KORG

PERFORMANCE SIGNAL PROCESSOR

A1

OWNER'S MANUAL

CONTENTS

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WARNING

THE FCC REGULATION WARNING

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacture's instructions, may cause interference to radio and television reception. It has been type 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, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that 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 off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna.
- Relocate the equipment with respect to the receiver.
- Move the equipment away from the receiver.
- Plug the equipment into a different outlet so that equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful. "How to Identify and Resolve Radio - TV Interference Problems". This booklet is available from the US Government Printing Office, Washington D.C 20402, stock No.004-000-0003454-4.

CANADA

THIS APPARATUS COMPLIES WITH THE "CLASS B" LIMITS FOR RADIO NOISE EMISSIONS SET OUT IN RADIO INTERFERENCE REGULATIONS.

CET APPAREIL EST CONFORME AUX NORMES "CLASS B", POUR BRUITS RADIOELECTRIQUES. TEL QUE SPECIFIER DANS LE REGLEMENT SUR LE BROUILLAGE RADIOELECTRIQUE.

Main Features of the A1

Fully Programmable Digital Multi-Effecter

The A1 comes with effects in groups that can be combined to make up effect chains that use up to 7 effects simultaneously. Chains and individual effect settings can be saved as programs and stored in a 100-program RAM memory card.

Fully Digital Effect Processing

Fully digital effect processing is made possible by a newly developed DSP (Digital Signal Processor) which eliminates signal deterioration when connecting multiple effects.

A Wide Variety of Effect Chains

The A1's XX built-in effect chains combine up to 7 different effects to provide a wide variety of effect variations, while enabling individual effects to be turned on or off as desired. Further variety is provided by the ability to freely replace one effect with another of the same size.

Dynamic Modulation

The dynamic modulation function enables performances with a wider variety of effects than is possible with a conventional effect device. Using a MIDI, foot pedal and input envelope, you can control in real time a large number of parameters, including reverb level, delay time, flanger sweep, define depth, and modulation speed.

Full Stereo Effects

The stereo effect chains and L and R connectors of the A1 provide full stereo separation for both input and output.

Unlimited Sound Expansion

You may select any of 200 effect programs from an optional ROM card, or edit and store up to 100 effect settings on a RAM card to create your own private library of original effects.

Built-in Digital Noise Reduction

The A1 is equipped with a built-in stereo digital noise reduction system to automatically cut off hum and noise from sources such as tape tracks or guitars.

Connection of Optional Foot Controller

Connection of the optional FC6 foot controller allows you to control program changes, effect ON/OFF, and individual effect parameter settings for ultimate control during live performances.

Connection of Optional Remote Editor

Connection of the optional RE1 remote editor allows you to quickly perform editing operations from a mixing console or other remote location.

Map Play and Performance Edit for Live Performances

As functions especially useful during live performances, Map Play allows you to use the UP key to instantly call up desired programs that have been stored in advance, while performance Edit allows you to control multiple effects in an instant, without the need to call up individual parameters.

Double Function Edit controls

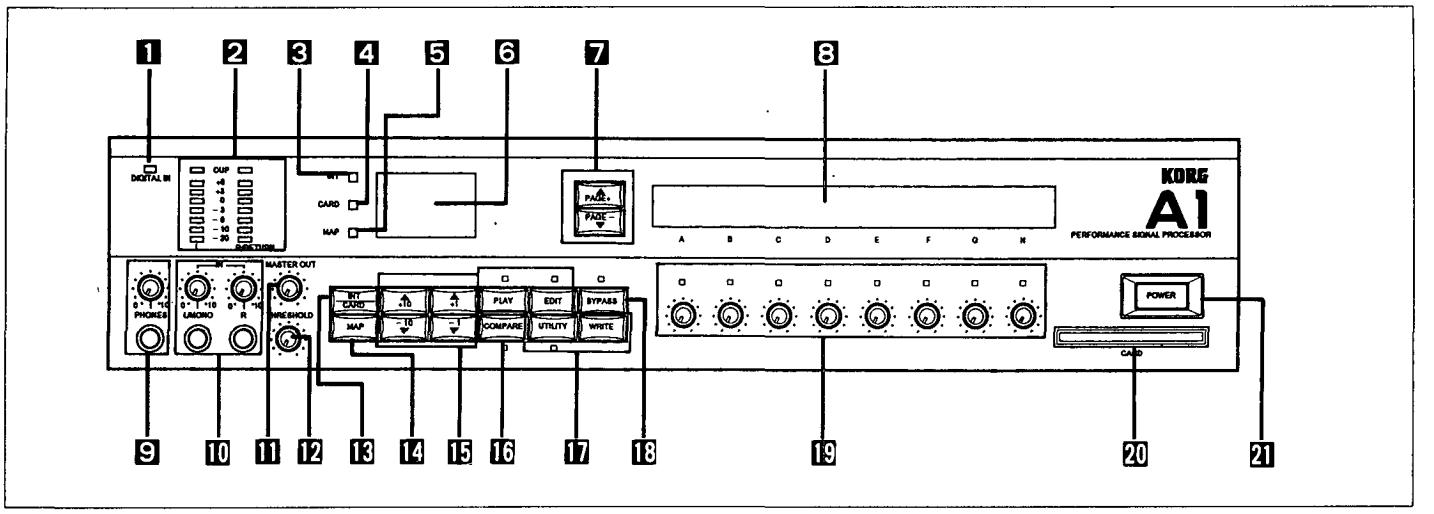
New double function edit controls operating as both rotary and push-button switches greatly simplifies checking and editing procedures. Even the most complex effect chains are quickly edited and stored by looking at the easy-to-follow LCD screen display.

DIGITAL I/O Functions

Equipped with a digital audio interface (IN, OUT) the A1 can be linked directly to other digital audio equipment (or another A1) without degradation of sound quality.

Identification of Control and Terminals

FRONT PANEL



1 DIGITAL IN Indicator
Lights up to indicate input of a digital signal.

2 L and R/RETURN (input) indicator and digital CLIP indicator
Indicates the volume of the input signal. The CLIP indicator lights up when the input level is excessive (The CLIP indicator does not light up during effect processing even when signals are clipped).

3 INT (internal) Indicator.
Lights up during the operation of an internal program of the A1.

4 CARD Indicator
Lights up during the operation of a program provided on a memory card.

5 MAP Indicator
Lights up during the activation of Map Play Mode.

6 Program Number Display
Displays the current program number.

7 PAGE +, - (Page Up/Down) Keys
For turning the page when parameters exceed one page.

8 LCD Screen
Indicates the current chain, parameters, etc.

9 Headphones Jack and PHONES Volume Control
For connecting headphones and adjusting the volume.

10 IN (input) Volume Control and Input Jacks (L/MONO, R)
- L/MONO and R input jacks are for inputting a monaural signal.
- Use the IN volume control to adjust level of the R input jack to that of the L/MONO input jack.
- This front panel input has priority over the rear panel inputs.

11 MASTER OUT Volume Control
For adjusting the output level. The volume level, set by the MASTER OUT volume control, is memorized in each program.

12 THRESHOLD Level Control
For adjusting the noise reduction threshold level. The threshold level, set by the THRESHOLD level control, is memorized in each program.

13 INT (internal) and CARD Keys
Use the INT key for selecting programs stored within the A1 and the CARD key to select programs stored on ROM card.

14 MAP Key
Press to select Map Play Mode. Press again to cancel the Map Play Mode.

15 Up/Down Keys
For selecting programs and adjusting parameters in Edit Mode.

16 COMPARE Key
Press during editing to compare edited data with the original data. Press again to restore the original data.

17 Mode Keys and Indicators
Press the mode keys to select the desired modes. LEDs indicate the currently selected modes.
- PLAY: Play Mode for program playing and simple effect parameter editing.
- EDIT: Edit Mode for modifying the contents of programs.
- UTILITY: Global Utility Mode for setting MIDI and other functions; press again to cancel.
- WRITE: Write Mode for saving programs to the A1 memory or memory card.

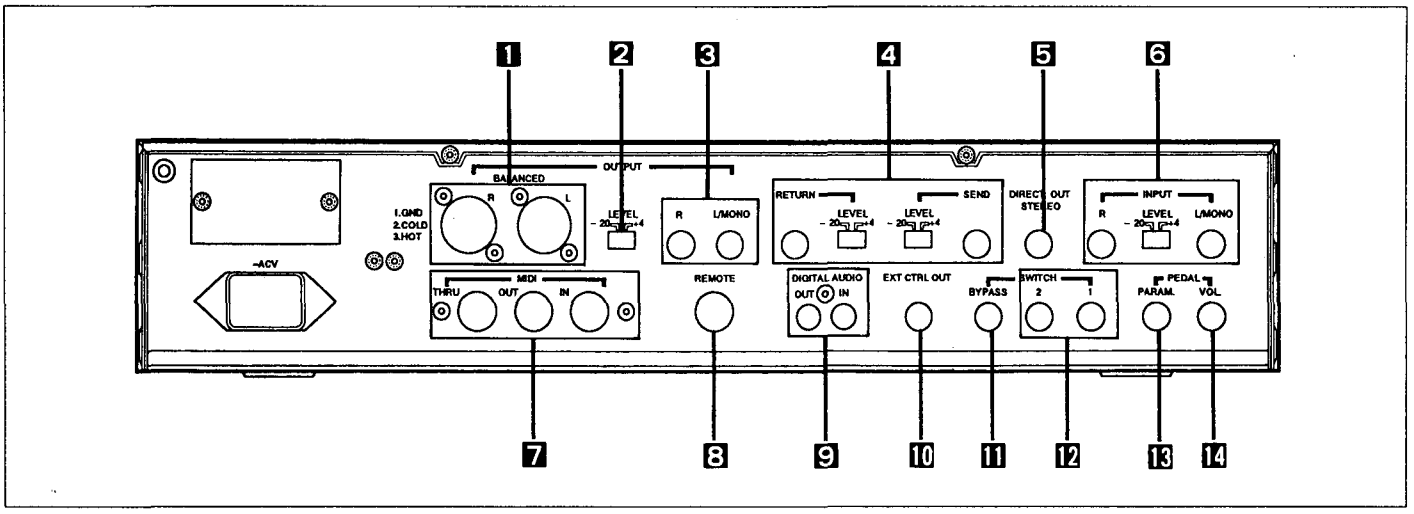
18 BYPASS Key
Press to activate the bypass function for sound output without effects. Press again to cancel the bypass function.

19 Double Function Edit Controls and Indicators (A-H)
Press the double function edit controls in Play Mode to turn the corresponding effect ON or OFF.
Turn the double function edit controls in Edit Mode to set the parameters of the corresponding effect.

20 CARD Slot
For inserting optional ROM or RAM (MCR-03) cards.

21 POWER switch
For turning the power ON and OFF.

REAR PANEL



1 BALANCED OUTPUT Jacks
For connecting mixers and other equipment having balance input

2 OUTPUT LEVEL Switch
For setting the nominal output level to match the various studio situations.

3 OUTPUT Jacks (R, L/MONO)
For connecting to guitar amplifiers, etc.

4 SEND, RETURN Jacks and LEVEL Switches
For programs with SEND and RETURN options. Signals output from the SEND jack are returned to the RETURN jack via other effect devices. Set the switches to match the input/output level of the connected equipment.

5 DIRECT OUT (STEREO) Jack
For direct left- and right-channel stereo sound output.

6 INPUT Jacks (R, L/MONO) and LEVEL Switch
For connection to musical instruments, mixers, etc. Set the LEVEL switch to the output level of the connected equipment.

- When using a monaural sources, connect to the L/MONO jack.
- When connecting to a monaural instrument, adjust the R volume control to the level of the L/MONO jack.
- The INPUT jacks on the rear panel are for balanced input from stereo plugs only. When a monaural plug with unbalanced input is connected, the input level cut by approximately half. In this case, use the volume control on the front panel to compensate for the decrease.
- During balanced input, the tip of the stereo plug is hot, the ring cold, and the sleeve ground (GND).

7 MIDI Jacks (IN, OUT and THRU)
For connecting MIDI equipment.

8 REMOTE Jack
For connecting the optional RE1 remote editor or the FC 6 for the remote control of the A1.

9 DIGITAL AUDIO INPUT/OUTPUT Jacks
For connecting equipment with a sampling frequency of 48 KHz, such as DATs, digital amplifiers, and other A1s.

10 EXT CTRL OUT (external control output) jack
For connection to switch jacks of external devices, etc. During program changes, outputs OPEN and CLOSE set in Program Utility mode.

11 BYPASS SWITCH Input Jack
For connecting a foot switch such as the PS-1 for turning ON and OFF the bypass.

12 FOOT SWITCH Input Jacks (1, 2)
For connecting a foot switch such as the PS-2. Connection setup is performed in Global Utility Mode.

13 PARAM.(parameter) PEDAL Input Jack
For connection to the output jack of the KVP-001 volume pedal to enable the control of effects as dynamic modulation sources.

14 VOL.(volume) PEDAL Input Jack
For connection with the output jack of the KVP-001 volume pedal. Placement of the volume pedal between effects is specified in Program Utility Mode.

Basic Operation

1 Preparation and Basic Connections

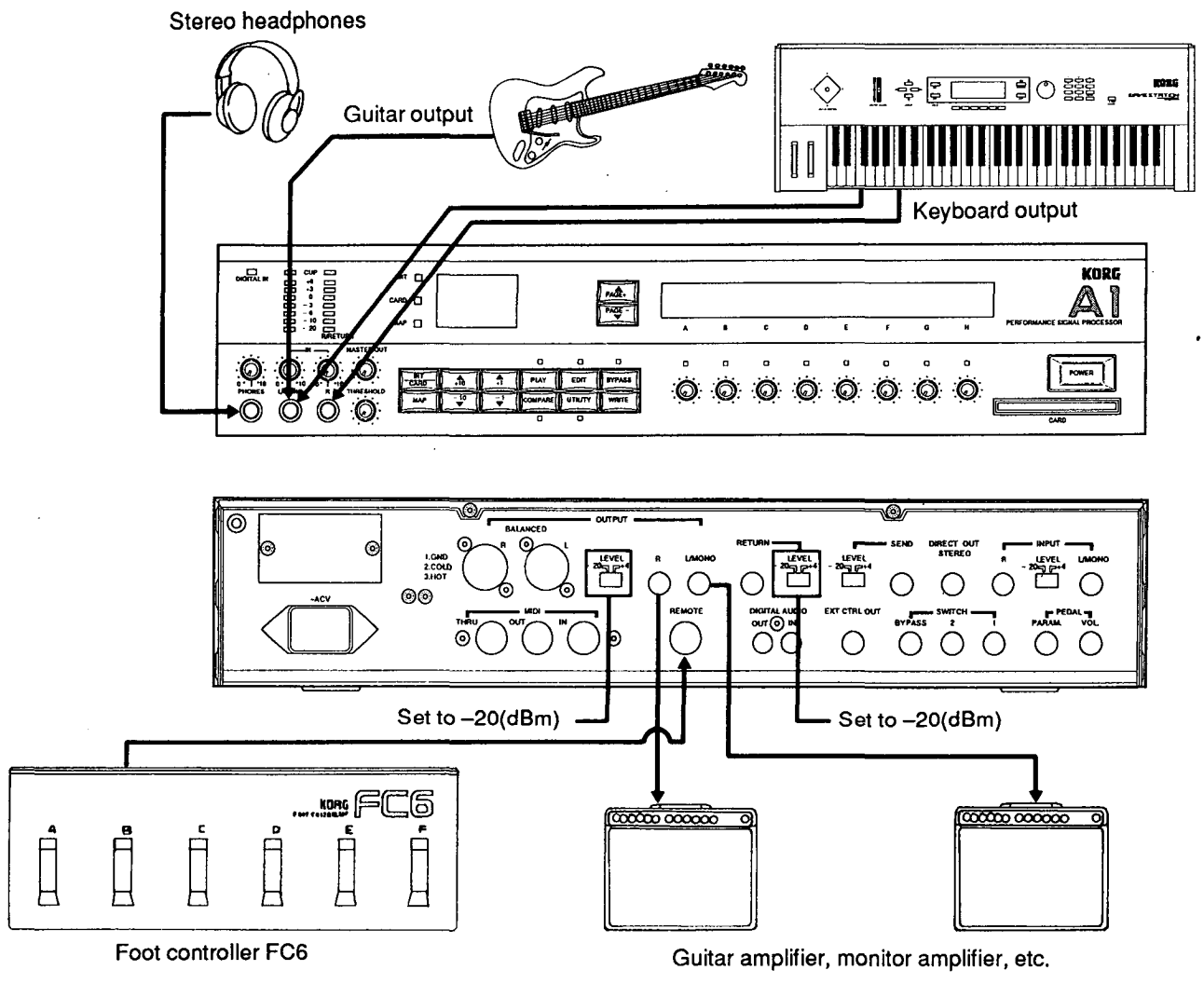
Before making connections, make sure that the POWER switch is OFF.

When connecting a guitar or keyboards:

1 Connect the guitar, etc. to the IN (input) jacks on the front panel.
- Connect a monaural sound sources such as a guitar to the L/MONO jack.
- Connect stereo sound sources such as a keyboard to the L/MONO and R jacks.

2 Connect the mixer or guitar amplifier to the output terminal on the A1's rear panel.
- Connect monaural sound sources such as a guitar amplifier to the L/MONO OUTPUT jack.
- Connect to the L/MONO and R/OUTPUT jacks when playing back in stereo.

3 Set the OUTPUT LEVEL and INPUT LEVEL switches on the rear panel to -20(dBm).



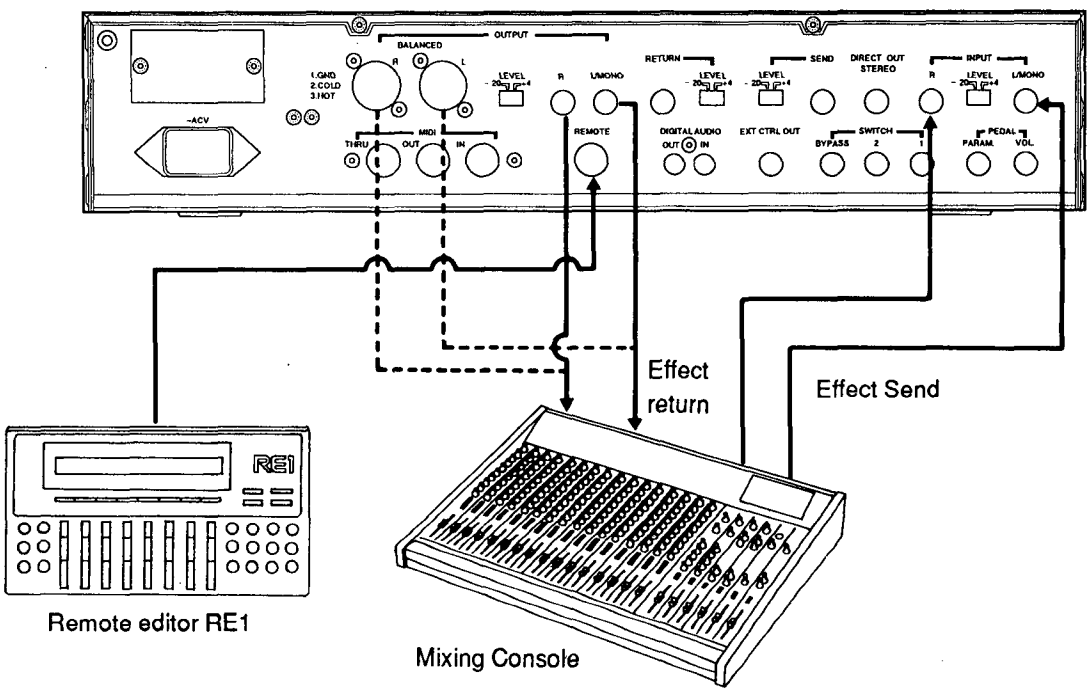
When connecting the A1 to the effect loop of a mixing console:

1 Connect the A1's rear panel input terminal to the effect send terminal of the mixing console.

- If a normal (monaural) shielded cable is used, the A1 input becomes unbalanced.
- If a stereo shielded cable is used, the input becomes balanced. (The tip is hot, the ring cold, and the slip the ground.)

2 Connect the effect return of the mixing console to the balanced output terminal or the output terminal on the A1's rear panel.

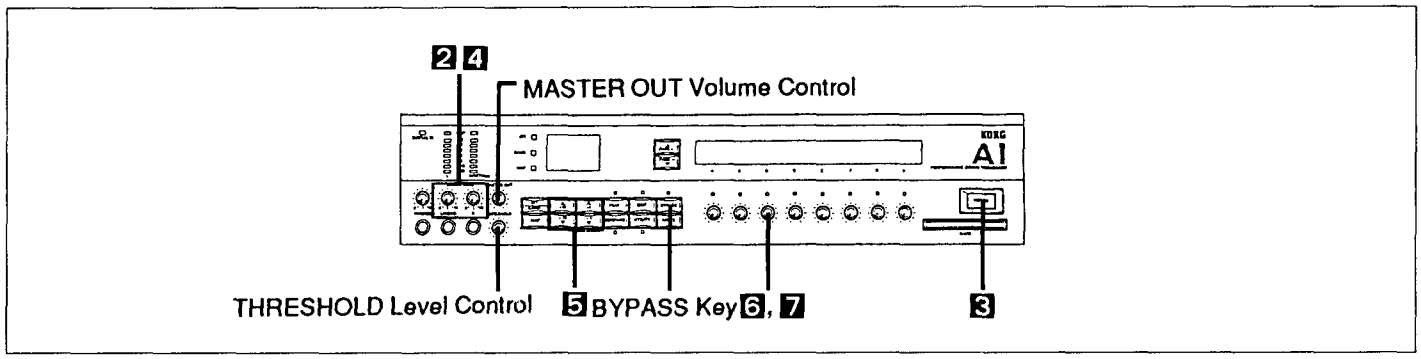
3 Adjust the OUTPUT LEVEL and INPUT LEVEL of the A1's rear panel to +4 or –20 to match the level of the mixing console.



2 Play Mode

The A1 is equipped with 100 preset effect programs.

1/ Selecting Programs



1 Connect the A1 to a musical sound source following steps 1 to 3 on page 8.

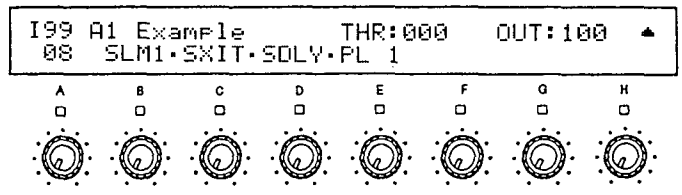
2 Set the input volume to 0.

3 Turn ON the POWER switch.

4 Set the input volume level such that the input indicator at +6dB lights briefly when playing the loudest passages or sounds.

5 Select the program number by pressing the UP/DOWN keys.
The A1's 100 preset programs are numbered I 00 to I 99.
Program I 99("A1 Example) is selected here as an example.

	Tens-column	Ones-column
UP key	▲ +10	▲ + 1
DOWN key	-10 ▼	-1 ▼



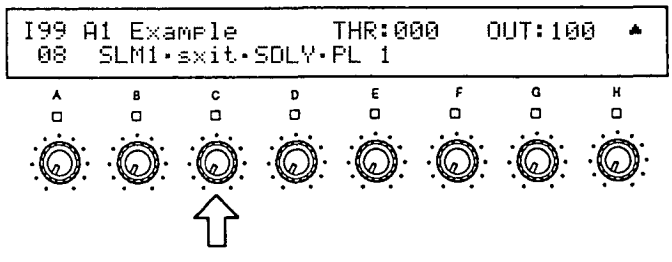
Playing with Program I99

Program I 99 is made up of four effects: Stereo Limiter (SLM1), Stereo Exciter (SXIT), Stereo Delay (SDLY), and Plate Reverb (PL1). You can play with four effects in program number I99.

Each program can combine up to 7 effects at the same time. Any effect can be set to OFF if undesired.

Turning On / Off the Individual Effects

6 Press the "C" double function edit control.
The indicator under the "C"double function edit control turns off, and the effect name ("SXIT") in the display changes to lowercase letters ("sxit") to indicate that the effect is OFF.



Play the musical instrument to check that the Stereo Exciter effect is OFF.
Other effects can be toggled ON and OFF in the same manner by pressing the corresponding A - H double function edit controls.

7 You can restore the effect by pressing the "C" double function edit control again, turning on its indicator.

All other preset effect programs can be selected in the same way for any performance.

2/Useful Functions

► Master Volume

The MASTER OUT volume control adjusts the overall volume level of the currently selected program. The level is indicated as a value between 000 and 100 at the OUT indication in the top-right portion of the display. The volume control is active in all the modes.

► Noise Reduction Threshold Level

The THRESHOLD control can be used to adjust the noise reduction threshold level of the selected program. The value is shown at THR on the display when the noise level is high, adjust the control to a high value. The control is operative in all modes.

IMPORTANT: In Play Mode, the master volume output and noise reduction threshold levels are set to the values stored in memory every time a program is selected.

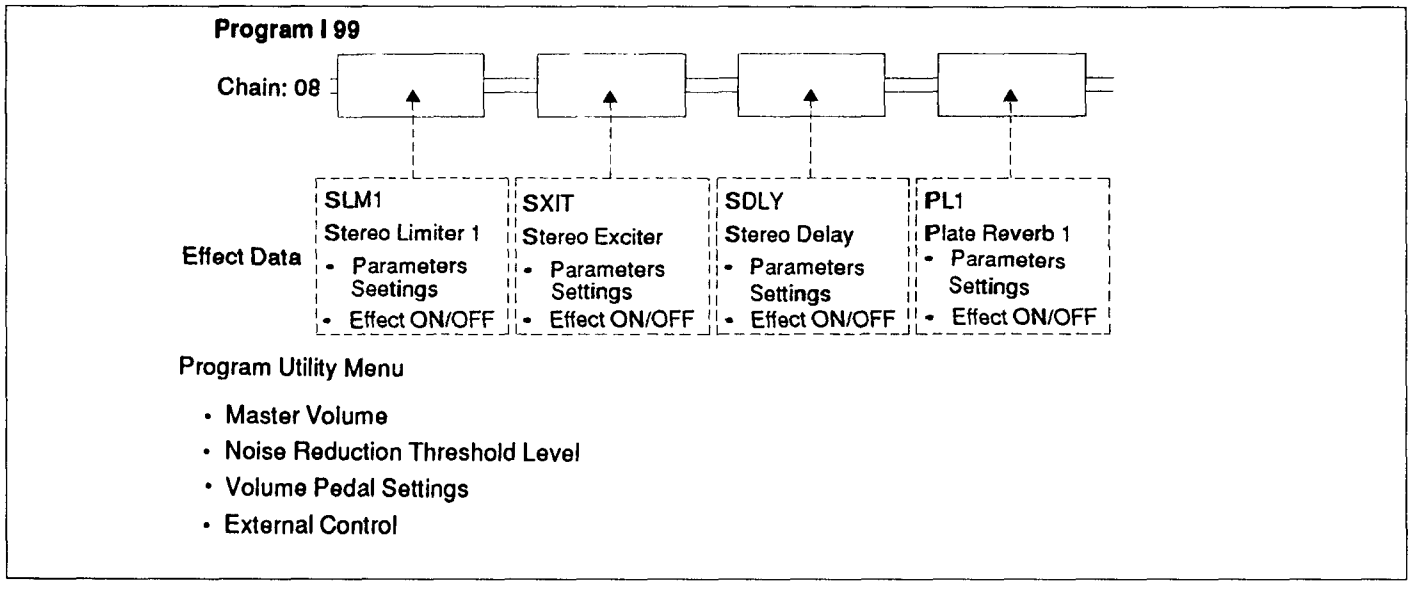
► BYPASS Switch

Pressing the BYPASS switch allows you to toggle between activation and deactivation of effects during sound output.

Structure of Effect Programs

The A1 is an all-in-one multi-effect device, capable of simultaneously combining up to 7 effects in what is called a chain, and storing chains along with a program name and other parameters in what is called an effect program.

Program Sample : A1 Example



Program

A program in the A1 is essentially an effect chain with effects, their parameter and other settings in memory including a master output level and noise reduction level and other settings.

Chain

An A1 program is an assembly of up to seven effects, which may be simply considered as seven different effect devices linked together. The pattern in which effects are linked is called a chain. A chain is the connection pattern in which boxes called effects (effect box) are lined up.

Effect

The A1 contains 59 families of effects, all of which can be allocated to effect boxes to create different programs.

Variations

Different parameter patterns of an effect produce what are called variations of the effect. For example, reverb comes in a variation of hall, room, and plate.

Parameters

Elements called parameters determine the characteristics of an effect, and can be assigned numerical values by the user.

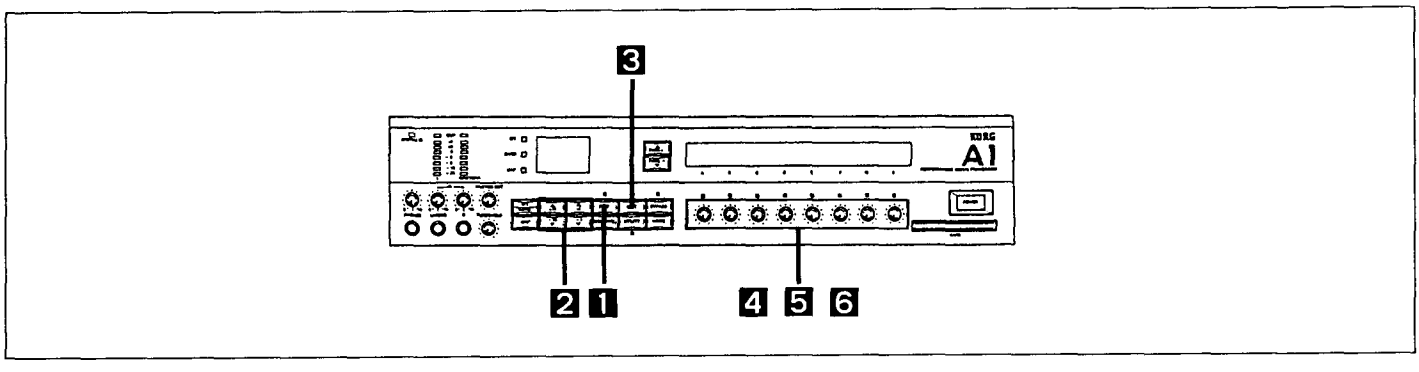
Variables Common to All Effect Programs

- Threshold level - threshold level of the built-in noise reduction system
- Master volume - overall volume of the program
- Volume pedal placement
- External control position setting

3 Program Editing

Your A1 allows you to edit its built-in programs to create your own custom programs.

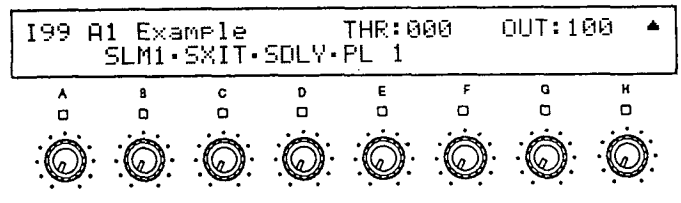
1/ Changing a Part of Program (Effect Parameters)



Editing program I99

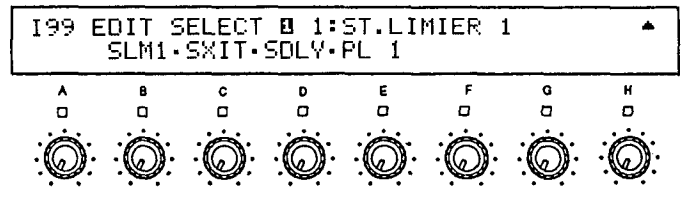
1 Press the Play Mode key.

2 Select the program to be edited using the UP/DOWN keys.



3 Press the EDIT key.

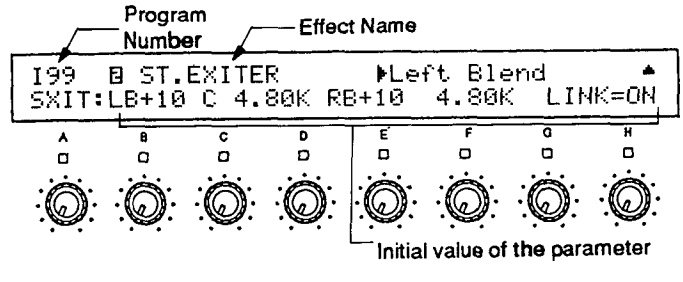
"EDIT SELECT" is shown on the display.



4 Press the double function key ("B" to "H") of the effect you want to change.

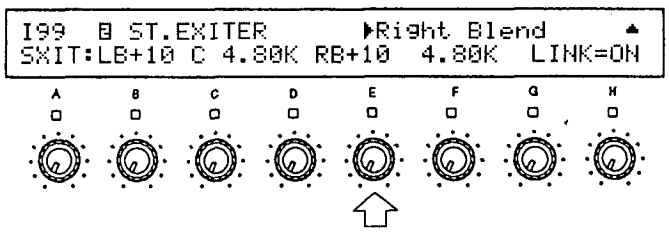
The EDIT indicator begins to blink, and the effect name and parameter values are shown on the display.

Pressing the "C" double function edit control to change the level of the Stereo Exciter effect



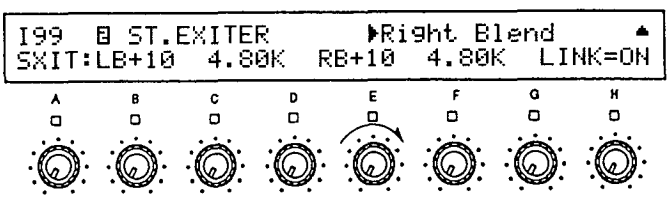
Press the "E" double function edit control to show "Right Blend" on the display

5 Press the double function key below the parameter you wish to change.
The parameter name is displayed in the top-right portion of the screen.



Rotate the "E" double function edit control to change the strength of the right-channel exciter

6 While monitoring the sound, set the desired value for each parameter by rotating the double function edit control under the respective parameter.



Since the LINK parameter of Stereo Exciter is on in this program, the value of Left Blend is changed at the same time as Right Blend.

7 Edit the parameters by rotating the double function edit control under the other parameters.

8 Change the contents of other effects by repeating steps 3 to 7 above.
Refer to "Effect Parameter List" for details on the operation of each effect parameter.

2/ Replacing an Effect in a Program with Another

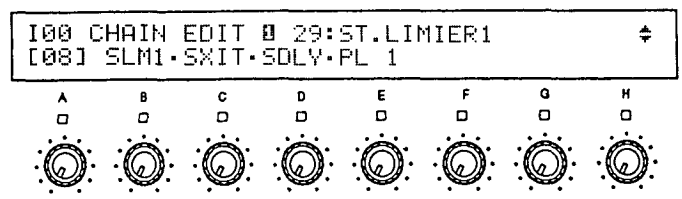
The A1 allows you to freely substitute effects in programs with others, as long as the other effects can fit into the respective effect box.

Replacing PL1 in program I99

1 Display EDIT SELECT by following steps 1 to 3 on page 14.

2 Press the PAGE + key.

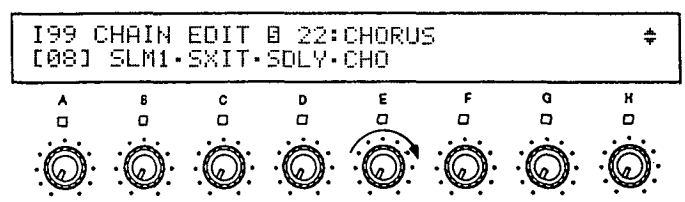
"CHAIN EDIT" is shown on the display. Now you can replace an effect with another.



Replacing "PL1" chorus with "CHO" phaser

3 Select a new effect by turning the double edit control under the desired effect. For example, replace "No.1 PL1 Plate Reverb" with "No.22 CHO Chorus" by turning the "E" double function edit control.

After turning the "E" double function edit control, you may also find the desired effect by scanning them one at a time with the UP/DOWN keys.



For a list of the effects for each number, refer to the "Effect Parameters List".

4 Similarly, replace one effect with another by turning the other double function edit controls.

To save the edited program:

In the Write Mode, store the edited program in memory (see page 42). A program that has just been edited will return unaltered to its original form if you select another program without executing the write operation.

3/ Creating a New Program

The procedure for creating a new program is outlined below. For the details, refer to "The Edit Mode" on page 24.

1 Selecting a Chain

Select one type of chain, from the five types (Serial, Parallel, etc).
For the chain selection procedure, and the types of chains, refer to "Chain Edit" on page 25.

2 Selecting an Effect

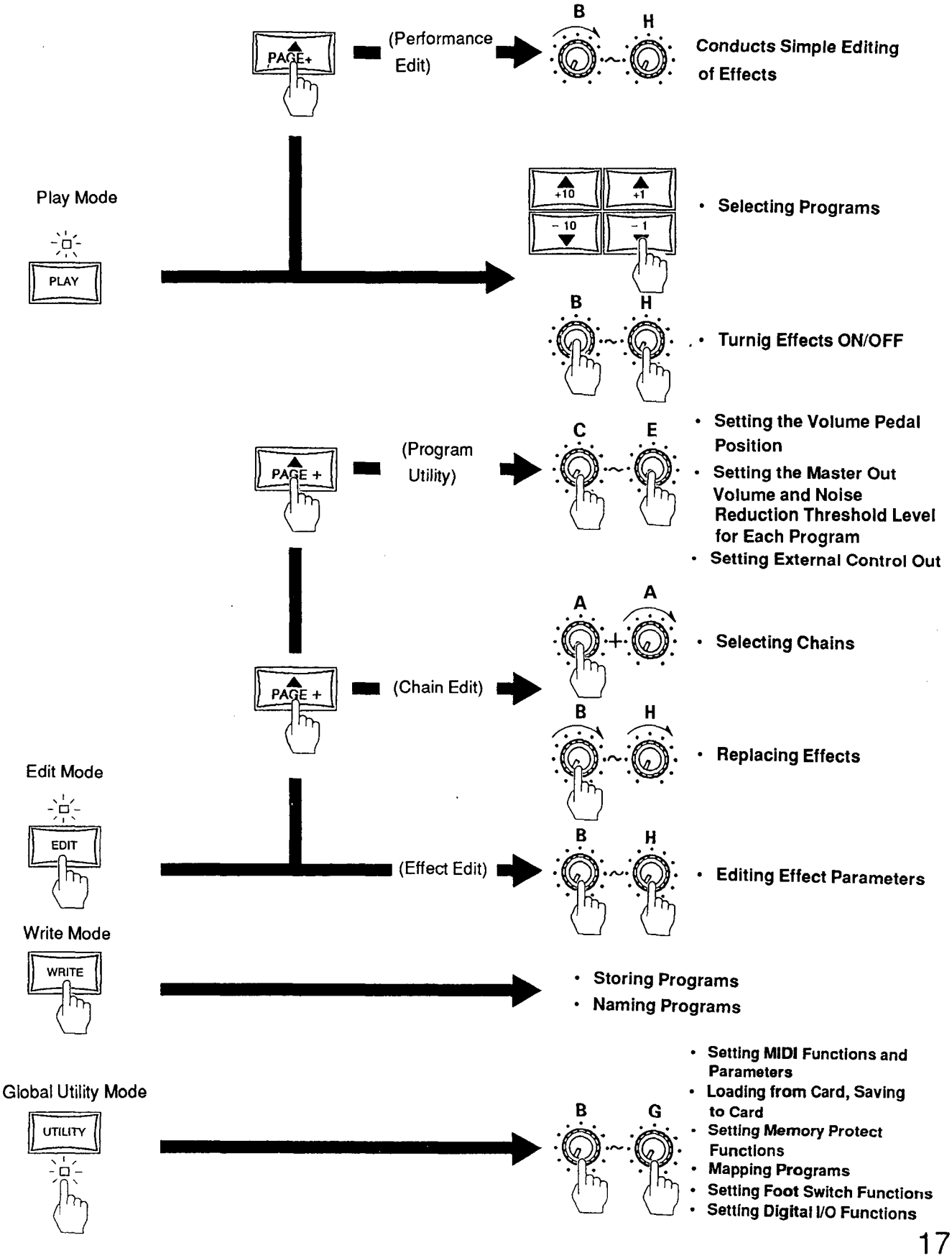
Place the effects to be used in the boxes of the selected chain. Refer to "Replacing Effects" on page 28.

3 Setting effect parameters

Set a series of parameters that create the effect sound you want to have. Refer to "Effect Edit" on page 32.

The Four Modes and Their Functions

In addition to Play Mode and Edit Mode, the A1 has two additional modes for a total of 4: Write Mode for storing programs in memory and Global Utility Mode which provides supplementary functions.
The relationship between the four modes are illustrated by the chart below.



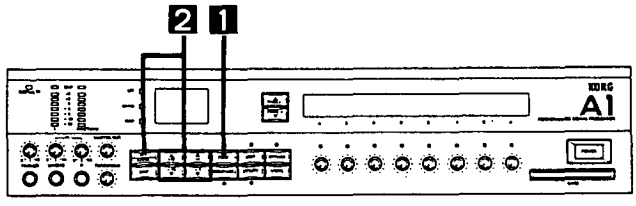
Play Mode

The Play Mode indicator lights up when the A1 is in Play Mode, at which time you can freely select and play any of 100 preset effect programs or programs provided on A1-compatible memory cards. Play Mode also provides Performance Edit Mode in which effects can be turned on or off for easy editing of effect parameters.

1 Program Selection

Using the UP/DOWN keys, you can select programs that have been factory set within the A1 itself or stored on memory cards.

1/ Basic Play Mode



Press the Play Mode key to select Play Mode.
Play Mode is automatically selected when the POWER switch is turned on.

- **To select a program, preset in A1:**
  Select a program number using the UP/DOWN keys.
- **To select a program from a memory card:**
  1. Press the INT/CARD key. The CARD indicator lights up.
  2. Select a program number using the UP/DOWN keys.

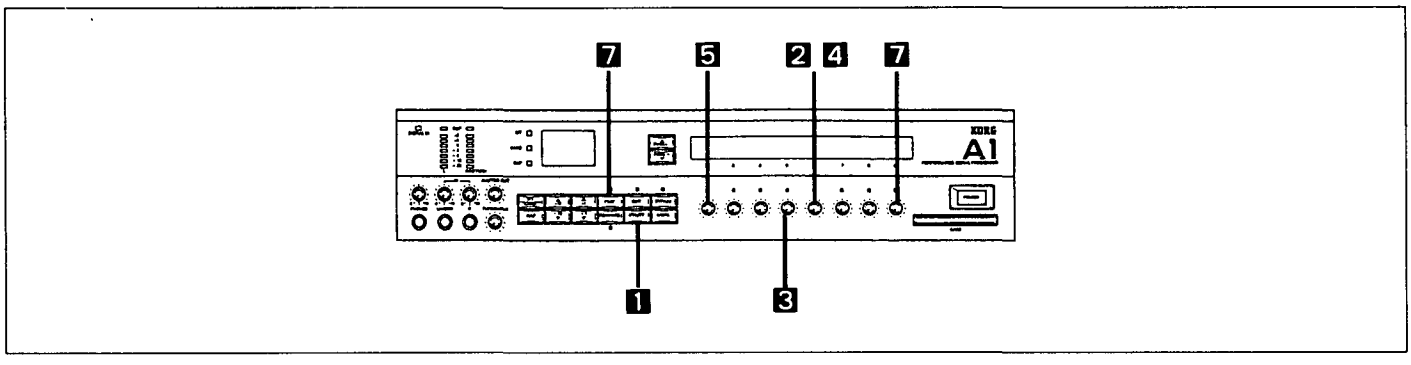
Pressing the INT/CARD key again turns on the INT and returns to the preset program selection mode.

	2nd digit changes	1st digit changes
UP key	▲ +10	▲ +1
DOWN key	▼ -10	▼ -1

Holding down the UP or DOWN key enables continuous scrolling through the program numbers.

2/ Rearranging the Program Order - Map Play

Map Play allows you to set the order in which programs are to play, a very useful function during live performances. By pressing the UP key, it is possible to advance progressively to higher program numbers in an instant.

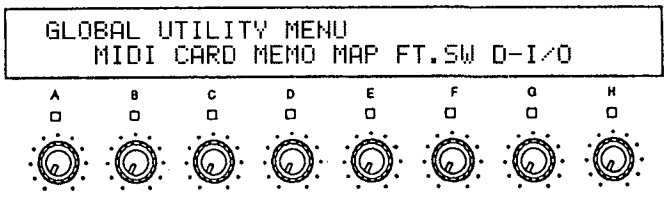


Map Edit

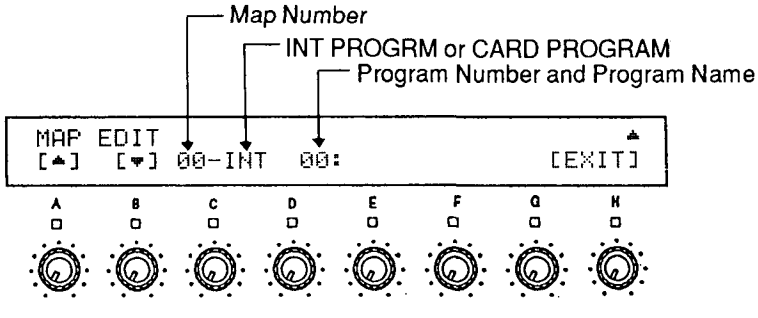
Use Map Edit to register program numbers in the order of play.

Preparation

1 Press the Utility Mode key to show the Global Utility Menu on the entire display.



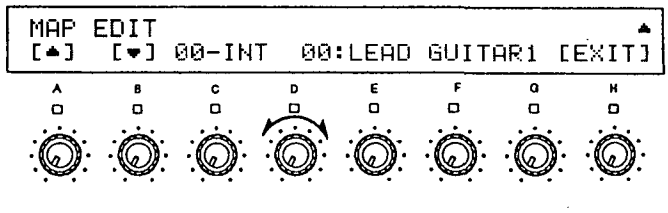
2 Press the "E" double function edit control to select Map Edit Mode.



