

KORG

PERFORMANCE SIGNAL PROCESSOR

A2

OWNER'S MANUAL

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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 SPECIFIE DANS LE REGLEMENT SUR LE BROUILLAGE RADIOELECTRIQUE.

THE FCC REGULATION WARNING

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in accordance with the manufacturer'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 of the following measures:

- Reorient the receiving antenna.
- Relocate the equipment with respect to the receiver.
- Move 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.

MAIN FEATURES OF THE A2

1. "Full Programmable" Digital Multi Effects

The A2 comes with 102 effects in 44 groups that can be combined to make up an effect chain, each chain using up to 6 effects simultaneously. The chains and individual effect setting can be edited and stored in the 100 program RAM memory.

2. Complete Digital Effect Processing

Full digital effect processing is made possible by the newly developed DSP (Digital Signal Processor), which keeps the A2 from any signal degradation while connecting with several effect units.

3. A Wide Variety of Effect Chains for use with Different Instruments

The 97 preset chains in the A2 include typical studio and live multi – effect connections for guitar, bass, keyboards, vocals, drums and wind instruments. Normally, these effects require many different effect units and a complex patching system. However by plugging your instrument into the A2, the latest and most sophisticated studio/live effect configurations are available at the touch of a button.

4. Full Stereo Effects

Using the 2 inputs(L,R) together with the stereo effect chains in the A2, full stereo separation is possible with stereo input and output.

5. Unlimited Sound Expansion

With memory cards, you can load a variety of new effects into the A2 with entirely new effect programs, which is impossible with most effect devices. Using the optional ROM card, you can then select and play any one of 200 effect programs. (Internal programs and ROM card programs.) You can also store any edited effect settings into a RAM card (up to 100 programs) to create your own library of original effects.

6. Compatible with all A3 Cards

To further expand the range of sound creation, the A2 can read the program data from all the memory cards available for the A3 Performance Signal Processor. However, effect chains in the A3 cards SPC – 01, 02, 03, 04, and 05 are already built in the A2.

7. Built – in Digital Noise Reduction

The A2 is equipped with a built – in digital noise reduction system to automatically cut off hum and noise during breaks in the input signal.

8. 4 Times Over – sampling Digital Filter

Degradation in sound quality, due to multiple delay and distortion, is eliminated by the 4 times over – sampling digital filter. The filter preserves phase characteristics in the high frequencies and this results in high – quality sound output.

9. Connection with Foot Controller FC6

Program change, Effect ON/OFF, as well as individual Effects Parameter Settings can be controlled in real time by connecting the optional FC6 Foot Controller for ultimate control of live performances.

10. Performance Play Function

The A2 allows you to control the parameters of multiple effects simultaneously in the Performance Edit Mode for easy real time editing of complex effect chains.

11. Double Function Editors

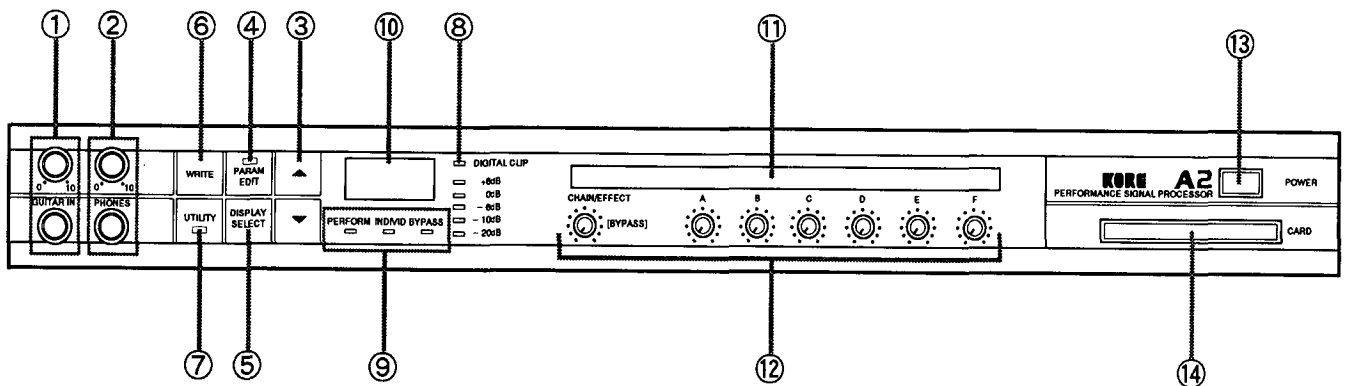
Double function editors operating as both rotary and push button switches can make your checking and editing procedures extremely easy. Even the most complex effect set – ups can be quickly edited and stored by just looking at the display.

12. Automatic Front Panel Input Terminal Assignment

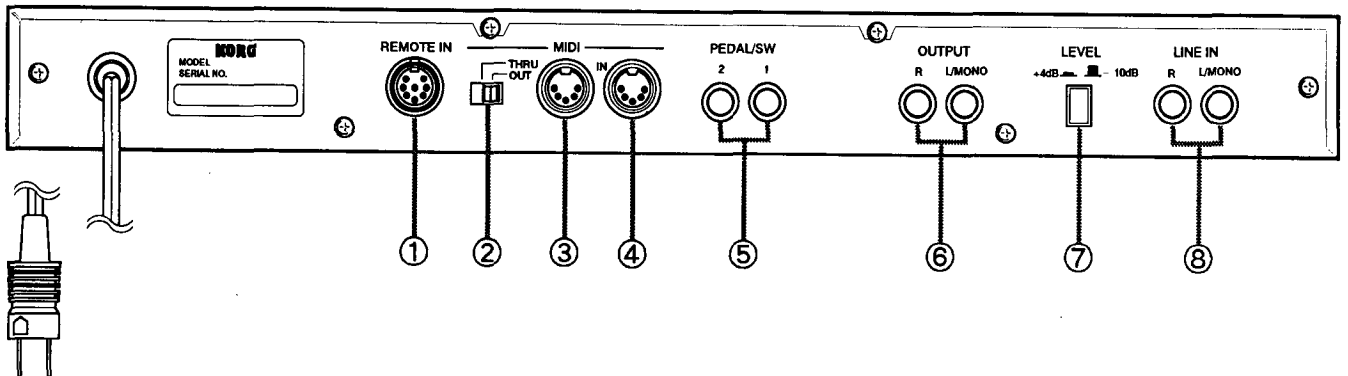
When connected, the front panel GUITAR IN terminal automatically overrides the rear panel input terminals.

NAMES AND FUNCTIONS OF CONTROLS AND TERMINALS

FRONT PANEL



REAR PANEL



FRONT PANEL

① Guitar In, Input Level

For connecting a guitar, etc. This front panel input has priority over the rear panel inputs.

② Headphone Jack, Headphone Volume

For connecting headphones and adjusting the volume.

③ Up/Down Keys

For selecting programs and adjusting parameters in the edit mode.

④ Parameter Edit Key

For entering edit mode. (Refer to page 17.)

⑤ Display Select Key

For selecting either Performance Play or Individual Play in the Play Mode. (This key is also used to switch between the parameter name and the parameter value in the display while editing individual effects in the Effect Edit Mode.)

⑥ Write Key

For storing edited data to memory. (Refer to page 19.)

⑦ Utility Key

This is used to select the utility functions of the A2. (Refer to page 22.)

⑧ Input Indicator

For visual monitoring of the input level while making adjustments. Set the input level to light up the +6dB indicator but not the DIGITAL CLIP LED.

⑨ Mode Indicator Display

LED's indicate the currently selected mode. The PERFORM LED is lit when in the PERFORMANCE mode, the INDIVID LED when in the individual mode, and the BYPASS LED when Bypass has been selected.

⑩ Program No. Display

Indicates the current program number.

⑪ LCD Display

Indicates the current parameters, settings, etc.

⑫ Double Function Editors

These function as two controls in one depending on whether they are rotated or pressed.

1) CHAIN/EFFECT (BYPASS)

Chains can be selected by turning this control. Pressing this control in normal operation modes toggles the bypass function on and off. When editing individual effects in the Edit Effect mode, rotating the control varies the selected effect. Pressing the control in this mode turns the effect on and off. Pressing while in the PARAM/EDIT[SELECT] MODE ENABLES the compare function.

2) A – F

For setting the parameter values, effect variations, effect ON/OFF, etc.

⑬ Power Switch

For turning the power on and off.

⑭ Card Slot

For inserting optional RAM (MCR – 03) and ROM cards.

REAR PANEL

① Remote Input Terminal

For connection of optional FC6 Foot Controller, with a special remote cable.

② MIDI IN Terminal

③ MIDI OUT/THRU Terminal

For connection of external MIDI devices.

④ MIDI OUT/THRU Selection Switch

For changing the MIDI OUT/THRU terminal to either MIDI OUT or THRU. When set to OUT, MIDI messages from the A2 are transmitted via MID OUT; when set to THRU, MIDI messages received at the MIDI IN terminal are transmitted unaltered via MIDI THRU.

⑤ Pedal/Switch Input Jacks

For connection of a footswitch or volume pedal. Please see the Utility section (page 32) for detailed setup information.

⑥ L/MONO and R Outputs

For connection to amplifiers, mixers, etc. To take advantage of the sophisticated stereo effects in the A2,

connect the two outputs to a stereo amplification system.

For monaural operation, connect to the L/MONO output jack.

⑦ Level Attenuator Switch

For setting the nominal level to match the application.

– 10dB : Electric instruments with high – level output, such as keyboards, etc. Also audio equipment for the amateur/semi – professional level.

+4dB : Professional audio equipment, power amplifiers.

This switch does not attenuate the input level at Guitar In.

⑧ L/MONO and R Inputs

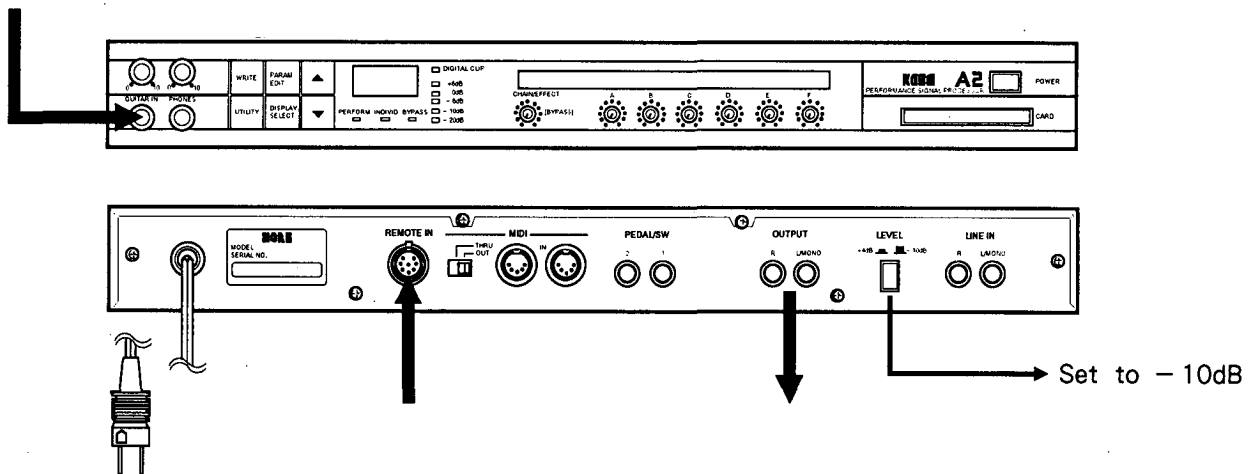
For connection of keyboards such as synthesizers or electric pianos or line level signals from mixers, etc. When using a monaural instrument, connect to the L/MONO input jack.

BASIC OPERATION

NOTE: Do not turn on the power until you finish making all the connections with other instruments and equipment.

1. Connection of Instrument and Amplifier

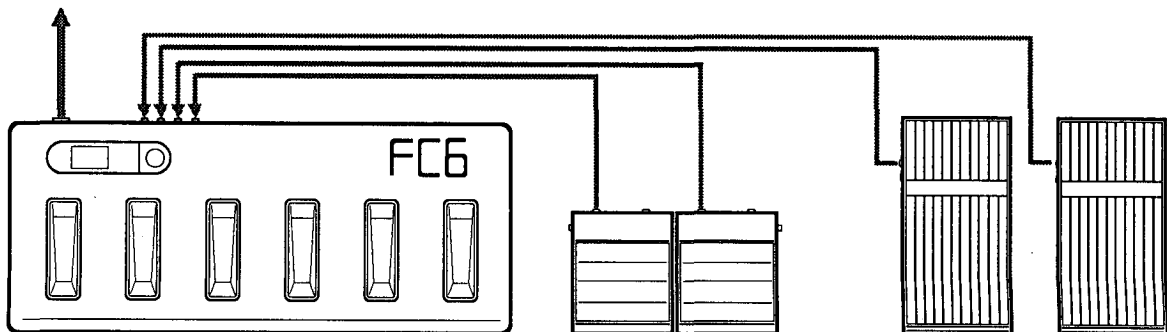
- ① Connect the guitar, etc. to the GUITAR IN terminal on the front panel. (Fixed at - 20dB.)
- ② Connect the guitar amplifier, etc. to the OUTPUT terminal on the rear panel.
- ③ Set the LEVEL SW of the rear panel to - 10dB (switch should be in the raised position.)



Connection with the FC6

The following notes and instructions apply to connection of the A2 to the optional FC6 Foot Controller.

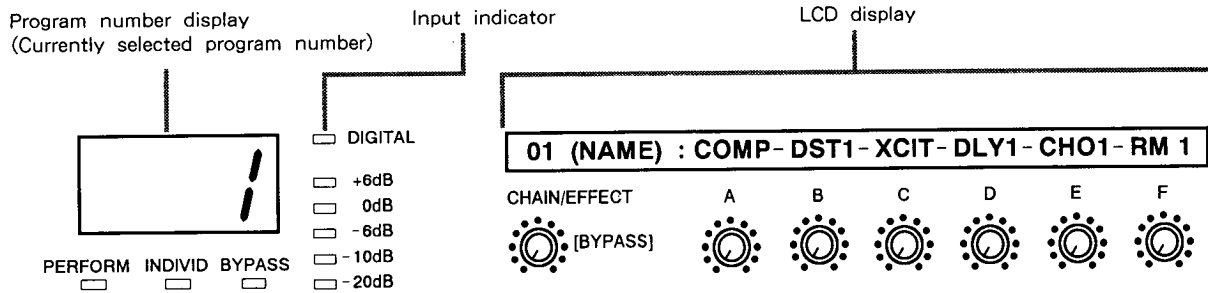
- ① The remote cable has a lock on one of its plugs and no lock on the other. Connect the plug with the lock to the FC6 and the other side to the A2.
- ② Set the power switch on the rear panel of the FC6 to OFF/EXT. The power is now supplied from the A2.
- ③ The FC6, upon connection to the A2, automatically sets itself to control the operation of the A2.



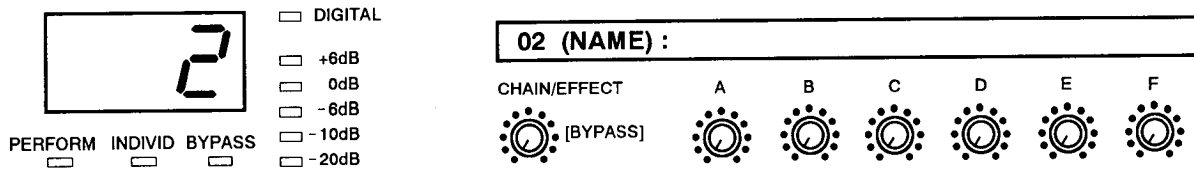
2. Selection of Internal Effect Programs

The A2 is equipped with 100 factory set effect programs.

- ① Turn on the power. The display illustrated below will appear in the LCD. The A2 will power up to the last program selected when powered down. The program number is indicated in the left side of the LCD display, and the effect contents of the program are shown in the right side of the display.

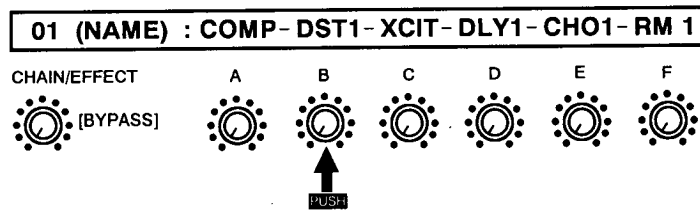


- ② Set the input level such that input indicator lights at around "+3" and "+6" when playing the loudest.
 ③ To select other programs, press the UP key or the DOWN key. Pressing either of these keys single – steps the program numbers in increasing and decreasing order, respectively.



- ④ Each program is made up of a combination of several effects. Any effects can be set to OFF if undesired. For example, a program using chain 01 includes six separate effects, Compressor [COMP], Distortion [DIST1], Exciter [XCIT] Delay [DLY1], Chorus1[CHO] and Room Reverb 1 [RM1]. In this example, the Distortion effect can be turned off as in the following procedures.

- 1) Turn the "Chain/Effect" double function editor completely to the left. (Until the display reads 01.)
- 2) Press the "B" double function editor, directly under "DST1" in the display. The effect name in the display switches to lowercase letters ("dst1") to indicate that the Distortion effect is OFF. You can return it to the original setting by pressing the "B" double function editor again.



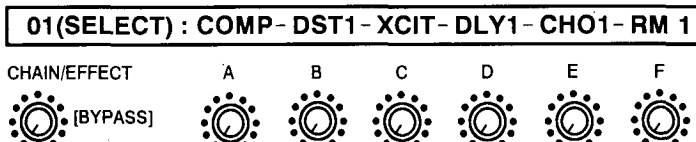
Other effects can be toggled ON and OFF in the same manner by pressing the corresponding A – F double function editors.

Any desired effect programs can be selected in the Play Mode. Refer to the Play Mode (page 12) for more functions of this mode.

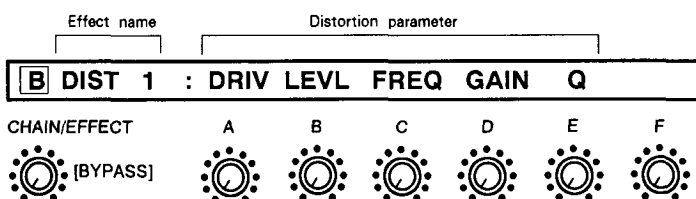
3. Creating Your Own Effects

Making changes to the factory Effect Programs

- ① Select the program you wish to change by using the UP/DOWN keys. Select a program using the "Distortion" effect, for example.
- ② Press the PARAM EDIT (Parameter Edit) key. The LED in this key lights up to indicate that the Parameter Edit Mode has been selected. (In this mode it is possible to change or edit the programs.)

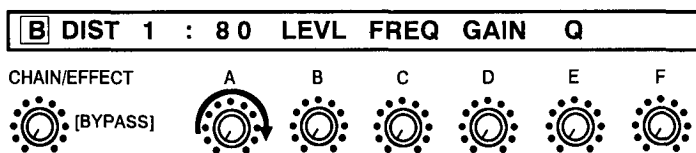


- ③ Edit the individual effects by pressing the double function editor directly below the name of the effect. For example, select "Distortion" by pressing the "B" doublefunction editor.



The name of the selected effect is indicated in the left side of the display. And the right side shows all the effect parameters you can change.

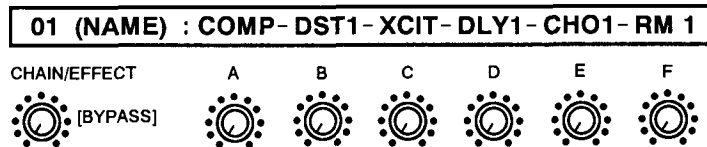
- ④ Set the parameter to the desired value by rotating the double function editor under each parameter. For example, the degree of distortion in the Distortion effect is changed when rotating the "A" double function editor below "DRIV". (The display automatically and temporarily changes to the parameter value when the double function editor is rotated.)



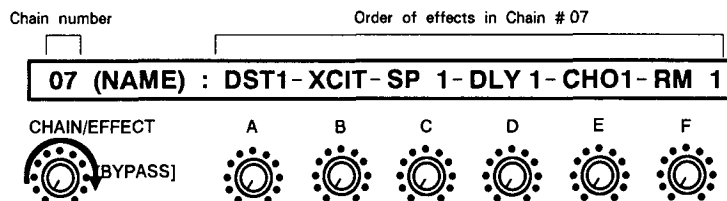
- ⑤ Change other parameters in the same way. Refer to the "Effect Parameter List" for details of each effect parameters.
- ⑥ Switch among variations of the effect, since some of the preset effects in the A2 include certain variations. For example, the Distortion effect has 4 variations: [DST1], [DST2], [OVD1], and [OVD2]. The variation can be changed (while Distortion is selected in the Parameter Edit Mode) by rotating the CHAIN/EFFECT double function editor. Select the desired variation and edit the parameters.
- ⑦ You can switch to any effects and parameters other than Distortion by pressing the desired A – F double function editors. To return to the "[SELECT]" display (where all effects in the selected program are shown), press the PARAM EDIT key twice. The first press exits the Parameter Edit Mode, and the second press returns to the mode again.
- ⑧ Save the edited program by executing the write operation. A recently edited program will return unaltered to its original program setting if you select another program without executing the write operation.

Creating Original Effect Programs

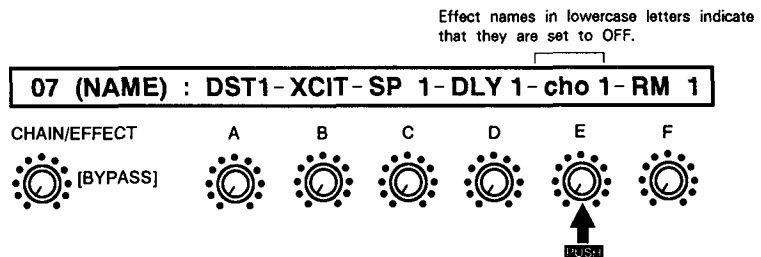
- ① Select any program number. For example, select Program number 1.



