SDD-3300

TRIPLE DIGITAL DELAY

OWNER'S MANUAL

KORG®

SDD-3300

Thank you and congratulations on your choice of the KORG SDD-3300 Sampling Digital Delay. To obtain optimum performance and assure long service life, please read this manual carefully before using this unit.

MAIN FEATURES OF THE SDD-3300

1

The SDD-3300 is a "triple" sampling digital delay, which features three delay units that can be used totally independently, or used together to create short/long delay, chorus, flanging, ensemble and other effects. Each "unit" features twin LFOs which can be set at different rates and phase relationships for 3-phase chorus/flanger, stereo chorus, and a wide array of unique effects. Each unit also features a built-in high-cut and low-cut filter to vary the characteristics of delayed sounds.

2

Up to 64 program settings, including "mixer" section settings, can be held in the SDD-3300's memory. Names and numbers can be given to each "sound", for easy recall during performance or editing.

3

Each unit features a 1000msec Sampling function, to allow the units to be used as Sampling and Delay sound sources.

4

The SDD-3300 features MIDI IN, OUT, and THRU for communication of Program Change and System Exclusive data with other MIDI devices and instruments.

IMPORTANT SAFETY PRECAUTIONS

■Location

Do not use this unit for extended periods of time where it is exposed to:

- direct sunlight
- extremes of temperature or humidity
- sand or dust

■Power Supply

- Use only with rated AC voltage. If you will be using this unit in a country having a different voltage, be sure to obtain the proper transformer to convert to rated voltage.
- To help prevent noise and poor sound quality, avoid using the same outlet as other equipment, or branching off extensions cords shared by other equipment.

■Input/Output Jacks and Connection Cords

Be sure to use standard cables with phone plugs for input and output connections at the rear panel of the SDD-3300. Never insert any other kind of plug into these jacks.

■Handle Gently

Knobs and switches are designed to provide positive operation with a gentle touch. Do not use force.

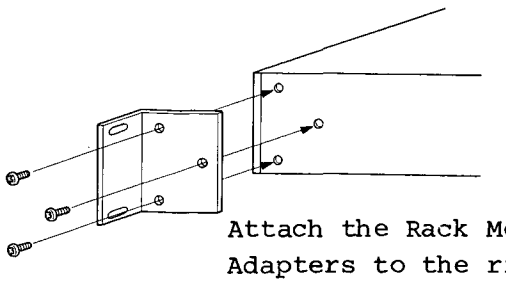
■Maintenance

Wipe the exterior with a soft, dry cloth. Never use paint thinner, benzene, or other solvents.

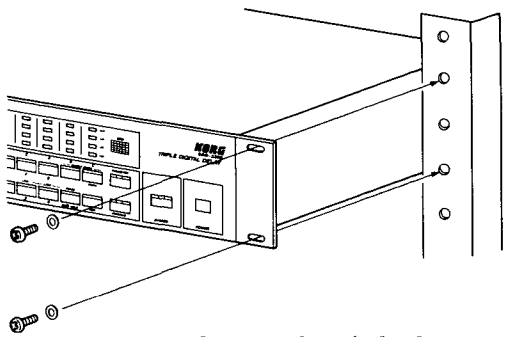
■Keep This Manual

Store this manual in a safe place for future reference.

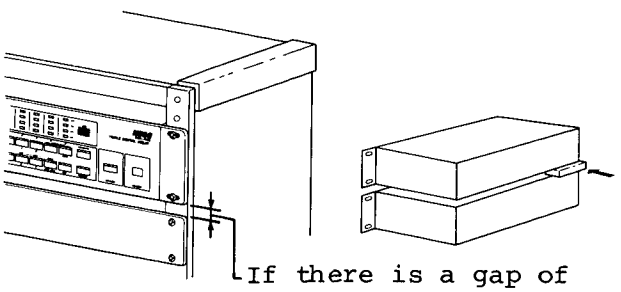
19" Rack Mounting Procedure



Attach the Rack Mount Adapters to the right and left sides of the unit using small screws.



Attach to the rack with large screws.



If there is a gap of approximately 3mm or more at the rear of the unit, fill space with styrofoam, etc.

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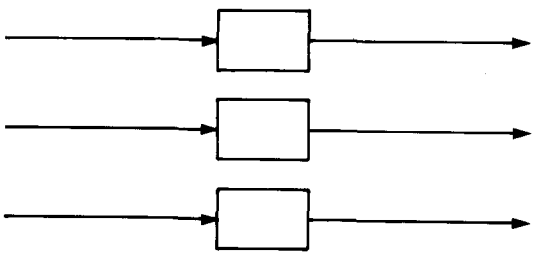
OUTLINE OF SDD-3300 OPERATIONS

The SDD-3300 is a "Triple" delay device, featuring three built-in delay units, which are known as "UNIT A", "UNIT B" and "UNIT C".
Each "UNIT" is a full-feature, full-function delay which can be used independently as a digital delay unit. The units can also be used together to obtain complex effects which formerly could only be obtained through the use of a number of mixers, patch bays and delay units. Also, the setting of each unit can be held in memory for recall in perfomance or further editing.

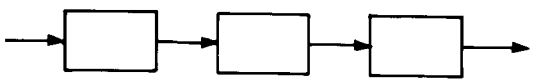
* There are three basic configurations in which the units can be used - "Delay Unit Connection", "Feedback" and "Input/Output". (These are all set by INPUT MIXER and OUTPUT MIXER operations.)

■Unit connection patterns are as shown below:

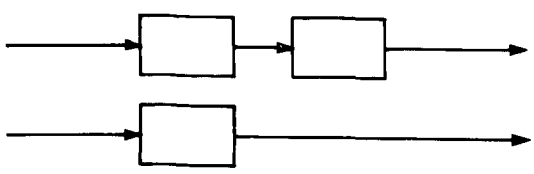
(1) Parallel Type



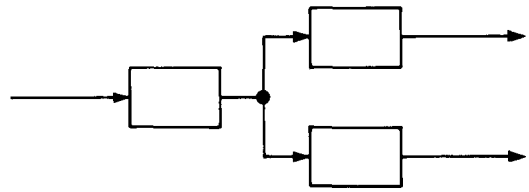
(2) Serial Type



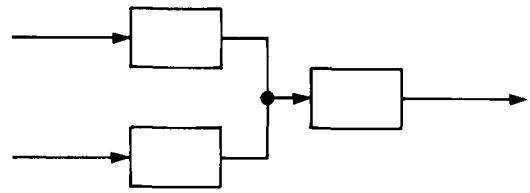
(3) 2:1 Type



(4) < Type

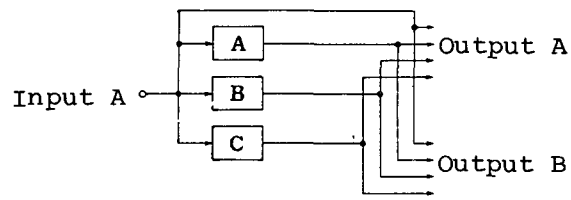


(5) > Type



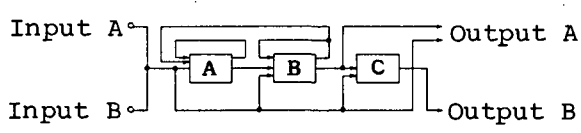
■ **Examples of Actual Operation**

* 3-Phase Chorus



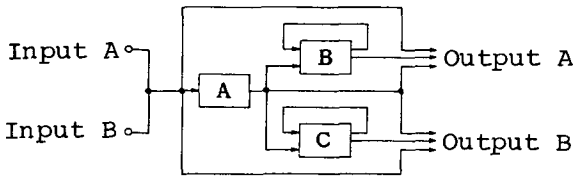
* In this configuration, all Units are connected in parallel. The signal at INPUT A is sent to Units A, B, and C. These signals are then mixed into a stereo output signals by the OUTPUT MIXER and sent to OUTPUT A and OUTPUT B. (No feedback is added. INPUT C and OUTPUT C are not used.)

* Simulated Initial Reverb



* In this configuration, all three units are connected in series. Signals from INPUT A and INPUT B are mixed and sent back to UNIT A, UNIT B, and then UNIT C. Feedback is selected for UNIT A and UNIT B, as well as between UNITS A and B. (Input C is not used.)

* Stereo Chorus Delay

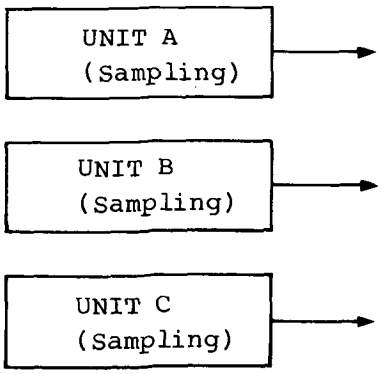


- In this configuration, units are connected in a "<" pattern. A mixed signal from INPUT A and INPUT B is sent to UNIT A, then into UNIT B and UNIT C, where feedback is produced. After this, the signal is processed into 2 lines via the OUTPUT MIXER and OUTPUT in stereo via OUTPUT A and OUTPUT B.

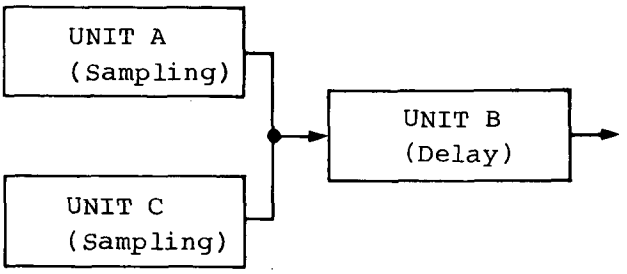
The SDD-3300 can also be used as a sampling machine.
Each unit can be used to sample sounds of up to 1000mSec. Naturally, each unit can hold a different sound, and all three can be played back independently.
Each unit can be set independently, to be used as a delay unit or a sampling machine. Because of this, sounds which are sampled can be processed via effects created in the other two units.

[Example of Actual Sampling Function Application]

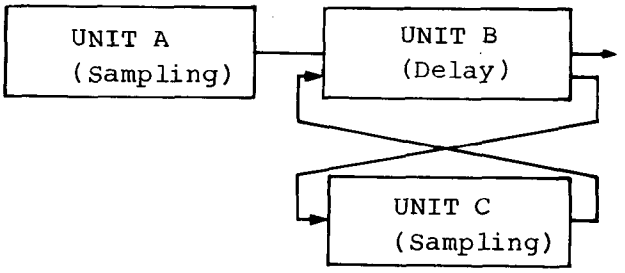
1. Use as a Parallel type Sampling Machine



2. In a ">" type configuration, units A and C are used as sampling machines, and processed by effect created in Unit B.

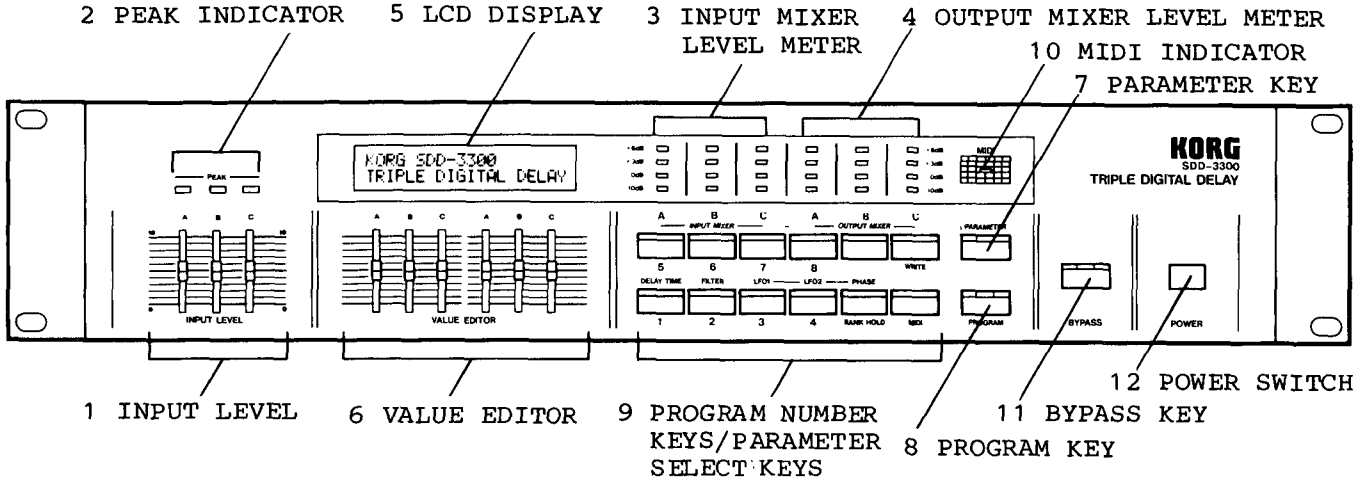


3. In a "1" type configuration, Unit A is used as a sampling machine, and processed by effects created in Unit B and C.

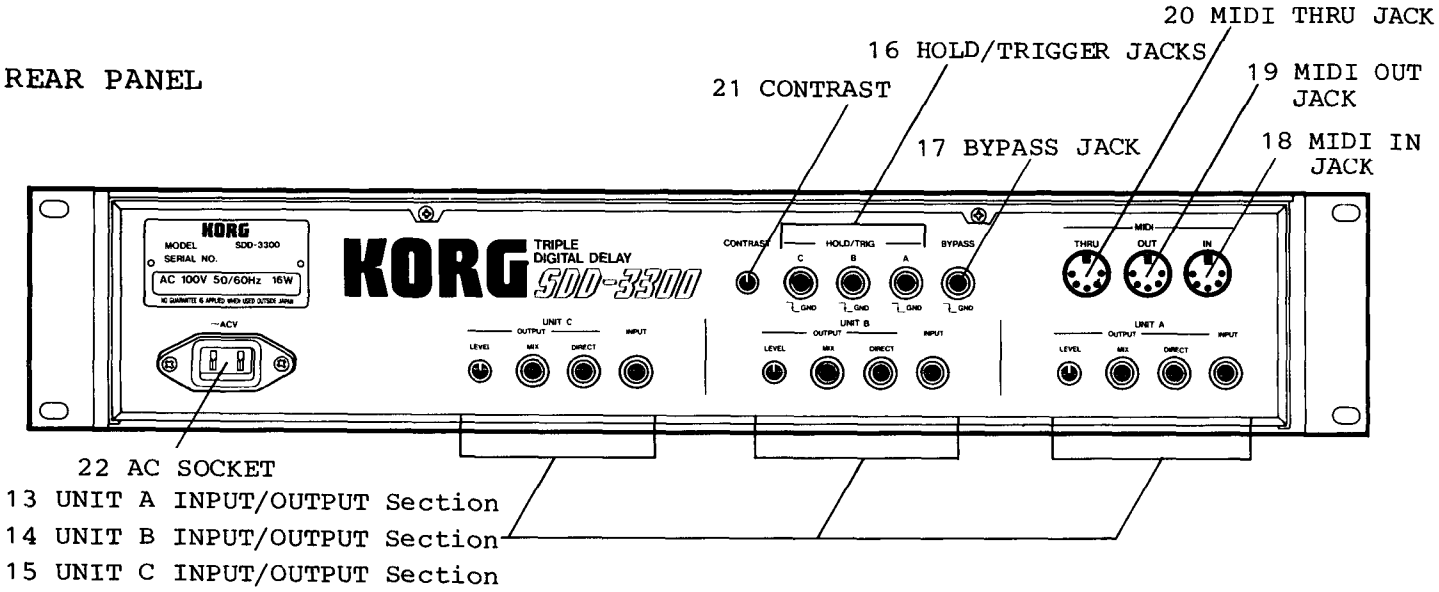


FEATURES AND FUNCTIONS

FRONT PANEL



REAR PANEL



1. Front Panel

1.INPUT LEVEL/2. PEAK LEVEL INDICATORS
The Input Level controls are used to control the input volume from the input jacks on the rear panel (A, B, C). (Slider "A" controls INPUT A input volume, slider "B" controls INPUT B input volume, etc.)