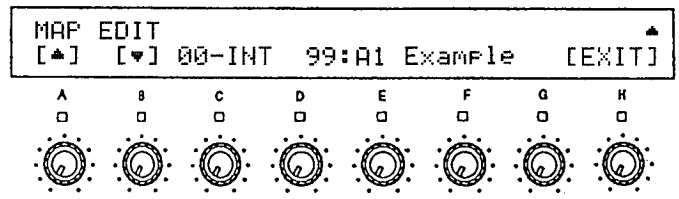
The display indicates that internal program 00 is assigned to map number 00.
First, set the desired program (ie., the program to be used first) to map number 00.

Registering program numbers as map numbers

3 Select INT or CARD by turning the "D" double function edit control.
Specify "INT" to select preset programs in the A1 or "CARD" to select programs from a memory card.



4 Turn the "E" double function edit control to select the first program number to be played.
As an exmaple, specify 99.



Program number I99 has been registered as map number 00.

5 Press the "A" double function edit control once to advance to 01.
As an example, set program I 98 to the next map number. Map number 00 is shown in the upper part of LCD and map number 01 in the lower part.

6 Repeat steps 3 to 5 to set other program numbers in the order to be played.

7 After setting all map numbers:
- Press the "H" double function edit control to return to the Global Utility menu, or press the PLAY key to return to Play Mode.

To change a map number setting, turn the "C" double function edit control or press the "A" and "B" double function edit controls to change the number one at a time to select the new map number.

Playing programs in order of registration

1 Press the PLAY key to light up the Play Mode indicator.

2 Press the MAP key to light up the Map indicator.
- Map number "00" is shown under PROGRAM NUMBER in the display.
- The previously set program number I99 is shown on the display.
- To begin Map Play using the optional RE1: Press the "INT" and "CARD" keys at the same time to display the map number at the bottom-left portion of the RE1's display.

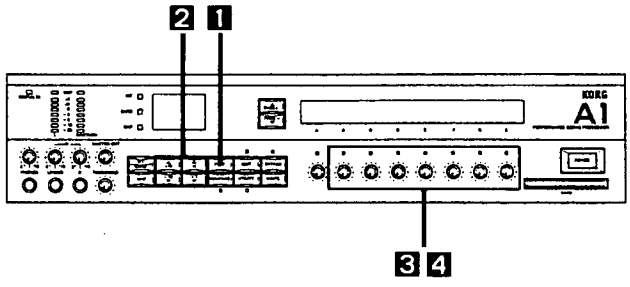
3 Press the UP key to advance to the next map number.
Pressing it once advances to previously set program number I98.
Each press of the UP key advances the program number in the order they were registered.

4 After all registered programs have been played, press the MAP key again.
The INT indicator lights up and the A1 returns to basic Play Mode.
However, if map play ends with a map number set to a RAM card-stored program, "CARD" is displayed to indicate that it is a RAM-card program, and the A1 returns to basic play mode.

IMPORTANT: Even after powering down, data created in Map Edit Mode is saved in memory until next changed.

2 Turning Effects ON and OFF

In Play Mode, you can easily turn off any effect in a program. This function allows you to modify a program in real time during a live performance or studio mixing session.



1 Press the PLAY key to select Play Mode.
The Play Mode indicator lights up.

2 Select a program.

3 Press the double function edit control immediately below the displayed name of the effect to be turned on or off.
An effect is on when the effect name is shown in capital letters and the indicator of the double function edit control is turned on; an effect is off when the effect name is shown in lowercase letters and the indicator of the double function edit control is not lighted.

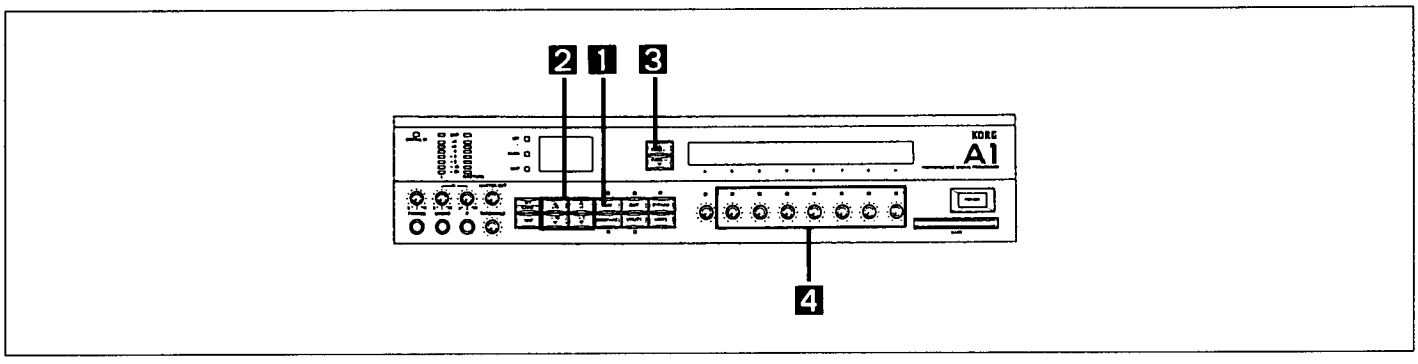
4 Press the double function edit control to turn the effect on again.
- The display on the RE1 indicates an effect is ON or OFF by showing its name in capital or lowercase letters, respectively.

Effect ON/OFF settings can be saved in Write Mode.

IMPORTANT: Certain effects are constantly on and cannot be turned off by pressing their respective double function edit control.

3 Performance Edit

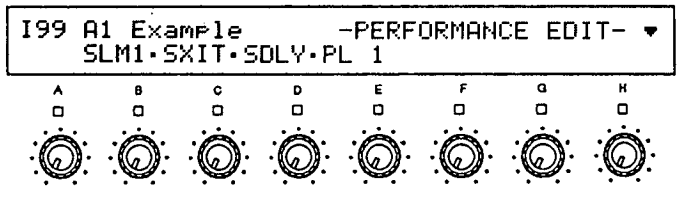
The Performance Edit function of Play Mode is used to easily modify effects during play. The parameters that can be changed by the Performance Edit function depend on the effect. For details, refer to the Separate, "Effect Parameter List."



1 Press the PLAY key to select Play Mode.
The Play Mode indicator lights up.

2 Select a program.
As an example, select I99, "A1 Example."

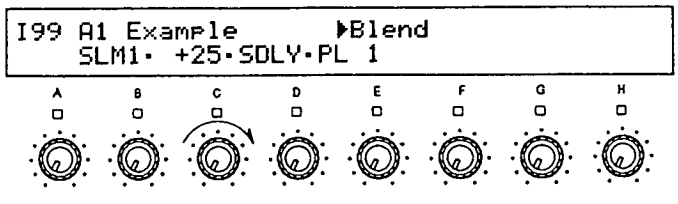
3 Press the PAGE key.
"PERFORMANCE EDIT" is displayed in the top-right of the display.



Changing the strength of Stereo Exciter(SXIT)

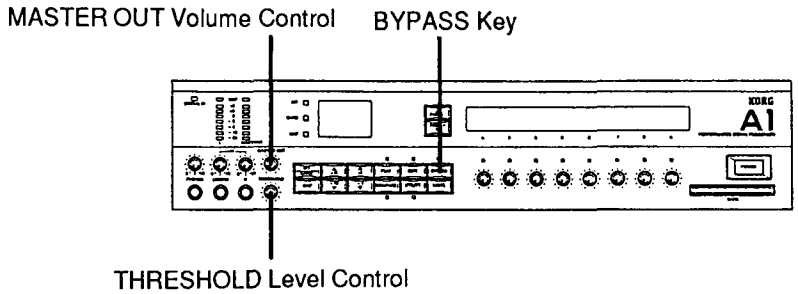
4 Turn the double function edit control of the effect to be changed.
The effect name shown on the display is replaced by a numerical value.
The parameters of the effect that can be modified in Performance Edit mode are shown.
The double function edit controls is ± 00 at center, and a maximum of ± 50% when turned. When set at ± 00, the parameter value set in the Edit mode is shown.

Changing the level of the Compressor effect



press the PAGE- key
To return to Play Mode,
Changes made to parameters with the Performance Edit function can be saved to memory by executing a writing operation in Write Mode.

4 Setting Master Out Volume, Noise Reduction Threshold Level and Bypass Switching in Play Mode



► Master out volume

The master volume enables you to adjust the overall volume of the currently selected program.
Adjust the volume with the MASTER OUT volume control.
An OUT value between 000 and 100 is displayed in the top-right portion of the display.

► Threshold level

Use the THRESHOLD control to adjust the noise reduction level for the currently selected program. The threshold(THR) value is shown in the A1 display. This function is normally used with guitar distortion programs or noisy sources.
To reduce the noise level, silence the connected musical instrument completely (by muting the strings in the case of a guitar), then turn the THRESHOLD volume control up until no noise is heard.

- Switching a program to another causes the master volume and noise reduction threshold levels set in Play Mode to change to the values that were memorized for the new program.

► BYPASS Switching

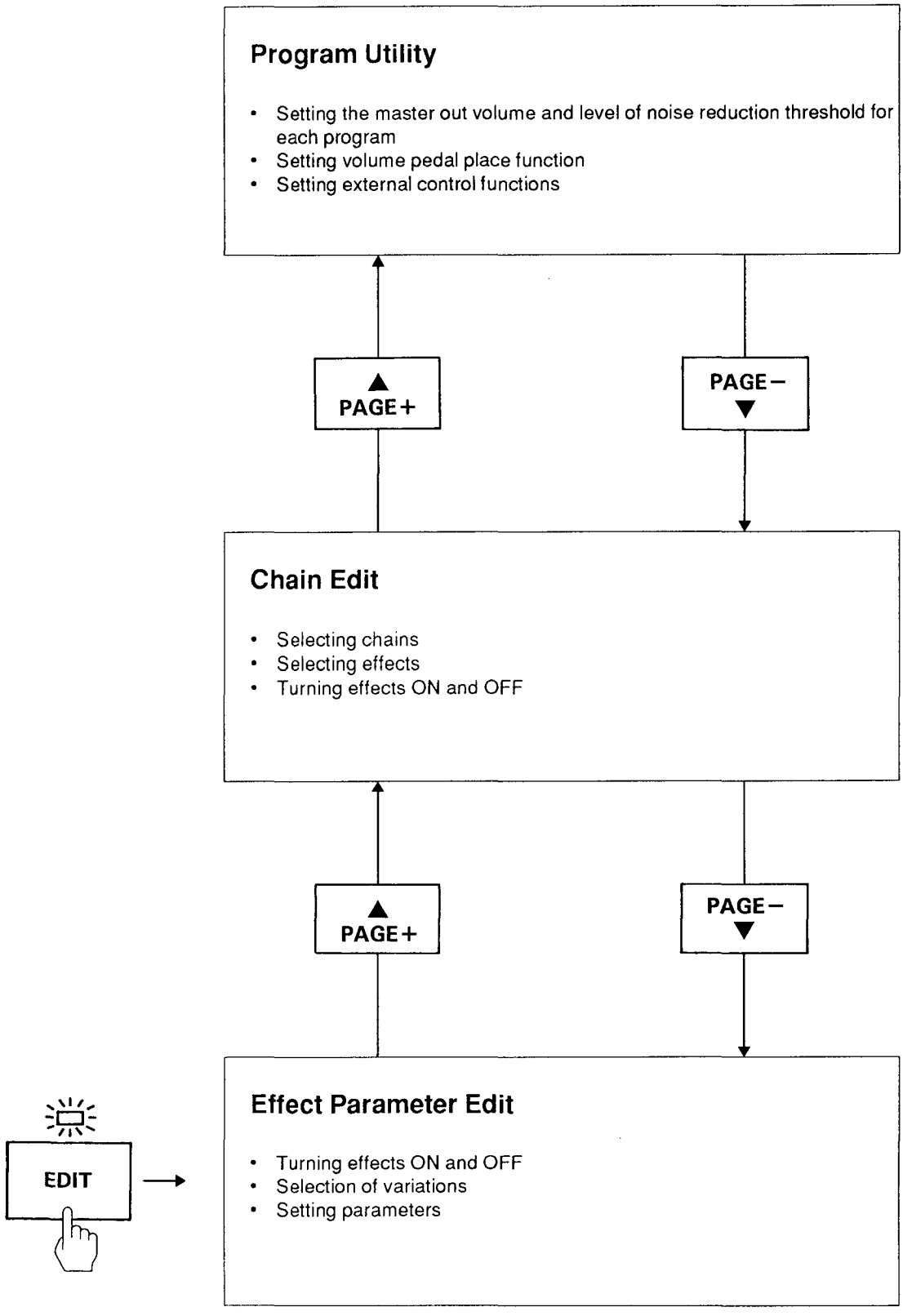
Pressing the BYPASS key toggles the bypass function, allowing you to listen to the sound with or without effects.

- When the bypass function is turned on, the BYPASS indicator lights up and sound is output without effects.
- When the bypass function is turned off, the BYPASS indicator goes off and sound is output with effects.

These functions are operative in all modes.

Edit Mode

Edit Mode enables you to change the contents of programs to create your own sounds. There are three types of edit functions in Edit Mode: chain edit, effect parameter edit and control edit. The Edit Menu is used to perform settings for all three functions.



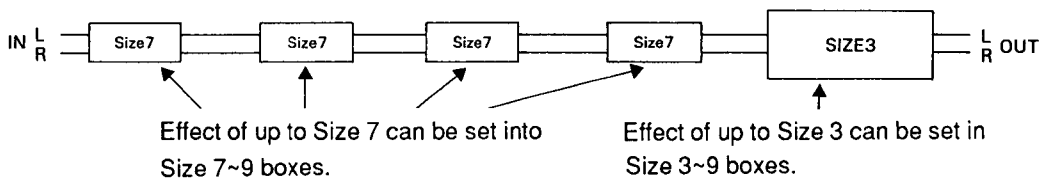
1 Chain Edit

There are two methods of chain editing. One replaces effects in a preset program with other effects. The other arranges the effects in a sequence to create a new effect.

Chains

In the A1, the pattern in which effects are connected is called a chain. A box in which an effect is contained is called an effect box, and a chain is a linked pattern of effect boxes, as illustrated below. There are 9 types of effect boxes, each with different capacities ranging from size 1 to 9. You are allowed to place any effect into an effect box as long as it will fit.

Example:



Effect of up to Size 7 can be set into Size 7~9 boxes.

Effect of up to Size 3 can be set in Size 3~9 boxes.

All effects can be set regardless of whether they are monaural or stereo.
See the separate "Effect Parameter List" for effect sizes.

Types of Chains

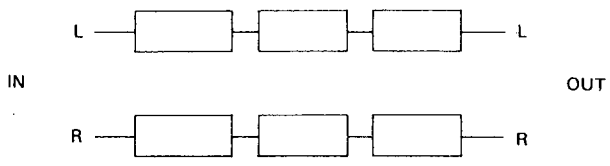
Of the ** chains are provided in the A1 (chain 1 ~50), five types can be distinguished, each characterized by the method in which effect boxes are linked.

1. Series Chain

In a series chain, effect boxes are arranged sequentially from input to output.

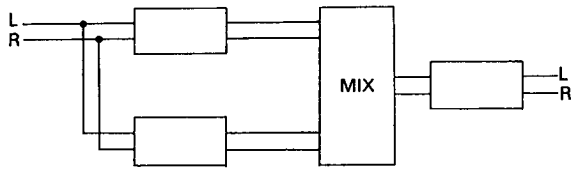
2. Dual Chain

In a dual chain, the left and right channels are completely independent of each other.



3. Parallel Chain

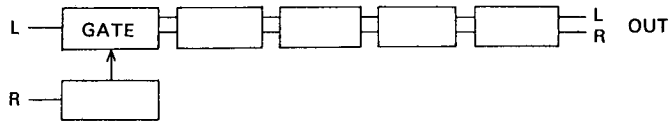
In a parallel chain, effect boxes branch off into parallel lines. In a parallel chain, the MIXER effect cannot be replaced with another effect.



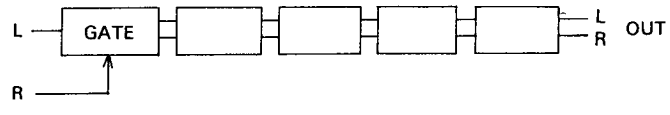
4. Key-In Chain

A key-in chain is a chain which uses the input signal from the right channel as a key-in signal. In this case, the right-channel input signal is used only for GATE or LIMITER effect control, and is not output as a sound signal. The effects which are subject to key-in signal control are the Limiter effect, and the Gate effect.
There are two types of key-in chains; one in which the key-in input (Rch input) directly controls the GATE or other effect; and another in which the key-in signal controls the Gate or other effect after passing through another effect, called a "side effect."

- Key-In chain with side effect



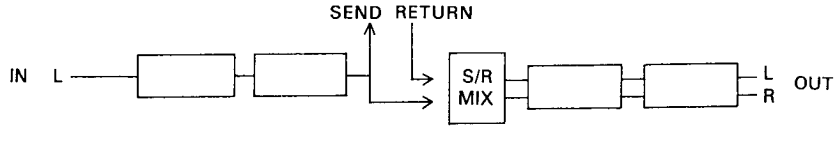
- Key-In chain without side effect



What is a Side Effect?
A side effect is an effect which is used as a control signal for the Gate or Limiter effect. For example, as EQ effect with the high frequencies boosted can be used as a side effect, resulting in an enhancement of the high-frequency signals input into the Limiter effect.

5. Send/Return Chain

A chain which includes SEND and RETURN data is called a send/return chain. The SEND and RETURN jacks on the rear panel function only when a send/return chain is selected. When a send/return chain is used, A1 input becomes monaural, and the Lch input terminal on the front or rear panel is enabled and the Rch input disabled.



Note: During digital input, the return jack is inoperative in SEND/RETURN chains. (The Rch signal of the digital input is input as a return signal to the send/return mixer.)

Symbols Used to Show Effect Connection in a Chain

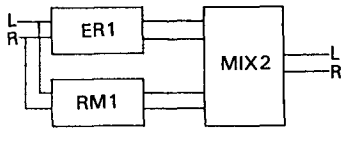
In the A1 display, the following symbols are used to indicate the connection between effects in a chain.

" ▪ " This symbol indicates a serial connection of effects.

Ex: SLM1▪SXIT▪SDLY▪RM1

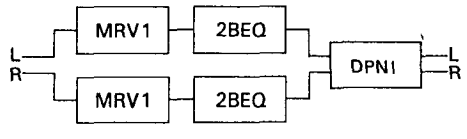
"=", "/" The "=" symbol indicates the output of a particular effect is split and sent to two different effects. Effects separated by "/" are in parallel.

Ex: ER1/RM1=MIX2



If "/" this symbol is followed by "=", it indicates that parallel effects are connected to one effect such as the Mixer effect.

EX: MRV1▪2BEQ/MRV1▪2BEQ=DPN1

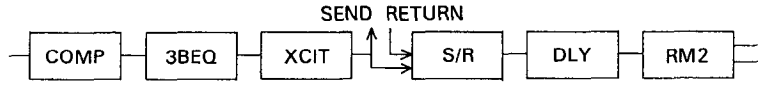


When "/" appears in a key-in chain, it indicates the existence of side effects before and after.

" ⌟⌞ " It also indicates that it is possible to place a SEND or RETURN in the interval between.

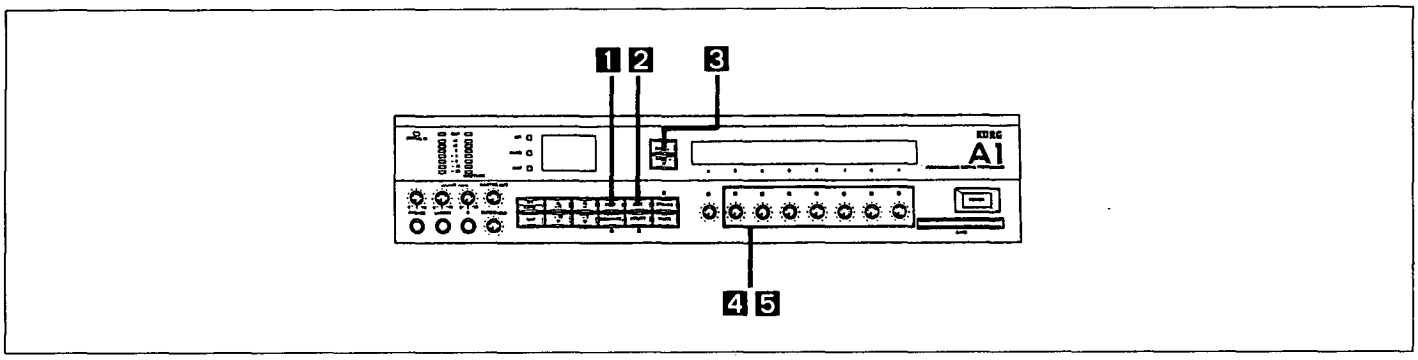
EX: COMP▪3BEQ▪XCIT⌟S/R▪DLY▪RM2

'S/R is a send/return mixer.

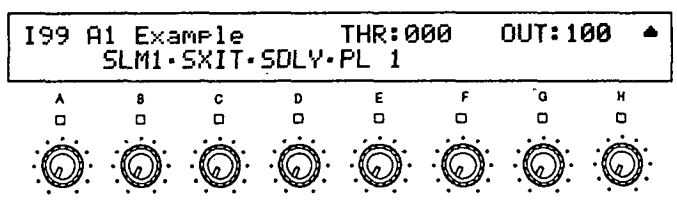


1/ Replacing effects in a preset program with other effects

You will get a new program by replacing effects in the preset program's chain with another effects.

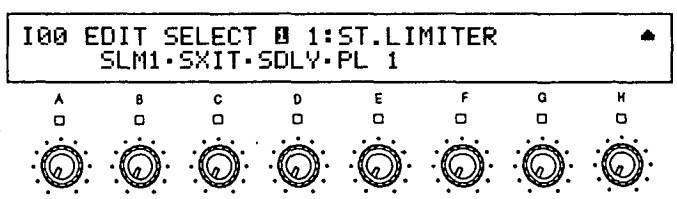


1 In Play Mode, select the program to be modified by Chain Edit.



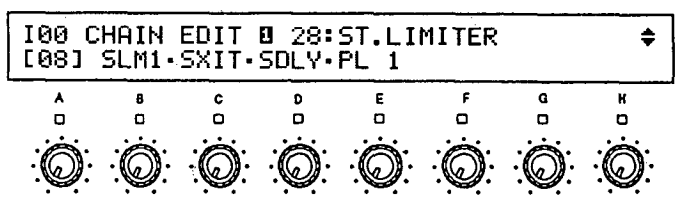
2 Press the EDIT key.

"EDIT SELECT" is shown on the display.



3 Press the PAGE+ key.

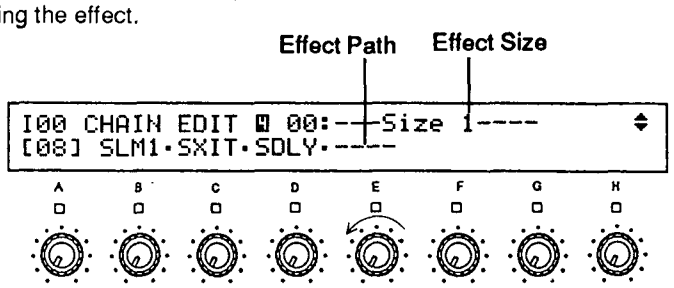
"CHAIN EDIT" is shown on the display.



Checking the effect size

4 Turn the double function edit control (B-H) below the effect to be replaced fully counterclockwise.

The effect path "----" appears on the display and the effect box size is displayed in the upper right portion of the display. Make sure to check size of the effect box before replacing the effect.

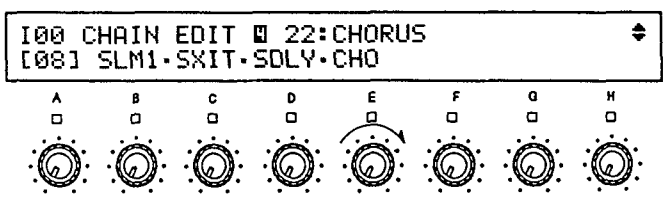


Turning the "E" double function edit control for the Plate effect ("PL1") fully counterclockwise shows that the fourth effect box is Size 1.

Selecting a new effect

5 Select a new effect by slowly turning the desired double function edit control clockwise.

The effect path display is replaced by the names of effects, whose sizes fit the effect box size 1 to 9, which appear on the screen one by one.
You can scroll through the effects one at a time by pressing the UP/DOWN keys.

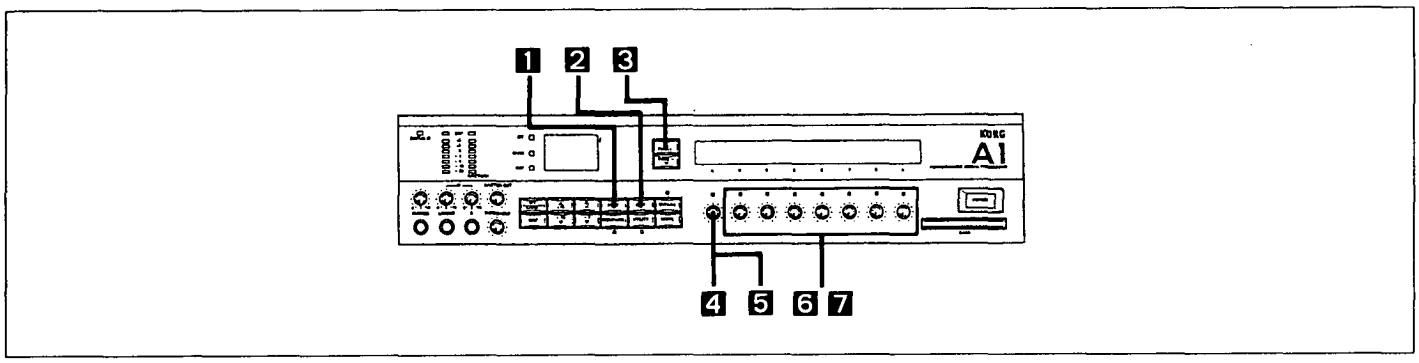


6 Continue entering new effects by repeating steps 4 and 5.

See the separate "Effect Parameter List" for the sizes of the various effects.
Refer to the separate "Chain List" to check if effect boxes of the respective sizes are contained in the various chains.

2/ Creating a new chain

You can write a new program by making a new chain.



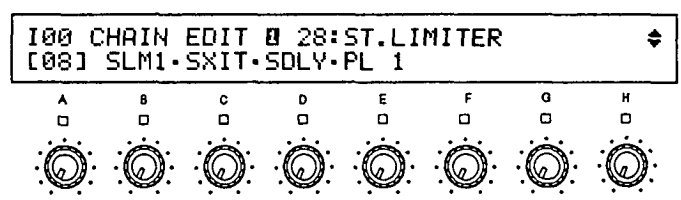
1 In Play Mode, select a program I99.

2 Press the EDIT key

"EDIT SELECT" is shown on the display.

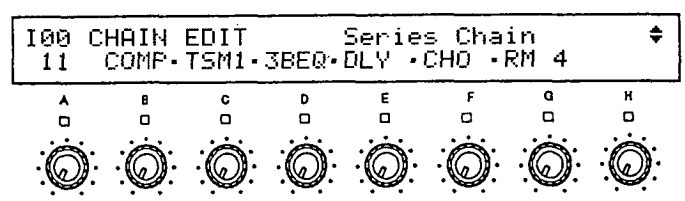
3 Press the PAGE+ key.

"CHAIN EDIT" is shown on the display.



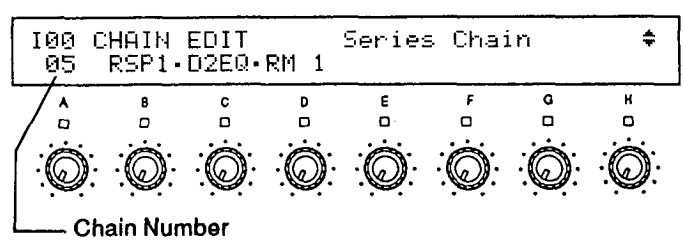
4 Press the "A" double function edit control below the chain number.

The displays show the chain select conditions with the chain type (i.e., Series Chain, Key-In Chain, etc.) in the upper-right part of the screen.



Selecting a chain number

5 Select a chain number 05 by turning the "A" double function edit control or pressing the UP/DOWN key.



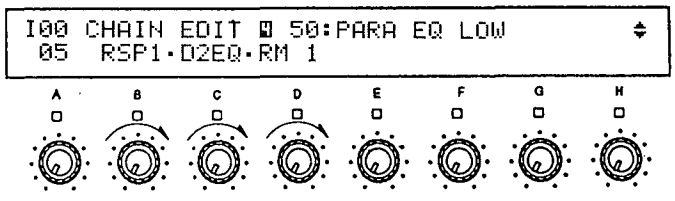
See the separate "Chain List" for details on the chains for each number.

This chain allows you to use three effects simultaneously. When it is selected, each effect box contains the respective effect that was previously assigned to it.

Selecting an effect

6 Slowly rotate double function edit controls B through H clockwise or press the UP/DOWN keys until the desired effect is shown.

Effects with a size that fits the effect box size are displayed one by one.



7 After the new chain is completed, set the parameters for each effect, referring to the section on Effect Edit from page 32.

Chain Edit Using the RE-1

In chain-edit using the RE-1, the REI-1's numeric keypad is used to directly select the desired chain number and effect numbers.

Chain Selection Technique

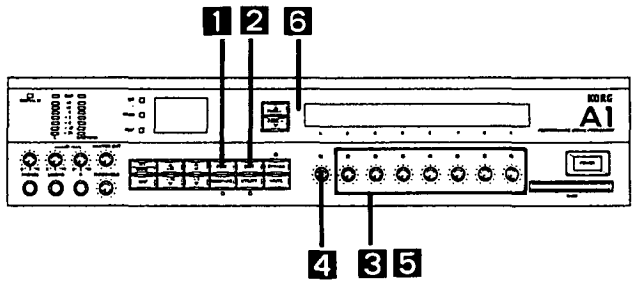
1 **Refer to "Types of Chains" on page 25 to verify the type of chain to be used (1-5).**

2 **Select the two or three main effects to be used, then select a chain with effect boxes of a size that will fit those effects.**

For example, when you want to use the Tube Simulation and Rotary Speaker effects for an organ, Chain 5 is found to be a series chain with effect boxes large enough to contain the Tube Simulation effect (Size 7) and Rotary Speaker effect (Size 4). Refer to "Chain List" for details on effect sizes.

2 Effect Edit

The sound characteristics of each effect are determined by its parameters. The A1's Effect Edit mode allows you to change the values of each parameter of the various effects to create your own custom sounds.



1 • **Changing the parameters of internal programs in the A1 or programs stored on a memory card**

In Play Mode, select the program you wish to edit.

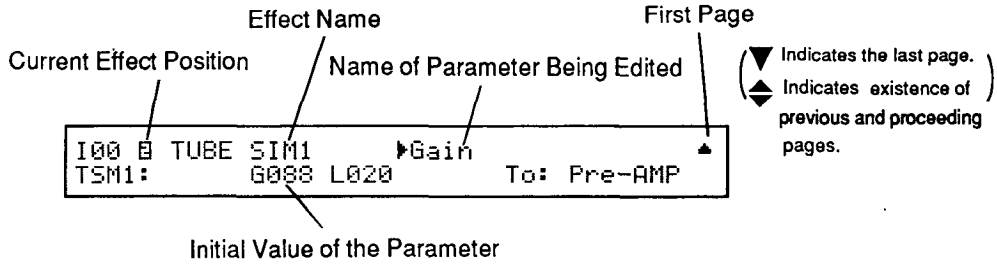
• **Setting new parameters for each effect after editing in Chain Edit Mode**

Start with Step 2.

2 Press the EDIT Mode key.

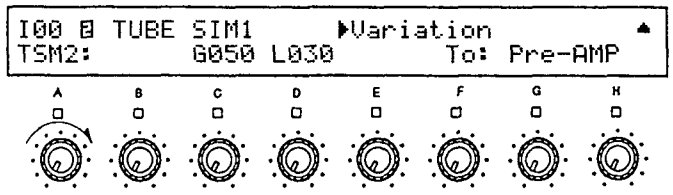
"EDIT SELECT" is shown on the display to indicate that the A1 is in Parameter Edit Mode.

3 Press the double function edit control below the effect whose parameters you wish to change. As an example, select Tube Simulation for editing.



Change in variation
Changing an effect variation

4 Rotate the "A" double function edit control to select a variation.
No change occurs for effects with no variations.



Setting the effect parameters

5 Turn the double function edit control under any of the currently displayed parameters to change its value.

- **For fine adjustment of parameter values**

1. Press the double function edit control under the parameter to be set. The indicator of the double function edit control lights up and the parameter name is shown on the display.
2. Use the UP/DOWN keys to make fine adjustments of the parameter value.

6 Setting many effect parameters

Repeat to press the PAGE +/- keys until the desired parameter comes on the display.

Refer to the separate "Effect Parameter List" for details on each parameter.

Turning an Effect ON and OFF

When the first page is displayed in the Effect Edit Mode, you can turn any effect ON and OFF by pressing the "A" double function edit control under the variation number. When an effect is turned OFF, its effect name changes to lowercase letters.

Compare Key

During editing, the COMPARE key makes it easy to compare the edited sound color with the original sound color stored in memory for that program number. Press the COMPARE key during editing and the COMPARE indicator lights up. The parameter values prior to editing are called up and you can then make a sound color comparison. If you press the key again, the indicator turns off and the edited parameter values are restored. It is also possible to edit the data called up by the compare function (the original data prior to editing), but the original data will be lost in the process.

Using the Dynamic Modulation Function

The dynamic modulation function varies effects through the use of volume pedals, MIDI data, the A1's built-in LFO, and input signal envelopes.
An external controller, which is used to vary effects, is called a dynamic source, and those parameters which are controlled by an external controller are called dynamic parameters.

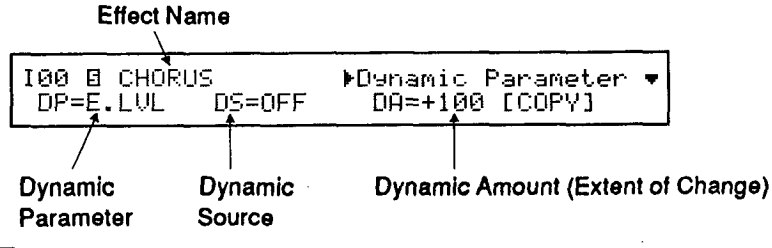
Dynamic source	Control item or effect
OFF	No dynamic modulation
ENV	Input signal envelope curve
LFO	Built-in LFO
PEDAL	Volume pedal connected to the PARAM. PEDAL input jack
Velo	Velocity at MIDI Note On(key touch)*
AftT	External MIDI after touch
Ptch B	External MIDI pitch bend (causes same rate of change in pitch up and pitch down when center is set to zero.)
Ctrl#	MIDI control change Control change numbers 01 to 95

* When note data is entered in chord form, the key touch of the highest velocity is given priority.

Varying the dynamic modulation of the Chorus effect

Using the Chorus effect as an example, pedals or MIDI data can be used to vary the speed and level of the effect.

Refer to the separate "Effect Parameter List" for details on the way various effects can be varied through dynamic modulation.



1 In Effect Edit Mode, press the PAGE+ key.
Press the PAGE+ key until " " (last page) is shown in the upper-right part of the display. Note that this will not appear for effects not subject to the dynamic modulation function.

Using a pedal to control the speed

2 Rotate the "B" double function edit control to select the dynamic parameter "speed".
Some effects may have only one dynamic parameter.

3 Rotate the "D" double function edit control to select the dynamic source "pedal".
OFF, ENV or LFO cannot be selected for certain dynamic parameters.

4 Rotate the "F" double function edit control to set the value (dynamic modulation effect level).

The higher the value, the more the effect is varied by the dynamic source. A "+" or "-" sign displayed before the value indicates that two directions of change by the modulation source can be specified. For example, a "+" or "-" sign in the case of the Chorus effect indicates the ability to specify either a speed up or slow down in the effect with each press of the pedal. For details, see function on setting the dynamic amount on page 35.

After completing the dynamic modulation setting

You can now use the dynamic modulation function to change the speed of the Chorus effect using the volume pedal connected to the PARAM.PEDAL input jack on the rear panel of the A1.

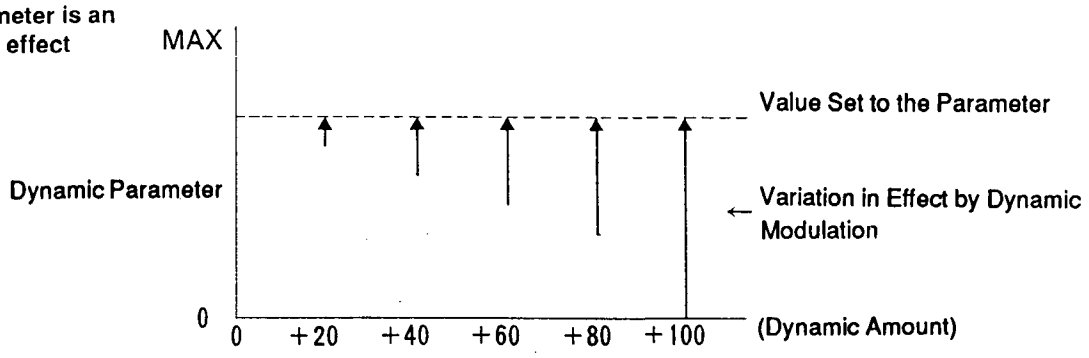
Setting the Dynamic Amount

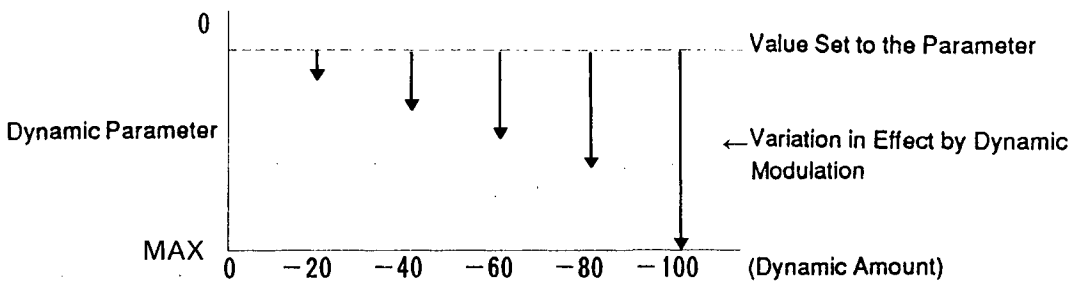
Relationship between dynamic amount and dynamic parameters

The parameters that can be set as a dynamic parameter of an effect include parameters that may or may not be original parameters of the effect in question. For example, the LFO Speed parameter is both a parameter that can be set as dynamic parameter of the Chorus/Flanger effect, as well as an original parameter of the effect. However, the "sweep" and other similar dynamic parameters of the Sweep Delay effect do not exist as original parameters of the effect.

The relationship between dynamic amount and dynamic parameter in the two cases described above is illustrated in the following diagram.

When the dynamic parameter is an original parameter of the effect





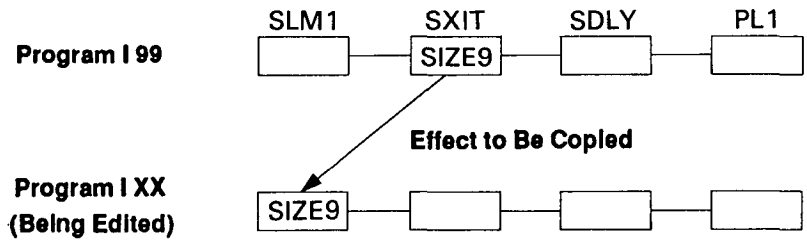
As shown above, the change in the value of the dynamic parameter induced by dynamic modulation ranges from 0 to the value set to the parameter. Moreover, a "+" or "-" sign in front of the dynamic amount indicates the direction in which the effect changes in relation to the dynamic source data. In the case of the Effect Level (E.LVL) dynamic parameter, the change caused by dynamic modulation ranges from 0 to the effect level set by the Effect Balance parameter..

When the dynamic parameter is not an original parameter

Since the change in dynamic amount differs according to the effect, please refer to parameter list for each effect in the separate "Effect Parameter List".
of the effect

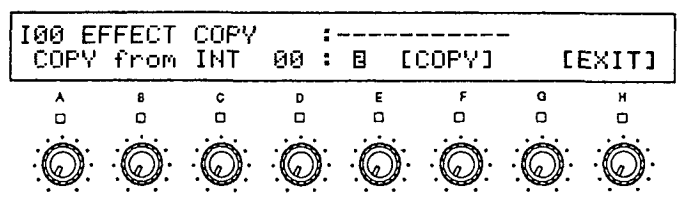
Copying Effects

While editing an effect, you can copy another effect being used in another program or its parameters to the effect being edited. The effect to be copied may be a different tvpe as long as it size is the same or smaller than the effect being edited.



1 In Effect Edit Mode, press the PAGE+ key until the last page is shown on the display.

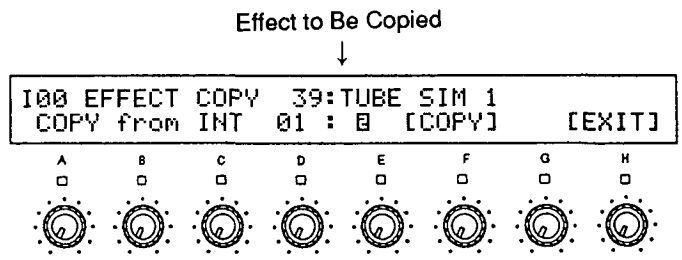
2 Press the "G" double function edit control [COPY].
"EFFECT COPY" is shown on the display.



3 Rotate the "C" double function edit control to specify the location of the program to be copied from: INT for an internal program of the A1, or CARD for a program stored on memory card.

4 Rotate the "D" double function edit control to select the number of the program to be copied from.
After pressing the "D" double function edit control, press the UP/DOWN keys to change the program numbers one at a time.

5 Rotate the "E" double function edit control to select the effect in the chain to be copied.
The number and name of the selected effect is not displayed if the effect is too large to fit into the effect box being edited.



6 After selecting the effect to be copied, press the "F" double function edit control [COPY].

After parameter copying is completed.

7 "COMPLETED" is shown on the display.

8 Press the "H" double function edit control [EXIT] to return to Effect Edit Mode.

3 Program Utility

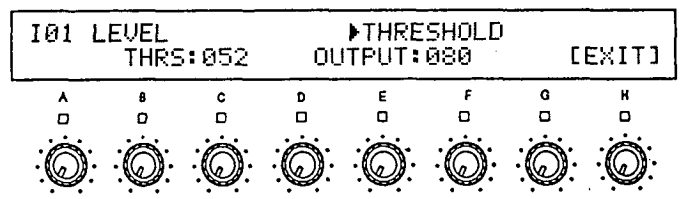
The Program Utility Mode provides the 3 following functions:
1. Setting the master volume and threshold level
2. Setting volume pedal position
3. Setting external control functions

1/ Setting levels

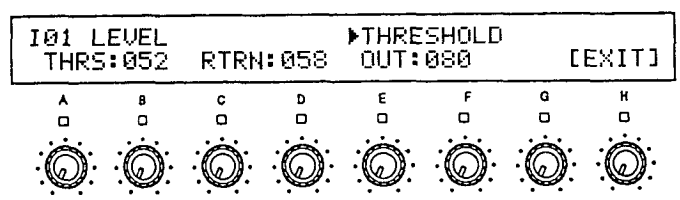
Setting the master volume and noise reduction threshold levels for each program.

1 While EDIT SELECT is shown on the display, press the PAGE+ key twice.
The Program Utility Menu is shown on the display.

2 Press the "C" double function edit control [LEVEL].



3 Set the noise reduction level by rotating the "C" double function edit control.
Adjust the threshold level according to the respective noise level.
When the chain includes SEND and RETURN, the level of noise reduction for the input signal can be set for the input jacks and for the RETURN jack. Rotate the "B" double function edit control to set the threshold level for input jacks, and the "D" double function edit control for the threshold level of the RETURN jack.
After pressing the various double function edit controls, you can use the UP/DOWN keys to change the value one unit at a time.



4 Set the master volume by turning the "F" double function edit control.

After completing the master volume and threshold level settings

5 Press the "H" double function edit control [EXIT] to return to the Program Utility Menu.

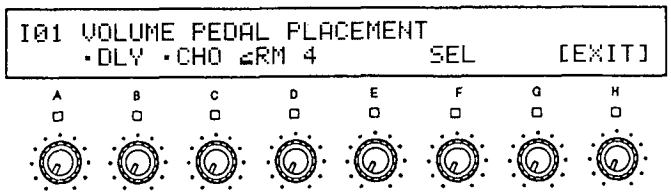
The master volume and input signal noise reduction threshold levels can also be set with the MASTER OUT volume and THRESHOLD level controls, respectively.
You can store all the settings thus obtained for each program in memory.

2/Setting Volume Pedal

The output volume of any effect can be controlled with a volume pedal connected to the VOL. PEDAL input jack on the rear panel.
Follow the procedure below to specify the effect the volume pedal to follow.

1 While EDIT SELECT is shown on the display, press the PAGE+ key twice.
The Program Utility Menu is displayed.

2 Press the "D" double function edit control [VPDL].



3 Rotate the "F" double function edit control [SEL] to move the cursor "≤ " after the effect where volume control by the volume pedal is to take place.
Note that some types of chains do not allow you to move the cursor " ≤ ".
For details, refer to the separate "Chain List".