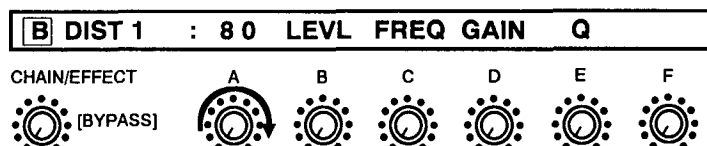
- ② Next, select a chain. The pattern or order of connecting the effects is called a "chain" in the A2. There are 97 factory preset chains (No.1 – 97) in the A2. (Refer to the attached "Effect Parameter List".) When you rotate the CHAIN/EFFECT double function editor, the chain number (shown on the left in the display) and the connected effects change together. Set this to Chain number 07, for example. The display changes as shown below.



- ③ To disable any effects in Chain #07, press the double function editors directly below them. For example, when Chorus is not needed, press the double function editor under [CHO1].



- ④ Different variations of the same effect type can be selected by rotating the double function editor below the appropriate effect name.
- ⑤ Enter the Parameter Edit Mode to edit parameters and make detailed changes to the sound. Press the PARAM EDIT key, and select the effect you wish to edit by pressing the appropriate double function editor. The parameters of the selected effect will be shown in the display. Adjust the parameter settings by rotating the corresponding double function editors.
- ※ Extreme settings in the compressor, distortion, overdrive and equalizer effects may result in unwanted noise, since the difference in adjacent settings is quite wide.

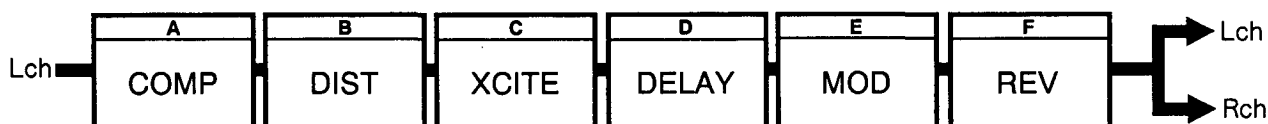


- ⑥ Make sure to write the program when you are satisfied with the edits you have made. You can use a maximum of 7 characters to name your effect programs.

STRUCTURE OF EFFECT PROGRAMS

About Effect Chains

The A2 is capable of combining up to 6 effects at once, called a chain. The A2 contains chains of both monaural input and stereo input. The stereo chains supply separate effects to each of the L and the R channels. The A2 includes factory programmed 76 monaural chains (01 – 76) and another 21 stereo chains (77 – 97). There are also 4(71-74) guitar amp "Switching" chains.

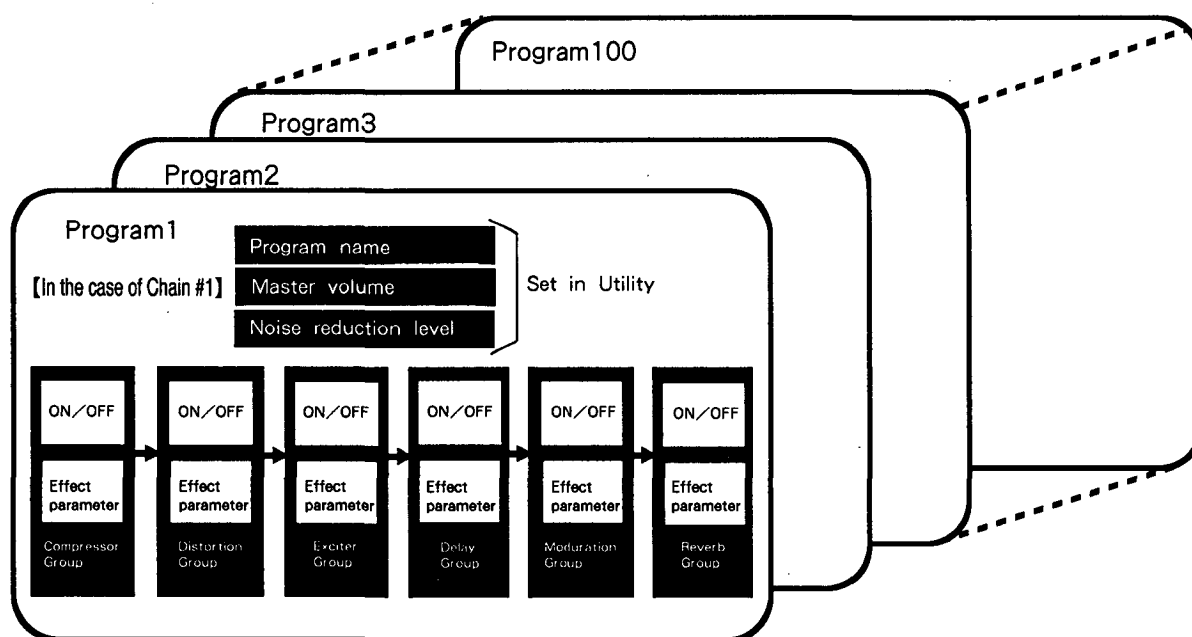


The chain can be given a program name, a master volume setting and a specified degree of noise reduction (as well as ON/OFF and parameter settings of each effect) and then written to memory as an "effect program". Additional chains and effect programs are available on optional memory cards. However, 10 chains each from A3 cards SPC – 01, 02, 03, 04 and 05 are already built into the A2 as Chain Nos. 21 – 70. (SPC – 01 programmed as Chain Nos. 21 – 30, SPC – 02 as Nos.31 – 40, etc.) Refer to the attached "Effect Parameter List" for details of effects in each chain.

Variation

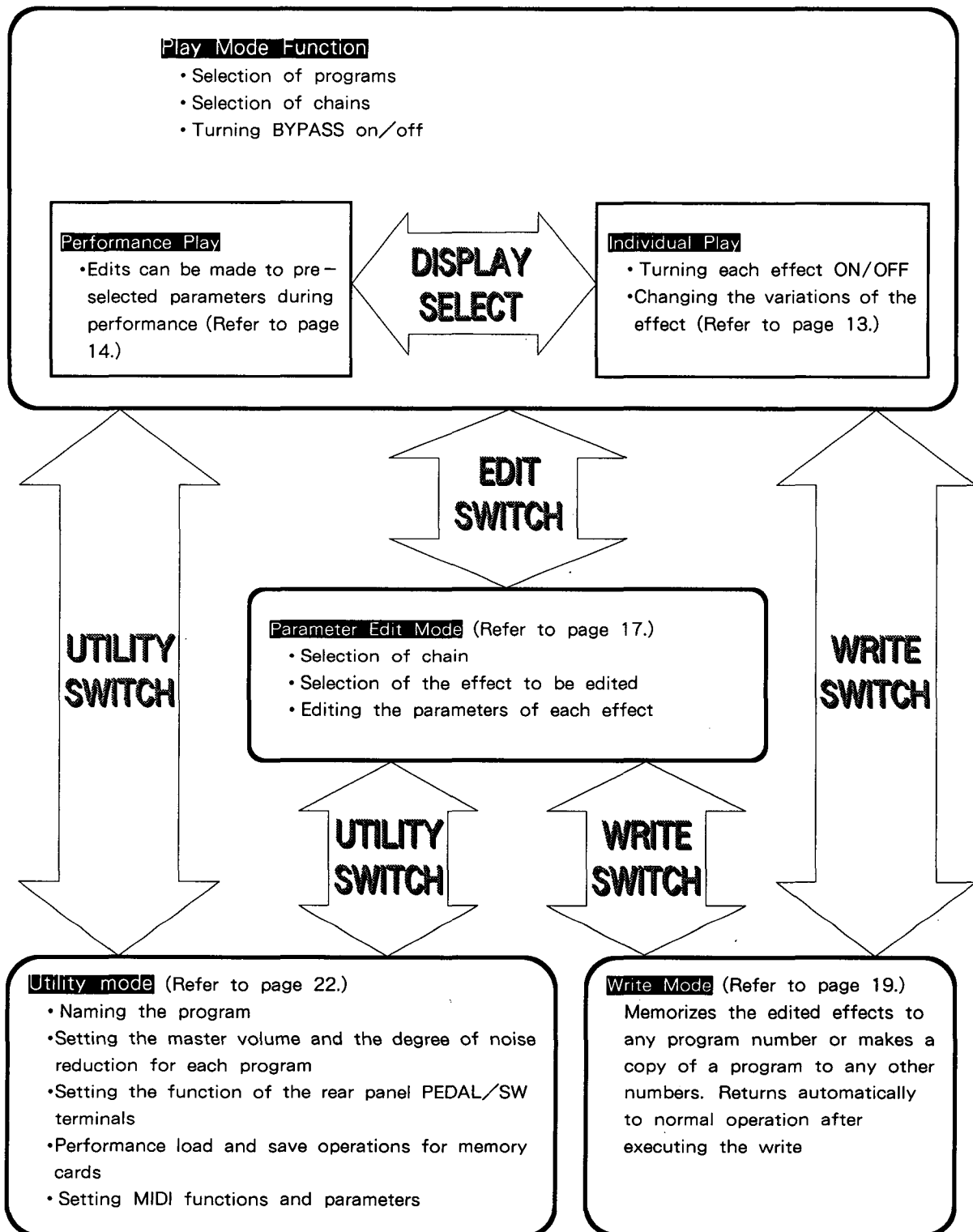
Each of the 6 effects in a chain forms its own effect group. Some groups contain more than one variation. Effect variations can be selected both in the Play Mode and the Parameter Edit Mode.

Structure of Program



OUTLINE OF OPERATION SYSTEM

The A2 has four operation modes: Play Mode, Parameter Mode, Utility Mode, and Write Mode. Functions in each mode are outlined below. Each mode can be entered by pressing the switches indicated in the arrows below. Refer to pages 12 – 41 for more details of each mode.



PLAY MODE

NOTE: The A2 is in Play mode whenever the LED in the Parameter Edit key is off.

In the Play Mode, any of 100 internal effect program can be selected. The A2 memorizes 100 internal programs (No.1 – 100), and additional 100 programs can be saved to a memory card (No.101 – 200) as well. The following data are memorized in each program.

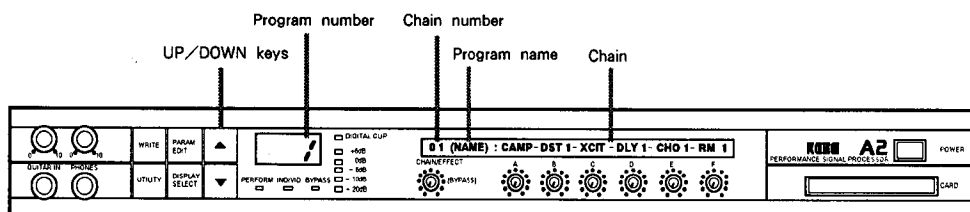
Programs

- Name Program name. (Set in the Utility mode. Refer to page 35.)
- Chain..... Effect connection patterns, such as COMPRESSOR → DISTORTION → EXCITER → CHORUS → DELAY → REVERB. The A2 has 97 factory programmed chains.
- Individual Parameter Data Separate parameter data for each effect. For example, DISTORTION has parameters such as DRIVE, LEVEL, etc. whose values make up the parameter data for the effect.
- Master Volume, Noise Reduction ... Total volume and threshold level of noise reduction for the program. (Set in the Utility mode. Refer to page 22.)

Effect programs can be selected for play in one of the two ways; Individual Play and Performance Play. Individual play allows you to turn each effect on or off separately within the program (as described in the BASIC OPERATION section). Performance play allows real – time editing of effects in a program, using the "A" – "F" double function editors.

1. Selecting Programs

The Play Mode is selected automatically when the A2 is turned on.



Programs can be selected by using the UP/DOWN keys.

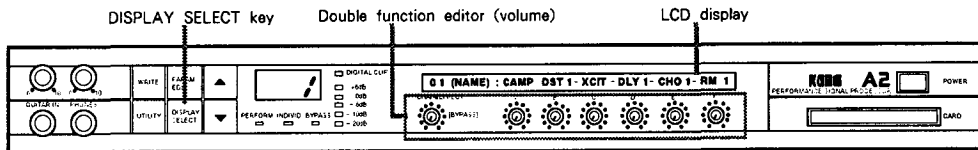
- ① When no card is inserted : Programs 1 – 100 can be selected upon each press of the UP/DOWN keys.
- ② When a card is inserted (to expand the A2's memory) : Programs 1 – 200 can be selected with the UP/DOWN keys.

- ♣ Holding down the UP or DOWN key allows continuous scrolling through the program numbers.
- ♣ You can advance through the program numbers in groups of 10 by holding down the UP key, then pressing the DOWN key. To reverse through the program numbers in groups of 10, do just the opposite: hold down the DOWN key, then press the UP key.

2. Individual Play

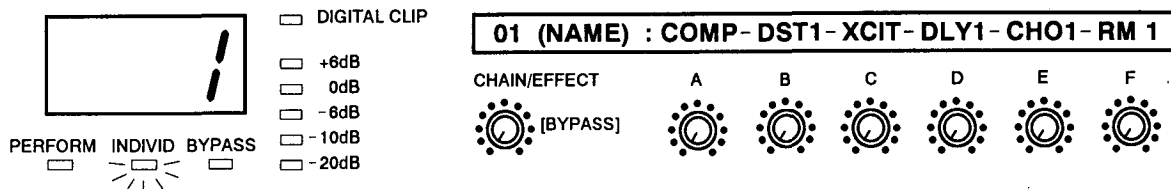
Individual play allows you to separately control each of the effects in a program by:

- 1) turning each effect on or off, and
- 2) changing the variation of each effect (selecting one type of effect from the same effect group).



Procedure : To select Individual play, press the DISPLAY SELECT key until the INDIVID LED is lit. The display below will appear.

Note : When the power is first applied, Individual play is automatically selected.



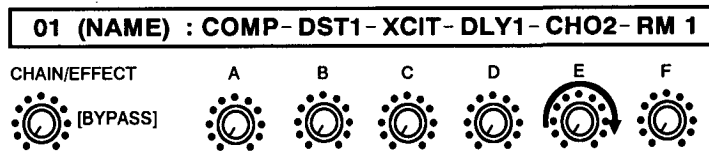
Switching effects ON and OFF

Pressing the double function editor immediately below the displayed effect name toggles the effect ON and OFF. (Capital letters = effect ON, Lowercase letters = effect OFF)

Changing the Effect Variation

Variations of effect can be selected by rotating the double function editor immediately below each effect name in the display. For example, Chorus effect can be selected from CHO1 (Chorus 1), CHO2, FLN1 (Flanger 1) and FLN2.

NOTE: Where an effect has only one type, no variations can be selected.



Turning ON and OFF the Bypass Function

Pressing the CHAIN/EFFECT double function editor (BYPASS) toggles the bypass function ON and OFF, and the BYPASS indicator LED (in the Mode Indicator display) is lit or unlit accordingly.

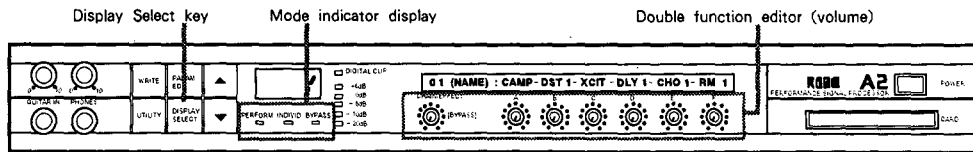
Selecting Chains

Chains can be selected by rotating the CHAIN/EFFECT double function editor. The display indicates the effect connection of each chain. During a normal operation without a card, the chain numbers change over a range of 1 – 97. When programs Nos. 101 – 200 are selected from the card, additional chain numbers stored in the card can be selected. Once you have loaded data from the card, these new chains can be used while writing internal programs 1 – 100, also.

Note: For finer selection of the available 97 chains, enter the Parameter Edit [SELECT] mode and press the UP/DOWN keys to single – step through the chain numbers.

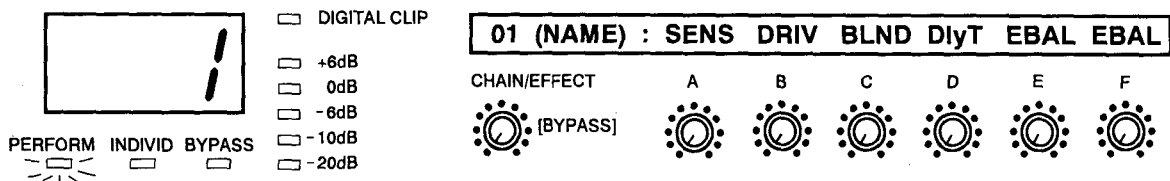
3. Performance Play

In Performance Play mode, each program is treated as a complete effect unit and can be controlled by editing the featured parameters that make up the character of the program. This makes it easy to change or edit the color of an entire program, without having to edit individual effect parameters. (Available parameters for editing in this mode are predetermined for each chain. Refer to page 21 and the attached "Chain List" for more details.)

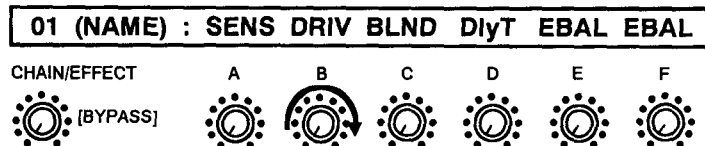


Editing the Performance Parameters

1) Press the DISPLAY SELECT key until the PERFORM LED lights up. The display shows effect parameters in each chain.



2) To change the parameter value, rotate the double function editor immediately below each parameter name. In the figure below, the parameter value for "DRIV" is changed by turning the "B" double function editor. The parameter values are not indicated in Performance play mode, however the parameter names can be always displayed by turning the double function editor to the central position.



3) Follow the same procedure for changing other parameters.

Selecting Chains

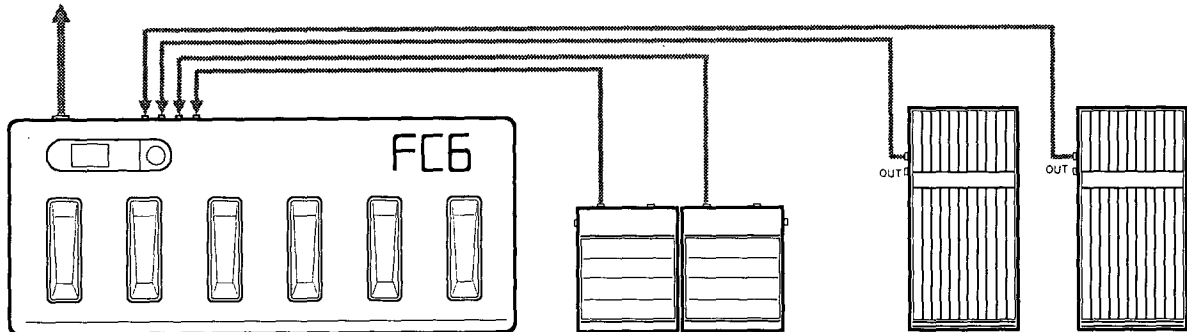
To select chains, rotate the CHAIN/EFFECT double function editor. No chain can be shown when the display is selected to Performance play mode.

Cancelling Effects with Bypass Function

Press the CHAIN/EFFECT [BYPASS] double function editor to light up the BYPASS LED. This operation puts the A2 in Bypass mode, disabling all effects. To release the BYPASS function, simply press the double function editor again.

- ♣ The display shows no effect NAMES during Performance Play Mode. To check them, press the DISPLAY SELECT key to select the Individual Play Mode.
- ♣ Keep in mind that all edited data in the effects will be erased upon switching to another program unless written to the internal memory.

4. Operating with the FC6 Foot Controller (Option)



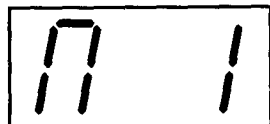
Setting Up

The A2 can be controlled with the FC6 in one of the two ways: Manual 1 and Manual 2.
 (Note : Effect variations cannot be changed with the FC6.)

- [Manual 1] : Program Change mode (Program changes on the A2 are triggered by the FC6. See the details below for setting up the FC6 for this mode.)
- [Manual 2] : Effect ON/OFF mode (The A2's individual effects of a program can be turned ON/OFF from the FC6.)

- Switching between manual modes with a foot switch, such as PS - 1 :
 Connect the foot switch (PS - 1, etc.) into the SW1 jack on the rear panel of the FC6. Manual 1 and 2 are alternated each time the foot switch is pressed.
- Switching between manual modes without a foot switch :
 Press the Utility key on the FC6 to check the Manual mode shown by the LED.
 Next, press any of the pedal switches (A - F) to switch between Manual 1 and 2.
 Press the Utility key again when completing the switching.

Display shown for manual 1



Display shown for manual 2



(1) Program Selection Using the FC6 Foot Controller [Manual 1]

The method of switching programs from the FC6 differs depending on the mode selected. Select the best mode for your purpose according to the table below. The mode switch is located on the rear panel of the FC6.
 (Set the FC6 to its manual 1 mode before operating; see below for details.)

MODE 1

In this mode, programs are grouped for selection into banks, with five consecutive programs making up one bank. The program – to – bank assignments are: programs No. 1 – 5, 6 – 10, 11 – 15, 16 – 20, 21 – 25, and so on. (Example : When the last selected program number is 18.)

SW A : Selecting the first program in the bank.	—————→	pressing SW A calls up # 16 ;
SW B : Selecting the second program in the bank.	—————→	pressing SW B calls up # 17 ;
SW C : Selecting the third program in the bank.	—————→	pressing SW C calls up # 18 ;
SW D : Selecting the fourth program in the bank.	—————→	pressing SW D calls up # 19 ;
SW E : Selecting the fifth program in the bank.	—————→	pressing SW E calls up # 20 ;
SW F : Selection of bank.	—————→	pressing SW F calls up the next bank,
(Bank advances upon each press of the switch : [1],[6],		starting with program # 21.
[11],[16],[21],[26],[31]....[76],[81],[86],[91],[96],[1])		

- ♠ Each press of switch [F] changes the program number display and advances the bank selection as follows : # 21, # 26, # 31, # 36, and on up to # 96. After # 96, the selection "wraps around" to # 01.
- ♠ To decrease the bank number, press switch [F] while holding down switch [E]. This operation calls up the fifth program in the bank first, and changes the banks in decreasing order.

