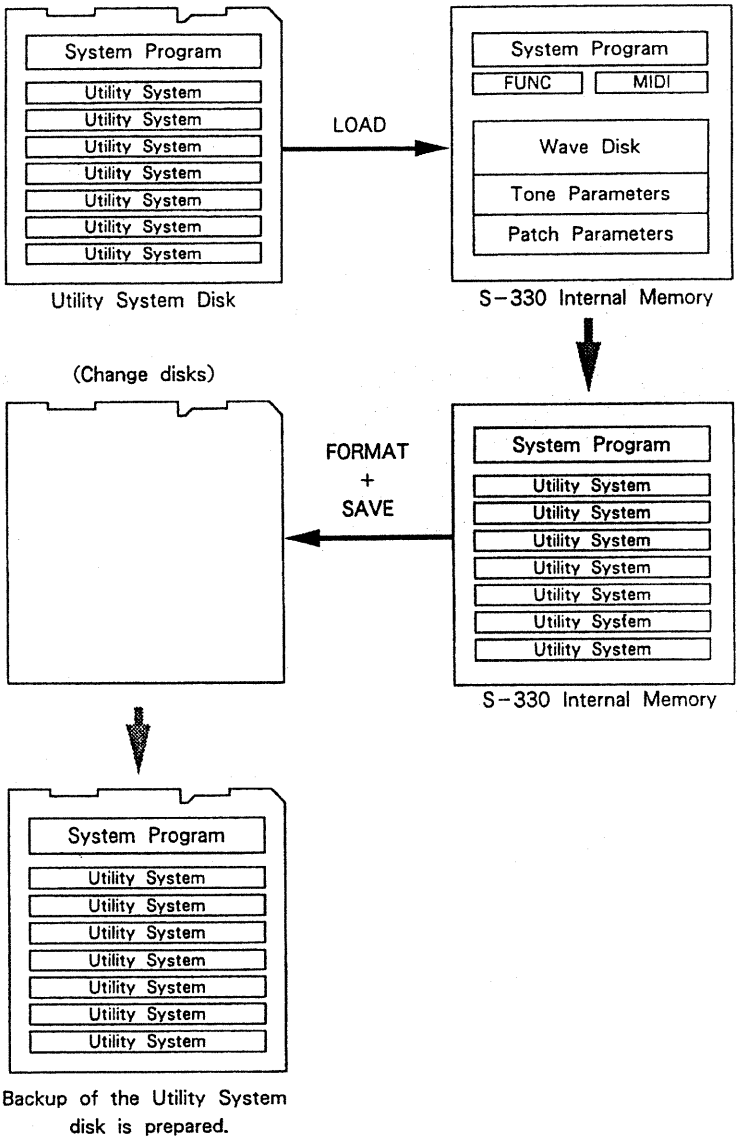
Step 1 Open the Command Window, then push the EXECUTE Button or the left side button on the Mouse.

"Now Loading" is shown in the Display, and the entire Utility system program is loaded into the internal memory.

Step 2 When "Change disk" is shown in the Display, insert a disk for backup into the Disk Drive with the Protect Tab on the disk set to the Write position.

"Formatting", then "Now Saving" is shown on the Message Line.

When finished, "Complete" is shown on the Message Line.

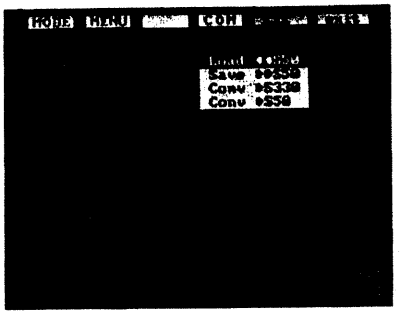

System Program
Utility System
Utility System
Utility System
Utility System
Utility System
Utility System
Utility System
Utility System Disk
LOAD
System Program
FUNC
MIDI
Wave Disk
Tone Parameters
Patch Parameters
S-330 Internal Memory
(Change disks)
FORMAT
+
SAVE
System Program
Utility System
Utility System
Utility System
Utility System
Utility System
Utility System
Utility System
S-330 Internal Memory
System Program
Utility System
Utility System
Utility System
Utility System
Utility System
Utility System
Utility System
Backup of the Utility System disk is prepared.

Convert

The Convert function can convert S−50 data into S−330 or the S−330 data into S−50 (Ver.2.0).

***The S−50 and S−330 do not feature exactry the same parameters, therefore, the converted data may sound different from each other.**

***Data on the S−550's disk can be loaded into the S−330 without converting it.**



Preparation 1 **Insert the Utility disk into the Disk Drive.**

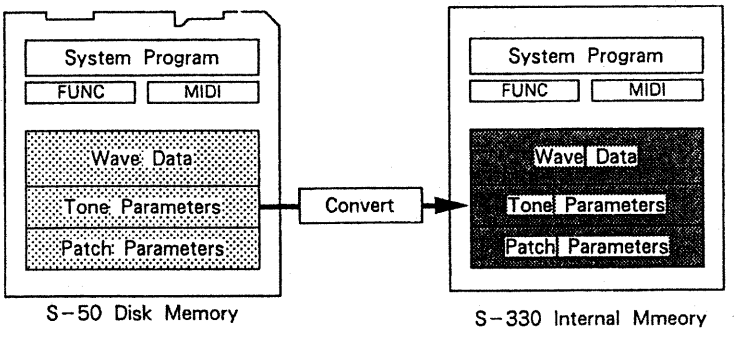
Preparation 2 **Open the Mode Menu and select UTIL, to open the Utility menu.**

Preparation 3 **Select [Convert] to open the Command Window.**

There are four types of Convert Commands :

Load←←S50 (Convert Load)

Using this function, Sound data (except for Function and MIDI data) on an S−50 (Ver.1.0, 2.0) disk can be loaded into the S−330.



Step 1 **Insert an S−50 disk into the Disk Drive.**

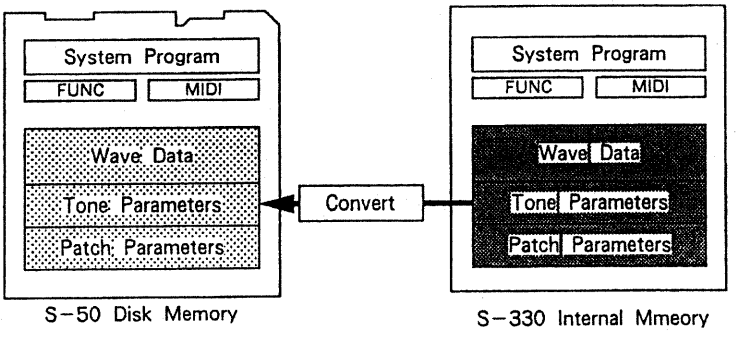
Step 2 **Select "Load←← S−50" and push the EXECUTE button or the left side button on the Mouse.**

"Now Loading" is shown on the Message Line, then the number counts down to 00. When finished, **"Complete"** is shown on the Message Line.

Save→→S50 (Convert Save)

Using this function, Sound data (except for Function and MIDI data) on the S−330 can be saved on the S−50 (Ver.2.0) disk.

***Patches on the S−330 are numbered 11 through 18 and 21 through 28 while those on the S−50 are P1 to P8. Therefore, Patches 21 to 28 on the S−330 are ignored in the Convert Save.**



Step 1 **Prepare a disk formatted with the S−50 (Ver.2.0), and set the Protect Tab on the disk to the WRITE position. Then insert the disk into the Disk Drive.**

Step 2 **Select "Save→→ S50" and push the EXECUTE button or the left side button on the Mouse.**

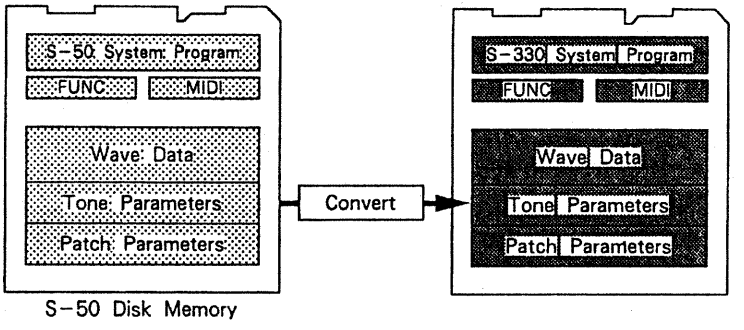
"Now Saving" is shown on the Message Line, then the number counts down to 00. When finished, **"Complete"** is shown on the Message Line.

Conv➡S330 (Convert Disk)

This function updates a S−50 (Ver.1.0, 2.0) disk to the S−330.

＊This function does not change the contents of Sound data on the S −330.

＊The converted disk can boot up the S−330.



S−50 Disk Memory

Step 1 **Prepare an S−50 disk to be converted into S−330, set the Protect Tab on the disk to the WRITE position, then insert it into the Disk Drive.**

Step 2 **Select "Conv➡S330" and push the EXECUTE button or the left side button on the Mouse.**

＊When the disk is for other than the S−50 (Ver.2.0), the Display shows " Not S−50 Disk".

"Working" is shown on the Message Line, and when finished,"Complete"

Conv→S50 (Convert Disk)

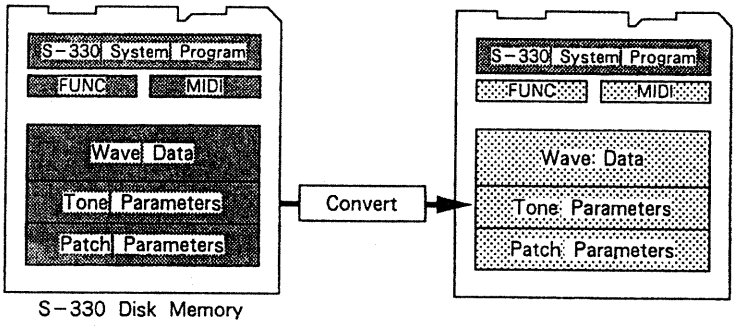
This function converts a S−330 disk into the S−50 (Ver.2.0).

*This function does not change the contents of Sound data on the S −330.

*This Convert Disk converts only the Sound data. The system program remains intact, therefore, it is not possible to boot up the S−50 with the converted disk. To do that, first boot the S−50 with the Ver,2. 0 system disk, then execute SAVE SYS on this disk.

*Patches on the S−330 are numbered 11 through 18 and 21 through 28 while those on the S−50 (Ver.2.0) are P1 to P8. Therefore, Patches 21 to 28 on the S−330 are ignored in the Convert DISK.

*When the Multi Patch setting on the S−330 does not correspond to the S−50 (Ver.2.0), it will be modified automatically to match the S −50's. So, check the setting and correct it, if necessary.



S−330 Disk Memory

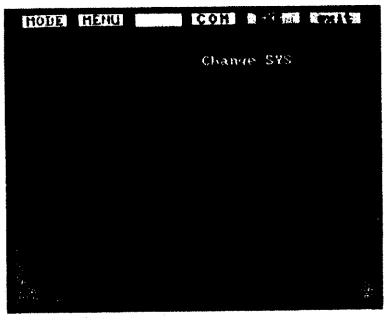
Step 1 Prepare an S−330 disk to be converted into S−50 (Ver.2.0), set the Protect Tab on the disk to the WRITE position, then insert it into the Disk Drive.

Step 2 Select "Conv→S50" and push the EXECUTE button or the left side button on the Mouse.

"Working" is shown on the Message Line, and when finished, "Complete"

Change System

This replaces the system program loaded in the internal memory with different software, leaving the sound data intact.



Step 1 Open the Mode Menu and select DISK, to open the DISKmenu.

Step 2 Select [Change SYS], to open the Command Window.

Step 3 Push the EXECUTE button or the left side button on the Mouse.

ERROR MESSAGES

Cannot Execute

This is shown when a command cannot be executed, such as there is no space left for writing wave data, or the same Tone number is assigned for the source and the destination Tones.

Level Over

This is shown to warn you that the level of the sound may exceed the capacity, causing distortion during digital filtering or mixing.

Insert Disk

A disk is not connected to the S−330.

Not S−330 Disk

This is shown when the connected disk is not formatted for the S−330.

Not Sound Disk

This is shown when the Utility disk is inserted. Sound data cannot be saved on the Utility disk. Insert an S−330 disk that contains sound data.

Not Utility Disk

This is shown when a disk containing sound data is inserted. What you wish to do is load the Utility system, so replace it with the Utility disk.

Not S−50 Disk

When using the Convert Load or Convert Disk function that works on the S−50 disk, a disk other than the S−50's is inserted in the Disk Drive. Insert an S−50 disk.

Disk Protected

The Protect Tab on the disk is set to the PROTECT position, therefore data cannot be saved.

Disk Error

There is something wrong with the disk, and data cannot be read properly. Replace it with a proper one.

Disk Load Error

There is something wrong with the System Program of the disk, therefore the S−330 cannot boot. Replace it with a proper one.

***If the number turns red during countdown, the System Program cannot be read properly.**

DIGITAL SAMPLER
MODEL S−330

MIDI Implementation Chart

Date : Jun. 12. 1988
Version : 1.00

Function...		Transmitted	Recognized	Remarks
Basic	Default	×	1−16 *4	*2
Channel	Changed	×	1−16 *4	
Mode	Default	×	3	
	Messages	×	×	
	Altered	*********	×	
Note Number		×	12−120	
	True Voice	*********	12−120	
Velocity	Note ON	×	*1	V=1−127
	Note OFF	×	×	
After Touch	Key's	×	×	
	Ch's	×	*1	
Pitch Bender		×	*1	
Control Change	1	×	*1	Modulation
	7	×	*1	Volume
	64	×	*1	Hold 1
	100, 101		*1	RPC LSB, MSB
	6, 38			DATA Entry LSB, MSB
				Number−0 Pitch Bend Sensitivity
Prog Change			*1 0−127	*3
	True #	*********	0−127	
System Exclusive		*1	*1	
System Common	Song Pos	×	×	
	Song sel	×	×	
	Tune	×	×	
System Real Time	Clock	×	×	
	Commands	×	×	
Aux Message	Local ON/OFF	×	×	
	All Notes OFF	×	○ (123−127)	
	Active Sense	×	×	
	Reset	×	×	
Notes		*1 Can be set to ○ or × manually, and memorized by disk. *2 Memorized by disk. *3 Patch numbers for each program change number can be set freely. *4 MIDI Channel of each voice group can be set in Multi Channel Mode.		

Mode 1 : OMNI ON, POLY
Mode 2 : OMNI ON, MONO
Mode 3 : OMNI OFF, POLY
Mode 4 : OMNI OFF, MONO

○ : Yes
× : No

Roland Exclusive Messages

1. Data Format for Exclusive Messages

Roland's MIDI implementation uses the following data format for all exclusive messages (type IV) :

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
CMD	Command ID
[BODY]	Main data
F7H	End of exclusive

MIDI status : F0H, F7H

An exclusive message must be flanked by a pair of status codes, starting with a Manufacturer-ID immediately after F0H (MIDI version1.0).

Manufacturer- ID : 41H

The Manufacturer-ID identifies the manufacturer of a MIDI instrument that triggeres an exclusive message. Value 41H represents Roland's Manufacturer-ID.

Device- ID : DEV

The Device-ID contains a unique value that identifies the individual device in the multiple implementation of MIDI instruments. It is usually set to 00H - 0FH, a value smaller by one than that of a basic channel, but value 00H - 1FH may be used for a device with multiple basic channels.

Model- ID : MDL

The Model-ID contains a value that uniquely identifies one model from another. Different models, however, may share an identical Model-ID if they handle similar data.

The Model-ID format may contain 00H in one or more places to provide an extended data field. The following are examples of valid Model-IDs, each representing a unique model :

01H
02H
03H
00H, 01H
00H, 02H
00H, 00H, 01H

Command- ID : CMD

The Command-ID indicates the function of an exclusive message. The Command-ID format may contain 00H in one or more places to provide an extended data field. The following are examples of valid Command-IDs, each representing a unique function :

01H
02H
03H
00H, 01H
00H, 02H
00H, 00H, 01H

Main data : BODY

This field contains a message to be exchanged across an interface. The exact data size and contents will vary with the Model-ID and Command-ID.

2. Address- mapped Data Transfer

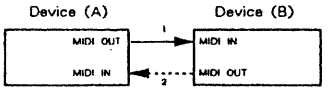
Address mapping is a technique for transferring messages conforming to the data format given in Section 1. It assigns a series of memory-resident records--waveform and tone data, switch status, and parameters, for example--to specific locations in a machine-dependent address space, thereby allowing access to data residing at the address a message specifies.

Address-mapped data transfer is therefore independent of models and data categories. This technique allows use of two different transfer procedures : one-way transfer and handshake transfer.

One- way transfer procedure (See Section3 for details.)

This procedure is suited for the transfer of a small amount of data. It sends out an exclusive message completely independent of a receiving device status.

Connection Diagram

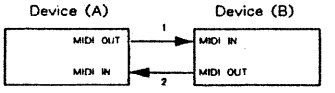


Connectionat point2 is essential for "Request data" procedures. (See Section3.)

Handshake- transfer procedure (See Section4 for details.)

This procedure initiates a predetermined transfer sequence (handshaking) across the interface before data transfer takes place. Handshaking ensures that reliability and transfer speed are high enough to handle a large amount of data.

Connection Diagram



Connectionat points1 and 2 is essential.

Notes on the above two procedures

*There are separate Command-IDs for different transfer procedures.
*DevicesA and B cannot exchange data unless they use the same transfer procedure, share identical Device-ID and Model ID, and are ready for communication.

3. One- way Transfer Procedure

This procedure sends out data all the way until it stops when the messages are so short that answerbacks need not be checked.
For long messages, however, the receiving device must acquire each message in time with the transfer sequence, which inserts intervals of at least 20milliseconds in between.