Volume of each input should be adjusted so that the Peak Level Indicators light occasionally.

3.INPUT MIXER LEVEL METER
Displays the input level of the signals to each Delay Unit.

4.OUTPUT MIXER LEVEL METER
Displays the output level of the three output jacks (MIX OUT A, B, and C.)

5. DISPLAY (LCD)
Displays Program Numbers, Program Names, Program Parameters and their selected values.

6.VALUE EDITOR
Sliders used to set values of each parameter. (Up to six parameters can be set one time.)

7.PARAMETER KEY
Used to enable parameter selection and editing. After pressing, parameters may be selected and values can be set.

8.PROGRAM KEY
Used to enable program selection.

9.PROGRAM NUMBER KEYS/PARAMETER SELECT KEYS
Used to select Program Numbers and Parameters.

10.MIDI INDICATOR
Lights when valid MIDI data is received.

11.BYPASS KEY
When this key is ON, the output signals from each Delay Unit (EFFECT sounds) are muted. Only direct sounds from the input terminals which are mixed through the output mixer are output.

12.POWER SWITCH
The LCD display changes as shown below when power is turned ON. Switches, keys, and sliders do not operate when the display appears as shown. Operation becomes possible when the display changes to show Program Numbers and Parameters.)

[SDD-3300 Display at Power ON]

K	O	R	G		S	D	D	-	3	3	0	0					
T	R	I	P	L	E		D	I	G	I	T	A	L		D	E	L	A	Y

2. Rear Panel

13-15.OUTPUT SECTIONS
Used for input/output of signals to and from each Delay Unit. Sections function in the following ways:

INPUT:
Used to connect signals from outputs of keyboards, electric guitars, mixers, etc. (This unit's input sensitivity is -20dB, so it does not correspond with direct inputs from microphones <-50dB>. Signals must be run through an external mixer or preamplifier mixers and set to the appropriate level.)

* Depending on the parameter settings for the INPUT MIXER; signals can be set to any of the units.
See page 9 (INPUT MIXER) for details.

MIX:
Outputs mixed sounds including Direct Effect and Sampling sounds. Levels are controlled via the Output Mixer.

DIRECT:
Direct sounds (sounds input via INPUT jacks) are output exactly as input.

OUTPUT LEVEL:
This controls the total level of signals output via the MIX OUT jack. Normally it is set to the MAX position. (Lower when connecting with a guitar amp, etc.)

16.HOLD/TRIGGER JACK
Used to connect a foot switch for control of the HOLD and TRIGGER functions.

17.BYPASS JACK
The BYPASS function, as controlled via the BYPASS key on the front panel, can also be controlled by connecting a foot switch to this jack.

18.MIDI IN JACK
Used to receive MIDI data.

19.MIDI OUT JACK
Used to transmit MIDI data.

20.MIDI THRU JACK
Used to transmit MIDI data exactly as received at MIDI IN.

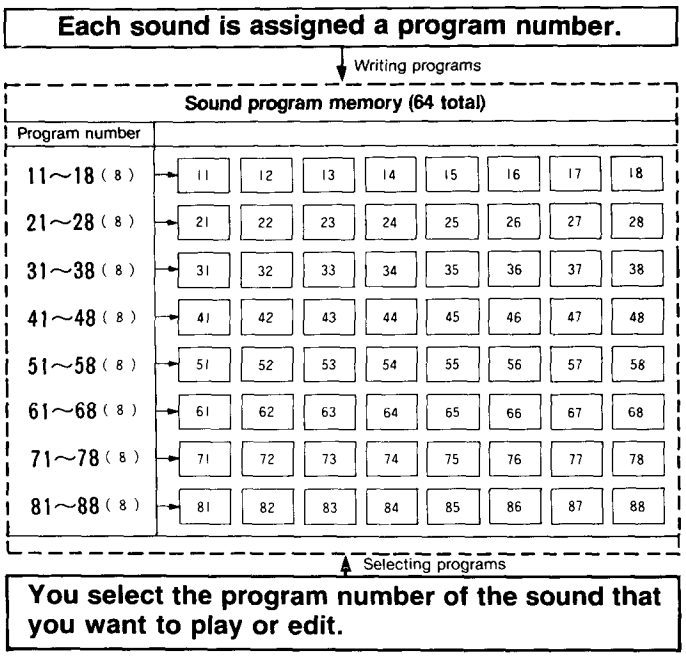
21.CONTRAST
Used to adjust contrast of the LCD display.

22.AC CORD SOCKET
Connects the accessory AC cord.

SELECTING PROGRAMS

1. PROGRAM NUMBERS

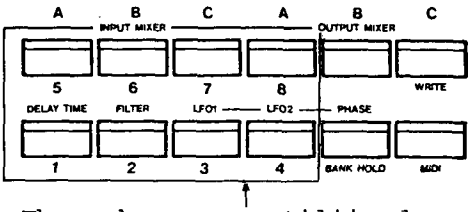
The SDD-3300 features a 64-program internal memory. Up to 64 different sound settings can be held in memory, for immediate recall.
Each of these programs is assigned a 2-digit number, from 11 to 88 (the digits "0" and "9" are not used). These are called Program Numbers. Program Numbers are used when storing a sound setting in memory, or when recalling certain settings which you have stored previously.



■ How to Select a Program Number

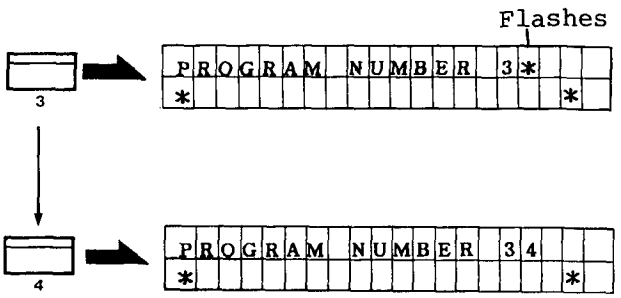
(1) Press the PROGRAM Key.
Program number selection can be performed when the LED indicator at the top of the PROGRAM Key is lit.

(2) Specify the desired 2-digit Program Number by pressing the PROGRAM NUMBER keys (1-8).

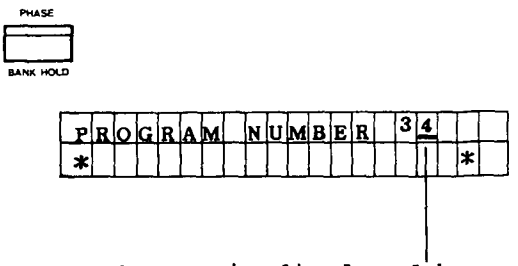


These keys are utiliized

(EX) When specifying Program Number "34"



* About BANK HOLD
The left digit in the Program Number signifies the "BANK". By pressing the BANK HOLD Key, quick access can be made to any of the 8 program settings held within a single BANK.



Cursor is displayed here.
(Indicates BANK HOLD in effect)

(BANK HOLD can be cancelled by pressing the BANK HOLD Key again)

CREATING PROGRAMS

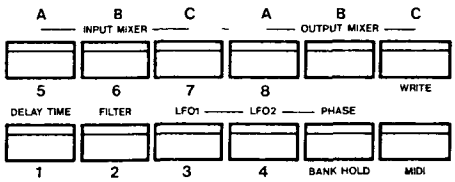
1. PARAMETER SELECTION AND EDITING

The SDD-3300 features 12 PARAMETER SELECT Keys, which are used to set various parameter values that make up individual program settings. Program settings are made by altering initial values for each different parameter.

■ How to Select and Edit Parameters

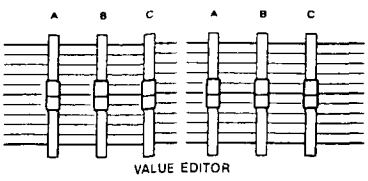
(1) Press the PARAMETER Key.
Parameter Number selection can be made when the LED indicator at the top of the PARAMETER Key is lit.

(2) Specify the parameter to be altered by pressing a PARAMETER SELECT Key (INPUT MIXER, OUTPUT MIXER, DELAY TIME, etc.).



(3) Alter the Parameter Value via the VALUE EDITORS (Sliders A, B, & C on the left and right).

(The VALUE EDITORS are designed so that alteration of values can be made only after the sliders have been moved to positions corresponding to the currently displayed values. During operation, move the sliders until the currently displayed value changes. Then adjust to the desired new value).



* Refer to the next section on the function of each parameter, and related parameter values.

2. PARAMETER FUNCTIONS AND EDITING

[1] INPUT MIXER

The following 6 types of signals can be input into each Delay Unit.

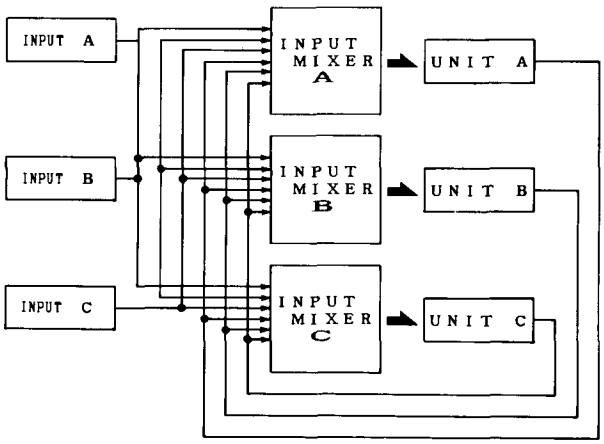
Signal from Input A Signal from Input B Signal from Input C
Signal output from Delay Unit A Signal output from Delay Unit B Signal output from Delay Unit C

INPUT MIXER parameters are used to mix these various signals, and are set for each Delay Unit.

* Input Mixer A is used to mix signals input into Unit A

* Input Mixer B is used to mix signals input into Unit B

* Input Mixer C is used to mix signals input into Unit C



As shown in the above diagram, the INPUT MIXER settings are used to specify how the 3 Delay Units are connected.
In addition, feedback can be created by looping an output signal back through the same Delay Unit. This is controlled in the following ways:

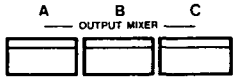
- Unit A feedback level is controlled by INPUT MIXER A
- Unit B feedback level is controlled by INPUT MIXER B
- Unit C feedback level is controlled by INPUT MIXER C

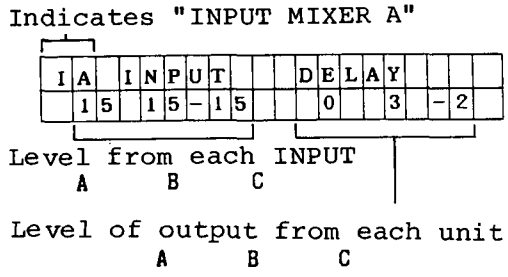
(Feedback will begin to oscillate if the feedback level is set too high.)

* For example, if a signal output from Unit A is looped through Unit B and then back into Unit A, feedback can occur in Unit A.

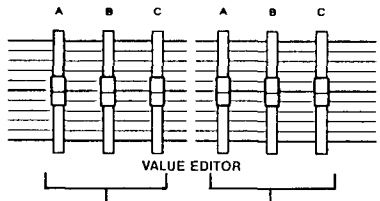
■ EDITING INPUT MIXER PARAMETERS (A, B, & C)

(1) Specify the INPUT MIXER which is to be edited (A, B or C).





(2) Set levels via the VALUE EDITOR.



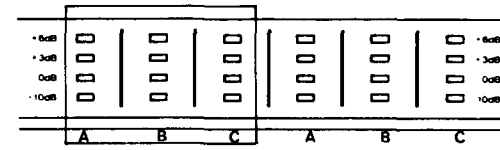
(Left Sliders)
Used to control levels of each INPUT (A, B, & C)
A---Level from INPUT A
B---Level from INPUT B
C---Level from INPUT C

(Right Sliders)
Used to control levels of output from each UNIT
A---Output level of UNIT A
B---Output level of UNIT B
C---Output level of UNIT C

* Values can be set in the range of "-15 -0- +15"
Reverse polarity signals can be used by specifying negative values.
In either case (negative or positive) the larger the value, the higher the volume level added to each unit. A setting of "0" indicates OFF, or, in other words, no signal is added to the specified unit.

* The Input Level of each unit is displayed on the level meter located on the front panel (3 digits on the left of the 6-digit LED meter). Adjust so that +3dB LEDs light with maximum volume levels.

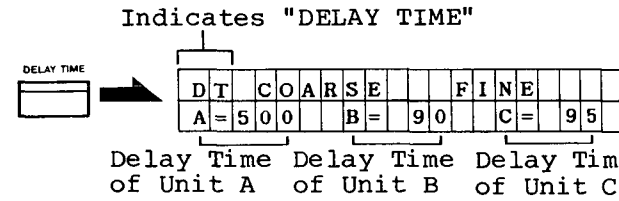
Input Level Meter



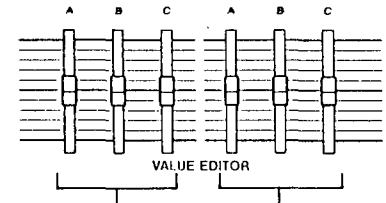
[2] DELAY TIME
This parameter controls the Delay Time of each Delay Unit. Delay Time can be set betwen 0.5mSec (Min.) and 500mSec (Max.)

■ EDITING DELAY TIME PARAMETERS

(1) Select the DELAY TIME parameter.



(2) Set values via the VALUE EDITOR.