After completing the volume pedal setting

4 Press the "H" double function edit control H [EXIT] to return to the Program Utility Menu.

3/ Setting External Control Functions

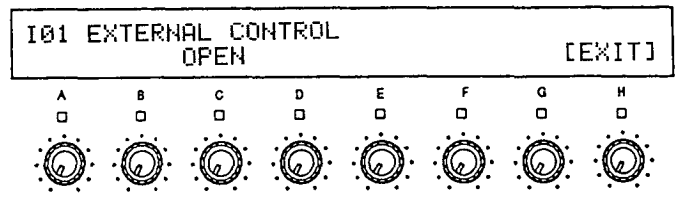
Setting the EXT CTRL OUT (external control output) jack on the rear panel of the A1 to OPEN or CLOSE enables external control functions to be set in each program. By connecting the A1's EXT CTRL OUT jack to the channel switching control jack (for foot switches, etc.) of a guitar amplifier having multiple input channels, etc., switching of amplifier input channels can be programmed to coincide with a change in programs.

1 With the Edit Select Menu showing, push the PAGE + key twice.
The Program Utility Menu is shown on the display.

2 Press the "E" double function edit control.

3 Rotate the "C" double function edit control to select "OPEN" or "CLOSE."
Select "OPEN" to switch off the external equipment; select "CLOSE" to switch the equipment on.

The equipment that is controlled by the "OPEN" and "CLOSE" setting depends on the channel used for equipment connection.

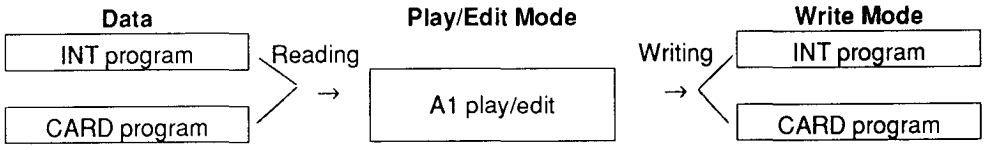


After completing the external control setting

4 Press the "H" double function edit control [EXIT] to return to the Program Utility Menu.
You can switch the external control output jack between OPEN and CLOSE manually, by setting one of the programmable footswitches to EXT CTRL in the Global Utility mode.

Write Mode

Write Mode is used for storing edited programs to the A1's memory or a memory card, and for copying one program to another program. It is also used to copy one program to another program. Unless stored in this mode, edited data are erased when another program is selected, and the original program will remain unaltered.
A program name can be assigned to programs when saved in this mode.



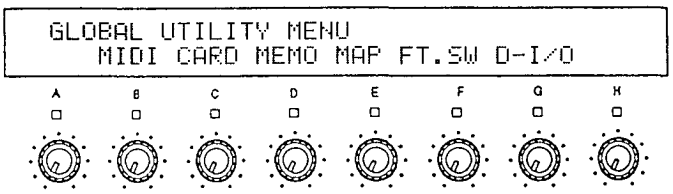
1 Write Operation

Setting up to save data to an internal (INT) A1 program

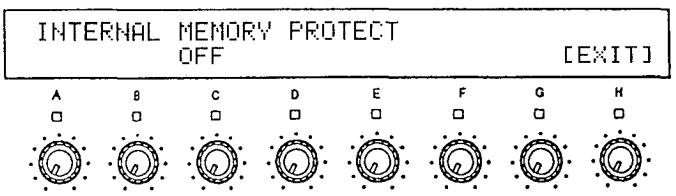
An INT program can be write-protected so that it cannot be erased by mistake. To save data to an INT program that is write-protected, the write-protection must be first be switched off. Once switched off, perform the write operation.

Switch off the memory-protect function

1 Press the UTILITY Mode key.
The Global Utility Menu is shown on the display.



2 Press the "D" double function edit control [MEMO].



3 Rotate the "C" double function edit control to change the indication to "OFF."
Setting up for saving the edited program is complete.

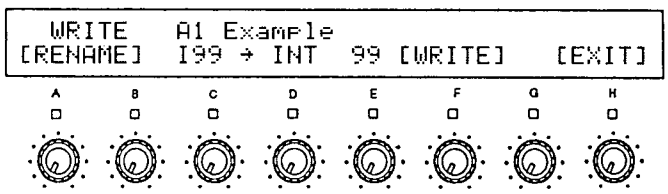
4 Press the UTILITY Mode key to return to the previous mode.

Setting up for saving a program to a RAM card

Slide the write-protect tab at the top-right of the RAM card to the OFF position before selecting the program to be saved.
Be sure to enter the WRITE mode after you have finished editing the program or while you are recalling the program to be stored in the PLAY Mode.

Starting the write operation

1 Press the WRITE Mode key.

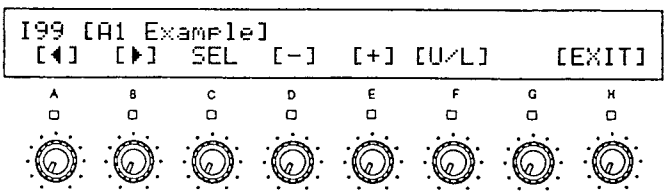


Specifying a program name

You can give the program to be saved a name consisting of up to 12 characters.
If you don't change the program name, proceed to step 7.

2 Press the "A" double function edit control [RENAME].

Program number
Program name - max. 12 characters



3 Rotate the "C" double function edit control [SEL] to select the characters of the program name.

Press the "D" (-) or the "E" (+) double function edit control to single-step through the list of available characters. You may also select the characters by pressing the UP/DOWN keys.

Pressing the "F" double function edit control [U/L] changes a character to uppercase or lowercase.

4 After selecting a character, press the "B" double function edit control " ▶ " to move the cursor forwards within the name field.

Press the "A" double function edit control " ◀ "to move the cursor backwards within the name field.

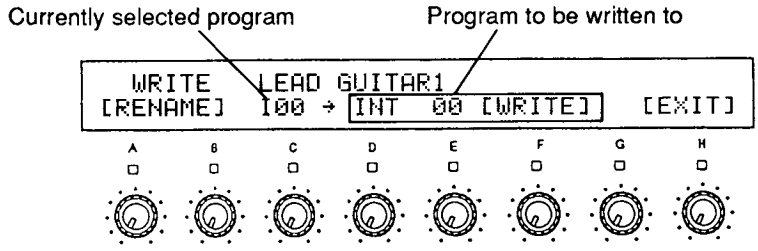
5 Repeat steps 3 and 4 to specify all of the characters of the program name.

List of available characters

	!	"	#	$	%	&	'	(	)	*	+	,	−	.	/
0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
P	Q	R	S	T	U	V	W	X	Y	Z	[	¥	]	^	_
`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
p	q	r	s	t	u	v	w	x	y	z	{	|	}	→	←

After completing the program name setting

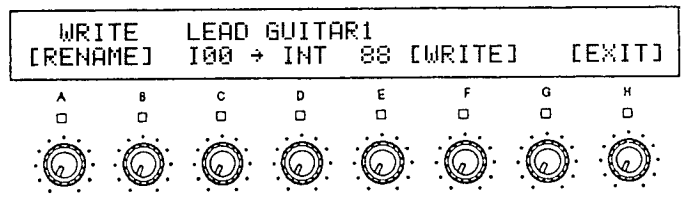
6 Press the "H" double function edit control [EXIT] to return to Write Mode.



Selecting the program number to be written to

7 Rotate the "D" double function edit control to select INT(internal A1 program) or CARD.

8 Rotate the "E" double function edit control to select the program number.
The UP/DOWN keys may also be used to select the program number.



After selecting the program number to be written to

9 Press the "F" double function edit control [WRITE].

10 Press the "G" double function edit control [YES] to start the write operation, or the "H" double function edit control [NO] to cancel the write operation.

After completing the write operation

11 "COMPLETED" is shown on the display.

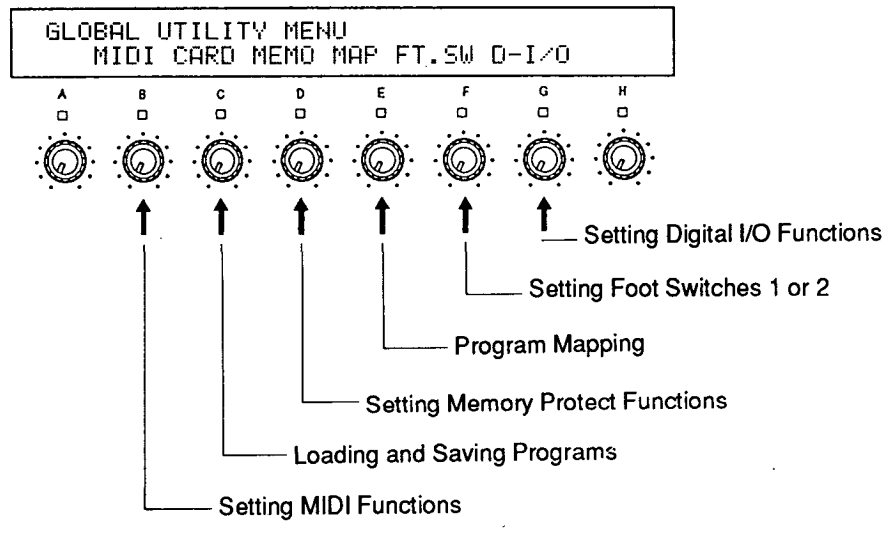
12 Press the "H" double function edit control to return to the mode prior to the write operation.

IMPORTANT: After completing a write operation, always set the write-protect tab of the RAM card to the ON position in order to prevent accidental erasure of stored programs.

Global Utility Mode

Global Utility Mode is used for the six following functions:
1. Setting MIDI functions and parameters
2. Loading programs from and saving programs to memory cards
3. Setting memory protect functions
4. Mapping programs
5. Setting foot switch 1 and 2 functions
6. Setting digital I/O functions

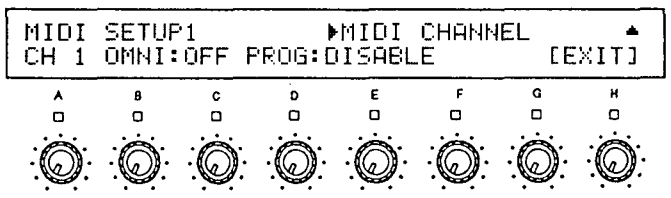
Press the UTILITY mode key to display the Global Utility Menu.
Press the double function edit control below any of the six menus displayed within the Global Utility Menu to display the first page of the respective menu.



1 Setting MIDI Functions

Page 1 of the MIDI Menu

The "MIDI SETUP1" page is for the selection of MIDI channels.



Selecting the MIDI transmit-receive channel

Rotate the "A" double function edit control to select any channel from 1 to 16.

Setting the OMNI Mode

Rotate the "C" double function edit control to set OMNI Mode ON or OFF.

OMNI-ON: all MIDI channels can be received.
OMNI-OFF: only specified MIDI channels can be received.

Enabling/Disabling MIDI program change messages

Rotate the "E" double function edit control to specify ENABLE or DISABLE.

ENABLE: MIDI program change messages can be received.
DISABLE: MIDI program change messages cannot be received.

Page 2 of the MIDI Menu

The "MIDI SETUP 2" page is for MIDI volume setting and the transmission of MIDI exclusive data.

ENABLE and DISABLE Setting for volume control using A1 MIDI volume data

MIDI volume data can be used in the A1 to control the volume at the locations set by the volume placement setting function of the Program Utility mode. This consists of setting volume control by volume data to ENABLE or DISABLE. Use this procedure to disable volume control when MIDI volume data (CTRL07) is used as a dynamic source for dynamic modulation.

1 With the "MIDI SETUP 1" page showing, press the PAGE UP key.
The display changes to the "MIDI SETUP 2" page.

```
MIDI SETUP 2          ▶MIDI EXCLUSIVE    ▼
VOL:DISABLE    EXCL:DISABLE [DUMP][EXIT]
```

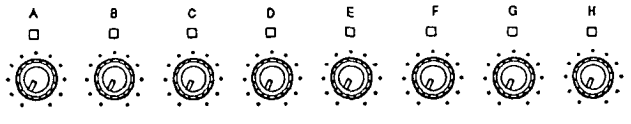
2 Rotate the "B" double function edit control to select ENABLE or DISABLE.
ENABLE: enables volume control by MIDI volume data.
DISABLE: disables volume control by MIDI volume data.

Dumping MIDI data in the A1

This procedure dumps out the A1's 100 internal programs, digital I/O data, map data and foot switch setting data. Before starting the procedure, use a MIDI cable to connect the MIDI OUT jack of the A1 whose data are to be dumped to the MIDI IN jack of another A1 or external MIDI device.

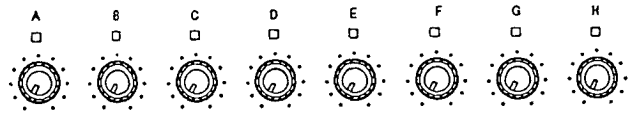
1 Press the PAGE+key to change from page1 [MIDI SETUP1] to page2 [MIDI SETUP2] of the MIDI Menu.

```
MIDI SETUP 2          ▶MIDI EXCLUSIVE    ▼
VOL:DISABLE    EXCL:DISABLE [DUMP][EXIT]
```



2 Press the "G" double function editor [DUMP] to begin transmitting MIDI exclusive Dump data.
Data is transmitted regardless of the ENABLE/DISABLE setting.

```
MIDI EXCLUSIVE      EXCLUSIVE          ▼
     NOW TRANSMITTING...
```



3 When the transmission is completed, "COMPLETED" is displayed.

4 Press the "H" double function edit control [EXIT] to return to page 1 [MIDI EXCLUSIVE] of the MIDI Menu.

Press the "H" double function edit control [EXIT] to return to the Global Utility Menu.

Enabling or disabling the A1 MIDI exclusive setting

While on page 2 (MIDI EXCLUSIVE) of the MIDI Menu, turn the "E" double function edit control to select ENABLE or DISABLE.

ENABLE: enables transmission and reception of exclusive data such as parameter and mode changes.
DISABLE: disables transmission and reception of exclusive data.

The MIDI exclusive setting should normally be set to DISABLE.

Receiving Dump Data through MIDI exclusive data from another A1 or external MIDI devices

Setting up

Turn off the memory protect function of the A1 to allow the reception of data.

1 Rotate the "E" double function edit control to set the MIDI exclusive setting of the receiving A1 to "ENABLE."

2 Press the PAGE key to return to the "MIDI SETUP 1" page.

3 Rotate the "A" double function edit control to match the receiving A1's MIDI channel with that of the transmitting device.

Receiving data

4 Conduct the Dump data from the transmitting device.
"EXCLUSIVE DUMP RECEIVING -----" is displayed.
If not displayed, an error has occurred in the data transmission. If this occurs, recheck the MIDI cable connections.

5 When data transmission is completed, "EXCLUSIVE DUMP COMPLETED"[EXIT] is displayed.
Press the "H" double function edit control [EXIT] to return to the previous mode. A normal data dump takes approximately 10 seconds to complete.

2 Loading Programs from and Saving Programs to Memory Cards

This page is for reading programs from memory cards (load) or writing programs (save). Memory card loading and writing allows you to read or write 100 programs or mapping data for Map Play. For this purpose, use dedicated ROM cards or RAM cards (KORG MCR-03).

► ROM (Read Only Memory) card

ROM cards allow data to be read only; data storage to a ROM card is not possible. Programs for the A1 are stored on a ROM card.

► RAM (Random Access Memory) card

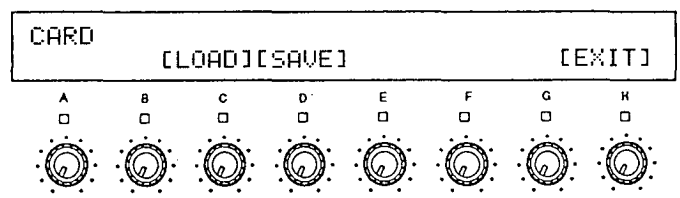
RAM cards can be used for both reading and writing data. Edited programs can be saved on a RAM card for recall and loading to the A1 at any time. A RAM card comes initially empty before programs are saved.

Loading (reading) memory card programs to the A1

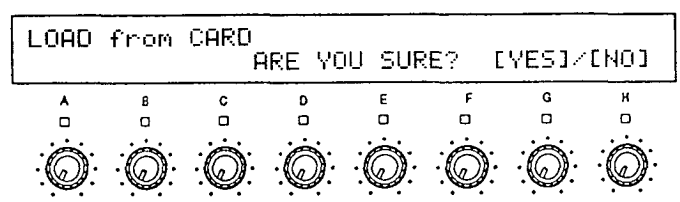
1 Insert the ROM or RAM card into the A1's CARD slot.
"ROM CARD INSERTED" or "(WRITE PROTECTED) RAM CARD INSERTED" is displayed.

2 Press the UTILITY Mode key to display the Global Utility Menu.

3 Press the "C" double function edit control [CARD].



4 Press the "C" double function edit control [LOAD].



5 Press the "G" double function edit control [YES] to proceed with program loading, or the "H" double function edit control [NO] to cancel program loading.
If an error message is displayed, press the "H" double function edit control [EXIT] to return to the Global Utility Menu.

For a list of error messages, see page 63.

6 When loading is completed, "COMPLETED" is displayed.
Press the "H" double function edit control [EXIT] to return to the CARD page.

Press the "H" double function edit control [EXIT] again to return to the Global Utility Menu.

Saving (writing) A1 programs to a RAM card

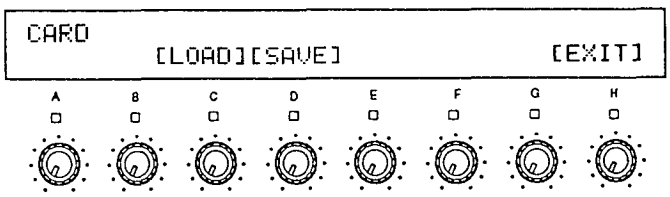
Make sure beforehand that the write-protect switch on the RAM card is set to OFF.

1 Insert the RAM card into the CARD slot.

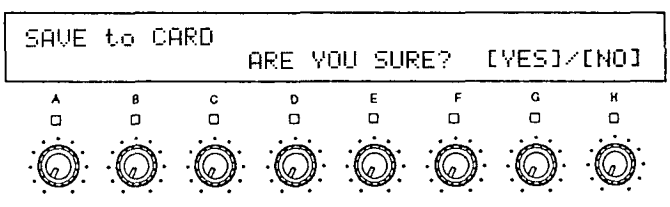
"RAM CARD INSERTED" or "UNFORMATTED" will appear on the display . Press [EXIT] and go to step 2.

2 Press the UTILITY Mode key to display the Global Utility Menu.

3 Press the "C" double function edit control [CARD].



4 Press the "D" double function edit control [SAVE].



5 Press the "G" double function edit control [YES] to proceed with program saving, or the "H" double function edit control [NO] to cancel program saving.

If an error message is displayed, press the "H" double function edit control [EXIT] to return to the Global Utility Menu.

For a list of error messages, see page 63.

6 When the program has been saved to the RAM card, "COMPLETED" is displayed.

Press the "H" double function edit control [EXIT] to return to the CARD page.

Press the "H" double function edit control [EXIT] again to return to the Global Utility Menu.

When program saving is completed

When you have finished saving the program, switch the write-protect switch on the RAM card to ON.

Using the ROM Card Included with Your A1

The ROM card that comes with your A1 has been factory-installed with the same data contained in the A1's internal programs (I00 to I99). If any of the internal programs is erased by mistake, it can be restored by inserting the ROM card into the CARD slot and writing the internal program data from the ROM card in the Write mode. The contents of all 100 internal programs may be replaced with the (factory-loaded) contents of the ROM card by loading data from the ROM card in the Global Utility mode.

3 Setting Internal Memory Protect Functions

This page is for turning the internal memory protect function ON and OFF for all A1 programs.
See page 42.

1 With the Global Utility Menu displayed, press the "D" double function edit control [MEMO].
The Memory Protect page is displayed.

2 Rotate the "C" double function edit control to select "ON" or "OFF". Selecting "ON" will disable the loading of any program from the card and the saving of it to the internal program memory.

After the memory protect setting is completed, press the "H" double function edit control [EXIT] to return to the Global Utility Menu.

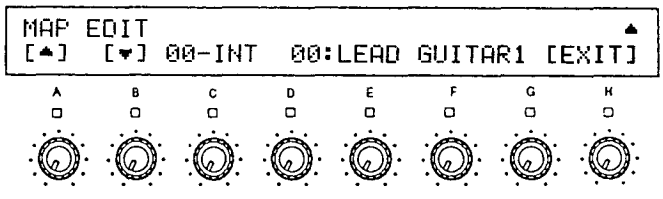
4 Mapping Programs

This page is for setting programs for use in Map Play in Play mode (see page xx). Using the mapping functions to set program numbers in the order to be played allows you to change programs with a single operation during live performances.

Map Edit

1 Press the Utility Mode key to display the Global Utility Menu.

2 Press the "E" double function edit control [MAP].
The first map number (00) of the Map Edit mode is displayed.



3 Rotate the "D" double function edit control [INT] to select "INT" or "CARD " for the source of the program to be set to map number 00.
Select "INT" for an A1 internal program, or "CARD" for a program stored on memory card.

4 Rotate the "E" double function edit control to select the program to be assigned map number 00.
The UP/DOWN keys may also be used to select the program number.

5 Rotate the "C" double function edit control, or press the "A" or "B" double function edit control to select the next map number.

6 Repeat steps 3 to 5 to enter the remaining programs.

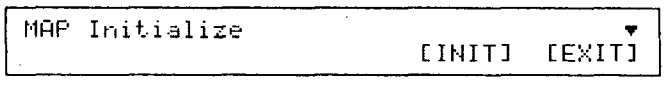
7 After the program settings have been completed, press the "H" double function edit control [EXIT] to return to the Global Utility Menu.

8 In Play mode, press the Map key to select Map play.
This allows you to call back each program in the order they were entered.

MAP Initialization

At the time your A1 was shipped, internal programs I00 to I99 were factory set to map numbers 00 to 99, respectively.

1 Press the PAGE +key



2 Press the "F" double function edit control [INIT].

3 Are you sure?" is displayed. Answer yes by pressing the "G" double function edit control.

4 Press the "H" double function edit control [EXIT] to return to the Global Utility Menu.

5 Setting Foot Switch Functions

Foot switches connected to FOOT SWITCH input jacks 1 and 2 on the rear panel can be used to control the following functions:

1) PROG UP (Program Up): While in Play Mode, advances the program number by 1.

2) **PROG DOWN (Program Down):** While in Play Mode, reverses the program number by 1.

3) **R-SP SPEED (Rotary Speaker Speed):** Switches the speed (SLOW/FAST) of the Rotary Speaker effect.

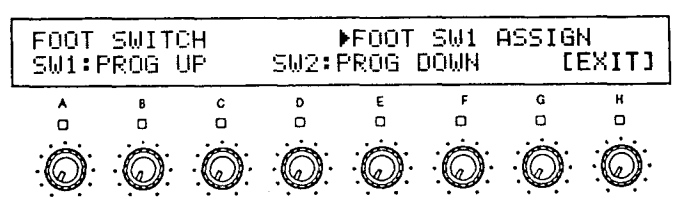
4) **DYNPAN TRG (Dynapan Trigger):** Provides a manual trigger for the Dynapan effect.

5) **HDLY REC (Hold Delay Recording):** Provides timing to the manual trigger of the Hold Delay effect.

6) **EXT CTRL:** Switches the external control between OPEN and CLOSE.

7) **EFFECT 7:** Switches the 7th effect ON and OFF when the optional FC6 foot controller is connected.

1 Press the Utility Mode key after the Global Utility Menu is displayed, press the "FT.SW" double function edit control.
The foot switch setting is displayed.



2 Rotate double function edt control "B" to select the control by foot switch 1.

3 Rotate double function edit control "E" to select the control by foot switch 2.

4 After completing the settings, press double function edit control "H" to return to the Utility Menu.
The UP/DOWN keys can be used to select the foot switch function indicated by the EDIT indicator.

In steps 2 and 3, pressing the "B" or "E" double function edit control, respectively, allows you to use the UP/DOWN keys to select the function.

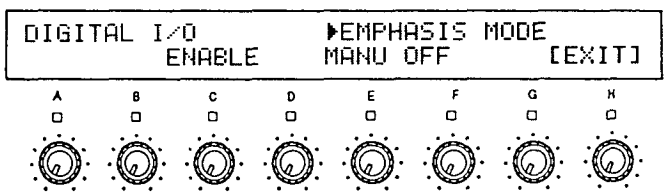
6 Setting Digital I/O Functions

A1 digital I/O allows you to send and receive 48-KHz digital audio interface signals (CP340 Type II).
This page is for enabling and disabling digital input, and for setting the emphasis for digital input.

1 Display the Global Utility Menu, then press the "G" "D–I/O"double function edit control.

2 Rotate the "C" double function edit control to select the digital input setting.

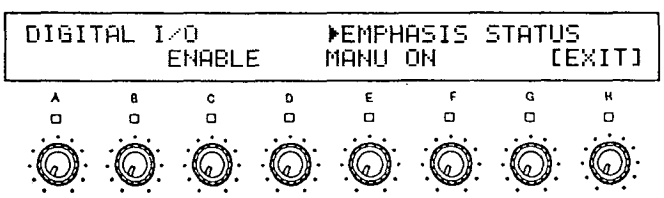
Select "DISABLE" to disable the reception of digital input.
Select "ENABLE" to enable the reception of digital input.
Digital output is always enabled.



Note:The input indication on the front panel always shows the level of analog input, and will not show the level of a signal input through digital I/O.

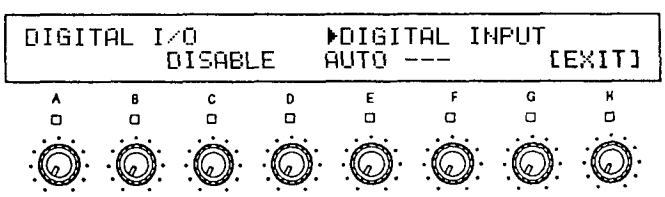
3 Rotate the "E" double function edit control to select Emphasis Mode for digital input.

"AUTO" sets the emphasis for digital input to the same level as the emphasis of the inputted signal.
"MANU" allows the emphasis for digital input to be set manually.



4 In the case of a "MANU" setting, rotate the "F" double function edit control to switch the Emphasis Status of digital input ON and OFF.

There is no change in the display in case of the Automatic Emphasis mode "AUTO".



5 After digital I/O function settings have been completed, press the "H" double function edit control to return to the Global Utility Menu.

Connecting the FC6 Foot Controller (Option)

The optional FC6 foot controller can be connected to the A1 to allow you to change programs and switch effects ON and OFF via foot operations, as well as to visually confirm the ON/OFF status of effects by looking at the display on the FC6. The A1 can be controlled with the FC6 in either of the following manual modes: Manual 1 and Manual 2.

Manual 1: Program Change Mode: Program changes on the A1 are triggered by the FC6.
Manual 2: Effect ON/OFF Mode: Individual effects in A1 programs can be turned ON and OFF from the FC6.

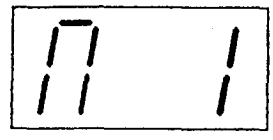
1/ Switching between Manual 1 and 2 using a foot switch such as the PS-1

- Connect the foot switch (PS-1, etc.) to the SW1 jack on the rear panel of the FC6.
- Manual 1 and 2 are alternated each time the foot press is pressed.

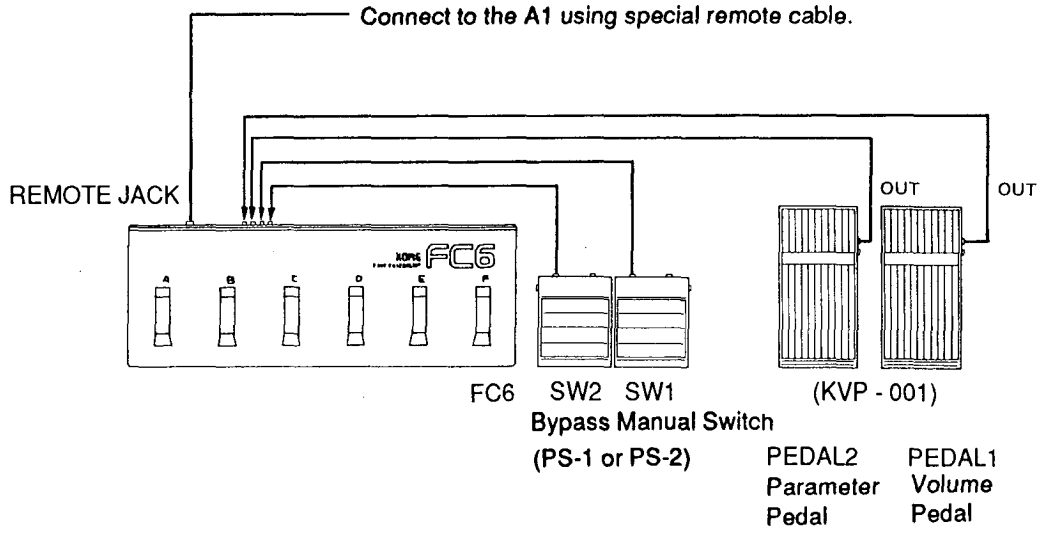
2/ Switching between Manual 1 and 2 without a foot switch

- Press the UTILITY Mode key on the FC6 to show the manual mode status on the display.
- Press any of the pedal switches (A to F) to switch between Manual 1 and Manual 2.
- After selecting the manual mode, press the UTILITY Mode key again.

Display for Manual 1



Display for Manual 2



1 Manual 1 (Program Change Mode)

Manual 1 has two program change modes - Modes 1 and 2.
The Mode 1 switch is on the rear panel of the FC6.

Mode 1

In Mode 1, programs are grouped for selection into banks, with five consecutive programs making up one bank. The program assignments in each bank are: program numbers 0-4, 5-9, 10-14, etc.
Using switches A to F, programs are called up as follows:

SW A: 1st program number in the bank
SW B: 2nd program number in the bank
SW C: 3rd program number in the bank
SW D: 4th program number in the bank
SW E: 5th program number in the bank
SW F: Advances to the next bank.

To decrease the bank number

Holding down switch E, press switch F.
After calling up the 5th program by pressing switch E, pressing switch F calls up the previous bank.

When the first program number is 18

As an example, if the first program number is 18, pressing switches A to F will call up the following programs:

SW A: 15
SW B: 16
SW C: 17
SW D: 18
SW E: 19
SW F: 20

Mode 2

In Mode 2, the program number increases or decreases in steps of ten or in individual steps.

SW A: Program number decreases by 10
SW B: Program number increases by 10
SW C: Program number decreases by 1
SW D: Program number increases by 1
SW E: No change in program number
SW F: No change in program number

When the first program number is 23

As an example, if the first program number is 23, pressing switches A to F will call up the following programs:

SW A: 13
SW B: 33
SW C: 22
SW D: 24
SW E: 23 (no change)
SW F: 23 (no change)

The FC6 can be used to select not only the internal programs in the A1 (100 to 199) but also programs stored on a memory card (C00 to C99).
When a card program is selected, the program number (I00~I99) is shown on the display.

2 Manual 2 (Effect ON/OFF Mode)

In Manual 2, effects can be switched ON and OFF by pressing the corresponding FC6 switch.

Correspondence between A1 effects and FC6 switches

A1	FC6
Effect 1	SW A
Effect 2	SW B
Effect 3	SW C
Effect 4	SW D
Effect 5	SW E
Effect 6	SW F
Effect 7	*

Selecting effects with FC6 switches (A to F)

Red LED lights up – Effect is ON
Green LED lights up – Effect is OFF
No LED – No effect

Verifying ON/OFF status of effects on the A1 display

Effect name in uppercase, LED on – Effect is ON
Effect name in lowercase, LED off – Effect is OFF

* The FC6 cannot be used to switch the A1's 7th effect ON and OFF when the FC6 is connected, however, it is possible to switch the A1's 7th effect ON and OFF with a foot switch connected to the A1's rear panel (See page 56).

3 Connecting Foot Switch 1 and 2 to the SW1 and SW2 Jacks on the FC6 Rear Panel

The following functions can by used by connecting a footswitch such as a PS - 1 or PS - 2 to the SW1 and SW2 jacks on the rear panel of the FC6, and the output of the KVP-001 volume pedal to the PEDAL1 and PEDAL2 jacks.

SW1: Switches between manual1 and 2.
SW2: Turns the A1 bypass on and off.
PEDAL1: Controls the A1's volume (the same function as the VOL jack on the A1's rear panel.).
PEDAL2: Controls A1 parameters (the same function as the PARA M jack on the A1's rear panel).

Connecting the Optional RE1 Remote Editor

Connecting the optional RE1 remote editor enables you to quickly perform editing operations at a remote location.

Connecting the RE1

1 Turn off the A1's POWER switch.

2 Connect the REMOTE jack on the rear panel of the A1 to the RE1's REMOTE jack with the cable supplied with the RE1.

(Either the FC6 or the RE1 can be used at any one time, not both. When the FC6 is connected, disconnect the FC6 first before connecting the RE1.)

3 Turn on the A1's POWER switch.

Power from the A1 turns the RE1 on simultaneously. The RE1 can now be used to control the A1.
Attach the RE1 seal on the rear panel of the A1 when the AE1 is being used.
Connecting the RE1 has no effect on A1 switch operations.

Relationship between A1 and RE1 operations.

A1 operation	RE1 operation
PLAY	F1
EDIT	F3
BYPASS	F5
COMPARE	F2
UTILITY	F4
WRITE	F6
Rotating double function edit controls	Sliders A to H
Pressing double function edit controls	Pressing switches A to H
▲ /+1	▲ /UP
▼ /-1	▼ /DOWN
PAGE+	PAGE+
PAGE-	PAGE-
INT/CARD	Pressing INT and CARD switches
Map	Simultaneous pressing of INT and CARD switches. Press INT or CARD switch when cancelling.

The RE1's numeric keypad (0-9) can be used in Play Mode to directly input program numbers, and in Chain Edit Mode to directly input chain and effect numbers.

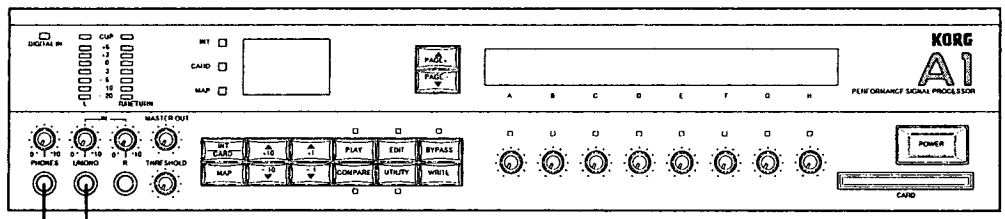
The RE1 display

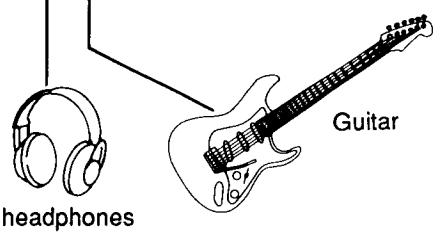
With the exception of the map number display on the A1 during Map Play, the RE1's display is identical to the display of the A1.

Connection Examples with the A1

1 Guitar Setup

Make sure that the A1's POWER switch is OFF before making any connections.





Guitar

Stereo headphones

Guitar amplifier

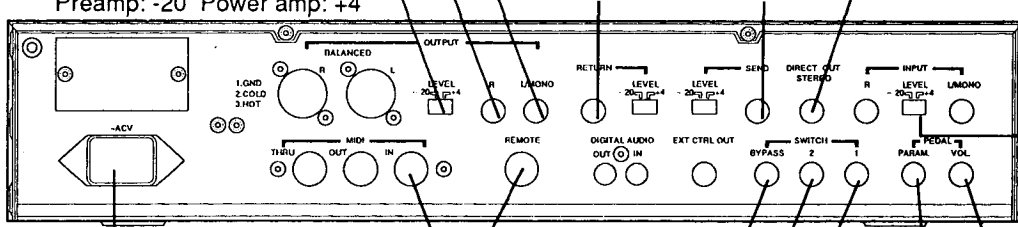
Most effective when output in stereo

Tuner (DT-1 PRO, etc.)

Tuning is possible even with the input volume turned down since audio signals are still output.

(When the effect chain contains SEND and RETURN) Effect

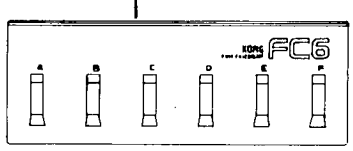
Set to the input level of the connected amplifier.
Preamp: -20 Power amp: +4

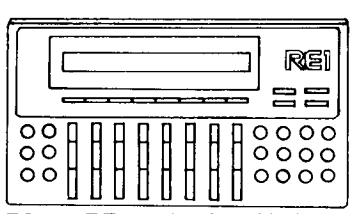


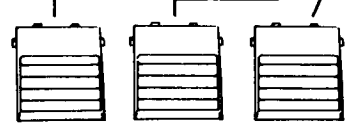
Set to –20

Connect when making program changes with external MIDI devices.

To a power outlet







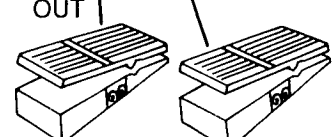
BYPASS select

SW2

SW1

SW1 and SW2 can be set to PROG UP, PROG DOWN, or Rotary Speaker SPEED in Global Utility Mode.

OUT



Parameter control

Volume control

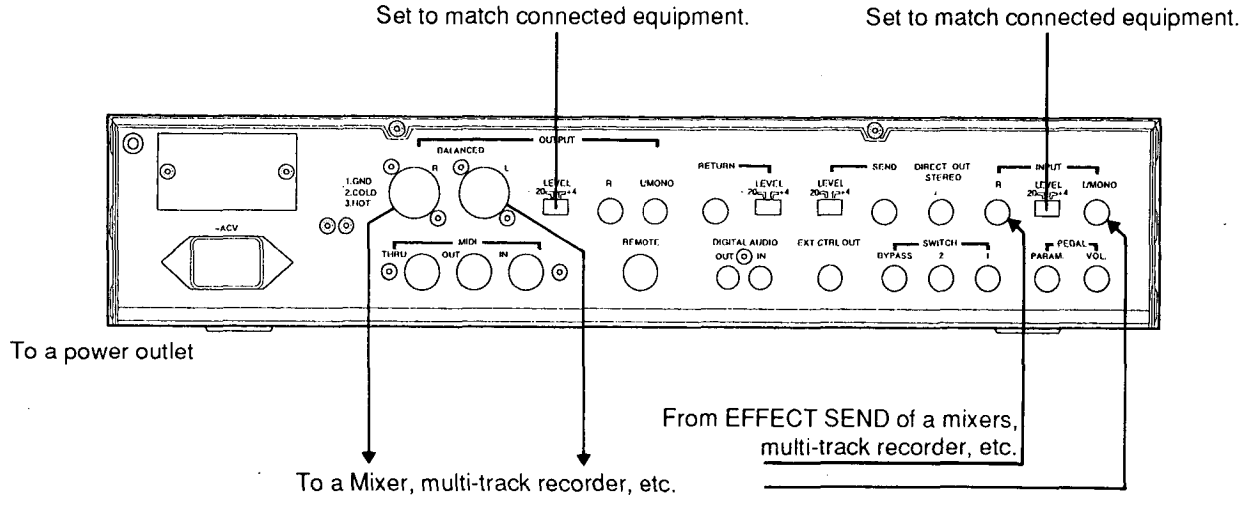
KVP-001 Volume Pedal

* Connect to the OUT terminal of the foot volume pedal. Set the slide volume on the right side to 0-.

Connect the FC6 or RE1 to the A1 with the supplied cable.

2 Mixer and Multi-track Recorder Setup

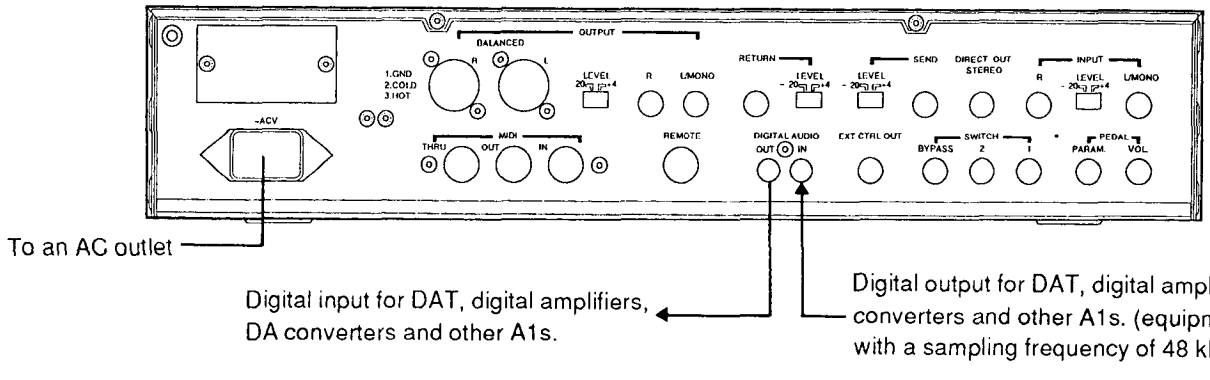
Make sure that the A1's POWER switch is OFF before making any connections.



3 Using Digital I/O

Make sure that the A1's POWER switch is OFF before making any connections.

The A1's DIGITAL AUDIO IN jack only accepts equipment with a digital audio interface with a sampling frequency of 48 kHz. Therefore, DATs and other A1s, whose sampling frequency is 48KHz, can be connected, but CD players and other devices with a different sampling frequency cannot be switched to DIGITAL AUDIO IN even when connected. In such cases, the A1's DIGITAL IN indicator does not light up.
When using the DIGITAL AUDIO IN jack, set DIGITAL INPUT to "ENABLE" in Global Utility Mode.



Caution: Do not connect both the DIGITAL IN and OUT jacks of external equipment and the A1's DIGITAL AUDIO IN and OUT jacks at the same time.

IMPORTANT: Use a commercially available video cable for the DIGITAL IN and OUT jacks.

Troubleshooting

If a problem should occur during the operation of your A1, follow the suggestions below to check and remedy the trouble. If the A1 still does not function properly, contact the place of purchase or your nearest KORG service center.

No sound.	• **Check if the INPUT volume control is set to 0.** Adjust the INPUT volume control. An indicator reading of +3 or +6 is most suitable.
	• **The MASTER OUT volume control is turned down.** Gradually raise the level of the MASTER OUT volume control.
	• **Check if the Level parameter in one of the effects (such as Distortion or Compressor) is set to 0.** Reset the Level parameter of the respective effect.
No effect	• **Check if the bypass function is ON.** Press the BYPASS key to turn off the BYPASS indicator.
	• **Check if the Effect Balance parameter of each effect has been set to 0.** Raise the level of the Effect Balance parameter.
	• **Check if the effect name is displayed in lowercase or if its indicator is off.** Press the double function edit control to light up the indicator.
Edited data is lost and the original data restored.	• **Did you execute a write operation?** Edit the data again and execute a write operation.
	• **Check if the memory protect function is on.** With the Global Utility Menu displayed, turn off the memory protect function. In the case of memory cards, turn the card's write-protect switch off.
Effect parameters cannot be copied	• **Check if an effect of a program being edited has been selected.** Execute a write operation first before copying the edified effect program.
	• **Check if the effect size is appropriate.** Copy from an effect with a larger effect size number.
Data cannot be saved or written to a memory card.	• **The memory card's write-protect switch is on.** Turn the switch off.
	• **You are attempting to save data to a ROM card.** Data cannot be saved to ROM cards.
	• **The memory card has not been inserted correctly.** Take out the memory card and reinsert it.
	• **The RAM card has not been formatted.** The RAM card is formatted at the same time a save operation is conducted. Save the data again,then repeat the write operation.
A1 Lockup (SYSTEM RESET)	• **If a SYSTEM lockup should occur, first try a "soft" reset by powering the A1 down and powering back up. If this does not solve the problem, a "hard" SYSTEM reset can be done by holding down the WRITE button and PAGE +key during power up.** CAUTION: The SYSTEM RESET function will erase all programs in the A1 internal memory. It is always a good practice to back up your programs!

List of Error Messages

1 Error Messages

Memory card loading and saving

Error: NO CARD
The card to be loaded from or written to is not inserted.

Error: INVALID RAM CARD
A write or load operation was attempted with an inserted RAM card that is not compatible with the A1.

Error: UNFORMATTED RAM CARD
A write or load operation was attempted with an inserted RAM card that is not compatible with the A1.

Error: ROM CARD
A write operation was attempted to a ROM card.

Error:WRITE PROTECTED RAM CARD
A write operation was attempted to a write-protected RAM card.

Effect Copy

Error: EFFECT SIZE OVER
Copying was attempted between different effects.

Write

Error: MEMORY PROTECTED
The internal programs of the A1 are write protected.

2 Messages

When turning on the power

*****INTERNAL BATTERY LOW*****
The back-up battery (to maintain the A1's internal memory) is low. When you see this message, Immediately contact the place of purchase, or your nearest KORG service center for battery replacement.

When a Memory Card is Used

*****RAM CARD BATTERY LOW*****
The back-up battery in the RAM card is low. When you see this message, replace the battery immediately (CR2016 lithium battery). When changing the battery, make sure the A1 is on and the card is inserted in the card slot until you finish (to prevent erasure of card data).

ROM CARD INSERTED
The inserted card is a ROM card for the A1.

RAM CARD INSERTED
The inserted card is a RAM card for the A1.

WRITE PROTECTED RAM CARD INSERTED
A write-protected RAM is inserted into the A1.

INVALID ROM CARD INSERTED
The inserted card is a ROM card not compatible with the A1,
or a write-protected RAM card not compatible with the A1.

UNFORMATTED RAM CARD INSERTED
The inserted Ram card is not formatted for the A1.