Types of Messages

Message	Command ID
Request data 1	RQ1 (11H)
Data set 1	DT1 (12H)

Request data # 1 : RQ1 (11H)

This message is sent out when there is a need to acquire data from a device at the other end of the interface. It contains data for the address and size that specify designation and length, respectively, of data required.
On receiving an RQ1 message, the remote device checks its memory for the data address and size that satisfy the request.

If it finds them and is ready for communication, the device will transmit a "Data set 1 (DT1)" message, which contains the requested data. Otherwise, the device will send out nothing.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
11H	Command ID
aaH	Address MSB
⋮	⋮
	LSB
ssH	Size MSB
⋮	⋮
	LSB
sum	Check sum
F7H	End of exclusive

*The size of the requested data does not indicate the number of bytes that will make up a DT1 message, but represents the address fields where the requested data resides.
*Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
*The same number of bytes comprises address and size data, which, however, vary with the Model-ID.
*The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Data set 1 : DT1 (12H)

This message corresponds to the actual data transfer process. Because every byte in the data is assigned a unique address, a DT1 message can convey the starting address of one or more data as well as a series of data formatted in an address - dependent order.

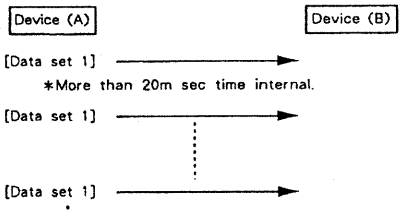
The MIDI standards inhibit non-real time messages from interrupting an exclusive one. This fact is inconvenient for the devices that support a "soft-through" mechanism. To maintain compatibility with such devices, Roland has limited the DT1 to 256 bytes so that an excessively long message is sent out in separate segments.

Byte	Description
F0H	Exclusive
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
12H	Command ID
aaH	Address MSB
⋮	⋮
	LSB
ddH	Data
⋮	⋮
sum	Check sum
F7H	End of exclusive

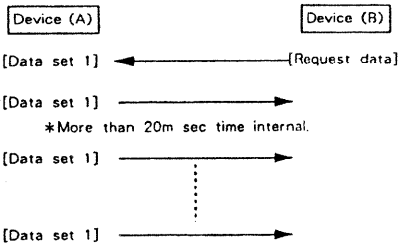
*A DT1 message is capable of providing only the valid data among those specified by an RQ1 message.
*Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
*The number of bytes comprising address data varies from one Model-ID to another.
*The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Example of Message Transactions

● Device A sending data to Device B
Transfer of a DT1 message is all that takes place.



● Device B requesting data from Device A
Device B sends an RQ1 message to Device A. Checking the message, Device A sends a DT1 message back to Device B.



4. Handshake- Transfer Procedure

Handshaking is an interactive process where two devices exchange error checking signals before a message transaction takes place, thereby increasing data reliability. Unlike one way transfer that inserts a pause between message transactions, handshake transfer allows much speedier transactions because data transfer starts once the receiving device returns a ready signal.

When it comes to handling large amounts of data - - sampler waveforms and synthesizer tones over the entire range, for example- -across a MIDI interface, handshaking transfer is more efficient than one-way transfer.

Types of Messages

Message	Command ID
Want to send data	WSD (40H)
Request data	RQD (41H)
Data set	DAT (42H)
Acknowledge	ACK (43H)
End of data	EOD (45H)
Communication error	ERR (4EH)
Rejection	RJC (4FH)

Want to send data : WSD (40H)

This message is sent out when data must be sent to a device at the other end of the interface. It contains data for the address and size that specify designation and length, respectively, of the data to be sent.

On receiving a WSD message, the remote device checks its memory for the specified data address and size which will satisfy the request. If it finds them and is ready for communication, the device will return an "Acknowledge (ACK)" message.
Otherwise, it will return a "Rejection (RJC)" message.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
40H	Command ID
aaH	Address MSB
⋮	⋮
	LSB
ssH	Size MSB
⋮	⋮
	LSB
sum	Check sum
F7H	End of exclusive

*The size of the data to be sent does not indicate the number of bytes that make up a "Data set (DAT)" message, but represents the address fields where the data should reside.
*Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
*The same number of bytes comprises address and size data, which, however, vary with the Model-ID.
*The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Request data : RQD (41H)

This message is sent out when there is a need to acquire data from a device at the other end of the interface. It contains data for the address and size that specify designation and length, respectively, of data required.

On receiving an RQD message, the remote device checks its memory for the data address and size which satisfy the request. If it finds them and is ready for communication, the device will transmit a "Data set (DAT)" message, which contains the requested data. Otherwise, it will return a "Rejection (RJC)" message.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
41H	Command ID
aaH	Address MSB
⋮	⋮
	LSB
ssH	Size MSB
⋮	⋮
	LSB
sum	Check sum
F7H	End of exclusive

*The size of the requested data does not indicate the number of bytes that make up a "Data set (DAT)" message, but represents the address fields where the requested data resides.
*Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
*The same number of bytes comprises address and size data, which, however, vary with the Model-ID.
*The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Data set : DAT (42H)

This message corresponds to the actual data transfer process. Because every byte in the data is assigned a unique address, the message can convey the starting address of one or more data as well as a series of data formatted in an address-dependent order.

Although the MIDI standards inhibit non-real time messages from interrupting an exclusive one, some devices support a "soft-through" mechanism for such interrupts. To maintaincompatibility with such devices, Roland has limited the DAT to 256bytes so that an excessively long message is sent out in separate segments.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
42H	Command ID
aaH	Address MSB
⋮	⋮
	LSB
ddH	Data
⋮	⋮
sum	Check sum
F7H	End of exclusive

*A DAT message is capable of providing only the valid data among those specified by an RQD or WSD message.
*Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
*The number of bytes comprising address data varies from one model ID to another.
*The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Acknowledge : ACK (43H)

This message is sent out when no error was detected on reception of a WSD, DAT, "End of data (EOD)", or some other message and a requested setup or action is complete. Unless it receives an ACK message, the device at the other end will not proceed to the next operation.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
43H	Command ID
F7H	End of exclusive

End of data : EOD (45H)

This message is sent out to inform a remote device of the end of a message. Communication, however, will not come to an end unless the remote device returns an ACK message even though an EOD message was transmitted.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
45H	Command ID
F7H	End of exclusive

Communications error : ERR (4EH)

This message warns the remote device of a communications fault encountered during message transmission due, for example, to a checksum error. An ERR message may be replaced with a "Rejection (RJC)" one, which terminates the current message transaction in midstream.

When it receives an ERR message, the sending device may either attempt to send out the last message a second time or terminate communication by sending out an RJC message.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
4EH	Command ID
F7H	End of exclusive

Rejection : RJC (4FH)

This message is sent out when there is a need to terminate communication by overriding the current message. An RJC message will be triggered when :

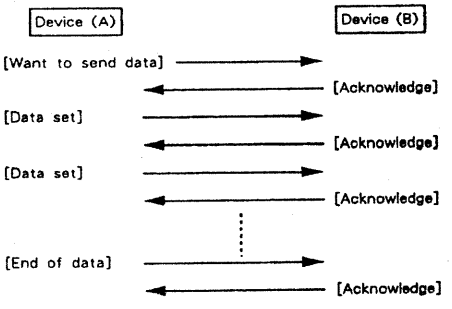
- a WSD or RQD message has specified an illegal data address or size.
- the device is not ready for communication.
- an illegal number of addresses or data has been detected.
- data transfer has been terminated by an operator.
- a communications error has occurred.

An ERR message may be sent out by a device on either side of the interface. Communication must be terminated immediately when either side triggers an ERR message.

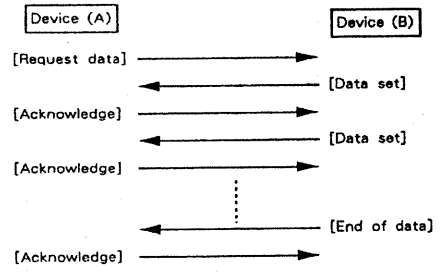
Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
4FH	Command ID
F7H	End of exclusive

Example of Message Transactions

● Data transfer from device (A) to device (B).

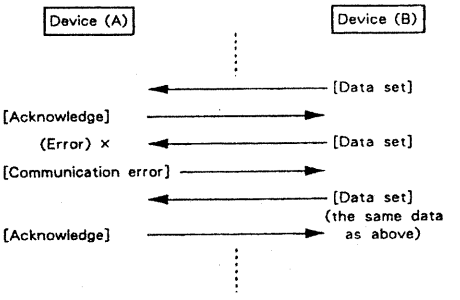


● Device (A) requests and receives data from device (B).

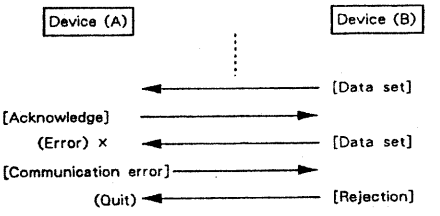


● Error occurs while device (A) is receiving data from device (B).

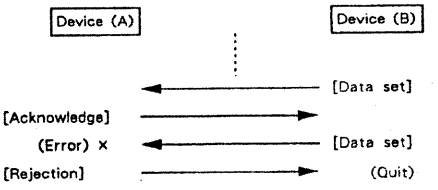
1) Data transfer from device (A) to device (B).



2) Device (B) rejects the data re-transmitted, and quits data transfer.



3) Device (A) immediately quits data transfer.



DIGITAL SAMPLER
MODEL S−330

MIDI Implementation

Date : Jun 12. 1988
Version : 1.00

1. TRANSMITTED DATA

■ System exclusive

Status
F0H : System exclusive
F7H : EOX (End Of Exclusive)

Transmitted if the System exclusive switch is ON.

2. RECOGNIZED RECEIVE DATA

Up to eight different channels can be set on the S−330.

■ Note event

Note off

Status	Second	Third
8nH	kkH	vvH
9nH	kkH	00H

kk=Note number 0CH−78H (12−120)
vv=Velocity igored
n=MIDI channel number 0H−FH (1−16)

Note on

Status	Second	Third
9nH	kkH	vvH

kk=Note number 0CH−78H (12−120)
vv=Velocity 01H−7FH (1−127)
n=MIDI channel number 0H−FH (1−16)

■ Control change

Modulation

Status	Second	Third
BnH	01H	vvH

vv=00H−7FH (0−127)

Recognized if the Modelation recognition switch is ON.

Volume

Status	Second	Third
BnH	07H	vvH

vv=00H−7FH (0−127)

Recognized if the Volume recognition switch is ON.

Hold 1

Status	Second	Third
BnH	40H	vvH

vv=00H−3FH (0−63) : OFF
vv=40H−7FH (64−127) : ON

Recognized if the Hold recognition switch is ON.

Registerd parameter control

Status	Second	Third
BnH	64H	ppH
BnH	65H	qqH
BnH	06H	mmH
BnH	26H	llH

Bend range

pp=RPC LSB	00H
qq=RPC MSB	00H
mm=Data entry MSB	00H−0CH
ll−Data entry LSB	ignored

Recognized if the Bend range recognition switch is ON.

■ Program change

Status	Second
CnH	ppH

pp=Program change 00H−7FH (0−127)

Recognized if the Program change recognition switch is ON. How to assign a Program change number to a patch can be freely selected.

■ Channel aftertouch

Status	Second
DnH	vvH

vv=00H−7FH (0−127)

Recognized if the Aftertouch recognition switch is ON.

■ Pitch bender

Status	Second	Third
EnH	llH	mmH

ll=LSB 00H−7FH (0−127)
mm=MSB 00H−7FH (0−127)

Recognized if the Pitch bender recognition switch is ON.

■ Channel mode message

All notes off

Status	Second	Third
BnH	7BH	00H

Recognized as only All notes off. S−330 doces not change mode, but remains in mode 3 (Omni off, Poly). When the All notes off is recognized, all the notes whitch have been turned ON only by MIDI IN note ON messages are turned OFF. However, if the damper ON message has been recognized, thees ON notes will be not turned OFF Damper OFF message is received.

OMNI OFF

Status	Second	Third
BnH	7CH	00H

OMNI ON

Status	Second	Third
BnH	7DH	00H

MONO

Status	Second	Third
BnH	7EH	0mH

POLY

Status	Second	Third
BnH	7FH	00H

Recognized if the System exclusive switch is ON.

■ System Exclusive

Status
F0H : System exclusive
F7H : EOX (End Of Exclusive)

Recognized if the System exclusive switch is ON.

3. EXCLUSIVE COMMUNICATIONS

The Exclusive Messages can be transmitted or recognized only when the Exclusive switch on the S−330 is ON. Ignored when OFF.

The Model−ID number of the S−330 is [1EH]. (Same as the S−550)

Device−ID can be changed from the panel in MIDI Mode.
The numbers 1−16 on the display correspond to Device−ID codes 0−15, respectively.

Each Address and Size should be 4 bytes of data, respectively.

3.1 One way communication

3.1.1 Request RQ1 11H

Only when the recognized address and size in RQ1 match those on the S−330, it transmits the corresponding data.
It ignores Requests having illegal address or size. *3−1

The S−330 won't tranmit RQ1.

Byte	Description	
F0H	Exclusive status	
41H	Roland−ID	
DEV	Device−ID	
1EH	Model−ID (S−330)	
11H	Command−ID (RQ1)	
aaH	Address MSB	*3−1
aaH	Address	
aaH	Address	
aaH	Address LSB	
ssH	Size MSB	*3−1
ssH	Size	
ssH	Size	
ssH	Size LSB	
sum	Checksum	
F7H	EOX (End of Exclusive)	

3.1.2 Data set DT1 12H

When the recognized Dataset message contains an appropriate address and size data, the S−330 stores the associated data that address.
It ignores any Data set having illegal address.

The S−330 transmits a Data set message when a Tone Parameter is edited on the pannel or when the S−330 recognizes RQ1.

Byte	Description	
F0H	Exclusive status	
41H	Roland−ID	
DEV	Device−ID	
1EH	Model−ID (S−330)	
12H	Command−ID (DT1)	
aaH	Address MSB	*3−1
aaH	Address	
aaH	Address	
aaH	Address LSB	
ddH	Data	*3−2
:		
sum	Checksum	
F7H	EOX (End of Exclusive)	

3.2 Handshaking communication

3.2.1 Want to send data WSD 40H

When recognized WSD message has an appropriate address and size data, the S−330 transmits ACK and waits the associated data.
If not appropriate, it will transmit RJC. *3−1

The S−330 won't transmit WSD.

Byte	Description	
F0H	Exclusive status	
41H	Roland−ID	
DEV	Device−ID	
1EH	Model−ID (S−330)	
40H	Command−ID (WSD)	
aaH	Address MSB	*3−1
aaH	Address	
aaH	Address	
aaH	Address LSB	
ssH	Size MSB	*3−1
ssH	Size	
ssH	Size	
ssH	Size LSB	
sum	Checksum	
F7H	EOX (End of Exclusive)	

3.2.2 Request data RQD 41H

When recognized RQD message has an appropriate address and size data, the S−330 transmits the corresponding data.
If not appropriate, it will trasnmit RJC. *3−1

The S−330 won't transmit RQD.

Byte	Description	
F0H	Exclusive status	
41H	Roland−ID	
DEV	Device−ID	
1EH	Model−ID (S−330)	
41H	Command−ID (RQD)	
aaH	Address MSB	*3−1
aaH	Address	
aaH	Address	
aaH	Address LSB	
ssH	Size MSB	*3−1
ssH	Size	
ssH	Size	
ssH	Size LSB	
sum	Checksum	
F7H	EOX (End of Exclusive)	

3.2.3 Data set DAT 42H

Byte	Description	
F0H	Exclusive status	
41H	Roland−ID	
DEV	Device−ID	
1EH	Model−ID (S−330)	
42H	Command−ID (DAT)	
aaH	Address MSB	*3−1
aaH	Address	
aaH	Address	
aaH	Address LSB	
ddH	Data	*3−2
:		
sum	Checksum	
F7H	EOX (End of Exclusive)	

3.2.4 Acknowledge ACK 43H

Byte	Description
F0H	Exclusive status
41H	Roland−ID
DEV	Device−ID
1EH	Model−ID (S−330)
43H	Command−ID (ACK)
F7H	EOX (End of Exclusive)

3.2.5 End of data EOD 45H

Byte	Description
F0H	Exclusive status
41H	Roland−ID
DEV	Device−ID
1EH	Model−ID (S−330)
45H	Command−ID (EOD)
F7H	EOX (End of Exclusive)

3.2.6 Communication error ERR 4EH

The S−330 transmits ERR if a checksum error occurs.

When ERR message is recognized, the S−330 transmits RJD and ceases the current communication.

Byte	Description
F0H	Exclusive status
41H	Roland−ID
DEV	Device−ID
1EH	Model−ID (S−330)
4EH	Command−ID (ERR)
F7H	EOX (End of Exclusive)

3.2.7 Rejection RJC 4FH

The S−330 transmits RJC and ceases communication if it detects one of the following :
a) ERR is recognized,
b) address in the recognized Dat set is not continuous one and
c) ENTER is activated on the panel during communication.

Byte	Description
F0H	Exclusive status
41H	Roland−ID
DEV	Device−ID
1EH	Model−ID (S−330)
4FH	Command−ID (RJC)
F7H	EOX (End of Exclusive)

Notes :

*3−1 Address and size should specify a memory space in which data exist. The lowest bit of LSB byte in address and size should be 0.