(Left Slider)
Used for COARSE adjustment of Delay Time for each Unit
A---COARSE adjustment of UNIT A
B---COARSE adjustment of UNIT B
C---COARSE akjustment of UNIT C

(Right Slider)
Used for FINE adjustment of Delay Time for each Unit
A---FINE adjustment of UNIT A
B---FINE adjustment of UNIT B
C---FINE adjustemnt of UNIT C

* Delay Time is displayed in single mSec units.
* For easy setting of Delay Time values, coarse adjustment should be made first with the Left Sliders, afterwhich fine adjustment can be made with the Right Sliders.
* A "RC" or "PL" message will be displayed when the Left Slider is raised to a certain point. This indicates that sampling may be performed (see section on "Sampling", page 19). To use as a normal delay machine, set the displayed value at a level between 0.5 and 500.

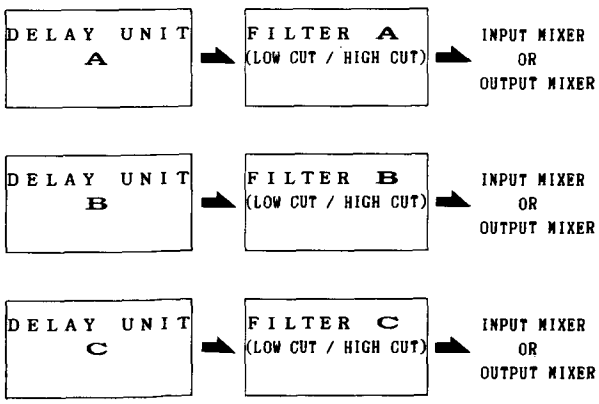
[3] FILTER

Both low-cut and high-cut filters are built-in to each Unit's output section. The tonal quality of signals (delay sound) output from each unit can be altered via these parameter settings.

* Passing delay sounds through the low-cut filter "soften " sound by filtering out high frequencies.

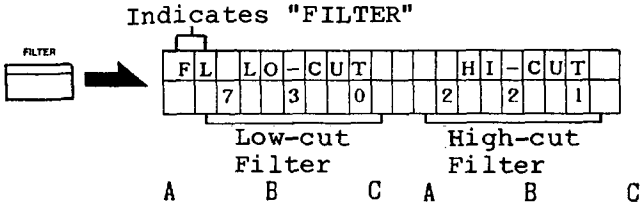
* Passing delay sounds through the high-cut filter creates softers the sound by filtering out high frequencies.

The FILTER parameter is used to the set the cutoff frequency for the low-cut and high-cut filters.

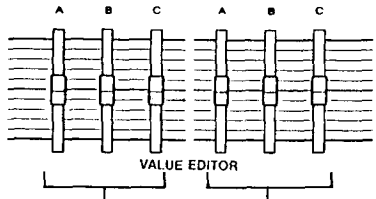


■ Editing the FILTER Parameter

(1) Select the FILTER parameter.



(2) Set Cutoff frequency via the VALUE EDITOR



(Left Slider)
Used to control the cutoff frequency of each unit's Low-cut Filter
A---Controls Filter A
B---Controls Filter B
C---Controls Filter C

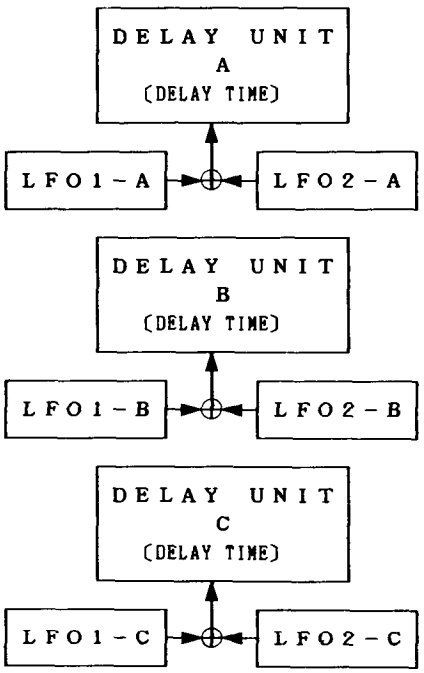
(Right Slider)
Used to control the cutoff frequency of each unit's High-Cut Filter
A---Controls Filter A
B---Controls Filter B
C---Controls Filter C

* Displayed values can be set between "0" and "7". The cutoff frequency becomes higher as this value is raised for in the case of the Lo-cut filter, and lower in the case of Hi-cut filter.

[4] LFO

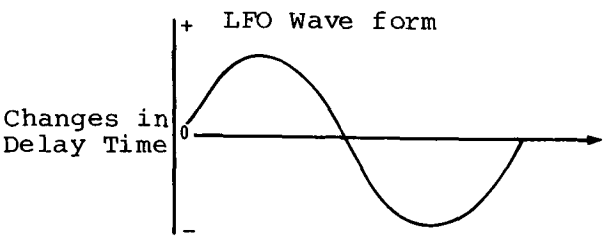
When Delay time is changed cyclically by modulation via the LFOs (low-frequency oscillators), effects such as chorus, vibrato and flanging can be attained.

There are two LFO circuits (LFO 1, LFO 2) built into each unit. Delay Time can be modulated by mixing the settings of these LFO signals.

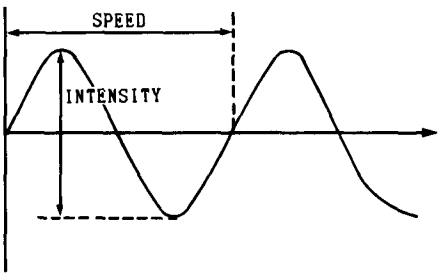


The LFOs used to modulate Unit A are known as "LFO 1 A" and "LFO 2 A". Likewise, Unit B features "LFO 1 B" and "LFO 2 B", and Unit C contains LFO 1 C and LFO 2 C.

Each LFO outputs sine waves digitally. Because of this, Delay Time is changed smoothly. Allowing natural sounding chorus, flange and vibrato effects.



Both SPEED and INTENSITY of LFO oscillation can be controlled.



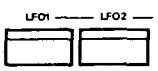
SPEED:
This controls the number of cycles per second. (The higher the value of this parameter, the faster changes in Delay time take effect.)

INTENSITY:
This controls the depth or amount of change in Delay Time (depth of osillations). (The higher the value of this parameter, the larger the change in Delay Time.)

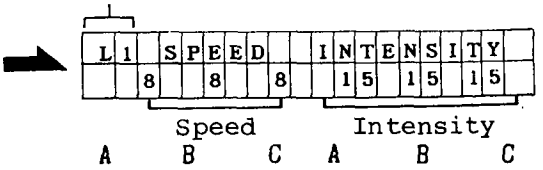
* Use to control the amount of pitch change in chorus or vibrato effects.

■ Editing the LFO Parameters

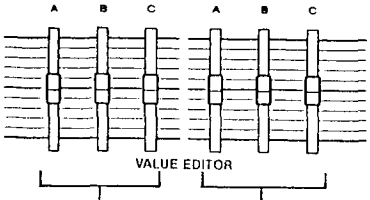
(1) Select the LFO 1 parameter to edit LFO 1 for each unit (LFO1A/LFO1B/LFO1C).
Select the LFO 2 parameter to edit LFO 2 for each unit (LFO2A/LFO2B/LFO2C).



Indicates LFO 1



(2) Set SPEED & INTENSITY via the VALUE EDITOR



(Left Slider)
Controls the speed at which the LFOs modulate each unit (SPEED)

A---SPEED of Unit A's LFO
B---SPEED of Unit B's LFO
C---SPEED of Unit C's LFC

(Right Slider)
Controls the intensity at which the LFOs modulate each unit (INTENSITY)

A---INTENSITY of Unit A's LFO
B---INTENSITY of Unit B's LFO
C---INTENSITY of Unit C's LFO

* Displayed values can be set between "0" and "31".

When B & C are synchronized via the phase parameter [5], the speed is the same as for "A".

The higher the value of the intensity setting, the deeper the modulation.

[REFERENCE]

■ Effects Using Dual Oscillators

Conventional delay machines have used only a single LFO.
Because of this, only simple effects featuring "swelling" sounds, such as chorus and flanging could be obtained.
The SDD-3300 features two LFOs for each Delay Unit. By mixing the signals from each of these oscillators, delay time can be modulated. This allows the creation of complex detuning effects never before possible with conventional delay units.

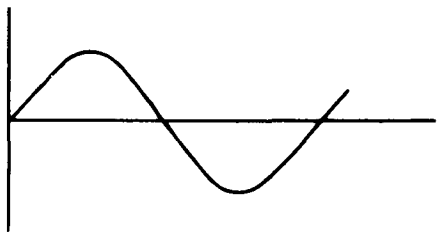
(EX) In case of set LFO for the unit as shown in Fig. 1:

(Fig.1-(A) is shows the output waveform of LFO1, and Fig.1-(B) shows the output waveform of LFO2).

The Delay unit generated the mixed waveforms shown in Fig.1-(A) and Fig.1-(B). For the modulation generated by the A waveform plus B waveform, the delay time changes with these waveforms (Fig. 2).

The SDD-3300 enables more flexible delay times than conventional delay machines.

Fig-1 (A) LFO 1 Waveform (sine wave)



(B) LFO 2 Waveform (sine wave)

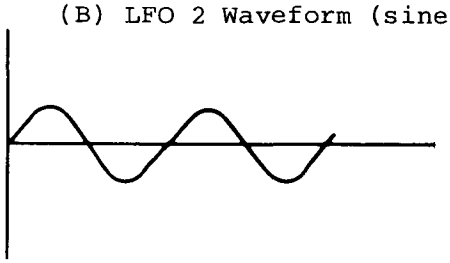
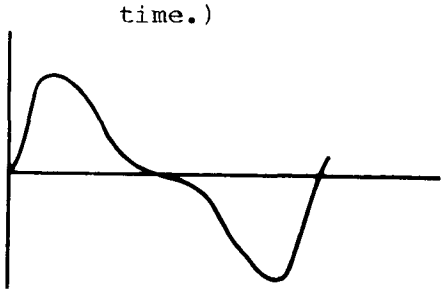


Fig-2 ---A mixed waveform containing the two waveforms shown above. (Results in modulated delay time.)

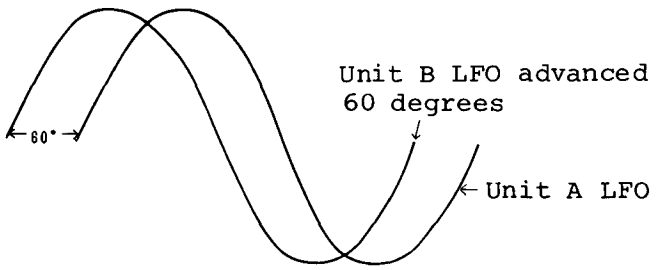


[5]PHASE

By synchronizing the LFOs of Units B & C to A, and shifting the phase of the latter units, three-phase effects (3-phase chorus, flanging, etc.) can be obtained.

This parameter is used to specify the phase difference between LFOs in Units A, B and C.

fig-3: Phase of Unit B LFO advanced 60 in relation to Unit A LFO.



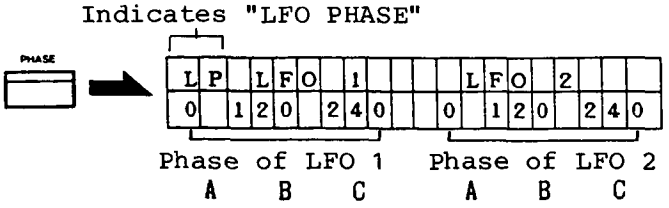
* Phase difference can be set at levels of "0 / 60/ 90/ 120/ 180/ 210/ 240/".

* Phase difference is set in relation to the phase of the Unit A's LFOs. Because of this, phase difference cannot be set for Unit A. (A "0" is normally displayed.)

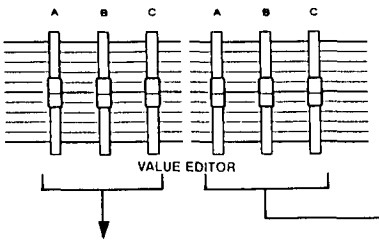
* Phase differences can be set for LFO 1 and LFO 2 on units B and C. In other words, phase differences are set for the LFO1A/LFO1B/LFO1C relationship, as well as for the LFO2A/LFO2B/LFO2C. (Because of this, an extremely efficient effect can be obtained by creating modulation via both LFO 1 and LFO 2.)

■ Editing the PHASE parameter

(1) Select the PHASE parameter.



(2) Set phases via the VALUE EDITOR



(Left Slider)

Used to set Phase of LFO 1

A---Not used (Unit A LFO used as standard)

B---Phase of LFO 1 corresponding to Unit B

C---Phase of LFO 1 corresponding to Unit C

(Right Slider)

Used to set Phase of LFO 2

A---Not used (Unit A LFO used as standard)

B---Phase of LFO 2 corresponding to Unit B

C---Phase of LFO 2 corresponding to Unit C

* When sliders B or C on the Right or Left are raised to a certain point, a "***" message appears. This indicates that the LFO specified operates totally independently from other units LFOs.

[6]OUTPUT MIXER

This unit features three different output terminals (MIX OUT A, MIX OUT B, MIX OUT C). The following six types of signals can be mixed and output from each of the three terminals.

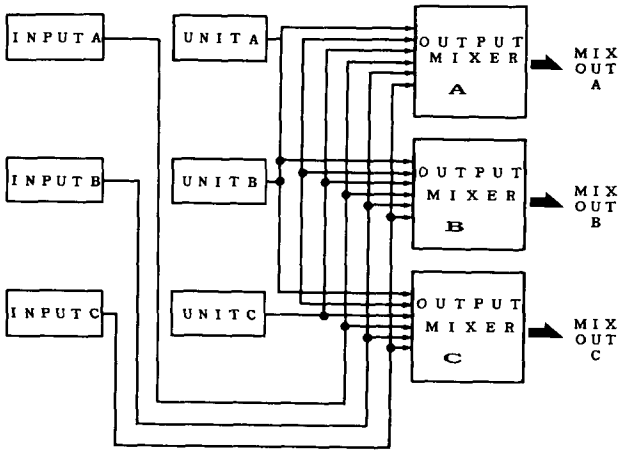
Signal from Input A (DIRECT A)
Signal from Input B (DIRECT B)
Signal from Input C (DIRECT C)
Signal from Unit A (EFFECT A)
Signal from Unit B (EFFECT B)
Signal from Unit C (EFFECT C)

The OUTPUT MIXER parameter is used to mix these various signals, and is set for each of the three outputs.