MODE 2

In this mode, program number increases or decreases in steps of ten or in individual steps. (Example : When the last selected program number is 23.)

SW A : Program number decreases by 10	—————→	pressing SW A calls up program number 13 ;
SW B : Program number increases by 10	—————→	pressing SW B calls up # 33 ;
SW C : Program number decreases by 1	—————→	pressing SW C calls up # 22 ;
SW D : Program number increases by 1	—————→	pressing SW D calls up # 24 ;
SW E : no change	—————→	pressing SW E has no change in the program selection.
SW F : no change	—————→	pressing SW F has no change in the program selection.

- ♠ The FC6 Foot Controller is capable of selecting any of the programs 1 – 100 on the A2. However, when selecting card programs with the FC6, you must manually switch the A2 to the appropriate program group, first. Selecting any program number in the group 101 – 200 on the A2 enables the FC6 to control that range of programs. To go back to the 1 – 100 range, simply use the UP/DOWN key to select any number in that range.

(2) Individual Play Using the FC6 Foot Controller [Manual 2]

The FC6 turns each effect ON/OFF or bypasses all effects at once.

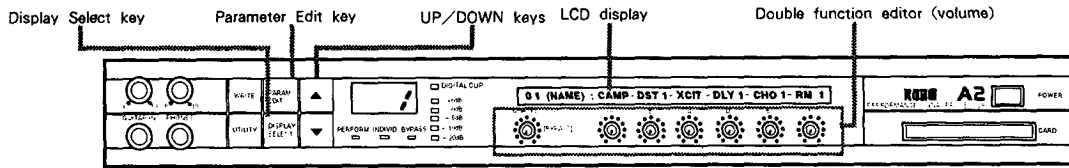
Procedure :

- 1) Switch the FC6 to the Effect ON/Off mode (Manual 2).
- 2) Press the pedal switch (A – F) to turn each effect ON/OFF. Check the ON/OFF status with LEDs in the pedal switch.
 - LED turns red = Effect ON
 - LED turns green = Effect OFF
 - Unlit LED = no effect available
- 3) All ON/OFF status of effects is also indicated in the A2's display.
 - Capital letter = Effect ON
 - Lowercase letter = Effect OFF

NOTE: Effect variation cannot be selected from the FC6.

PARAMETER EDIT MODE

This mode provides the editing functions of effect parameters in a program.



Setting Up

Press the PARAM EDIT key from either Performance Play or Individual Play. The LED in the key lights up to indicate the A2 is in Parameter Edit Mode.

NOTE: In BYPASS mode, effects are not active and cannot be heard. Turn BYPASS off before switching to Parameter Edit Mode for editing.

Effect Selection

1) When Parameter Edit Mode is selected, the display changes as below.

01 (SELECT) : COMP-DST1-XCIT-DLY1-CHO1-RM1

2) If necessary, change the chain by rotating the CHAIN/EFFECT double function editor or by pressing the UP/DOWN keys.

B DIST 1 : DRIV LEVL FREQ GAIN Q

3) Press the double function editor under each effect name to display its parameters. The names of the parameters are indicated when the effect is selected.

- ① At this time, different effect variation in a group can be selected by rotating the CHAIN/EFFECT [BYPASS] double function editor.
- ② Also, the current effect can be turned ON or OFF by pressing the CHAIN/EFFECT [BYPASS] double function editor. (ON/OFF can be applied only to the currently selected effect. Capital letters = ON, lowercase letters = OFF)
- ③ To change the value of each parameter, rotate the double function editor under the parameter name or use the UP/DOWN keys for finer adjustments. The display automatically returns to the parameter name when editing is finished. Each press of the DISPLAY SELECT key toggles the screen to display all parameter names or all parameter values at once. The display below will appear when the "DRIV" value for DIST1 is edited, for example.

B DIST 1 : 10 LEVL FREQ GAIN Q

4) Edit other effects by pressing the corresponding double function editor (A – F). The display below will appear when Exciter is selected, for example.

C EXCITER : BLND FREQ

To return to the [SELECT] display, press the PARAM EDIT key twice. The first press exits the Parameter Edit Mode, and the second press returns to the mode again.

COMPARE FUNCTION

Pressing the CHAIN/EFFECT[Bypass] double function editor, during while in the PARAM/EDIT [SELECT] display can recall the original program before edits.

1. Comparing chains, effect variations, or effect ON/OFF

1) Enter the parameter Edit Mode and edit chains, effect variations, or effect settings(ON/OFF).

01 [SELECT] : COMP - OVD1 - xcit - DLY1 - cho1 - RM 2

2) To compare your current EDIT with THE ORIGINAL PROGRAM, Press the PARAM/EDIT Button twice, to first exit the Edit mode and to re - enter the [SELECT] display. Now press the CHAIN/EFFECT BYPASS button to enter the COMPARE MODE. (Recalling the original settings can be visually confirmed with the "C" in the display, as in the figure below.) Pressing the CHAIN/EFFECT[Bypass] double function editor again (leaving the original program without editing it), returns you to the edited program. It is now possible to continue editing or to write the new program.

01 [SELECT] **C COMP - DST1 - XCIT - DLY1 - CHO1 - RM 1**

2. Comparing effect parameters

1) After selecting an effect you wish to edit in the Parameter Edit Mode, start editing it's parameters with the double function editors.

While the parameters are being edited, press the Display Select Key to display all parameters values at once.

****B** DIST 1 : 46 50 3.00 0 7.00**

2) Pressing the CHAIN/EFFECT[Bypass] double function editor recalls their original parameter values. This can visually be confirmed with a "C" on the display, as in the figure below. Pressing the CHAIN/EFFECT[Bypass] double function editor again (leaving the original data without editing it), returns you to the edited program.

****B** DIST 1 **C** 50 50 3.00 10 3.50**

3) Comparing only CHAIN Edits when first entering the PARAM/EDIT[SELECT] display , it is possible to Select a different chain and (by pressing the CHAIN/EFFECT/BYPASS) view the originally programmed chain. Pressing the CHAIN/EFFECT BYPASS button again returns you to the chain edit

Saving DATA (WRITE OPERATION)

This mode is for storing the edited program data or copying one program to another program number. Unless stored in this mode, the edited data will be erased when selecting another program.

Setting Up

Make sure the LED in the UTILITY key is not lit.

When a card is not used

1) After editing the effect parameters in Parameter Edit mode or selecting a program to copy, press the WRITE key. Program number 6 is selected in the figure below.

PROGRAM WRITE 6 → 6 YES / NO

2) Use the UP/DOWN keys to select the destination program number. The destination number is indicated above the "D" double function editor. Holding down the UP/DOWN keys continuously scrolls through the program numbers.

3) Press the double function editor immediately below "YES" to execute the Write function. To cancel the Write operation, simply press "NO".

4) When write operation is completed, the display below appears.

WRITE COMPLETED!!

♠ To leave from the Write Mode, you must press "YES", "NO", or the Write Key.

When a card is inserted

When using a memory card, the A2's memory area is expanded to program Nos. 1 – 200. However, certain limits apply to the program number for storage.

(1) Edited programs cannot be written to Programs # 101 – #200, when using the A3 cards.

(2) Edited programs can be written to both Programs #1 – 100 and Programs #101 – 200. When using internal chains.

(Note: Internal chains are built into the A2. Internal chains are, when selected, displayed in numbers only.)

(3) When using external chains;

Edited programs #1 – 100 cannot be written to Programs #101 – 200.

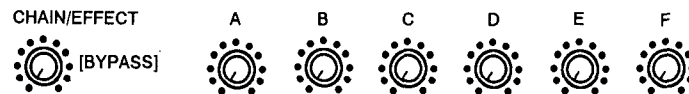
Edited programs #101 – 200 cannot be written to Programs #1 – 100.

(Note: External chains are provided from the memory cards. External chains are, when selected, displayed in letters and numbers.)

WRITE TO \ WRITE FROM	# 1~100	# 101~200
	Internal Chains # 1~100	○
External Chains # 1~100	○	×
Internal Chains # 101~200	○	○
External Chains # 101~200	×	○

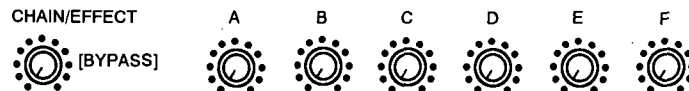
Error messages in Write operation

ROM CARD!



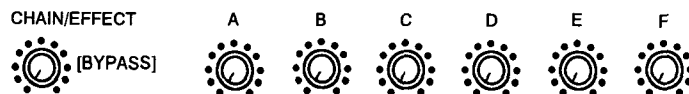
You tried to write to a ROM card. Use a RAM card.

A3 CARD!



No write operation can be made to the A3 memory cards. If you wish to use the A3 card for the A2, load the A3 data from such a card to the A2, first. Then, re – format the card for the A2 and save the data. Once you have re – formatted the A3 card, you cannot use it again for the A3.

WRITE PROTECTED CARD



Card protection is set on the RAM card itself. Turn off the "WRITE PROTECT SW" and attempt the Write operation again.

PERFORMANCE PARAMETERS

Performance Play mode displays the featured parameters for the maximum of six effects in a chain. The A2 calls these the performance parameters. The displayed position of performance parameters has one – by – one correspondence to that of the effect names in Individual Play. Press DISPLAY SELECT key to see the parameters. The figure below shows that "SENS" is a performance parameter of "COMP" effect.

Individual Play

: COMP- DST1- XCIT- DLY1- CHO1- RM 1



Performance Play

: SENS- DRI V- BLND- Dly T- EBAL- EBAL

Parameter Name	Display	Functions
SENSITIVITY	SENS	Sensitivity of compressor.
TONE	TONE	Frequencies of equalizer.
DRIVE	DRIV	Amount of gain in distortion group effects.
BLEND	BLND	Amount of exciter (depth of effect).
DELAY TIME	DlyT	Delay time of delay group effects.
E.R TIME	E.rT	Time to the start of early reflection.
SPEED	SPD	Speed of effects having SPEED parameters.
DEPTH	SPD	Depth of effects having DEPTH parameters.
EFFECT BALANCE	EBAL	Balance of effects having EBAL parameters.
PITCH	PTCH	Pitch of pitch shifter.
THRESHOLD LEVEL	THR	Threshold level of gate.
RATIO	RATO	Ratio of limiter.
AMBIENCE	Amb	Ambience for reverb II, etc.

UTILITY

The following five functions make up the Utility mode.

(1) NAME

Naming of programs.

(2) LEVEL

Sets the master volume and the threshold level of the internal noise gate for each program.

(3) PEDAL/SW (Pedal switch)

Assigning functions to Pedal SW 1,2 jacks on the rear panel.

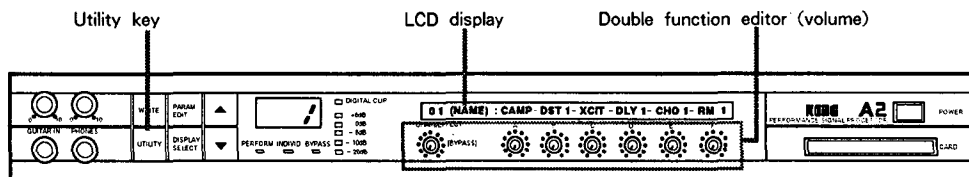
(4) CARD

Loading data from optional ROM/RAM cards to the A2's internal memory, and saving internal data to RAM cards.

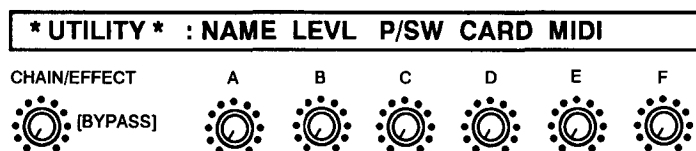
(5) MIDI

- Selecting the MIDI channels and OMNI ON/OFF.
- Loading and saving data through MIDI Exclusive Message.

Setting Up



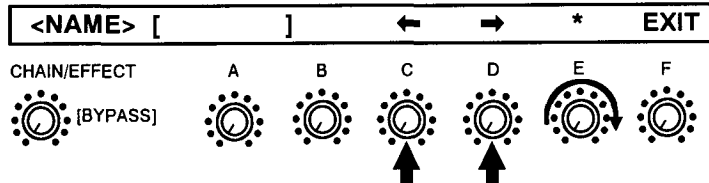
- ① Press the UTILITY key. The LED in the key lights up. The Utility mode can be selected directly from any modes (except when the Write operation is executed). To return to the previous operation or mode, press the UTILITY key again. The LED will go off. The display below appears when selecting the Utility mode.



- ② Press the double function editor (A – E) under the parameter you wish to edit.

1.NAME

Before entering the Utility mode, use the UP/DOWN keys to select the program you wish to name. Select "NAME" (press "A" double function editor) in the Utility mode, and name the program within 7 characters. The display appears as below.



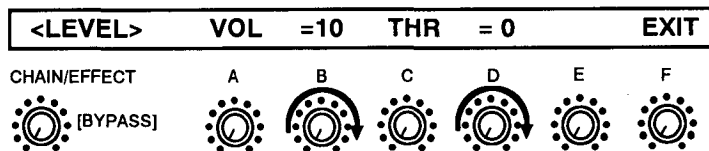
Press the double function editors C(←) and D(→) to shift the cursor in the name field. Then, select the characters by rotating the E(*) double function editor. Use the UP/DOWN keys to single – step through the characters. When naming is finished, press the F(EXIT) double function editor or the Utility key. (There is no need to write it.)

The following characters and numbers are available for naming.

	!	"	#	\$	%	&	'	(	)	*	+	,	-	.	/	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	{	|	}	→	←

2.LEVEL

Before entering the Utility mode, select the program you wish to change the level. Select "LEVL" (press "B" double function editor) in the Utility mode. The display appears as below.



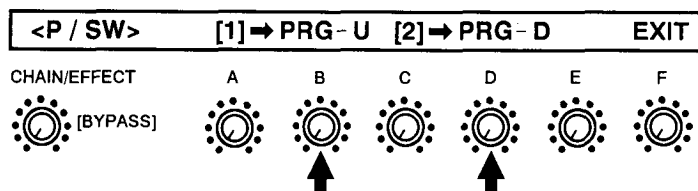
- The master volume of the selected program can be adjusted by rotating the "B" double function editor. (Adjustable range = 0 – 10)
- The threshold level of the internal noise reduction can be adjusted by rotating the "D" double function editor. (Adjustable range = 0 – 10)
- Press the "F" double function editor directly below "EXIT" to return to the initial Utility mode display.

About Noise Reduction System

The A2 is equipped with the digital noise reduction system which shuts down the output signal when the input signal falls below a certain level. This user selectable level is called the threshold. The higher the noise level is, the higher the threshold level should be.

3. Pedal/Switch (P/SW)

Select "P/SW" (press "C" double function editor) in the Utility mode. The display appears as below.



To assign the functions to Pedal Switch 1, press the "B" double function editor. Likewise, to assign the functions to Pedal Switch 2, press the "D" double function editor.

Functions Controllable with KORG Volume Pedal KVP - 001

- VOL (Volume) : For continuous adjustment of effect volume.
- PARAM (PARAMETER CONTROL) : For continuous control of effect parameters. Controllable parameters are listed in the attached "Effect Parameter List".

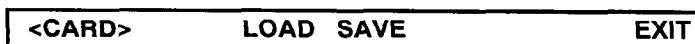
Functions Controllable with Footswitches (such as KORG PS - 1)

- PROG - U (Program Up) : Advances the program number by 1.
- PROG - D (Program Down) : Reverses the program number by 1.
- BYPASS : Switches the bypass function ON/OFF.
- R.SPD (Rotary speaker speed) : Changes the speed of Rotary speaker effect.

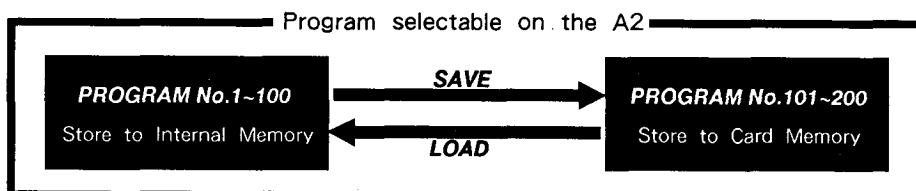
4. CARD

You can use any RAM cards or A3 ROM cards for the A2. But the chains in the A3 ROM cards SPC - 01, 02, 03, 04 and 05 are already built into the A2. ROM cards, available from your nearest KORG dealers, are capable of providing additional effects and effect programs into the A2. (You cannot save any data to the cards.) On the other hand, the A2 data can be both loaded from and saved to RAM cards.

Select "CARD" (press "D" double function editor) in the Utility mode. The display below appears.



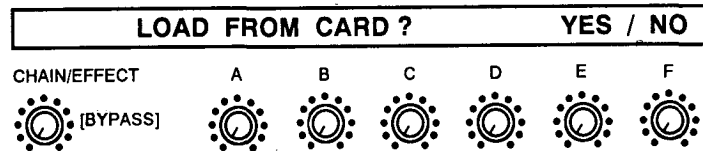
Select "SAVE" to store the A2's internal data to the card. Select "LOAD" to send the card data into the A2's internal memory. Press EXIT to cancel the operation.



① LOAD Operation

Procedure

- 1) Insert a ROM or RAM card into the CARD slot of the A2. Then, select "LOAD" while < CARD> is shown on the display. The display appears as below.



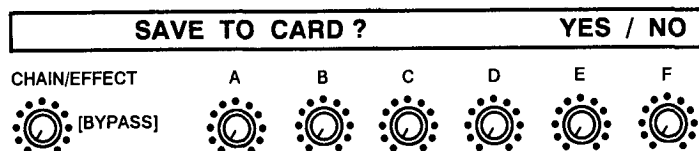
- 2) Select "YES" to start loading. When loading is completed, the display will return to the initial Utility mode.

② SAVE Operation

Procedure

- 1) Insert a RAM card into the A2's CARD slot. (Make sure the Protect Switch on the upper left corner of the card is set to OFF.) Then, select "Save" while < CARD> is shown on the display. The display appears as below.

Following the above procedure, the card data for programs Nos. 101 – 200 are now transmitted to the A2's internal programs Nos. 1 – 100.



- 2) Select "YES" to start saving. When saving is completed, the display will return to the initial Utility mode. Following the above procedures, the A2's internal data for programs Nos. 1 – 100 are now transmitted to the programs Nos. 1 – 100 in the card.

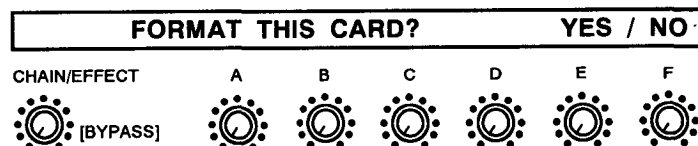
- ♣ To save the A2's internal data to a RAM card formatted to the A3, you have to re – format the card to the A2 before going into the saving operation. Formatting an A3 card to the A2 results in erasing all previous A3 data in the card and saving the A2 data – Programs #1 – 100

③ How to Format a RAM Card

Before using newly purchased RAM cards or RAM cards that are formatted to other devices, you must have them formatted on the A2.

Procedure

- 1) Insert the RAM card you wish to format into the CARD slot. When doing so, make sure the Write Protect Switch on the upper left of the card is set to OFF. When you insert the card, the display may indicate "DIFFERENT CARD". Even when this happens, continue the operation.
- 2) Enter the Utility mode and select "CARD" (by pressing the "D" double function editor). The display appears as below.

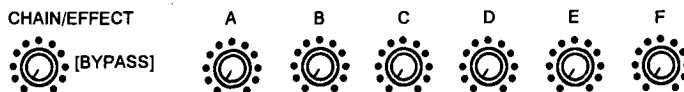


- 3) Press the E double function editor right below "YES" to execute the formatting operation. The display will return to the initial Card selection display as soon as the formatting is completed.
 - 4) Select "YES" (press the "E" double function editor) to execute the formatting operation. When formatting is completed, the display returns to the initial Card mode.
- ♣ When formatted, the card is written with the data ID which indicates that the card has been formatted to the A2, as well as saving the program data for Nos. 1 – 100.

④ Error Messages

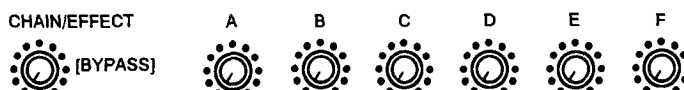
When any of the following error messages appears in the display, attempt the operation again according to each instruction.

DIFFERENT CARD !



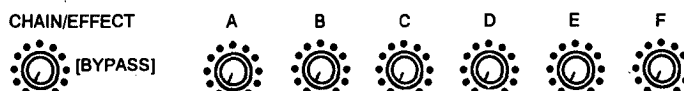
☆ The inserted ROM card is neither for the A2 nor the A3, or you have inserted an unformatted card with its "WRITE PROTECT SW" at ON position.

NO CARD !



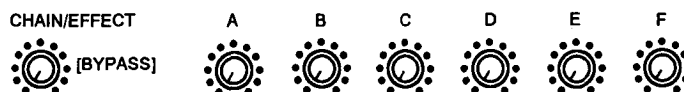
☆ The card is not properly inserted, or not inserted at all. Insert a RAM or ROM card, firmly.