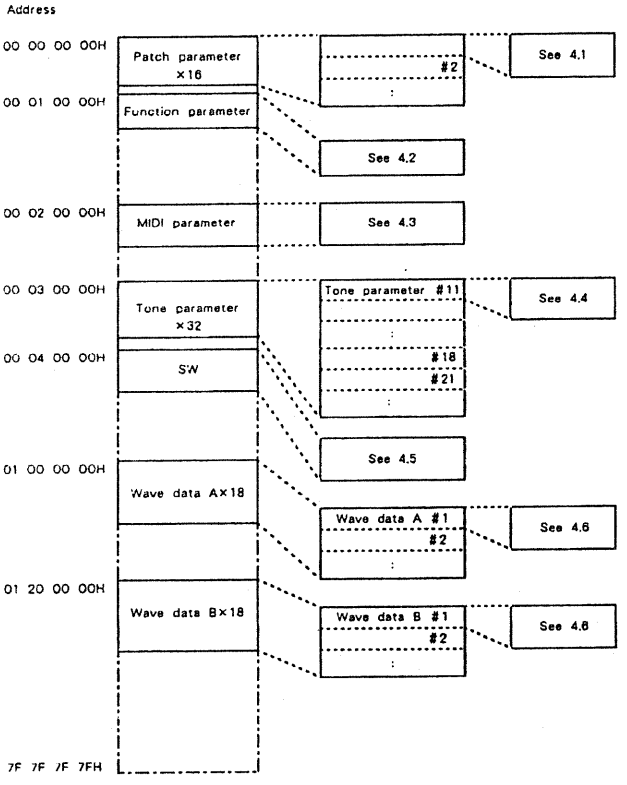
*3−2 The number of data bytes should be even number.

4. Address mapping of parameters

Address is represented from 00 to 7F by hexdecimal.

Address	MSB			LSB
binary	0aaa aaaa	0bbb bbbb	0ccc cccc	0ddd dddd
7 bit Hex	AA	BB	CC	DD

An offset address added to an address of each block makes a real address.



4.1 Patch parameter

Offset address	Description			
00 00H	0000 aaaa	PATCH NAME 1		
00 01H	0000 bbbb	aaaa bbbb		32−127 (ASCII)
:				
00 16H	0000 aaaa	PATCH NAME 12		
00 17H	0000 bbbb	aaaa bbbb		32−127 (ASCII)
00 18H	0000 aaaa	BEND RANGE		
00 19H	0000 bbbb	aaaa bbbb		0−12
00 1AH	0xxx xxxx	dummy		
00 1BH	0xxx xxxx			
00 1CH	0000 aaaa	AFTER TOUCH SENSE		
00 1DH	0000 bbbb	aaaa bbbb		0−127
00 1EH	0000 aaaa	KEY MODE		
00 1FH	0000 bbbb	aaaa bbbb		0 : Normal 1 : V−Sw 2 : X−Fade 3 : V−Mix 4 : Unison
00 20H	0000 aaaa	VELOCITY SW THRESHOLD		
00 21H	0000 bbbb	aaaa bbbb		0−127
00 22H	0000 aaaa	TONE TO KEY #1−1		
00 23H	0000 bbbb	aaaa bbbb		−1−31 −1 : OFF
:				
01 7AH	0000 aaaa	TONE TO KEY #1−109		
01 7BH	0000 bbbb	aaaa bbbb		0−31
01 7CH	0000 aaaa	TONE TO KEY #2−1		
01 7DH	0000 bbbb	aaaa bbbb		0−31
:				
03 54H	0000 aaaa	TONE TO KEY #2−109		
03 55H	0000 bbbb	aaaa bbbb		0−31
03 56H	0000 aaaa	COPY SOURCE		
03 57H	0000 bbbb	aaaa bbbb		0−7
03 58H	0000 aaaa	OCTAVE SHIFT		
03 59H	0000 bbbb	aaaa bbbb		−2−+2
03 5AH	0000 aaaa	OUTPUT LEVEL		
03 5BH	0000 bbbb	aaaa bbbb		0−127
03 5CH	0xxx xxxx	dummy		
03 5DH	0xxx xxxx			
03 5EH	0000 aaaa	DETUNE		
03 5FH	0000 bbbb	aaaa bbbb		−64−+63
03 60H	0000 aaaa	VELOCITY MIX RATIO		
03 61H	0000 bbbb	aaaa bbbb		0− 127
03 62H	0000 aaaa	AFTER TOUCH ASSIGN		
03 63H	0000 bbbb	aaaa bbbb		0 : Modulation 1 : Volume 2 : Bend + 3 : Bend − 4 : Filter
03 64H	0000 aaaa	KEY ASSIGN		
03 65H	0000 bbbb	aaaa bbbb		0 : Rotary 1 : Fix
03 66H	0000 aaaa	OUPUT ASSIGN		
03 67H	0000 bbbb	aaaa bbbb		0 : OUTPUT 1 1 : OUTPUT 2 2 : OUTPUT 3 3 : OUTPUT 4 4 : OUTPUT 5 5 : OUTPUT 6 6 : OUTPUT 7 7 : OUTPUT 8 8 : TONE
03 68H	0xxx xxxx	dummy		
:				
03 7FH	0xxx xxxx			
Total size	00 00 04 00H			

4.2 Function parameter

Offset address	Description			
00 00H	0000 aaaa	MASTER TUNE		
00 01H	0000 bbbb	aaaa bbbb		−64−+63
00 02H	0xxx xxxx	dummy		
:				
00 1BH	0xxx xxxx			
00 1CH	0xxx xxxx	dummy		
00 1DH	0xxx xxxx			
00 1EH	0xxx xxxx	dummy		
00 1FH	0xxx xxxx			
00 20H	0000 aaaa	VOICE MODE		
00 21H	0000 bbbb	aaaa bbbb		0−23 0 : AUTO MODE LAST NOTE PRIORITY 1 : AUTO MODE FIRST NOTE PRIORITY 2−23 : FIX MODE 1−22
00 22H	0000 aaaa	MULTI MIDI RX−CH 1		
00 23H	0000 bbbb	aaaa bbbb		0−15
:				
00 30H	0000 aaaa	MULTI MIDI RX−CH 8		
00 31H	0000 bbbb	aaaa bbbb		0−15
00 32H	0000 aaaa	MULTI PATCH NUMBER 1		
00 33H	0000 bbbb	aaaa bbbb		0−15
:				
00 40H	0000 aaaa	MULTI PATCH NUMBER 8		
00 41H	0000 bbbb	aaaa bbbb		0−15
00 42H	0xxx xxxx	dummy		
:				
00 53H	0xxx xxxx			
00 54H	0000 aaaa	KEYBOARD DSPLAY		

00 55H	0000 bbbb aaaa bbbb		0 : A 1 : B 2 : C 3 : D 4 : E 5 : F 6 : G 7 : H 8 : ALL
00 56H	0000 aaaa	MULTI LEVEL 1	
00 57H	0000 bbbb aaaa bbbb		0–127
:			
00 64H	0000 aaaa	MULTI LEVEL 8	
00 65H	0000 bbbb aaaa bbbb		0–127
00 66H	0000 aaaa	BLOCK 1 DISK LABEL 1	
00 67H	0000 bbbb aaaa bbbb		32–127 (ASCII)
:			
01 5CH	0000 aaaa	BLOCK 1 DISK LABEL 60	
01 5DH	0000 bbbb aaaa bbbb		32–127 (ASCII)
01 5EH	0xxx xxxx	dummy	
:			
05 5DH	0xxx xxxx		
05 5EH	0000 aaaa	OUTPUT MODE	
:			
05 5FH	0000 bbbb aaaa bbbb		0 : INDIVIDUAL OUT 1 : MIX OUT
05 60H	0000 aaaa	dummy	
:			
07 7FH	0xxx xxxx		
Total size		00 00 08 00H	

4.3 MIDI parameter

Offset address	Description		
00 00H	0xxx xxxx	dummy	
:			
00 3FH	0xxx xxxx		
00 40H	0000 aaaa	RX CHANNEL 1	
00 41H	0000 bbbb aaaa bbbb		0–16 0–15 ··· 1–16 CH 16 ··· OFF
:			
:			
00 4EH	0000 aaaa	RX CHANNEL 8	
00 4FH	0000 bbbb aaaa bbbb		0–16
00 50H	0000 aaaa	RX PROGRAM CHANGE 1	
00 51H	0000 bbbb aaaa bbbb		0 : OFF 1 : ON
:			
:			
00 5EH	0000 aaaa	RX PROGRAM CHANGE 8	
00 5FH	0000 bbbb aaaa bbbb		0 : OFF 1 : ON
00 60H	0000 aaaa	RX BENDER 1	
00 61H	0000 bbbb aaaa bbbb		0 : OFF 1 : ON
:			
:			
00 6EH	0000 aaaa	RX BENDER 8	
00 6FH	0000 bbbb aaaa bbbb		0 : OFF 1 : ON
00 70H	0000 aaaa	RX MODULATION 1	
00 71H	0000 bbbb aaaa bbbb		0 : OFF 1 : ON
:			
:			
00 7EH	0000 aaaa	RX MODULATION 8	
00 7FH	0000 bbbb aaaa bbbb		0 : OFF 1 : ON
01 00H	0000 aaaa	RX HOLD 1	
01 01H	0000 bbbb aaaa bbbb		0 : OFF 1 : ON
:			
:			
01 0EH	0000 aaaa	RX HOLD 8	
01 0FH	0000 bbbb aaaa bbbb		0 : OFF 1 : ON
01 10H	0000 aaaa	RX AFTER TOUCH 1	
01 11H	0000 bbbb aaaa bbbb		0 : OFF 1 : ON
:			
:			
01 1EH	0000 aaaa	RX AFTER TOUCH 8	
01 1FH	0000 bbbb aaaa bbbb		0 : OFF 1 : ON
01 20H	0000 aaaa	RX VOLUME 1	
01 21H	0000 bbbb aaaa bbbb		0 : OFF 1 : ON
:			
:			
01 2EH	0000 aaaa	RX VOLUME 8	
01 2FH	0000 bbbb aaaa bbbb		0 : OFF 1 : ON
01 30H	0000 aaaa	RX BEND RANGE 1	
01 31H	0000 bbbb aaaa bbbb		0 : OFF 1 : ON
:			
:			
01 3EH	0000 aaaa	RX BEND RANGE 8	
01 3FH	0000 bbbb aaaa bbbb		0 : OFF 1 : ON
01 40H	0xxx xxxx	dummy	
01 41H	0xxx xxxx		
01 42H	0000 aaaa	SYSTEM EXCLUSIVE	
01 43H	0000 bbbb aaaa bbbb		0 : OFF 1 : ON
01 44H	0000 aaaa	DEVICE ID	
01 45H	0000 bbbb aaaa bbbb		0–15
01 46H	0000 aaaa	RX PROGRAM CHANGE NUMBER 1	
01 47H	0000 bbbb aaaa bbbb		0–127
:			
02 06H	0000 aaaa	RX PROGRAM CHANGE NUMBER 32	
02 07H	0000 bbbb aaaa bbbb		0–127
02 08H	0xxx xxxx	dummy	
:			
03 7FH	0xxx xxxx		
Total size		00 00 04 00H	

4.4 Tone parameters

Offset address	Description		
00 00H	0000 aaaa	TONE NAME 1	
00 01H	0000 bbbb aaaa bbbb		32–127 (ASCII)
:			
:			
00 0EH	0000 aaaa	TONE NAME 8	
00 0FH	0000 bbbb aaaa bbbb		32–127 (ASCII)
00 10H	0000 aaaa	OUTPUT ASSIGN	
00 11H	0000 bbbb aaaa bbbb		0–7
00 12H	0000 aaaa	SOURCE TONE	
00 13H	0000 bbbb aaaa bbbb		0–31
00 14H	0000 aaaa	ORIG/SUB TONE	
00 15H	0000 bbbb aaaa bbbb		0 : ORG 1 : SUB
00 16H	0000 aaaa	SAMPLING FREQUENCY	
00 17H	0000 bbbb aaaa bbbb		0 : 30KHz 1 : 15KHz
00 18H	0000 aaaa	ORIG KEY NUMBER	
00 19H	0000 bbbb aaaa bbbb		11–108 (MIDI FORMAT)
00 1AH	0000 aaaa	WAVE BANK	
00 1BH	0000 bbbb aaaa bbbb		0 : A 1 : B
00 1CH	0000 aaaa	WAVE SEGMENT TOP	
00 1DH	0000 bbbb aaaa bbbb		0–17
00 1EH	0000 aaaa	WAVE SEGMENT LENGTH	
00 1FH	0000 bbbb aaaa bbbb		0–18
00 20H	0000 aaaa	START POINT	
00 21H	0000 bbbb		
00 22H	0000 cccc aaaa bbbb cccc dddd eeee ffff		
00 23H	0000 dddd		000000–221180
00 24H	0000 eeee		
00 25H	0000 ffff		
00 26H	0000 aaaa	END POINT	
00 27H	0000 bbbb		
00 28H	0000 cccc aaaa bbbb cccc dddd eeee ffff		
00 29H	0000 dddd		000004–221184
00 2AH	0000 eeee		
00 2BH	0000 ffff		
00 2CH	0000 aaaa	LOOP POINT	
00 2DH	0000 bbbb		
00 2EH	0000 cccc aaaa bbbb cccc dddd eeee ffff		
00 2FH	0000 dddd		000000–221184
00 30H	0000 eeee		
00 31H	0000 ffff		
00 32H	0000 aaaa	LOOP MODE	
00 33H	0000 bbbb aaaa bbbb		0 : Fwd 1 : Alt 2 : 1Shot

			3 : Reverse
00 34H	0000 aaaa	TVA LFO DEPTH	
00 35H	0000 bbbb	aaaa bbbb	0−127
00 36H	0xxx xxxx	dummy	
00 37H	0xxx xxxx		
00 38H	0000 aaaa	LFO RATE	
00 39H	0000 bbbb	aaaa bbbb	0−127
00 3AH	0000 aaaa	LFO SYNC	
00 3BH	0000 bbbb	aaaa bbbb	0 : OFF 1 : ON
00 3CH	0000 aaaa	LFO DELAY	
00 3DH	0000 bbbb	aaaa bbbb	0−127
00 3EH	0xxx xxxx	dummy	
00 3FH	0xxx xxxx		
00 40H	0000 aaaa	LFO MODE	
00 41H	0000 bbbb	aaaa bbbb	0 : NORMAL 1 : ONE SHOT
00 42H	0000 aaaa	TVA LFO DEPTH	
00 43H	0000 bbbb	aaaa bbbb	0−127
00 44H	0000 aaaa	LFO POLALITY	
00 45H	0000 bbbb	aaaa bbbb	0 : Sine 1 : Peak hold
00 46H	0000 aaaa	LFO OFFSET	
00 47H	0000 bbbb	aaaa bbbb	0−127
00 48H	0000 aaaa	TRANSPOSE	
00 49H	0000 bbbb	aaaa bbbb	0−127
00 4AH	0000 aaaa	FINE TUNE	
00 4BH	0000 bbbb	aaaa bbbb	−64−+63
00 4CH	0000 aaaa	TVF CUT OFF	
00 4DH	0000 bbbb	aaaa bbbb	0−127
00 4EH	0000 aaaa	TVF RESONANCE	
00 4FH	0000 bbbb	aaaa bbbb	0−127
00 50H	0000 aaaa	TVF KEY FOLLOW	
00 51H	0000 bbbb	aaaa bbbb	0−127
00 52H	0xxx xxxx	dummy	
00 53H	0xxx xxxx		
00 54H	0000 aaaa	TVF LFO DEPTH	
00 55H	0000 bbbb	aaaa bbbb	0−127
00 56H	0000 aaaa	TVF EG DEPTH	
00 57H	0000 bbbb	aaaa bbbb	0−127
00 58H	0000 aaaa	TVF EG POLALITY	
00 59H	0000 bbbb	aaaa bbbb	0 : NORMAL 1 : REVERSE
00 5AH	0000 aaaa	TVF LEVEL CURVE	
00 5BH	0000 bbbb	aaaa bbbb	0−5
00 5CH	0000 aaaa	TVF KEY RATE FOLLOW	
00 5DH	0000 bbbb	aaaa bbbb	0−127
00 5EH	0000 aaaa	TVF VELOCITY RATE FOLLOW	
00 5FH	0000 bbbb	aaaa bbbb	0−127
00 60H	0xxx xxxx	dummy	
00 61H	0xxx xxxx		
00 62H	0000 aaaa	TVF SWITCH	
00 63H	0000 bbbb	aaaa bbbb	0 : OFF 1 : ON
00 64H	0000 aaaa	BENDER SWITCH	
00 65H	0000 bbbb	aaaa bbbb	0 : OFF 1 : ON
00 66H	0000 aaaa	TVA ENV SUSTAIN POINT	
00 67H	0000 bbbb	aaaa bbbb	0−7
00 68H	0000 aaaa	TVA ENV END POINT	
00 69H	0000 bbbb	aaaa bbbb	1−7
00 6AH	0000 aaaa	TVA ENV LEVEL 1	
00 6BH	0000 bbbb	aaaa bbbb	0−127
00 6CH	0000 aaaa	TVA ENV RATE 1	
00 6DH	0000 bbbb	aaaa bbbb	1−127
00 6EH	0000 aaaa	TVA ENV LEVEL 2	
00 6FH	0000 bbbb	aaaa bbbb	0−127
00 70H	0000 aaaa	TVA ENV RATE 2	
00 71H	0000 bbbb	aaaa bbbb	1−127
00 72H	0000 aaaa	TVA ENV LEVEL 3	
00 73H	0000 bbbb	aaaa bbbb	0−127
00 74H	0000 aaaa	TVA ENV RATE 3	
00 75H	0000 bbbb	aaaa bbbb	1−127
00 76H	0000 aaaa	TVA ENV LEVEL 4	
00 77H	0000 bbbb	aaaa bbbb	0−127
00 78H	0000 aaaa	TVA ENV RATE 4	
00 79H	0000 bbbb	aaaa bbbb	1−127
00 7AH	0000 aaaa	TVA ENV LEVEL 5	
00 7BH	0000 bbbb	aaaa bbbb	0−127
00 7CH	0000 aaaa	TVA ENV RATE 5	
00 7DH	0000 bbbb	aaaa bbbb	1−127
00 7EH	0000 aaaa	TVA ENV LEVEL 6	
00 7FH	0000 bbbb	aaaa bbbb	0−127
01 00H	0000 aaaa	TVA ENV RATE 6	
01 01H	0000 bbbb	aaaa bbbb	1−127
01 02H	0000 aaaa	TVA ENV LEVEL 7	
01 03H	0000 bbbb	aaaa bbbb	0−127
01 04H	0000 aaaa	TVA ENV RATE 7	
01 05H	0000 bbbb	aaaa bbbb	1−127
01 06H	0000 aaaa	TVA ENV LEVEL 8	
01 07H	0000 bbbb	aaaa bbbb	0−127
01 08H	0000 aaaa	TVA ENV RATE 8	
01 09H	0000 bbbb	aaaa bbbb	1−127
01 0AH	0xxx xxxx	dummy	
01 0BH	0xxx xxxx		
01 0CH	0000 aaaa	TVA ENV KEY−RATE	
01 0DH	0000 bbbb	aaaa bbbb	0−127
01 0EH	0000 aaaa	LEVEL	
01 0FH	0000 bbbb	aaaa bbbb	0−127
01 10H	0000 aaaa	ENV VEL−RATE	
01 11H	0000 bbbb	aaaa bbbb	0−127
01 12H	0000 aaaa	REC THRESHOLD	
01 13H	0000 bbbb	aaaa bbbb	0−127
01 14H	0000 aaaa	REC PRE−TRIGER	
01 15H	0000 bbbb	aaaa bbbb	0 : 0ms 1 : 10ms 2 : 50ms 3 : 100ms
01 16H	0000 aaaa	REC SAMPLING FREQUENCY	
01 17H	0000 bbbb	aaaa bbbb	0 : 30KHz 1 : 15KHz
01 18H	0000 aaaa	REC START POINT	
01 19H	0000 bbbb		
01 1AH	0000 cccc	aaaa bbbb cccc dddd eeee ffff	
01 1BH	0000 dddd		000000−221180
01 1CH	0000 eeee		
01 1DH	0000 ffff		
01 1EH	0000 aaaa	REC END POINT	
01 1FH	0000 bbbb		
01 20H	0000 cccc	aaaa bbbb cccc dddd eeee ffff	
01 21H	0000 dddd		000004−221184
01 22H	0000 eeee		
01 23H	0000 ffff		
01 24H	0000 aaaa	REC LOOP POINT	
01 25H	0000 bbbb		
01 26H	0000 cccc	aaaa bbbb cccc dddd eeee ffff	
01 27H	0000 dddd		000000−221184
01 28H	0000 eeee		
01 29H	0000 ffff		
01 2AH	0000 aaaa	ZOOM T	
01 2BH	0000 bbbb	aaaa bbbb	0−5
01 2CH	0000 aaaa	ZOOM L	
01 2DH	0000 bbbb	aaaa bbbb	0−5
01 2EH	0000 aaaa	COPY SOURCE	
01 2FH	0000 bbbb	aaaa bbbb	0−31
01 30H	0000 aaaa	LOOP TUNE	
01 31H	0000 bbbb	aaaa bbbb	−64−+63
01 32H	0000 aaaa	TVA LEVEL CURVE	
01 33H	0000 bbbb	aaaa bbbb	0−5
01 34H	0xxx xxxx	dummy	
:			