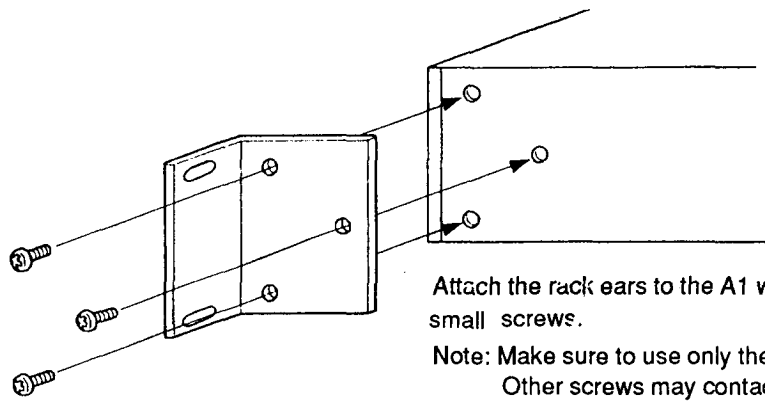
MIDI Exclusive Message

NOW TRANSMITTING • • •
Exclusive data is being transmitted from the A1 to an external device.

EXCLUSIVE DUMP RECEIVING • • •
Exclusive data is being loaded from an external device to the A1.

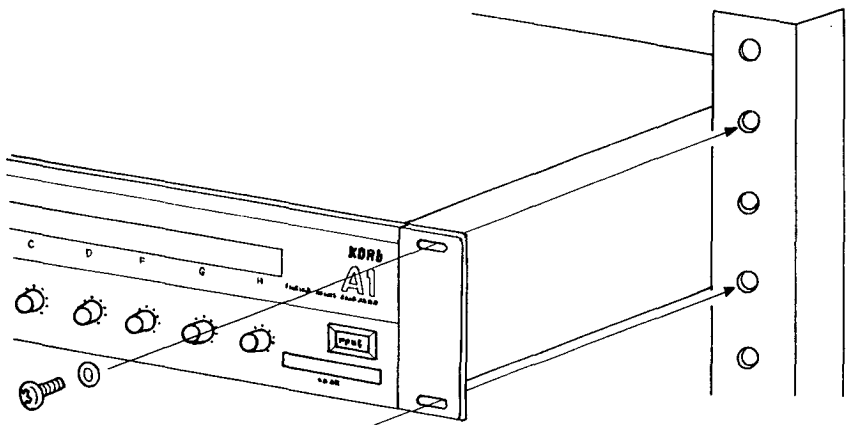
Rack Mount Installation

If you have a 19-inch rack mount case, use the following procedure to install the A1.

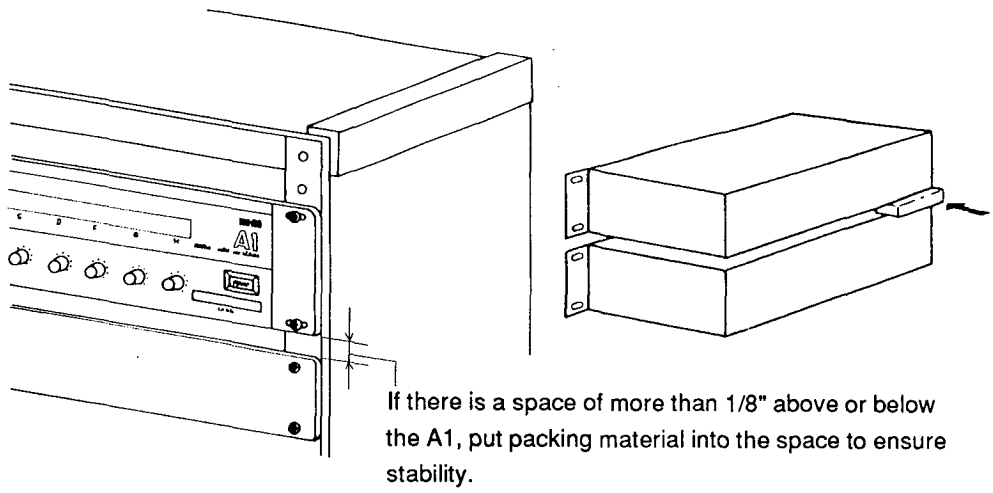


Attach the rack ears to the A1 with the supplied small screws.

Note: Make sure to use only the supplied screws. Other screws may contact internal circuitry to cause unit malfunction.



Mount the A1 to the rack with the supplied large screws.



If there is a space of more than 1/8" above or below the A1, put packing material into the space to ensure stability.

Specifications and Options

Input	Input level/impedance Left, right input: +4dBm (+19dBm max.)/1MOhm -20dBm (+19dBm max.)/1MOhm Return input: +4dBm (+19dBm max.)/1MOhm -20dBm (+19dBm max.)/1MOhm
Output	Output level/impedance Left, right input: +4dBm (+19dBm max.)/600Ohm -20dBm (-5dBm max.)/600Ohm Return input: +4dBm (+19dBm max.)/600Ohm -20dBm (-19dBm max.)/600Ohm Direct output: Input gain unity/2.2KOhm
AD/DA	16-bit linear (DA: 4-ply over-sampling digital filter)
Sampling frequency	48KHz
Frequency characteristics	20Hz-20KHz (+1.5/-3dB)
Dynamic range	85dB or more
Memory	Internal - 100 programs External - 100 programs
Digital I/O	CP340 Type II or equivalent (sampling frequency 48KHz only)
Power consumption	25W
External dimensions	430 x 407.8 x 89mm (w/h/d) (16 9/10 x 16 x 3 1/2)
Weight	6.3 Kg (13lbs 14oz)
Options	RE1 Remote Controller FC6 Foot Controller RCC-050 Remote Cable KVP-001 Volume Pedal PS-1, PS-2 Foot Switch MCP-03 RAM card

Design and specifications are subject to change without notice.

MIDI Implementation

Function		Transmission	Reception	Notes
Basic Channel	Default	1 ~ 16	1 ~ 16	Memorized
	Changed	1 ~ 16	1 ~ 16	Memorized
Mode	Default	x	MODE 1,3	Memorized
	Messages	x	O	
	Altered	********	x	
Note Number		x	0 ~ 127	Through a dynamic source
	: True Voice	x	x	
Velocity	Note ON	x	1 ~ 127	Through a dynamic source
	Note OFF	x	x	
After Touch	Key's	x	x	
	Channels	x	O	Through a dynamic source
Pitch Bender		x	O	Through a dynamic source
Control Change	0	O	O	Bank select (MSB) *1
	7	x	O	volume *2
	32	O	O	Bank select (LSB) *1
	1 ~ 31, 33 ~ 95	x	O	Through a dynamic source
	121	x	O	Reset all controllers
Program Change		0 ~ 99	0 ~ 127	*1
	: True#	********	0 ~ 99	
System Exclusive		O	O	When MIDI exclusive is set to ENABLED in Global Utility Mode.
System Common	: Song Pos	x	x	
	: Song Sel	x	x	
	: Tune	x	x	
System Real Time	: Clock	x	O	When DYNAPAN or HOLD DELAY is selected.
	: Command	x	O	When DYNAPAN is selected.
Aux Message	Local ON/OFF	x	x	
	: All Notes OFF	x	x	
	: Active Sense	x	x	
	: Reset	x	x	

Notes

*2 when MIDI volume messages are enabled in Global Utility Mode.

*1 when MIDI program change messages are enabled in Global Utility Mode.

Mode 1 : OMNI ON, POLY Mode 2 : OMNI ON, MONO O : Yes

Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF, MONO x : No

AI MIDI IMPLEMENTATION

1. TRANSMITTED DATA

1-1 Channel Messages

Status	Second	Third	Description
1011 nnnn	0000 0000	0000 0000	Program Bank Change (MSB)
1011 nnnn	0010 0000	0000 000b	Program Bank Change (LSB)
1100 nnnn	Oppp pppp	---- ----	Program Change

Transmit when Program Change Enable

nnnn : MIDI Channel Number
b : Bank (0 = Internal / 1 = Card)
ppp pppp : Program Numbar (0 - 99)

1-2 Universal System Excusive Messages

Byte	Description	
1111 0000 (F0)	Exclusive Status	
0111 1110 (7E)	Non Realtime Message	
0000 nnnn (0n)	MIDI Channel Number	(Device ID)
0000 0110 (06)	Inquiry Message	(Sub ID 1)
0000 0010 (02)	Identity Reply	(Sub ID 2)
0100 0010 (42)	KORG ID	(Manufactures ID)
0010 1100 (2C)	AI ID	(Family Code(LSB))
0000 0000 (00)		((MSB))
0000 0000 (00)		(Member Code(LSB))
0000 0000 (00)		((MSB))
0*** **** (**)	ROM No. 1 -	(Minor Ver.(LSB))
0000 0000 (00)		((MSB))
0*** **** (**)	Soft Version	(Major Ver.(LSB))
0000 0000 (00)		((MSB))
1111 0111 (F7)	EOX	

Transmits when Inqiry Message Request received.

1-3 System Exclusive Messages

AI System Exclusive

```
1st Byte = 1111 0000 (F0) : Exclusive Status
2nd Byte = 0100 0010 (42) : KORG ID
3rd Byte = 0011 nnnn (3n) : Format ID  n:MIDI Channel
4th Byte = 0010 1100 (2C) : AI ID
5th Byte = 0fff ffff (ff) : Function Code
6th Byte = 0ddd dddd (dd) : Data
             :         :        :
LastByte = 1111 0111 (F7) : End of Exclusive
```

Ex.Header

Func	Description	R	C	D	E
42	MODE DATA	o			
4E	MODE CHANGE		o		
41	PARAMETER CHANGE		o		
40	PROGRAM PARAMETER DUMP	o	o		
50	ALL DATA DUMP	o		o	
26	RECEIVE MESSAGE FORMAT ERROR	o			o
23	DATA LOAD COMPLETED				o
24	DATA LOAD ERROR				o
21	WRITE COMPLETED				o
22	WRITE ERROR				o

Transmitted when
R : Request message is received
C : Mode or Number changed by switch
D : Data dump by switch
E : Exclusive message received

2. RECOGNIZED RECEIVE DATA

2-1 Channel Messages

Status	Second	Third	Description		ENA
1000 nnnn	Okkk kkkk	0xxx xxxx	Note Off		D
1001 nnnn	Okkk kkkk	0000 0000	Note Off		D
1001 nnnn	Okkk kkkk	0vvv vvvv	Note On		D
1011 nnnn	0000 0000	0xxx xxxx	Program Bank Change (MSB)		P
1011 nnnn	0000 0111	0ddd dddd	Volume		
1011 nnnn	0010 0000	0xxx xxxb	Program Bank Change (LSB)		P
1011 nnnn	0ccc cccc	0ddd dddd	Control Change		D
1011 nnnn	0111 1001	0000 0000	Reset All Controllers		
1011 nnnn	0111 1100	0000 0000	Omni Mode Off		
1011 nnnn	0111 1101	0000 0000	Omni Mode On		
1100 nnnn	Oppp pppp	---- ----	Program Change	*1	P
1101 nnnn	Oddd dddd	---- ----	After Touch	*2	D
1110 nnnn	Oddd dddd	Oddd dddd	Pitch Bender		D

nnnn : MIDI Channel Number
kkk kkkk : Note Number
vvv vvvv : Velocity (1 - 127)
b : Bank (0 = Internal / 1 = Card)
ddd dddd : Data (0 - 127)
ccc cccc : Controller Number(1 - 31, 33 - 95)
ppp pppp : Program Numbar
x : Don't care

ENA = P : Enabled when Program Change On
E : Enabled when Exclusive On
D : Selected as Dynamic Source

*1 : Data beyond value of 99 are assigned a new value by subtracting 100.
*2 : Receive when selected as Speed Select in Rotary Speaker effect.

2-2 System Realtime Messages

Status	Description	
1111 1000	Timing Clock	*3
1111 1010	Start	*4
1111 1011	Continue	*4
1111 1100	Stop	*4

*3 : Receive when MIDI selected as Tempo Control source in Tempo Delay effect, or CLK selected as Trigger Select in Dynapan effect.
*4 : Receive when CLK selected as Trigger Select in Dynapan effect.

2-3 Universal System Excusive Messages

Byte	Description	
1111 0000 (F0)	Exclusive Status	
0111 1110 (7E)	Non Realtime Message	
0nnn nnnn (nn)	MIDI Channel Number	(Device ID)
0000 0110 (06)	Inquiry Message	(Sub ID 1)
0000 0001 (01)	Inquiry Request	(Sub ID 2)
1111 0111 (F7)	EOX	

Receives this Message and transmits Inquiry Reply Message.
nn = 00 ~ 0F : Receive if Same Channel
7F : Receive any Channel

2-4 System Exclusive Messages

Func	Description	P	E	U	W
12	MODE REQUEST	o	o	o	o
10	PROGRAM PARAMETER DUMP REQUEST	o	o	o	o
0F	ALL DATA DUMP REQUEST	o	o	o	o
11	PROGRAM WRITE REQUEST	o	o		o
40	PROGRAM PARAMETER DUMP	o	o		
50	ALL DATA DUMP	o	o	o	o
4E	MODE CHANGE	o	o	o	o
41	PARAMETER CHANGE	o	o		

Received when
P : Play Mode
E : Edit Mode
U : Utility Mode
W : Write Mode

3. MIDI EXCLUSIVE FORMAT (R : Receive, T : Transmit)

(1) MODE REQUEST R

Byte	Description	
F0, 42, 3n, 2C	Exclusive Header	
0001 0010	Mode Request	12
1111 0111	EOX	

Receives this message, and transmits Func=42 message.

(2) PROGRAM PARAMETER DUMP REQUEST R

Byte	Description	
F0, 42, 3n, 2C	Exclusive Header	
0001 0000	Program Parameter Dump Request	10
1111 0111	EOX	

Receives this message, and transmits Func=40 or Func=24 message.

(3) ALL DATA (Utility and All Program) DUMP REQUEST R

Byte	Description	
F0, 42, 3n, 2C	Exclusive Header	
0000 1111	All Data Dump Request	0F
1111 0111	EOX	

Receives this message, and transmits Func=50 or Func=24 message.

(4) PROGRAM WRITE REQUEST R

Byte	Description	
F0, 42, 3n, 2C	Exclusive Header	
0001 0001	Program Write Request	11
0000 000b	Program Bank	(NOTE 2)
0ppp pppp	Write Program Number	(NOTE 3)
1111 0111	EOX	

Receives this message, write program data and transmits Func=21 or Func=22 message.

(5) PROGRAM PARAMETER DUMP R, T

Byte	Description	
F0, 42, 3n, 2C	Exclusive Header	
0100 0000	Program Parameter Dump	40
0ddd dddd	Data	(NOTE 5)
...	...	
1111 0111	EOX	

Receives this message and data, and transmits Func=23 or Func=24 message.
Receives Func=10 message, and transmits this message and data. When the Program number is changed by switch, transmits this message and data.

(6) ALL DATA (Utility and All Program) Dump R, T

Byte	Description	
F0, 42, 3n, 2C	Exclusive Header	
0101 0000	All Data Dump	50
0000 000b	Format	(NOTE 2)
0ddd dddd	Data	(NOTE 6)
...	...	
1111 0111	EOX	

Receives this message and data, and transmits Func=23 or Func=24 message.
Receives Func=0F message, and transmits this message and data.
Transmits this message and data by DUMP sw.

(7) MODE CHANGE R, T

Byte	Description	
F0, 42, 3n, 2C	Exclusive Header	
0100 1110	Mode Change	4E
0000 00mm	Mode Data	(NOTE 1)
1111 0111	EOX	

Receives this message and data, changes Mode, and transmits Func=23 or Func=24 message.
When Mode is changed by switch, transmits this message and data.

(8) PARAMETER CHANGE R, T

Byte	Description	
F0, 42, 3n, 2C	Exclusive Header	
0100 0001	Parameter Change	41
0000 000m	Mode	(NOTE 7)
0ppp pppp	Page	(TABLE 4)
000p pppp	Position	(TABLE 5)
0vvv vvvv	Value (LSB bit 6 - 0)	(NOTE 8)
0vvv vvvv	Value (MSB bit15 - 7)	(NOTE 8)
1111 0111	EOX	

Receives this message and data, and transmits Func=23 or Func=24 message.
When Parameter is changed by switch, transmits this message and data.

(9) MODE DATA T

Byte	Description	
F0, 42, 3n, 2C	Exclusive Header	
0100 0010	Mode Data	42
0000 00mm	Mode Data	(NOTE 1)
0000 000b	Program Bank	(NOTE 2)
0000 0vvv	Card Variation	(NOTE 4)
1111 0111	EOX	

Receives Func=12 message, and transmits this message and data.

(10) MIDI IN DATA FORMAT ERROR T

Byte	Description	
F0, 42, 3n, 2C	Exclusive Header	
0010 0110	MIDI In Data Format Error	26
1111 0111	EOX	

Transmits this message when there is an error in MIDI in message.

(11) DATA LOAD COMPLETED T

Byte	Description	
F0, 42, 3n, 2C	Exclusive Header	
0010 0011	Data Load Completed	23
1111 0111	EOX	

Transmits this message when DATA LOAD, PROCESSING have been completed.

(12) DATA LOAD ERROR T

Byte	Description	
F0, 42, 3n, 2C	Exclusive Header	
0010 0100	Data Load Error	24
1111 0111	EOX	

Transmits this message when DATA LOAD, PROCESSING have not been completed.

(13) WRITE COMPLETED T

Byte	Description	
F0, 42, 3n, 2C	Exclusive Header	
0010 0001	Write Completed	21
1111 0111	EOX	

Transmits this message when DATA WRITE by MIDI has been completed.

(14) WRITE ERROR T

Byte	Description	
F0, 42, 3n, 2C	Exclusive Header	
0010 0010	Write Error	22
1111 0111	EOX	

Transmits this message when DATA WRITE by MIDI has not been completed.

NOTE 1 : mm = 0 : Play Mode
1 : Edit Mode
2 : Utility Mode
3 : Write Mode

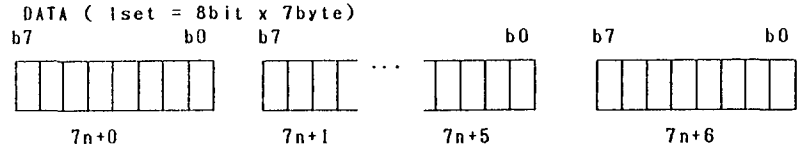
NOTE 2 : b = 0 : Internal
1 : Card

NOTE 3 : ppp pppp = 0 - 99

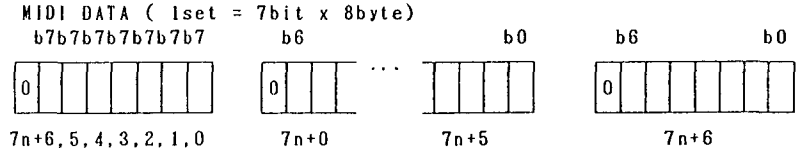
NOTE 4 : vvv = 0 : No Card
1 : Invalid Card
2 : Unformatted RAM Card
3 : RAM Card (Formatted)
4 : ROM Card
5 : Write Protected RAM Card (Formatted)

Dump Data Format for NOTE 5 & 6
n = 0, 1, ...

DATA (1set = 8bit x 7byte)



MIDI DATA (1set = 7bit x 8byte)



NOTE 5 : Program Parameter dump format (see TABLE 1)
[Parameter No.00], ... , [Parameter No.189]
190byte = 7x27+1 --> 8x27+(1+1) = 218byte

NOTE 6 : All Data dump format
f = 0 : Internal Program Only (100 Prog.)
[Prog.100 (190byte)], ... , [Prog.199 (190byte)], (see NOTE 5)
[Utility Data (6byte)], (see TABLE 2)
[Map Data (100byte)] (see TABLE 3)
19106byte = 7x2729+3 --> 8x2729+(3+1) = 21836byte

f = 1 : Internal and Card Program (200 Prog.)
[Prog.100 (190byte)], ... , [Prog.199 (190byte)], (see NOTE 5)
[Prog.C00 (190byte)], ... , [Prog.C99 (190byte)],
[Utility Data (6byte)], (see TABLE 2)
[Map Data (100byte)] (see TABLE 3)
38106byte = 7x5443+5 --> 8x5443+(5+1) = 43550byte

NOTE 7 : m = 0 : Play Mode
1 : Edit Mode

NOTE 8 : Value Data Format
bit 15 - 13 of value data are Sign Flag, and each bit has the same value.

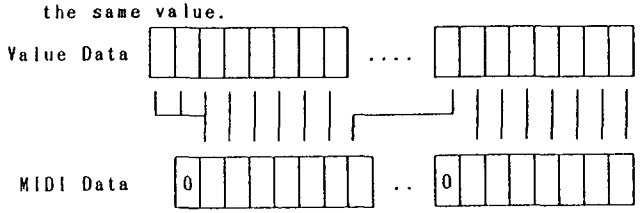


TABLE 1 Program Parameters

Offset No.	Parameters	Data(Hex) : Value
00 : 09	Program Name (Head) Program Name (Tail)	20 .. 7F
10	(NUL)	00
11	Chain Number	
	Effect 1 Parameters	
12	Effect On/Off	00, 01 : On, Off
13	Effect Number	
14	Effect Variation Number	
15	Dynamic Source	00 .. 66 *1
16	Dynamic Amount	9C .. 64
17 : 35	Effect Parameter	
	Effect 2 - 7 Parameters	
36 : 179	Same as Effect 1 (12 .. 35) x 6	
	Program Utilities	
180	Output Level	00 .. 64 : 0 .. 100
181	Threshold Level	00 .. 64 : 0 .. 100
182	Threshold Level 2	00 .. 64 : 0 .. 100
183	Volume Pedal Place	02 .. 07
184	External Control	00, 01 : Close, Open
185 : 189	(NUL)	00

*1 0 : Off
1 : Envelope
2 : LFO
3 : Parameter Pedal
4 : MIDI Velocity
5 : MIDI After Touch
6 : MIDI Pitch Bend
8 ~ 102 : MIDI Control Change (can't take 7 and 39)
(Control No. 1~95 except 32)

TABLE 2 Utility Parameters

No.	Parameters	Data(Hex) : Value	
00	MIDI Volume	00, 01 : Dis, Ena	
01	Digital In	00, 01 : Dis, Ena	
02	Emphasys Mode	00, 01 : Auto, Manual	
03	Emphasys Status	00, 01 : OFF, ON	
04	Pedal 1 Assign	00 .. 06	*2
05	Pedal 2 Assign	00 .. 06	*2

*2 00 : Program Up
01 : Program Down
02 : Rotary Speaker Speed Control
03 : Dynapan Trigger
04 : Hold Delay Trigger
05 : External Control
06 : Effect 7 On/Off (when FC6 connected)

TABLE 3 Map Parameters

No.	Parameters	Data(Hex) : Value
00	Map Number 00	00 .. C7 : 100 .. 199
:		C00 .. C99
99	Map Number 99	

TABLE 4 Page Number (for Parameter Change)

Page (HEX)	Parameters
Play Mode (m = 0)	
Play	
00	Effect On/Off
Performance Edit	
01	Effect On/Off Performance Edit
Edit Mode (m = 1)	
Effect Edit (Effect 1 - 7)	
01	Effect On/Off Effect Variation Select
*4	Effect On/Off Effect Variation Select Effect Parameters
*5	Effect Parameters
*6	Dynamic Modulation
Chain Edit	
19	Effect Select Effect On/Off
1A	Chain Select
Program Utility	
2C	Level
2D	Volume Pedal Placement
2E	External Control

*4 0000 nnnn : nnnn = Effect Place Number + 1 (2 ~ 8)
*5 pppp nnnn : pppp = Page Number
*6 eeee nnnn : eeee = end of Page Number of the Effect

TABLE 5 Position Number (for Parameter Change)

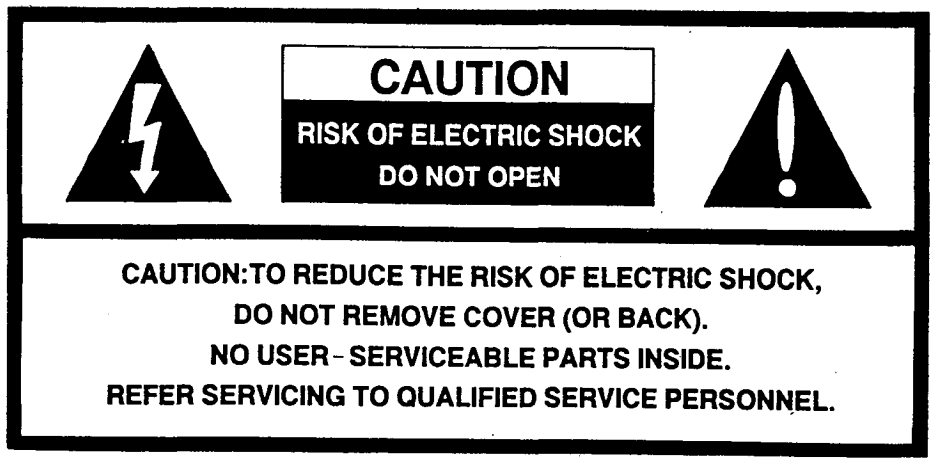
	A	B	C	D	E	F	G	H
sw	08	09	0A	0B	0C	0D	0E	0F
volume	10	11	12	13	14	15	16	17

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. To reduce the risk of injury, close supervision is necessary when a product is used near children.
3. 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.
4. This product should be used only with a cart or stand that is recommended by the manufacturer.
5. 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 high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
6. The product should be located so that its location or position does not interfere with its proper ventilation.
7. The product should be located away from heat sources such as radiators, heat registers, or other products that produce heat.
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. Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
11. The product should be served 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.
12. 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



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KORG

PERFORMANCE SIGNAL PROCESSOR

A1

EFFECT PARAMETER LIST

EFFECT PARAMETER LIST

EFFECT PARAMETER LIST

How to read block diagrams

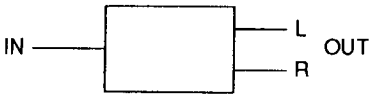
The following is an explanation of the functions of the parameters and structure (block) of each effect.

1. Basic blocks

- Three types of input and output specifications

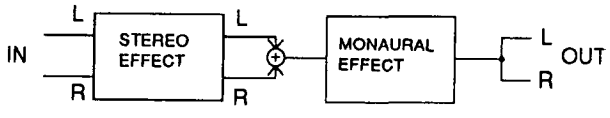
STEREP IN/STEREO OUT

MONO IN/MONO OUT

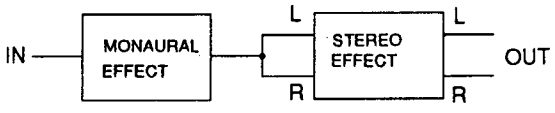


MONO IN/STEREO OUT

- Connections for monaural and stereo effects
  When in Chain Edit Mode, connecting effects with different input and output specifications results in the following input and output



STEREO OUT + MONO IN
(Left and right channel output are mixed.)



MONO OUT = STEREO IN
(The same signals are input to the left and right channels.)

2. Dynamic modulation

Dynamic modulation is a function which allows you to vary the impact of effects in real time using a foot pedal, MIDI data or LFO.

Dynamic modulation is composed of three elements:

Dynamic modulation	Dynamic Parameter:	Determines which aspect of an effect is controlled in real time. (e.g. the speed of LFO)
	Dynamic Source:	Determines what is used to control effects.(e.g. foot pedal)
	Dynamic Amount:	Determines the depth and direction of dynamic modulation.

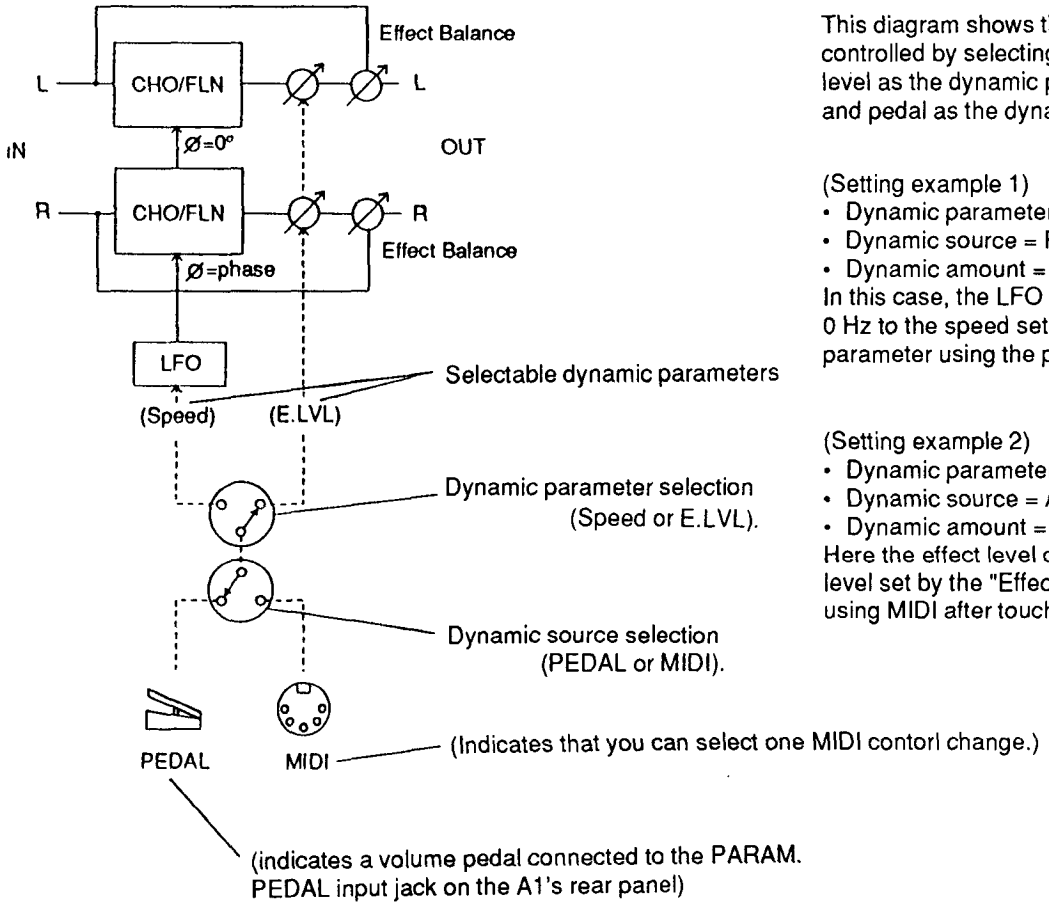
To enter the EFFECT EDIT MODE:

1. Press the front panel EDIT button to enter the EDIT SELECT menu.
2. From this menu, press the B-H button directly below the effect you wish to edit.
3. It is now possible to use the B-H buttons, to select and edit parameters, and the PAGE buttons to access any additional parameters on other pages.
4. To return to the EDIT SELECT menu, (to select another effect in the CHAIN to edit), press the flashing EDIT button.

• Block diagram representation of dynamic modulation in the case of the Chorus/Flanger effect.

——— : General signal flow

..... : Dynamic modulation flow



This diagram shows that dynamic modulation is controlled by selecting the LFO speed or effect level as the dynamic parameter, and MIDI data and pedal as the dynamic source.

(Setting example 1)
- Dynamic parameter = Speed
- Dynamic source = Pedal
- Dynamic amount = +100

In this case, the LFO speed can be varied from 0 Hz to the speed set by the "LFO Speed" parameter using the pedal.

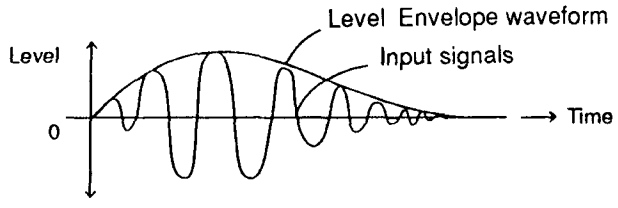
(Setting example 2)
- Dynamic parameter = E.LVL
- Dynamic source = Aftc (MIDI after touch)
- Dynamic amount = +100

Here the effect level can be varied from 0 to the level set by the "Effect Balance" parameter using MIDI after touch.

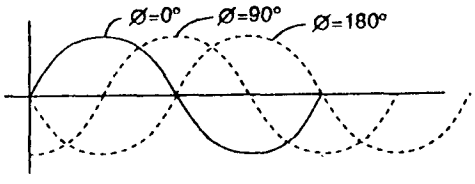
3. Basic blocks and terms

This section provides explanations of basic blocks and terms which appear in the diagrams.

- LFO: Low Frequency Oscillator. The LFO oscillates at low frequencies which modulate effects.
- Envelope: Envelope detection block. Input signals are converted into envelope waveforms as follows:



- ø = x°: Indicates the LFO's phase. For example, if ø = 0° and ø = 180° are indicated in the same effect, the LFO's phase is inverted.



-  Indicates that the signal control flow can be altered by parameter settings.
-  Indicates a volume operation.
-  PEDAL Indicates that a foot pedal is connected to the PARAM. PEDAL (parameter pedal) input jack on the rear panel.
-  MIDI Indicates MIDI control change data such as after touch or bent data input to the MIDI IN jack.

Envelope (or trigger) Select parameters

Effects which use envelope signals have what are called Envelope Select parameters, which are set to specify which signal is used as envelope data in an effect. Depending on the effect, the value of some Envelope select parameters are not displayed.

- INL: Selects signals input to the A1's left channel input jack either on the front or rear panel as envelope signals.
- INR: Selects signals input to the A1's right channel input jack either on the front or rear panel as envelope signals.
- INM: Selects a combination of signals input to the A1's left and right channel input jacks as envelope signals.
- PreL: Selects left channel output signals of the effect immediately before the current effect as envelope signals.
- PreR: Selects right channel output signals of the effect immediately before the current effect as envelope signals.
- PreM: Selects a combination of left and right channel output signals of the effect immediately before the current effect as envelope signals.
- K-IN: Can be set only in the Key-IN chain. Selects signals input by keys as envelope signals.
- Side: Can be set only in chains with side effects (effects for envelope signals). Selects side effect output signals as envelope signals.

Note: If the effect immediately before an effect which has the Envelope Select parameter is output in monaural, PreL and PreR operate in the same way.

The Performance Edit Parameters

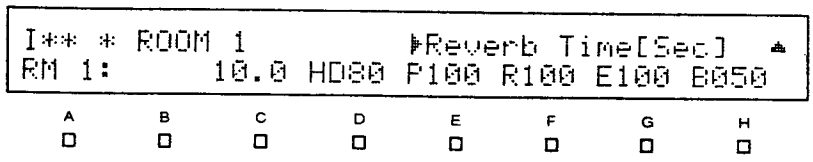
In the parameters box, a ☆ indicates that the parameters is available to control the parameter range in Play Mode.

EFFECT NO.1 REVERB [RM1, HL1, PL1]

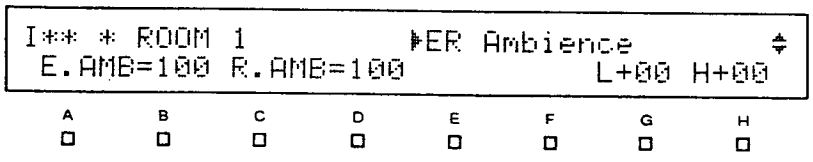
EFFECT SIZE: 1
EFFECT TYPE: STEREO EFFECT

This is the largest reverb effect in the A1 with the addition of reverb and E/R ambience parameters.

Page 1



Page 2



Variations:

ROOM 1 [RM1] ..... Room-type reverb with ambience
HALL 1 [HL1] ..... Hall-type reverb with ambience
PLATE 1 [PL1] ..... Plate-type reverb with ambience

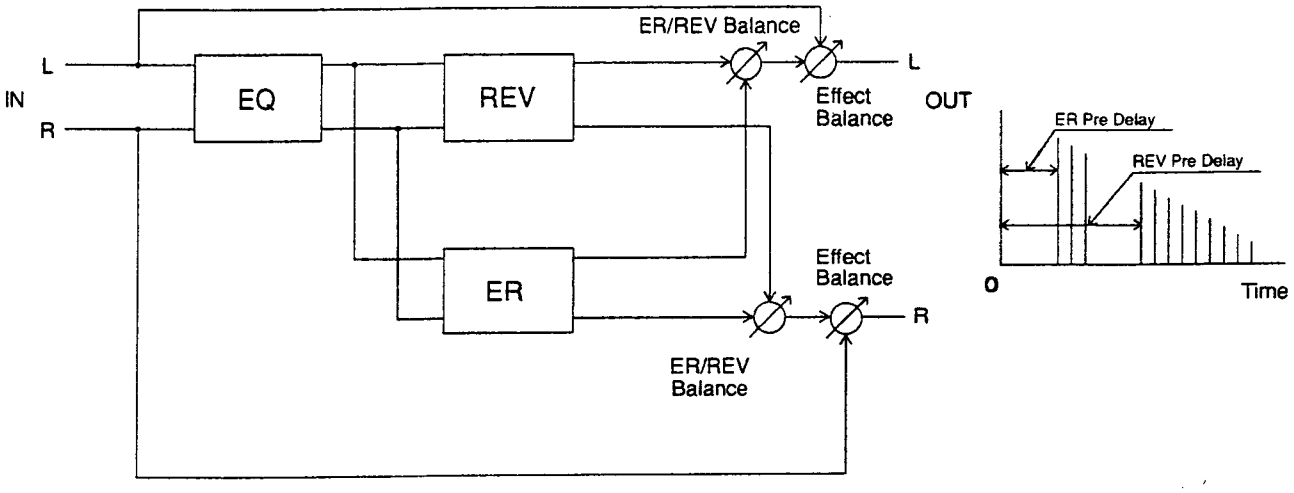
Parameters box:

Page 1

Button	Parameter Name	Parameter Range	Function
C	Reverb Time	0.1~10.0 [Sec]	Sets the reverb time.
D	High Damp	0~80[%]	Adjusts the damping of high frequency components. The higher the value, the softer the sound becomes.
E	ER Pre Delay (Early reflection pre-delay)	0~100 [mSec]	Sets the length of time between the source sound and the initial reflected sound.
F	REV Pre Delay (Reverb pre-delay)	0~100 [mSec]	Sets the length of time between the source sound and the start of the reverb sound.
G	ER/REV Balance (Early reflection/reverb balance)	0~100[%]	Sets the volume balance between the initial reflected sound and the reverb sound. The higher the value, the louder the reverb sound.
☆ H	Effect Balance (Dry/Wet Mix)	0~100[%]	Sets the volume balance between the direct sound and the effect sound. The higher the value, the wetter the sound.

Page 2

Button	Parameter Name	Parameter Range	Function
B	ER Ambience (Early reflection ambience)	0~100	Sets the normal position of the initial reflected sound. Set to '0' to concentrate the sound in the center. The higher the value, the wider the spread of the sound.
D	REV Ambience (Reverb ambience)	0~100	Sets the normal position of reverb sound. Set to '0' to concentrate the sound in the center. The higher the value, the wider the spread of the sound.
G	Low EQ	-12 ~ +12 [dB]	This is a shelving type EQ which allows boosting or cutting frequencies below 1K.
H	High EQ	-12 ~ +12 [dB]	This is a shelving type EQ which allows boosting or cutting frequencies above 1K.

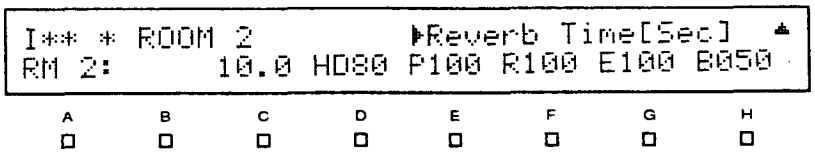

ER/REV Balance
L
IN
R
EQ
REV
ER
Effect
Balance
L
OUT
Effect
Balance
R
ER/REV
Balance
ER Pre Delay
REV Pre Delay
0
Time

EFFECT NO.2 REVERB [RM2-3, HL2-3, PL2-3, SPG1]

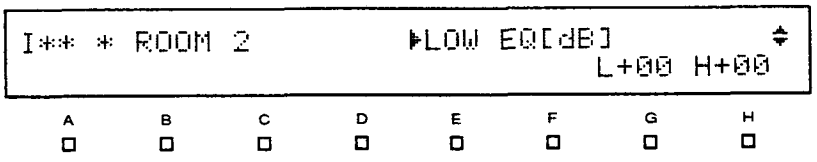
EFFECT SIZE: 3
EFFECT TYPE: STEREO EFFECT

This reverb effect contains 2 variations of room, hall and plate reverbs and a spring reverb simulation.

Page 1



Page 2



Variations:

ROOM 2 [RM2] ..... Room-type reverb
ROOM 5 [RM5] ..... Room-type reverb
HALL 2 [HL2] ..... Hall-type reverb
HALL 3 [HL3] ..... Hall-type reverb
PLATE 2 [PL2] ..... Plate-type reverb
PLATE 3 [PL3] ..... Plate-type reverb
SPRING 1 [SPG1] ..... Spring-type reverb

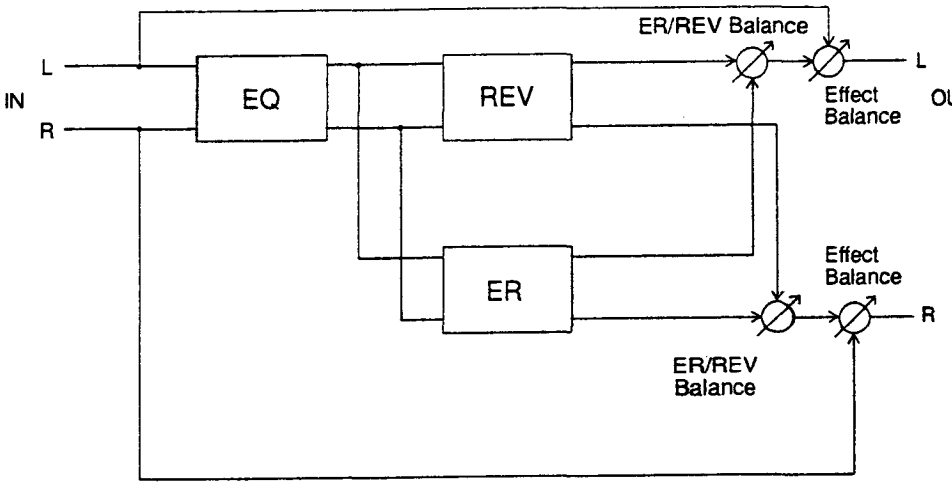
Parameters box:

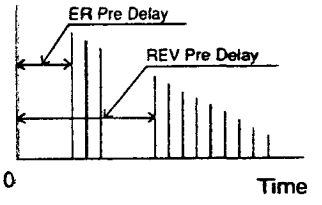
Page 1

Button	Parameter Name	Parameter Range	Function
C	Reverb Time	0.1~10.0 [Sec]	Sets the reverb time.
D	High Damp	0~80 [%]	Adjusts the damping of high frequency components. The higher the value, the softer the sound becomes.
E	ER Pre Delay (Early reflection pre-delay)	0~100 [mSec]	Sets the length of time between the source sound and the initial reflected sound.
F	REV Pre Delay (Reverb pre-delay)	0~100 [mSec]	Sets the length of time between the source sound and the start of the reverb sound.
G	ER/REV Balance (Early reflection/reverb balance)	0~100[%]	Sets the volume balance between the initial reflected sound and the reverb sound. The higher the value, the louder the reverb sound.
☆ H	Effect Balance (Dry/Wet Mix)	0~100[%]	Sets the volume balance between the direct sound and the effect sound. The higher the value, the wetter the sound.

Page 2

Button	Parameter Name	Parameter Range	Function
G	Low EQ (Low equalizer)	- 12 ~ +12[dB]	This is a shelving type EQ which allows boosting or cutting frequencies below 1K.
H	High EQ (High equalizer)	- 12 ~ +12[dB]	This is a shelving type EQ which allows boosting or cutting frequencies above 1K.


ER/REV Balance
L
IN
R
EQ
REV
ER
Effect
Balance
L
OUT
Effect
Balance
R
ER/REV
Balance

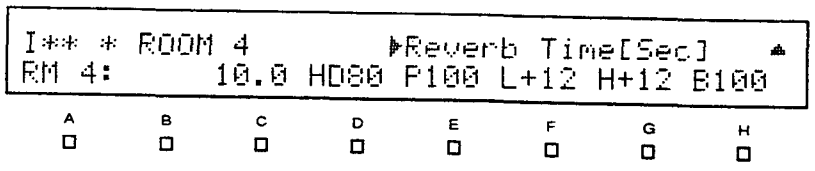

ER Pre Delay
REV Pre Delay
0
Time

EFFECT NO.3 REVERB [RM4-5, HL4-5, PL4-5, SPG2]

EFFECT SIZE: 4
EFFECT TYPE: STEREO EFFECT

This effect realistically simulates reverberation in a hall, room, plate or spring.

Page 1



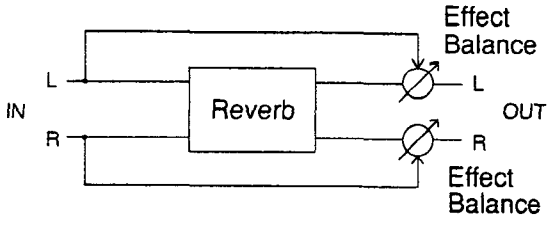
Variations:

ROOM 4[RM4] ..... Room-type reverb
ROOM 5[RM5] ..... Room-type reverb
HALL 4[HL4] ..... Hall-type reverb
HALL 5[HL5] ..... Hall-type reverb
PLATE 4[PL4] ..... Plate-type reverb
PLATE 5[PL5] ..... Plate-type reverb
SPRING 2[SPG2] ..... Spring-type reverb

Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
C	Reverb Time	0.1~10.0[Sec]	Sets the reverb time.
D	High Damp	0~80[%]	Adjusts the damping of high frequency components. The higher the value, the softer the sound becomes.
E	Pre Delay	0~100 [mSec]	Sets the length of time between the source sound and the initial reflected sound.
F	Low EQ	-12 ~ +12[dB]	Sets the length of time between the source sound and the start of the reverb sound.
G	High EQ	-12 ~ +12[dB]	Sets the volume balance between the initial reflected sound and the reverb sound. The higher the value, the louder the reverb sound.
H	Effect Balance (Dry/Wet Mix).	0 ~ 100[%]	Sets the volume balance between the direct sound and the effect sound. The higher the value, the wetter the sound.