* OUTPUT MIXER A is used to specify signals output via MIX OUT A

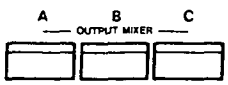
* OUTPUT MIXER B is used to specify signals output via MIX OUT B

* OUTPUT MIXER C is used to specify signals output via MIX OUT C

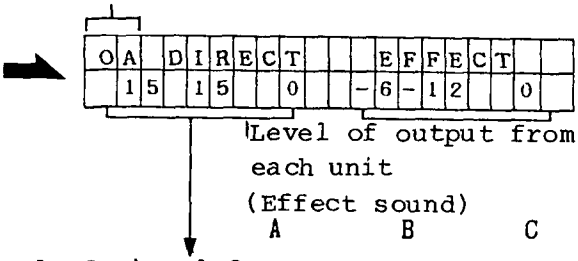


■ Editing the OUTPUT MIXER parameters (A, B, C)

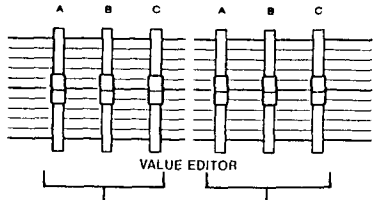
(1) Select the OUTPUT MIXER to be edited (A, B, or C).



Indicates "OUTPUT MIXER A"



(2) Set Levels via the VALUE EDITOR



(Left Slider)

Used to adjust level from inputs (A, B, C) (DIRECT)

A---Level from INPUT A
B---Level from INPUT B
C---Level from INPUT C

(Right Slider)

Used to adjust level of output from each unit (EFFECT)

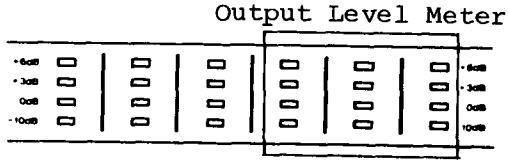
A---Level from Unit A
B---Level from Unit B
C---Level from Unit C

* Displayed values can be set within a range of "-15 - 0 - +15". Negative values are used to specify signals with reversed polarity. In either case (negative or positive), the larger the value, the higher the volume level output from each output teminal. A setting of "0" indicates OFF, or, in other words, no signal is output.

NOTE: Signals are not output via Bypass "ON" when "DIRECT" level of output mixer is not raised.

* Levels from each of the three output terminals are displayed on the Level Meter on the front panel (3 LEDs on righthand side). Adjust so that +3dB LEDs light with maximum volume levels.

Output Level Meter



3. PROGRAM WRITE/COPY OPERATIONS

[1] SDD-3300 Programs and Parameters
The following 11 parameters are held in the SDD-3300 memory.

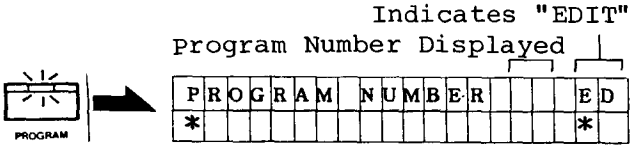
[Programmable Parameters]

1. INPUT MIXER A·····INPUT (A,B,C) /DELAY (A,B,C)
2. INPUT MIXER B·····INPUT (A,B,C) /DELAY (A,B,C)
3. INPUT MIXER C·····INPUT (A,B,C) /DELAY (A,B,C)
4. DELAY TIME·····DELAY TIME (A,B,C)
5. FILTER·····LO-CUT (A,B,C) /HI-CUT (A,B,C)
6. LFO1·····SPEED (A,B,C) /INTENSITY (A,B,C)
7. LFO2·····SPEED (A,B,C) /INTENSITY (A,B,C)
8. PHASE·····LFO1 (B,C) /LFO2 (B,C)
9. OUTPUT MIXER A···DIRECT (A,B,C) /EFFECT (A,B,C)
10. OUTPUT MIXER B···DIRECT (A,B,C) /EFFECT (A,B,C)
11. OUTPUT MIXER C···DIRECT (A,B,C) /EFFECT (A,B,C)

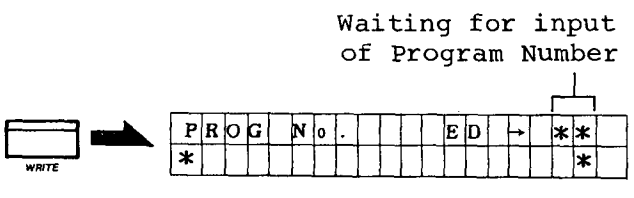
The following section explains how to write a "Program" to memory. A single "Program" consists of settings for each of the 11 parameters listed above.

■ Writing Programs to Memory

(1) After completing desired editing of each Parameter, press the PROGRAM Key.



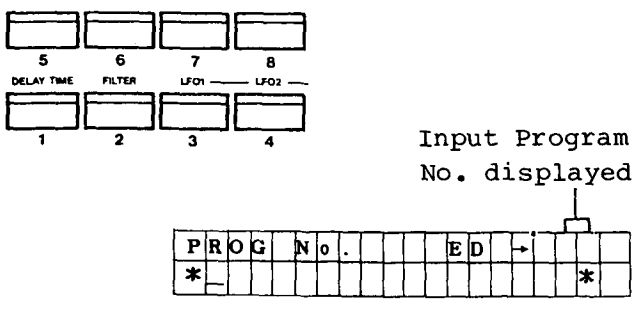
(2) Next, press the WRITE Key.



(3) Specify the desired Program Number via the Program Number Keys (1 through 8).

* 2-digit Program Numbers can be selected between 11 and 88.

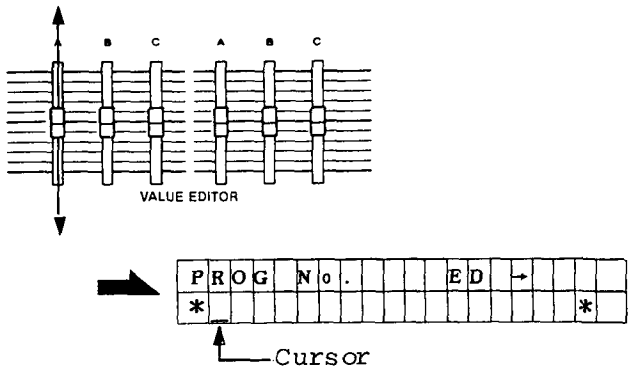
* Parameter settings made via editing are held in memory under the displayed Program Number.



(4) At this point, the sound or effect created can be given a name or title, up to 17 characters long. This is done by using the value editor as described below.

[NANING PROCEDURE]

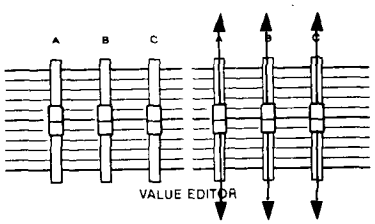
■ The "A" slider on the left side of the Value Editor is used to move the cursor left and right. Move it to the desired position by sliding it up or down. (Only letters in cursor position can be altered.)



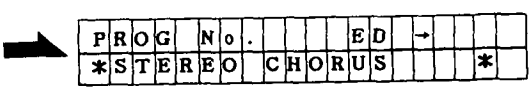
■ The sliders on the left side of the Value Editor (A, B, and C) are used to select alphanumeric characters and symbols.

A---Numbers from 0 to 9 and "@".
B---Letters from A to Z
C---Symbols as shown below:

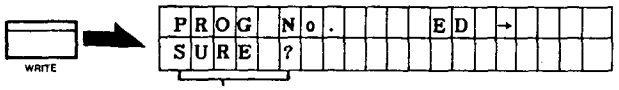
! " # $ % & ' ( ) * + , - .
/ : ; < = > ? → ← ¥] [



(EX)
Line cursor up under character to be changed or specified



(5)Press the WRITE Key once again after finishing the NAMING procedure.



(Requests verification)

At this time a "SURE?" inquiry appears on the display. If there is an error in the Program Number, repeat input procedures. If not, press the WRITE Key once again.

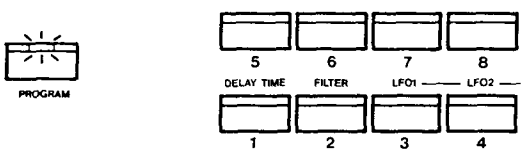
* With this, the Program Write procedure is completed.
* Program Numbers may be altered when the "SURE?" message appears.
  (Input the correct number with the Program Number Keys and press the WRITE Key.)
* When the Program Keys are pressed with a "SURE?" message appearing, operation returns to step (1).
  Program Numbers can be rewritten and programs renamed by repeating from step (2).

[2]COPYING PROGRAMS

Perform the following procedures to copy a program into another program number.

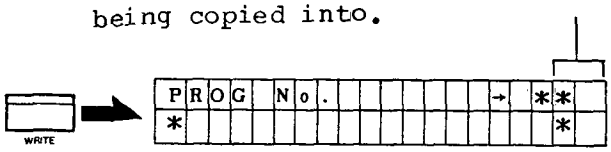
■Copy Procedures

(1)Press the PROGRAM Key and select the Program to be copied.

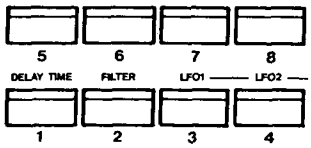


(2)Press the WRITER Key.

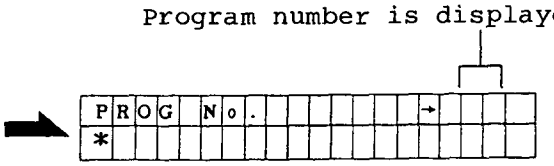
Waits for Program number that is being copied into.



(3)Select the Program Number into which you wish to copy.

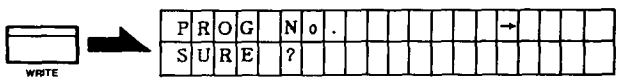


Program number is displayed



(4)At this time, naming of the selected program can be performed.

(5)Press the WRITE Key again.
("SURE?" inquiry appears)



(6)Press WRITE Key again after verifying that Program Number is correct.

HOLD FUNCTION/SAMPLING FUNCTION

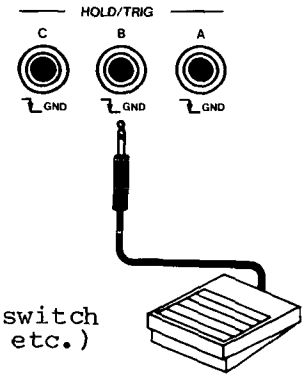
1. HOLD FUNCTION

Besides acting as delays, each Unit - A, B, and C - has two othe functions. One of these is the "HOLD" function. Sounds or phrases up to 500mSec can be played back over and over via the HOLD function. For example, a phrase can be input during performance, and then be replayed (as a background) while a second phrase is played.

■HOLD Function Operations

(1)To utilize the HOLD function, connect a foot switch (PS-1, PS-2, optional) to the HOLD/TRIG jack on the rear panel.

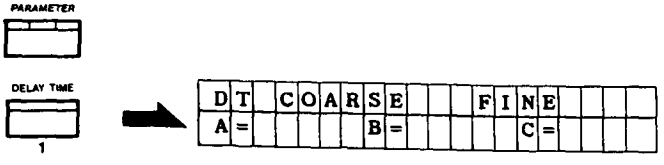
* The HOLD function can be used independently on each unit. Because of this, HOLD/TRIG jacks are provided for each unit. Connect foot switches to all units for which the HOLD function is to be utilized.



Foot switch
(PS-1 etc.)

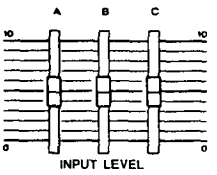
(2)Set DELAY TIME to correspond to the length of the sound or phrase to be held. (This time is repeated as a single cycle)

* Perform this setting procedure for each unit.
* If the "RC" or "PL" messages appear for any of the DELAY TIME parameters, the HOLD function cannot be used.
(Set between 0.5 and 500)
* See section [2], page10 on setting DELAY TIME.



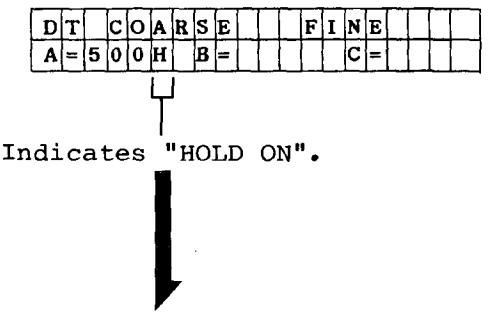
(3)During actual operation, perform the following procedures.

1 Adjust INPUT LEVELs of each unit so that the PEAK indicators light occaisionally when peak valumes are reached.



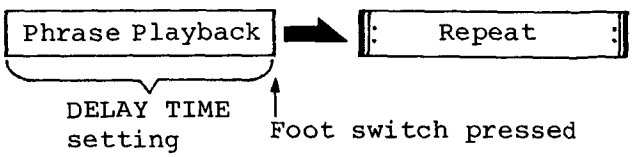
2 Set INPUT MIXER levels for each unit, so that the +3dB LEDs light periodically.

3 Play the desired phrase or sound and press the foot switch immediately after.



The HOLD function and corresponding phrase is now set for the unit into which the foot switch is connected.

(If the phrase is longer than the time set in step (2), the front part of the phrase will be cut off.)



* The HOLD pattern is cancelled by subsequently pressing the foot switch.
* HOLDs are also cancelled when DELAY TIME parameters of corresponding delay units are altered.

[NOTES]

■Functions of each parameter during a HOLD

Each parameter functions independently when a HOLD is specified. Because of this, it's necessary to set FILTER, LFO and other parameters to "0" in order to obtain a pure "repeat" function. Conversely, these parameters can be used to crate unique sounds when used in conjunction with the HOLD function.

2. SAMPLING FUNCTION

The SDD-3300 is capable of recording sounds up to 1000mSec in length and playing them back on command. This function is known as "Sampling." Each Unit is capable of SAMPLING independently.

SAMPLING includes two different operations - recording and playback. Both recording and playback can be controlled by two types of signals.

- Trigger signals from a foot switch
- MIDI NOTE ON Events

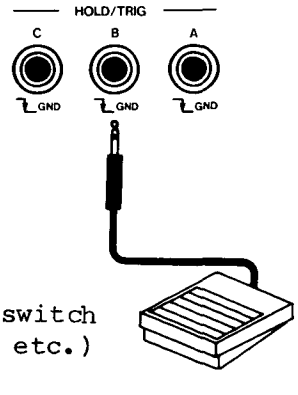
SAMPLING operational procedures vary according to the type of signal which is utilized.

[1] When using a Foot Switch

■SAMPLING Function Operations

■Connect a foot switch (PS-1, PS-2 optional) to the HOLD/TRIG jack on the rear panel.