01 4BH	0xxx xxxx	
01 4CH	0000 aaaa	LOOP LENGTH
01 4DH	0000 bbbb	
01 4EH	0000 cccc	aaaa bbbb cccc dddd eeee ffff
01 4FH	0000 dddd	000004–221184
01 50H	0000 eeee	
01 51H	0000 ffff	
01 52H	0000 aaaa	PITCH FOLLOW
01 53H	0000 bbbb	aaaa bbbb 0 : OFF 1 : ON
01 54H	0000 aaaa	ENV ZOOM
01 55H	0000 bbbb	aaaa bbbb 0–5
01 56H	0000 aaaa	TVF ENV SUSTAIN POINT
01 57H	0000 bbbb	aaaa bbbb 0–7
01 58H	0000 aaaa	TVF ENV END POINT
01 59H	0000 bbbb	aaaa bbbb 1–7
01 5AH	0000 aaaa	TVF ENV LEVEL 1
01 5BH	0000 bbbb	aaaa bbbb 0–127
01 5CH	0000 aaaa	TVF ENV RATE 1
01 5DH	0000 bbbb	aaaa bbbb 1–127
01 5EH	0000 aaaa	TVF ENV LEVEL 2
01 5FH	0000 bbbb	aaaa bbbb 0–127
01 60H	0000 aaaa	TVF ENV RATE 2
01 61H	0000 bbbb	aaaa bbbb 1–127
01 62H	0000 aaaa	TVF ENV LEVEL 3
01 63H	0000 bbbb	aaaa bbbb 0–127
01 64H	0000 aaaa	TVF ENV RATE 3
01 65H	0000 bbbb	aaaa bbbb 1–127
01 66H	0000 aaaa	TVF ENV LEVEL 4
01 67H	0000 bbbb	aaaa bbbb 0–127
01 68H	0000 aaaa	TVF ENV RATE 4
01 69H	0000 bbbb	aaaa bbbb 1–127
01 6AH	0000 aaaa	TVF ENV LEVEL 5
01 6BH	0000 bbbb	aaaa bbbb 0–127
01 6CH	0000 aaaa	TVF ENV RATE 5
01 6DH	0000 bbbb	aaaa bbbb 1–127
01 6EH	0000 aaaa	TVF ENV LEVEL 6
01 6FH	0000 bbbb	aaaa bbbb 0–127
01 70H	0000 aaaa	TVF ENV RATE 6
01 71H	0000 bbbb	aaaa bbbb 1–127
01 72H	0000 aaaa	TVF ENV LEVEL 7
01 73H	0000 bbbb	aaaa bbbb 0–127
01 74H	0000 aaaa	TVF ENV RATE 7
01 75H	0000 bbbb	aaaa bbbb 1–127
01 76H	0000 aaaa	TVF ENV LEVEL 8
01 77H	0000 bbbb	aaaa bbbb 0–127
01 78H	0000 aaaa	TVF ENV RATE 8
01 79H	0000 bbbb	aaaa bbbb 1–127
01 7AH	0000 aaaa	AFTER TOUCH SWITCH
01 7BH	0000 bbbb	aaaa bbbb 0 : OFF 1 : ON
01 7CH	0xxx xxxx	dummy
:		
01 7FH	0xxx xxxx	
Total size		00 00 02 00H

4.5 SW

Offset address	Description	
00H	0000 aaaa	SW 1 (all)
01H	0000 bbbb	aaaa bbbb
02H	0000 aaaa	SW 2 (character)
03H	0000 bbbb	aaaa bbbb
04H	0000 aaaa	SW 3 (patch)
05H	0000 bbbb	aaaa bbbb
06H	0000 aaaa	ALPHA DIAL
07H	0000 bbbb	aaaa bbbb –127–+127
Total size		00 00 00 08H

4.6 Wave data

Offset address	Description	
00 00 00H	0aaa aaaa	aaaa aaab bbbb
00 00 01H	0bbb bb00	12 bit 2's complemet data
:		
:		
01 3F 7EH		
01 3F 7FH		
Total size		00 01 40 00H

INDEX

SPECIFICATIONS

S−330 : 16 voice polyphonic digital sampler MIDI sound module.

■ Memory
Wave Data 512k words
32 Tone/Tone Parameters
16 Patch/Patch Parameters
Function Parameters
MIDI Function Parameters

■ Front Panel
Power Switch
Mode Button
Cursor Buttons
Menu Button
Sub Menu Button
Command Button
Execute Button
DEC/INC (NO/YES) Buttons
Roll Button
Volume Knob
Recording Level Control Knob
Input Jack
Headphone Jack
EXT CTRL Connector
2×16 Letter (LCD) Display Window

■ Rear Panel
Output 1 Phone Jack
Individual Output Jacks x 8
MIDI IN Connector
MIDI OUT Connector
MIDI THRU Connector
RGB Connector for a Color Monitor Display
Composite Connector for a Black and White Monitor Display

■ Disk Drive
3.5" Micro Floppy Disk Drive : Double density, Double Track (2DD)

■ Dimensions
482 (W) × 340 (D) × 44 (H) mm
19" × 13−3/8" × 1−3/4"

■ Weight
4.3kg/9 lb /8 oz

■ Consumption
17W

■ Accessories
Connection Cord (PJ−1) ×1
MIDI Cable ×1
System Disk ×2
Utility Disk ×1
Owner's manual
S−330 Guide Book
Guide Book for MIDI

■ Options
Mouse (MU−1)
Remote Controller RC−100
RGB Cable (RGB−25N)
3.5" Micro Floppy Disk MF2DD
Sound Library Disks L−501 to 509

*** Specifications are subject to change without notice.**

S-330
DIGITAL SAMPLER
GUIDE BOOK

Roland

INTRODUCTION

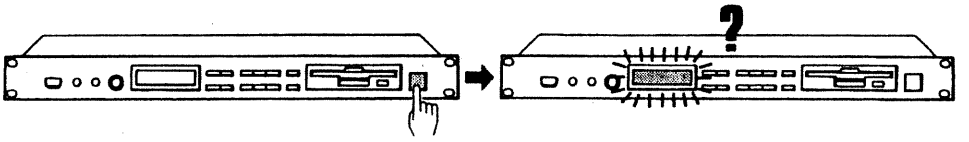
This guide book plainly explaines
the basic concept and necessary procedures
of the Roland Digital Sampler S-330.
If you need more information,
read the owner's manual.
Also, refer to "Basic Operation Table"
at the back of this guide book.

CONTENTS

The S-330, an Open System

1. The S-330 System Disk

The S-330 cannot be played as a musical instrument just after being turned on. This is because the "brain" of the S-330 is still empty and therefore cannot work, judge or command.



To play the S-330 as a musical instrument, it is necessary to transfer **the System Ptrgram** from **the supplied System Disk** to the "empty brain". In other words, the System Program determines how the S-330 should function. Switch the S-330 on, then insert the System Disk into the Disk Drive, and it will automatically read the System Program from the disk. A devices which does not function unless reading the system program are called "Open System".

2. What the S-330 can do

There are two kinds of System Programs for the S-330; the Sampler System disk which is supplied with the S-330, and an optional disk the SYS-333 "DIRECTOR-S".

The Sampler System disk is used for digitally recording sounds, editing wave data, combining samples, etc. In other words, it is disigned to turn the S-330 into a Sampler. Data programmed using the Sampler System is called **Sound Data.**

The SYS-333 "DIRECTOR-S" (optional) is provided for using the S-330 as a MIDI sequencer including a sampling sound module. That is, the sequencer data recorded on the S-330 itself, plays the S-330's sound module. Data programmed using the SYS-333 sequencer disk is called **Song Data**. For a detailed explanation on this system, see page 25.

*** Please ask for the SYS-333 "DIRECTOR-S" at the store where you have purchased the S-330.**

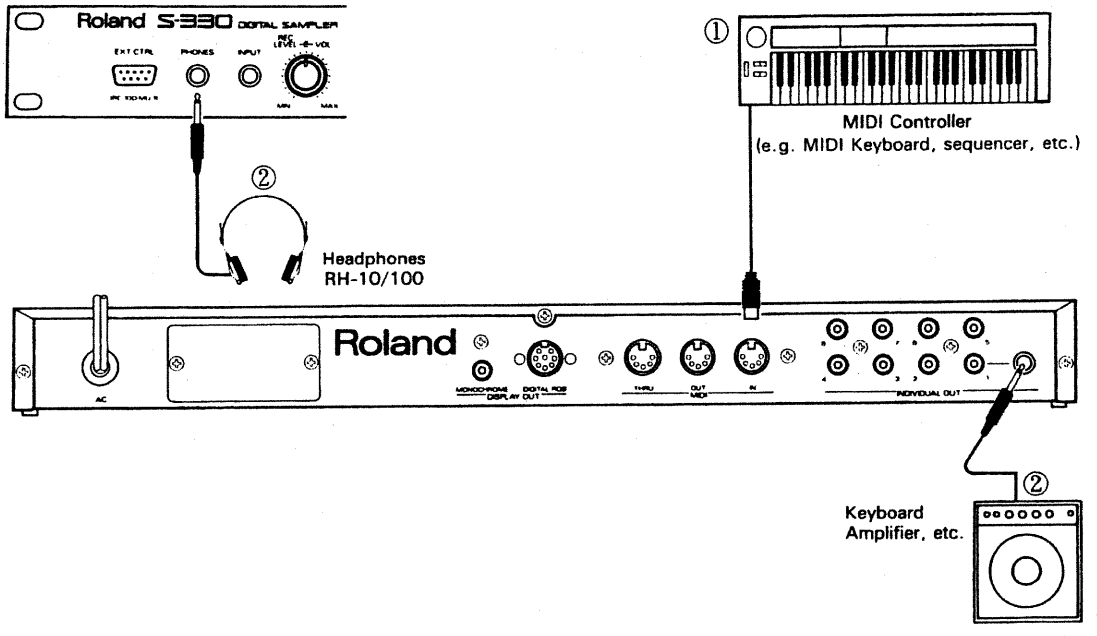
Necessary Preparations

Now, follow these necessary preparation, then boot up the S-330 with the supplied Sampler System disk.

1. Connections

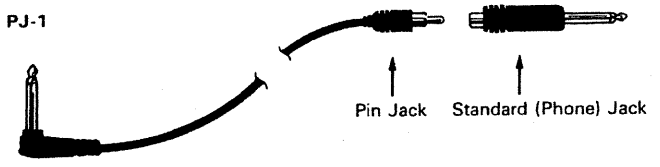
a. Basic Setup

The following is an example setup, using the minimum number of devices to play the S-330.

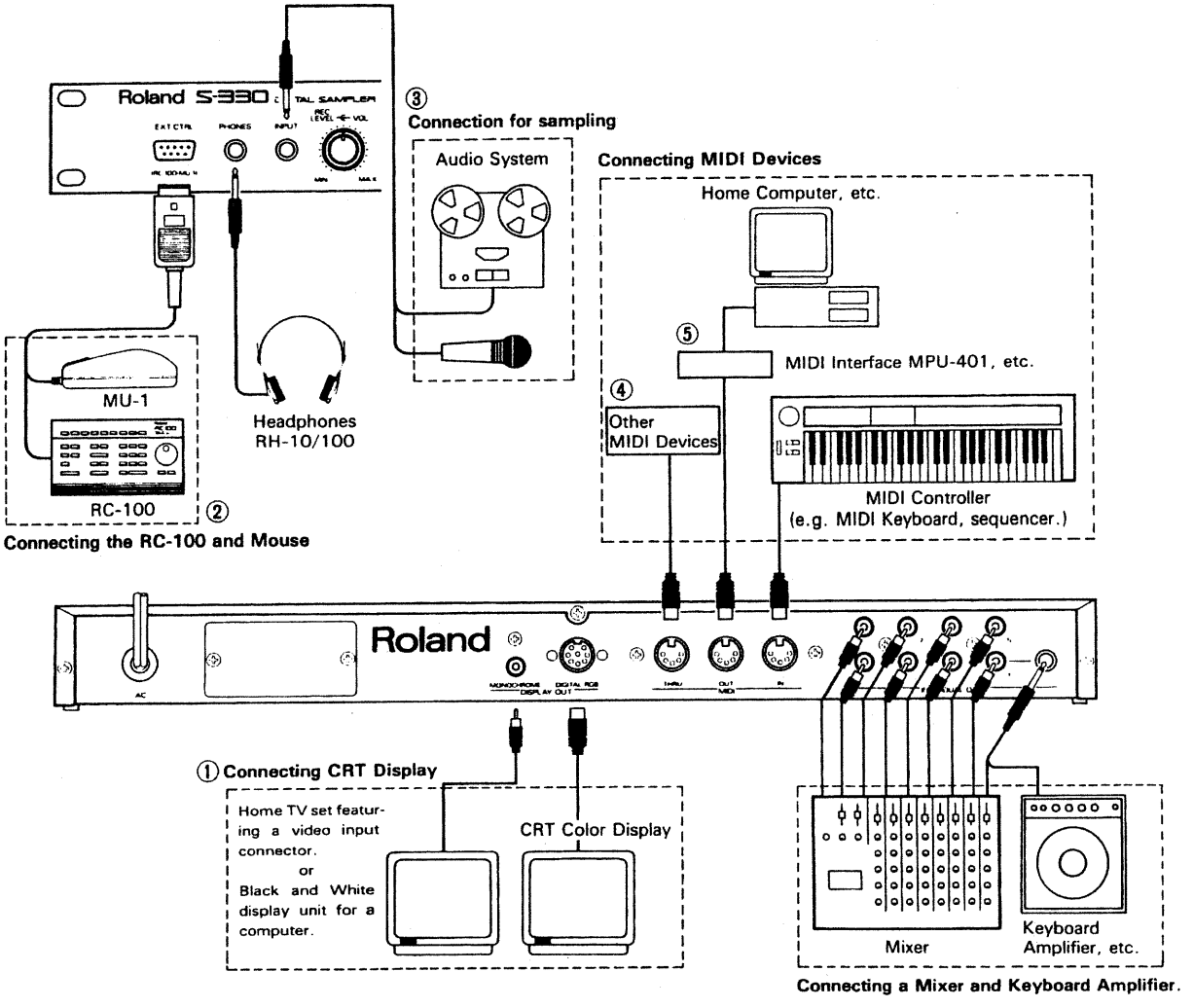


① The S-330 is played by MIDI performance messages received through the MIDI IN connector. Connect the MIDI IN connector of the S-330 to a MIDI Controller such as the D-50, S-50 or GM-70 Guitar Controller, or sequencer. To enjoy the expressive performance of the S-330, use a controller featuring the touch sensitivity or aftertouch.