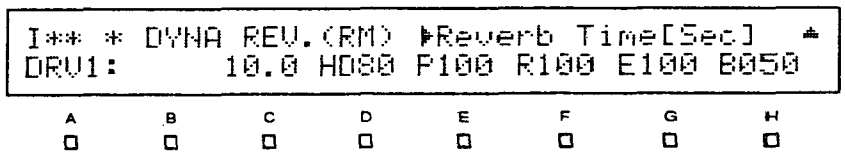


EFFECT NO.4 DYNAMIC REVERB [DRV1-3]

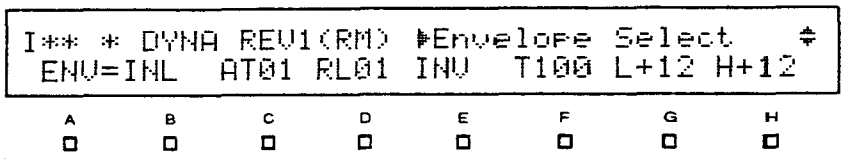
EFFECT SIZE: 2
EFFECT TYPE: STEREO EFFECT

This reverb enables you to control the effect sound volume using dynamics such as an input envelope. You may select normal polarity or inverse polarity to turn the effect sound ON or OFF, respectively, when the envelope exceeds the threshold level. You can also select the input and effect levels through the dynamic parameter.

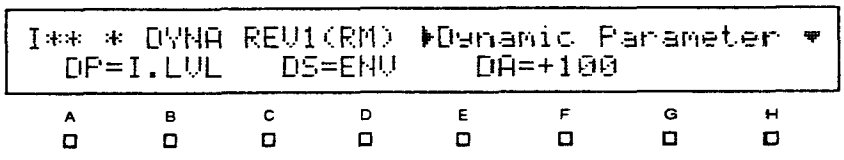
Page 1



Page 2



Page 3



Variations:

DYNAMIC REVERB 1(RM) [DRV1] . . . . . Room-type reverb
DYNAMIC REVERB 2(HL) [DRV2] . . . . . Hall-type reverb
DYNAMIC REVERB 3(PL) [DRV3] . . . . . Plate-type reverb

Parameters box:

Page 1

Button	Parameter Name	Parameter Range	Function
C	Reverb Time	0.1~10.0[Sec]	Sets the reverb time.
D	High Damp	0~80[%]	Adjusts the damping of high frequency components. The higher the value, the softer the sound becomes.
E	ER Pre Delay (Early reflection pre-delay)	0~100 [mSec]	Sets the length of time between the source sound and the initial reflected sound.
F	REV Pre Delay (Reverb pre-delay)	0~100 [mSec]	Sets the length of time between the source sound and the start of the reverb sound.
G	ER/REV Balance (Early reflection/reverb balance)	0~100[%]	Sets the volume balance between the initial reflected sound and the reverb sound. The higher the value, the louder the reverb sound.
☆ H	Effect Balance (Dry/Wet Mix)	0~100[%]	Sets the volume balance between the direct sound and the effect sound. The higher the value, the wetter the sound.

Page2

Button	Parameter Name	Parameter Range	Function
B	Envelope Select	INL, INR, PreL, PreR	Specifies which signal is selected as the input envelope (see page 6).
C	Attack	0~80	Sets the rate of change of the effect level (or input level) when the envelope signal exceeds the threshold level. The higher the value, the slower the attack.
D	Release	0~80	Sets the rate of change of effect level(or input level) when the envelope signal exceeds the threshold level. The higher the value, the longer the release.
E	Dynamic Polarity	NORM, INV	Sets the direction of change of the effect sound (effect level or input level) when the envelope signal exceeds the threshold level. NORM boosts the effect sound while INV reduces it.
F	Threshold	0~100	Sets the threshold level for the dynamic control.
G	Low EQ	-12 ~ +12[dB]	This is a shelving type EQ which allows boosting or cutting frequencies below 1K.
H	High EQ	-12 ~ +12[dB]	This is a shelving type EQ which allows boosting or cutting frequencies above 1K.

Page 3

Button	Parameter Name	Parameter Range	Function
B	Dynamic Parameter	I.LVL, E.LVL, I + E.LVL	Controls input level using I.LVL, effect level using E.LVL, and both levels using I + E.LVL
D	Dynamic Source	OFF, ENV, PEDAL, MIDI	Specifies the dynamic source.
F	Dynamic Amount	-100 ~ +100	Sets the depth of the dynamic modulation effect.

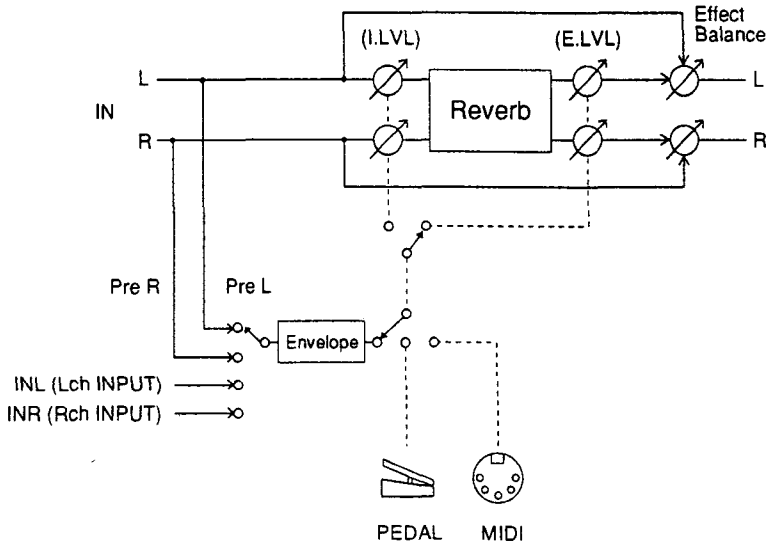
[Dynamic Amount setting]

The dynamic amount operates differently according to the dynamic source specification as follows:

1. When ENV is selected as the dynamic source,
   the dynamic amount becomes sensitive to envelope signals, and can adjust the depth of the dynamic effect.

2. When PEDAL or MIDI is selected as the dynamic source,
   the range of I.LVL and E.LVL, which can be varied by the dynamic amount, is as follows:

E.LVL: variable between n% and m% [n = 100 - (specified value of dynamic amount), m = specified value of effect balance]
LVL: variable between n% and 100% [n = 100 - (specified value of dynamic amount)]

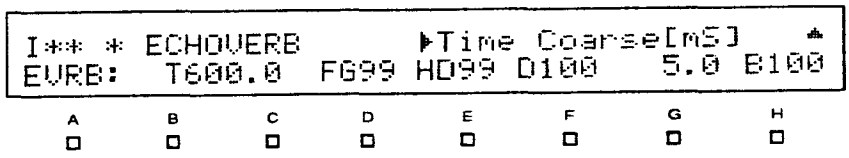


EFFECT NO.5 ECHOVERB [EVRB]

EFFECT SIZE: 4
EFFECT TYPE: STEREO EFFECT

This effect combines feedback delay and reverb; with each feedback cycle, the sound becomes more distant.

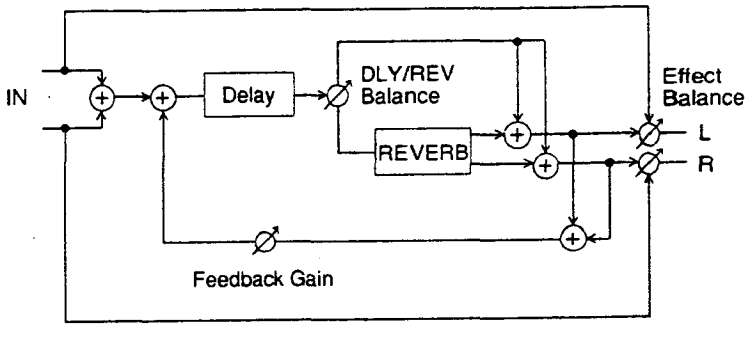
Page 1



Parameters box:

Page 1

Button	Parameter Name	Parameter Range	Function
B	Time Coarse	0~670 [mSec]	Time - Coarse Sets the delay time in 10 mSec increments.
C	Time Fine	0~9.9 [mSec]	Time - Fine Sets the delay time in 0.1 mSec increments.
D	Feed back Gain	0~99	Sets the amount of delay feedback.
E	High Damp	0~99[%]	Adjusts the damping of the high frequency components in the feedback. The higher the value, the softer the reverb sound.
F	DLY/REV Balance	0~100[%]	Sets the volume balance between delay sound and reverb sound. The higher the value, the louder the reverb sound.
G	Reverb Time	0.1~5.0 [Sec]	Sets the reverb time.
☆ H	Effect Balance (Dry/Wet Mix.)	0~100[%]	Sets the volume balance between the direct sound and the effect sound. The higher the value, the wetter the sound.

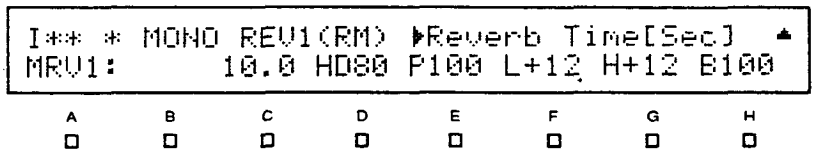


EFFECT NO.6 MONO REVERB [MRV1-7]

EFFECT SIZE: 5
EFFECT TYPE: MONO EFFECT

This effect realistically simulates reverberation.

Page 1



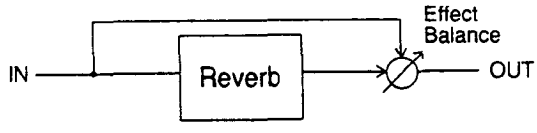
Variations:

MONO REVERB 1 [MRV1] ..... Room-type reverb
MONO REVERB 2 [MRV2] ..... Room-type reverb
MONO REVERB 3 [MRV3] ..... Hall-type reverb
MONO REVERB 4 [MRV4] ..... Hall-type reverb
MONO REVERB 5 [MRV5] ..... Plate-type reverb
MONO REVERB 6 [MRV6] ..... Plate-type reverb
MONO REVERB 7 [MRV7] ..... Spring-type reverb

Parameters Box:

Page 1

Button	Parameter Name	Parameter Range	Function
C	Reverb Time	0.1~10.0 [Sec]	Sets the reverb time.
D	High Damp	0~80[%]	Adjusts the damping of high frequency components. The higher the value, the softer the sound becomes.
E	Pre Delay	0~100 [mSec]	Sets the length of time between the direct sound and the start of the reverb sound.
F	Low EQ	-12 ~ + 12 [dB]	This is a shelving type EQ which allows boosting or cutting frequencies below 1K.
G	High EQ	-12 ~ + 12 [dB]	This is a shelving type EQ which allows boosting or cutting frequencies above 1K.
☆ H	Effect Balance (Dry/Wet Mix)	0~100[%]	Sets the volume balance between the direct sound and the effect sound. The higher the value, the wetter the sound.

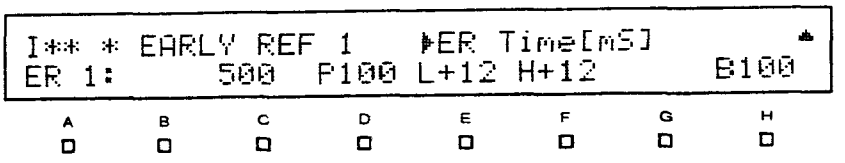


EFFECT NO.7 EARLY REFLECTION [ER1-4]

EFFECT SIZE: 2
EFFECT TYPE: STEREO EFFECT

This is an early reflection effect with multiple taps.

Page 1

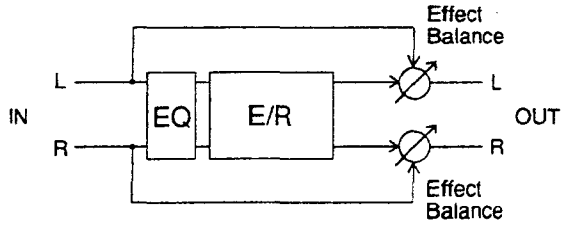


Variations

EARLY REFLECTION 1 [ER1] .....Gate-type early reflection.
EARLY REFLECTION 2 [ER2] .....Gate-type early reflection (w/sharp attack and release).
EARLY REFLECTION 3 [ER3] .....Natural early reflection).
EARLY REFLECTION 4 [ER4] .....Reverse-type early reflection).

Parameter Box:
Page 1

Button	Parameter Name	Parameter Range	Function
☆ C	ER Time (Early reflection time)	4~500 [mSec]	Sets the initial reflected sound.
D	Pre Delay	0~100 [mSec]	Sets the length of time between the direct sound and the initial reflected sound.
E	Low EQ	-12~+12 [dB]	This is a shelving type EQ which allows boosting or cutting frequencies above 1K.
F	High EQ	-12~+12 [dB]	This is a shelving type EQ which allows boosting or cutting frequencies above 1K.
H	Effect Balance (Dry/Wet Mix)	0~100[%]	Sets the volume balance between the direct sound and the effect sound. The higher the value, the wetter the sound.

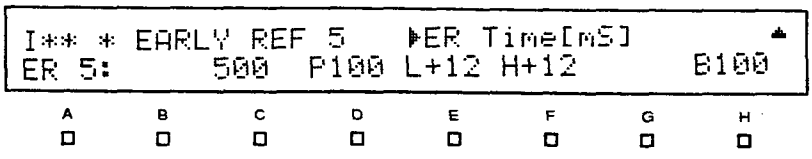


EFFECT NO.8 EARLY REFLECTION [ER5-7]

EFFECT SIZE: 6
EFFECT TYPE: STEREO EFFECT

This is an early reflection effect with fewer taps (than ER 1-4).

Page 1



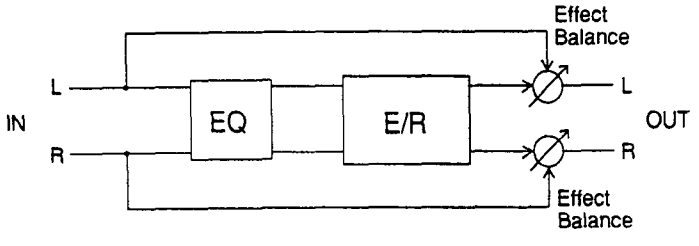
Variations

EARLY REFLECTION 5 [ER5] . . . . . Gate-type early reflection
EARLY REFLECTION 6 [ER6] . . . . . Natural early reflection
EARLY REFLECTION 7 [ER7] . . . . . Reverse-type early reflection

Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
C	ER Time (Early reflection time)	4~500 [mSec]	Sets the initial reflected sound.
D	Pre Delay	0~100 [mSec]	Sets the length of time between the direct sound and the initial reflected sound.
E	Low EQ	-12 ~ + 12 [dB]	This is a shelving type EQ which allows boosting or cutting frequencies below 1K.
F	High EQ	-12 ~ + 12 [dB]	This is a shelving type EQ which allows boosting or cutting frequencies above 1K.
H	Effect Balance (Dry/Wet Mix)	0~100[%]	Sets the volume balance between the direct sound and the effect sound. The higher the value, the wetter the sound.

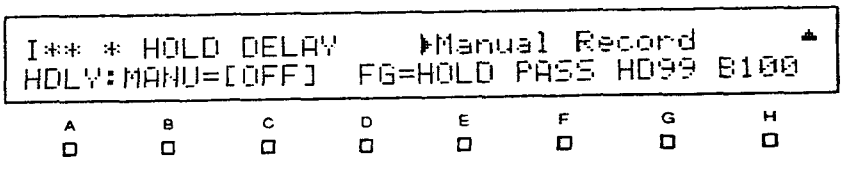


EFFECT NO.9 HOLD DELAY [HDLY]

EFFECT SIZE: 1
EFFECT TYPE: MONO EFFECT

This delay enables you to record signals onto the delay block while the foot switch is ON, and to hold (play back repeatedly) recorded signals when the foot switch is OFF.

Page 1



Parameters shown in brackets [ ] can be changed by pressing the double function edit control between them.

Using the Hold Delay

1. Connect a momentary foot switch, such as the Korg PS-2, to the A1's FOOT SWITCH input jack 1(or 2) on the rear panel, and set HDLY REC to SW1(or SW2) of FT.SW in Utility mode.

2. Turn the effect off, then on again to clear the play time count and sound being held.(*Turn it off for at least 2.6 seconds to* ensure erasure of the held sound.

3. Turn the FOOT SWITCH on by pressing it, then play the phrase to be recorded. Turn the FOOT SWITCH off to end the recording. The recorded phrase is then automatically held. The delay time may also be set while the FOOT SWITCH is on.
   Note: The delay time count is effected only when a program change is made or during the first recording after the effect is *turned from OFF to ON.*
   The maximum recording time is 2.60 msec. When this is exceeded with the switch ON, the delay time is automatically set to 2,600ms.

4. If recording was not possible, repeat the procedure from step 2.

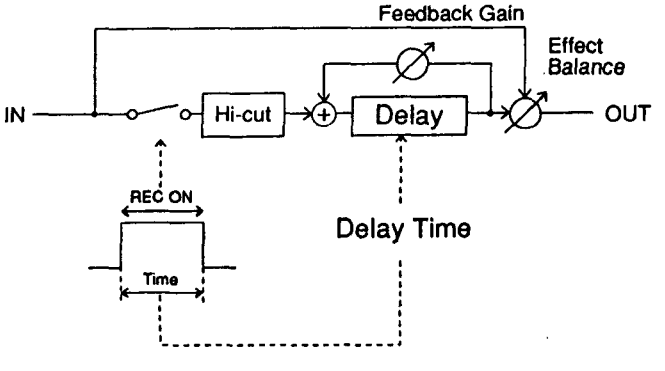
5. Performances in conjunction with the held phrase are now possible.

6. By turning the FOOT SWITCH on again, a new phrase can be superimposed on top of the currently held phrase. Utility mode is accessed from the front panel Utility mode button.

Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
C	Manual Record	[OFF], [ON]	Start or stop recording by pressing control key 'C'. A footswitch can be used to perform this function.
E	Feedback Gain	-99~HOLD (HOLD = + 99)	Sets damping of the hold delay. Specify HOLD when damping is not required.
F	High Cut	300~PASS [Hz]	Sets the cut-off frequency level of the high cut filter before the delay block.
G	High Damp	0~99[%]	Adjusts the high damp level. *The higher the value, the softer the sound becomes each time* hold is repeated.
☆ H	Effect Balance (Dry/Wet Mix).	0~100[%]	Sets the volume balance between the direct sound and the hold sound. *The higher the value, the louder the hold sound.*

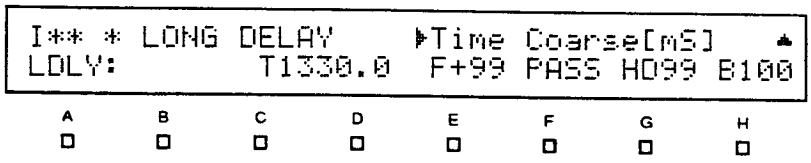


EFFECT NO.10 LONG DELAY [LDLY]

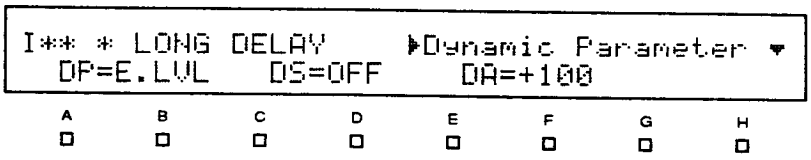
EFFECT SIZE: 5
EFFECT TYPE: MONO EFFECT

This monaural delay allows a delay time of up to a maximum of 1339.9 mSec.

Page 1



Page 2



Parameter Box:

Page 1

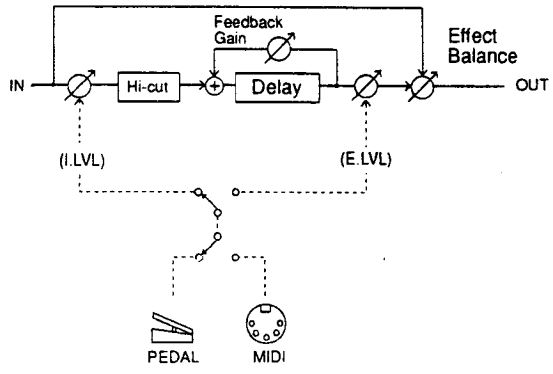
Button	Parameter Name	Parameter Range	Function
☆ C	Time Coarse	0~1330 [mSec]	Set the delay time in 10 mSec increments.
D	Time Fine	0~9.9 [mSec]	Sets the delay time in 0.1 mSec increments.
E	Feedback Gain	- 99~ + 99	Sets the amount of feedback.
F	High Cut	300~PASS [Hz]	Sets the cut-off frequency level of the high cut filter before the delay block.
G	High Damp	0~99[%]	Adjust the high damp level. The higher the value is, the softer the tone becomes each time feedback is repeated.
H	Effect Balance (Dry/Wet Mix)	0~100[%]	Sets the volume balance between the direct sound and the effect sound. The higher the value, the louder the effect sound.

Page 2

Button	Parameter Name	Parameter Range	Function
B	Dynamic Parameter	I.LVL, E.LVL, I + E.LVL	Controls the input level using I.LVL, the effect level using E.LVL, and both levels using I + E.LVL.
D	Dynamic source	OFF, PEDAL, MIDI	Specifies the dynamic source.
F	Dynamic Amount	-100~+100	Sets the depth and direction of the dynamic modulation effect.

The range of E.LVL and I.LVL in the Dynamic Parameter can be varied as follows:

E.LVL:variable between n% and m% [n = 100 - (specified value of dynamic amount), m = specified value of Effect Balance]
I.LVL:variable between n% and 100% [n = 100 - (specified value of dynamic amount)]

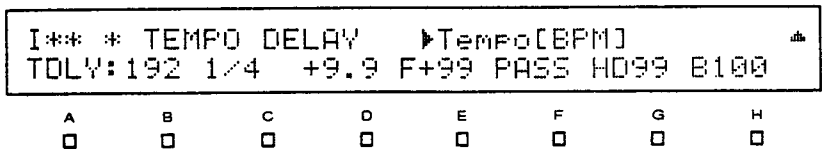


EFFECT NO.11 TEMPO DELAY [TDLY]

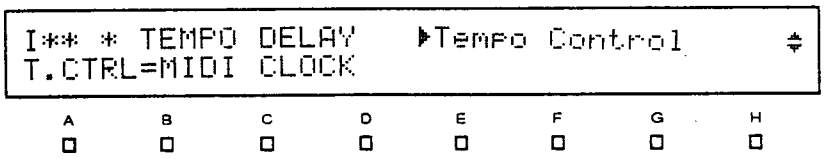
EFFECT SIZE: 5
EFFECT TYPE: MONO EFFECT

This delay effect automatically sets the delay time based on tempo and note information. The delay time can be synchronized to an external MIDI clock.

Page 1



Page 2



Parameter Box:

Page 1

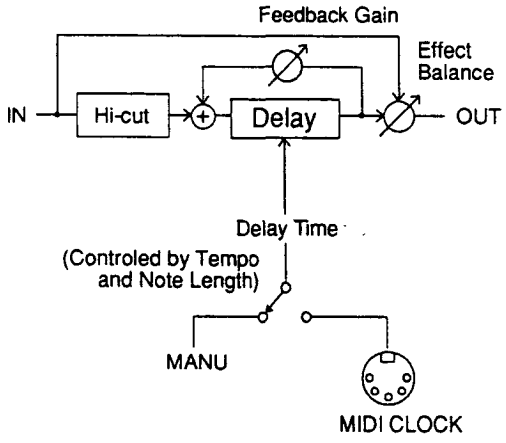
Button	Parameter Name	Parameter Range	Function
B	Tempo	40~250 [BPM]	Sets the tempo. [BPM] = beats per minute. This parameter operates only when MANUAL is specified for Tempo Control on parameter page 2 B below.
C	Note Resolution	1/2~1/64T	Sets the delay time according to the length of the note. T = Triplet; D = Dotted note e.g. 1/4 = Quarter note; 1/4D = Dotted quarter note
D	Time Adjust	- 9.9~ +9.9[%]	Minutely adjusts the delay time. The higher the value, the longer the delay time.
E	Feedback Gain	- 99~ +99	Adjusts the amount of feedback.
F	High Cut	300~PASS [Hz]	Sets the cut-off frequency level of the high cut filter before the delay block.
G	High Damp	0~99[%]	Adjusts the high damp level. The higher the value, the softer the sound becomes with each feedback cycle.
☆ H	Effect Balance (Dry/Wet Mix).	0~100[%]	Sets the volume balance between the direct sound and the effect sound. The higher the value, the louder the effect sound.

Page 2

Button	Parameter Name	Parameter Range	Function
B	Tempo Control	MANUAL, MIDI CLOCK	Specifies whether the tempo is determined by the TEMPO parameter or synchronized with the MIDI clock automatically.

Note: Synchronizing the tempo with a MIDI clock

- Sequences and other devices that output a MIDI clock signal either outputs it continuously or between the starting and stopping of the sequencer. In the former case, the tempo of the tempo delay can be controlled irrespective of starting or stopping of the sequencer; in the latter case, the tempo is saved right before it is first changed when the sequencer is started or right before the clock signal ends when the sequencer is stopped.
- When " ▲" appears as the Tempo value:the received tempo exceeds 250.
- When " ▼" appears as the tempo value:the received tempo has fallen below 40, or the set delay time has exceeded 1300 [ms] due to the Tempo and Note Resolution parameter settings.

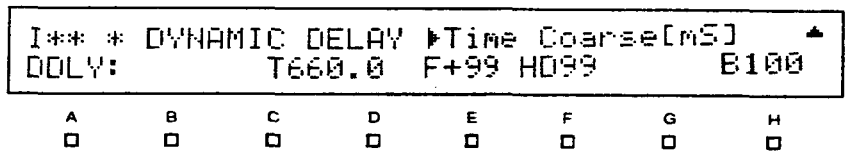

Feedback Gain
Effect
Balance
IN
Hi-cut
Delay
OUT
Delay Time
(Controled by Tempo
and Note Length)
MANU
MIDI CLOCK

EFFECT NO.12 DYNAMIC DELAY [DDLY]

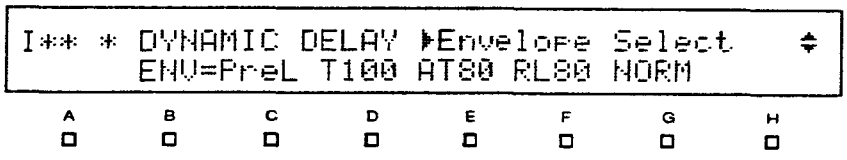
EFFECT SIZE: 6
EFFECT TYPE: MONO EFFECT

You may select normal inverse polarity or inverse polarity to turn the effect sound ON or Off, respectively, when the envelope exceeds the threshold level. You can also select the input and effect levels through the dynamic parameter.

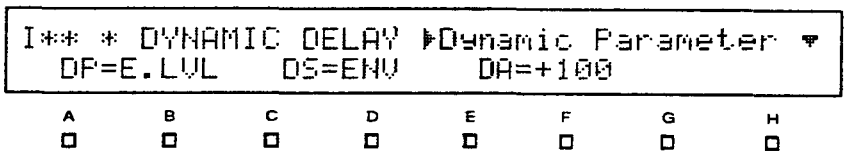
Page 1



Page 2



Page 3



Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
C	Time Coarse	0~660 [mSec]	Sets the delay time in 10 mSec increments.
D	Time Fine	0~9.9 [mSec]	Sets the delay time in 0.1 mSec increments.
E	Feedback Gain	- 99 ~ + 99	Sets the amount of feedback.
F	High Damp	0~100[%]	Adjusts the high damp level. The higher the value, the softer the sound becomes with each feedback cycle.
☆ H	Effect Balance (Wet/Dry Mix)	0~100[%]	Sets the volume balance between the direct sound and the effect sound. The higher the value, the louder the effect sound.

Page 2

Button	Parameter Name	Parameter Range	Function
C	Envelope Select	INL, INR, PreL, PreR	Specifies which signal is used as the envelope signal.
D	Threshold	0~100	Sets the threshold level for the dynamic control.
E	Attack	0~80	Sets the attack time. The higher the value, the slower the attack.
F	Release	0~80	Sets the release time. The higher the value, the longer the release.
G	Dynamic Polarity	NORM, INV	Specifies the direction of the effect sound volume control. Select NORM to enhance and INV to reduce signals.

Button	Parameter Name	Parameter Range	Function
B	Dynamic Parameter	I.LVL, E.LVL, I + E.LVL	Controls the input level using I.LVL, effect level using E.LVL, and both levels using I + E.LVL.
D	Dynamic Source	OFF, EVE, PEDAL, MIDI	Specifies the dynamic source.
F	Dynamic Amount	0 ~ +100	Sets the depth and direction of the dynamic modulation effect. When ENV is specified, the value range becomes 0 ~ +100.

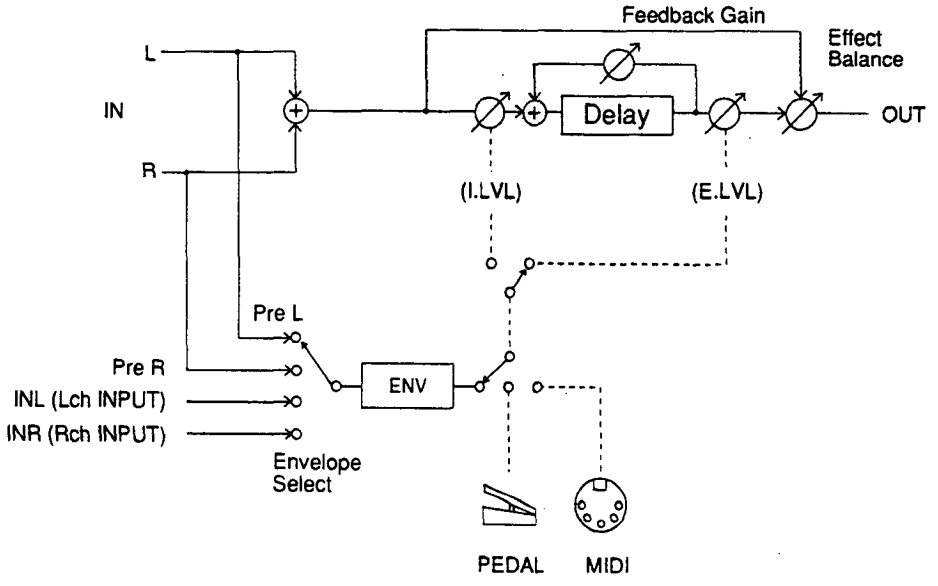
Dynamic Amount setting

The dynamic amount operates differently according to the dynamic source specification as follows:

1. When ENV is selected as the dynamic source,
   The dynamic amount becomes sensitive to envelope signals, and therefore adjusts the depth of the dynamic effect.

2. When PEDAL or MIDI is selected as the dynamic source,
   The range of I.LVL and E.LVL, which can be varied by the dynamic amount, is as follows:

E.LVL: variable between n% and m% [n = 100 - (specified value of dynamic amount), m = specified value of effect balance]
I.LVL: variable between n% and 100% [n = 100 - (specified value of dynamic amount)]

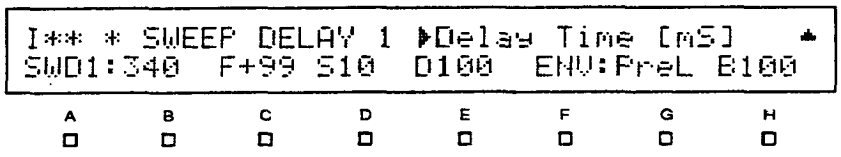


EFFECT NO.13 SWEEP DELAY [SWD1-2]

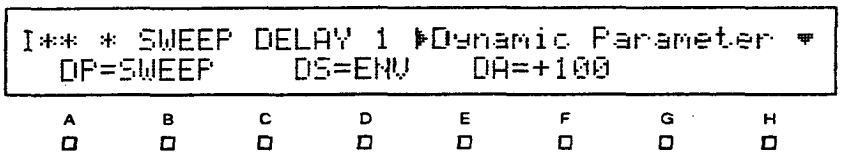
EFFECT SIZE: 7
EFFECT TYPE: MONO EFFECT

This delay effect modulates the delay time according to the strength of envelope signals. The modulated pitch of the delay sound varies with the level of envelope movement.

Page 1



Page 2



Variations:

SWEEP DELAY 1 [SWD1] . . . . . The larger the envelope is, the higher the pitch becomes.
SWEEP DELAY 2 [SWD2] . . . . . The larger the envelope is, the lower the pitch becomes.

Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
B	Delay Time	0.1~340 [mSec]	Sets the delay time (at the minimum envelope level).
C	Feedback Gain	- 99 ~ + 99	Adjusts the amount of feedback.
D	Sweep Decay	1~10	Sets the decay time for modulation.
E	Depth	0~100[%]	Sets the depth of modulation.
G	Envelope Select	INL, INR, PreL, PreR	Specifies which signal should be used as the envelope signal. (See page 00.) This parameter is valid only when ENV is specified as the dynamic parameter.
☆ H	Effect Balance (Dry/Wet Mix)	0~100[%]	Sets the volume balance between the direct sound and the effect sound. The higher the value, the louder the effect sound.

Page 2

Button	Parameter Name	Parameter Range	Function
B	Dynamic Parameter	Sweep	Specifies the dynamic parameter. Only SWEEP can be specified.
D	Dynamic Source	ENV, PEDAL, MIDI	Specifies the dynamic source.
F	Dynamic Amount	–100 ~ +100	Sets the depth of the dynamic modulation effect. The range for ENV is 0 to 100.

Dynamic Amount setting

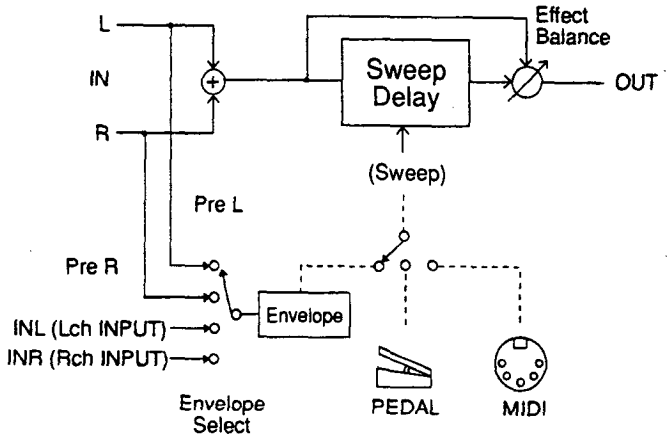
The dynamic amount becomes sensitive to envelope signals, and therefore adjusts the depth of the dynamic effect.

1. When ENV is selected as the dynamic source,
   The dynamic amount becomes sensitive to envelope signals, and can adjust the depth of the dynamic effect.

2. When PEDAL or MIDI is selected as the dynamic source,
   The range of IN.LVL and E.LVL which can be varied by the dynamic amount is as follows:

E.LVL: variable between n% and m% [n = 100 - (absolute value of dynamic amount), m = specified value of effect balance]
IN.LVL: variable between n% and 100% [n = 100 - (absolute value of dynamic amount)]

The DEPTH parameter specifies, in percentage, the variable range for the selected dynamic parameter.

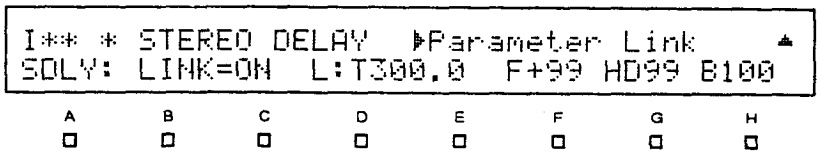


EFFECT NO.14 STEREO DELAY [SDLY, XDLY]
EFFECT TYPE: STEREO EFFECT

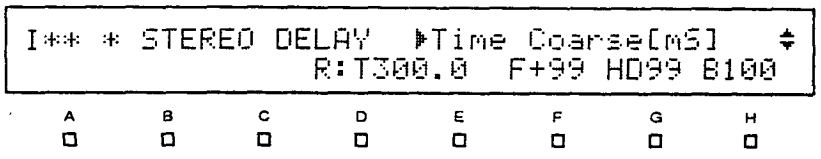
EFFECT SIZE: 8

This is a stereo delay effect with two delay blocks. You can select stereo/dual mono delay, or cross delay.

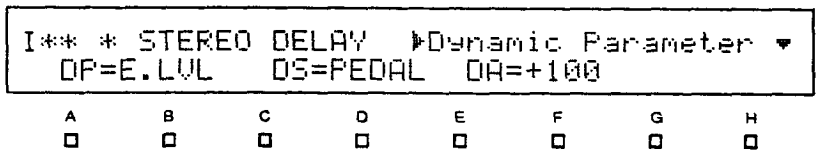
Page 1



Page 2



Page 3



Variations:

STEREO DELAY [SDLY] . . . . . Two-line self-feedback delay
CROSS DELAY [XDLY] . . . . . Cross delay with two delays feeding back alternately

Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
C	Parameter Link	OFF, ON	When this parameter is ON, the same parameters can be set for both channels by setting either the right or left channel.
☆ D	L Time - Coarse	0~330 [mSec]	Sets the delay time for the left channel in 10 mSec increments.
E	L Time - Fine	0~9.9 [mSec]	Sets the delay time for the left channel in 0.1 mSec increments.
F	L-Feedback Gain	-99~+99	Sets the amount of the feedback at the left channel.
G	L-High Damp	0~99[%]	Adjusts the damping of high frequency components in left channel feedback. The higher the value, the softer the sound becomes.
H	L-Effect Balance	0~100[%]	Sets the volume balance between the direct sound and the effect sound at the left channel. The higher the value, the louder the effect sound.

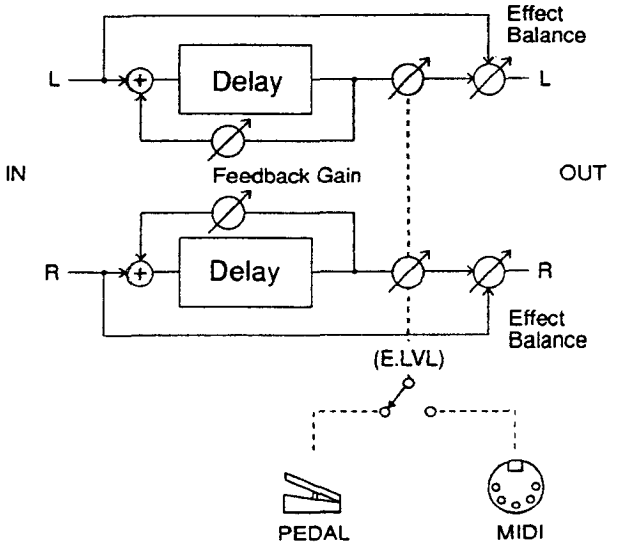
Page 2

Button	Parameter Name	Parameter Range	Function
☆ D	R Time - Coarse	0~330 [mSec]	Sets the delay time for the right channel in 10 mSec increments.
E	R Time - Fine	0~9.9 [mSec]	Sets the delay time for the right channel in 0.1 mSec increments.
F	R-Feedback Gain	- 99 ~ +99	Sets the amount of the feedback at the right channel.
G	R-High Damp	0~99[%]	Adjusts the damping of high frequency components in right channel feedback. The higher the value, the softer the sound becomes.
H	R-Effect Balance (Dry/Wet Mix)	0~100[%]	Sets the volume balance between the direct sound and the effect sound at the right channel. The higher the value, the louder the effect sound.

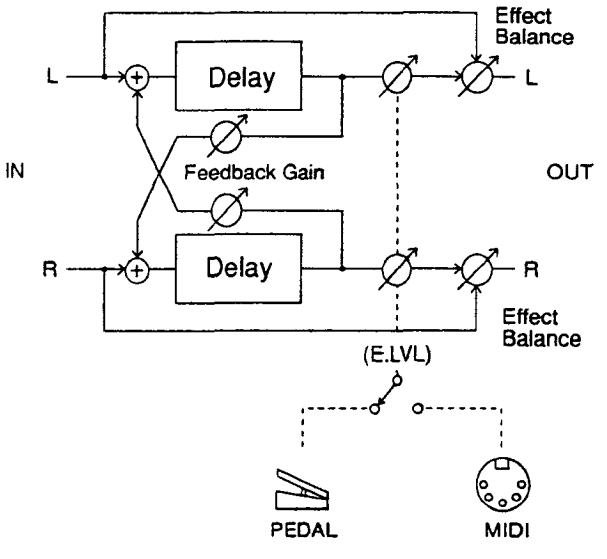
Page 3

Button	Parameter Name	Parameter Range	Function
B	Dynamic Parameter	E.LVL	Specifies the dynamic parameter. Only E.LVL can be specified.
D	Dynamic Source	OFF, PEDAL, MIDI	Specifies the dynamic source.
F	Dynamic Amount	- 100 ~ +100	Sets the depth and direction of the dynamic modulation effect.

SDLY (Stereo Delay)



XDLY (Cross Delay)

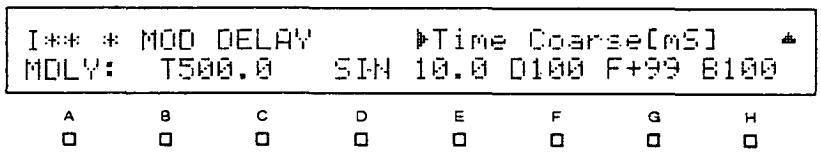


EFFECT NO.15 MODULATION DELAY [MDLY]

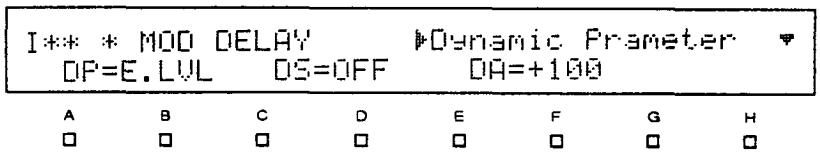
EFFECT SIZE: 8
EFFECT TYPE: MONO EFFECT

This is a delay with an LFO.

Page 1



Page 2



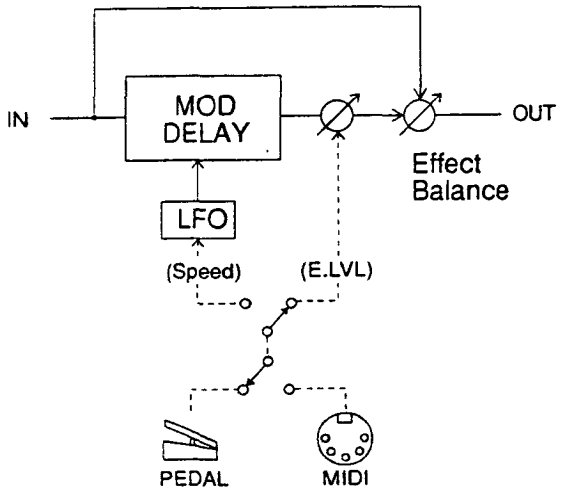
Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
B	Time - Coarse	0~500 [mSec]	Sets the time delay time in 10 mSec increments.
C	Time - Fine	0~9.9 [mSec]	Sets the time delay time in 0.1 mSec increments.
D	LFO Waveform	SIN, TRI	Specifies the modulation LFO waveform.
E	LFO Speed	0.02~10.0 [Hz]	Sets the modulation speed.
☆ F	Depth	0~100[%]	Sets the modulation depth.
G	Feedback Gain	- 99 ~ +99	Sets the amount of feedback.
H	Effect Balance (Dry/Wet Mix)	0~100[%]	Sets the volume balance between the direct sound and the effect sound. The higher the value, the louder the effect sound.

Page 2

Button	Parameter Name	Parameter Range	Function
B	Dynamic parameter	Speed, E.LVL	Specifies the dynamic parameter.
D	Dynamic Source	OFF, PEDAL, MIDI	Specifies the dynamic source.
F	Dynamic Amount	- 100 ~ +100	Sets the depth and direction of the dynamic modulation effect.

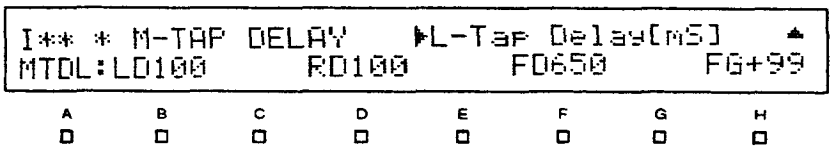


EFFECT NO.16 MULTI-TAP DELAY [MTDL]

EFFECT SIZE: 8
EFFECT TYPE: MONO IN/STEREO OUT EFFECT

This delay effect allows you to specify the delay time independently for the left and right channel taps. Using the Tap Density parameter, you can also increase the density of the taps each time feedback is repeated (density, in this case refers, to feedback reflections).

Page 1



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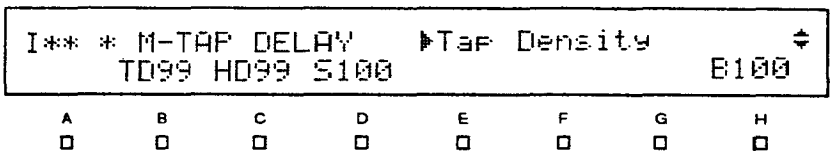


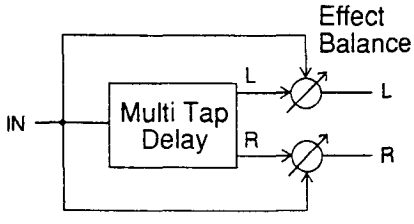
Parameter Box:

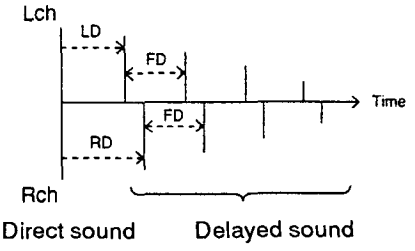
Page 1

Button	Parameter Name	Parameter Range	Function
B	L-Tap Delay Time	0~650 [mSec]	Sets the delay time for the left channel tap.
D	R-Tap Delay Time	0~650 [mSec]	Sets the delay time for the right channel tap.
F	Feedback Delay	0~650 [mSec]	Sets the delay time for each tap's feedback.
H	Feedback Gain	- 99 ~ +99	Sets the amount of feedback. When a minus value is specified, inversely phased signals are returned as feedback.