WRITE PROTECTED CARD



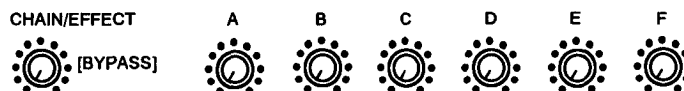
☆ You are using a write – protected RAM card. Slide the protect switch to OFF and attempt the Save operation again.

ROM CARD !



☆ Data cannot be saved to a ROM card. Use a properly formatted RAM card.

*** DATA ERROR !! ***



☆ Save or Load has not been correctly executed. Attempt the operation again. The card may possibly be damaged if this message appears repeatedly. When this message appears during the formatting operation, either the Protect Switch on the card is ON or the card itself is damaged.

5.MIDI

When you select "MIDI" in the Utility mode, the following will appear in the display.

① MIDI Receive, Transmit Channels and OMNI

To set the MIDI channel, press the "A" double function editor. The channel number advances by 1 upon each pressing of the "A" double function editor. (Range = CH 1 – 16) Select the Omni setting by pressing the "C" double function editor. Omni can be only toggled ON/OFF.

Omni ON is indicated by the capital letters "OMNI", and Omni OFF by the lowercase letters "omni" in the display.

★ When OMNI is set to OFF, only the MIDI data in the selected MIDI channel are received. Likewise, set the EXCLUSIVE by pressing the "C" or "D" double function editor. EXCLUSIVE ON is indicated by the capital letters "EXCLUSIVE", and EXCLUSIVE OFF by the lowercase letters "exclusive".

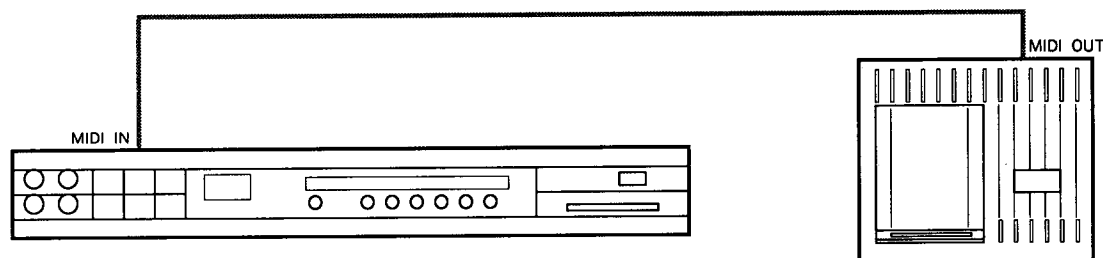
★ When EXCLUSIVE is set to OFF, the A2's parameters cannot be edited nor the program parameters can be received through the exclusive message.

★ When EXCLUSIVE is set to OFF, the A2's program parameters cannot be transmitted nor received through the exclusive message.

Select "EXIT" to return to the initial Utility mode. Set the EXCLUSIVE OFF during normal operation.

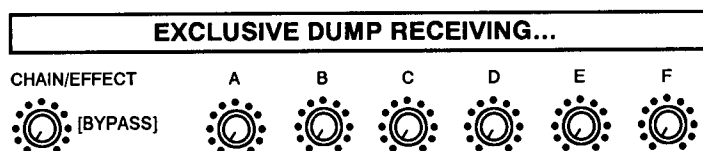
② Load by MIDI Exclusive Message

1) Connect the MIDI IN port on the A2 to the MIDI OUT port on the external MIDI data filer.

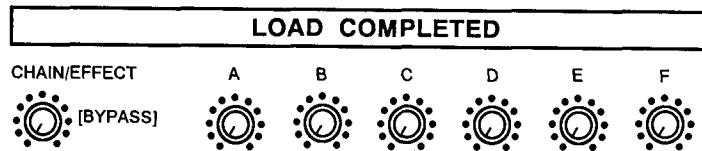


2) After you select "MIDI" in the Utility mode, select EXCLUSIVE ON by pressing the "C" or "D" double function editor. The capital letter "EXCLUSIVE" indicates that the A2 is ready for loading the exclusive data.

3) When the data is transmitted from an external device and being loaded to the A2, the following message will appear in the display.



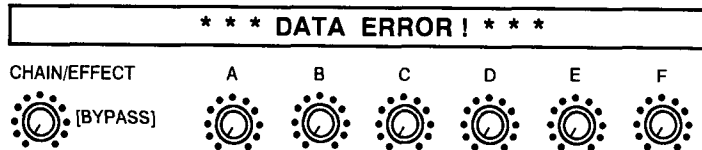
4) When loading is completed, the display shows the following message, and returns to the initial MIDI display in the Utility mode within a few seconds.



The data from an external MIDI device are loaded to the A2's internal programs Nos.1 – 100 by the above operation.

Data Error in Loading Operation

- If the following message appears while data is being loaded, there has been a error in data transmission. Attempt the loading operation, again. If the same message appears repeatedly, the data files may be damaged.

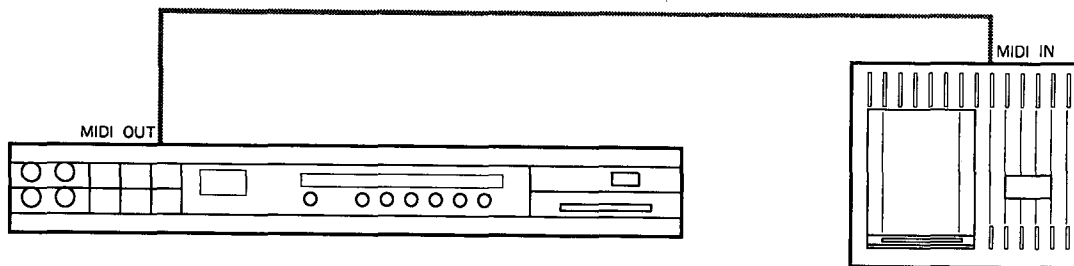


- If the "EXCLUSIVE DUMP RECEIVING" message remains on the display after the external device finishes sending the MIDI data, the data transmission may have been interrupted by a loose MIDI cable. Also , when an error occurs during loading, part of data may be automatically modified by the A2's system protecting function.

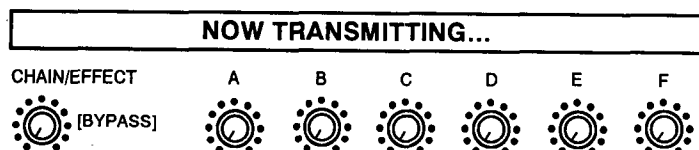
- 1) Data was not sent at all, because the MIDI cable was not connected properly.
- 2) The data being sent was formatted on something else other than the A2.

③ Saving by MIDI Exclusive

- 1) Connect the MIDI OUT port on the A2 to the MIDI IN port on the external data filers such as KORG MIDI DATA FILER DF – 1, KORG MIDI RECORDER SQD – 8, or T – series keyboard. (Set the MIDI output switch on the rear panel of the A2 to OUT.)



- 2) Set the external MIDI device to receive MIDI data.
- 3) After selecting "MIDI" in the Utility mode, select "DUMP" by pressing the "E" double function editor. The message below will appear, indicating that a saving operation through MIDI exclusive is being executed.

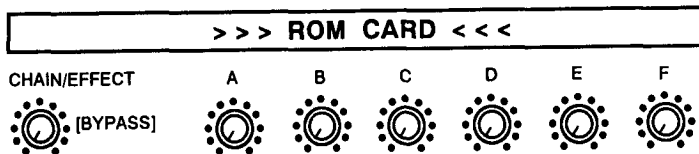


- 4) When the data is transmitted from an external device and being loaded to the A2, the following message appears in the display.
- 5) When saving is completed, the display returns to the initial MIDI display in the Utility mode.

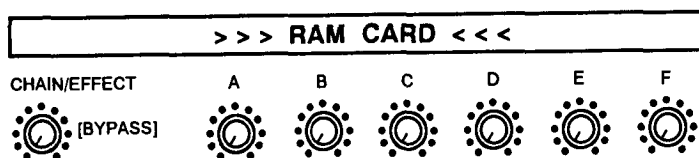
OTHER MESSAGES

When Card is Used:

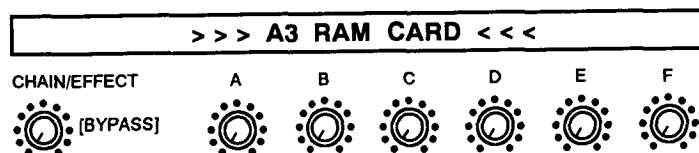
☆The inserted is a ROM card.



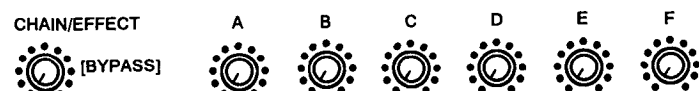
☆The inserted is a RAM card.



☆A RAM card formatted to the A3 is inserted.



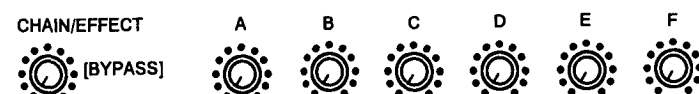
*** CARD BATTERY LOW ***



☆ The back – up battery in the RAM card is low. When you find this message, replace immediately with a new battery (CR2016 lithium battery). When changing the batteries, make sure the card is kept inserted in the slot until you finish replacing them (to protect the card data from being erased).

When Turning On the Power

INTERNAL BACKUP BATTERY LOW !



☆ The back – up battery (to preserve the A2's internal memory) is low. When you see this message, contact immediately the store of purchase or your nearest KORG service center for battery replacement.

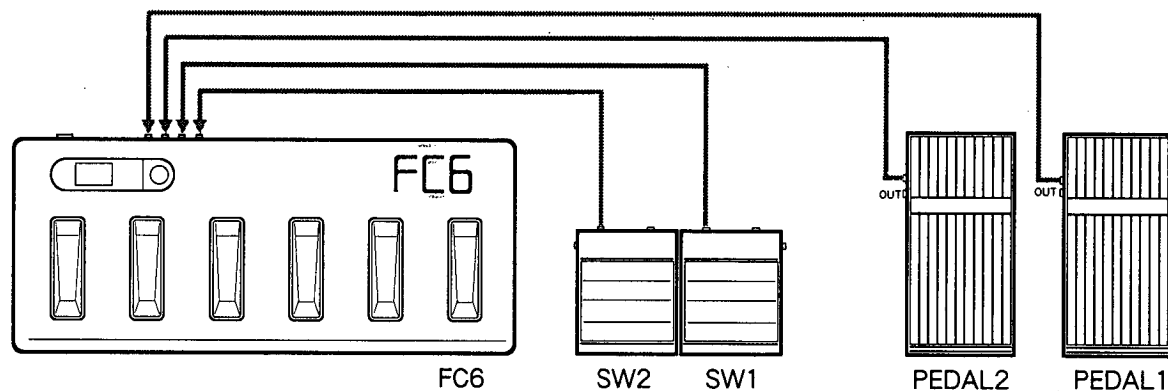
OTHER FUNCTIONS OF THE FC6

The optional FC6 Foot Controller is especially designed to make control of the A2 easier and faster. When you connect it to the A2, you can control the program changes and ON/OFF switching of individual effects, as explained on pages 15 – 16.

Moreover, you will be able to control many other functions of the A2 by connecting footswitches or volume pedals to the FC6.

Setting Up

Connect footswitches such as PS – 1 or PS – 2 to the SW 1, 2 terminals on the rear panel of the FC6. And connect KVP – 001 Volume Pedal to one of the PEDAL 1, 2 terminals. (See the illustration below.)



SW 1 : For switching the manuals (modes) of the FC6.

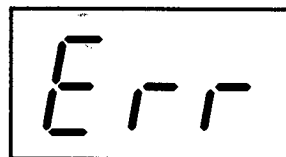
SW 2 : For turning the A2's Bypass function ON/OFF.

PEDAL 1 : For controlling the volume of the A2.

PEDAL 2 : For controlling individual effect parameters. See the attached "Effect Parameter List". This pedal allows you to obtain such effects as pedal – controlled pan and pedal – controlled wah – wah.

- ◆ The pedals directly connected to A2 have priority over these accessory pedals when the Pedal/Switch function is already set to "Volume" or "Parameter Control" in the Utility mode. When you desire to use PEDAL 1 or 2 of the FC6, set the A2 Pedal/Switch function to parameters other than "Volume" and "Parameter Control".

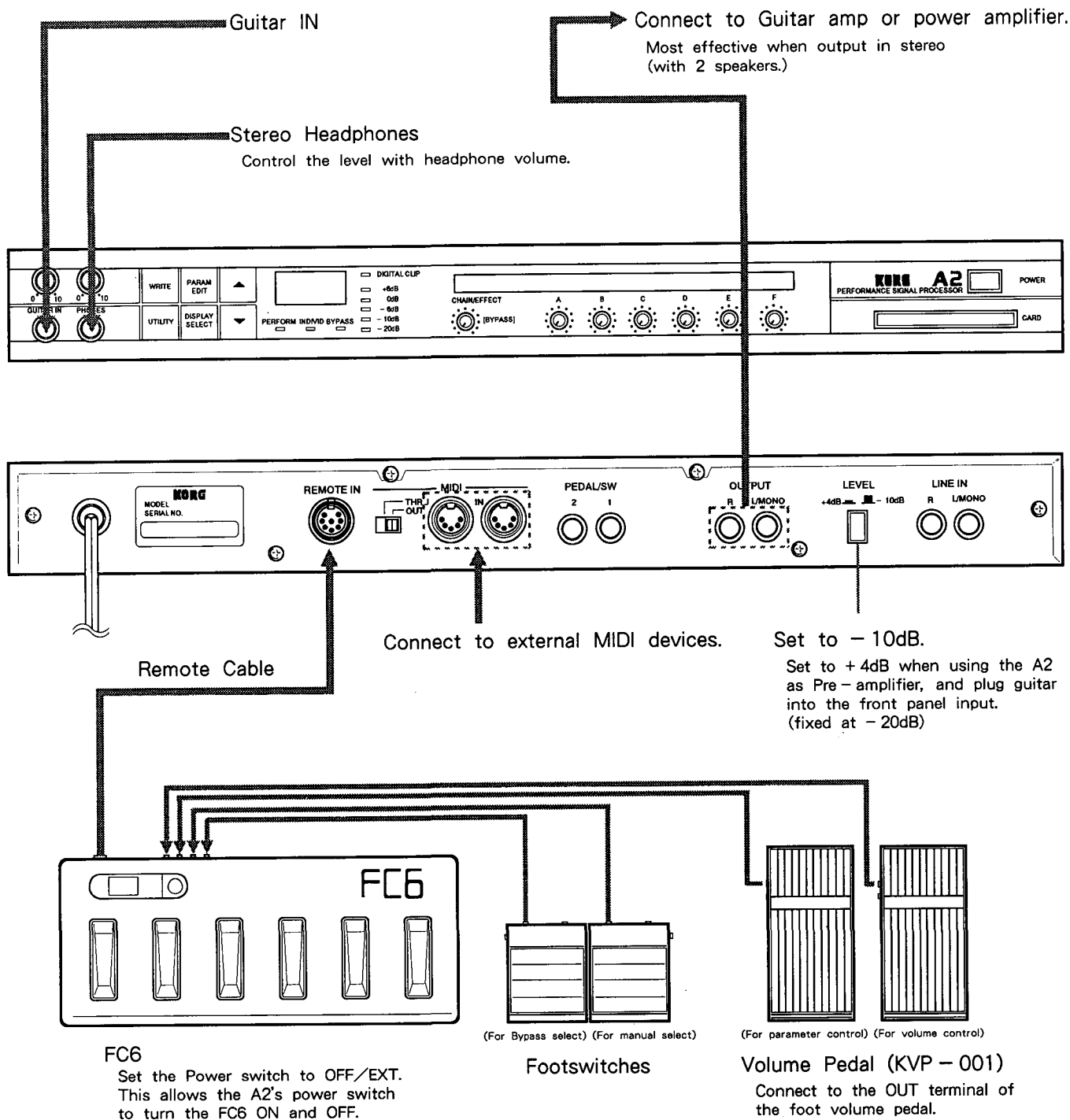
Error Messages on the FC6



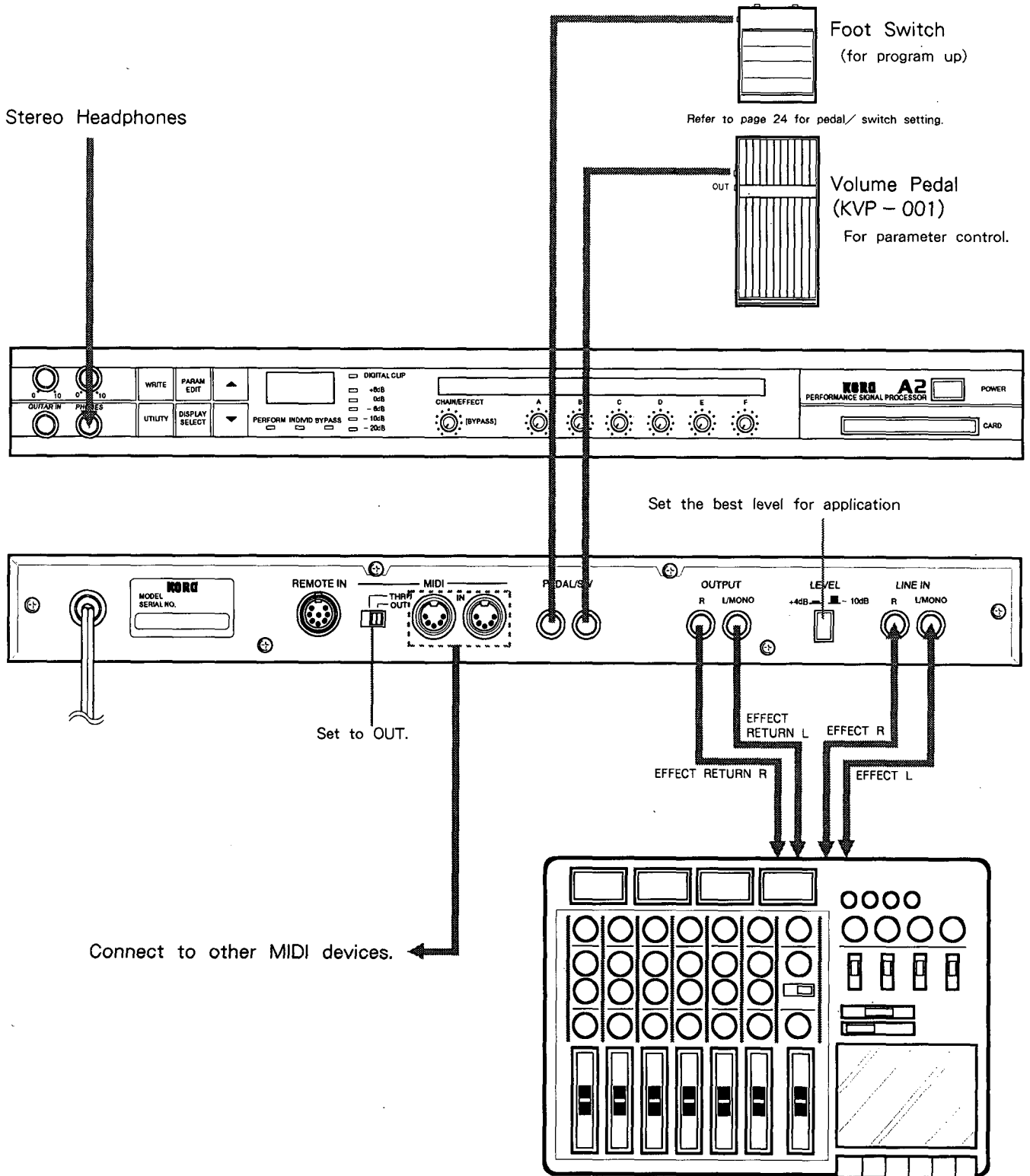
When this message appears on the LED of the FC6, the cable is not correctly connected. Check if the cable is firmly connected.

CONNECTING EXAMPLES WITH THE A2

1. Guitar Setup (with the FC6)



2. Mixer and Multi-track recorder Setup



MIDI IMPLEMENTATION

1. TRANSMITTED DATA

1-1 Channel Messages

Status	Second	Third	Description	ENA
1011 nnnn	0000 0000	0000 0000	Program Bank Change (MSB)	P
1011 nnnn	0010 0000	0000 0000	Program Bank Change (LSB)	P
1011 nnnn	0000 1100	0vvv vvvv	Effect Control 1	*1
1011 nnnn	0000 1101	0vvv vvvv	Effect Control 2	*2
1011 nnnn	0101 1011	0ddd dddd	Effect 1 Depth	*3
1011 nnnn	0101 1100	0sss ssss	Effect 2 Depth	*4
1100 nnnn	0ppp pppp	---- ----	Program Change	P

nnnn : MIDI Channel Number
 c : Bank (0 = Internal / 1 = Card)
 vvv vvvv : Value (0 - 127)
 ddd dddd : OFF(0 - 63) ON(64 - 127)
 sss ssss : Slow(0 - 63) Fast(64 - 127)
 ppp pppp : Program Number (0 - 99)

ENA = P : Enabled when Play or Edit Mode

- *1 : Volume Control (When volume Control pedal is Effective)
- *2 : Parameter Control (When volume Control pedal is Effective)
- *3 : Bypass Control (When Play or Edit Mode)
- *4 : Rotary Effect Speed Control (When Rotary speed Control pedal is Effective)

1-2 System Exclusive Messages

Func	Description	R	C	D	E
40	PROGRAM PARAMETER DUMP	o	o		
4C	ALL PROGRAM PARAMETER DUMP			o	
26	RECEIVE MESSAGE FORMAT ERROR				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
1011 nnnn	0000 0000	0000 0000	Program Bank Change (MSB)	P
1011 nnnn	0010 0000	0000 0000	Program Bank Change (LSB)	P
1011 nnnn	0000 1100	0vvv vvvv	Effect Control 1	*1
1011 nnnn	0000 1101	0vvv vvvv	Effect Control 2	*2
1011 nnnn	0101 1011	0ddd dddd	Effect 1 Depth	*3
1011 nnnn	0101 1100	0sss ssss	Effect 2 Depth	*4
1011 nnnn	0111 1100	0000 0000	Omni Mode Off	
1011 nnnn	0111 1101	0000 0000	Omni Mode On	
1100 nnnn	0ppp pppp	---- ----	Program Change	*5 P

nnnn : MIDI Channel Number
 c : Bank (0 = Internal / 1 = Card)
 ddd dddd : OFF(0 - 63) ON(64 - 127)
 sss ssss : Slow(0 - 63) Fast(64 - 127)
 ppp pppp : Program Number (0 - 99)

ENA = P : Enabled when Play or Edit Mode

- *1 : Volume Control (When volume Control is Valid)
- *2 : Parameter Control (When volume Control is Valid)
- *3 : Bypass Control (When Play or Edit Mode)
- *4 : Rotary Effect Speed Control (When Rotary speed Control is Valid)
- *5 : Data beyond value of 99 are assigned a new value by subtracting 100.