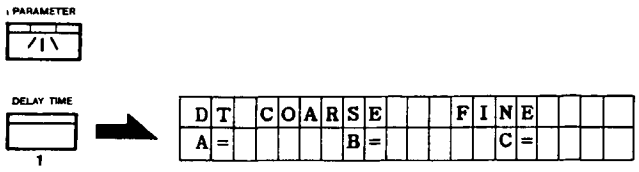
* The SAMPLING function can be used independently with each unit. Because of this, HOLD/TRIG jacks are provided for each unit. Connect foot switches to all units for which the SAMPLING function is to be utilized.



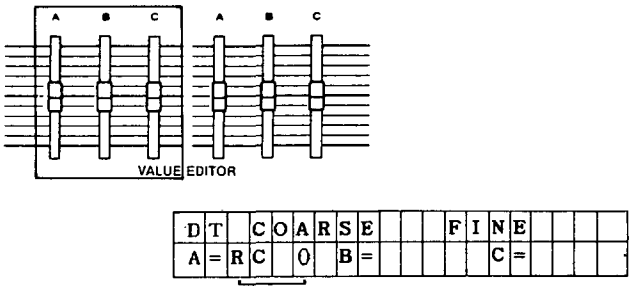
Foot switch
(PS-1 etc.)

Recording Operations

(1) Select the DELAY TIME parameter.

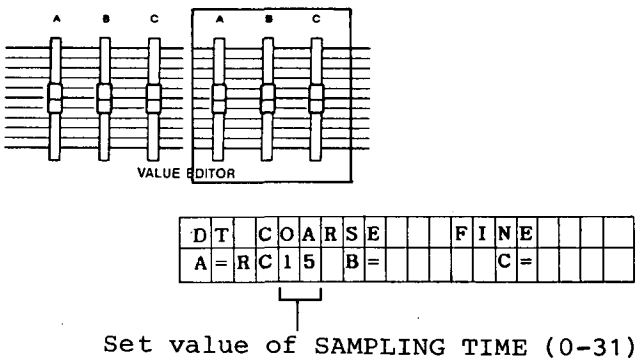


(2) Move up the left side sliders (A, B, C) corresponding to units to be sampled in, until the "RC" (RECORD) message appears on the display. [This indicates the selected unit is in the RECORD Mode.]



Indicates REC Mode

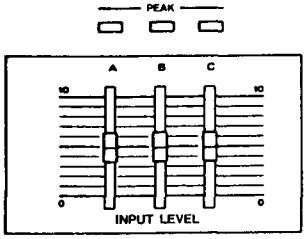
(3) Set SAMPLING TIME via the right sliders (A, B, C). The indicated values move between "0" and "31" when the sliders are moved, with "0" equalling 1000mSec. and "31" equalling 250mSec.



Set value of SAMPLING TIME (0-31)

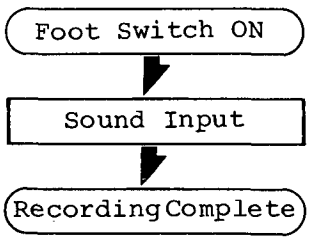
* Moving sliders up causes playback sounds to be higher in pitch than the source sound, while moving them down causes the playback sound to be lower in pitch.
* If the SAMPLED sound is recorded with SAMPLING TIME set at MAX ("0" on the display) then it is impossible to lower the pitch of the playback sound below it's original pitch.
* If the SAMPLED sound is recorded with SAMPLING TIME set at MIN ("31" on the display) then it is impossible to raise the pitch of the playback sound.

(4)Next, adjust INPUT LEVELs.
Adjust so that the corresponding PEAK indicator lights periodically when the sound to be sampled is input.



(5)Set the INPUT MIXER level for each unit, so that the +3dB LEDs light periodically.

(6)Depress the foot switch to begin recording. Input the sound to be sampled. When the foot switch has been depressed again, sampling is completed.

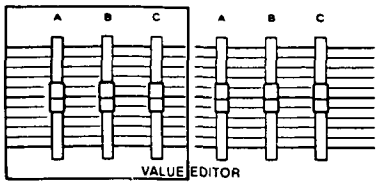


* Repeat the above procedures to sample sounds for each unit.

* To alter sampled sounds, repeat procedures from the beginning.
(The formerly sampled sound will be erased when the foot switch is depressed.)

PLAYBACK OPERATIONS

(7)Move the left side slider corresponding to the sound to be played back until the "PL" (PLAY) message is displayed.



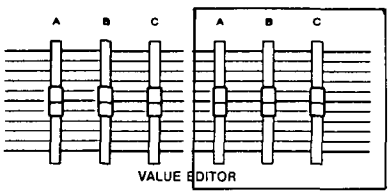
* The "PL" message indicates the PLAY mode.

D	T		C	O	A	R	S	E				F	I	N	E								
A	=	P	L	1	5		B	=							C	=							

Indicates "PLAY" mode.

(8)When the foot switch is depressed, the corresponding sampled sound is played back.

* Playback pitch is raised with the VALUE EDITOR slider.
(See pge 19 (3) for details.)



D	T		C	O	A	R	S	E				F	I	N	E								
A	=	P	L				B	=							C	=							

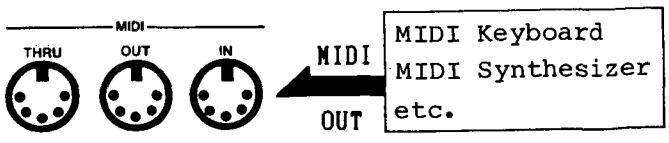
Playback pitch can be raised by changing Sampling Time setting.

NOTE

Sounds are not held in memory if power is turned OFF. Also, if the left side sliders are moved, the mode returns to the DELAY mode, resulting in distortion or erasure of sampled sounds.

[2]Controlling the Unit via MIDI NOTE ON EVENT Messages

■Connect the MIDI IN terminal on the back panel to the MIDI OUT terminal of the controlling MIDI device.



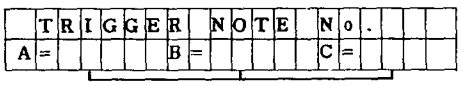
■Set the TRIGGER NOTE NUMBER

In this case, MIDI NOTE ON EVENT messages are used to trigger recording or playback operation. Individual units begin playback or recording operation only when a preset note number is received. This note number is known as a "TRIGGER NOTE NUMBER". Because TRIGGER NOTE NUMBERS can be set, different keys on a keyboard instrument, for example, can be used to trigger recording or playback for various units. For example, middle C, note number 60 on a keyboard, can be used for Unit A sampling, note number 62 used for Unit B, etc.

Perform the following procedures to set TRIGGER NOTE NUMBERS for each individual Unit.

(1)Press the PARAMETER Key. (TRIGGER NOTE NUMBER is included in MIDI-related parameters. Refer to page 23 for details.)

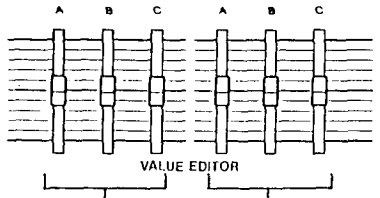
(2)Press the MIDI parameter select key a number of times, until the display appears as shown below.



Indicates Note Number
(0 - 127)

(3)Set the TRIGGER NOTE NUMBER for each unit using the VALUE EDITOR sliders.

The VALUE EDITOR functions as shown below.



(Left Slider)
Used to alter the TRIGGER NOTE NUMBER in units of ten.

A---Used to set unit A
B---Used to set unit B
C---Used to set unit C

(Right Slider)
Used to specify the "digits" place in the TRIGGER NOTE NUMBER.

A---Used to set unit A
B---Used to set unit B
C---Used to set unit C

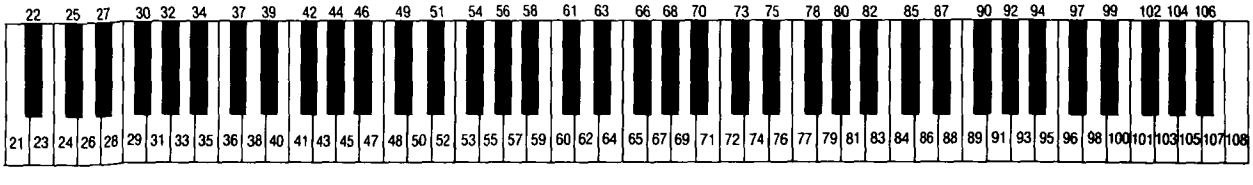
* Displayed values indicate TRIGGER NOTE NUMBERS (May be set between "0" and "127")

NOTE

■MIDI Keyboards and NOTE NUMBERS

MIDI keyboards feature numbers assigned to each key on the keyboard, as shown below. These numbers can be used in specifying which keys are used to control sampling operations in each of the SDD-3300 units.

Fig.1 Note number in piano range



- IMPORTANT NOTE -

The SDD-3300 must be setup as described below in order to allow control via MIDI NOTE ON EVENT messages.

- The SDD-3300's MIDI receive channel must be set to the same number as the controling device's MIDI transmit channel. (Reger to page 24 for details.)

- Set OMNI Mode to ON. (See Section [4],OMNI MODE on page 26 for details.)

Communication with the connected MIDI device will not be possible if these settings are not correct.

Recording and playback operations are the same as for when using a foot switch.

The following describes an example of operations when using a MIDI keyboard for control.

Recording Procedure----------

(1)Connect the MIDI IN terminal on the rear panel to the MIDI OUT terminal of a MIDI keyboard.

(2)Set TRIGGER NOTE NUMBER for each unit.

(3)Select the DELAY TIME parameter.

(4)Raise the left side slider corresponding to the unit to be used for sampling, until the "RC" message is displayed.

(5)Set Sampling Time using the right side sliders.

(6)Input the desired sound and set input levels.

(7)Recording begins when the key on the keyboard corresponding to the Note Number set in (2) is pressed. Input the sound for recording. (Recording is completed after the time set in (5) has expired)

* Repeat the procedure for each unit.

* To alter recorded sound, repeat entire procedure.

Playback Procedure----------

(8)Raise the left side slider until the "PL" message is displayed.

(9)Playback begins when the key on the keyboard corresponding to the Note Number set in (2) is depressed.

* Pitch may be altered by moving the corresponding right side slider.

MIDI CONTROL

The SDD-3300 features MIDI terminals, allowing communications with other MIDI-equipped devices, such as synthesizers, sequensers, etc.

The SDD-3300 is capable of transmitting and receiving the following MIDI messages:

Transmitted Messages
■ PROGRAM CHANGE ■ SYSTEM EXCLUSIVE MESSAGES
Received Messages
■ NOTE ON EVENT ■ PROGRAM CHANGE ■ SYSTEM EXCLUSIVE MESSAGES

Utilizing these MIDI messages, the SDD-3300 can be controlled in the following ways:

Control via PROGRAM CHANGE messages
[PROGRAM CHANGE data is used to specify changes in Program Numbers]

- Program Numbers of other deveices can be changed automatically by altering Program Numbers on the SDD-3300.
- Conversely, Program Numbers on the SDD-3300 can be changed automatically by altering Program Numbers on the controlling MIDI device.

Control via NOTE ON EVENT messages
[NOTE ON EVENT data relates to the basic "sounding" of notes when keys are played on the keyboard]

- This data is used in controling timing when the SDD-3300 is used for sampling. (See page 19, "SAMPLING FUNCTION" for details.)

Control via SYSTEM EXCLUSIVE Messages
[SYSTEM EXCLUSIVE messages include various level settings on the SDD-3300, including switch and slider positions, as well as settings of various parameters]

- Data stored in the SDD-3300 programmer can be transmitted to and stored in another SDD-3300 or other MIDI memory device, such as the MEX-8000.
- Data stored in an external device such as another SDD-3300 or MEX-8000 can be loaded into the SDD-3300.
- It's also possible to control data held in the SDD-3300 via an external computer. (Special software required to handle SYSTEM EXCLUSIVE messages.)

1. MIDI-RELATED PARAMETERS

MIDI-related paremeters can be set in the following ways:

- **RECEIVE Channel and RECEIVE Program Number**
  SDD-3300's RECEIVE CHANNEL can be set. (1-16) It's also possible to freely set which SDD-3300 Program Number is selected when External MIDI Program Change data is received.
- **TRANSMIT Channel and TRANSMIT Program Number**
  SDD-3300's TRANSMIT CHANNEL can be set. (1-16) It's also possible to freely set which External MIDI Program Change data is selected when an SDD-3300 Program Number is transmitted.
- **TRIGGER NOTE NUMBER**
  Used to select which note number triggers recording or playback operation when used in the sampling mode.

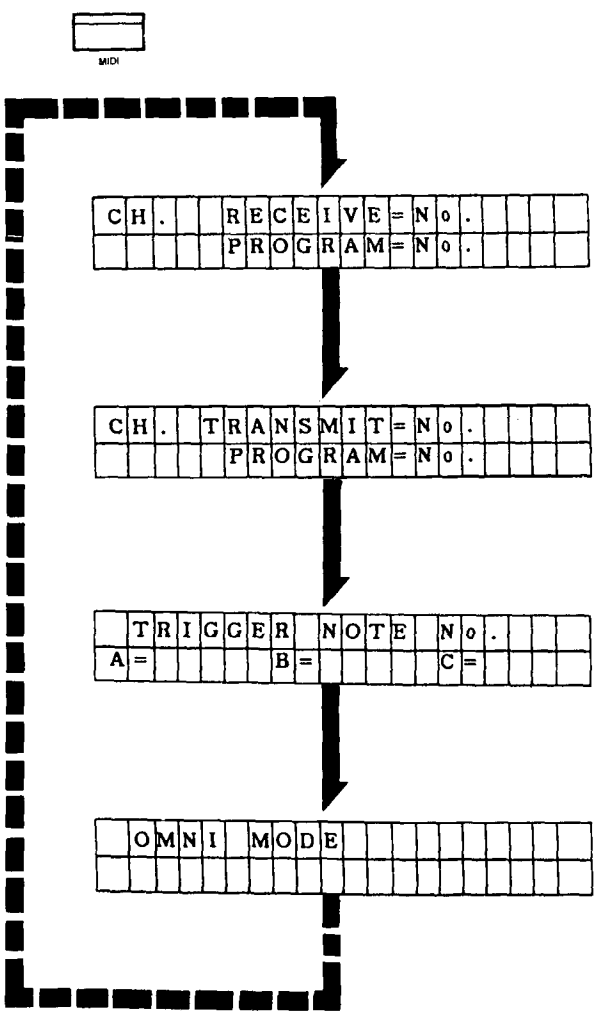
- **OMNI MODE**
  SDD-3300 OMNI ON/OFF can be selected. In the ON mode, all MIDI messages are received. When set to OFF, only messages corresponding to those specified on the SDD-3300 are received.

Perform the following procedures to specify these parameters.

■ Selecting MIDI-related Parameters

(1) Press the PARAMETER Key.