Page 2

Button	Parameter Name	Parameter Range	Function
B	Tap Density	0~99	The higher the value, the more dense the tap becomes with each feedback cycle.
C	High Damp	0~99[%]	Adjusts the high damp level. The higher the value, the softer the sound becomes with each feedback cycle.
D	L/R Spread	0~100	The higher the value, the wider the spread of the stereo taps.
☆ H	Effect Balance (Dry/Wet Mix)	0~100[%]	Sets the volume balance between the direct sound and the effect sound. The higher the value, the louder the effect sound.



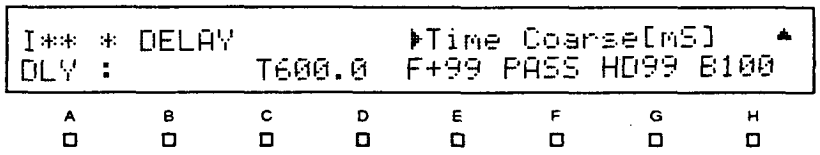


EFFECT NO.17 DELAY [DLY]

EFFECT SIZE: 9
EFFECT TYPE: MONO EFFECT

This delay effect has one delay block. This is used for echo effects.

Page 1



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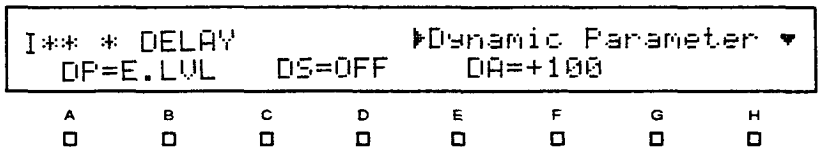


Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
☆ C	Time - Coarse	0~670 [mSec]	Sets the delay time in 10 mSec increments.
D	Time - Fine	0~9.9 [mSec]	Sets the delay time in 0.1 mSec increments.
E	Feedback Gain	- 99 ~ +99	Sets the amount of feedback.
F	High Cut	300~PASS [Hz]	Sets the cut-off frequency level of the high cut filter before the delay block.
G	High Damp	0~99[%]	Adjusts the high damp level. The higher the value, the softer the sound becomes with each feedback cycle.
H	Effect Balance	0~100[%]	Sets the volume balance between the direct sound and the effect sound. The higher the value is, the more effect sound can be obtained.

Page 2

Button	Parameter Name	Parameter Range	Function
B	Dynamic Parameter	I.LVL, E.LVL, I + E.LVL	Controls the input level using I.LVL, the effect using E.LVL, and both levels using I + E.LVL.
D	Dynamic source	OFF, PEDAL, MIDI	Specifies the dynamic source.
F	Dynamic Amount	- 100 ~ +100	Sets the depth and direction of the dynamic modulation effect.

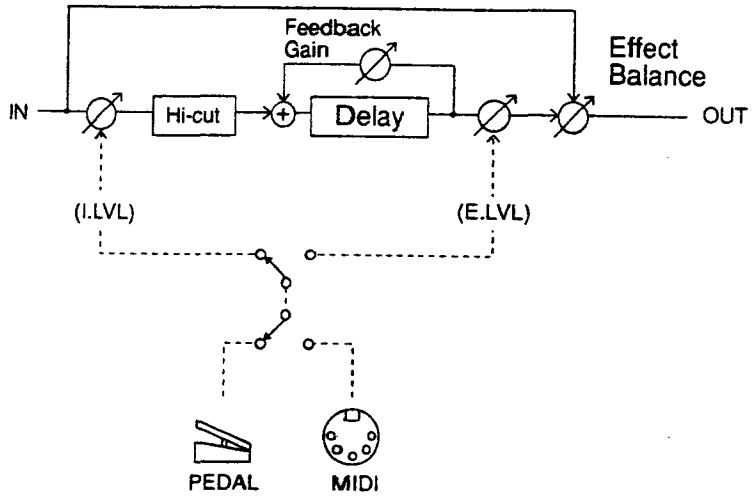
The difference between High Damp and High Cut

High damp is in the delay's feedback loop, so the delay sound becomes softer as feedback is repeated.
High cut comes before the feedback loop setting the tonal shape of the effect sound.

Dynamic Parameters Setting

The ranges of the E.LVL and I.LVL dynamic parameters can be varied as follows:

E.LVL: variable between n% and m% [n = 100 - (absolute value of dynamic amount), m = specified value of Effect Balance]
I.LVL: variable between n% and 100% [n = 100 - (absolute value of dynamic amount)]

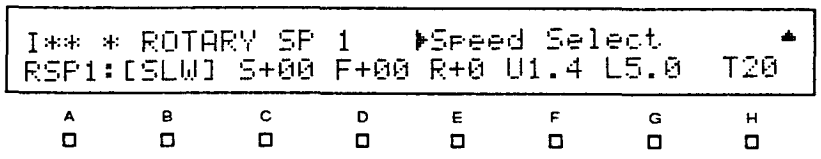


EFFECT NO.18 ROTARY SPEAKER [RSP1-2]

EFFECT SIZE: SIZE 4
EFFECT TYPE: MONO IN/STEREO OUT EFFECT

This effecter produces a rotary speaker effect. Rotary sound can be faithfully simulated using the parameters to select slow or fast speed, the speed ratio between the UPPER and LOWER speakers, the fast and slow speed levels,tone, etc.
The speed can also be selected using the foot switch or the MIDI after touch function.

Page 1



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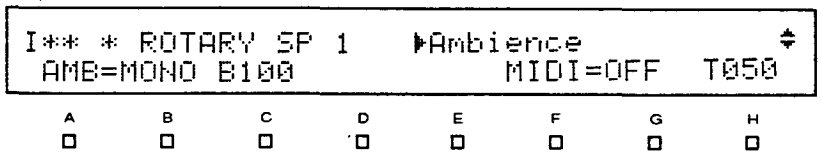


Parameter shown in brackets [ ] can be changed by pressing the double function edit control beneath them.

Methods of switching the rotation speed

1. Press the Speed Select [SLOW/FAST] switch in edit mode.
2. Connect a foot switch (such as the KORG PS-2) to the FOOT SWITCH 1 (or 2) input jack on the rear panel, and set the FT.SW SW1 (or 2) to R-SP SPEED in utility mode. The speed is switched every time the foot switch is depressed in play or edit mode.
3. Set the Speed Control Source Parameter to Aftc or Ct01. The MIDI After Touch or Control 01 signal switches rotation speeds when the value set to the Control Threshold parameter is exceeded.

Variations:

ROTARY SPEAKER 1 [RSP1] . . . . . Modulation LFO waveform
ROTARY SPEAKER 2 [RSP2] . . . . . Modulation LFO waveform

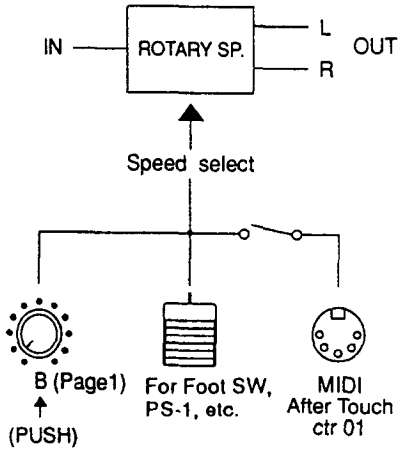
Parameter Box:

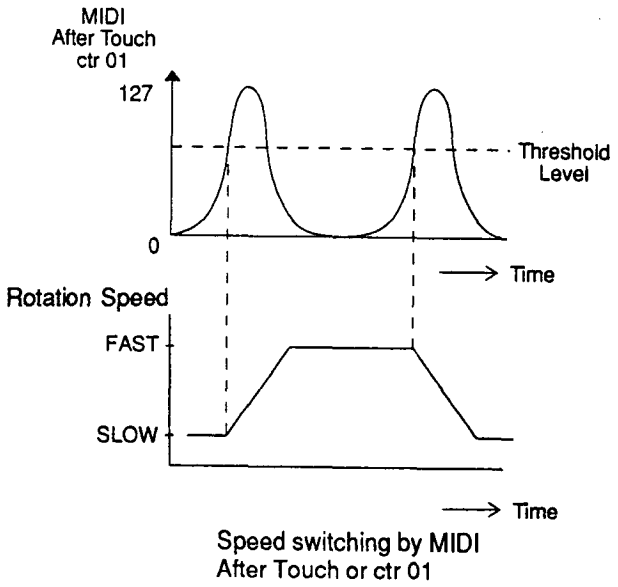
Page 1

Button	Parameter Name	Parameter Range	Function
☆ B	Speed Select	[SLW], [FST]	Sets two speed levels for speed of the rotation.
C	Slow Speed	- 12 ~ +12	Adjusts the rotation speed when SLOW speed is selected. The higher the value, the faster the speed.
D	Fast Speed	- 12 ~ +12	Adjust the rotation speed when FAST speed is selected. The higher the value, the faster the speed.
E	Speed Ratio	- 6 ~ +6	Adjusts the speed ratio between the UPPER and LOWER speakers. The higher the value above '"0", the faster the speed of the UPPER speaker in relation to the LOWER speaker.
F	Upper Weight	0.4~1.4 [Sec]	Sets the time it takes to switch the speed of the UPPER speaker.
G	Lower Weight	5.0~12.0 [Sec]	Sets the time it takes to switch the speed of the LOWER speaker.
H	Tone	1~20	Sets the tone of the UPPER speaker.

Page 2

Button	Parameter Name	Parameter Range	Function
B	Ambience	MONO, ST0~4	Adjusts the spreading effect of sound.
C	UP/LOW Balance	0~100[%]	Sets the volume balance between the LOWER and UPPER speakers. The higher the value, the louder the sound of the UPPER speaker in relation to the LOWER speaker.
G	MIDI Speed Control source	Off, Aftc, Ct01	Sets the source of MIDI Speed Control.
H	Control Threshold	10~127	Sets the threshold level for MIDI Speed Control.





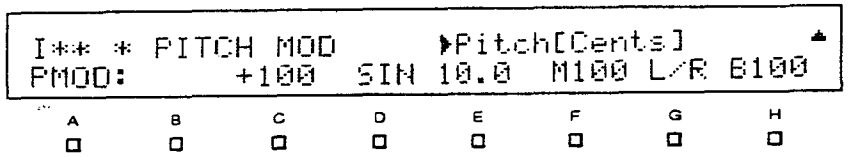
Speed switching by MIDI After Touch or ctr 01

EFFECT NO. 19 PITCH SHIFT MODULATION [PMOD]

EFFECT SIZE: 6
EFFECT TYPE: MONO IN/STEREO OUT EFFECT

This effect is a detune effect with an LFO. Clear and spacious sound can be obtained using this effect. The amount of pitch shift available is plus or minus 100 cents.

Page 1



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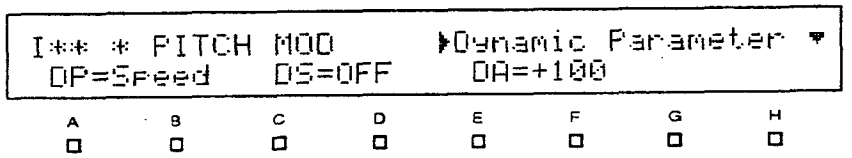


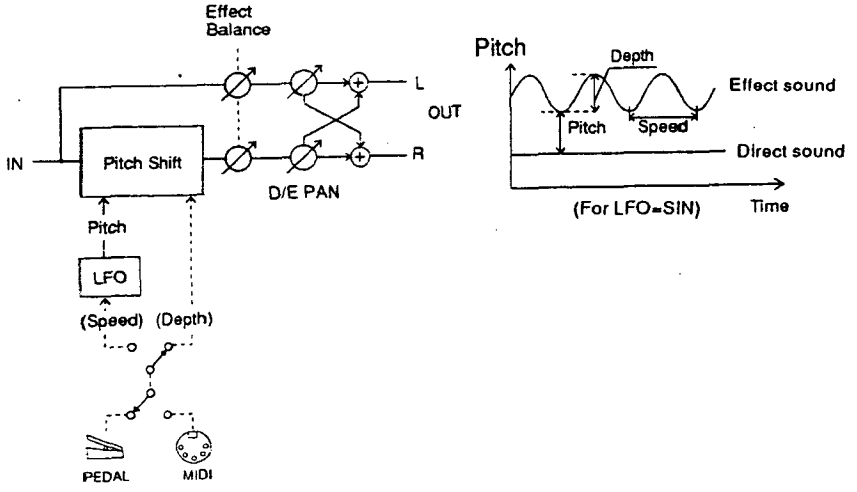
Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
C	Pitch	- 100 ~ +100 [cents]	Sets the pitch shift level (in cents).
D	LFO Waveform	SIN, TRI	Specifies the modulation LFO waveform.
E	LFO Speed	0.02~10.0 [Hz]	Sets the modulation speed.
F	Pitch Mod Depth	0~100[%]	Sets the pitch modulation depth.
G	Direct/Effect Pan	L/R, C/C, R/L	Specifies the L-R orientation of the direct sound and the effect sound.
☆ H	Effect Balance	0~100[%]	Sets the volume balance between the direct sound and the effect sound. (Dry/Wet Mix). The higher the value, the louder the effect sound.

Page 2

Button	Parameter Name	Parameter Range	Function
B	Dynamic Parameter	Speed, Depth	Specifies the dynamic parameter.
D	Dynamic Source	OFF, PEDAL, MIDI	Specifies the dynamic source.
F	Dynamic Amount	- 100 ~ +100	Sets the dynamic amount.

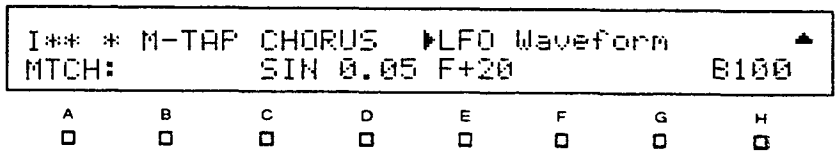


EFFECT NO.20 MULTI-TAP CHORUS [MTCH]

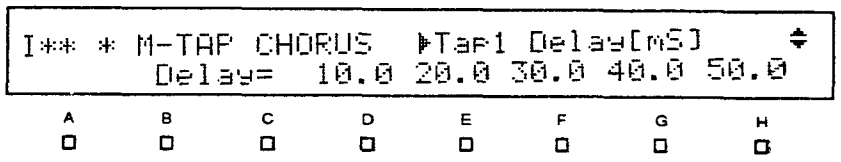
EFFECT SIZE: 6
EFFECT TYPE: STEREO EFFECT

This is a chorus effect which has five taps which can all be set at various times, phrases, depth and positions. This allows you to create a complex stereo sound.

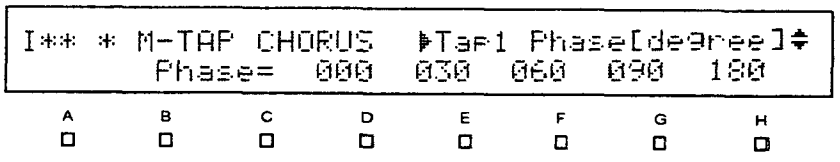
Page 1



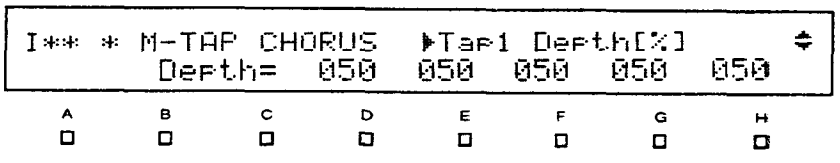
Page 2



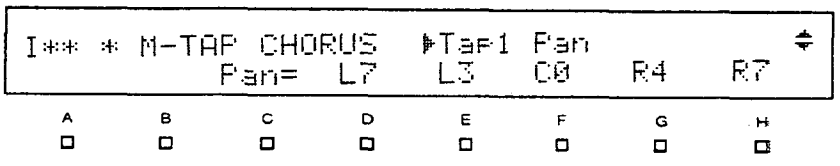
Page 3



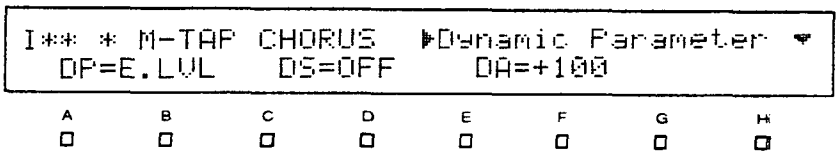
Page 4



Page 5



Page 6



Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
C	LFO Waveform	SIN, TRI	Specifies the modulation LFO waveform.
D	LFO Speed	0.02~10.0 [Hz]	Sets the modulation speed.
E	Feedback Gain	- 99 ~ +99	Sets the amount of feedback for TAP 3.
☆ H	Effect Balance (Dry/Wet Mix)	0~100[%]	Sets the volume balance between the direct sound and the effect sound. The higher the value, the louder the effect sound.

Page 2

Button	Parameter Name	Parameter Range	Function
D	Tap1 Delay Time	0~50.0 [mSec]	Sets the delay time for TAP 1.
E	Tap2 Delay Time	0~50.0 [mSec]	Sets the delay time for TAP 2.
F	Tap3 Delay Time	0~50.0 [mSec]	Sets the delay time for TAP 3.
G	Tap4 Delay Time	0~50.0 [mSec]	Sets the delay time for TAP 4.
H	Tap5 Delay Time	0~50.0 [mSec]	Sets the delay time for TAP 5.

Page 3

Button	Parameter Name	Parameter Range	Function
D	Tap1 Phase	0~330 [degree]	Sets the modulation LFO phase for TAP 1.
E	Tap 2 Phase	0~330 [degree]	Sets the modulation LFO phase for TAP 2.
F	Tap 3 Phase	0~330 [degree]	Sets the modulation LFO phase for TAP 3.
G	Tap 4 Phase	0~330 [degree]	Sets the modulation LFO phase for TAP 4.
H	Tap 5 Phase	0~330 [degree]	Sets the modulation LFO phase for TAP 5.

Page 4

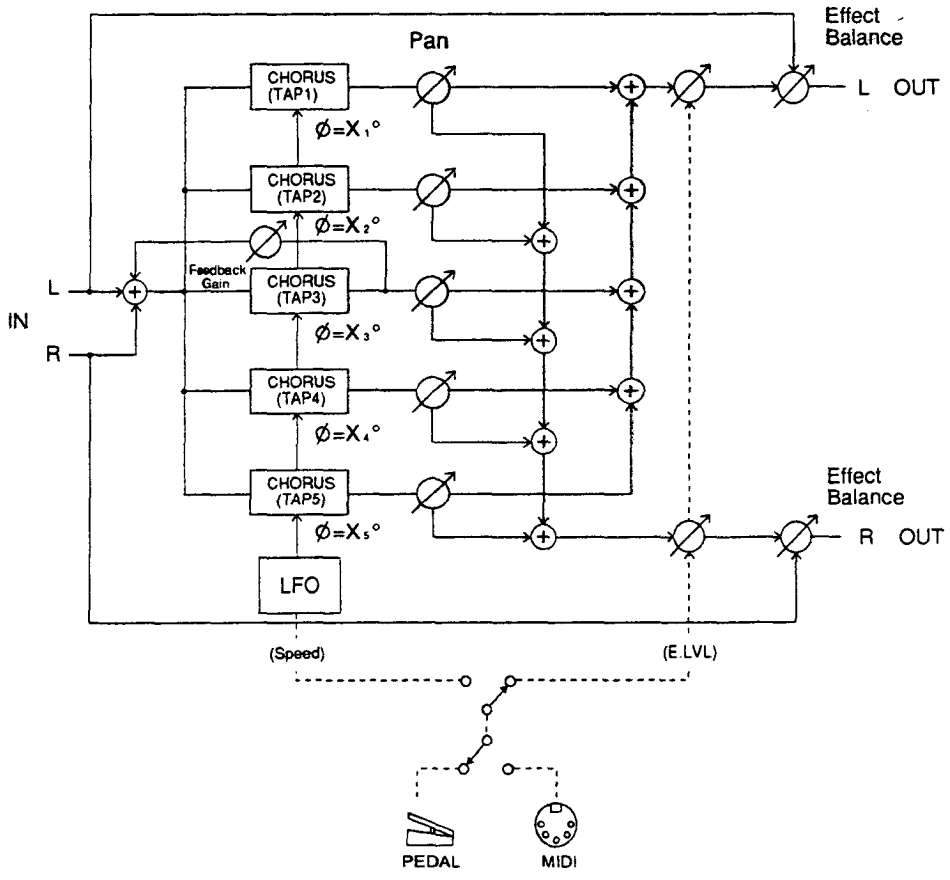
button	Parameter Name	Parameter Range	Function
D	Tap1 Depth	0~100[%]	Sets the modulation depth for TAP 1.
E	Tap2 Depth	0~100[%]	Sets the modulation depth for TAP 2.
F	Tap3 Depth	0~100[%]	Sets the modulation depth for TAP 3.
G	Tap4 Depth	0~100[%]	Sets the modulation depth for TAP 4.
H	Tap5 Depth	0~100[%]	Sets the modulation depth for TAP 5.

Page 5

Button	Parameter Name	Parameter Range	Function
D	Tap1 PAN	OFF, L7~C0~R7	Sets the position of TAP 1.
E	Tap2 PAN	OFF, L7~C0~R7	Sets the position of TAP 2.
F	Tap3 PAN	OFF, L7~C0~R7	Sets the position of TAP 3.
G	Tap4 PAN	OFF, L7~C0~R7	Sets the position of TAP 4.
H	Tap5 PAN	OFF, L7~C0~R7	Sets the position of TAP 5.

Page 6

Button	Parameter Name	Parameter Range	Function
B	Dynamic Parameter	E.LVL, Speed	Specifies the dynamic parameter.
D	Dynamic Source	OFF, PEDAL, MIDI	Specifies the dynamic source.
F	Dynamic Amount	- 100 ~ +100	Sets the depth and direction of the dynamic modulation effect.

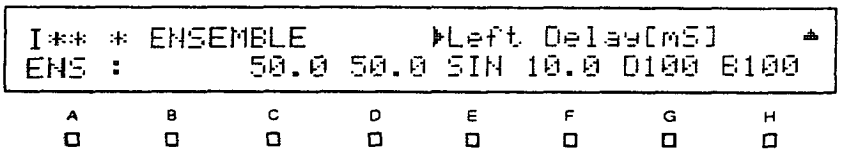

Pan
Effect
Balance
L OUT
CHORUS
(TAP1)
Ø=X1°
CHORUS
(TAP2)
Ø=X2°
Feedback
Gain
CHORUS
(TAP3)
Ø=X3°
CHORUS
(TAP4)
Ø=X4°
CHORUS
(TAP5)
Ø=X5°
L
IN
R
LFO
Effect
Balance
R OUT
(Speed)
(E.LVL)
PEDAL
MIDI

EFFECT NO.21 ENSEMBLE [ENS]

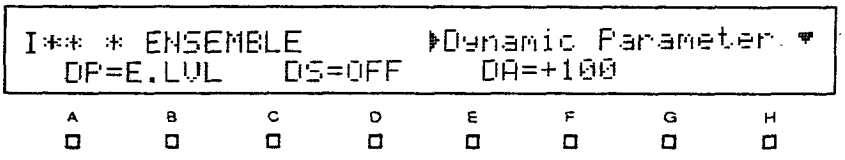
EFFECT TYPE: STEREO EFFECT
EFFECT SIZE: 6

This chorus effect produces a 3-phase modulated waveform.

Page 1



Page 2



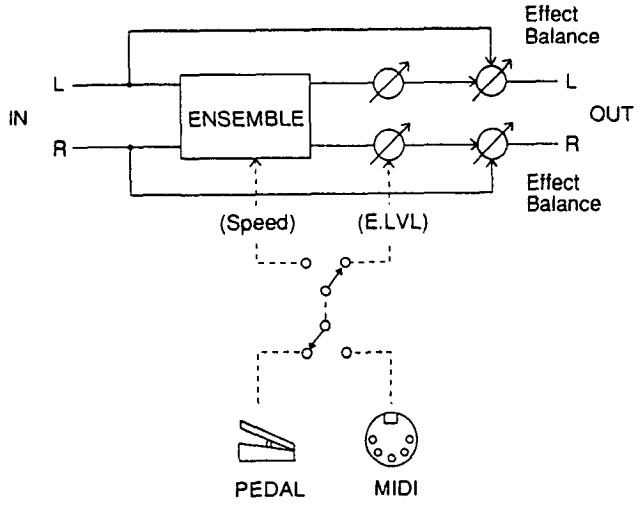
Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
C	Left Delay	0~50.0 [mSec]	Sets the left channel delay time.
D	Right Delay	0~50.0 [mSec]	Sets the right channel delay time.
E	LFO Wave form	SIN, TRI	Specifies the modulation LFO wave form.
F	LFO Speed	0.02~10.0 [Hz]	Sets the modulation speed.
G	Depth	0~100[%]	Sets the ensemble effect depth.
☆ H	Effect Balance (Dry/Wet Mix)	0~100[%]	Sets the volume balance between the direct sound and the effect sound. The higher the value, the louder the effect sound.

Page 2

Button	Parameter Name	Parameter Range	Function
B	Dynamic Parameter	E.LVL, Speed	Specifies the dynamic parameter.
D	Dynamic Source	OFF, PEDAL, MIDI	Specifies the dynamic source.
F	Dynamic Amount	- 100 ~ +100	Sets the depth and direction of the dynamic modulation effect.

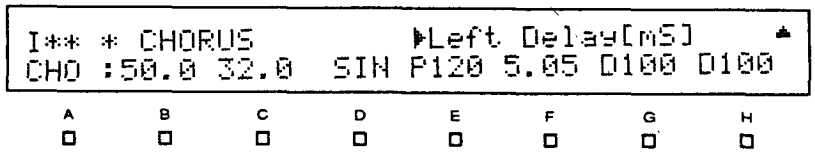


EFFECT NO.22 CHORUS/FLANGER [CHO,FLN]

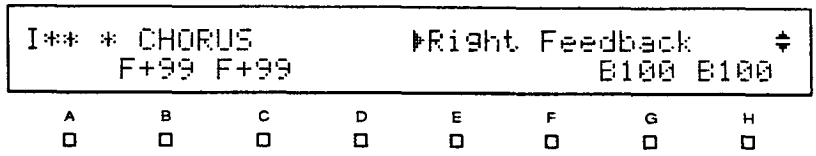
EFFECT SIZE: 7
EFFECT TYPE: STEREO EFFECT

This stereo effect combines the two modulation blocks, chorus and flanger. The position of the modulation waveform can be minutely set using the LFO phase parameter.

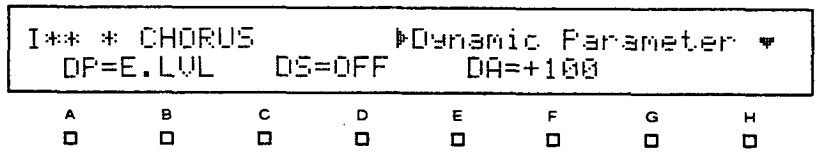
Page 1



Page 2



Page 3



Variations:

CHORUS [CHO] ..... Stereo-type chorus
FLANGER [FLN] ..... Stereo-type flanger

Parameter Box:

Page 1

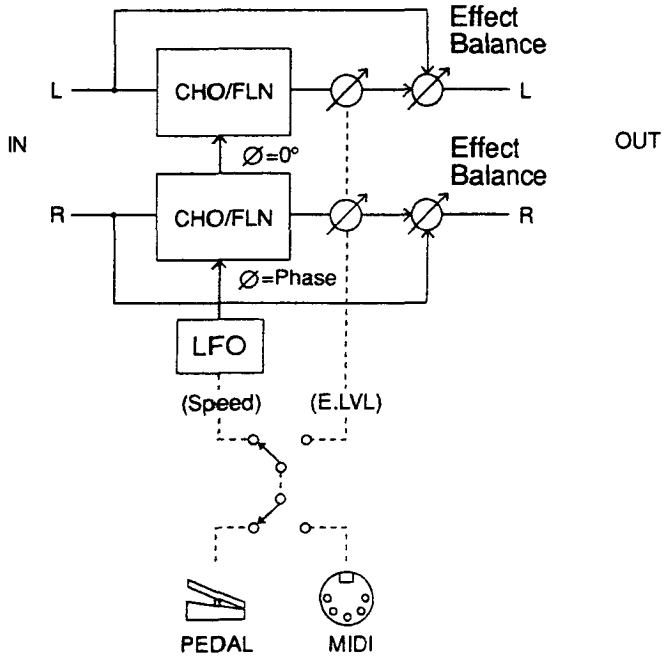
Button	Parameter Name	Parameter Range	Function
B	Left Delay	0~50.0 [mSec]	Sets the length of time between the direct sound from the left channel and modulation.
C	Right Delay	0~50.0 [mSec]	Sets the length of time between the direct sound from the right channel and modulation.
D	LFO Waveform	SIN, TRI	Specifies the modulation LFO waveform.
E	LFO Phase	0~350 [degree]	Sets the difference between the left and right phases in the modulation waveform.
F	LFO Speed	0.02~10.0[Hz]	Sets the modulation speed.
G	Left Depth	0~100	Sets the left channel modulation depth.
H	Right Depth	0~100	Sets the right channel modulation depth.

Page 2

Button	Parameter Name	Parameter Range	Function
B	Left Feedback	- 99 ~ +99	Sets the amount of feedback from the left channel.
C	Right Feedback	- 99 ~ +99	Sets the amount of feedback from the right channel.
☆ G	Left Balance (Dry/Wet Mix)	0~100[%]	Sets the balance between the direct sound of the left channel and effect sound. The higher the value, the louder the effect sound.
☆ H	Right Balance (Dry/Wet Mix)	0~100[%]	Sets the balance between the direct sound of the right channel and the effect sound. The higher the value, the louder the effect sound.

Page 3

Button	Parameter Name	Parameter Range	Function
B	Dynamic Parameter	E.LVL, Speed	Specifies the parameter for dynamic modulation.
D	Dynamic Source	OFF, PEDAL, MIDI	Specifies the source for dynamic modulation.
F	Dynamic Amount	- 100 ~ +100	Sets the depth and direction of the dynamic modulation effect.

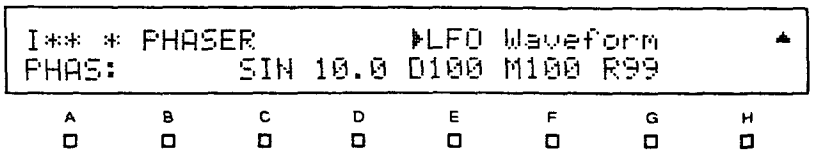


EFFECT NO.23 PHASER [PHAS]

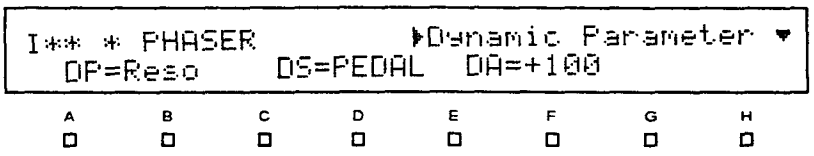
EFFECT SIZE: 7
EFFECT TYPE: MONO EFFECT

An undulating effect created by modulating the phases of the input signals.

Page 1



Page 2



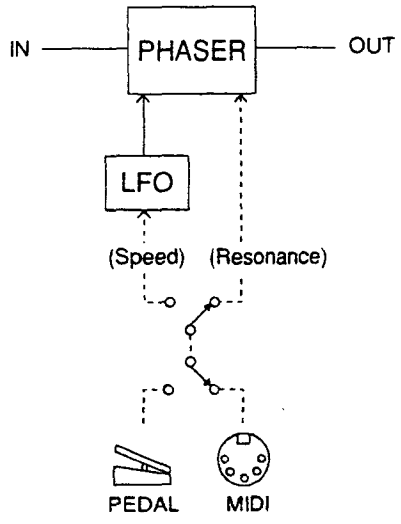
Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
C	LFO Waveform	SIN,TRI	Specifies the modulation waveform.
☆ D	LFO Speed	0.02~10.0 [Hz]	Sets the modulation speed.
E	Depth	0~100[%]	Sets the phaser effect depth.
F	Manual	0~100	Sets the central frequency for the phaser effect.
G	Resonance	0~99	Gives resonance to the sound. The higher the value, the stronger the effect.

Page 2

Button	Parameter Name	Parameter Range	Function
B	Dynamic Parameter	Reso, Speed	Sets the parameter for dynamic modulation.
D	Dynamic Source	OFF, PEDAL, MIDI	Specifies the source for dynamic modulation.
F	Dynamic Amount	- 100 ~ +100	Sets the depth and direction of the dynamic modulation effect.

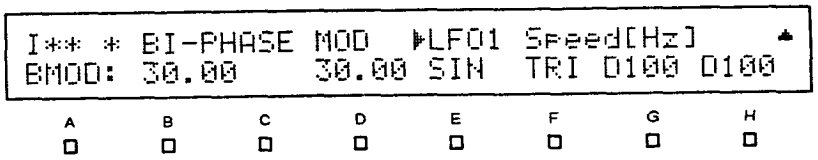


EFFECT NO.24 BI-PHASE MODULATION [BMOD]

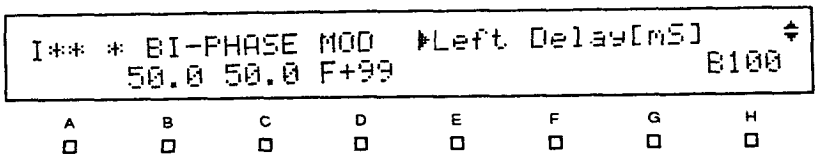
EFFECT SIZE: 7
EFFECT TYPE: STEREO EFFECT

This chorus effect modulates sound using waveforms combining two completely different types of LFO.

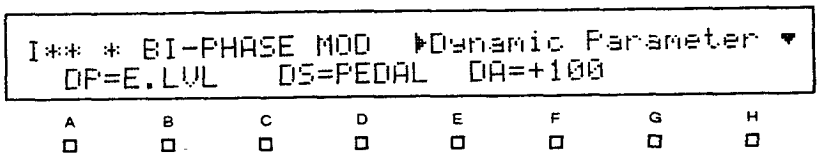
Page 1



Page 2



Page 3



Parameter Box:

Page 1

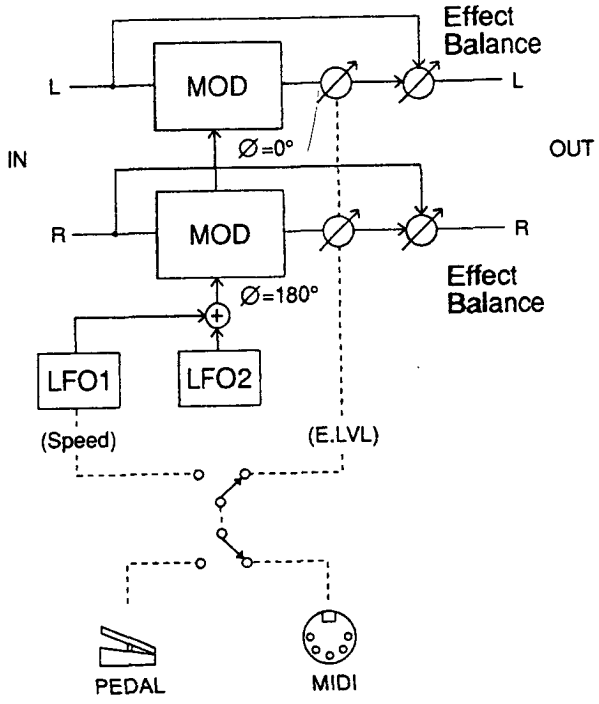
Button	Parameter Name	Parameter Range	Function
B	LFO1 Speed	0~30 [Hz]	Sets the speed of LFO 1.
D	LFO2 Speed	0~30 [Hz]	Sets the speed of LFO 2.
E	LFO1 Waveform	SIN, TRI	Sets the waveform of LFO 1.
F	LFO2 Waveform	SIN, TRI	Sets the waveform of LFO 2.
G	LFO1 Depth	0~100[%]	Sets the amplitude of LFO 1.
H	LFO2 Depth	0~100[%]	Sets the amplitude of LFO 2.

Page 2

Button	Parameter Name	Parameter Range	Function
B	Left Delay	0~50.0 [mSec]	Sets the left channel delay time.
C	Right Delay	0~50.0 [mSec]	Sets the right channel delay time.
D	Feedback Gain	- 99 ~ +99	Sets the amount of feedback.
☆ H	Effect Balance (Dry/Wet Mix)	0~100[%]	Sets the volume balance between the direct sound and the effect sound. The higher the value, the louder the effect sound.

Page 3

Button	Parameter Name	Parameter Range	Function
B	Dynamic Parameter	E.LVL, Speed 1	Specifies the parameter for dynamic modulation.
D	Dynamic Source	OFF, PEDAL, MIDI	Specifies the source for dynamic modulation.
F	Dynamic Amount	- 100 ~ +100	Sets the depth and direction of the dynamic modulation effect.

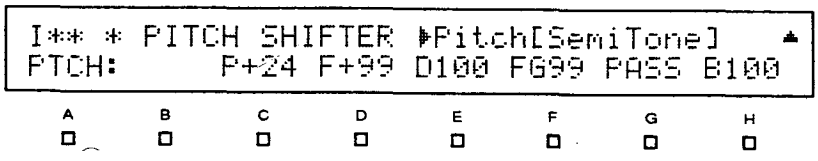

Effect
Balance
L
MOD
L
IN
Ø=0°
OUT
R
MOD
R
Effect
Balance
Ø=180°
LFO1
LFO2
(Speed)
(E.LVL)
PEDAL
MIDI

EFFECT NO.25 PITCH SHIFTER 2 [PTCH]

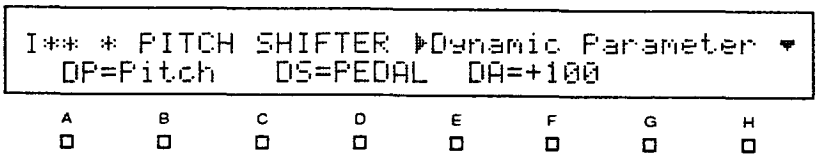
EFFECT SIZE: 6
EFFECT TYPE: MONO EFFECT

This effect allows two octave pitch shifting. The color of the pitch shifted sound can be changed using the high cut parameter.

Page 1



Page 2



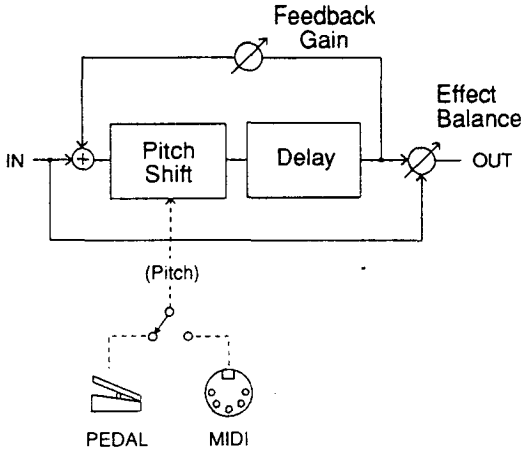
Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
☆ C	Pitch	- 24 ~ +24 [semitones]	Sets the pitch level (in semitones).
D	Fine	- 99 ~ +99 [cents]	Sets the pitch shift level (in cents).
E	Delay Time	0~600 [mSec]	Sets the delay time.
F	Feedback Gain	0~99	Sets the amount of feedback.
G	High Cut	300~PASS [Hz]	Sets the high cut filter for pitch shift sound.
H	Effect Balance	0~100[%]	Sets the volume balance between the direct sound and the effect sound. The higher the value, the louder the effect sound.

Page 2

Button	Parameter Name	Parameter Range	Function
B	Dynamic Parameter	Pitch	Specifies the parameter for dynamic modulation. Only PITCH can be specified.
D	Dynamic Source	OFF, PEDAL, MIDI	Specifies the source for dynamic modulation.
F	Dynamic Amount	- 100 ~ +100	Sets the depth and direction of the dynamic modulation effect.

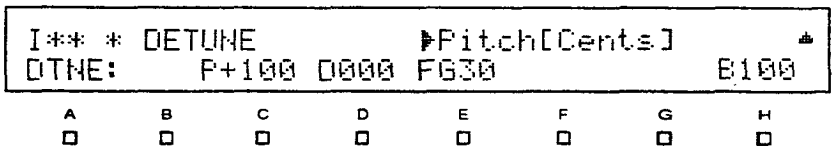


EFFECT NO.26 DETUNE [DTNE]

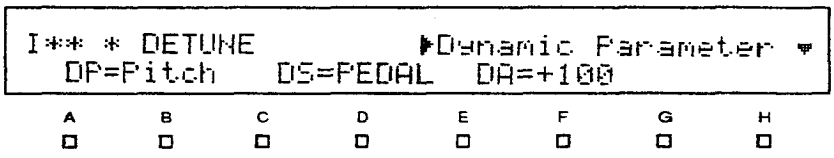
EFFECT SIZE: 7
EFFECT TYPE: MONO EFFECT

This effect allows 100-cent pitch shifting. In addition, the pitch can be controlled using a pedal or MIDI.

Page 1



Page 2



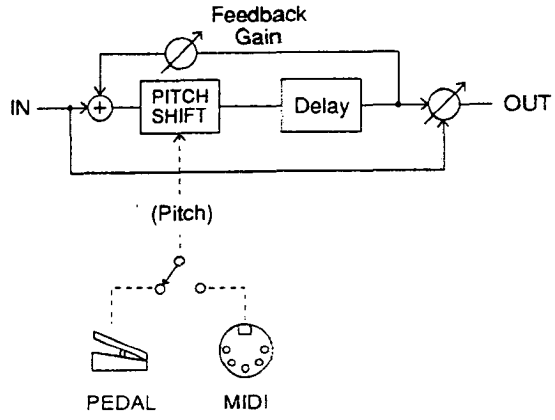
Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
☆ C	Pitch	- 100 ~ +100 [Cents]	Sets the pitch shift level (in Cents).
D	Delay Time	0~600 [mSec]	Sets the delay time.
E	Feedback Gain	0~99	Sets the amount of feedback.
H	Effect Balance	0~100[%]	Sets the volume balance between the direct sound and the effect sound. Effect Balance (Dry/Wet Mix). The higher the value, the louder the effect sound.

Page 2

Button	Parameter Name	Parameter Range	Function
B	Dynamic Parameter	Pitch	Specifies the parameter for dynamic modulation. Only PITCH can be specified.
D	Dynamic Source	OFF, PEDAL, MIDI	Specifies the source for dynamic modulation.
F	Dynamic Amount	- 100 ~ +100	Sets the depth and direction of the dynamic modulation effect.

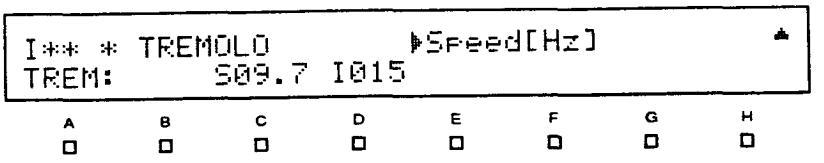


EFFECT NO.27 TREMOLO [TREM]

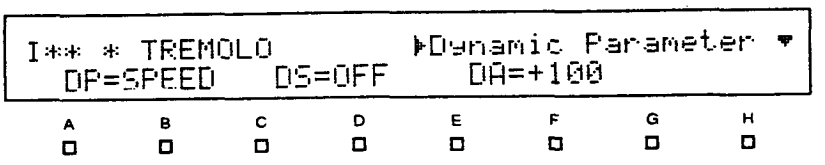
EFFECT SUZE: 8
EFFECT TYPE: MONO EFFECT

This effect periodically modulates the volume of the signal using LFO.

Page 1



Page 2



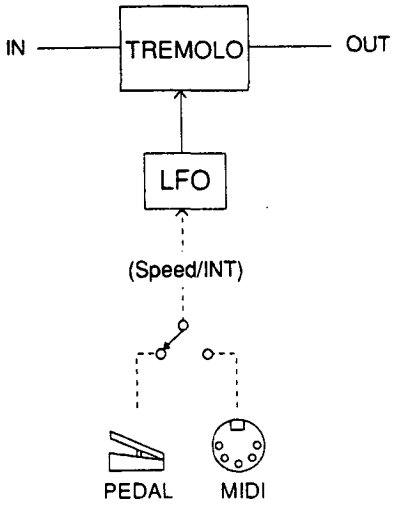
Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
☆ C	Speed	0.5~20.0 [Hz]	Sets the modulation speed.
D	Intensity	0~100	Sets the depth of the tremolo effect.

Page 2

Button	Parameter Name	Parameter Range	Function
B	Dynamic Parameter	Speed, INT	Specifies the dynamic parameter.
D	Dynamic Source	OFF, PEDAL, MIDI	Specifies the dynamic source.
F	Dynamic Amount	- 100 ~ +100	Sets the depth and direction of the dynamic modulation effect.

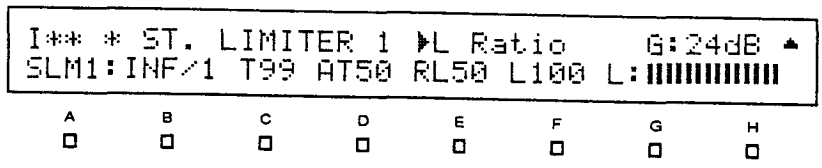


EFFECT NO.28 STEREO LIMITER [SLM1-3]

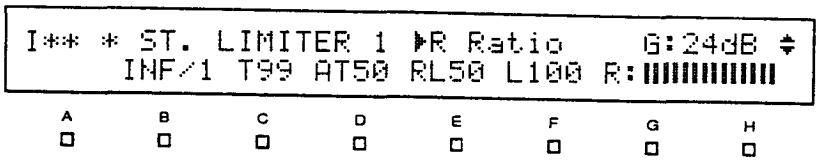
EFFECT SIZE: 5
EFFECT TYPE: MONO EFFECT

This effect is a two-channel limiter. Select one of the three variations for link 1, link 2, or dual. By specifying the corresponding parameters, the limiter for suppressing peak sound and the compressor for sustaining sound can both be used. The gain reduction at each channel is metered on the LCD display during editing.