② To fully benefit from the high quality sound of the S-330, use an amplifier and speaker with a wide dynamic range and frequency characteristics, such as a keyboard amplifier. You can use headphones if you cannot prepare an amplifier or speaker. (Note that the headphone output is a monaural output.)



b. More Integrated Setups



① Using a CRT Display will improve the operation on the S-330. The S-330 has two connectors for a CRT display, one is the Color Monitor connector and the other is the Monochrome Monitor connector. The Color Monitor connector is to be connected to a home computer display or a TV set featuring an RGB socket. However, before connecting a display, check if the display's input specifications match the output of the S-330 (see page 11 in the S-330's owner's manual). If not, it cannot be used with the S-330. Even when you do not have the above display, a home TV with a video input socket can do. Connect the Monocrome Monitor Connector to the Input Video Socket on a TV. The display, however, will always be black and white, even on a color TV.

② The Mouse MU-1 and the Remote Controller RC-100 (both optional) will be extremely useful for operating the S-330 with the CRT display. The Mouse requires only a forefinger and middle finger of the right hand to operate the S-330, therefore you can use your left hand for playing the keyboard. Therefore, except for turning on or off the unit or when changing a disk, you can operate the S-330 from a distance.

The Remote Controller RC-100 allows you to control the S-330 at a distance and to use the Ten Key Pad or Alpha Dial for quicker and easier operation. Also, by connecting the Mouse to the rear panel of the RC-100, you can use both units simultaneously with the S-330.

Use the EXT CTRL Connector for the connection of the Mouse or the Remote Controller.

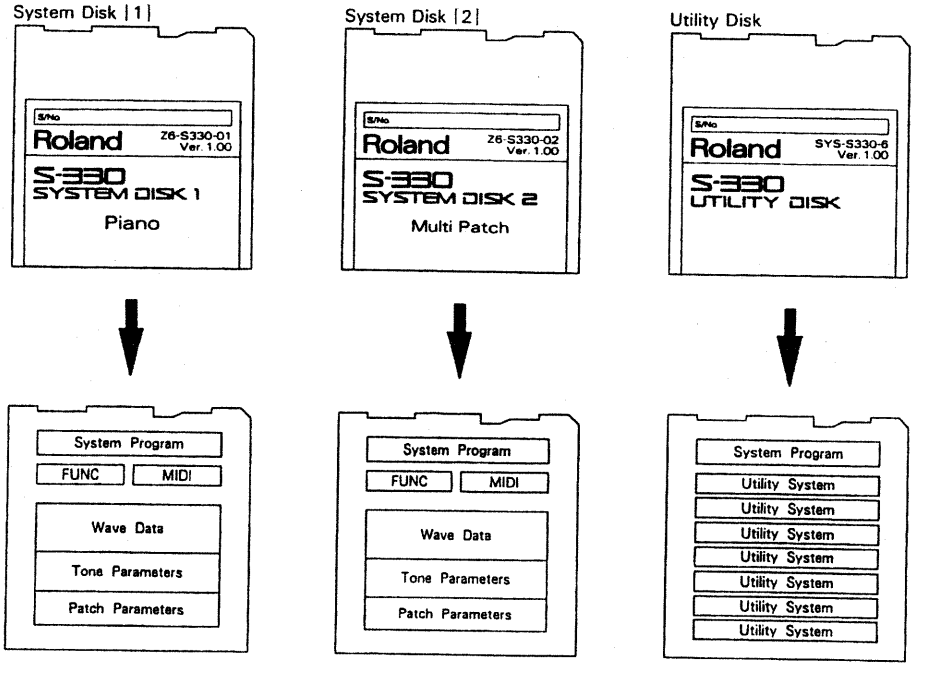
③ Connect a microphone, or the output socket of the audio equipment from which you wish to sample, to this socket when sampling a sound. Please use a cardioid microphone if possible, to avoide picking up extraneous noise.

④ Through the MIDI THRU connector, an exact copy of the messages fed from the MIDI IN will be transmitted.

⑤ Normally, the MIDI OUT connector is hardly used. It is used only for transmitting the S-330's internal data to a computer to save or edit it in the computer's memory.

2. Disk Types

The S-330 is supplied with two System Disks and a Utility Disk. All these three disks contain the same Sampler System Programs, therefore, any of them can boot up the S-330. Each of the two System Disks contains a different Sound Data. The Utility Disk contains the additional system programs that are used for sampling or modifying wave data.



Creating a Backup of the System Disk

To prevent loss of the System Program which is essential to activate the S-330, please make a few backups of a System Disk. (See page 136 in the S-330's owner's manual)

If possible, please use Roland MF2-DD floppy disks. They can be purchased at the store where you bought the S-330.

3. Power-up and Booting up

When you have made all the necessary connections, turn the units on in the following order, then boot up the S-330 using the "Multi Patch" System Disk. Before turning the S-330 on, check that a disk is not inserted in the Disk Drive, or data on the disk may be erased.

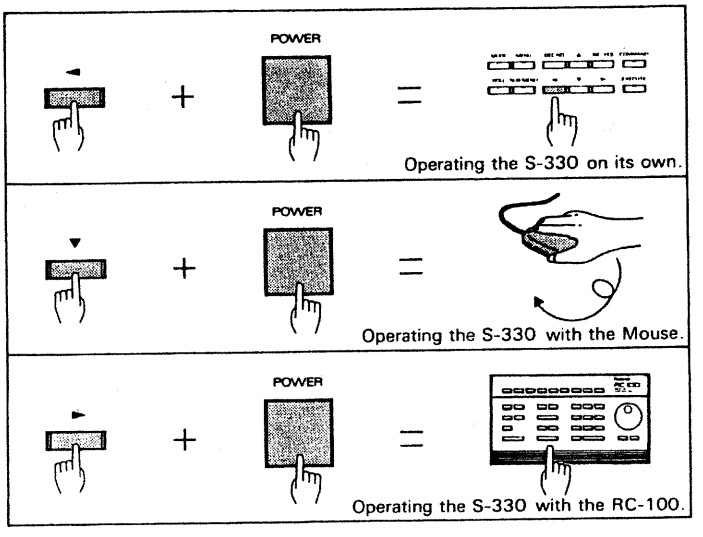
1. Turn the MIDI Controller on.

2. Turn the S-330 on as follows

If do not wish to use the Mouse, the RC-100, or the CRT display, switch the S-330 on while holding the ◀ button.

If you use a CRT display and the Mouse, turn the S-330 on while holding the ▼ button down.

If you use a CRT display and the RC-100, turn the S-330 on while holding the ▶ button down.

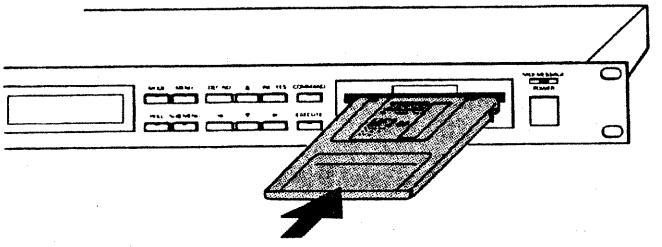


*** Keep pressing the button for a while even after the unit is switched on.**

*** If is possible to write your preference on a disk, taht is, whether to use the Mouse and/or RC-100 or not, using the "Save SYS" function. (See page 138 in the owner's manual.) When the S-330 is turned on simply by using the Power Switch, the S-330 is booted so that it can be controlled by the controller (the Mouse and/or RC-100 or not) written on the disk. If booted with a System Disk, it will not be cotnrolled by either of them ("off").**

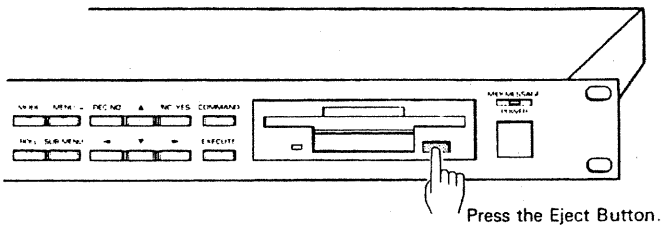
3. **Switch on the Display, keyboard amplifier, then mixer.**

4. **Insert the "Multi Patch" System Disk into the Disk Drive as shown below.**



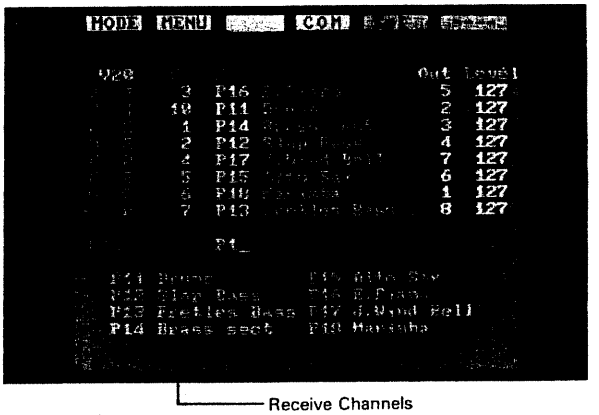
When the disk is inserted, the System Program, then the Sound Data on the Disk will be automatically load into the S-330's memory. While loading, the number in the Display counts down to zero, then returns to the Play Mode Display. (When the Utility Disk is used, as it has no Sound Data, the Play Mode Display will appear right after the System Program is loaded.)

5. **As shown in the picture, push the Eject Button to remove the disk from the Disk Drive.**



When the S-330 has booted up, it will automatically return to the Play mode.

To return to the Play mode from another mode, push the MODE button, then the EXECUTE button.



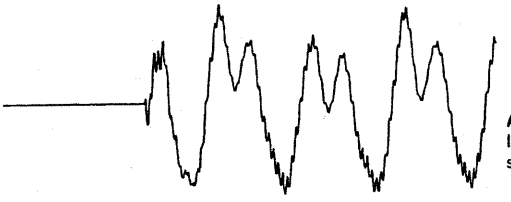
The Play mode switches the S-330 to the usual playing mode. The following shows the entire structure of the S-330; including the combination of Tones which are made from sampled wave data. We will study this later on page 21. Now, listen to the Sound Data loaded from the System Disk.

The S-330 is played by the MIDI messages sent from an external MIDI controller. The MIDI channels of the controller and the sound module should be set to the same number, otherwise, the MIDI messages cannot be communicated between the two devices. The S-330 has 8 MIDI receive channels which can be simultaneously used. The following pictures show the MIDI channels currently set on the S-330. Set the MIDI transmit channel of the controller to one of these channel numbers to listen to the S-330's sound.

Sampling and Playing

1. Sampling

"Synthesizing" can create a wide variety of sounds, but it is often very difficult to synthesize natural sounds. "Sampling" is a completely different method, which is recording real sounds which can be modified.

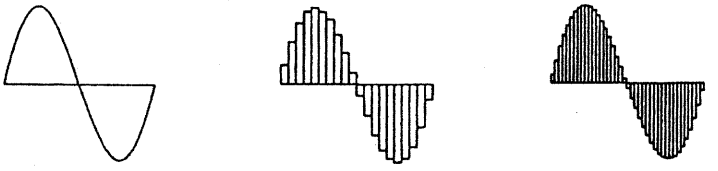


Attack wave of on electric Piano
It is difficult to make such waveforms by combining sine waves and saw tooth waves.

Reverberation wave of an electric Piano 1.5 second after the attack
When the reverberations calm down, wave-forms become gentle.

The S-330's sampling is conceptually like a tape recorder in that it records sounds. However, the recording process is very different since the S-330 is recording into computer memory. This is called a PCM sampling system, which is used not only for samplers but also for rhythm machines or digital effects such as digital delays. The PCM recording converts audio signal into digital. It does this by examining (sampling) the incoming signal level a great many times each second, and sequentially recording these different levels in computer memory. The Sampling frequencies are the number of times per second that a sample is made of the input signal. The S-330 can sample either at 30,000 or 15,000 samples per second (30 or 15kHz).

At higher sampling frequencies, the sampling time is shorter, but the audio quality of the sample is better. On the other hand, at lower sampling frequencies, longer samples are possible, but the audio quality of the sample is slightly lowered.



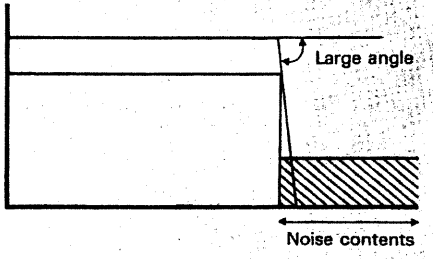
Input Wave form

Converts the levels of a wave into digital signals.

Roland S Series' DI System

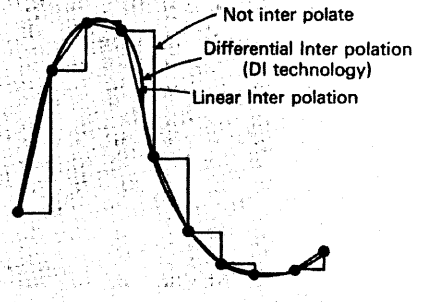
The Roland S Series Samplers adopt the DI system, which is a new technology invented for resolving noise generated while sampled data is being played.

A sampler, different from a CD player, should reproduce samples at various pitches. Many samplers change pitche by changing frequency, but the Roland S-series Samplers play the sampled data by changing the intervals. This is called the fixed sampling method. In fixed sampling, the generated noise can be cut at a certain frequency band using a sharp digital filter, resulting in successful playback of the original sound without affecting the harmonic contents.



The Digital Filter sharply cuts the noise.

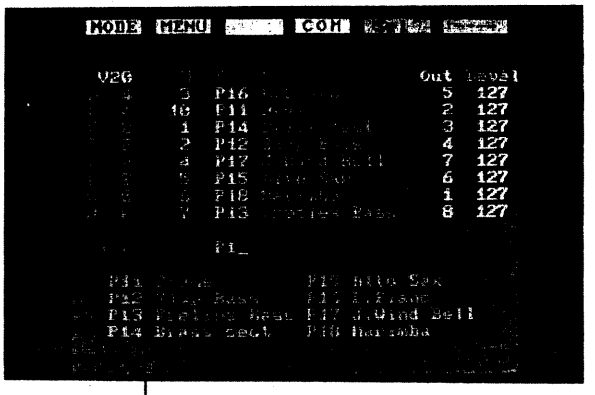
The most important element of the DI technology is how to achieve a correct calculation of the interval points. The S-series can perform high speed calculations, supplying imaginary point data. This makes the interval setting extremely accurate, therefore, noise is greatly reduced, resulting in high quality sounds.



The data of the smapled sound is called **Wave data**, and the place where the Waves are sotred is a Wave Bank. The S-330 contains two Wave Banks, A and B. Each Wave Bank can store one long tone or many smaller tones.

Now, let's sample a sound.

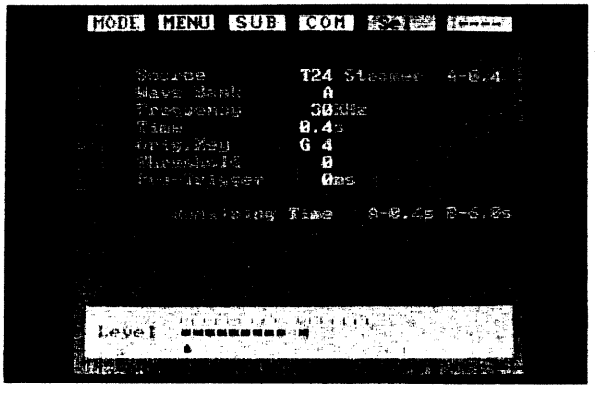
To be able to hear the sampled sound properly, set the MIDI channel of Voice Group A to the MIDI transmit channel of the controller, while in the Play mode.



MIDI Channel (Receive) of Voice Group A

Call the Sampling Menu.

The Sampling System is stored on the Utility Disk. Insert the Utility Disk into the Disk Drive, then push the MODE button. Select "UTIL" using the Cursor Buttons (▲▼), then push the EXECUTE button and MENU button to display all the menus stored on the Utility Disk. With the Cursor Buttons (▲▼), select "Sampling", then push the EXECUTE button. Now, the system program necessary for sampling will be loaded.



The Wave data you have sampled can be numbered from 11 to 18 or 21 to 28, or 31 to 38, 41 to 48. Before sampling, select a Tone Number for the Wave data you are to sample, using the relevant SUB MENU button.

Here, we select Tone Number 17 "Crash" (when the S-330 is booted up with the "Multi Patch" System disk). When you sample new Wave data, the Tone Number "Crash" will be erased. ("Crash" is erased from the internal Wave Bank but retained on the System Disk, and therefore can be loaded back to the internal memory at any time.) Move the cursor to T17, and push the EXECUTE button. Here, pushing the SUB MENU button will return to the original Sampling Display.

Original Tones and Sub Tones

The S-330 has two types of Tones; Original Tones and Sub Tones. Each sample has a Tone Number. Therefore, for example, if each sample uses an eintire Wave Bank, A or B, only two Tones can be programmed, leaving the other 30 Tone Numbers meaningless. To use the remaining Tone Numbers effectively, the S-330 allows you to borrow any of the existing Tones (=Original Tones) to make a completely different Tone with a modified setting of Tone Parameters. This is called a Sub Tone.

If the selected Tone Number is an Original Tone, the wave data of the existing Tone will be rewritten with a new sample. However, if you wish to sample a longer tone than the original data, you should make a space by deleting some extra data such as another Original Tone.

If the selected Tone Number is a Sub Tone, the new sample does not automatically rewrite the existing data, therefore, when the Wave Banks are full of existing data (=when the S-330 is booted up with a System Disk), you should make sufficient space by deleting unnecessary Original Tones before sampling.