(2) The LCD display changes each time the MIDI parameter select key is pressed. Select the desired parameter by pressing this key.



2. SETTING MIDI-RELATED PARAMETERS

MIDI-related parameters can be set according to following procedures.

[1] Set the RECEIVE CHANNEL and RECEIVE PROGRAM NUMBER

- **About the Recive Number and the Program Number Parameters**
  The PROGRAM-NUMBER that is transmitted from another MIDI device to the SDD-3300 is called the RECEIVE NUMBER. The internal PROGRAM NUMBER that is referenced to a RECEIVE NUMBER is called the PROGRAM NUMBER.

(EX.) When Program Change No.32 is received from another MIDI device, Program 11 is selected on the SDD-3300, and is for example, effects on the SDD-3300 can be freely assigned when parameters are matched with a synthesizer, as shown below.

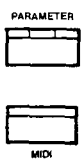
(Ex.) When the synthesizer and the SDD-3300 are connected.

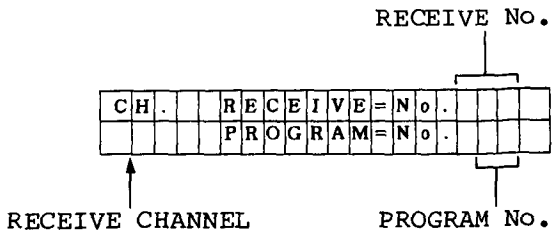
1 Electric Piano 1--------PROGRAM 11
2 Strings----------------PROGRAM 21
3 Electric Piano 2--------PROGRAM 11
4 Brass 1----------------PROGRAM 31
5 Electric Piano 3--------PROGRAM 11
6 Brass 2----------------PROGRAM 31 etc.

* The RECEIVE NUMBER has a range of "0 to 127".

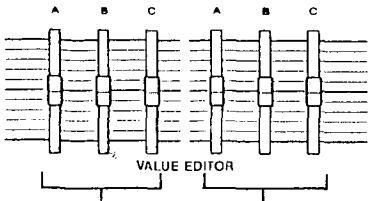
* The PROGRAM NUMBER can be set within the range of "11 to 88"

(1) Select this parameter as described above.





(2) Select Values with the Value Editor.



Left-Side Slider

A----Sets the channel reception (Channels 1-16).
B----Not used.
C----Sets the first two digits of the RECEIVE NUMBER.

Right-Side Slider

A----Sets the last digit of the RECEIVE NUMBER.
B---Sets the first digit of the PROGRAM NUMBER.
C----Sets the second digit of the PROGRAM NUMBER.

● When setting the RECEIVE NUMBER / PROGRAM NUMBER, first select a RECEIVE NUMBER and then set the desired PROGRAM NUMBER.

[2] Set the TRANSMIT CHANNEL and the TRANSMIT PROGRAM NUMBER.

● For the PROGRAM NUMBER and TRANSMIT PROGRAM NUMBER:

The selected program number of the SDD-3300 that transmits a programa change to another MIDI is called the "Transmit number".

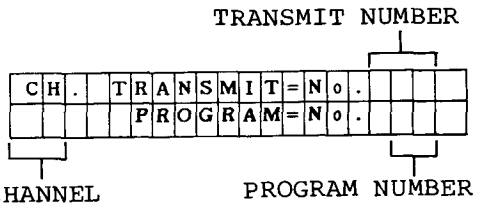
(Ex.) If the parameter the settings are:
PROGRAM NUMBER = 11
TRANSMIT NUMBER = 32
Selecting the PROGRAM NUMBER 11 via the on the SDD-3300 causes the other MIDI device to change to PROGRAM NUMBER 32.

(Ex.) When the SDD-3300 and another MIDI device are connected.

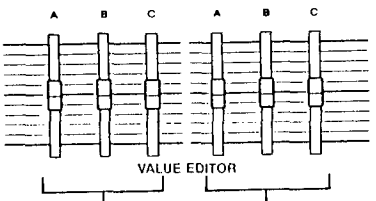
(SDD-3300) (Another Effector with the MIDI function.)
PROGRAM 11----------PROGRAM 2
PROGRAM 12----------PROGRAM 3
PROGRAM 13----------PROGRAM 0
PROGRAM 14----------RROGRAM 5
PROGRAM 15----------PROGRAM 4
PROGRAM 16----------PROGRAM 1 etc.

* The TRANSMIT NUMBER has a range of "0" to 127".
* The PROGRAM NUMBER has a range of "11 to 88.

(1) Select this parameter:



(2) Select values with the VALUE EDITOR.



Left-Side Slider

A----Sets the TRANSMIT CHANNEL. (Channels 1-16)
B----Not used.
C----Sets the first two digits of the TRANSMIT NUMBER.

Right-Side Slider

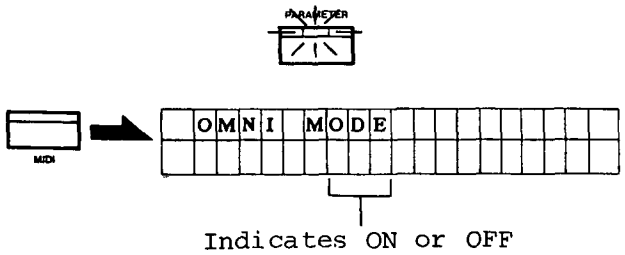
A----Sets the last digit of the TRANSMIT NUMBER.
B----Sets the first digit of the PROGRAM NUMBER.
C----Sets the second digit of the PROGRAM NUMBER.

* When setting the TRANSMIT NUMBER/ PROGRAM NUMBER, first select a PROGRAM and the set the desired TRANSMIT NUMBER.

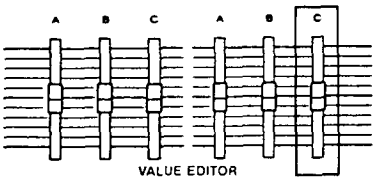
[3] Setting the TRIGGER NOTE NUMBER
Information on the setting of this parameter is provided on page 21.

[4] Setting the OMNI MODE

(1) Specify the OMNI MODE parameter.



(2) Set using the "C" slider on the right side of the Value Editor.



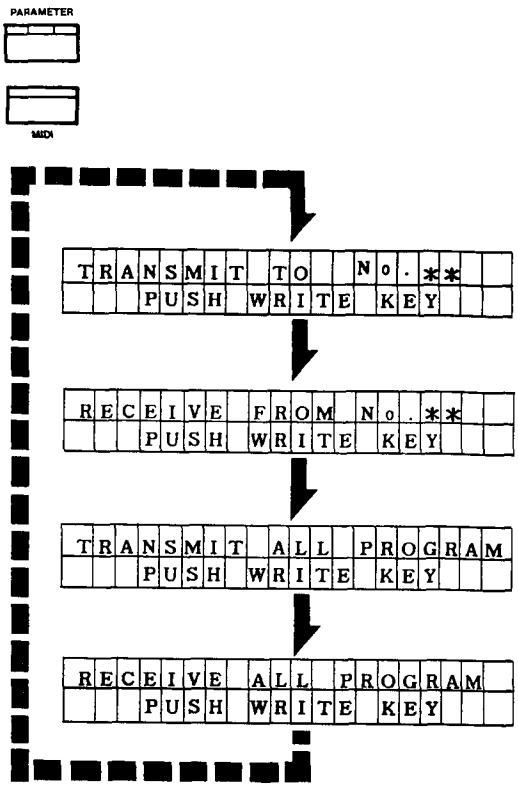
3. PROGRAM SAVE/LOAD

Save/Load operations can be performed to communicate program data between the SDD-3300 and another SDD-3300, MEX-8000 or other memory device. This is known as the "Program Transceiving Mode."
The following types of Save/Load operations are possible with another SDD-3300:

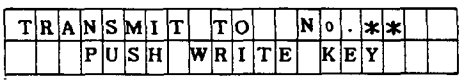
■1 Program Save/Load
Communicating via MIDI System Exclusive messages, the program data from a single program memory can be loaded and saved from one SDD-3300 to another.

■64 Program Save/Load
Communicating via MIDI System Exclusive messages, the program data from the entire program memory of one SDD-3300 can be loaded and saved in another.
(1 Program Save/Load operation is impossible when using a MEX-8000.)

[1] Setting the program Transceive Mode
Select the PROGRAM Key then press the MIDI Key. The display changes as shown each time the MIDI Key is pressed.



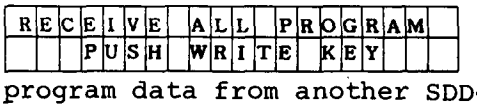
Meaning of Display Messages



[Data from a single program to be transmitted to program "**" of another SDD-3300]

[Data from a single program of another SDD-3300 to be recieved in program "**" mode used to set to Delay units]

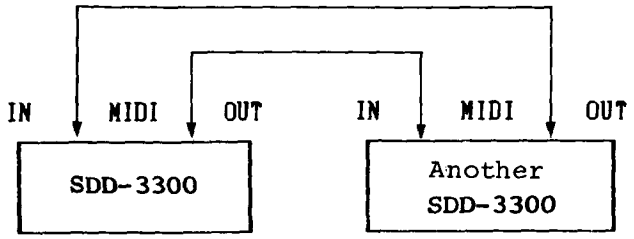
[All Program memory of unit to be transmitted to memory of another device]



[All program data from another SDD-3300 to be received]

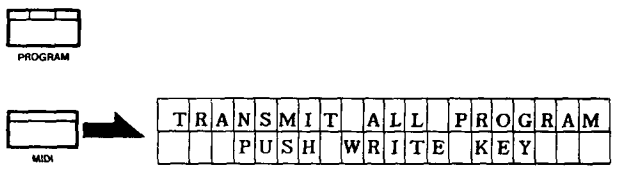
[2] Transmit/Receive of Data Using Another SDD-3300
(Save/Load)

Connection and Setting of MIDI CHANNELS
Two SDD-3300 units are connected as shown below.

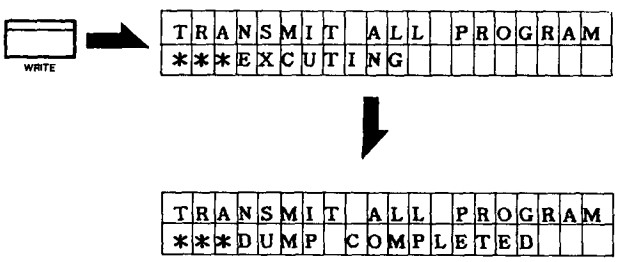


■SAVING ALL 64 PROGRAMS
Perform the following procedures to SAVE the data of the SDD-3300 in another SDD-3300's memory banks.
(Using the SDD-3300 as a "Master" and another unit as "Slave")

(1)Select the PROGRAM Key, then press the MIDI Key repeatedly, until the display appears as shown below.



(2)Press the WRITE Key.



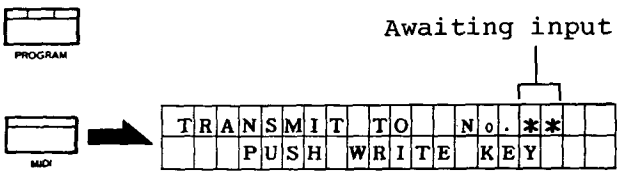
(3)When the SAVE operation is completed correctly, the display appears as follows:

* When the PROGRAM Key or PARAMETER Key is pressed after performing a SAVE, operations return to their initial state.

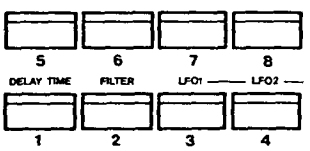
■SAVING SINGLE PROGRAMS
Perform the following procedures to SAVE the data of a single SDD-3300 program in the memory of another SDD-3300.
(Using the SDD-3300 as a "Master" and another unit as "Slave")

(1)Using PROGRAM SELECT operations, select the program to be saved at the Slave unit.
(The data corresponding to the PROGRAM selected will be saved in the slave unit's memory.)

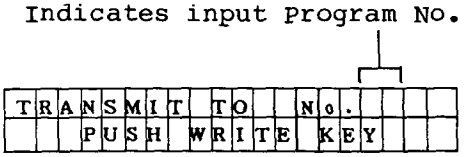
(2)Select the PROGRAM Key, then press the MIDI Key repeatedly, until the display appears as shown below.



(3)Using the Number Keys, specify the memory number of the Slave unit into which data is to be Saved.
(Input a two digit number.)

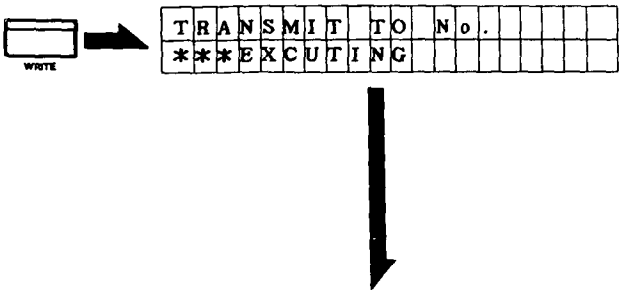


Indicates input Program No.

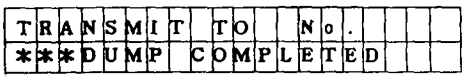


(4)Press the WRITE Key.

* Data included in the PROGRAM selected in (1) is transmitted to the slave.



(5)When the SAVE operation is completed correctly, the display appears as follows:



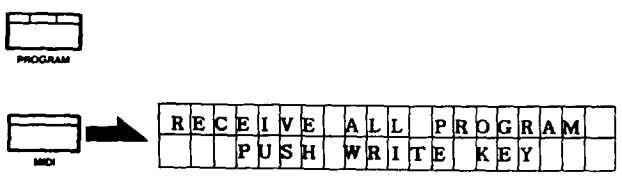
* If the SAVE is not performed corrected, the following ERROR message is displayed. After checking the MIDI Channel Number settings, press the WRITE Key once again. (Or repeat precedures from step (3).)

* When the PROGRAM Key or PARAMETER Key is pressed after performing a SAVE, operations return to their initial state.

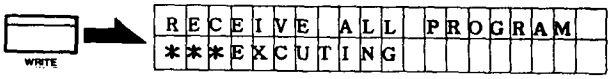
■LOADING ALL 64 PROGRAMS

By performing the following operations, memory data which has been Saved in the Slave unit can be reloaded in the SDD-3300 Master unit's memory, via MIDI Exclusive Messages.

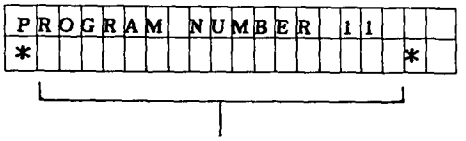
(1)Select the PROGRAM Key then press the MIDI Key repeatedly, until the display appears as shown below.