2-2 System Exclusive Messages

Func	Description	P	O
10	PROGRAM PARAMETER DUMP REQUEST	o	o
1C	ALL PROGRAM PARAMETER DUMP REQUEST	o	o
11	PROGRAM WRITE REQUEST	o	o
40	PROGRAM PARAMETER DUMP	o	o
5C	ALL PROGRAM PARAMETER DUMP	o	o

Received when

- P : Play or Edit Mode
- O : Any Other Mode

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

(1) PROGRAM PARAMETER DUMP REQUEST

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

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

(2) ALL PROGRAM PARAMETER DUMP REQUEST

Byte	Description	
F0, 42, 3n, 2D	Exclusive Header	
0001 1100	All Program Parameter Dump Request	1CH
1111 0111	EOX	

Receives this message, and transmits Func=4C or Func=24 message.

(3) PROGRAM WRITE REQUEST

Byte	Description	
F0, 42, 3n, 2D	Exclusive Header	
0001 0001	Program Write Request	11H
0000 000c	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.

(4) PROGRAM PARAMETER DUMP

Byte	Description	
F0, 42, 3n, 2D	Exclusive Header	
0100 0000	Program Parameter Dump	40H
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.

(5) ALL PROGRAM PARAMETER DUMP

Byte	Description	
F0, 42, 3n, 2D	Exclusive Header	
0100 1100	All Program Parameter Dump	4CH
0ddd dddd	Chain Data	(NOTE 6)
....	
0ddd dddd	Parameter Data	(NOTE 6)
....	
1111 0111	EOX	

Receives this message and data, and transmits Func=23 or Func=24 message.

Receives Func=1C message, and transmits this message and data. Transmits this message and data by DUMP sw.

(6) MIDI IN DATA FORMAT ERROR

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

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

(7) DATA LOAD COMPLETED

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

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

(8) DATA LOAD ERROR

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

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

(9) WRITE COMPLETED

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

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

(10) WRITE ERROR

I

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

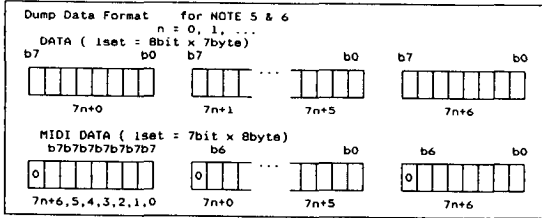
Transmits this message when DATA WRITE by MIDI has not been completed.

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

NOTE 2 : c = 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)



NOTE 5 : Program Parameter dump format (see TABLE 1)
[Parameter No.00], ..., [Parameter No.63]
64byte = 7*9+1 --> 8*9+(1+1) = 74byte

NOTE 6 : All Data dump format (100 Prog.)
f = 0 : Internal Program Only
Chain Data 8192byte = 7*1170+2 --> 8*1170+(2+1) = 9363byte
Parameter Data (TABLE 1 * 100)
[Prog.100 (64byte)], ..., [Prog.199 (64byte)]. (see NOTE 5)
6400byte = 7*914+2 --> 8*914+(2+1) = 18595byte

TABLE 1 Program Parameters (64bytes)

offs.	Parameters	Data(Hex) : Value
00	Chain Number	Internal:01~63, External:80~89
01	(no use)	
02	Master Volume	00~0A
03	Threshold	00~0A
04	(no use)	
05	Variation No. 01 and 02	1stFX(bit0~3),2ndFX(bit4~7):00~07
06	Variation No. 03 and 04	3rdFX(bit0~3),4thFX(bit4~7):00~07
07	Variation No. 05 and 06	5thFX(bit0~3),6thFX(bit4~7):00~07
08	Variation No. 07 and 08	7thFX(bit0~3),8thFX(bit4~7):00~07
09~15	Program Name	7characters (fill with spaces if shorter)
16~21	1st FX parameters	6bytes (parameter value)
22~27	2nd FX parameters	6bytes (parameter value)
28~33	3rd FX parameters	6bytes (parameter value)
34~39	4th FX parameters	6bytes (parameter value)
40~45	5th FX parameters	6bytes (parameter value)
46~51	6th FX parameters	6bytes (parameter value)
52~57	7th FX parameters	6bytes (parameter value)
58~63	8th FX parameters	6bytes (parameter value)

TROUBLESHOOTING/ RACK MOUNT INSTALLATION

TROUBLESHOOTING

If a problem is found during operation of the A2, follow the suggestions below to check and remedy the trouble. If the A2 still does not function properly, contact the store of purchase or your nearest KORG service center.

No Sound

- ① Check if the INPUT volume is set to 0. Raise the level until the input signal reaches +6dB but not, the DIGITAL CLIP of the input indicator.
- ② The Level parameter in one of the effects (such as Distortion or Compressor) may have been set to 0. In this case, sound can be heard only when pressing the "BYPASS". Adjust the Level parameters.
- ③ Check if the master volume in the Utility mode is set to 0. If so, reset it to a suitable level.
- ④ If a volume pedal is connected, it may be in the up or no sound position.

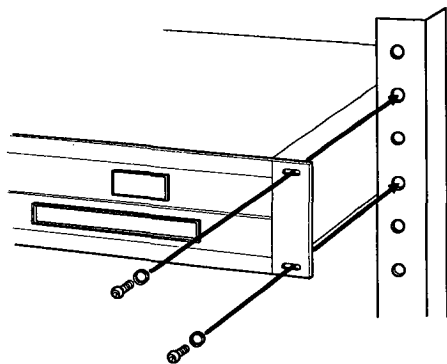
No Effect (or No sound change while editing)

- ① Check if BYPASS has been turned ON. Press the CHAIN/EFFECT double function editor to turn it OFF.
- ② Check if the Effect Balance parameter of each effect is set to 0. If so, reset it to a suitable level.
- ③ Check if any effects have been set to OFF. Make sure that each effect is indicated in capital letters in the Individual Play mode. Effects indicated in lowercase letters have been set to OFF. Press the double function editors (A – F) directly below them to turn them ON.

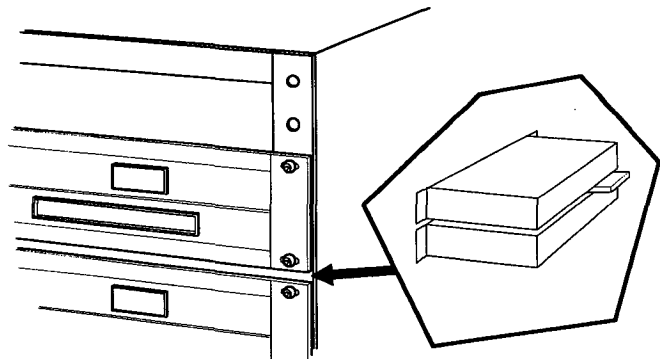
RACK MOUNT INSTALLATION

If you have a 19 – inch rack mount case, use the following procedure to install the A2.

- ① Mount the A2 to the rack, with the provided large screws.



- ② If there is more than 1/8" of space above or below the A2, put packing material into the space for stable



SPECIFICATIONS AND OPTIONS

- Front panel input : FRONT (GUITAR IN) fixed at -20dB (-5dBm MAX)/ $1\text{M}\Omega$
- Back panel input : Input level/impedance : $+4\text{dB}$ ($+19\text{dBm MAX}$)/ $50\text{K}\Omega$ -10dB ($+5\text{dBm MAX}$)/ $50\text{K}\Omega$
- Back panel output : Output level/impedance : $+4\text{dB}$ (19dBm MAX)/ 470Ω -10dB ($+5\text{dBm MAX}$)/ 470Ω
Headphone out impedance: over 10Ω
- AD/DA : 16 – bit linear (DA: 4 – times over – sampling digital filter)
- Sampling frequency : 37.1KHz
- Frequency response : 24Hz – 18KHz + 1.5/ – 3dB
- Dynamic range : 90dB
- Memory : No.1 – 100; No.1 – 200 when using card
- Front panel :
 - KEY SW : UP,DOWN,DISPLAY SELECT,PARAMETER EDIT,UTILITY,WRITE,POWER SW, DOUBLE FUNCTION EDITOR [A – F, CHAIN/EFFECT(BYPASS)]
 - Display : Backlit LCD display: 40 characters \times 1 row
 - PROGRAM No. display : 7 – segment LED \times 3
 - Dot type LEDs : PERFORMANCE,INDIVIDUAL,BYPASS,PARAMETER EDIT,UTILITY
 - Input level : 5 – element level meter, with digital clip
 - INPUT VOLUME
 - PHONES LEVEL
 - CARD slot
 - GUITAR IN terminal
 - PHONES terminal (stereo)
- Rear panel
 - Switches : level attenuation switch ($-10\text{dB}/+4\text{dB}$), MIDI OUT/THRU toggling switch
 - LINE IN terminal \times 2 (L/MONO,R)
 - OUT PUT terminal \times 2 (L/MONO,R)
 - PEDAL/SW input terminal \times 2
 - MIDI IN, MIDI OUT/THRU
 - REMOTE IN
- Internal effects: REVERB GROUP, COMPRESSOR GROUP, DISTORTION GROUP, DELAY GROUP,STEREO DELAY GROUP, MODULATION DELAY GROUP, MODULATION GROUP, ROTARY SPEAKER GROUP, PAN GROUP, PARAMETRIC EQUALIZER, PITCH SHIFTER GROUP, EXCITER GROUP, ENSEMBLE GROUP, PHASER GROUP, 3 BAND EQUALIZER, SPEAKER SIMULATION GROUP, PEDAL PAN, GATE,PEDAL WAH, EARLY REFLECTION, HARD DISTORTION GROUP, AUTO WAH GROUP, SPACE PHASER GROUP, MULTI TAP DELAY GROUP, LONG DELAY GROUP,TEMPO DELAY, DYNAMIC MODULATION GROUP, 4CH MIXER, GATE II GROUP, LIMITTER, BAND CHORUS GROUP, STEREO EXCITER, COMP/LIMITTER, SUPER DISTORTION GROUP, HARD DISTORTION II GROUP, NEW 3 BAND EQUALIZER, MULTI – TAP CHORUS, REVERB II GROUP,DRIVER, ROTARY SPEAKER II, MODULATION II GROUP, STEREO COMP/LIMITTER LEFT, STEREO COMP/LIMITTER RIGHT,STEREO PITCH SHIFTER/DELAY GROUP, SPACIAL REVERB GROUP,
- Power consumption: 26 W
- Dimensions: 482(W) \times 332.5(D) \times 44(H)mm (19" \times 12 – 15/16" \times 1 – 3/4")
- Weight : 4.5 kg (albs 14½oz)
- Optional accessories: VOLUME PEDAL(KVP – 001), FOOT SWITCH(PS – 1,PS – 2), REMOTE CABLE(RCC – 050,RCC – 100), FOOT CONTROLLER(FC6), RAM CARD(MCR – 03 only), ROM CARD(SPC – 01 –)

★ Specifications subject to change without notice.

MIDI IMPLEMENTATION CHART

Function		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	1 1~16	1 1~16	
Mode	Default Messages Altered	× × *****	MODE1 × ×	
Note Number	:True Voice	× ×	× ×	
Velocity	Note ON Note OFF	× ×	× ×	
After Touch	Key's Channels	× ×	× ×	
Pitch Bender		×	×	
Control Change		×	×	
Program Change	:True #	0~99 *****	0~127 0~99	* 1
System Exclusive		○	○	
System Common	:Song Pos :Song Sel :Tune	× × ×	× × ×	
System Real Time	:Clock :Command	× ×	× ×	
Aux Message	:Local ON/OFF :All Notes OFF :Active Sense :Reset	× × × ×	× × × ×	
Notes * 1 : Program number 1~100 is selected for Program change 1~128.				

Mode 1:OMNI ON, POLY
Mode 3:OMNI OFF,POLY

Mode 2:OMNI ON, MONO
Mode 4:OMNI OFF,MONO

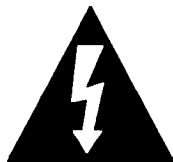
○ : Yes
× : No

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 serviced by qualified service personnel when:
 - A. The power-supply cord or the plug has been damaged; or
 - B. Objects have fallen, or liquid has been spilled into the product; or
 - C. The product has been exposed to rain; or
 - D. The product does not appear to, operate normally or exhibits a marked change in performance; or
 - E. The product has been dropped, or the enclosure damaged.
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



CAUTION

**RISK OF ELECTRIC SHOCK
DO NOT OPEN**



**CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**

N O T I C E

KORG products are manufactured under strict specifications and voltages required by each country. These products are warranted by the KORG distributor only in each country. Any KORG product sold without a warranty card or not carrying a serial number disqualifies the product from the manufacturer's warranty and liability. This requirement is for your own protection and safety.

KORG

PERFORMANCE SIGNAL PROCESSOR

A2

EFFECT PARAMETER LIST

CONTENTS

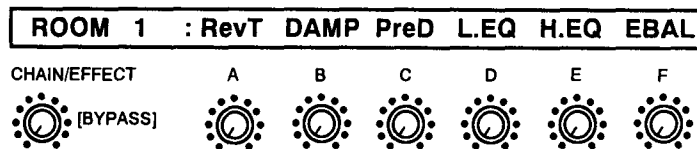
REVERB GROUP [RM1,2/HL1,2/PL1,2]	2
COMPRESSOR GROUP [COMP]	3
DISTORTION GROUP [DST1,DST2,OVD1,OVD2]	3
DELAY GROUP [DLY1,DLY2,DLY3]	4
STEREO DELAY GROUP [SDLY,XDLY]	5
MODULATION DELAY GROUP [MDL1,MDL2]	6
MODULATION GROUP [CHO1,CHO2,FLN1,FLN2]	7
ROTARY SPEAKER GROUP [R.SP]	8
AUTOPAN GROUP [PAN1,PAN2]	9
PARAMETRIC EQUALIZER [P.EQ]	9
PITCH SHIFTER GROUP [PTCH]	10
EXCITER GROUP [XCIT]	10
ENSEMBLE GROUP [ENS]	11
PHASER GROUP [PHA1,PHA2]	11
3 BAND EQUALIZER [EQ]	12
SPEAKER SIMULATION GROUP [SP1,SP2,SP3]	12
PEDAL PAN [PAN]	13
GATE [GATE]	13
PEDAL WAH [WAH]	14
EARLY REFLECTION [ER1,ER2,ER3]	14
HARD DISTORTION GROUP [HDST,TOD]	15
AUTO WAH GROUP [WAH1,WAH2]	16
SPACE PHASER GROUP [SPH1,SPH2]	17
MULTI – TAP DELAY GROUP [MTD1~MTD6]	18
LONG DELAY GROUP [LDLY1~LDLY3]	19
TEMPO DELAY [TDLY]	20
DYNAMIC MODULATION GROUP [DMD1,DMD2,PMD1,PMD2]	21
4CH MIXER [MIX]	22
GATE II GROUP [GAT1,GAT2]	23
LIMITER [LIM]	24
BAND CHORUS GROUP [BCH1,BCH2,BCH3,BCH4]	25
STEREO EXCITER [SXIT]	26
COMP/LIMITER [C/LM]	27
SUPER DISTORTION GROUP [SDS1,SDS2,SOD1,SOD2]	28
HARD DISTORTION II GROUP [HD2,TOD2]	28
NEW 3 BAND EQUALIZER [3BEQ]	29
MULTI – TAP CHORUS [MTC1,MTC2]	29
REVERB II GROUP [RM3,HL3,PL3]	31
DRIVER [DRV1,DRV2,DRV3,DRV4]	32
ROTARY SPEAKER II [RSP2]	33
MODULATION II GROUP [CHO3,CHO4,FLN3,FLN4]	34
STEREO COMP/LIMITER LEFT [LIM L]	35
STEREO COMP/LIMITER RIGHT [LIM R]	36
STEREO PITCH SHIFTER/DELAY GROUP [SPT1,SPT2]	37
SPACIAL REVERB GROUP [SRM1,SRM2,SHL1,SHL2,SPL1,SPL2]	38

EFFECT PARAMETERS

The A2 is equipped with 102 different effects in 44 effect groups. These effects and parameters make up the effect "chains" of the A2. This section explains the function of each effect program and its individual parameters.

REVERB GROUP [RM1,2/HL1,2/PL1,2]

This effect group provides spatial depth to a sound by simulating the ambience and reverberation characteristics of a concert hall or room.



Variation

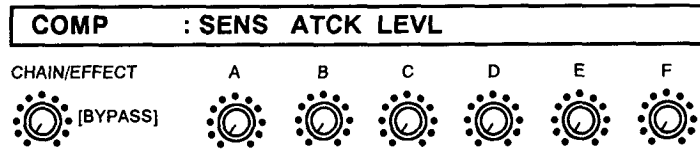
- ROOM1 [RM 1]: Room type reverb
- ROOM2 [RM 2]: Room type reverb
- HALL1 [HL 1] : Hall type reverb
- HALL2 [HL 2] : Hall type reverb
- PLATE1 [PL 1] : Plate type reverb
- PLATE2 [PL 2] : Plate type reverb

Parameters

A	RevT	REVERB TIME	0.1-5.0[SEC]	Reverberation time, the time that the reverb takes to decay.
B	DAMP	HIGH DAMP	0-99	Amount of high frequency damping. The higher this value, the faster high frequencies decay.
C	PreD	PRE DELAY	0-100[mSEC]	Time from direct sound to the start of early reflection.
D	L.EQ	LOW EQ	- 12-12[dB]	Gain for equalizing (cutting or boosting) low frequencies.
E	H.EQ	HIGH EQ	- 12-12[dB]	Gain for equalizing (cutting or boosting) high frequencies.
F	EBAL	EFFECT BALANCE	0-100	Balance between direct sound and effect output.

COMPRESSOR GROUP [COMP]

This is a LIMITTER effect which suppresses the high level attack transients of an input signal sound by compressing that signal. This effect also helps sustain or lengthen the sound by raising the level as a sound decays.

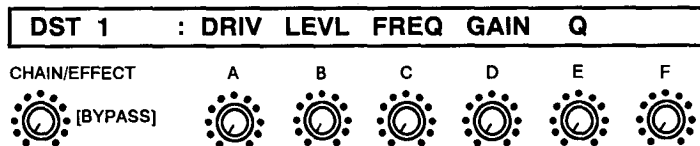


Parameters

A	SENS	SENSITIVITY	0~100	Degree of the compressor effect. Input sound is output as it is, without processing, at 0. Effect is maximum at 100.
B	ATCK	ATTACK	0~20	Speed of the attack. The higher this value, the faster the attack.
C	LEVEL	LEVEL	0~100	Output level of the effect sound.

DISTORTION GROUP [DST1, DST2, OVD1, OVD2]

This effect creates a typical distortion effect used mainly by guitarists. The two variation groups differ in the degree of the effect; the Distortion with hard fuzz effects and the Overdrive group with mild distortion effects.



Variation

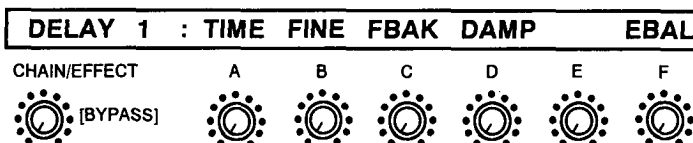
- DISTORTION1 [DST1] : Distortion type effect
- DISTORTION2 [DST2] : Distortion type effect
- OVER DRIVE1 [OVD1] : Overdrive type effect
- OVER DRIVE2 [OVD2] : Overdrive type effect

Parameters

A	DRIV	DRIVE	0~100	Amount of distortion.
B	LEVL	LEVEL	0~100	Output level of the effect sound. The larger this is, the louder the effect sound.
C	FREQ	FREQUENCY	0.55~8.00[KHz]	Center frequency to boost or cut.
D	GAIN	GAIN	-12~12[dB]	Amount of boosting or cutting the frequency.
E	Q	Q	2.0~10.0	Effective range of boost or cut. The larger this value, smaller the effective range.

DELAY GROUP [DLY1, DLY2, DLY3]

This effect group provides repeated echo reflections to a sound in various settings. The three delay effects in this group are identical in their parameters but are set to different delay times in their factory settings.



Variation

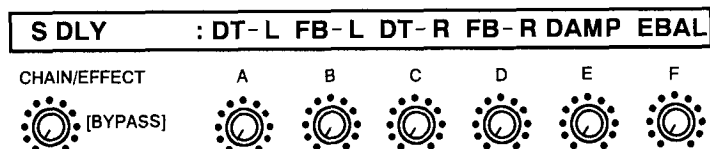
- DELAY1[DELAY1] : Long delay effects.
- DELAY2[DELAY2] : Short delay effects.
- DELAY3[DELAY3] : Doubling effects.