Page 1



Page 2



Variations:

STEREO LIMITER 1 [SLM1] ..... Gain is controlled by combined signals from the left and right channels. (Link)
. The parameter specification is the same for both channel.
STEREO LIMITER 2 [SLM2] ..... Gain is controlled by combined signals from the left and right channels.
. Parameters for the two channels can be specified independently.
STEREO LIMITER 3 [SLM3] ..... This is a dual mono limiter.

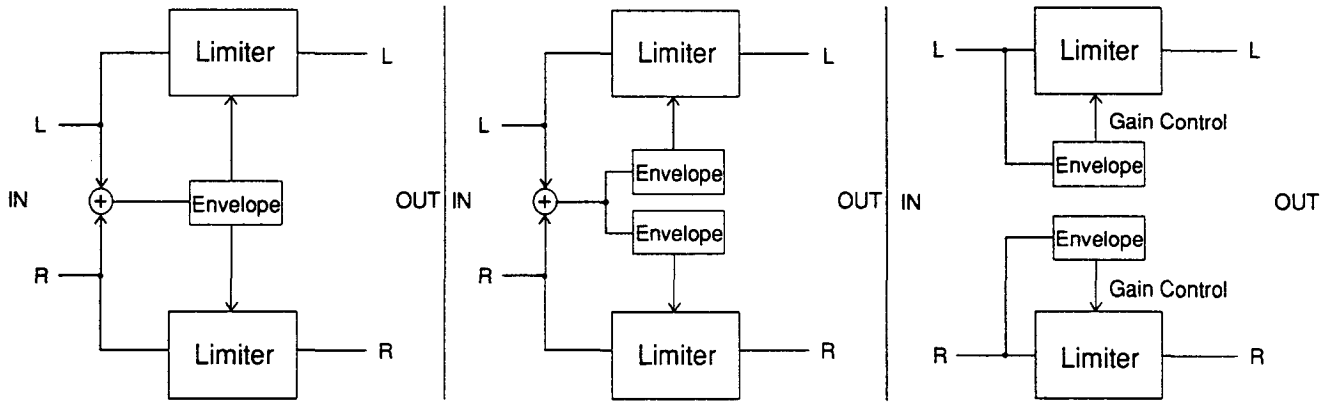
Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
☆ B	Left Ratio	1/1~INF/1	Sets the compression ration for signals higher than the threshold level.
C	Left Threshold	0~99	Sets the threshold level for the limiter effect.
D	Left Attack	0~80	Sets the attack time. The higher the value, the slower the attack.
E	Left Release	0~80	Sets the release time. The higher the value, the longer the release.
F	Left Level	0~100	Sets the output level.
G H	Left Gain Reduction	▮▮▮▮▮▮▮	LCD meter showing gain reduction (Left gain reduction).

Page 2

Button	Parameter Name	Parameter Range	Function
☆ B	Right Ratio	1/1~INF/1	Sets the compression ratio for signals higher than the threshold level.
C	Right Threshold	0~99	Sets the threshold level for the limiter effect.
D	Right Attack	0~80	Sets the attack time. The higher the value, the slower the attack.
E	Right Release	0~80	Sets the release time. The higher the value, the longer the release.
F	Right Level	0~100	Sets the output level.
G H	Right Gain Reduction	▮▮▮▮▮▮▮	LCD meter showing gain reduction (Right gain reduction).



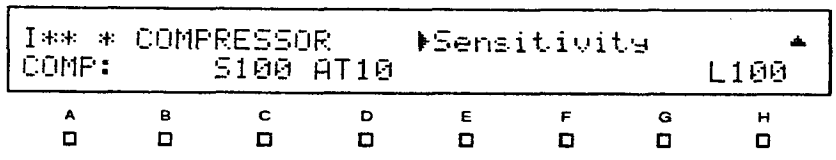
〔SLM1〕 〔SLM2〕 〔SLM3〕

EFFECT NO.29 COMPRESSOR [COMP]

EFFECT SIZE: 7
EFFECT TYPE: MONO EFFECT

This is a mono compressor.

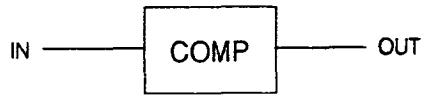
Page 1



Parameter Box:

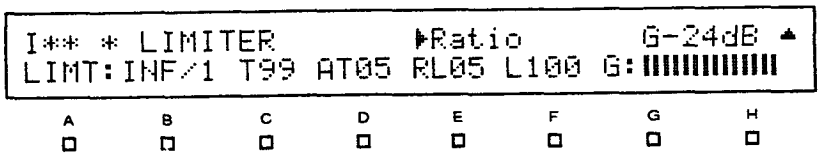
Page 1

Button	Parameter Name	Parameter Range	Function
☆ C	Sensitivity	0~100	Sets the amount of compression. At the '0' setting, the sound is unchanged. At the 100 setting the compression effect is maximized.
D	Attack	0~20	Sets the speed of the attack. The higher the value, the faster the attack.
H	Output Level	0~100	Sets the output level of the effect sound.

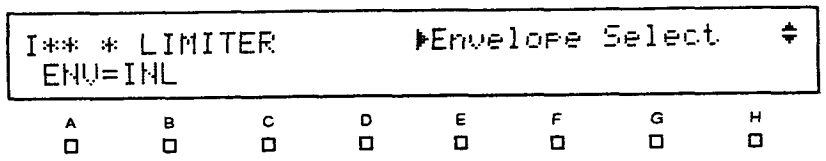


This effect compresses input sound signals. By setting the corresponding parameters, the limiter for suppressing peak sound and the compressor for sustaining sound can both be used. Gain reduction is metered on the LCD display during editing.

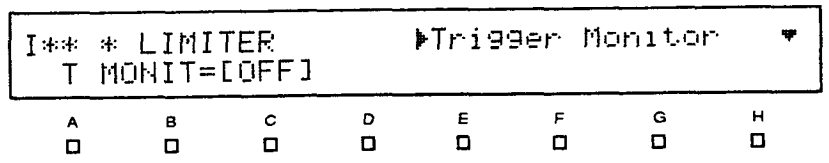
Page 1



Page 2



Page 3



Parameters shown in brackets [ ] can be changed by pressing the double function edit control beneath them.

Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
☆ B	Ratio	1~INF/1	Sets the compression ratio of signals higher than the threshold level.
C	Threshold	0~99	Sets the threshold level for the limiter effect.
D	Attack	0~80	Sets the attack time. The higher the value, the slower the attack.
E	Release	0~80	Sets the release time. The higher the value, the longer the release.
F	Output Level	0~100	Sets the output level.
G H	Gain Reduction	▮▮▮▮▮▮▮	LCD meter showing gain reduction.

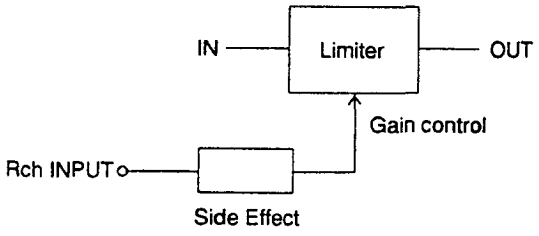
Page 2

Button	Parameter Name	Parameter Range	Function
B	Envelope Select	INL, INR, INM, PreL, PreR, PreM, K-IN, Side	Specifies which signal is selected as the input envelope. (See page 00.) K-IN can only be set in the KEY-IN chain. Side can only be set in chains with side effects (effects for envelope signals.

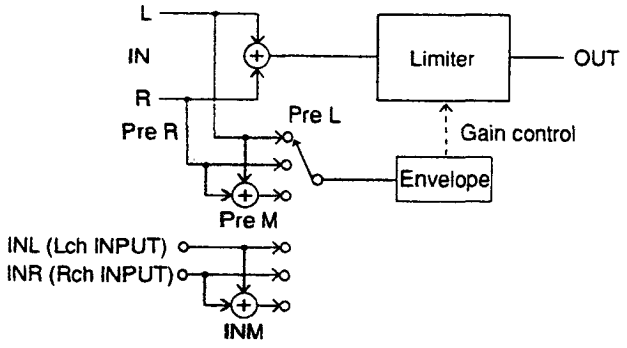
Page 3

Button	Parameter Name	Parameter Range	Function
C	Trigger Monitor	[OFF], [ON]	This parameter can only be set in the KEY-IN chain or chains with side effects. When ON is specified, the KEY-IN signals or side effect signals are output regardless of their parameter settings.

For Key-In chain



Other than Key-In chain



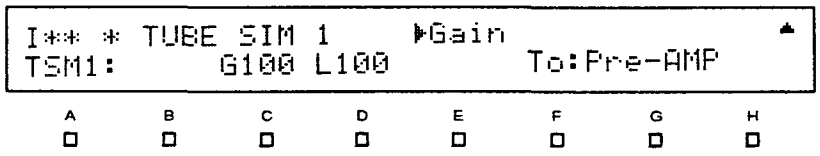
EFFECT NO.31 TUBE SIMULATION [TSM1-2]

EFFECT SIZE: 7
EFFECT TYPE: MONO EFFECT

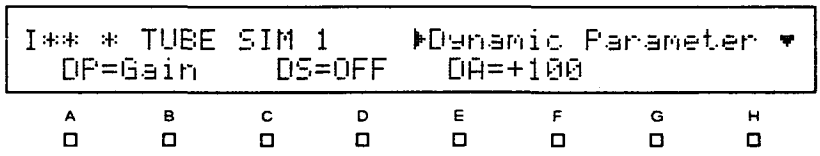
This effect simulates tube amplifier distortion.

Note: When the A1 is connected to a power amplifier, set the OUTPUT LEVEL switch on the rear panel to +4.

Page 1



Page 2



Variations:

TUBE SIMULATION 1 [TSM1] . . . . . Lead sound distortion
TUBE SIMULATION 2 [TSM2] . . . . . Rhythm sound distortion

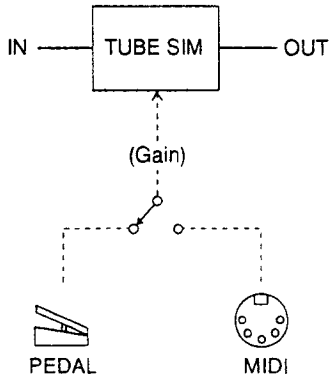
Parameter Box

Page 1

Button	Parameter Name	Parameter Range	Function
☆ C	Gain	0~100	Sets the amount of distortion.
D	Level	0~100	Sets the effect output level.
G	Application	To Pre-Amp, To Power-Amp, To Line Out	Specifies the external device to which the output of the A1 is connected.

Page 2

Button	Parameter Name	Parameter Range	Function
B	Dynamic Parameter	Gain	Specifies the dynamic parameter. Only GAIN can be specified.
D	Dynamic Source	OFF, PEDAL, MIDI	Specifies the dynamic source.
F	Dynamic Amount	- 100 ~ +100	Sets the depth and direction of the dynamic modulation effect.



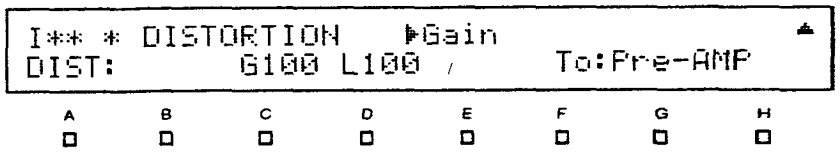
EFFECT NO.32 DISTORTION [DIST]

EFFECT SIZE: 7
EFFECT TYPE: MONO EFFECT

A clean and sustainable distortion effect.

Note: When the A1 is connected to a power amplifier, set the OUTPUT LEVEL switch on the rear panel to +4.

Page 1



Parameter Box:

Page 1

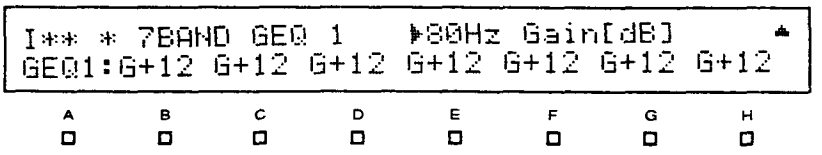
Button	Parameter Name	Parameter Range	Function
☆ C	Gain	0~100	Sets the amount of distortion.
D	Level	0~100	Sets the effect output level.
G	Application	To Pre-Amp, To Power-Amp, To Line Out	Specifies the external device to which the output of the A1 is connected.

EFFECT NO.33 7 BAND GRAPHIC EQUALIZER [GEQ1-4]

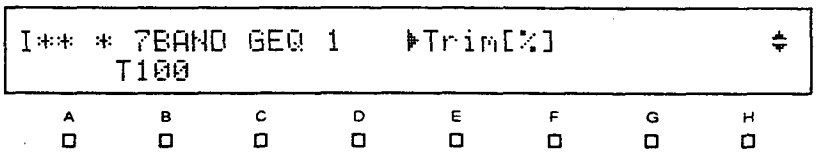
EFFECT SIZE: 3
EFFECT TYPE: MONO EFFECT

This effect is a seven-band graphic equalizer. You can choose between four equalizing frequency variations (see VARIATIONS chart below). Variation 3 [GEQ 3] is set in a low frequency range and Variation 4 [GEQ 4] is set in a high frequency range. A fourteen-band graphic equalizer can be created by forming a series chain.
This setting may cause the output to be clipped (distorted). If this happens, reduce TRIM to a level below clipping.

Page 1



Page 2



Variations:

	B	C	D	E	F	G	H
GRAPHIC EQ 1 [GEQ1]	Fc=80Hz	220Hz	500Hz	1KHz	2.5KHz	6.3KHz	16KHz
GRAPHIC EQ 2 [GEQ2]	Fc=63Hz	160Hz	400Hz	1KHz	2.5KHz	6.3KHz	16KHz
GRAPHIC EQ 3 [GEQ3]	Fc=40Hz	63Hz	100Hz	160Hz	250Hz	400Hz	630Hz
GRAPHIC EQ 4 [GEQ4]	Fc=1KHz	1.5KHz	2.5KHz	4KHz	6.3KHz	10KHz	16KHz

Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
B	--Hz Gain (Band 1 gain)	- 15 ~ + 15 [dB]	Sets the degree of amplification for band 1.
C	--Hz Gain (Band 2 gain)	- 15 ~ + 15 [dB]	Sets the degree of amplification for band 2.
D	--Hz Gain (Band 3 gain)	- 15 ~ + 15 [dB]	Sets the degree of amplification for band 3.
E	--Hz Gain (Band 4 gain)	- 15 ~ + 15 [dB]	Sets the degree of amplification for band 4.
F	--Hz Gain (Band 5 gain)	- 15 ~ + 15 [dB]	Sets the degree of amplification for band 5.
G	--Hz Gain (Band 6 gain)	- 15 ~ + 15 [dB]	Sets the degree of amplification for band 6.
H	--Hz Gain (Band 7 gain)	- 15 ~ + 15 [dB]	Sets the degree of amplification for band 7.

Page 2

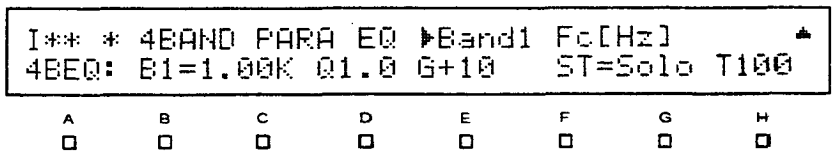
Button	Parameter Name	Parameter Range	Function
B	Trim	0~100[%]	Sets the input level of the equalizer.

EFFECT NO.34 4 BAND PARAMETRIC EQUALIZER [4BEQ]

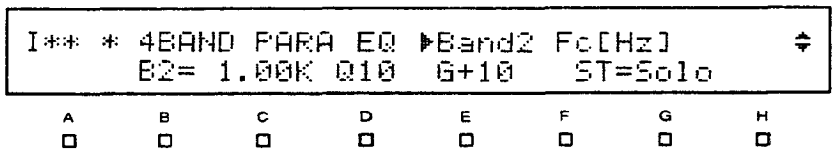
EFFECT SIZE: 6
EFFECT TYPE: MONO EFFECT

This effect is a four-band parametric equalizer.
Band setting may cause the output to be clipped (distorted). If this happens, reduce TRIM to a level below clipping.

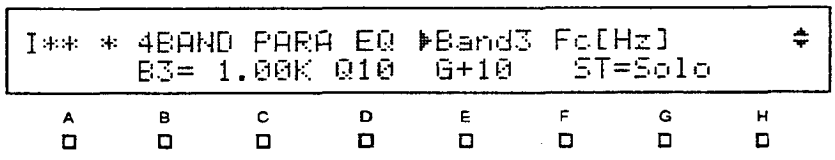
Page 1



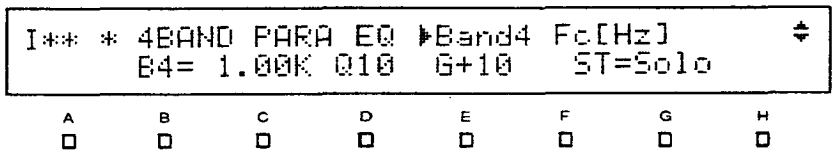
Page 2



Page 3



Page 4



Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
C	BAND1 Fc	Fc 20~1.00K [Hz]	Sets the center frequency for band 1.
D	Band Width (Q)	Q0.5~Q10	Sets the width of band 1. The higher the value, the narrower the band width.
E	Gain	- 18 ~ + 18 [dB]	Sets the degree of amplification for band 1.
G	Band Status	ON, Solo, Mute	Sets the band status (see page 60).
H	Trim	0~100 [%]	Sets the input level of the equalizer.

Page 2

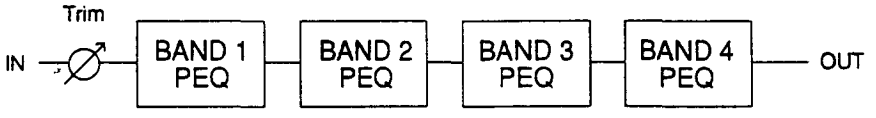
Button	Parameter Name	Parameter Range	Function
C	BAND2 Fc	50~5.00K [Hz]	Sets the center frequency for band 2.
D	Bandwidth (Q)	Q0.5~Q10	Sets the width of band 2. The higher the value, the narrower the band width.
E	Gain	- 18 ~ + 18 [dB]	Sets the degree of amplification for band 2.
G	Band Status	ON, Solo, Mute	Specifies the band status.

Page 3

Button	Parameter Name	Parameter Range	Function
C	BAND3 Fc	100K~10.0K [Hz]	Sets the center frequency for band 3.
D	Bandwidth (Q)	Q0.5~Q10	Sets the width of band 3. The higher the value, the narrower the band width.
E	Gain	- 18 ~ + 18 [dB]	Sets the degree of amplification for band 3.
G	Band Status	ON, Solo, Mute	Specifies the band status.

Page 4

Button	Parameter Name	Parameter Range	Function
C	BAND4 Fc	200~20.0K [Hz]	Sets the center frequency for band 4.
D	Bandwidth (Q)	Q0.5~Q10	Sets the width of band 4. The higher the value, the narrower the band width.
E	Gain	- 18 ~ + 18 [dB]	Sets the degree of amplification for band 4.
G	Band Status	ON, Solo, Mute	Specifies the band status.

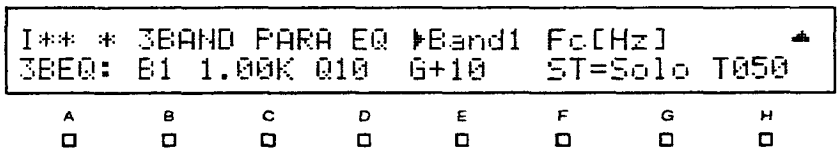


EFFECT NO.35 3 BAND PARAMETRIC EQUALIZER [3BEQ]

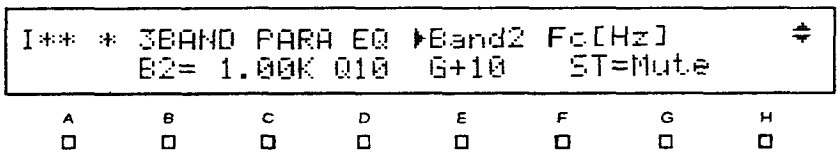
EFFECT SIZE: 7
EFFECT TYPE: MONO EFFECT

This effect is a three-band parametric equalizer.
Band setting may cause the output to be clipped (distorted). If this happens, reduce TRIM to a level below clipping.

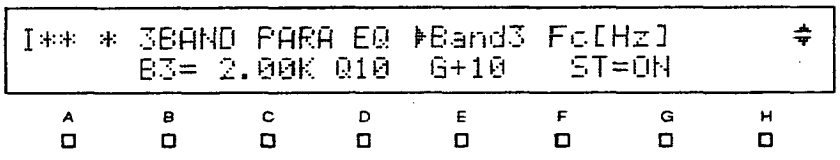
Page 1



Page 2



Page 3



Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
C	BAND1 Fc	20~1.00K [Hz]	Sets the center frequency for band 1.
D	Bandwidth (Q)	Q0.5~Q10	Sets the width of band 1. The higher the value, the narrower the band width.
E	Gain	- 18 ~ + 18 [dB]	Sets the degree of amplification for band 1.
G	Band Status	ON, Solo, Mute	Specifies the band status. (See below.)
H	Trim	0~100 [%]	Sets the input level of the equalizer.

Page 2

Button	Parameter Name	Parameter Range	Function
C	BAND2 Fc	250~6.00K [Hz]	Sets the center frequency for band 2.
D	Bandwidth (Q)	Q0.5~Q10	Sets the width of band 2. The higher this value is, the narrower the band width.
E	Gain	- 18 ~ + 18 [dB]	Sets the degree of amplification for band 2.
G	Band Status	ON, Solo, Mute	Specifies the band status.

Page 3

Button	Parameter Name	Parameter Range	Function
C	BAND3 Fc	1.50K~20.0K [Hz]	Sets the center frequency for band 3.
D	Band Width (Q)	Q0.5~Q10	Sets the width of band 3. The higher this value is, the narrower the band width.
E	Gain	- 18 ~ + 18 [dB]	Sets the degree of amplification for band 3.
G	Band Status	ON, Solo, Mute	Specifies the band status.

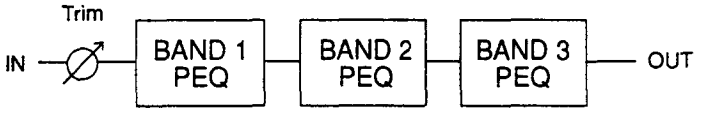
Band Status

The parameters for each band of the three-band equalizer occupy a separate page. By using BAND STATUS(G), you can address the following functions:

ON: All three bands operate as selected.

Solo: Only the band on the page currently displayed operates.

Mute: Gain is set to 0 only for the band on the page currently displayed.

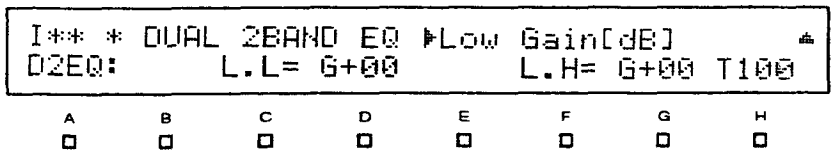


EFFECT NO.36 DUAL 2 BAND EQUALIZER [2BEQ]

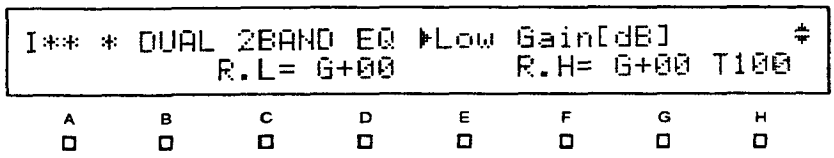
EFFECT SIZE: 7
EFFECT TYPE: STEREO EFFECT

This effect is a stereo two-band shelving-type equalizer.

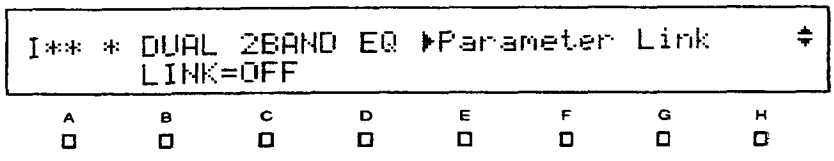
Page 1



Page 2



Page 3



Parameter Box:

Page 1

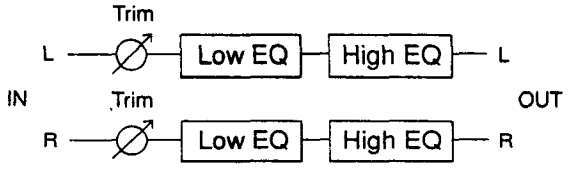
Button	Parameter Name	Parameter Range	Function
D	L-Low Gain	- 18 ~ + 18[dB]	Sets the low gain at the left channel.
G	L-High Gain	- 18 ~ + 18[dB]	Sets the high gain at the left channel.
H	L-Trim	0~100[%]	Sets the input level to the equalizer at the left channel.

Page 2

Button	Parameter Name	Parameter Range	Function
D	R-Low Gain	- 18 ~ + 18[dB]	Sets the low gain at the right channel.
G	R-High Gain	- 18 ~ + 18[dB]	Sets the high gain at the right channel.
H	R-Trim	0~100[%]	Sets the input level to the equalizer at the right channel.

Page 3

Button	Parameter Name	Parameter Range	Function
C	Parameter Link	OFF,ON	When the parameter is ON, the same parameters can be set for both channels by setting either the right or left channel.

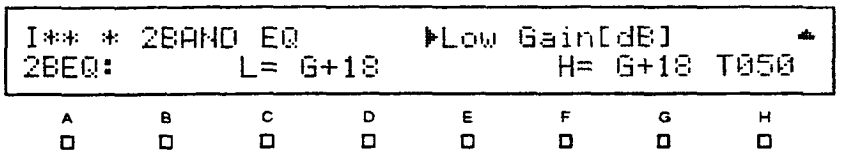


EFFECT NO.37 2 BAND EQUALIZER [2BEQ]

EFFECT SIZE: 8
EFFECT TYPE: MONO EFFECT

This effect is a stereo two-band shelving-type equalizer.

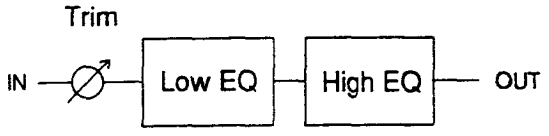
Page 1



Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
D	Low Gain	- 18 ~ + 18 [dB]	Sets the low gain.
G	High Gain	- 18 ~ + 18 [dB]	Sets the high gain.
H	Trim	0~100[%]	Sets the input level of the equalizer.

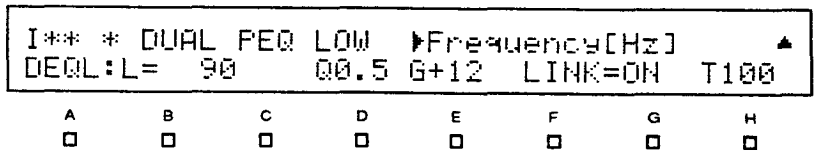


EFFECT NO.38 DUAL 1 BAND PARAMETRIC EQ[DEQL, DEQM, DEQH]

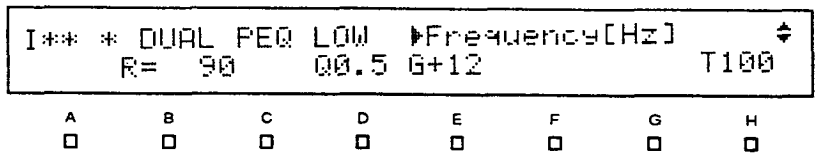
EFFECT SIZE: 8
EFFECT TYPE: STEREO EFFECT

This effect is stereo one-band peaking-type parametric equalizer. Select the center frequency range you require from the variations LOW, MID and HIGH.
Band setting may cause the output to be clipped (distorted). If this happens, reduce TRIM to a level below clipping.

Page 1



Page 2



Variations:

PARA EQ-Low [PEQL] ..... Fc=20Hz to 2.00KHz
PARA EQ-MID [PEQM] ..... Fc=250Hz to 6.00KHz
PARA EQ-HIGH [PEQH] ..... Fc=1.50KHz to 20.0KHz

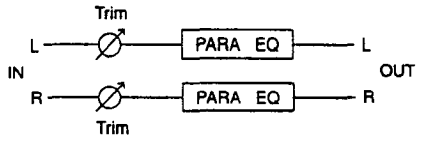
Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
C	L-Frequency	DEQL:20~2.00K DEQM:250~6.0K DEQH:1.50~20.0K [Hz]	Sets the center frequency for the left channel.
D	L-Band Width (Q)	Q0.5~10	Sets the band width. The higher the value, the narrower the band width.
E	L-Gain	- 18 ~ + 18 [dB]	Sets the degree of amplification for the selected band at the left channel.
G	Parameter Link	OFF, ON	When the parameter is ON, the same parameters can be set for both channels by setting either the right or left channel.
H	L-Trim	0~100 [%]	Sets the input level of the equalizer for the left channel.

Page 2

Button	Parameter Name	Parameter Range	Function
C	R-Frequency	DEQL:20~2.00K DEQM:250~6.0K DEQH:1.50~20.0K [Hz]	Sets the center frequency for the right channel.
D	R-Band Width (Q)	Q0.5~10	Sets the band width. The higher the value, the narrower the band width.
E	R-Gain	- 18 ~ + 18 [dB]	Sets the degree of amplification for the selected band at the right channel.
H	R-Trim	0~100 [%]	Sets the input level of the equalizer for the right channel.

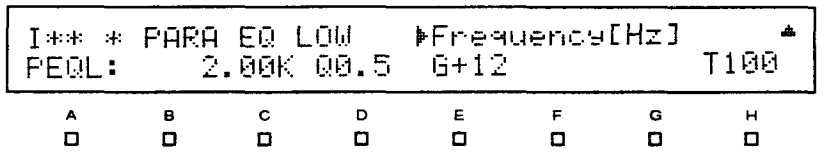


EFFECT NO.39 1 BAND PARAMETRIC EQUALIZER [PEQL, PEQM, PEQH]

EFFECT SIZE: SIZE 9
EFFECT TYPE: MONO EFFECT

This effect is one-band peaking-type parametric equalizer. Select the central frequency range you require from the variations LOW, MID and HIGH (see VARIATIONS chart below).
Band setting may cause the output to be clipped (distorted). If this happens, reduce Trim to a level below clipping.

Page 1



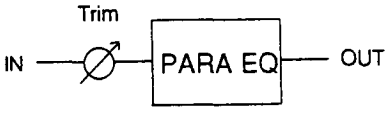
Variations:

PARA EQ-Low [PEQL] . . . . . Fc=20Hz to 2.00KHz
PARA EQ-MID [PEQM] . . . . . Fc=250Hz to 6.00KHz
PARA EQ-HIGH [PEQH] . . . . . Fc=1.50KHz to 20.0KHz

Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
C	Frequency	PEQL: 20~2.00K PEQM:250~6.0K PEQH:1.5~20.0K[Hz]	Sets the center frequency.
D	Bandwidth (Q)	Q0.5~10	Sets the band width. The higher the value, the narrower the band width.
E	Gain	- 18 ~ + 18 [dB]	Sets the degree of amplification.
H	Trim	0~100[%]	Sets the input level of the equalizer.

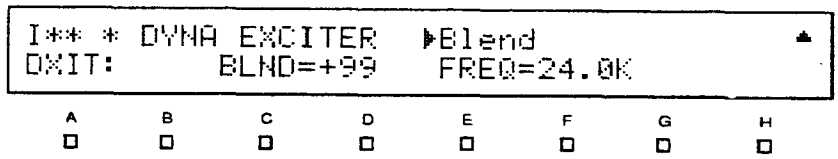


EFFECT NO.40 DYNAMIC EXCITER [DXIT]

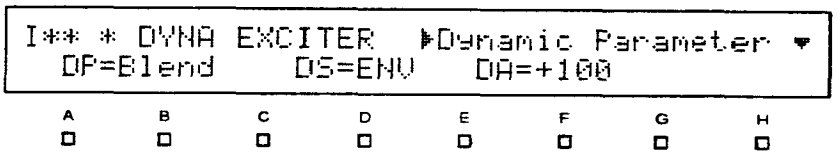
EFFECT SIZE: 8
EFFECT TYPE: MONO EFFECT

The dynamic exciter has the same effect on sound as the exciter, with the added feature of dynamic control.

Page 1



Page 2



Parameter Box:

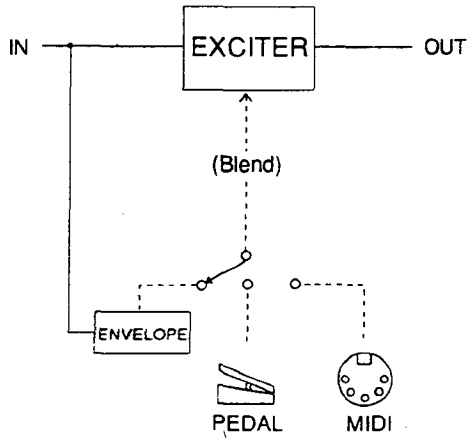
Page 1

Button	Parameter Name	Parameter Range	Function
☆ D	Blend	- 99 ~ +99	Sets the depth of the exciter effect. The higher the absolute value, the louder the effect sound.
F	Frequency	1.26K~24.0K [Hz]	Sets the center frequency of the exciter effect.

Page 2

Button	Parameter Name	Parameter Range	Function
B	Dynamic Parameter	Blend	Specifies the parameter for dynamic modulation. No parameter other than BLEND can be specified.
D	Dynamic Source	OFF, ENV, PEDAL, MIDI	Specifies the dynamic source.
F	Dynamic Amount	- 100 ~ +100	Sets the depth and direction of the dynamic modulation effect. When the ENV is specified as the dynamic source, the range becomes 0 ~ + 100.

When ENV is specified as the dynamic source, the dynamic amount becomes sensitive to envelope signals, and adjusts the depth of the dynamic effect.

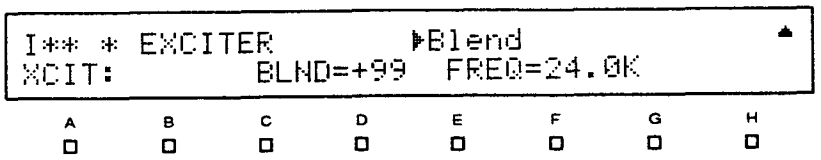


EFFECT NO. 41 EXCITER [XCIT]

EFFECT SIZE: 9
EFFECT TYPE: MONO EFFECT

This effect gives sound more power and sharper outlines.

Page 1



Parameter Box:

Page 1

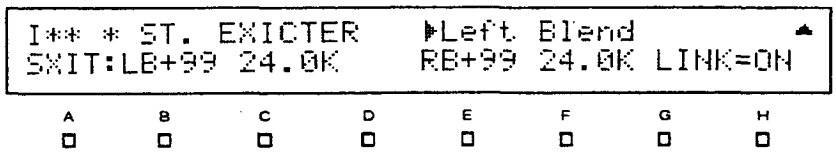
Button	Parameter Name	Parameter Range	Function
☆ D	Blend	- 99 ~ +99	Sets the depth of the exciter effect. The higher the absolute value, the louder the effect sound.
F	Frequency	1.26K~24.0K [Hz]	Sets the center frequency of the exciter effect.

EFFECT NO. 42 STEREO EXCITER [SXIT]

EFFECT SIZE: SIZE 9
EFFECT TYPE: STEREO EFFECT

This stereo exciter gives sound more power and a clearer outline.

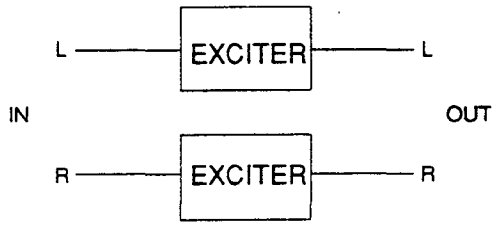
Page 1



Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
☆ B	Left Blend	- 99 ~ +99	Sets the depth of the left channel exciter effect. The higher the absolute value, the louder the effect sound.
C	Left Frequency	1.26K~24.0K [KHz]	Sets the center frequency of the left channel exciter effect.
☆ E	Right Blend	- 99 ~ +99	Sets the depth of the right channel exciter effect. The higher the absolute value, the louder the effect sound.
F	Right Frequency	1.26K~24.0K [KHz]	Sets the center frequency of the right channel exciter effect.
H	Parameter Link	OFF, ON	When this parameter is ON, the same parameters can be set for both channels by setting either the right or left channel.

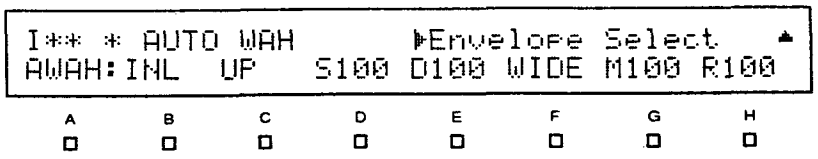


EFFECT NO.43 AUTO WAH [AWAH]

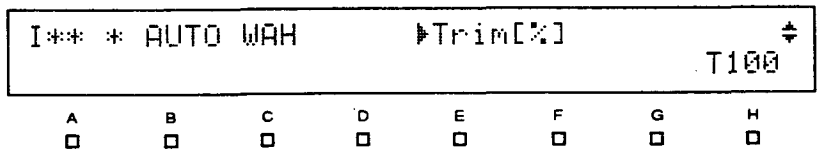
EFFECT SIZE: 6
EFFECT TYPE: MONO EFFECT

This is a dynamic filter effect.

Page 1



Page 2



Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
B	Envelope Select	INL, INR	Specifies which signal is selected as the envelope signal for this effect.
C	Sweep direction	UP, DOWN	Specifies the direction of the auto wah filter movement (sweep).
☆ D	Envelope Sense	0~100	Sets the sensitivity of the auto wah. A deep effect can be obtained by increasing this value even when the envelope is small.
E	Sweep Depth	0~100	Sets the depth of the filter movement for the auto wah.
F	Sweep Shape	NARW, WIDE	Specifies the shape of the filter movement for the auto wah.
G	Manual	0~100	Sets the filter's center frequency at the minimum envelope size.
H	Resonance	0~100	Gives resonance to the tone color. The higher the value is, the more resonant the tone.

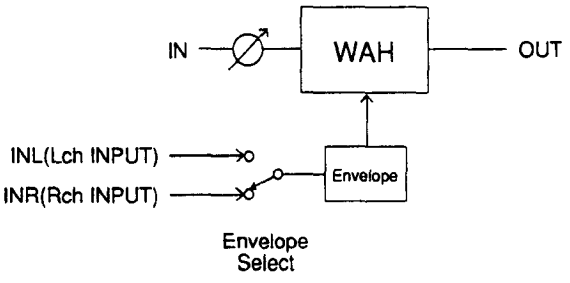
Page 2

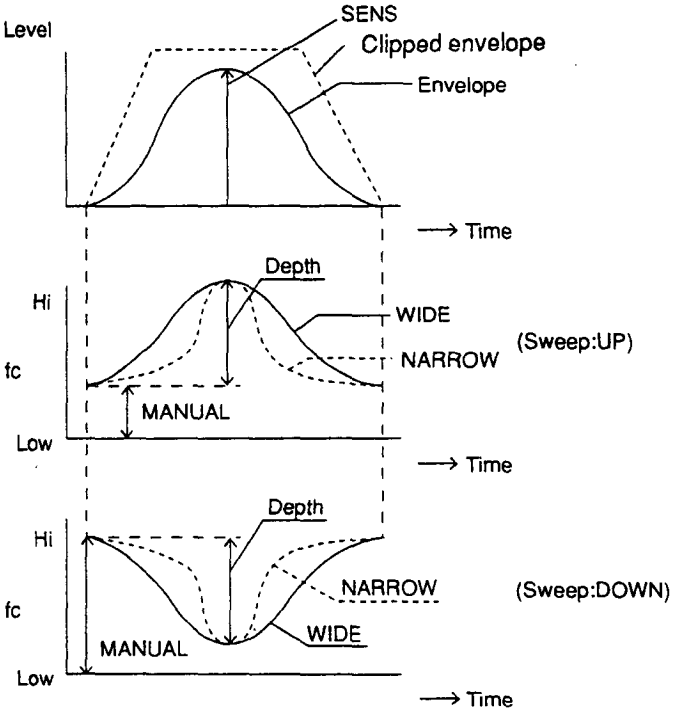
Button	Parameter Name	Parameter Range	Function
H	Trim	0~100 [%]	Sets the input level of the auto wah.

The Envelope Sense and Sweep Depth parameters

1. The Envelope Sense parameter deepens the effect of the auto wah by amplifying envelope signals. If the set value is too large, the envelope is clipped as in the diagram below, during which the filter's sweep does not function. Set Envelope Sense at a level at which the envelope is not clipped.

2. The Sweep Depth parameter determines by what percentage the sweep range specified in 1 above is variable.



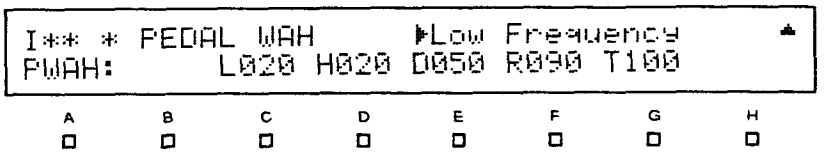


EFFECT NO. 44 PEDAL WAH [PWAH]

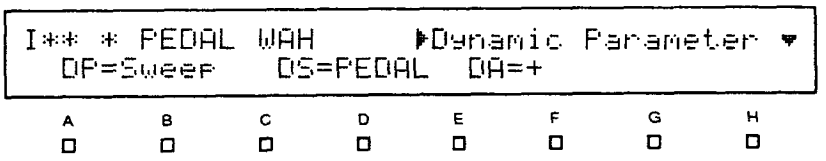
EFFECT SIZE: 8
EFFECT TYPE: MONO EFFECT

As the name implies, this effect provides a range of Wah sounds through volume pedal operations. Setting the dynamic source also allows you to produce a Wah by MIDI data instead of the volume pedal.

Page 1



Page 2



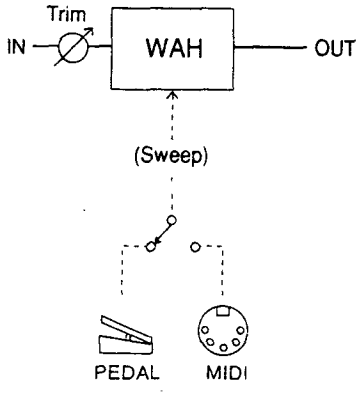
Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
C	Low Frequency	0~100	Sets the lower limit of the wah's center frequency.
D	High Frequency	0~100	Sets the upper limit of the wah's center frequency.
E	Default	0~100	Sets the default center frequency.
☆ F	Resonance	0~100	Gives resonance to the tone color. The higher the value, the more resonant the tone.
G	Trim	0~100 [100%]	Sets the input gain of the pedal Wah effect.

Page 2

Button	Parameter Name	Parameter Range	Function
B	Dynamic Parameter	Sweep	Specifies the dynamic parameter. Only Sweep can be specified.
D	Dynamic source	PEDAL, MIDI	Specifies the dynamic source.
F	Dynamic Amount	−, +	Sets the dynamic amount. The center frequency becomes high when the pedal is depressed at +, and low when depressed at -

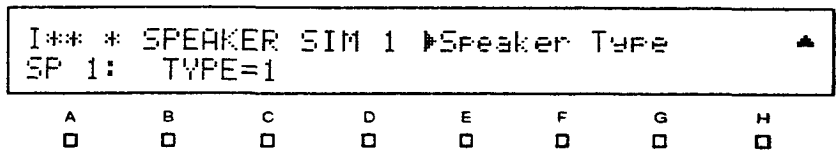


EFFECT NO.45 SPEAKER SIMULATION 1 [SP1]

EFFECT SIZE: SIZE 2
EFFECT TYPE: MONO EFFECT

This effect simulates the sonic characteristics of a speaker. You can select from three types of simulation.

Page 1



Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
☆ C	Speaker Type	1~3	Selects the speaker type.

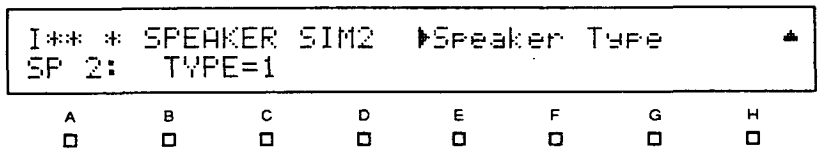
When this effect is used with the TUBE SIMULATION effect, set Pre Amp or Power Amp as the Application parameter.

EFFECT NO.46 SPEAKER SIMULATION 2 [SP2]

EFFECT SIZE: SIZE 4
EFFECT TYPE: MONO EFFECT

This effect simulates the sonic characteristics of a speaker such as in a guitar amplifier.

Page 1



Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
☆ C	Speaker Type	1, 2	Selects the speaker type.

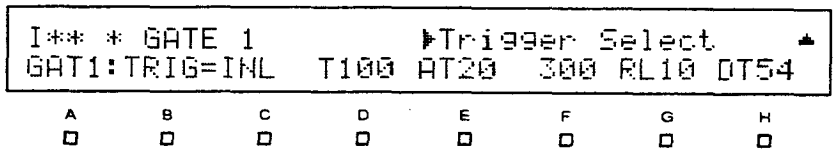
When this effect is used with the TUBE SIMULATION effect, set Pre Amp or Power Amp as the Application parameter.