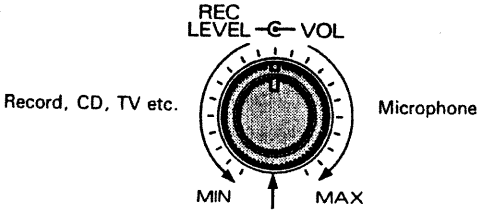
Deleting only erases data from Wave Banks in the internal memory, therefore, if the original data is saved on a disk, it can be loaded back to the internal memory. See page 63 in the owner's manual for a detailed explanation on deleting.

Now, you have selected a Tone Number. Next, you should assign a Wave Bank where the new data is to be written.
"Crash" is stored in Wave Bank A, so select "A" here.

Set the Frequency (=sampling frequency), Time (sampling time), Orig. Key (original key number).
At 30kHz sampling frequency, the sound quality can be higher, while longer (double) sampling time can be obtained at 15kHz. When 15kHz is selected, "X2" is indicated beside the sampling time. The sampling time can be set in 0.4 second steps. Even if there is no emply space in the Wave Bank, up to 1.2 second sampling (at 30kHz) is possible since the Wave data of "Crash" is 1.2 second long. In other words, you can select 0.4, 0.8 or 1.2 seconds.

The original key number determines which key on the keyboard should play the original sample. For instance, when sampling a middle C(C4) piano sound, the original key number may be set to C4. If, however, D4 is set, pressing the middle "D" key will play a "C" note, and pressing the middle "C" key will play a "B♭" note.

Now, connect for sampling.
To sample from a record, CD or TV, connect the output socket to the Input Socket on the S-330 using an audio cable, then rotate the Recording Level Knob to the MIN position. To sample your voice or natural sound around you, connect a microphone and set the Recording Level Knob to MAX.



Recording Level Control Knob

Now, let's feed the sound you wish to sample.

Set the volume and Recording Level Knob to the appropriate level, which is the highest possible level without the word "Over" being indicated in teh Display. Connecting headphones to the headphone Sockets will allow you to monitor the sample.

The S-330 features three types of sampling; Auto, Manual and Previous. For a detailed explanation on Auto and Previous sampling, see page 42 in the owner's manual.

Here, we sample using Manual Sampling. Set the Pre-Tigger to zero.

Push the COMMAND button, then select "Manual" with the cursor Buttons (▲▼). When "Ready" appears in the Display, the S-330 is ready for sampling. Push the EXECUTE button, and feed a sound immediately. The sampling automatically stops after the set sampling time.

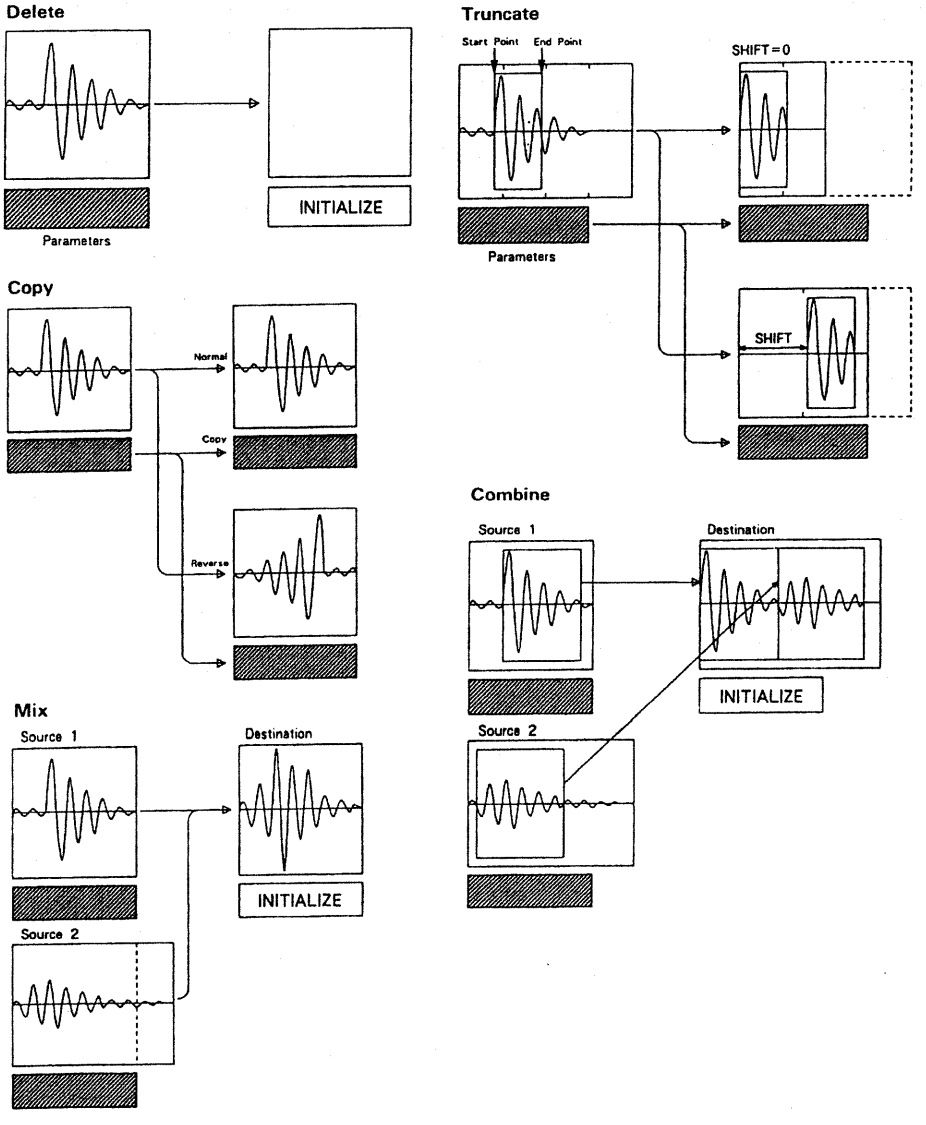
Now, play the keyboard.

The original sample will be played by pressing the Original Key. If the sound is distorted or cut, open the Command Window and re-sample at a lower volume level. If the sample does not sound immediately after the keyboard is played, resolve it later, seeh "Playback points and Loop" on page 17.

2. Editing Wave Data

The Wave data of the sample can be modified. For example, unneeded portions of the Wave data can be truncated, or you may process the tone of the Wave data, or mix two Waves, or even draw a completely new waveform using the optional Mouse (MU-1).

Here, we skip all those editing procedures and move to Setting Tone Parameters.

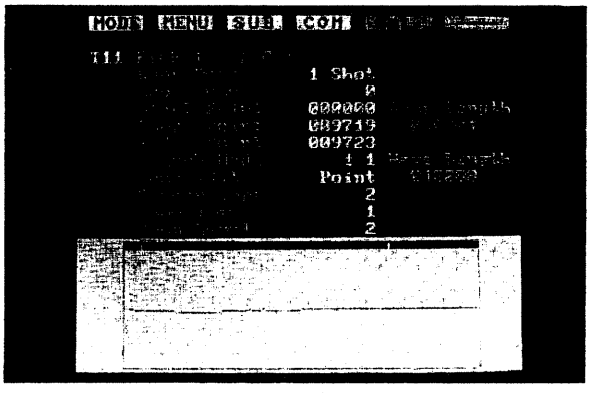


3. Setting Tone Parameters

The Wave data can be used intact or with different Tone Parameter setting. Tone Parameters involve how the recorded Wave data is read and reconstructed.

[Playback points and Loop]

Push the MODE button, select "EDIT" with the Cursor Buttons (▲▼), then push the EXECUTE button. The Display shows the Edit Mode Menu. Select "Loop" with the Cursor Buttons (▲▼), and push the EXECUTE button. The Display shows the Loop Menu and the Tone you have sampled is selected.



Loop Display

An intact sample (=Wave) is played from the beginning to the end. By setting the Start Point and the End Point, you can play only a particular portion of the wave. For example, you meant to sample "Hello" but some noise or silence is accidentally inserted before or after "Hellow", you can resolve it by setting the Start Point before "He..." and setting the End Point after "...o" while actually listenning to the sound.

Here, we set the Loop Mode to "Reverse". The loop you have made will be played in reverse.

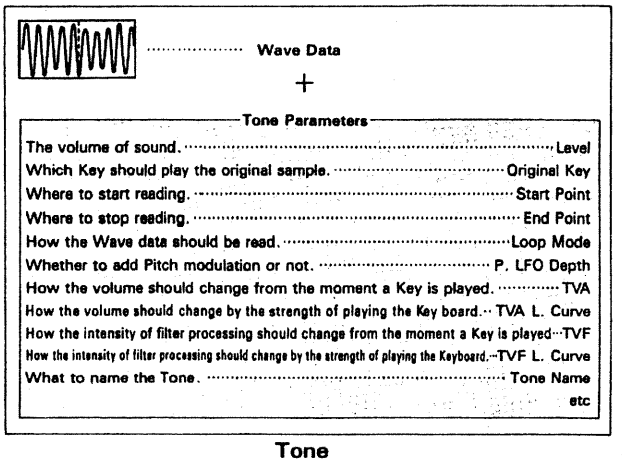
The Loop function, one of the outstanding characteristics of the S-330, plays a part of the wave data (=loop) repeatedly, while a key is being pressed.

Set the Loop Mode to "Forward". Set the Address of the Loop Point to the same number as the Start Point. As long as a key is pressed, the wave from the start to the End points sounds repeatedly. For example, our "Hello" sample will be played as "Hello Hello Hello...". Now, move the Loop Point toward the End Point. The portion from the Start to the End points is played once, then the portion from the Loop to the End points is played repeatedly like "Hello lo lo lo...".

Next, set the Loop Mode to "Alter". The portion from the Start to the End points is played once, then the loop repeats, playing forward and backward between the Loop and the End points "Hello ol lo ol lo...".

Using the above Loop function, you can make a long sustained sound successfully by combining only a stable parts of a sound. For example the sustained portion of a violin sample.

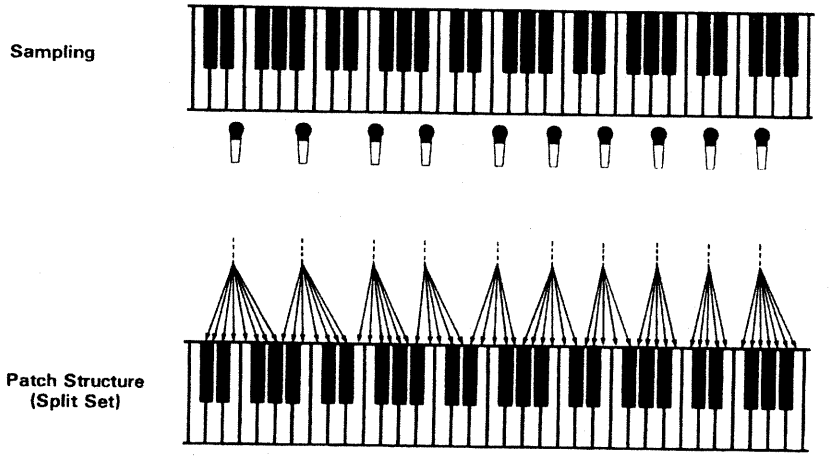
Other Tone Parameters are LFO, for modulating pitch, volume or tone, and TVF and TVA for setting envelope curves of volume and tone. The Tone Name is also a Tone Parameter. Consequently, a Tone consists of a Wave and a set of Tone Parameters.



Tone

4. Patches

The S-330 allows you to assign each Tone to a different keyboard range. A sample can be played in different pitches (=keyboard ranges), but may sound unnatural or strange in much higher or lower pitches. When piched more than one octave higher or lower the sound may appear completely different from the original sample. So, when you wish to play an instrument sound over a wide keyboard range, for instance, if using a piano sound, divide the keyboard into 7 to 8 sections. Then sample a certain notes, and distribute the tones made by the wave data of the sample to each keyboard sections. In this way, all the key ranges will sound natural. It is also interesting to distrubute a different sound to each keyboard range so that you can hear various sounds depending on the key you play. The Tone assignment to each key range is called **a Patch**.



Mutil Sampling

Changing sounds depending how you play the keyboard

Actual piano sounds change depending not only on the pitch but also the strength of playing. When you play the keyboard softly, softer and rounder sound are produced, and when played hard, sharp sounds are created. Changing the volume is not sufficient for expressing different playing manners. To reproduce realistic piano sounds, separately sample the sounds which are created by playing the keyboard strong and weak. Then make the stronger sound play only with stronger playing manner and the weaker sound play only with a weaker playing manner. This can be performed using the Key Modes, V-MIX (Velocity Mix) and V-SW (Velocity Switch). etc

The Tone assignment is performed in the "Split" menu. Push the MODE button, select "EDIT" with the Cursor Buttons (▲▼), then push the EXECUTE button, and the Edit Mode menu appears in the Display. Using the Cursor Buttons (▲▼), select "Split" then push the EXECUTE button.

Now, play the keyboard, and the Patch currently called is played. You can tell that various Tones are assigned to the keyboard.

Now, assign the Tone you have made. Set the Key Mode to "Normal", the Type Select to "1st", then call T17 at the "1st Tone" position. when the S-330 receives MIDI key messages from an external MIDI controller, the Tone is assigned to the corresponding keys. Press the keys where you wish to assign the Tone. Also, you can indicate the relevant keys on the CRT display by moving the Mouse, then push the left button on the Mouse. Pushing the right button will return the Mouse Cursor to the upper part of the Display.

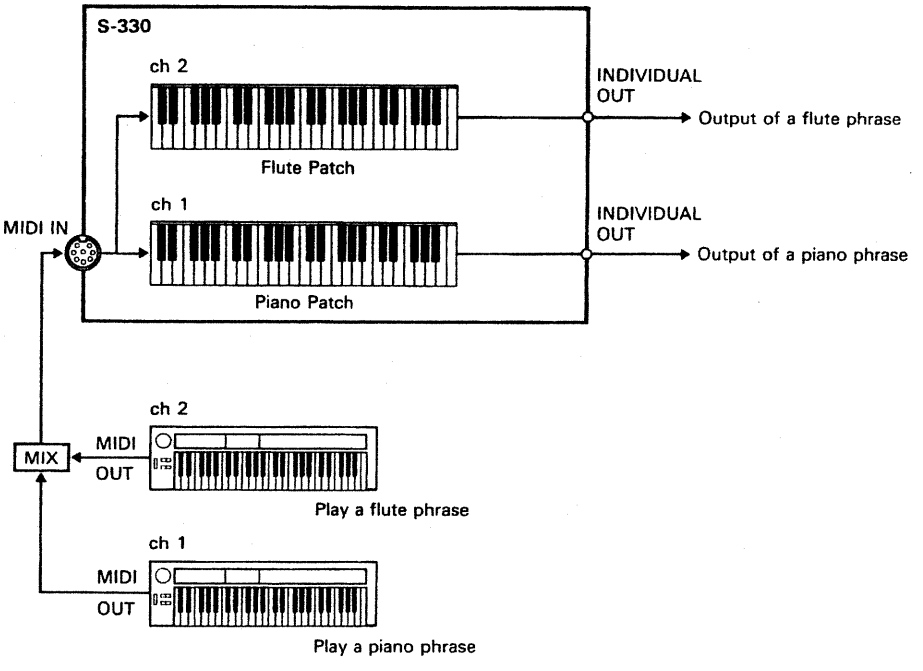
When you've finished assigning the Tone, set Type Select to "Info", and play the keyboard to hear how it sounds.

A Patch (=Tone Assignment to Key Ranges) can have various Patch Parameters such as Bend Range or Aftertouch. The Patch Name is considered as one of the Patch Parameters.

5. Multi Timbre Function and 8 Individual Outputs

Now, we are back to the Play Mode.

The S-330 can play up to 8 Patches at the same time. For example, when there are two Patches; Piano and Flute, set the MIDI channel of the Piano to 1 and that of the Flute to 2. Set up two keyboards as shown below, and set the MIDI channel of A to 1 and that of B to 2. Now, playing the A keyboard will create a piano sound, while playing the B keyboard will create the flute sound. Both the piano and flute can be played simulteneously. In other words, the S-330 can play more than one sound at the same time. This is called the Multi-Timbre function.



(fig. Play two Patches)

The above example plays two Patches, but the S-330 can play up to 8 Patches simultaneously on different MIDI channels. Therefore, the S-330 can be used as 8 sets of sound modules. However, the maximum number of voices is 16.

Moreover, the S-330 can send each Patch or Tone separately through the Individual Output Sockets.

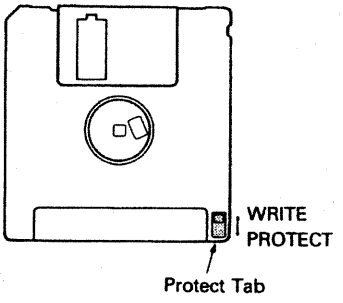
There are 8 Individual Output Sockets numbered 1 through 8. The Output 1 Phone Socket and the Headphone Socket on the front panel send exactly the same signal as Output Socket 1. "Mix" shown in the Play mode indicates that mixed signal of the 8 Individual Outputs is being sent through these three sockets. When you use headphones (when a mixer cannot be prepared), use the "Mix" mode.

If you wish to send each Patch individually, move the cursor to the "Mix" position, then change it to "Out", and each Patch will be sent from the Individual Output set with each Patch (=the number shown under "Out" represents the number of the Individual Output). Please note that exactly the same messages are sent from the Output 1 Phone Socket and the Headphone Socket.

Data Saving and turning the Power off

1. Memory Backup of the Internal Memory

The entire data in the internal memory of the S-330 will be erased when the unit is turned off. If you wish to retain the data, save it onto a floppy disk. Each disk has **a Protect Tab** to prevent accidental erasure of data. Normally, set the Protect Tab to the **"PROTECT"** position, and set it to **"WRITE"** when saving data onto the disk. If you try to save with the Protect Tab set to the **"PROTECT"** position, the Display shows "Disk Protected" and data cannot be saved. Always return the Protect Tab to **"PROTECT"** after saving.