Parameters

A	TIME	DELAY TIME	0~800[mSEC]	Delay between direct sound and effect output. (Set in 10 – mSEC steps.)
B	FINE	TIME FINE	0.0~9.9[mSEC]	Delay between direct sound and effect output. (Set in 0.1 – mSEC steps.)
C	FBAK	FEEDBACK	-99~99	Amount of feedback. A negative value reverses the phase.
D	DAMP	HIGH DAMP	0~99	Amount of high frequency damping. The higher this value, the faster high frequencies decay.
F	EBAL	EFFECT BALANCE	0~100	Balance between direct sound and effect output. The larger this value, the louder the effect mix.

STEREO DELAY GROUP [SDLY, XDLY]

This effect adds independent delays to the left and right channels. High Damp and Effect Balance have the same left – and right – channel values.



Variation

STEREO DELAY [S DLY]: A stereo delay effect having two delay systems with parallel feedback. Each delay signal feeds back on itself.

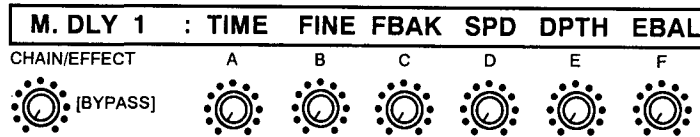
CROSS DELAY [X DLY]: A stereo delay in which the feedback signal of each delay crosses over to the other so that the delayed sound alternates left – right.

Parameters

A	DT-L	DELAY TIME L	0~400[mSEC]	Delay between direct sound and effect output for left channel.
B	FB-L	FEEDBACK L	- 99~+99	Amount of feedback in the left channel.
C	DT-R	DELAY TIME R	0~400[mSEC]	Delay between direct sound and effect output for right channel.
D	FB-R	FEEDBACK R	- 99~+99	Amount of feedback in the right channel.
E	DAMP	HIGH DAMP	0~99	Amount of high frequency damping. The higher this value, the faster high frequencies decay.
F	EBAL	EFFECT BALANCE	0~100	Balance between direct sound and effect output. The larger this value, the louder the effect mix.

MODULATION DELAY GROUP [MDL1, MDL2]

These are two modulation effects that can drastically alter the character of the original sound. This effect allows the use of positive or negative feedback for the creation of unique effects.



Variation

MODULATION DELAY1 [MDL1]: Sine (~) wave is used for the LFO.

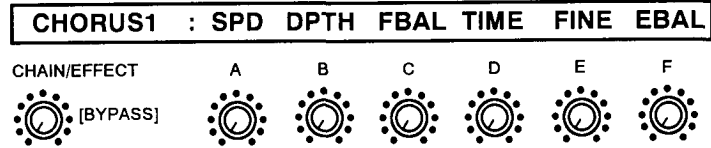
MODULATION DELAY1 [MDL2]: Triangle (^v) wave is used for the LFO.

Parameters

A	TIME	DELAY TIME	0~500[mSEC]	Delay between direct sound and effect output. (Set in 10 – mSEC steps.)
B	FINE	TIME FINE	0.0~9.9[mSEC]	Delay between direct sound and effect output. (Set in 0.1 – mSEC steps.)
C	FBAK	FEEDBACK	-99~+99	Amount of feedback. The larger the absolute value of this parameter, the more metallic the sound becomes.
D	SPD	SPEED	0.05~10.0[Hz]	Speed of modulation.
E	DPTH	DEPTH	0~100	Depth of modulation.
F	EBAL	EFFECT BALANCE	0~100	Balance between direct sound and effect output. The larger this value, the louder the effect mix.

MODULATION GROUP [CHO1, CHO2, FLN1, FLN2]

This effect combines two chorus/flanger circuits in a stereo configuration. A swirling, constantly changing sound that moves between the stereo outputs is created through phase – inverted LFOs of the two circuits (L/R channels). LFO can be either a sine wave or a triangle wave.



Variation

STEREO CHORUS 1 [CHO1] : Stereo Chorus with sine wave (~) modulation.

STEREO CHORUS 2 [CHO2] : Stereo Chorus with triangle wave (^v) modulation.

STEREO FLANGER 1 [FLN1] : Stereo flanger with sine wave (~) modulation.

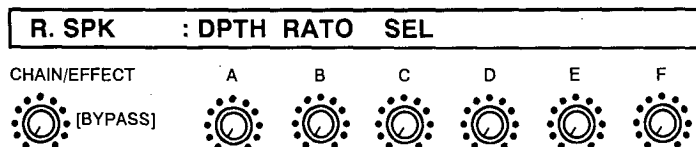
STEREO FLANGER 2 [FLN2] : Stereo flanger with triangle wave (^v) modulation.

Parameters

A	SPD	SPEED	0.05~10.0[Hz]	Speed of modulation.
B	DPTH	DEPTH	0~100	Depth of modulation.
C	FBAK	FEEDBACK	-99~+99	Amount of feedback. A negative value reverses the phase.
D	TIME	DELAY TIME	0~50[mSEC]	Time between direct sound and modulation effect. (Set in 1 – mSEC steps).
E	FINE	TIME FINE	0.0~0.9[mSEC]	Time between direct sound and modulation effect. (Set in 0.1 – mSEC steps).
F	EBAL	EFFECT BALANCE	0~100	Balance between direct sound and effect output. The larger this value, the louder the effect mix.

ROTARY SPEAKER GROUP [R.SP]

This reproduces the popular rotary speaker effect.



Parameters

A	DPTH	DEPTH	0~99	Depth of the rotary speaker.
B	RATO	SPEED RATIO	- 10+10	Speed ratio of the high frequency range speaker in relation to the rotation of the low frequency range speaker.
C	SEL	SPEED SELECT	HIGH/LOW	Speed of the rotation : high or low.

♣ One very important key to using this rotary speaker effect to the greatest advantage is to change the speed in real time, while playing. The following three methods can be used to change the speed in real time.

1) When using only the A2

Change the speed by rotating the volume "C"=SPEED SELECT in the Parameter Edit Mode. Or, set P/SW (pedal/switch) in Utility to [R.SPD] and connect a footswitch, such as KORG PS – 1, to the A2. Refer to the Owner's Manual, page 24 Utility (3) Pedal/Switch(P/SW), for more details.

2) When using the FC6

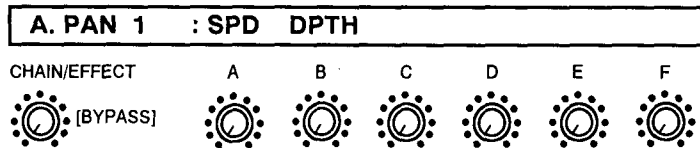
When the FC6 is in the program change mode (manual 1, mode 1), press down the LED switch lit in red.

3) When using external MIDI devices

Transmit data through MIDI over the same program number as currently used by the A2.

AUTO PAN GROUP [PAN1,PAN2]

This effect takes a mono signal and swings it between the left and right outputs for an automatic panning effect.



Variation

PAN 1 [PAN 1]: PAN with a sine wave (\sim) modulation.

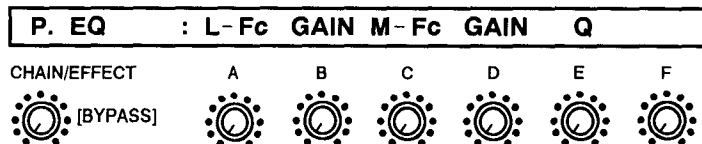
PAN 2 [PAN 2]: PAN with a triangle wave (∇) modulation.

Parameters

A	SPD	SPEED	0.05~10.0[Hz]	Speed of AUTO PAN effect.
B	DPTH	DEPTH	0~100	Depth of AUTO PAN effect.

PARAMETRIC EQUALIZER [P.EQ]

This effect provides a low and mid range parametric equalizer.










Parameters

A	L-Fc	LOW-Fc	0.1~2.0[KHz]	Cutoff frequency for low frequency band.
B	GAIN	LOW-GAIN	-12~+12[dB]	Gain for equalizing (cutting or boosting) low frequencies.
C	R-Fc	MID-Fc	0.55~8.0[KHz]	Cutoff frequency for mid frequency band.
D	GAIN	MID-GAIN	-12~+12[dB]	Gain for equalizing (cutting or boosting) mid frequencies.
E	Q	Q	2.0~10.0	Effective range of boost or cut. The larger this value, smaller the effective range.

PITCH SHIFTER GROUP [PTCH]

This effect changes the pitch of sound.








PITCH S : PTCH						EBAL
CHAIN/EFFECT	A	B	C	D	E	F
 [BYPASS]						

Parameters

A	PTCH	PITCH	- 100~+100[CENT]	Tuning of pitch in 5 cents. (100 cents = 1 half step)
F	EBAL	EFFECT BALANCE	0~100	Balance between direct sound and effect output. The larger this value, the louder the effect output.

EXCITER GROUP [XCIT]

This effect gives greater clarity, definition and presence to the sound.

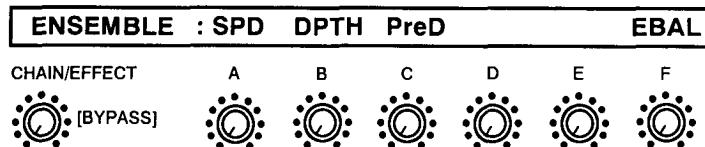
EXCITER : BLND FREQ						
CHAIN/EFFECT	A	B	C	D	E	F
 [BYPASS]						

Parameters

A	BLND	BLEND	- 100~+100	Depth of the exciter effect.
B	FREQ	FREQUENCY	1.9~18.6[KHz]	Center frequency for exciter effect.

ENSEMBLE GROUP [ENS]

This is a stronger and more pronounced version of the chorus effect.

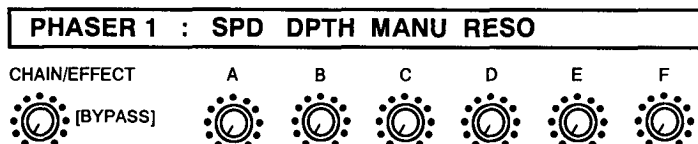


Parameters

A	SPD	SPEED	0.05~10.0[Hz]	Speed of modulation.
B	DPTH	DEPTH	0~100	Depth of the ensemble effect.
C	PreD	PRE DELAY	0~50[mSEC]	Time from direct sound to the effect sound.
F	EBAL	EFFECT BALANCE	0~100	Balance between direct sound and effect output. The larger this value, the louder the effect mix.

PHASER GROUP [PHA1, PHA2]

This effect creates a swirling and swishing sound by inverting the phase of the input signal.



Variation

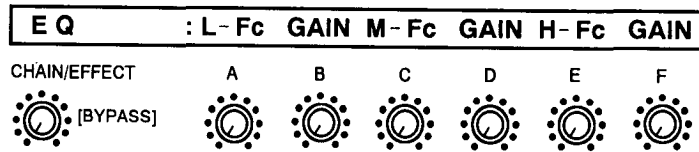
PHASER GROUP [PHA1] : Modulation waveform is a sine (~) wave.

PHASER GROUP [PHA2] : Modulation waveform is a triangle (^v) wave.

Parameters

A	SPD	SPEED	0.05~10.0[Hz]	Speed of modulation.
B	DPTH	DEPTH	0~100	Depth of the phaser.
C	MANU	MANUAL	0~100	Center frequency for the phaser.
F	RESO	RESONANCE	0~99	Adds feedback to the phaser. The larger this value, the higher the feed back level.

3 BAND EQUALIZER [EQ]



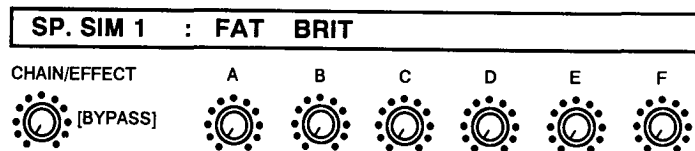
Parameters

A	L - Fc	LOW - Fc	0.1~2.0[KHz]	Cutoff frequency for low frequency band.
B	GAIN	LOW GAIN	- 12~+12[dB]	Gain for equalizing (cutting or boosting) low frequencies.
C	M - Fc	MID - Fc	0.55~8.0[KHz]	Center frequency for parametric equalizer.
D	GAIN	MID GAIN	- 12~+12[dB]	Gain for center frequency.
E	H - Fc	HIGH - Fc	1.0~8.0[KHz]	Cutoff frequency for high frequency band.
F	GAIN	HIGH GAIN	- 12~+12[dB]	Gain for equalizing (cutting or boosting) high frequencies.

- ♣ Depending on the setting of this 3 BAND EQ, the output may be distorted (or clipped) even when the DIGITAL CLIP LED is not lit. Turn down each GAIN parameter to avoid the clipping.

SPEAKER SIMULATION GROUP [SP1, SP2, SP3]

This effect reproduces characteristics of speakers as in guitar amplifiers.



Variation : 3 types of speakers (amplifiers) are simulated.

SPEAKER SIMULATION [SP1]

SPEAKER SIMULATION [SP2]

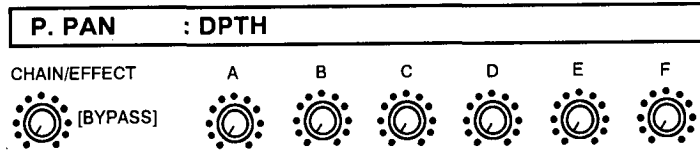
SPEAKER SIMULATION [SP3]

Parameters

A	FAT	FAT	ON/OFF	Boosts the mid - range when ON.
B	BRIT	BRIGHT	ON/OFF	Boosts the high - range when ON.

PEDAL PAN [PAN]

This effect allows the volume pedal to dynamically pan the inputs in the stereo output mix.

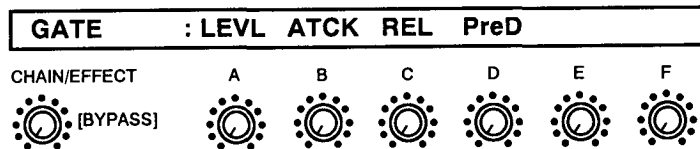


Parameters

A	DPTH	DEPTH	0~100	Depth of the pedal pan.
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GATE [GATE]

This effect shuts off the output when the input signal is lower than a specified level. Use this effect in combination with REVERB to create a GATED REVERB.

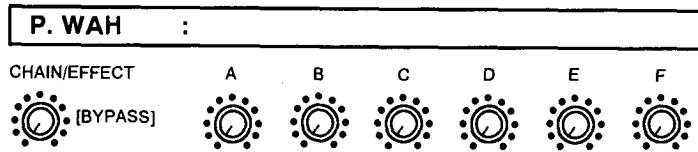


Parameters

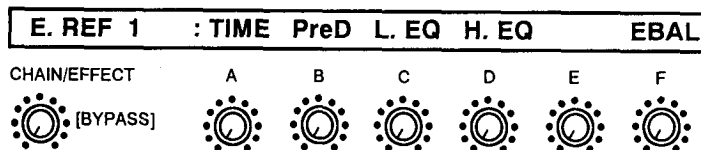
A	LEVL	THRESHOLD LEVEL	0~99	Threshold level for the gate effect. The larger this value, the higher the threshold.
B	ATCK	ATTACK TIME	0~99	Time for the gate to completely open after starting to open.
C	REL	RELEASE TIME	0~99	Time for the output level to reach zero (decay) after the gate starts to close.
D	PreD	PRE DELAY	0~50[mSEC]	Delay time of direct sound. When set to a large value, the gate seems to open before the signal reaches the threshold level.

PEDAL WAH [WAH]

This provides a wah – wah effect that can be controlled in real time by a volume pedal.



EARLY REFLECTION [ER1, ER2, ER3]



Variation

EARLY REFLECTION 1[ER1]

EARLY REFLECTION 2[ER2]

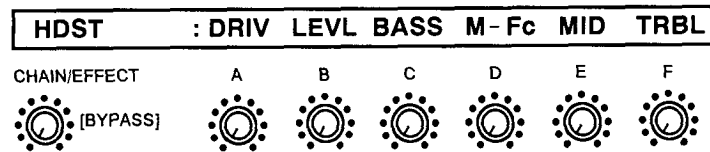
EARLY REFLECTION 3[ER3]

Parameters

A	TIME	EARLY REFLECTION TIME	5~500[mSEC]	Time for early reflection.
B	PreD	PRE DELAY	0~100[mSEC]	Delay to the start of early reflection.
C	L. EQ	LOW EQ	- 12~+12[dB]	Gain for equalizing (cutting or boosting) low frequencies.
D	H. EQ	HIGH EQ	- 12~+12[dB]	Gain for equalizing (cutting or boosting) high frequencies.
F	EBAL	EFFECT BALANCE	0~100	Balance between direct sound and effect output. The larger this value, the louder the effect mix.

HARD DISTORTION GROUP [HDST, TOD]

This effect simulates the sound of amplifier distortion. Along with drive and level parameters, a 3 band equalizer creates more hard edge in distortion.



Variation

HARD DISTORTION [HDST] : High gain "metallic" type distortion effect.

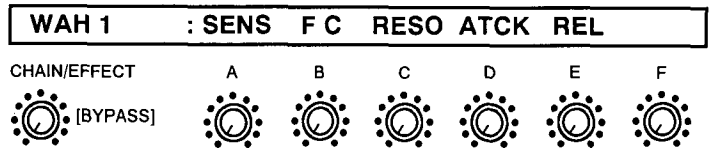
TUBE OVERDRIVE [TOD] : Warm "tube" type overdrive effect.

Parameters

A	DRIV	DRIVE	0~100	Amount of distortion.
B	LEVL	LEVEL	0~100	Output level of the effect sound.
C	BASS	BASS GAIN	- 12~+12	Gain for equalizing (cutting or boosting) low frequencies.
D	M-Fc	MID-Fc	0.55~8.0[KHz]	Center frequency for MID - EQ.
E	MID	MID GAIN	- 12~+12	Gain for equalizing (cutting or boosting) mid frequencies.
F	TRBL	TREBLE	- 12~+12	Gain for equalizing (cutting or boosting) high frequencies.

AUTO WAH GROUP [WAH1, WAH2]

This wah wah effect automatically functions by the envelope of the input signal controlling a filter.



Variation

DRIVE UP [WAH1] : The higher the input signal, the higher the wah peak level. A higher input signal causes the filter to open, creating a wah as the input signal becomes lower again.

DRIVE DOWN [WAH2] : The higher the input signal, the lower the wah peak level. A stronger input signal causes the filter to close.

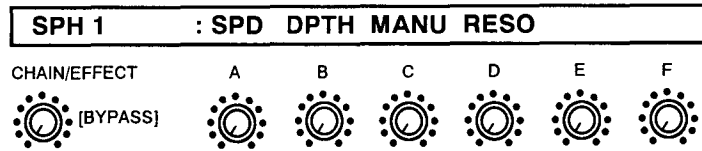
Parameters

A	SENS	SENSITIVITY	0~100	Sensitivity of the auto wah. The higher this value, the lower level the effect starts.
B	FC	CUTOFF FREQUENCY	0~100	Center frequency for the auto wah effect. The larger this value, the higher frequency the effect functions.
C	RESO	RESONANCE	0~99	Adds feedback to the auto wah effect. The larger this value, the more effect applies.
D	ATCK	ATTACK TIME	1~20	The larger this value, the faster the auto wah attacks.
E	REL	RELEASE TIME	1~20	The larger this value, the faster the auto wah releases.

♣ The sound may be distorted depending on the setting of parameters (especially by that of RESONANCE). If this should happen, lower the input level or the RESONANCE value.

SPACE PHASER GROUP [SPH1, SPH2]

This effect creates a swirling and swishing sound by inverting the phase of the input signal. This has more phase circuit stages than PHASER (PHA1,PHA2), thus enables a "deeper" phase shifting of the input signal.



Variation

SPACE PHASER GROUP [SPH1] : Modulation waveform is a sine (~) wave.

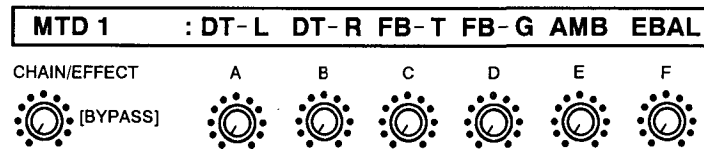
SPACE PHASER GROUP [SPH2] Modulation waveform is a triangle (∇) wave.

Parameters

A	SPD	SPEED	0.05~10.0[Hz]	Speed of modulation.
B	DPTH	DEPTH	0~100	Depth of the phaser.
C	MANU	MANUAL	0~100	Center frequency for the phaser.
D	RESO	RESONANCE	0~99	Adds feedback to the phaser. The larger this value, the more effect applies.

MULTI-TAP DELAY GROUP [MTD1~MTD6]

This effect has 2 selectable delay times that can be separately set for the L and R channels. This can be further set by "AMB (ambience parameter)" to spread the delay time in the stereo field.



Variation

MULTI – TAP DELAY 1 [MTD1] : Repeats right to left.

MULTI – TAP DELAY 2 [MTD2] : Short delay repeats right and then left, repeats and decays.

MULTI – TAP DELAY 3 [MTD3] : Delay sound pans right to left.

MULTI – TAP DELAY 4 [MTD4] : Feedback sound multiplies as they decay.

MULTI – TAP DELAY 5 [MTD5] : Delay sound pans right to left and repeats as they decay.

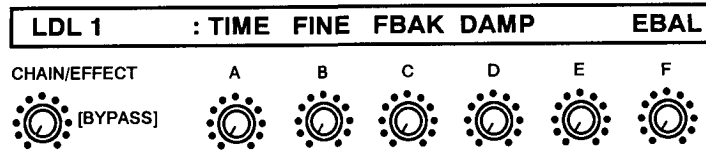
MULTI – TAP DELAY 6 [MTD6] : Multi – tap delay with short delay time.