(2)Press the WRITE Key.



(3)When the LOAD operation is completed correctly, the display appears as follows:



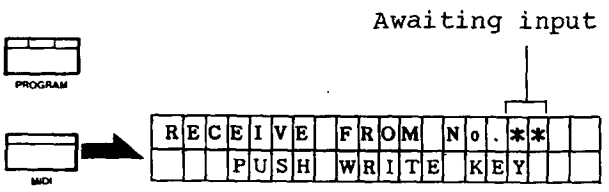
Program Name displayed.

* When the following ERROR message appears, press the WRITE Key again after checking connections and MIDI Channel Number settings.

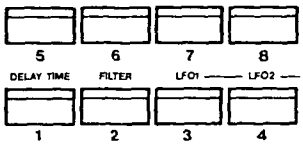
■LOADING SINGLE PROGRAMS

By performing the following operations, memory data of single programs which have been Saved in the Slave unit can be reloaded in the SDD-3300 Master unit's memory, via MIDI Exclusive Messages.
(Using the SDD-3300 as a "Master" and another unit as "Slave")

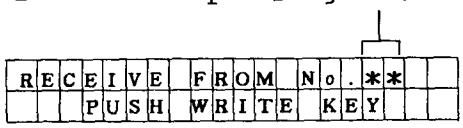
(1)Select the PROGRAM Key then, press the MIDI Key repeatedly, until the display appears as shown below.



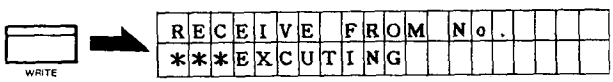
(2)Using the Number Keys, specify the memory number of the Slave unit from which data is to be Loaded.
(Input a two-digit number.)



Indicates input Program No.



(3)Press the Write Key.

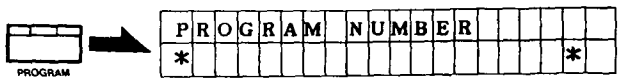


(4)When the SAVE operation is completed correctly, the display appears as follows:

* If the SAVE is not performed corrected, the following ERROR message is displayed. After checking the MIDI Channel Number settings, press the WRITE Key once again.

* At this stage, the program loaded into the SDD-3300 is simply in the "editing" stage, and is not yet entered into memory. Perform the following procedure to enter it into memory.

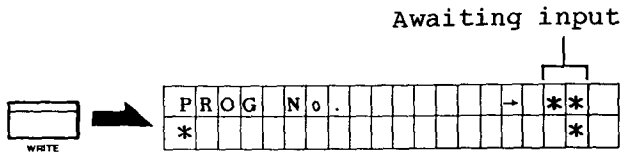
(5)Press the PROGRAM Key.



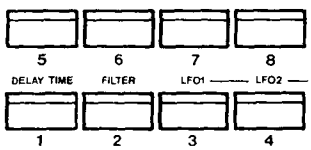
Returns to normal Program Mode.

(6) Press the WRITE Key.

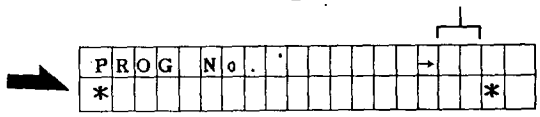
Awaiting input



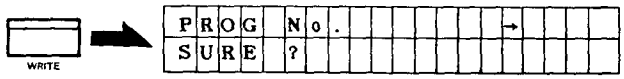
(7)Using the Number keys, specify the memory number of the Master unit in which data is to be memorized.
(Input a two digit number.)



Indicates input Program No.



(8) Press the WRITE Key.



(9) Press the WRITE Key once again after checking for errors.

* In order to change PROGRAM NUMBERs, input via the Number keys and press the WRITE Key.

* With this, the Slave PROGRAM selected in (2) is Loaded into the Master memory specified in step (7).

* In order to change data Loaded from another SDD-3300, perform the following:

(1) Press the PARAMETER Key.

(2) Edit desired parameters.

[3] Save/Load Operations When Utilizing an MEX-8000

The MEX-8000 Memory Expander can be used to hold SDD-3300 program data, using the following operations.

■DATA SAVE OPERATIONS

(1)Set the MEX-8000 DEVICE switch on the Function Switch section to "0110".

(2)MEX-8000 operation:
Press the BANK Key to select the bank into which memory is to be entered. (SAVE cannot be performed in Bank "D".)

(3)MEX-8000 operation:
Press the PROTECT Switch corresponding to the Bank selected in step (2).

(4)MEX-8000 operation:
Press the SAVE Key. Unit awaits input of data.

(5)SDD-3300 operation:
Follow procedures for "Saving All 64 programs." (See page 27)

(6)The MEX-8000 displays a message "GOOD" when data SAVE operations are correctly completed.

■DATA LOAD OPERATIONS

(1)As in SAVE operations, set MEX-8000 DEVICE switch to "0110," and specify Bank in which data is stored.

(2)Press the MEX-8000's "LOAD" Key.
LOAD operations begin when this key is pressed. The MEX-8000 display a "GOOD" message when data LOAD oparations are correctly completed.

(3)When LOAD operations are carried out successfully, the SDD-3300's Program Number display should show Program Number "11".

See the SDD-3300 MIDI Implementation Chart for more details on the MIDI.

MIDI IMPLEMENTATION

1. TRANSMITTED DATA

1 CHANNEL MESSAGE

STATUS	SECOND	THIRD	DESCRIPTION
1100 nnnn	0ppp pppp	———	Program Change ppp pppp= 0~127

* nnnn = 0 - 15 : Currently set MIDI Channel Number.

2 SYSTEM EXCLUSIVE MESSAGE

(1) DEVICE ID

BYTE	DESCRIPTION
1111 0000	Exclusive status
0100 0010	KORG ID 42H
0011 nnnn	Format ID 3*H (*=ch)
0000 1111	SDD-3300ID 0FH
1111 0111	EOX

(2) DATA DUMP

BYTE	DESCRIPTION
1111 0000	Exclusive status
0100 0010	KORG ID 42H
0011 nnnn	Format ID 3*H (*=ch)
0000 1111	SDD-3300ID 0FH
0100 0000	Data dump 40H
0ddd dddd ⋮ 0ddd dddd	}DATA 83 Bytes (See SDD-3300 BIT MAP)
1111 0111	EOX

(3) DATA DUMP REQUEST

BYTE	DESCRIPTION
1111 0000	Exclusive status
0100 0010	KORG ID 42H
0011 nnnn	Format ID 3*H (*=ch)
0000 1111	SDD-3300ID 0FH
0001 1100	Data dump request 1CH
1111 0111	EOX

(4) WRITE REQUEST

BYTE	DESCRIPTION
1111 0000	Exclusive status
0100 0010	KORG ID 42H
0011 nnnn	Format ID 3*H (*=ch)
0000 1111	SDD-3300ID 0FH
0001 0001	Write request 11H
0ppp pppp	Store Program No.
1111 0111	EOX

(5) WRITE COMPLETED

BYTE	DESCRIPTION
1111 0000	Exclusive status
0100 0010	KORG ID 42H
0011 nnnn	Format ID 3*H (*=ch)
0000 1111	SDD-3300ID 0FH
0010 0001	Write Completed 21H
1111 0111	EOX

(6) ALL PROGRAM DUMP

BYTE	DESCRIPTION
1111 0000	Exclusive status
0100 0010	KORG ID 42H
0011 nnnn	Format ID 3*H (*=ch)
0000 1111	SDD-3300ID 0FH
0100 1100	All Program dump 4CH
0ddd dddd	DATA 4096 Bytes
:	
0ddd dddd	
1111 0111	EOX

(7) ALL PROGRAM DUMP REQUEST

BYTE	DESCRIPTION
1111 0000	Exclusive status
0100 0010	KORG ID 42H
0011 nnnn	Format ID 3*H (*=ch)
0000 1111	SDD-3300ID 0FH
0001 1100	All program dump request 1CH
1111 0111	EOX

2. RECOGNIZED RECEIVE DATA

1 CHANNEL MESSAGE

STATUS	SECOND	THIRD	DESCRIPTION
1001 nnnn	0kkk kkkk	0vvv vvvv	Note On Velocity will be ignored kkk kkkk= 0~127
1100 nnnn	0ppp pppp		Program Change ppp pppp= 0~127
1011 nnnn	0111 1100	0000 0000	Omni Mode Off
1011 nnnn	0111 1101	0000 0000	Omni Mode On

* nnnn = 0 - 15 : Currently set MIDI Channel Number

2 SYSTEM EXCLUSIVE MESSAGES

(1) DEVICE ID REQUEST

BYTE	DESCRIPTION
1111 0000	Exclusive status
0100 0010	KORG ID 42H
0100 nnnn	Format ID 4*H (*=ch)
1111 0111	EOX

* nnnn = 0 - 15 : Currently set MIDI Channel Number

(2) PARAMETER CHANGE

BYTE	DESCRIPTION
1111 0000	Exclusive status
0100 0010	KORG ID 42H
0011 nnnn	Format ID 3*H (*=ch)
0000 1111	SDD-3300ID 0FH
0ddd dddd	Parameter offset (See SDD-3300 BIT MAP)
0ddd dddd	Paramater value
1111 0111	EOX

The following SYSTEM EXCLUSIVE MESSAGES are the same as "TRANSMITTED DATA"

- oDATA DUMP
- oDATA DUMP REQUEST
- oWRITE REQUEST
- oWRITE COMPLETED
- oALL PROGRAM DUMP
- oALL PROGRAM DUMP REQUEST

SYSTEM EXCLUSIVE MESSAGES

■The SDD-3300 can transmit/recive the following System Exclusive Messges.

DEVICE ID : Identifies the equipment. Sends upon receiving a DEVICE ID REQUEST. (Transmission only)

DEVICE ID REQUEST: Requests transmission of a DEVICE ID messages. (Reception only)

PARAMETER CHANGE : Used to change the currently set parameters. (Reception only)

DATA DUMP : Requests a dump of data stored in memory for a specific program.

DATA DUMP REQUEST: Requests transmission of DATA DUMP program data.

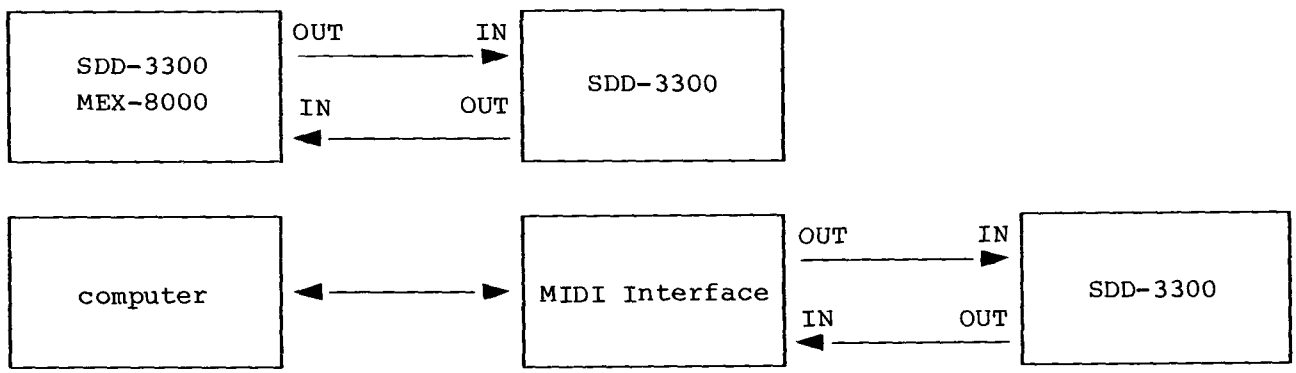
ALL PROGRAM DUMP : Requests of dump of data stored in memory for all 64 programs.

ALL PROGRAM DUMP REQUEST : Requests transmission of ALL PROGRAM DUMP program data.

WRITE REQUEST : Requests informtion used to WRITE transmitted program data into memory.

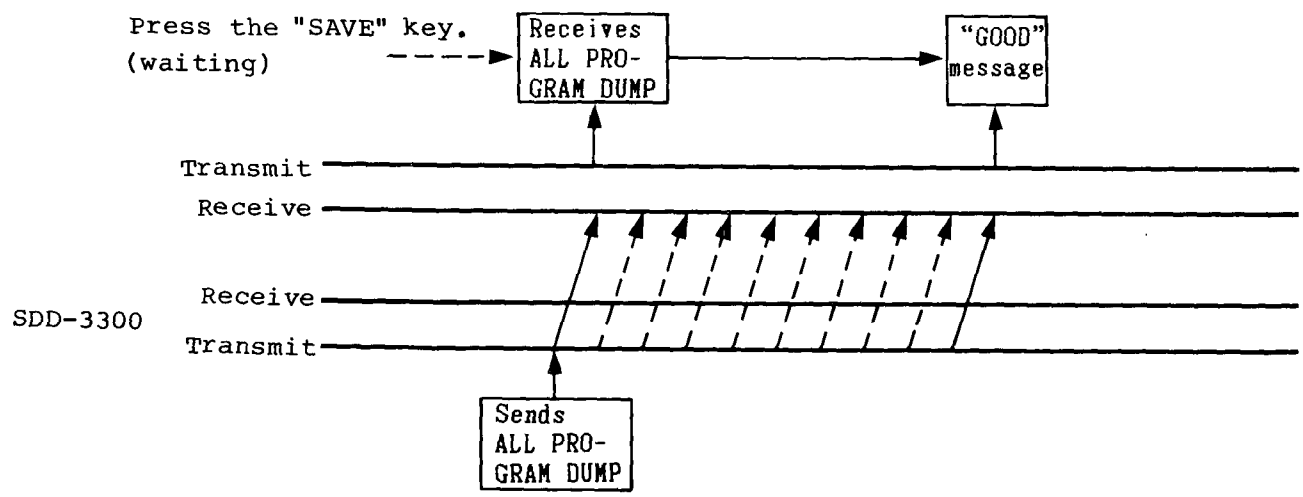
WRITE COMPLETED : Indicates that data sent to indicate that a WRITE operation was completed correctly.

■The SDD-3300 can use these System Exclusive Messages to communicate with another SDD-3300, MEX-8000 or computer, connected in the following ways.