* **To prevent accidental loss of data, be sure to set the Protect Tab to the PROTECT position except when writing (recording) data.**

The entire data in the internal memory of the S-330 can be saved onto a new floppy disk (Roland MF2-DD) with "Backup" procedure explained on page 136 in the onwer's manual. The Roland MF2-DD can be purchased in a store where you purchased the S-330.

2. Making a Collection Disk

Various Sound Library disks for the S-330 are optional. (See the separate sheet.) The Sound Library disks L-501 to 509 are sound data for the S-50 which can be used for the S-330 if converted using the "Conv → S330" program stored on the utility Disk. (See page 145 in the owner's manual.)

It may be a good idea to make your favorite collection from the Sound Libraries, Sound Data supplied with the S-330, or your own samples.

First of all, delete all data except for the data you want, using the "Delete" function in the EDIT mode. (See page 63 in the owner's manual.) Then insert the disk which contains the Tone you wish to use into the Disk Drive.

If you wish to use a Patch stored on the disk without modifying it, load the Patch Parameters (including Split setting) to the S-330, using the "Load Patch" function (see page 124 in the owner's manual), then load the Tones to the Tones of same number, one after another using the "Load Tone" (see page 126 in the owner's manual). If the Tone of same number is used, load to the another Tone, then split set over again.

If you wish to collect many different Tones to make a Patch, collect Tones you wish to use with the "Load Tone" function, then make a Patch in the Split or Patch Parameter Display.

When loading a Tone, watch that the wave is not too long for the remaining memory of the Wave Bank.

When you've finished collecting data, or wish to turn off the unit in the middle of the collecting procedure, save the data using the "Backup" function (see page 136 in the owner's manual).

3. Turning the Power off

When you have saved data onto a disk, **remove the disk**, then turn off the units in the following order.

1. **Turn off the Display, Keyboard Amplifier then Mixer.**

2. **Turn off the S-330 by pushing the Power Switch.**

3. **Turn off the MIDI Controller.**

Sequencer System "DIRECTOR-S"

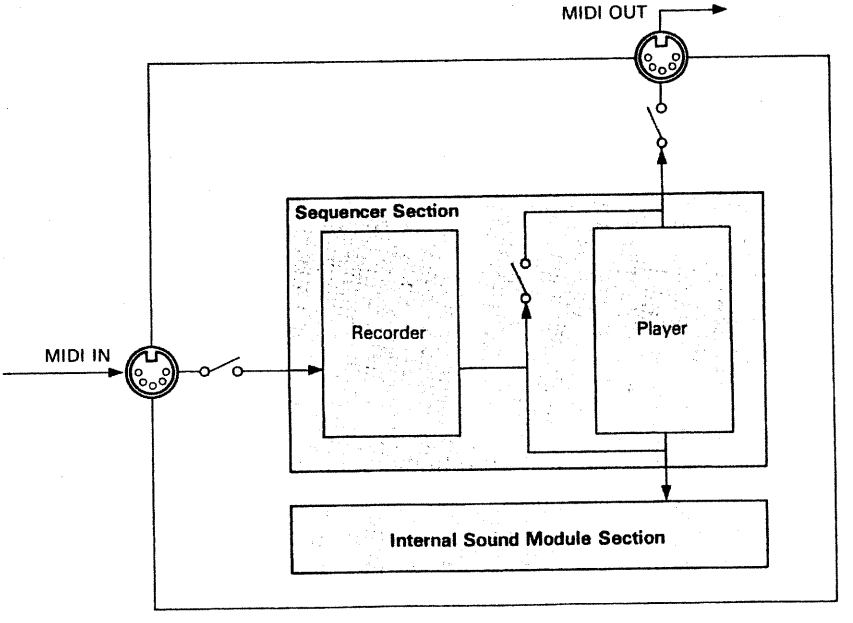
1. MIDI Sequencer and Sound Module

An S-330 booted with the SYS-333 "DIRECTOR-S" is a MIDI sequencer that features a sampling sound module.

The sequencer section records the MIDI messages fed into the MIDI IN Connector and can play them back, sending them to the MIDI OUT or to the sampling sound module section. The sampling sound module section works almost the same as when booted with the Sample System Disk supplied with the S-330 (except that the sampling wave data cannot be edited).

The sampler sound module can still be played by MIDI messages received at the MIDI IN, but is also played by the messages sent from the sequencer section when it is playing. The S-330's sound module section has 8 different MIDI channels and, therefore works just like 8 independent sound modules.

The S-330's sequencer and sound module may be considered as being connected with MIDI cables as shown below.



2. Programming Patterns

The SYS-333's seuqncer allows you to make patterns of up to 16 bars, and make a song by combining these existing patterns.

A pattern is programmed by recording an actual performance (=real time recording). Each channel, in other words, each Patch is recorded separately. For example, you can set the receive channel of the bass guitar to the same number as the transmit channel of the keyboard which is to be used for recording the performance, and set the receive channel of the piano sound module to the transmit channel of the keyboard. Then playing the keyboard will have the same effect as overdubbing, both the bass and piano being recorded. By repeating this, song data using up to 16 channels may be entered. The recorded data can be finely modified with the Microscopic Editing functions. The entire channel data can also be edited.

3. Programming a Song

Up to 200 patterns, or 15,000 notes can be used for a Song. When making a song, you can used the same pattern as many times as you want.

Up to 6 Songs can be stored in the S-330's internal memory. However, the maximum number of notes that the internal memory capacity can accept is 15,000. That is, if a Song uses 15,000 notes, no more song can be written in memory, while all the 6 Songs of 2,000 notes can be written in memory.

These Songs can be played in sequence with 2 to 3 second interval between two Songs.

Trouble-Shooting

Q I cannot boot up the S-330.

A Check the following points.

① If the S-330's Display does not show any characters, check if it is switched on, and also make sure that the AC socket is firmly connected.

② Check if the System Disk is securely connected. A disk should be inserted until it clicks.

③ If the Display shows "Disk Load Error", the S-330 cannot read the system program properly. Boot it up again. If the same error message is shown, not matter how many times you try, it is likely that the System Disk is damaged, so change to a proper disk.

*** It is important to make a few backups of the System Disks.**

④ If the number which is counting down is turned to red, data may not be loaded properly. If this is not remedied even after re-booting, replace the disk with a proper one.

Q The Mouse does not function properly.

A

To control the S-330 using the Mouse, the Controller Switch should be set to "Mouse". Check the Controller Switch indication shown on the Message Line in the "Master" menu in the Function mode.

① If the Controller Switch is not set to "Mouse", set it to "Mouse" as explained on page 111 and 112 in the owner's manual.

② If the Controller Switch is set to "Mouse", disconnect the Mouse from the EXT CTRL connector, then re-connect it securely.

③ Boot up the S-330 as shown on page 7.

Q The RC-100's buttons do not function.

A To control the S-330 using the RC-100, the Controller Switch should be set to "RC-100". Check the Controller Switch indication shown on the Message Line in the "Master" menu in the Function mode.

① If the Controller Switch is not set to "RC-100", set it to "RC-100" as explained on pages 111 to 113 in the owner's manual.
② If the Controller Switch is set to "RC-100", push the Reset Button on the rear of the RC-100.
③ Boot up the S-330 as shown on page 7.

Q The buttons or Mouse suddenly stop working.

A If pressing the buttons on the S-330 does not have any effect on the Display, the program is out of control. Turn the unit off, then turn it on after waiting a few seconds.

Q I turn off the unit by mistake during data programming.

A Data is lost, and there is no way to restore it. To prevent acidental loss of data, make it a rule to save data onto a disk as frequently as possible.

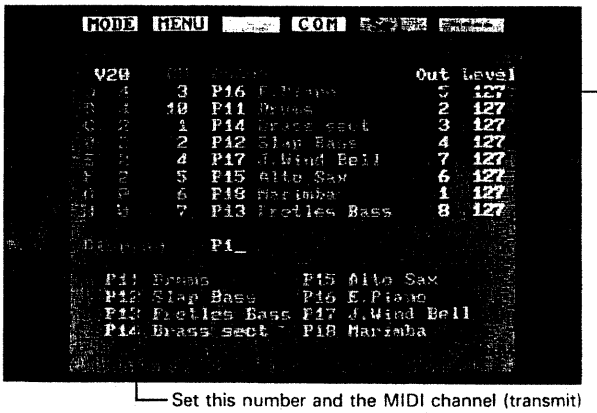
Q I cannot hear any sound.

A Check the following points.

① See if the Volume Knob on the front panel of the S-330 is raised and the volume of the mixer or amplifer connected to the S-330 is set sufficiently high.
② See if the units are correctly connected.
③ See if the MIDI channel of the Controller (or the Data of the SYS-333) is set to the same number as the receive channel of the S-330.

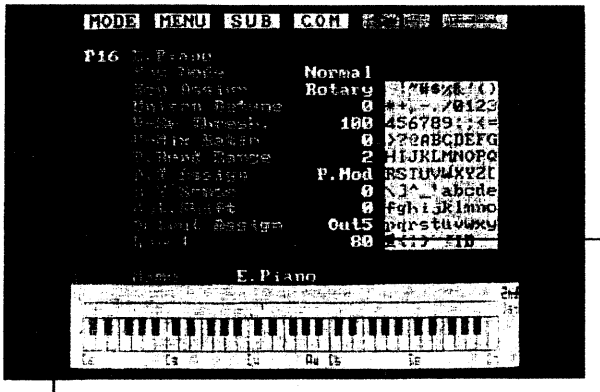
Q I cannot monitor the sound during editing or sampling.

A During sound data editing or sampling. Voice Module A is used for monitoring. The sound to be monitored is affected by the setting of the Patch assigned to Voice Module A. So, check the following points.



Check the Patch assigned to Voice Group A.

Set this number and the MIDI channel (transmit) of the MIDI Controller to the same number.



Raise the Patch Level.

Call the Patch assigned to Voice Group A.

① Check the receive channel of Voice Module A in the Play mode, then set the MIDI channel of the Controller (or the Data of the SYS-333) to the same number.

② Raise the Level of Voice Module A in the Play mode.

③ Chekc the Patch assigned to Voice Module A in the Play mode, then select that Patch in the "Patch PRM" menu in the Edit Mode. Increase the Level in the Patch Parameters.

Q I want to a disk which a friend of mine has given to me.

A The disk may cause trouble when used with your Utility Disk. On the S-330, the Version Number (=the number put on softwares) of the System Disk should be the same number as the utility Disk. If not, they cannot be used together. The Version number can be chekced in the default Display. To use the System Disk and the Utility Disk of different Version Numbers, save the System program using the "Save SYS" function to match the Version Numbers. (Higher number mean a later system).

*** The supplied System Disks and Utility Disks have the same Version Numbers, so there is no problem.**

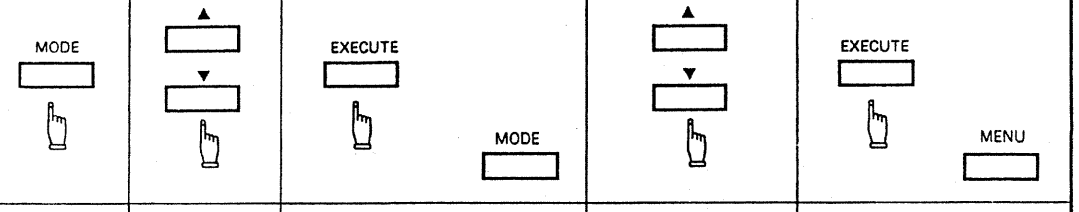
Basic Operation Table 1. Basic Procedure

MODE and MENU Selection

Each mode has various menus. The selected mode and menu are shown at the right corner on the Message Line.

S-330 Panel

Step



Open the Mode window.	Select the Mode.	Open the Menu Window.	(Exit)	Select the Menu.	Execute	(Exit)

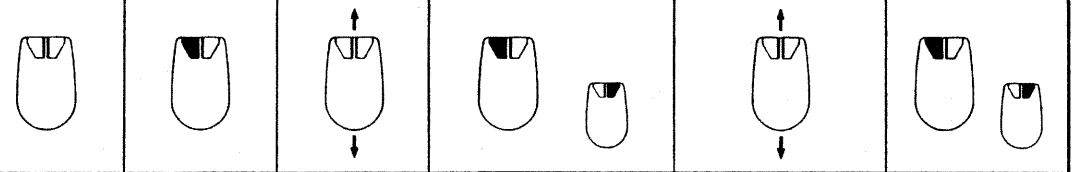
CRT Display

PLAY	PI⬆Y	Patch PRM	Patch ⬆RM
EDIT	EDIT	Split	Split
DISK	D⬇K	Patch Map	Patch ⬇lap
FUNC	FUNC	Tone PRM	Tone PRM
MIDI	MIDI	Loop	Loop

LCD Display

MU-1

Step



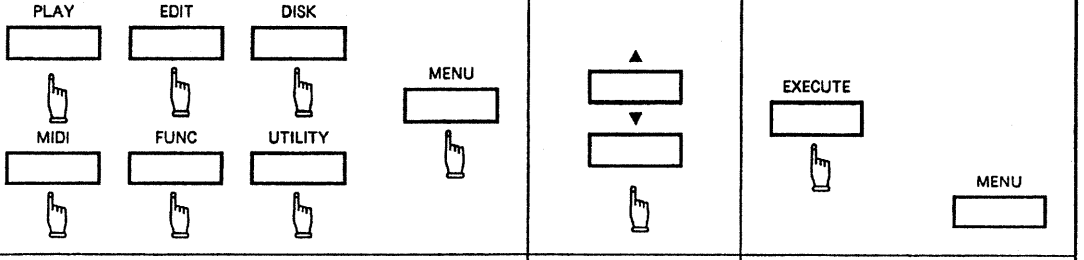
Lit in red	Open the Mode window.	Select the Mode.	Open the Menu Window.	(Exit)	Select the Menu.	Execute	(Exit)

CRT Display

MODE	PLAY	PI⬆Y	Patch PRM	Patch ⬆RM
	EDIT	EDIT	Split	Split
	DISK	D⬇K	Patch Map	Patch ⬇lap
	FUNC	FUNC	Tone PRM	Tone PRM
	MIDI	MIDI	Loop	Loop

RC-100

Step



Select a mode using the appropriate Mode Button. If you want the c same mode, open the Menu Window with the Menu Button.	Select the Menu.	Execute	(Exit)

CRT Display

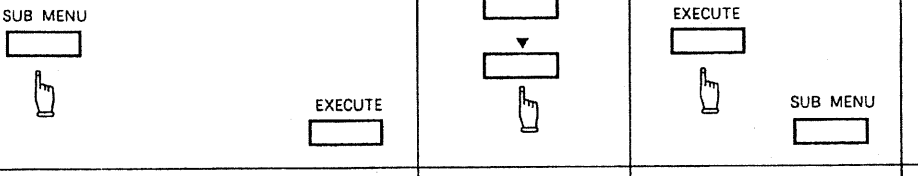
Patch PRM	Patch ⬆RM
Split	Split
Patch Map	Patch ⬇lap
Tone PRM	Tone PRM
Loop	Loop

Sub Menu

By using the Sub Menu, you can choose Patch or Tone watching the list. The Patch or Tone previously selected is shown at the left of the ➡ mark on the Mesaage Line.

S-330 Panel

Step

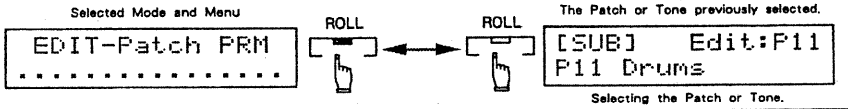


Open the list.	(Push EXECUTE to change the list.)	Select the Patch or Tone	Decite and change the list.	(Exit)	Return to a normal display.

CRT Display

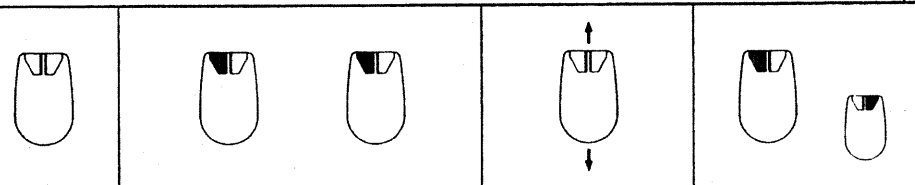
P11 Drums P12 Bass P13 Brass P14 Alto Sax P15 E.Piano		P11 Drums P12 Bass P13 Brass P14 Alto Sax P15 E.Piano	P11 Drums P12 Bass P13 Brass P14 Alto Sax P15 E.Piano

LCD Display



MU-1

Step



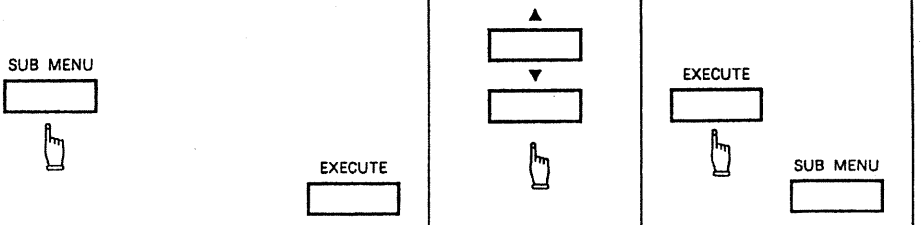
Lit in red.	Open the list.	(Push again to change the list.)	Select the Patch or Tone	Decite and change the list.	(Exit)	To a normal display.