Parameters

A	DT-L	DELAY TIME L	0~800[mSEC]	Delay between direct sound and effect output for left channel. (Set in 10 – mSEC steps.)
B	DT-R	DELAY TIME R	0~800[mSEC]	Delay between direct sound and effect output for left channel. (Set in 10 – mSEC steps.)
C	FB-T	FEEDBACK TIME	0~800[mSEC]	Feedback time for each delay sound.
D	FB-G	FEEDBACK GAIN	-99~+99	Amount of feedback.
E	AMB	AMBIENCE	0~20	Stereo position of the two delay sounds. The larger this value, the wider the delays spread out.
F	EBAL	EFFECT BALANCE	0~100	Balance between direct sound and effect output. The larger this value, the louder the effect mix.

LONG DELAY GROUP [LDLY1~LDLY3]

This effect has longer delay times. (1600 m – SEC max.)



Variation

LONG DELAY 1 [LDLY1] : Doubling effect.

LONG DELAY 2 [LDLY2] : Long delay effect.

LONG DELAY 3 [LDLY3] : Super long delay effect.

Parameters

A	TIME	DELAY TIME	0~1600[mSEC]	Delay between direct sound and effect output. (Set in 10 – mSEC steps.)
B	FINE	TIME FINE	0.0~9.9[mSEC]	Delay between direct sound and effect output. (Set in 0.1 – mSEC steps.)
C	FBAK	FEEDBACK	-99~+99	Amount of feedback.
D	DAMP	HIGH DAMP	0~99	Amount of high frequency damping. The higher this value, the faster high frequencies decay.
F	EBAL	EFFECT BALANCE	0~100	Balance between direct sound and effect output. The larger this value, the louder the effect mix.

TEMPO DELAY [TDLY]

By selecting Tempo and Note, delay time is automatically set so that the delay synchronizes with the tempo and beat of the song. When tempo is set at 120, 120 quarter – notes will be counted in 60 seconds.

TMP DLY : TEMP NOTE AJST FBAK DAMP EBAL

CHAIN/EFFECT A B C D E F

[BYPASS]

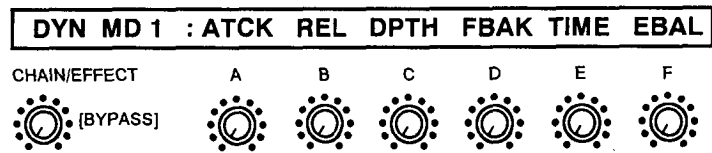
Parameters

A	TEMP	TEMPO	40-192	Sets the tempo (length of quarter – note). When note is 1/2 (♩), the Tempo value range is limited to 75 to 192.
B	NOTE	NOTE	*See below	Duration of the note to be synchronized.
C	AJST	ADJUST	-9.9~+9.9[%]	Fine adjustment of delay time.
D	FBAK	FEEDBACK	-99~+99	Amount of feedback. A negative value reverses the phase.
E	DAMP	HIGH DAMP	0-99	Amount of high frequency damping. The higher this value, the faster high frequencies decay.
F	EBAL	EFFECT BALANCE	0-100	Balance between direct sound and effect output. The larger this value, the louder the effect mix.

NOTE	DISPLAY
	1/2
	1/4D
	1/4
	1/8D
	1/4T
	1/8
	1/8T
	1/16
	1/16T
	1/32
	1/32T
	1/64
	1/64T

DYNAMIC MODULATION GROUP [DMD1, DMD2, PMD1, PMD2]

Delay time is controlled with input level, creating dynamic chorus and flanging effects. Variations [PMD1] and [PMD2] are controlled by a pedal.



Variation

DYNAMIC MODULATION 1 [DMD1] : Higher input level makes delay time longer.

DYNAMIC MODULATION 2 [DMD2] : Higher input level makes delay time shorter.

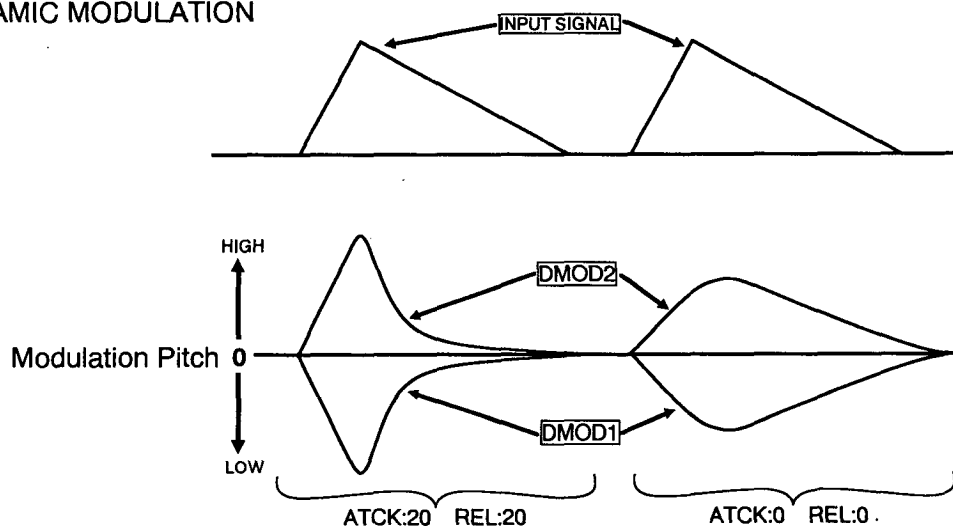
PEDAL MODULATION 1 [PMD1] : Longer delay time when stepping on a pedal.

PEDAL MODULATION 2 [PMD2] : Shorter delay time when stepping on a pedal.

Parameters

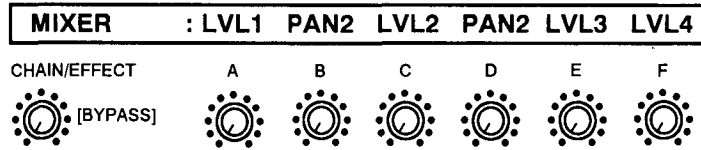
A	ATCK	ATTACK	0~20	Attack rate of delay modulation. The greater this value, the faster the attack. (applicable for DMD1 and DMD2 only.)
B	REL	RELEASE	0~20	Release rate of delay modulation. The greater this value, the faster the release. (applicable for DMD1 and DMD2 only.)
C	DPTH	DEPTH	0~100	Depth of modulation.
D	FBAK	FEEDBACK	-99~+99	Amount of feedback. A negative value reverses the phase.
E	TIME	DELAY TIME	0~50[ms]	Delay time of the effect sound.
F	EBAL	EFFECT BALANCE	0~100	Balance between direct sound and effect output. The larger this value, the louder the effect mix.

DYNAMIC MODULATION



4CH MIXER [MIX]

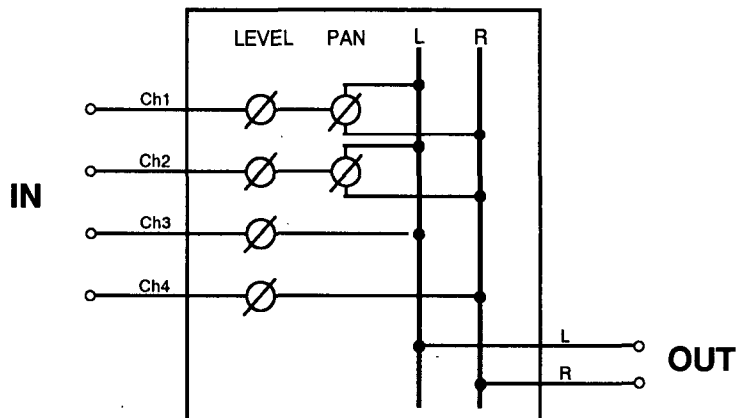
This functions as a 4 channel mixer with stereo output. Channels 1 and 2 are programmable for panning.



Parameters

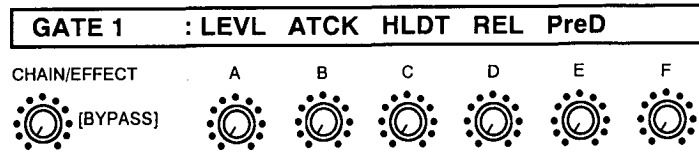
A	LVL1	Ch1 LEVEL	0-100	Input level of Channel 1.
B	PAN1	Ch1 PAN	L50-C-R50	Panning of Channel 1. From L50 to R50, the pan moves from left to right, and centered at C.
C	LVL2	Ch2 LEVEL	0-100	Input level of Channel 2.
D	PAN2	Ch2 PAN	L50-C-R50	Panning of Channel 2. From L50 to R50, the pan moves from left to right, and centered at C.
E	LVL3	Ch3 LEVEL	0-100	Input level of Channel 3. Output is fixed to L channel.
F	LVL4	Ch4 LEVEL	0-100	Input level of Channel 4. Output is fixed to R channel.

4CH Mixer Block Diagram



GATE II GROUP [GAT1, GAT2]

A hold parameter is added to the A2's internal GATE to create a variety of gated effects.



Variation

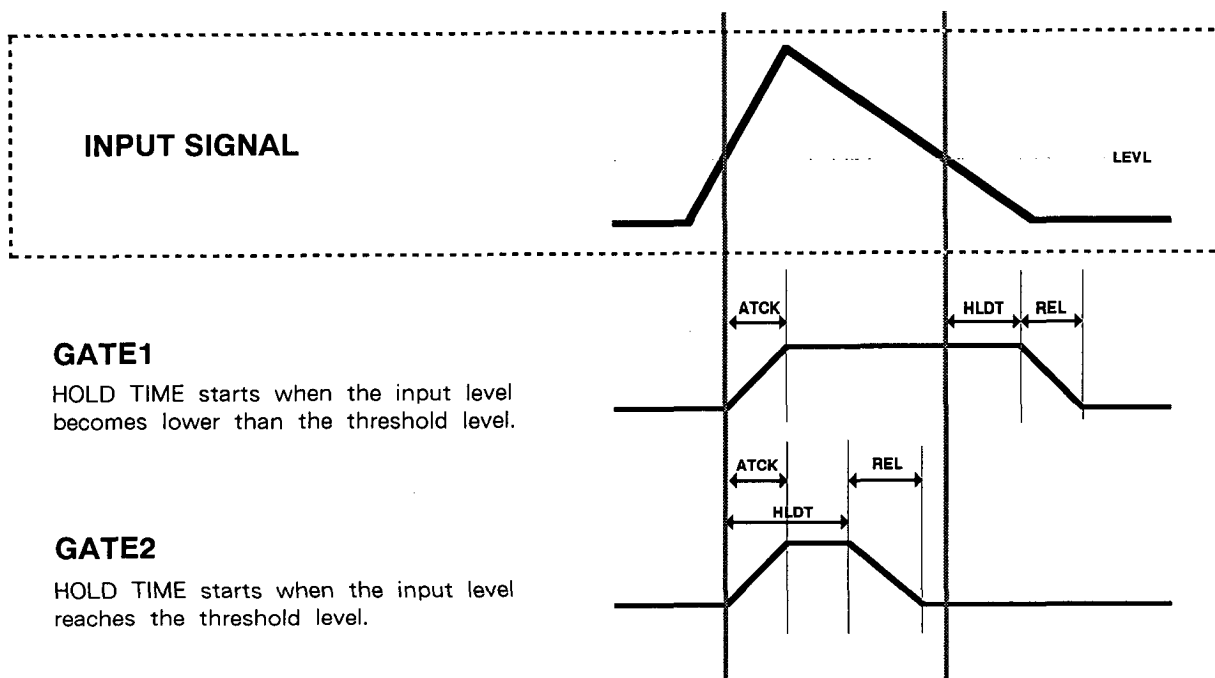
GATE 1[GAT1] : HOLD TIME starts when the input level becomes lower than the threshold level.

GATE 2[GAT2] : HOLD TIME starts when the input level reaches the threshold level. Effective for sustained sounds (such as symbol sounds) to be gated with specific Hold Time.

Parameters

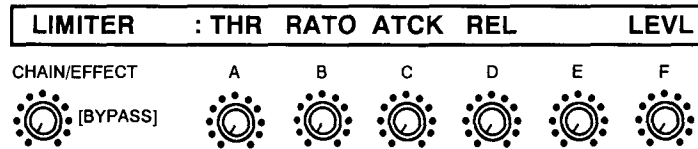
A	LEVEL	THRESHOLD LEVEL	0~99	Threshold level for the gate effect. The larger this value, the higher the threshold.
B	ATCK	ATTACK TIME	0~50	Time for the gate to completely open after starting to open.
C	HLDT	HOLD TIME	0~1600[ms]	Time for the gate to hold open. * See the chart below.
D	REL	RELEASE TIME	0~50	Time for the output level to reach zero (decay) after the gate starts to close.
E	PreD	PRE DELAY	0~50[ms]	Delay time of direct sound. When set to a large value, the gate seems to open before the signal reaches the threshold level.

♣ Editing HOLD TIME while sending the input signal may cause unstable function of the gate.



LIMITER [LIM]

This effect lowers the peak level and prevents distortion of input sound by compressing the input signals greater than the set threshold level.

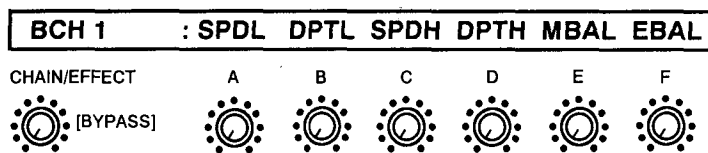


Parameters

A	THR	TRESHOLD	0-99	Threshold level for the limiter effect. The larger this value, the lower the threshold level.
B	RATO	RATIO	0-100	Degree of compression applied to input signals above the threshold level.
C	ATCK	ATTACK	0-30	Strength of attack. The attack is faster at high values.
D	REL	RELEASE	0-30.0	Release time. The larger this value, the longer the release time.
F	LEVL	LEVEL	0-100	Total Output level of the limiter effect.

BAND CHORUS GROUP [BCH1, BCH2, BCH3, BCH4]

Input signals are filtered into high and low bands, sent to separate chorus circuits and mixed for the output.



Variation

- BAND CHORUS 1 [BCH1]** : Short delay chorus. Modulation waveform is a sine (~) wave.
- BAND CHORUS 2 [BCH2]** : Short delay chorus. Modulation waveform is a triangle (^v) wave.
- BAND CHORUS 3 [BCH3]** : Long delay chorus. Modulation waveform is a sine (~) wave.
- BAND CHORUS 4 [BCH4]** : Long delay chorus. Modulation waveform is a triangle (^v) wave.

Parameters

A	SPDL	SPEED LOW	0.05~10.0[Hz]	Speed of modulation for low band.
B	DPTL	DEPTH LOW	0~100	Depth of modulation for low band.
C	SPDH	SPEED HIGH	SYNC/ 0.05~10.0[Hz]	Speed of modulation for high band. SYNC: The speed synchronizes with the low band speed. Modulation speed is controlled by the low band. (The value in A SPDL (low band) is used for modulation speed.)
D	DPTH	DEPTH HIGH	0~100	Depth of modulation for high band.
E	MBAL	MIX BALANCE	0~100	Balance between low and high bands. Low band only at 0, and high band only at 100 for output.
F	EBAL	EFFECT BALANCE	0~100	Balance between direct sound and effect output. The larger this value, the louder the effect output.

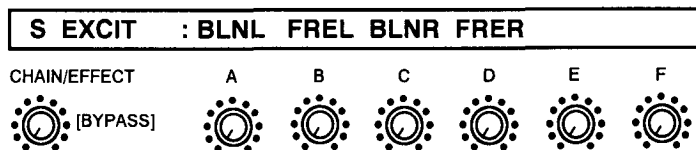
DELAY TIME

	LOW BAND	HIGH BAND
BCH 1 BCH 2	25	20
BCH 3 BCH 4	35	30

(mSEC)

STEREO EXCITER [SXIT]

This effect gives greater clarity, definition and presence to the sound in stereo.

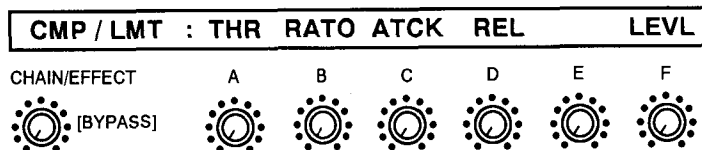


Parameters

A	BLNL	BLEND LEFT	- 100~+100	Depth of the exciter effect for left channel. The larger the absolute value, the greater the amount of effect. Different effects can be obtained by setting positive or negative values.
B	FREL	FREQUENCY LEFT	1.9~18.6[KHz]	Center frequency for exciter effect on left channel.
C	BLNR	BLEND RIGHT	- 100~+100	Depth of the exciter effect for right channel. The larger the absolute value, the greater the amount of effect. Different effects can be obtained by setting positive or negative values.
D	FRER	FREQUENCY RIGHT	1.9~18.6[KHz]	Center frequency for exciter effect on left channel.

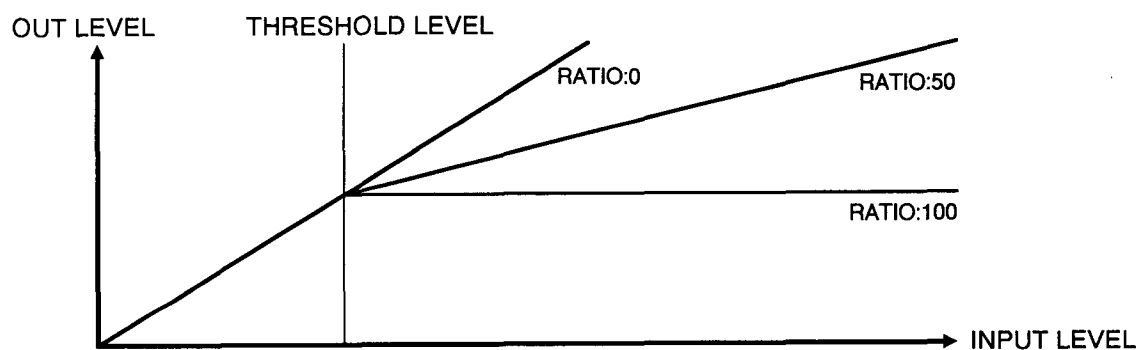
COMP/LIMITER [C/LM]

This effect can be used as compressor or LIMITTER, depending on the degree of compressing the input signals.



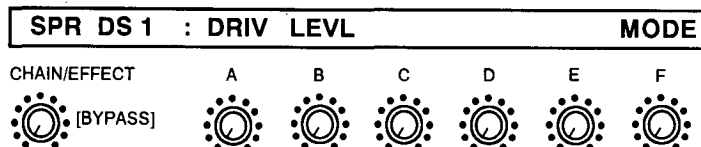
Parameters

A	THR	THRESHOLD LEVEL	0-99	Threshold level for the compressor or limiter effect. The larger this value, the lower the threshold level.
B	RATO	RATIO	0-100	Intensity of compression. Input/Output Ratio is 1:1 at value 0, and 100:1 at value 100.
C	ATCK	ATTACK	0-30	Speed of attack. The attack is faster at high values.
D	REL	RELEASE	0-30	Release time. The larger this value, the longer the release time.
F	LEVEL	OUT LEVEL	0-100	Output level of the effect sound.



SUPER DISTORTION GROUP [SDS1, SDS2, SOD1, SOD2]

These new distortion and overdrive effects simulate the harmonics in natural guitar amp distortion.



Variation

SUPER DISTORTION 1 [SDS1] : The most aggressive distortion sound.

SUPER DISTORTION 2 [SDS2] : Warmer distortion sound.

SUPER OVERDRIVE 1 [SOD1] : Strong overdrive suitable for solo.

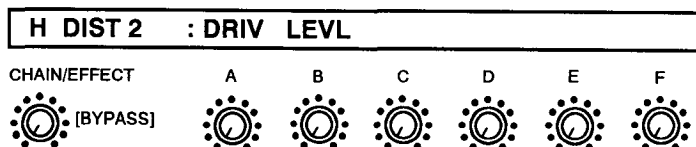
SUPER OVERDRIVE 2 [SOD2] : Softer overdrive suitable for both solo and accompanying.

Parameters

A	DRIV	DRIVE	0~100	Amount of distortion.
B	LEVL	EFFECT LEVEL	0~100	Output level of the effect sound.
F	MODE	OUTPUT MODE	AMP1, AMP2, LINE	Selectable EQ curves for specific amplifier or direct to console applications. Amp variation 1 : AMP 1 Amp variation 2 : AMP 2 Direct to Console : LINE (PA/MTR) AMP 1: Amp variation 1 (for compact to mid – size amps) AMP 2: Amp variation 2 (for large – size amps) LINE : Direct to Console (PA/MTR)

HARD DISTORTION II GROUP [HD2, TOD2]

This is an upgraded version of HARD DISTORION effect. A wide range of distortion can be created when used together with NEW 3 BAND EQUALIZER.



Variation

HARD DISTORTION 2 [HD2] : High gain distortion effect.

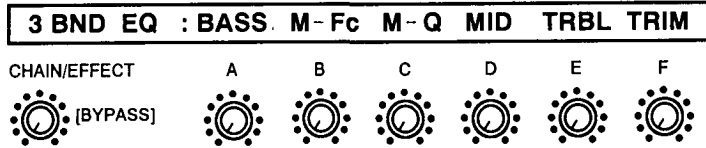
TUBE OVERDRIVE 2 [TOD2] : Warm tube overdrive sensitive.

Parameters

A	DRIV	DRIVE	0~100	Amount of distortion.
B	LEVL	EFFECT LEVEL	0~100	Output level of the effect sound.

NEW 3 BAND EQUALIZER [3BEQ]

This equalizer is designed specifically for use with guitar. Tone variation can be created when used in combination with DISTORTION effect.