EFFECT NO.47 GATE 1 (HOLD TYPE 1)[GAT1]

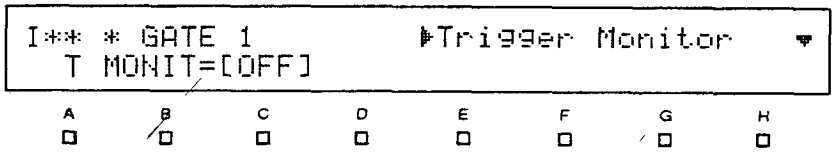
EFFECT SIZE: 5
EFFECT TYPE: STEREO EFFECT

This gate opens when input signals (trigger signals) exceed the threshold level, and closes after a specified period of time after the trigger signals go below the threshold level.

Page 1



Page 2



Parameters shown in brackets [ ] can be changed by pressing the double function edit control beneath them.

Parameter Box:

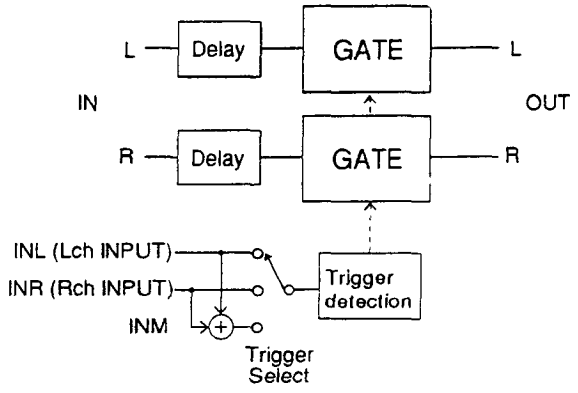
Page 1

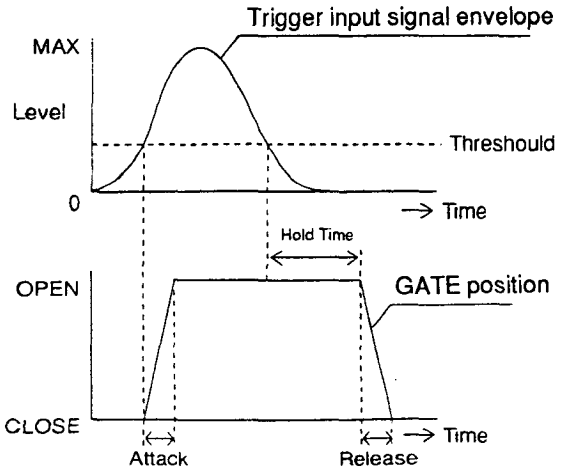
Button	Parameter Name	Parameter Range	Function
C	Trigger Select	INL, INR, K-IN, Side	Specifies which signal is selected as the trigger input (see page 6.)
☆ D	Threshold	0~100	Sets the threshold level for the gate. The higher the value, the higher the threshold value.
E	Attack	0~20	Sets the length of time from the moment the gate begins to open until it is completely open.
F	Hold Time	0~1000 [mSec]	Sets the length of time the gate is open.
G	Release	0~20	Sets the length of time from the moment the gate begins to close until the output signals have damped.
H	Delay Time	0~50 [mSec]	Sets the delay time for the direct sound. The higher the value, the earlier the gate seems to open before the signal level reaches the threshold level.

Page 2

Button	Parameter Name	Parameter Range	Function
C	Trigger Monitor	[OFF],[ON]	This parameter can only be set in the KEY-IN chain or chains with side effects. When ON is specified, the trigger input signal can be monitored regardless of their parameter settings.

Note: When setting HOLD TIME (parameter page 1 F above), mute the trigger signals.



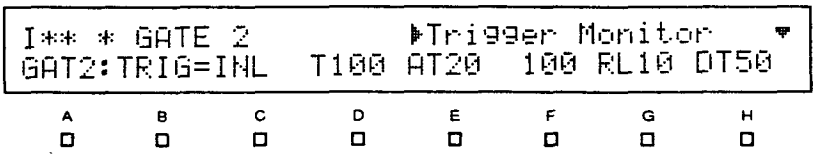


EFFECT NO.48 GATE2 HOLD TYPE2 [GAT2]

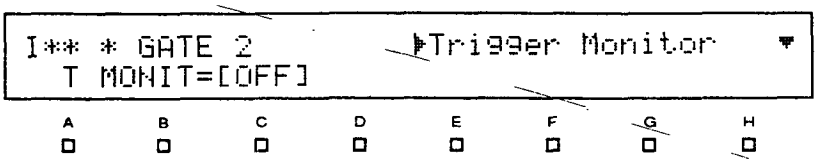
EFFECT SIZE: 5
EFFECT TYPE: STEREO EFFECT

This gate open when input signals (trigger signals) exceed the threshold level, and closes after a specified period of time regardless of the continuing level of the trigger signal. Once the gate closes, the gate will not open until the trigger signal goes below the threshold level and exceeds it again.

Page 1



Page 2



Parameters shown in brackets [ ] can be changed by pressing the double function edit control beneath them.

Parameter Box:

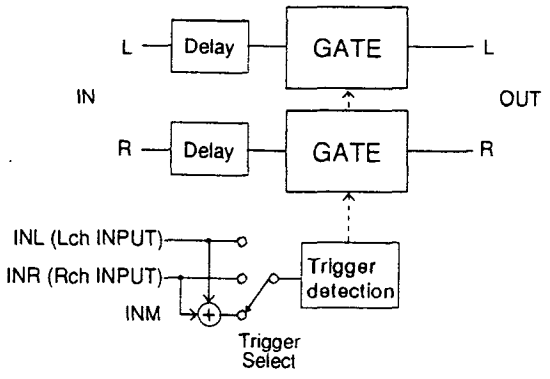
Page 1

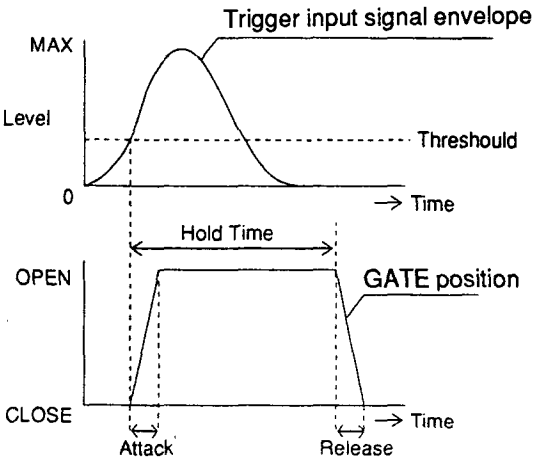
Button	Parameter Name	Parameter Range	Function
C	Trigger Select	INL, INR, INM, K-IN, Side	Specifies which signal is selected as the trigger input. K-IN can only be set in the KEY-IN chain. Side can only be set in chains with side effects (effects for envelope signals).
☆ D	Threshold	0~100	Sets the threshold level for the gate. The higher the value is, the greater the threshold level.
E	Attack	0~20	Sets the length of time from the moment the gate begins to open until it is completely open.
F	Hold Time	0~1000 [mSec]	Sets the length of time during which the gate is open.
G	Release	0~20	Sets the length of time from the moment the gate begins to close until output signals have damped.
H	Delay Time	0~50 [mSec]	Sets the delay time for the direct sound. The higher the value, the earlier the gate seems to open before the signal level reaches the threshold level.

Page 2

Button	Parameter Name	Parameter Range	Function
C	Trigger Monitor	[OFF], [ON]	This parameter can only be set in the KEY-IN chain or chains with side effects. When ON is specified, the trigger input signal can be monitored regardless of their parameter settings.

Note:When setting HOLD TIME (parameter page 1 F above), mute the trigger signals.



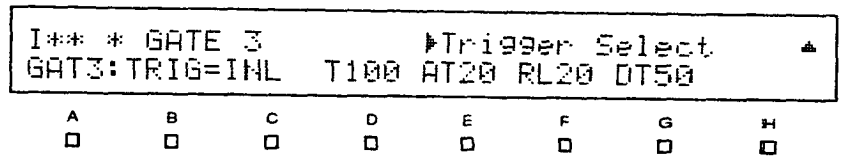


EFFECT NO.49 GATE3 [GAT3]

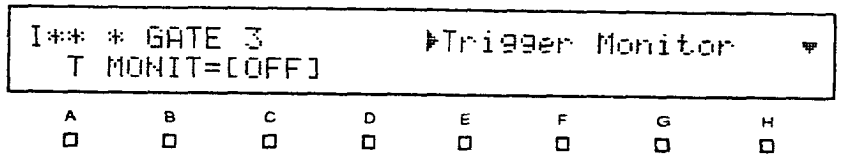
EFFECT SIZE: 7
EFFECT TYPE: MONO EFFECT

This gate closes when input signals go below a specified level. You can create a gated reverb effect by combining this effect with a reverb effect.

Page 1



Page 2



Parameters shown in brackets [ ] can be changed by pressing the double function edit control beneath them.

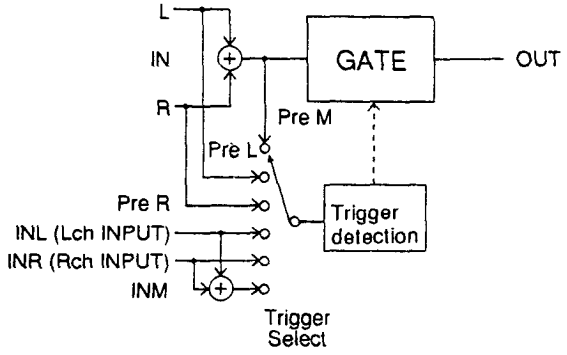
Parameter Box:

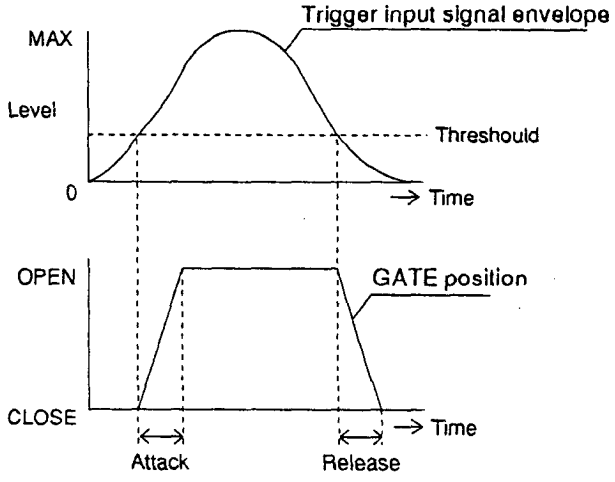
Page 1

Button	Parameter Name	Parameter Range	Function
C	Trigger Select	INL, INR, INM, PreL, PreR	Specifies which signal is selected as the trigger input. K-IN can only be set in the KEY-IN chain. Side can only be set in chains with side effects (effects for envelope signals).
☆ D	Threshold	0~100	Sets the threshold level for the gate. The higher the value, the higher the threshold level.
E	Attack	0~20	Sets the length of time from the moment the gate begins to open until it is completely open.
F	Release	0~20	Sets the length of time from the moment the gate begins to close until the output signals have damped.
G	Delay Time	0~50 [mSec]	Sets the delay time for the direct sound. The higher this value, the earlier the gate seems to open before the signal level reaches the threshold level.

Page 2

button	Parameter Name	Parameter Range	Function
C	Trigger Monitor	[OFF], [ON]	This parameter can only be set in the KEY-IN chain or chains with side effects. When ON is specified, the trigger input signal can be monitored regardless of their parameter settings.



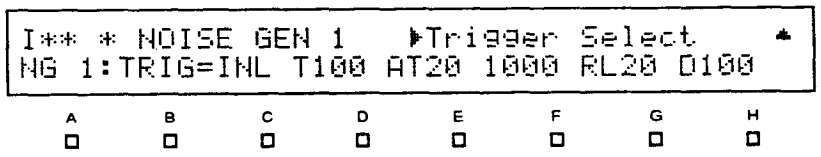


EFFECT NO.50 NOISE GENERATOR [NG 1-2]

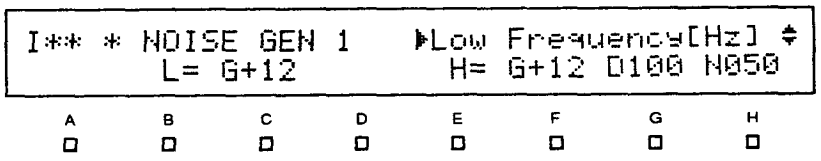
EFFECT SIZE: 4
EFFECT TYPE: MONO OUT EFFECT

This effect combines a gate effect with the A1's noise generator. The noise generator has a built-in two-band equalizer. Select the type of gate you require from the variations.

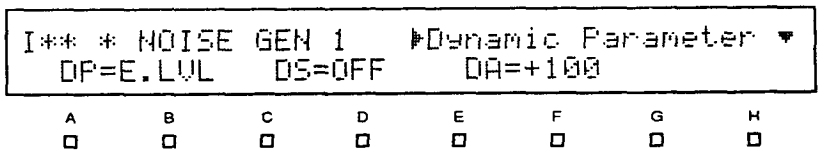
Page 1



Page 2



Page 3



Variations:

NOISE GENERATOR2 [NG 2] .... This effect combines a GATE1 effect with the noise generator.
NOISE GENERATOR3 [NG 3] .... This effect combines a GATE2 effect with the noise generator.

Parameters:

Page 1

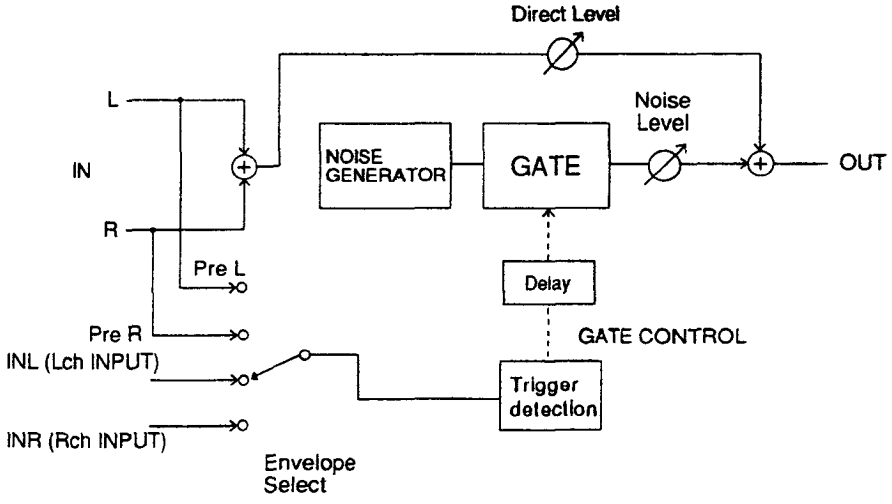
Button	Parameter Name	Parameter Range	Function
C	Trigger Select	INL, INR, PreL, PreR	Specifies which signal is selected as the trigger input.(see page 6)
☆ D	Threshold	0-100	Sets the gate's threshold level. The higher this value is, the higher the threshold level.
E	Attack	0-20	Sets the length of time from the moment the gate begins to open until it is completely open.
F	Hold Time	0-1000 [mSec]	Sets the length of time the gate is open.
G	Release	0-20	Sets the length of time from the moment the gate begins to close until it is completely closed.
H	Delay Time	0-100 [msec]	Sets the noise delay time. This is the length of time between the moment the trigger signal level reaches the threshold level and the moment the gate begins to open.

Page 2

Button	Parameter Name	Parameter Range	Function
C	Low Gain	- 12 ~ +12 [dB]	Sets the low gain.
F	High Gain	- 12 ~ +12 [dB]	Sets the high gain.
G	Direct Level	0-100	Sets the level of direct sound.
H	Noise Level	0-100	Sets the noise level.

Page 3

Button	Parameter Name	Parameter Range	Function
B	Dynamic Parameter	E.LVL	Specifies the parameter for dynamic modulation. No parameter other then E.LVL can be specified.
D	Dynamic Source	OFF, PEDAL, MIDI	Specifies the dynamic source.
F	Dynamic Amount	- 100 ~ +100	Sets the depth and direction of the dynamic modulation effect.

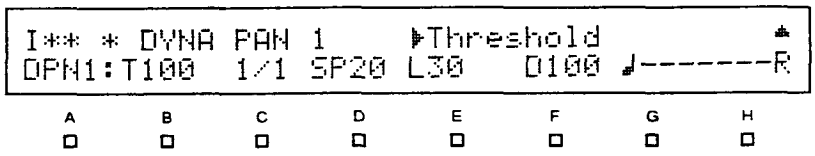


EFFECT NO. 51 DYNA-PAN [DPN1-2] EFFECT SIZE: 3

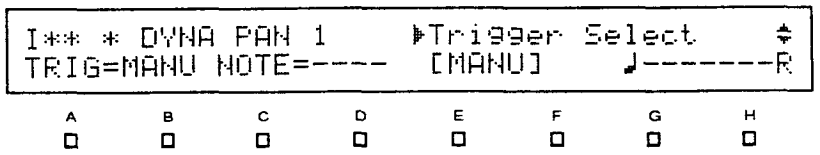
EFFECT TYPE: DYNA PAN 1: MONO IN(LCH)/STEREO OUT EFFECT, DYNA PAN2: STEREO EFFECT

This effect pans the source sound according to the number of trigger impulses received. For example, panning can be performed every time four trigger signals are input.

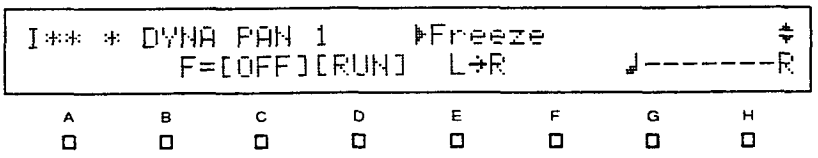
Page 1



Page 2



Page 3



Parameters shown in brackets [ ] can be changed by pressing the double function edit control beneath them.

Variations:

Dyna Pan 1 . . . . . Only the left input source is used.
Dyna Pan 2 . . . . . Stereo input source with panning movement between the left and right output.

Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
☆ B	Threshold	0~100	Sets the threshold level for the trigger input. The higher the value, the higher the threshold level.
C	Count	1/1, 2/2~8/8, 2/1, 3/1~7/1	Specifies how many triggered pans are performed: e.g. 2/2 pans every two trigger pulses; 3/1 pans three times to the left and once to the right for four trigger pulses.
D	Pan Speed	0~30	Sets the panning speed.
E	Offset	L50~C00-R50	Sets the L/R stereo field limits for panning.
F	Depth	0~100[%]	Sets the panning depth. The higher the value, the wider the Left/Right pan effect.
G H	Image Display	L---♩--R	Display the left channel input signal panning movement.

Page 2

Button	Parameter Name	Parameter Range	Function
B	Trigger Select	INL, INR, INM, PreL, PreR, PreM, CLK, Velo, MANU	Specifies which signal is selected as the trigger input. (see page 6)
D	Note Length	1/1, 1/2, 1/4, 1/8. 1/16, 1/2T, 1/4T, 1/8T	Specifies which beat should be counted as one trigger when the MIDI clock is selected as the trigger. e.g. 1/4 = Quarter note 1/8T = Eighth note triplet [Selectable only when CLK(MIDI Clock) is specified as the Trigger Select parameter.]
E	Manual Trigger	[MANU]	This key can be used as a manual trigger when MANU is specified as the Trigger Select parameter.
G H	Image Display	L---▟---R	Display the left channel input signal panning movement.

Page 3

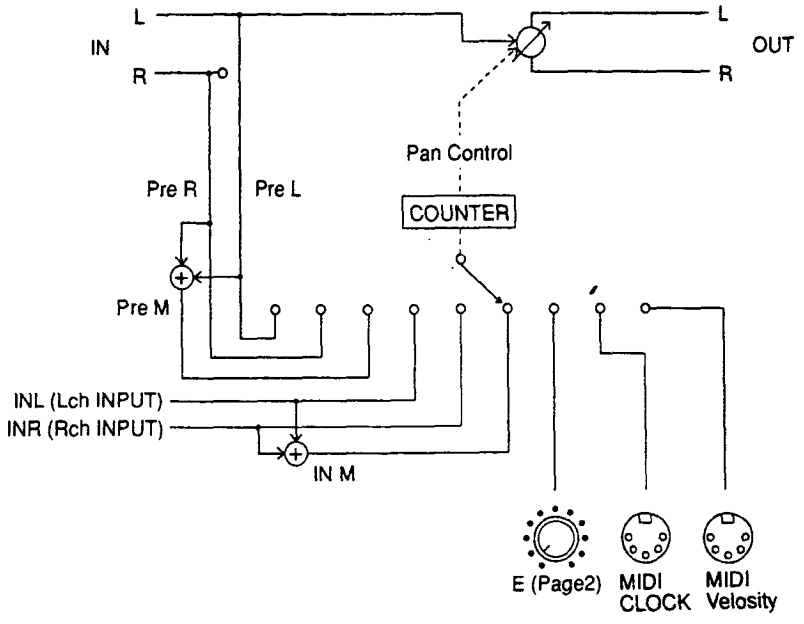
Button	Parameter Name	Parameter Range	Function
C	Freeze	OFF, ON	Trigger does not function when this parameter is set to ON. The current position is maintained.
D	Count Reset SW	[RUN],[RES]	RUN (operation) is normally specified. When RESET is specified, the trigger count is reset to 0. Specify RUN to start counting again.
E	Polarity	L → R R ← L	Selects the starting point (Left or Right) for the panning action.
G H	Image Display	L---▟--R	Display the left channel input signal panning movement.

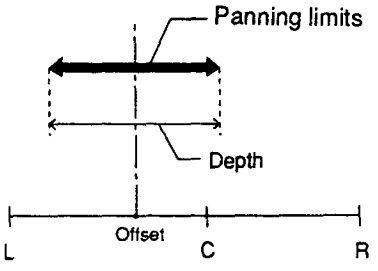
Specifying the Trigger Select parameter:

- When INL, INR, PreL or PreR is specified, the corresponding sound signal is selected as the trigger.
- When CLK is specified, the MIDI clock is selected as the trigger.
- When VELO is specified, MIDI velocity data are selected as the trigger. In this case, Threshold acts as the threshold for the velocity.
- When MANU is specified, the key corresponding to C on Page2 or the foot switch (KORG PS-2, etc) connected to the SWITCH 1 (or 2) input jack on the A1's rear panel can be used as the trigger. (Set DYNPAN TRG to FT.SW in utility mode when a foot switch is used.)

Note: When setting CLK (parameter page 2 B), DYNAPAN functions after receiving the start message from the MIDI sequencer. If receiving the stop message, DYNAPAN does not function.

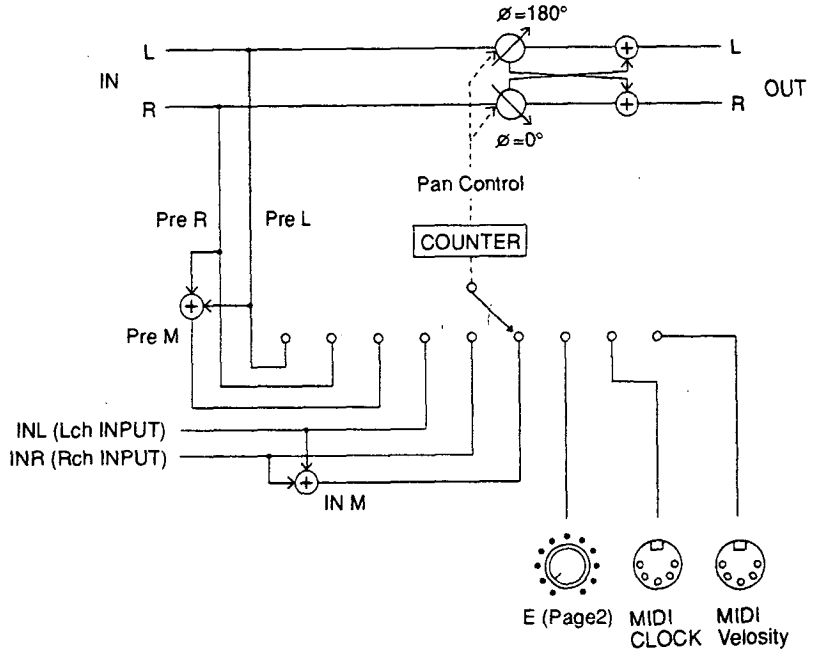
DYNAPAN 1





Normal Position

DYNAPAN 2



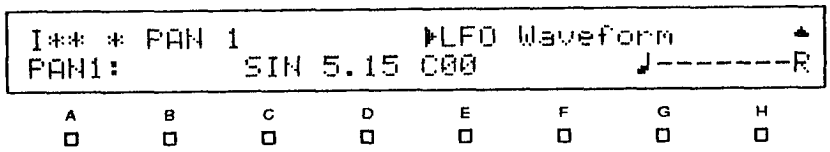
EFFECT NO. 52 PAN[PAN 1-2]

EFFECT SIZE:8

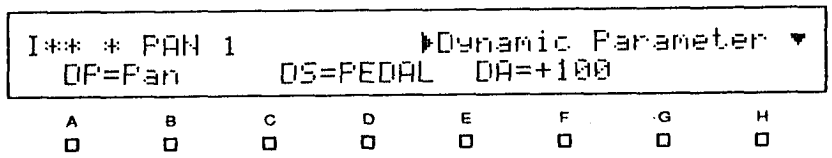
EFFECT TYPE: PAN 1: MONO IN(L CH)/STEREO OUT EFFECT, PAN 2: STEREO EFFECT

This effect changes the position of input signals. The position of signals can be changed via LFO, the foot pedal or MIDI data by setting the dynamic source parameter accordingly.

Page 1



Page 2



Variations

PAN 1[PAN1] ..... Only the left input source is used.
PAN 2[PAN2] ..... Stereo input source with panning movement between the left and right output.

Parameter Box:

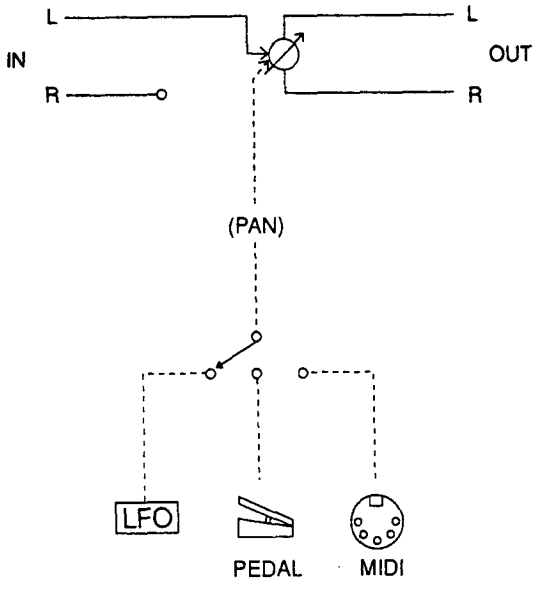
Page 1

Button	Parameter Name	Parameter Range	Function
C	LFO Waveform	SIN, TRI	Specifies the LFO waveform. (Functions only when LFO is specified as the dynamic source.)
☆ D	LFO Speed	0.05~10.0 [Hz]	Sets the LFO speed. (Functions only when LFO is specified as the dynamic source.)
E	Offset	L50~C00~R50	Sets the L/R stereo field limits for panning.
G H	Image Display	L---♩--R	Display the left channel input signal panning movement.

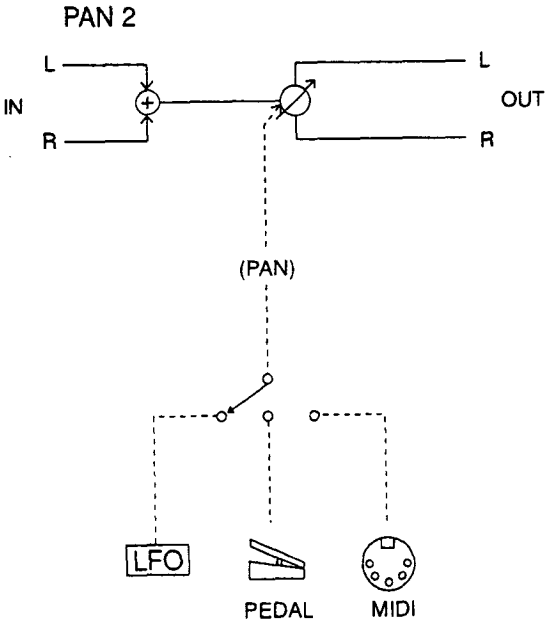
Page 2

Button	Parameter Name	Parameter Range	Function
B	Dynamic Parameter	Pan	Specifies the dynamic parameter. Only PAN can be specified.
D	Dynamic Source	OFF, PEDAL, MIDI	Specifies the dynamic source.
F	Dynamic Amount	- 100 ~ +100	Sets the dynamic amount. The higher the absolute value, the further the Left/Right PAN range.

PAN 1



PAN 2

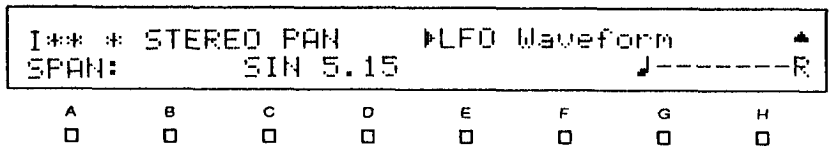


EFFECT NO.53 STEREO PAN[SPAN]

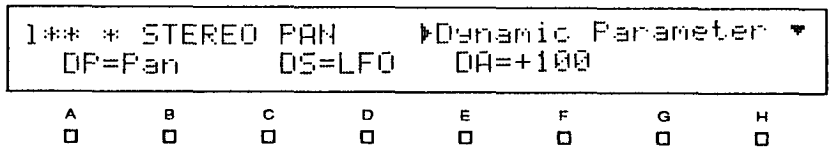
EFFECT SIZE:8
EFFECT TYPE: STEREO EFFECT

This effect changes the position of input signals.

Page 1



Page 2



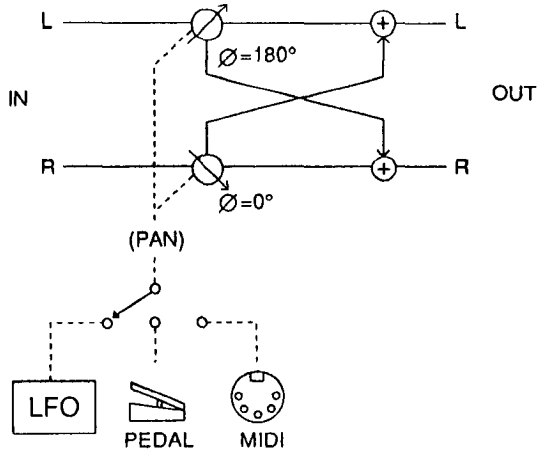
Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
C	LFO Waveform	SIN, TRI	Specifies the LFO waveform. (Functions only when LFO is specified as the dynamic source.)
☆ D	LFO Speed	0.02~10.0 [Hz]	Sets the LFO speed. (Functions only when LFO is specified as the dynamic source.)
G H	Image Display	L---♩--R	Display the left channel input signal panning movement.

Page 2

Button	Parameter Name	Parameter Range	Function
B	Dynamic Parameter	Pan	Specifies the dynamic parameter. Only PAN can be specified.
D	Dynamic Source	LFO, PEDAL, MIDI	Specifies the dynamic source.
F	Dynamic Amount	- 100 ~ +100	Sets the dynamic amount. The higher the absolute value, the further the Left/Right PAN range.

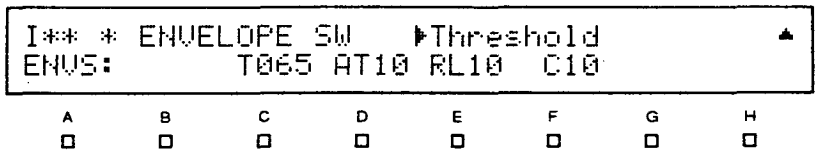


EFFECT NO. 54 ENVELOPE SWITCH[ENVS]

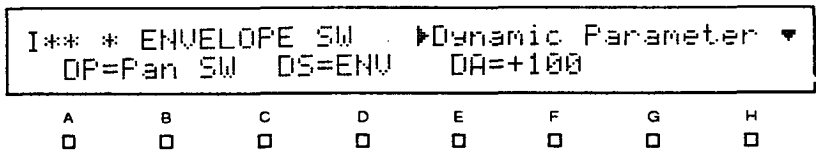
EFFECT SIZE: 7
EFFECT TYPE: MONO IN/STEREO EFFECT

This mono in effect allows you to output to the left or right channel according to the level of the input signals.

Page 1



Page 2



Parameter Box:

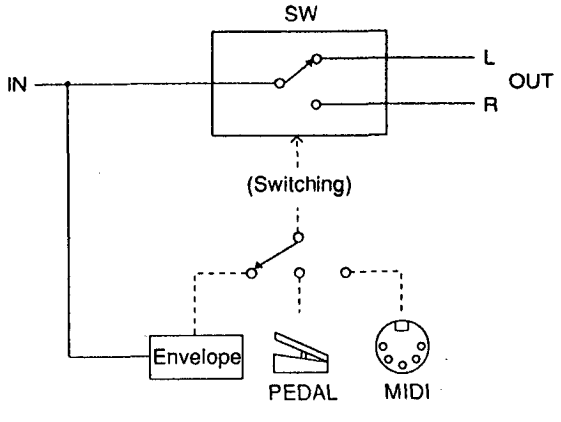
Page 1

Button	Parameter Name	Parameter Range	Function
☆ C	Threshold	0~100	Sets the switching threshold level.
D	Attack	0~20	Sets the attack time. The higher this value, the slower the attack.
E	Release	0~80	Sets the release time. The higher the value, the longer the release.
F	Offset	L50~c00~R50	Adjusts the center position.

Page 2

Button	Parameter Name	Parameter Range	Function
B	Dynamic Parameter	Out Sel.	Specifies the dynamic parameter. Only Out Sel. can be specified.
D	Dynamic Source	ENV, Pedal, Velo, Aftc, Ptch, Ctr (Controller)01-95	Specifies the dynamic source.
F	Dynamic Amount	- 100 ~ +100	Sets the direction and depth of the dynamic modulation effect. The higher the absolute value, the further the panning range. +: L → R −: R → L

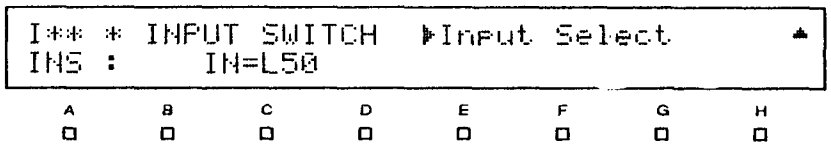
When ENV is selected as the dynamic source, the dynamic amount becomes sensitive to envelope signals, and can adjust the depth of the dynamic effect.



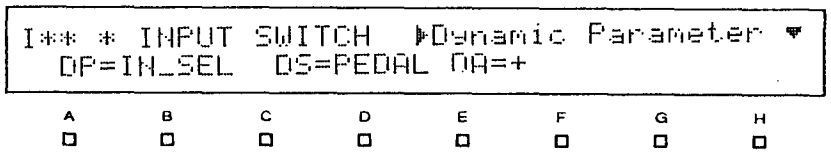
EFFECT NO.55 INPUT SWITCH [INS] EFFECT SIZE: SIZE 9

This effect allows you to select the input channel using the pedal or MIDI data.

Page 1



Page 2



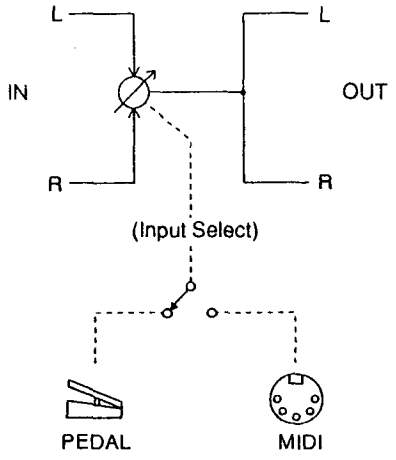
Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
C	Input Select	L50~C00~R50	Functions when OFF is specified as the dynamic source. When OFF is not specified as the dynamic source, this parameter sets the initial conditions when changing programs.

Page 2

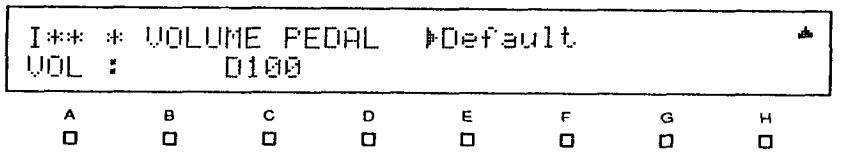
Button	Parameter Name	Parameter Range	Function
B	Dynamic Parameter	In_Sel.	Specifies the dynamic parameter. Only In_Sel. can be specified.
D	Dynamic Source	OFF, PEDAL, MIDI	Specifies the dynamic source.
F	Dynamic Amount	−,+	Sets the dynamic amount. The left channel input level increases as the pedal is depressed at +, and the right input level increases as it is depressed at -.



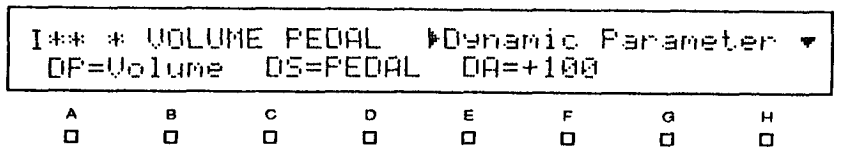
EFFECT NO. 56 VOLUME PEDAL[VOL] EFFECT SIZE: 9

This effect allows the simultaneous control the volume for the left and right channels.

Page 1



Page 2



Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
C	Default	0~100	Sets the level when programs are changed.

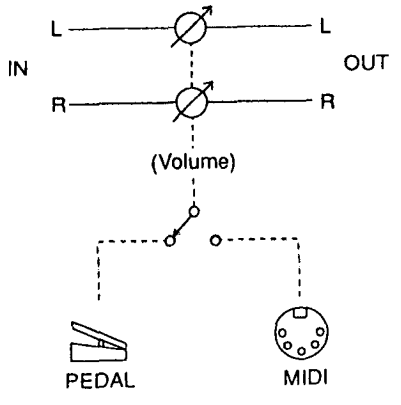
Page 2

Button	Parameter Name	Parameter Range	Function
B	Dynamic Parameter	Volume	Specifies the dynamic parameter. Only VOL (volume) can be specified.
D	Dynamic Source	PEDAL, MIDI	Specifies the dynamic source.
F	Dynamic Amount	- 100 ~ +100	Sets the depth and direction of the dynamic modulation effect.

Dynamic Amount Setting

The volume range, which can be varied by the dynamic amount, is as follows:

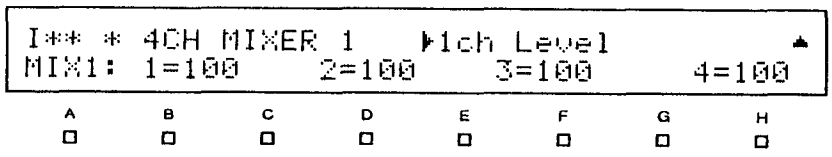
VOLUME = n% - 100% [n = 100 - (absolute value of dynamic amount)]



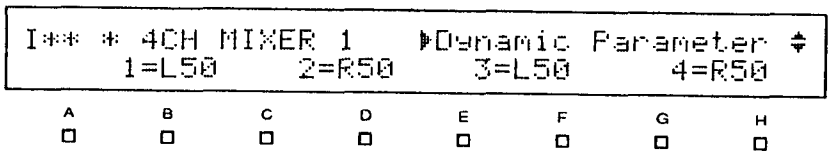
EFFECT NO. 57 4 CHANNEL MIXER 1 [MIX-1] EFFECT SIZE: NO SIZE

This effect is a level mixer for certain interval chains (Chain 25, 26, 27, 28, 29, 30 and 31).This mixer allows you to set the level and pan for each channel.

Page 1



Page 2



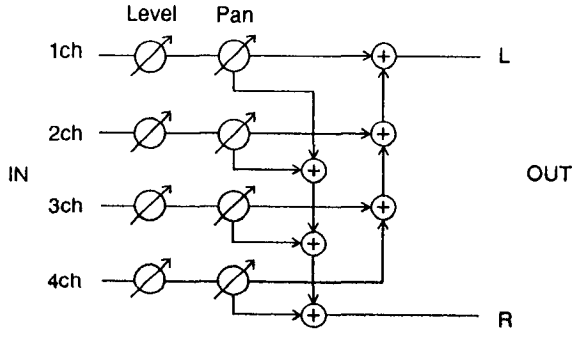
Parameter Box:

Page 1

Button	Parameter Name	Parameter Range	Function
B	1ch Level	0~100	Sets the channel 1 level.
D	2ch Level	0~100	Sets the channel 2 level.
F	3ch Level	0~100	Sets the channel 3 level.
H	4ch Level	0~100	Sets the channel 4 level.

Page 2

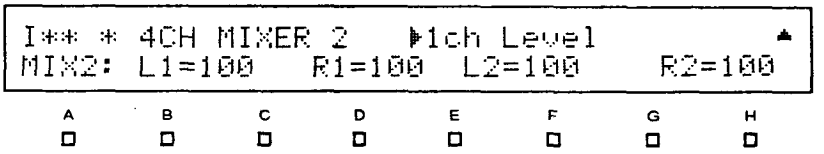
Button	Parameter Name	Parameter Range	Function
B	1ch PAN	L50~0~R50	Sets the channel 1 pan.
D	2ch PAN	L50~0~R50	Sets the channel 2 pan.
F	3ch PAN	L50~0~R50	Sets the channel 3 pan.
H	4ch PAN	L50~0~R50	Sets the channel 4 pan.



EFFECT NO.58 4 CHANNEL MIXER 2 [MIX2] EFFECT SIZE: NO SIZE

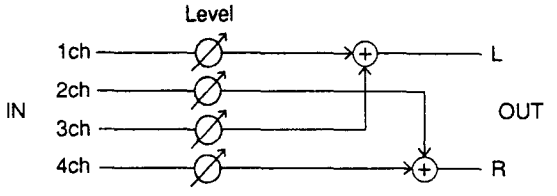
This effect is a level mixer for certain internal chains (Chain 33, 35 and 36). The position of each channels's pan is fixed, channels 1 and 3 at the left and channels 2 and 4 at the right.

Page 1



Parameter Box:
Page 1

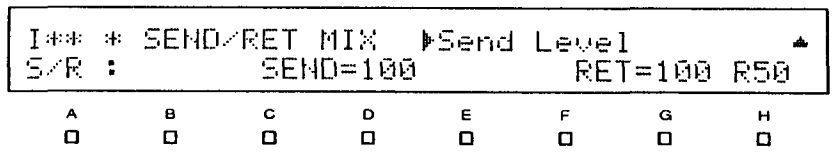
Button	Parameter Name	Parameter Range	Function
B	1ch Level	0~100	Sets the channel 1 level.
D	2ch Level	0~100	Sets the channel 2 level.
F	3ch Level	0~100	Sets the channel 3 level.
H	4ch Level	0~100	Sets the channel 4 level.



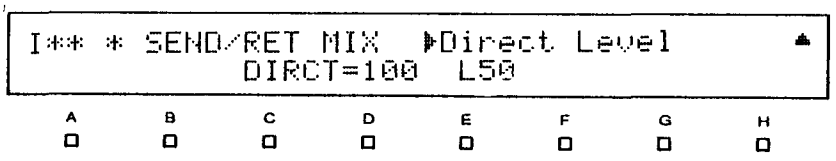
EFFECT NO.59 SEND RETURN MIXER [S/R]
EFFECT SIZE: NO SIZE

This effect mixes direct signals with return signals from send/return chains (Chain 48, 49 and 50)

Page 1



Page 2



Parameter Box:

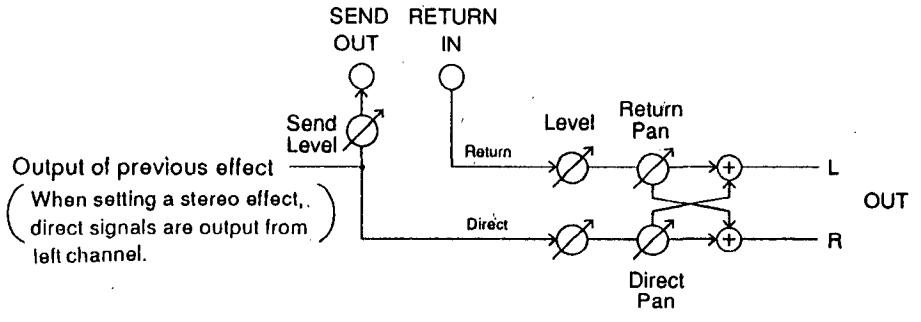
Page 1

Button	Parameter Name	Parameter Range	Function
D	Send Level	0~100	Sets the level of direct signals.
G	Return Level	0~100	Sets the position of direct signals.
H	Return Pan	L50~0~R50	Sets the position of return signals.

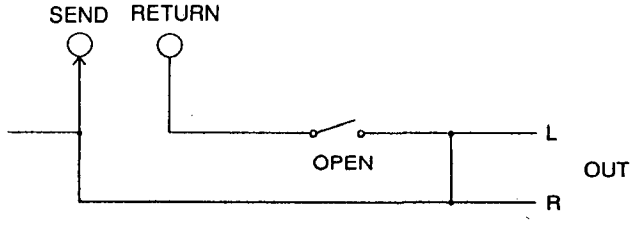
Page 2

Button	Parameter Name	Parameter Range	Function
D	Direct Level	0~100	Sets the level of direct signals.
E	Direct Pan	L50~C00~R50	Sets the position of direct signals.

When this effect is OFF, direct signals are output from both right and left channels.



※ When the effect is off.



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15 – 12, Shimotakaido 1 – chome, Suginami – ku, Tokyo, Japan.

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