CRT Display

SUB	P11 Drums P12 Bass P13 Brass P14 Alto Sax P15 E.Piano		P11 Drums P12 Bass P13 Brass P14 Alto Sax P15 E.Piano	P11 Drums P12 Bass P13 Brass P14 Alto Sax P15 E.Piano

RC-100

Step



Open the list.	(Push EXECUTE to change the list.)	Select the Patch or Tone	Decite and change the list.	(Exit)	Return to a normal display.

CRT Display

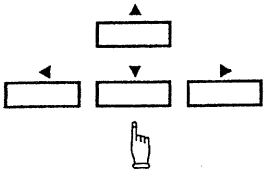
P11 Drums P12 Bass P13 Brass P14 Alto Sax P15 E.Piano		P11 Drums P12 Bass P13 Brass P14 Alto Sax P15 E.Piano	P11 Drums P12 Bass P13 Brass P14 Alto Sax P15 E.Piano

Value Entry

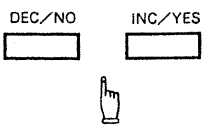
Move the cursor to the parameter to be changed and enter a value.

S-330 Panel

Step



Move the cursor



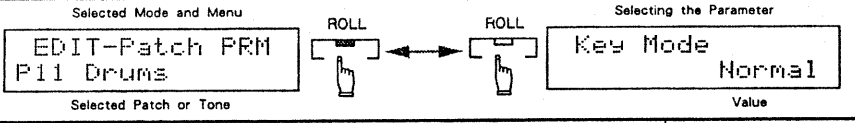
Increases or decreases a number .

CRT Display

Key Mode	Normal
Key Assign	↑tary
Unison Detune	-12
V-SW Thresh.	↓ 65
V-Mix Ratio	0

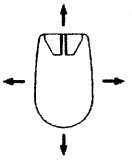
Key Mode	Normal
Key Assign	Rotary
Unison Detune	-12
V-SW Thresh.	65
V-Mix Ratio	0

LCD Display

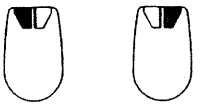


MU-1

Step



Move the cursor



Increases or decreases a number .

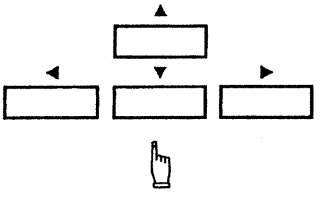
CRT Display

Key Mode	Normal
Key Assign	↑tary
Unison Detune	-12
V-SW Thresh.	↓ 65
V-Mix Ratio	0

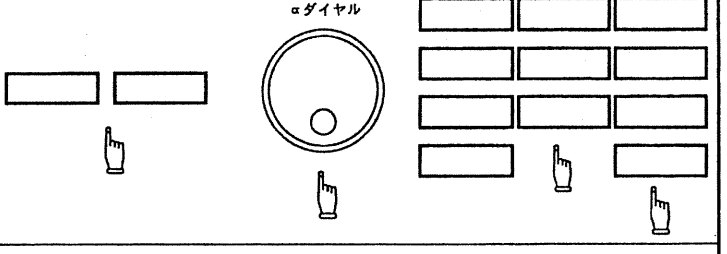
Key Mode	Normal
Key Assign	Rotary
Unison Detune	-12
V-SW Thresh.	65
V-Mix Ratio	0

RC-100

Step



Move the cursor



Increases or decreases a number .

Using the Ten Key Pad, push the ENTER to set.

CRT Display

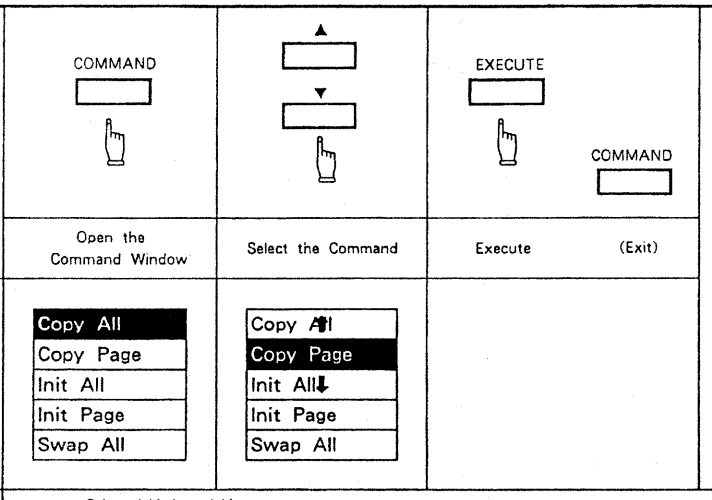
Key Mode	Normal
Key Assign	↑tary
Unison Detune	-12
V-SW Thresh.	↓ 65
V-Mix Ratio	0

Key Mode	Normal
Key Assign	Rotary
Unison Detune	-12
V-SW Thresh.	65
V-Mix Ratio	0

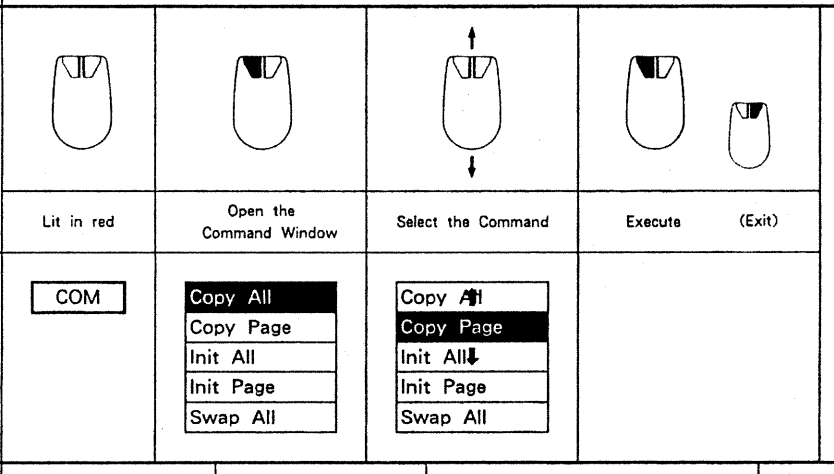
Executing a Command

To execute a command , such as sampling, wave· processing, data saving or loading, you should open the Command Window.

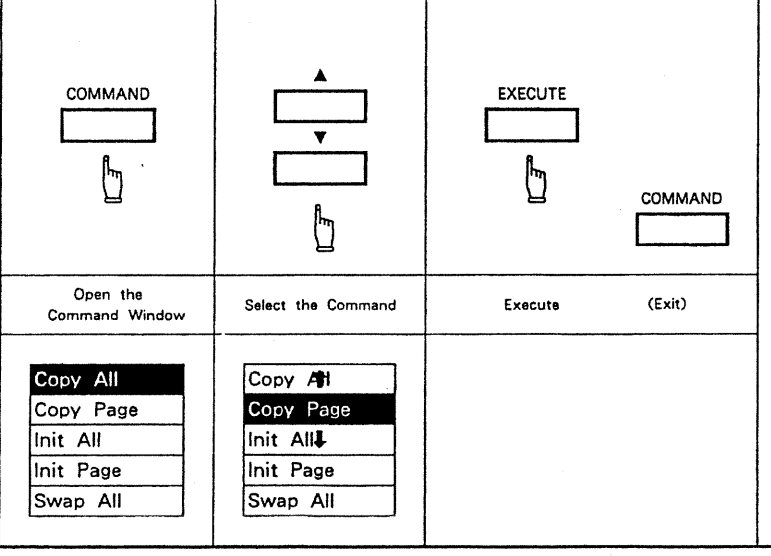
S-330 Panel



MU-1



RC-100



2. Useful Functions

When the EXT CTRL is OFF, proceed your operation watching the LCD Display on the unit.

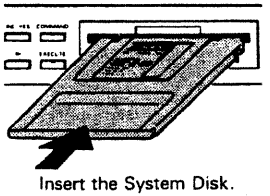
①Booting

Controlling with the S-330's panel. ..... ◀ + POWER

Controlling with the Mouse (MU-1) ..... ▼ + POWER

Controlling with the RC-100. ..... ▶ + POWER

Controlling with the Controller written on a disk. ..... POWER



Insert the System Disk.

→ When finished, "Complate" is shown

②Play Mode

MODE → EXECUTE

③Changing the Voice Mode

MODE → EXECUTE → ROLL → INC / DEC

Select a Mode

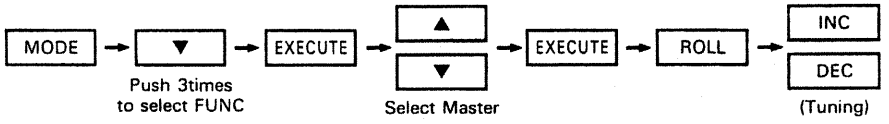
④Selecting the Individual Out or Mix Out

MODE → EXECUTE → ▶ → ▶ → ▶ → ▲ → INC / DEC

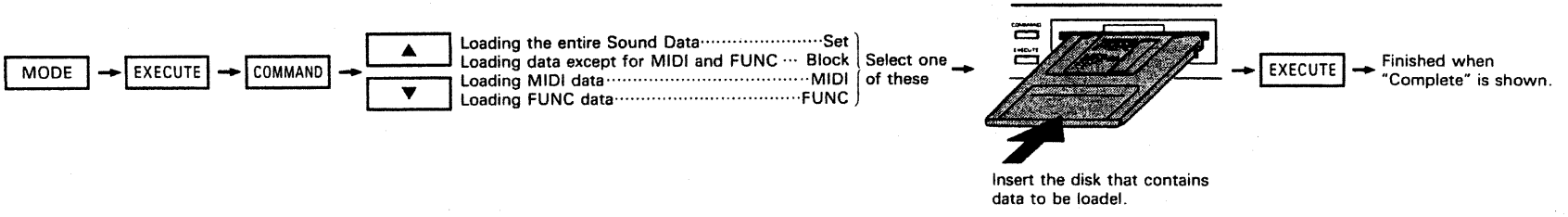
Select OUT

Select

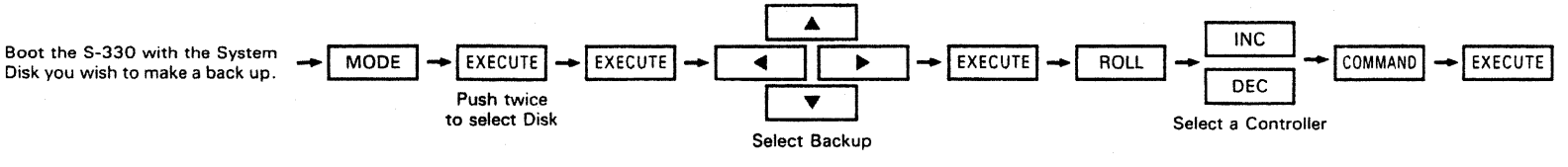
⑤Master Tuning



⑥Loading Sound Data

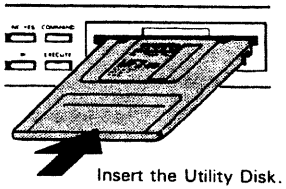


⑦Back up of the System Disk



⑧Backup of the Utility Disk

If necessary, Save the Sound Data in the internal memory on to a disk. →



Insert the Utility Disk.

→ [MODE] → [▼] → [EXECUTE]

Push 5 times to select UTIL.

[▲] [◀] [▶] [▼] → [EXECUTE] → [ROLL] → [INC] / [DEC] → [COMMAND] → [EXECUTE] → Change to a new disk, when "Change Disk" is shown. → Finished when "Complete" is shown.

Select UTIL. Backup

Select a Controller

⑨Changing the Controllers

[MODE] + [▼] → [EXECUTE] → [▲] / [▼] → [EXECUTE] → [COMMAND] →

To change to Mouse ··· [▼] → [EXECUTE] → Connect the Mouse → [EXECUTE]

To change to RC-100··· [▼] → [EXECUTE] → Connect the RC-100, then push the Reset Switch on the RC-100. → [EXECUTE]

Push 3 times to select FUNC

Select Master

27013534 '89-7-B2-5S


Roland

SOUND LIBRARY

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Roland Sound library for S – 550/S – 330

BOX NUMBER BOX NAME	DISK NAME	
L – 551 STRINGS & WINDS	# 1	Full Strings Section
	# 2	Cello (Solo)
	# 3	Fulute & Piccoro
	# 4	Alto Sax
	# 5	Trumpet & Trombone
L – 552 KEYBOARDS & PERCUSSIONS	# 6	Harpsichord
	# 7	Pipe Organ & Choir
	# 8	Electric Piano & Vibe
	# 9	Celesta
	# 10	Classic Percussions

Roland Sound library for S – 50

BOX NUMBER BOX NAME	DISK NAME	
L – 501 KEYBOARD	# 1	Electric Piano 1
	# 2	Electric Piano 2 & Clavi 1
	# 3	Harpsichord & Pipe Organ
	# 4	Electric Organ Vol. 1
	# 5	Synthesizer Vol. 1
L – 502 BRASS & WOODWIND	# 6	Brass Vol. 1
	# 7	Sax Vol. 1
	# 8	Sax Vol. 2
	# 9	Woodwind Vol. 1
	# 10	Woodwind Vol. 2
L – 503 PERCUSSION & ORCHSTRA & EFFECTS	# 11	Latin Percussion Vol.1
	# 12	Maliet Vol. 1
	# 13	Orchestra Vol. 1
	# 14	Effects Vol. 1
	# 15	Stereo Effects Vol. 1
L – 504 STRINGED INSTRUMENT	# 16	Acoustic Guitar Vol. 1
	# 17	Electric Guitar Vol. 1
	# 18	Electric Bass Vol. 1
	# 19	Wood Bass 1 & Harp 1, 2
	# 20	Strings Vol. 1
L – 505 JAPANESE INSTRUMENT1	# 21	Koto Vol. 1
	# 22	Shamisen Vol. 1
	# 23	Shamisen Vol. 2
	# 24	shakuhachi Vol. 1
	# 25	Yokobue Vol. 1
L – 506 JAPANESE INSTRUMENT2	# 26	Japanese Percussion Vol. 1
	# 27	Japanese Percussion Vol. 2
	# 28	Biwa Vol. 1
	# 29	Gagaku Vol. 1
	# 30	Gagaku Vol. 2
L – 507 ETHNIC INSTRUMENT1	# 31	Indian Strings Vol. 1
	# 32	Indian Strings Vol. 2
	# 33	Indian Percussion Vol. 1
	# 34	Indian Percussion Vol. 2
	# 35	Indian Percussion Vol. 3
L – 508 ETHNIC INSTRUMENT2	# 36	Western Strings Vol. 1
	# 37	Western Wind Vol. 1
	# 38	Middle Eastern Percussion
	# 39	Indian Wind & Thai Gong
	# 40	Gamelan Vol. 1
L – 509 ETHNIC INSTRUMENT3	# 41	Eastern Flavour Vol. 1
	# 42	Andean wind Vol. 1
	# 43	African Percussion Vol. 1
	# 44	Latin Percussion Vol. 2
	# 45	Latin Percussion Vol. 3

Note
To use L – 501 to L – 509 with the S – 330, load the library using "Convert Load" or convert the disk using "Convert Disk". (See the owner's manual P.142)

27013536 '89-7-B2-5S

S－550／330
Additional Functions and Corrections in the Owner's Manual.

The up－dated versions of the S－550 (Ver.1.12) and S－330 (Ver.1.01) includes the DC (Direct Current) Cut function, and the explanation on how to make backups of the system disks should be corrected as follows.

DC － Cut

(S－550's or S－330's owner's manual on page 54)

If DC (direct current) content (＝low range noise) is mixed with the sample, causing unclear sound, you can cut the DC content from the wave data.

Open the Command Window in "D.Filter" menu in the UTIL mode, and execute "DC－Cut" command.

Backup of the System Disks

(S－550's owner's manual on page 26,140)
(S－330's owner's manual on page 25)

Boot the S－330 with a System Disk, then make a backup without changing the contents.

Step 1 Take out the system disk from the Disk Drive, set the Protect Tab on the floppy disk for backup to the WRITE position, and insert in the Disk Drive.

S－330

Step 2 Push the MODE button.

Step 3 Using the Cursor Buttons, select "DISK", and push the EXECUTE button.

S－550

Step 2 Push the DISK button.

Step 3 Push the MENU button.

Step 4 Using the Cursor Buttons, select "Backup", and push the EXECUTE button.
Step 5 Push the COMMAND button,
Step 6 Push the EXECUTE button to start the procedure.

The Display shows "Formatting", then "Now Saving", and finally "Now Saving ... 0". Now, the System Disk's backup is prepared.

Push the Eject Button to take out the floppy disk from the Disk Drive, and set the Protect Tab to the PROTECT position.

Turn the unit off,boot the unit with second disk, then similarly prepare the backup of the second disk.

Utility Disk Backup

(S – 550's owner's manual on page 145)
(S – 330's owner's manual on page 26)

Step 1 Insert the Utility disk into the Disk Drive.

S – 330	S – 550
Step 2 Push the MODE button.	Step 2 Push the UTILITY button.
Step 3 Using the Cursor Buttons, select "UTIL", and push the EXECUTE button.	Step 3 Push the MENU button.

Wait a few minutes to open the Menu Window.

Step 4 Select "UTIL Backup" using the cursor buttons, then push the EXECUTE button.

Step 5 Push the COMMAND button.

Step 6 Push the EXECUTE button.

The Display shows "Now Loading", then the number counts down to 0, and finally "Change Disk" is displayed.

Step 7 Push the Eject button to take out the floppy disk from the Disk Drive, and set the Protect Tab on the floppy disk to the "WRITE" position, then insert it into the Disk Drive.

The Display shows "Formatting", then "Now Saving", then the number counts down to 0.
Now, the Utility Disk's Backup is prepared.

Step 8 Push the Eject Button and take out the floppy disk from the Disk Drive, then return the Protect Tab on the disk to the "PROTECT" position.

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