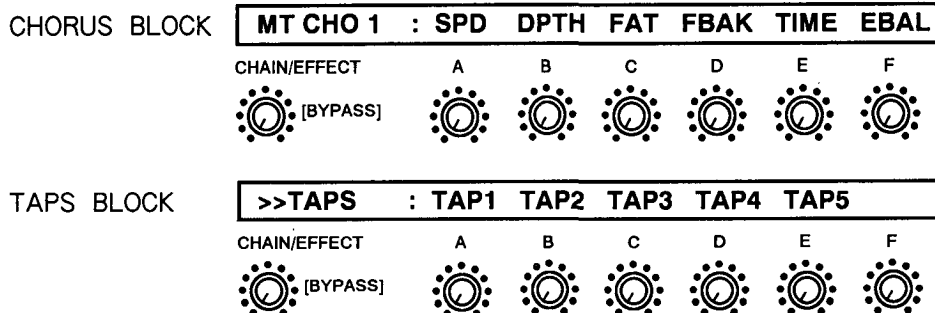


Parameters

A	BASS	BASS GAIN	-12~+12	Gain for equalizing (cutting or boosting) low frequencies.
B	M-Fc	MID FREQUENCY	550~8K[Hz]	Center frequency for equalizing mid frequencies.
C	M-Q	MID Q	2~5	Effective range of equalizing mid frequencies. The larger this value, the smaller the effected range.
D	MID	MID GAIN	-12~+12	Gain for equalizing (cutting or boosting) mid frequencies
E	TRBL	TREBLE GAIN	-12~+12	Gain for equalizing (cutting or boosting) high frequencies.
F	TRIM	INPUT TRIM	0~100	Adjusts input level to prevent from overload distortion.

MULTI-TAP CHORUS [MTC1, MTC2]

5 delay taps can be separately modulated with chorus effects of different depth. This effect consists of 2 parallel blocks: CHORUS BLOCK and TAPS BLOCK. To select CHORUS BLOCKS, press the double function editor under [MTC1] or [MTC2] in Play mode. To select TAPS BLOCK, press the double function editor under [>>]. Taps can be separately panned in TAPS BLOCK to create complex stereo chorus effects.



Variation

MULTI-TAP CHORUS 1 [MTC1] : Modulation waveform is a sine (~) wave.

MULTI-TAP CHORUS 2 [MTC2] : Modulation waveform is a triangle (^v) wave.

Parameters

CHORUS BLOCK

A	SPD	SPEED	0.05~10.0[Hz]	Speed of modulation.
B	DPTH	DEPTH	0~100	Depth of modulation.
C	FAT	FAT MODE	0, 1, 2, 3 (*1 See Fat Ratio Table)	Modulation depth for individual tap, selectable from 4 variations. When this value is 0, all taps are modulated at the same depth.
D	FBAK	FEEDBACK	-99~+99	Amount of feedback. A negative value reverses the phase.
E	TIME	DELAYTIME MODE	1, 2, 3, 4 (*2 See Delay time Table)	Delay time table for each delay tap.
F	EBAL	EFFECT BALANCE	0~100	Balance between direct sound and effect output. The larger this value, the louder the effect output.

TAPS BLOCK

A	TAP1	TAP 1 PAN	OFF, L, R, L+R	Pan selection for Tap 1.
B	TAP2	TAP 2 PAN	OFF, L, R, L+R	Pan selection for Tap 2.
C	TAP3	TAP 3 PAN	OFF, L, R, L+R	Pan selection for Tap 3.
D	TAP4	TAP 4 PAN	OFF, L, R, L+R	Pan selection for Tap 4.
E	TAP5	TAP 5 PAN	OFF, L, R, L+R	Pan selection for Tap 5.

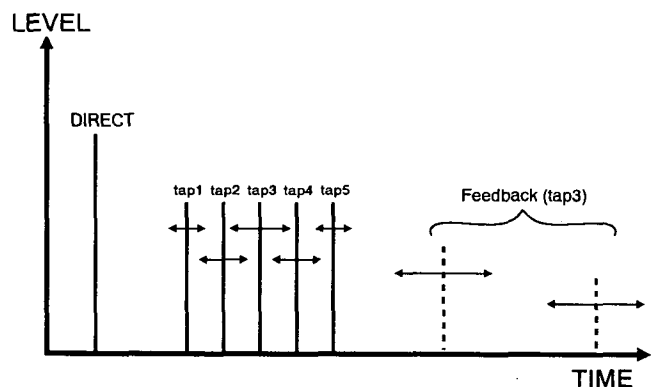
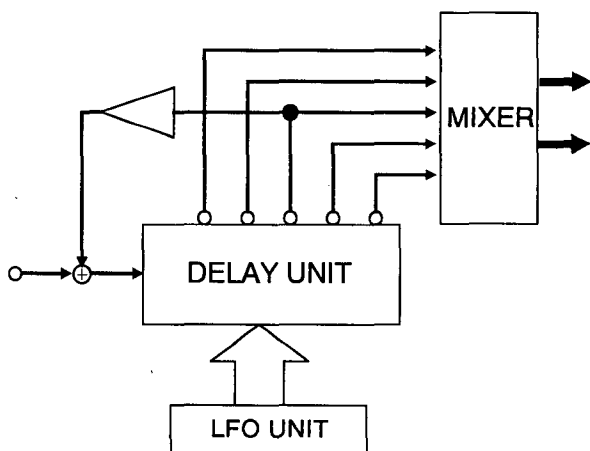
※ 1 FAT RATIO TABLE

	tap1	tap2	tap3	tap4	tap5
0	1	1	1	1	1
1	0.3	0.6	1	0.6	0.3
2	0.3	0.5	1	0.8	0.9
3	0.1	0.3	1	0.2	0.4

※ 2 DELAYTIME TABLE (UNIT:mSEC)

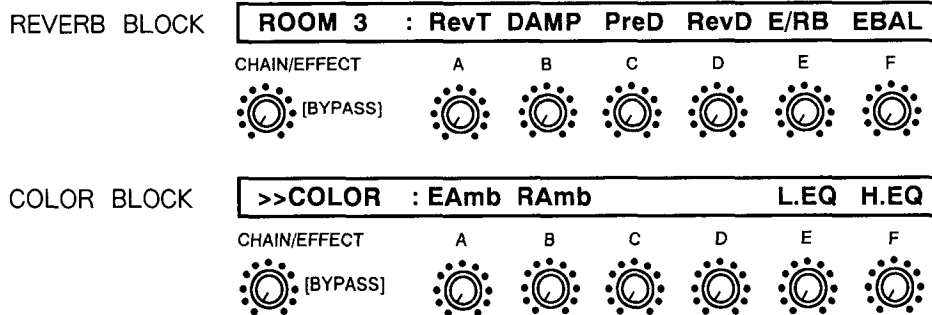
	tap1	tap2	tap3	tap4	tap5
1	1	3	8	12	15
2	10	15	20	25	30
3	8	15	22	35	42
4	20	25	30	40	50

(1 = Depth set in DEPTH parameter)



REVERB II GROUP [RM 3, HL 3, PL 3]

This effect is an upgraded version of REVERB (ROOM1,ROOM2, HALL1, HALL2, PLATE1, PLATE2) More improved parameters are grouped into 2 effect blocks: REVERB BLOCK and COLOR BLOCK. To select REVERB BLOCK, press the double function editor under [RM 3], [HL 3] or [PL 3] in Play mode. To select COLOR BLOCK, press the double function editor under [>>]. Time and mix parameters are set in REVERB BLOCK, and ambience and EQ are edited in COLOR BLOCK.



Variation

- ROOM 3 [RM 3] : Room type reverb.
- HALL 3 [HL 3] : Hall type reverb
- PLATE 3 [PL 3] : Plate type reverb

Parameters

REVERB BLOCK

A	RevT	REVERB TIME	0.1~5.0[SEC]	Reverberation time, the time that the reverb takes to decay.
B	DAMP	HIGH DAMP	0~80[%]	Amount of high frequency damping. The higher this value, the faster high frequencies decay.
C	PreD	PRE DELAY	0~200[mSEC]	Time from direct sound to the start of early reflection.
D	RevD	REVERB BALANCE	0~200[mSEC]	Time from direct sound to the reverberation.
E	E/RB	ER/REV BALANCE	0~100[%]	Balance between early reflection and reverb. E/R only when this value is 0, REV only at 100, and balances are even at 50.
F	EBAL	EFFECT BALANCE	0~100[%]	Balance between direct sound and effect output.

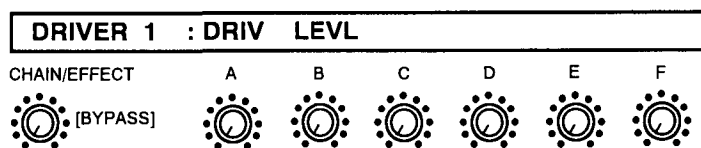
COLOR BLOCK

A	EAmb	E/R AMBIENCE	0~100[%]	Stereo position of early reflection. The higher this value, the wider the E/R spreads out. Centered at 0.
B	RAmb	REVERB AMBIENCE	0~100[%]	Stereo position of reverb. The higher this value, the wider the reverb spreads out. Centered at 0.
E	L.EQ	LOW EQ	- 12~+12	Gain for equalizing (cutting or boosting) low frequencies.
F	H.EQ	HIGH EQ	- 12~+12	Gain for equalizing (cutting or boosting) high frequencies.

♣ Effect ON/OFF is done on the Reverb Block.

DRIVER [DRV1, DRV2, DRV3, DRV4]

Distortion unit designed exclusively for ROTARY SPEAKER II (RSP 2). This effect is invaluable for creating "the" Hard Rock organ sound.



Variation

DRIVER 1 [DRV1] : Overdrive type effect.

DRIVER 2 [DRV2] : Overdrive type effect.

DRIVER 3 [DRV3] : Distortion type effect.

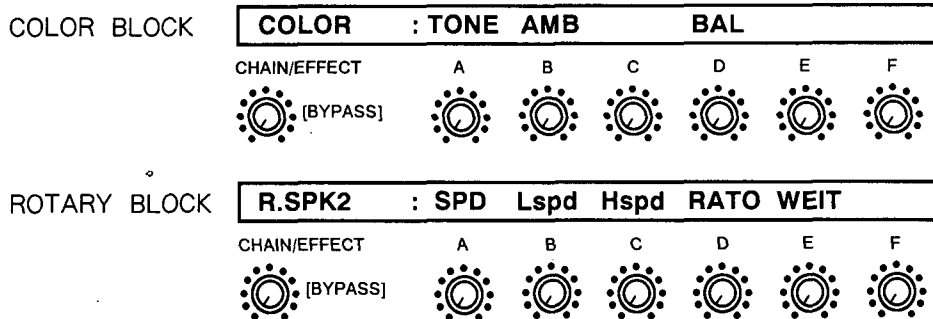
DRIVER 4 [DRV4] : Distortion type effect.

Parameters

A	DRIV	DRIVE	0~100	Amount of distortion.
B	LEVL	LEVEL	0~100	Output level of the effect sound. The higher this value, the louder the effect sound.

ROTARY SPEAKER II [RSP2]

This is a drastically upgraded version of ROTARY SPEAKER [R.SP]. More parameters contained in two blocks : COLOR BLOCK and ROTARY BLOCK enable the simulation of a "true" rotary sound. To select ROTARY BLOCK, press the double function editor under [RSP 2] in Play mode. To select COLOR BLOCK, press the double function editor under [COLOR].



Parameters

COLOR BLOCK

A	TONE	UPPER TONE	1~10	Tone of upper speaker. The larger this value, the brighter the tone.
B	AMB	AMBIENCE	MONO, ST0~4	Sides of rotation for the rotary speaker.
D	BAL	BALANCE	0~100	Volume balance between upper speaker and lower speaker. The higher this value, the louder the upper speaker.

ROTARY BLOCK

A	SPD	SPEED CHANGE	(LOW / HIGH)	Speed of rotary speaker (LOW or HIGH, no indication change on LCD).
B	Lspd	LOW SPEED	- 5~+5	Adjustment of speaker speed at low setting. The larger this value, the faster the speed.
C	Hspd	HIGH SPEED	- 5~+5	Adjustment of speaker speed at high setting. The larger this value, the faster the speed.
D	RATO	SPEED RATIO	- 3~+3	Adjustment of upper speaker speed in relation to lower speaker. The larger this value, the faster the upper speaker rotates. Regular speed ratio at 0.
E	WEIT	WEIGHT	1~3	Time required for speed change. The larger this value, the slower the speed changes.

◆ Effect ON/OFF

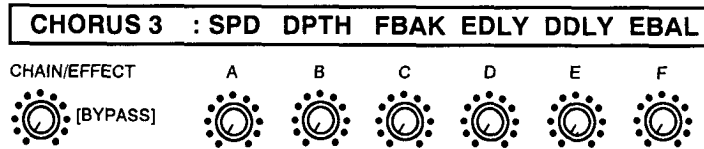
When turning the effect ON/OFF, press both switches of the Color and the Rotary Blocks. Pressing the Rotary Block only stops the rotation of the speaker.

◆ Speed Control with a Pedal

Refer to page 8 ROTARY SPEAKER for procedures.

MODULATION II GROUP [CHO3, CHO4, FLN3, FLN4]

A stereo effect combining two modulation blocks (Chorus/Flanger). A stereo effect combining two modulation types (Chorus/Flanger), with synchronous or phase inverted LFOs, depending on the Depth setting. Delay can be applied to the direct sound for creating a stronger flanger effect.



Variation

STEREO CHORUS 3 [CHO3] : Stereo Chorus with sine wave (\sim) modulation.

STEREO CHORUS 4 [CHO4] : Stereo Chorus with triangle wave (∇) modulation.

STEREO FLANGER 3 [FLN3] : Stereo flanger with sine wave (\sim) modulation.

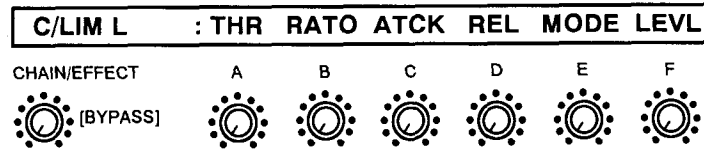
STEREO FLANGER 4 [FLN4] : Stereo flanger with triangle wave (∇) modulation.

Parameters

A	SPD	SPEED	0.05~10.0[Hz]	Speed of modulation.
B	DPTH	DEPTH	- 100~100	Depth of modulation and phase of LFO. LFO is phase - inverted between L and R channels in the range - 100~0.
C	FBAK	FEEDBACK	- 99~+99	Amount of feedback.
D	EDLY	EFFECT DELAY TIME	0~50[mSEC]	Time between receiving the input signal and sending the modulated sound. (Set in 0.1 mSEC steps between 0~100mSEC, 1 - mSEC steps between 10~ 50mSEC).
E	DDLY	DIRECT DELAY TIME	0~50[mSEC]	Time between receiving the input signal and sending the direct sound. (Set in 0.1 mSEC steps between 0~100mSEC, 1 - mSEC steps between 10~ 50mSEC).
F	EBAL	EFFECT BALANCE	0~100	Balance between direct sound and effect output. The larger this value, the louder the effect mix.

STEREO COMP/LIMITER LEFT [LIM L]

A stereo version of Comp/LIMITER. Stereo modes are selectable from DUAL MONO, LINK 1 and LINK 2. Effect can be switched ON/OFF with either [LIM L] or [LIM R], but turning ON either channel results in turning ON the other channel also.



Parameters

A	THR	THRESHOLD	0-99	Threshold level for compression. The larger this value, the lower the threshold level.
B	RATO	RATIO	0-100	Intensity of compression. Input/Output Ratio is 1:1 at value 0, and 100:1 at value 100.
C	ATCK	ATTACK	0-100	Speed of attack. The larger this value, the slower the attack.
D	REL	RELEASE	0-100	Release time. The larger this value, the longer the release time.
E	MODE	MODE	DUAL/LNK1/LNK2	Selection of stereo mode.
F	LEVEL	OUTPUT LEVEL	0-100	Output level of the effect sound.

♣ Stereo mode [MODE]

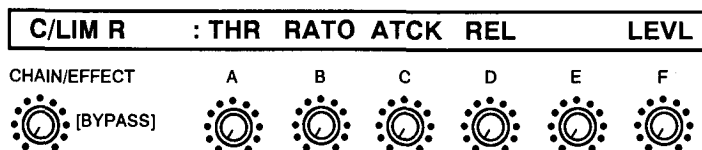
[DUAL]=DUAL MONO : Comp/LIMITER functions separately over the two channels.

[LNK1]=LINK 1 : Gain is controlled by combined signal level of L and R channels. Parameters for both channels function separately.

[LNK2]=LINK 2 : Gain is controlled by combined signal level of L and R channels. Parameters for L channel [LIM L] apply to both channels.

STEREO COMP/LIMITER RIGHT [LIM R]

A stereo version of Comp/LIMITER. Stereo modes are selectable from DUAL MONO, LINK 1 and LINK 2. Effect can be switched ON/OFF with either [LIM L] or [LIM R], but turning ON either channel results in turning ON the other channel also. When Link 2 mode is selected, the parameter settings on the left channel [LIM L] have a priority over this channel.

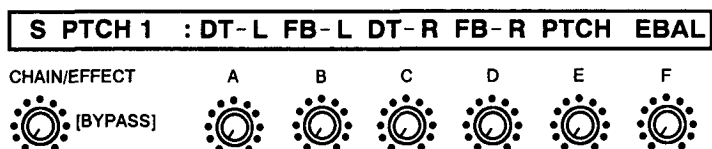


Parameters

A	THR	THRESHOLD	0~99	Threshold level for compression. The larger this value, the lower the threshold level.
B	RATO	RATIO	0~100	Intensity of compression. Input/Output Ratio is 1:1 at value 0, and 100:1 at value 100.
C	ATCK	ATTACK	0~100	Speed of attack. The larger this value, the slower the attack.
D	REL	RELEASE	0~100	Release time. The larger this value, the longer the release time.
F	LEVL	OUTPUT LEVEL	0~100	Output level of the effect sound.

STEREO PITCH SHIFTER/DELAY GROUP [SPT1, SPT2]

This effect creates a chorus effect by slightly shifting the pitch of stereo input. Stereo delay with gradual pitch shifting can also be created.



Variation

STEREO PITCH 1 [SPT1] : Reversed pitch – shifting over each channel.

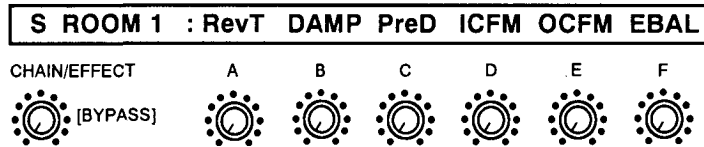
STEREO PITCH 2 [SPT2] : Same pitch – shifting for both channels.

Parameters

A	DT-L	DELAY TIME LEFT	0~400[mSEC]	Delay time for L channel.
B	FB-L	FEEDBACK LEFT	0~99	Feedback level for L channel.
C	DT-R	DELAY TIME RIGHT	0~400[mSEC]	Delay time for R channel.
D	FB-R	FEEDBACK RIGHT	0~99	Feedback level for R channel.
E	PTCH	PITCH	-100~+100[CENT]	Tuning of pitch. When setting for [SPT1], a higher value raises the Left pitch and lowers the Right pitch.
F	EBAL	EFFECT BALANCE	0~100	Balance between direct sound and effect output. The larger this value, the louder the effect output.

SPACIAL REVERB GROUP [SRM1, SRM2, SHL1, SHL2, SPL1, SPL2]

This full stereo reverb consists of 2 channels (L,R) of reverb effects. Input and Output Crossfade parameters creates a complex placement of the effect signal over each channel.

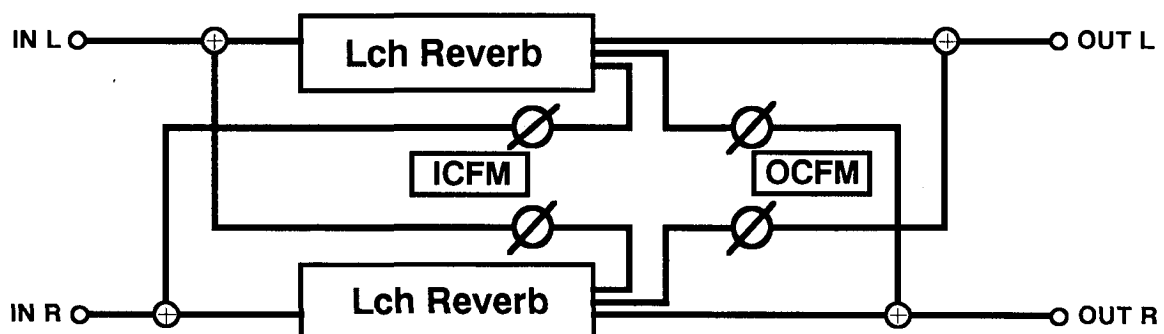


Variation

- SPACIAL ROOM 1 [SRM 1] : Room type reverb
- SPACIAL ROOM 2 [SRM 2] : Room type reverb
- SPACIAL HALL 1 [SHL 1] : Hall type reverb
- SPACIAL HALL 2 [SHL 2] : Hall type reverb
- SPACIAL PLATE 1 [SPL 1] : Plate type reverb
- SPACIAL PLATE 2 [SPL 2] : Plate type reverb

Parameters

A	RevT	REVERB TIME	0.1~5.0[SEC]	Reverberation time, the time that the reverb takes to decay.
B	DAMP	HIGH DAMP	0~80	Amount of high frequency damping. The higher this value, the faster high frequencies decay.
C	PreD	PRE DELAY	0~100[mSEC]	Time from direct sound to the start of early reflection.
D	ICFM	INPUT CROSS FADE MIX	0~100	Cross fade mixing of input level to the 2 stereo reverb units. A higher value creates a more complex "spacious" reverb effects.
E	OCFM	OUTPUT CROSS FADE MIX	0~100	Stereo mixing of two reverb sounds for output. A higher value blends the both channels together.
F	EBAL	EFFECT BALANCE	0~100	Balance between direct sound and effect output. The larger this value, the louder the effect output.



♠ This effect becomes a dual – mono reverb when [ICFM] and [OCFM] are both set to 0.

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