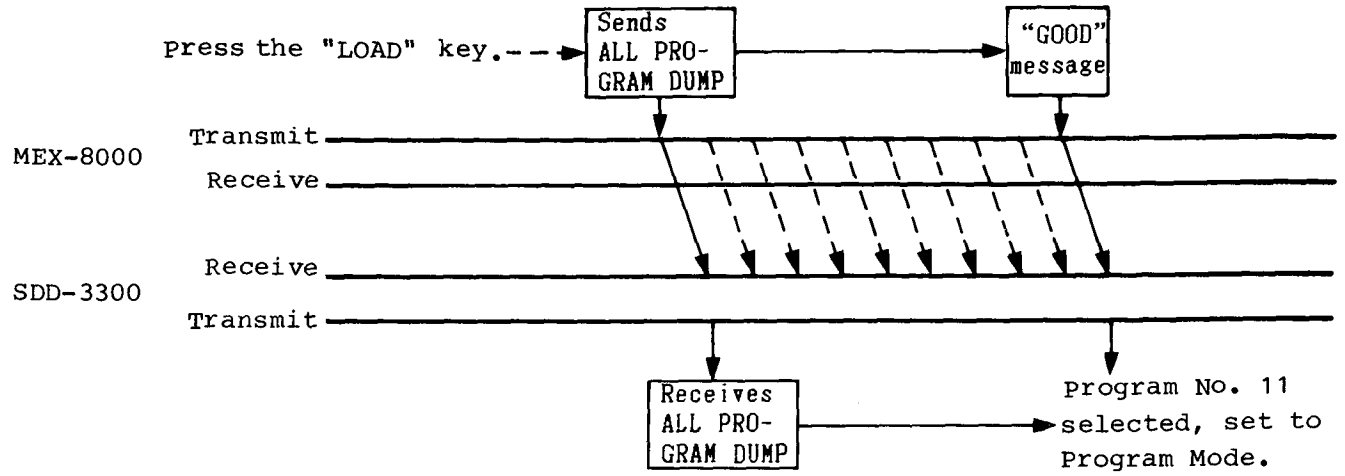


■ Communicating with the MEX-8000

1. Transmitting all 64 programs to the MEX-8000. (SAVE)

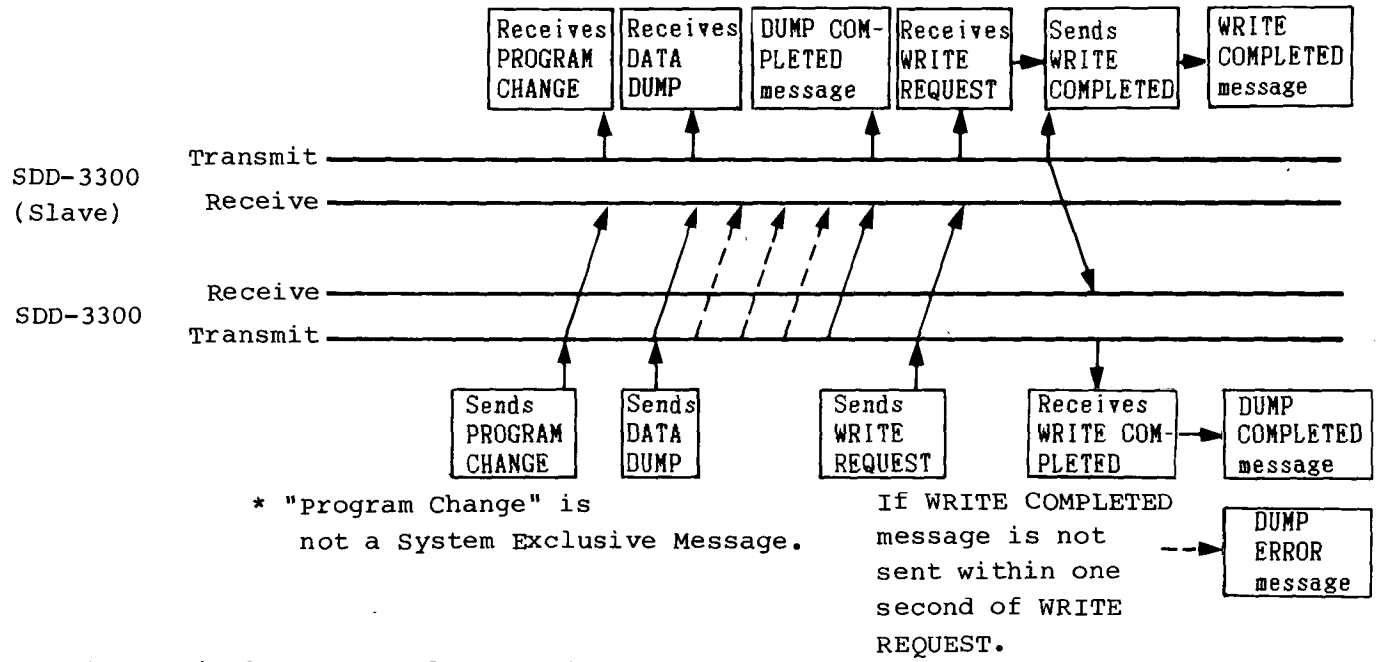


2. Receiving all 64 programs from the MEX-8000 (LOAD)



■ Communicating with another SDD-3300)

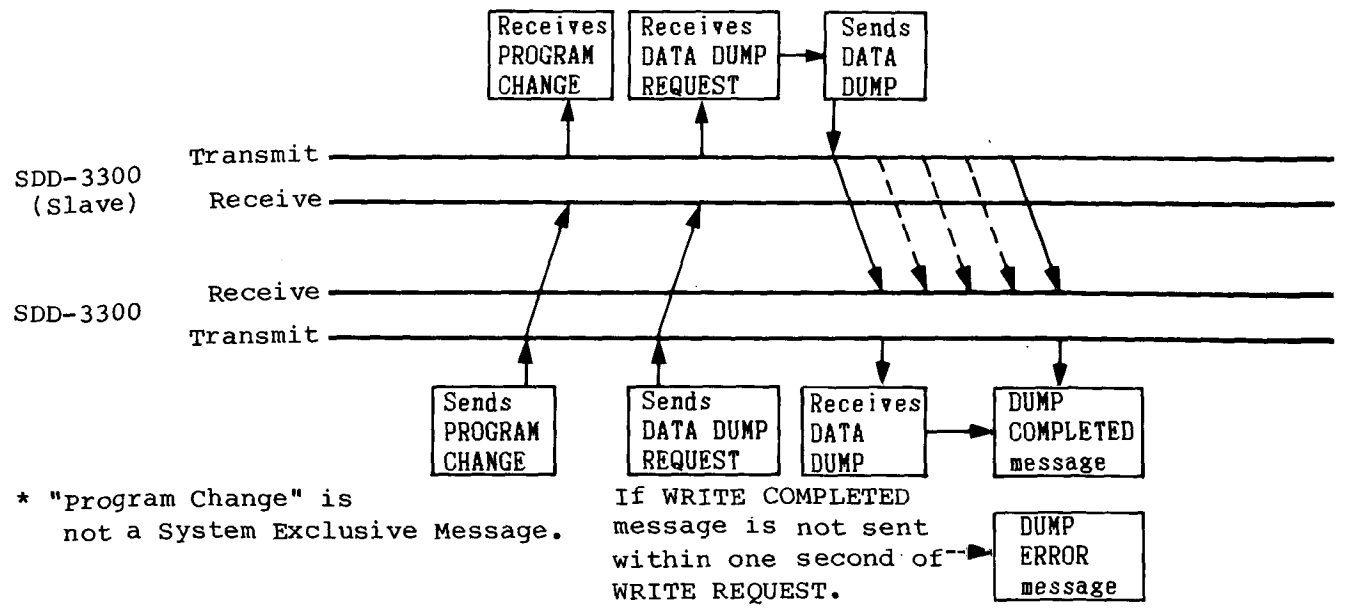
1. Transmitting a single program to another SDD-3300



* "Program Change" is not a System Exclusive Message.

If WRITE COMPLETED message is not sent within one second of WRITE REQUEST.

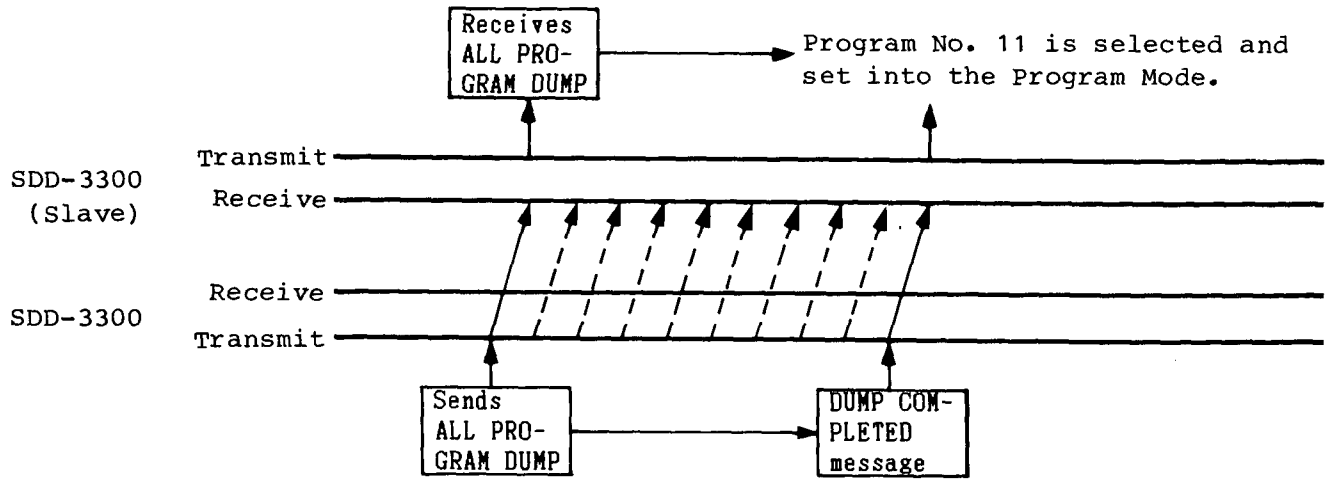
2. Receiving a single program from another SDD-3300



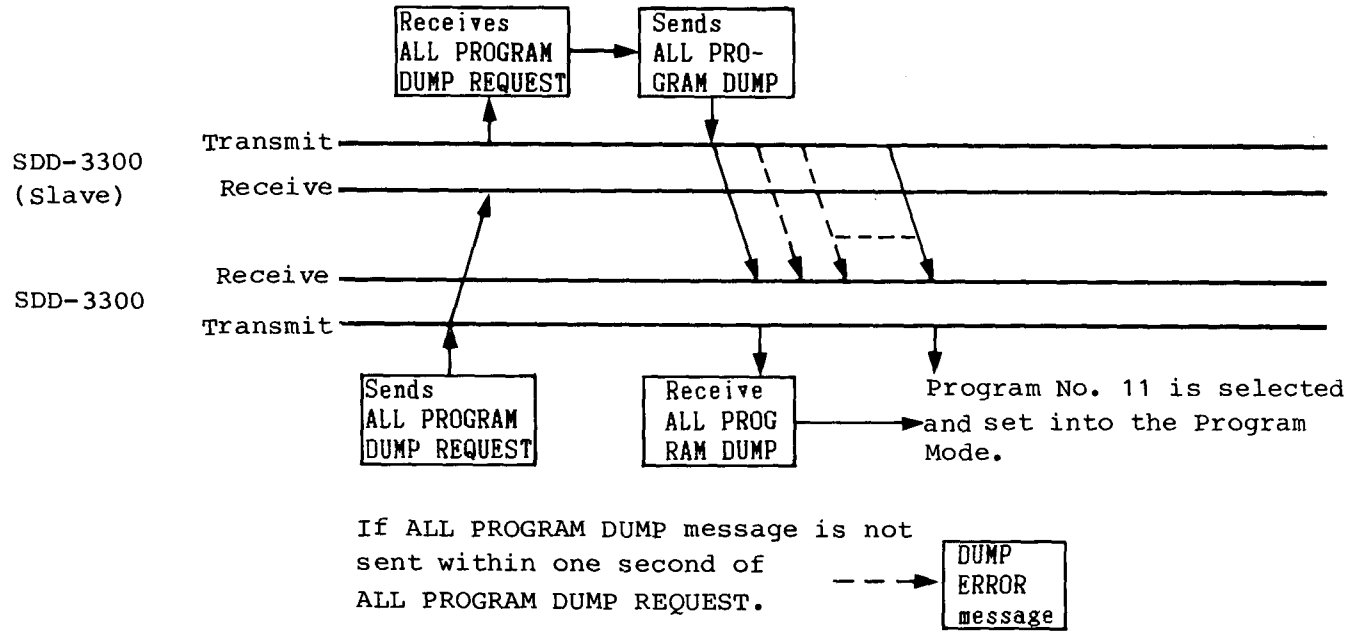
* "Program Change" is not a System Exclusive Message.

If WRITE COMPLETED message is not sent within one second of WRITE REQUEST.

3. Transmitting all 64 programs to another SDD-3300



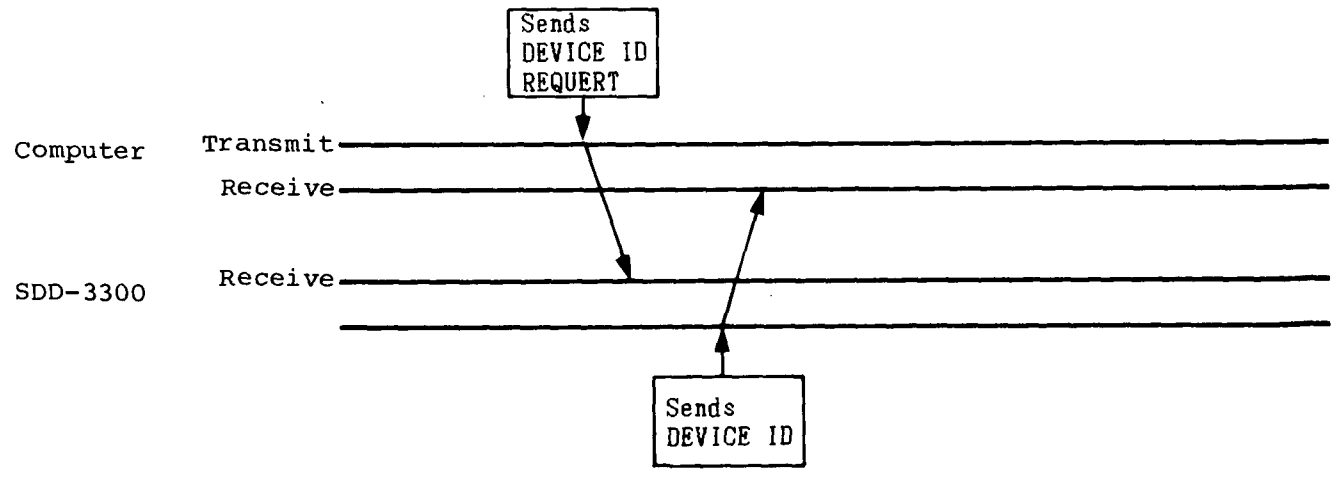
4. Receiving all 64 programs from another SDD-3300



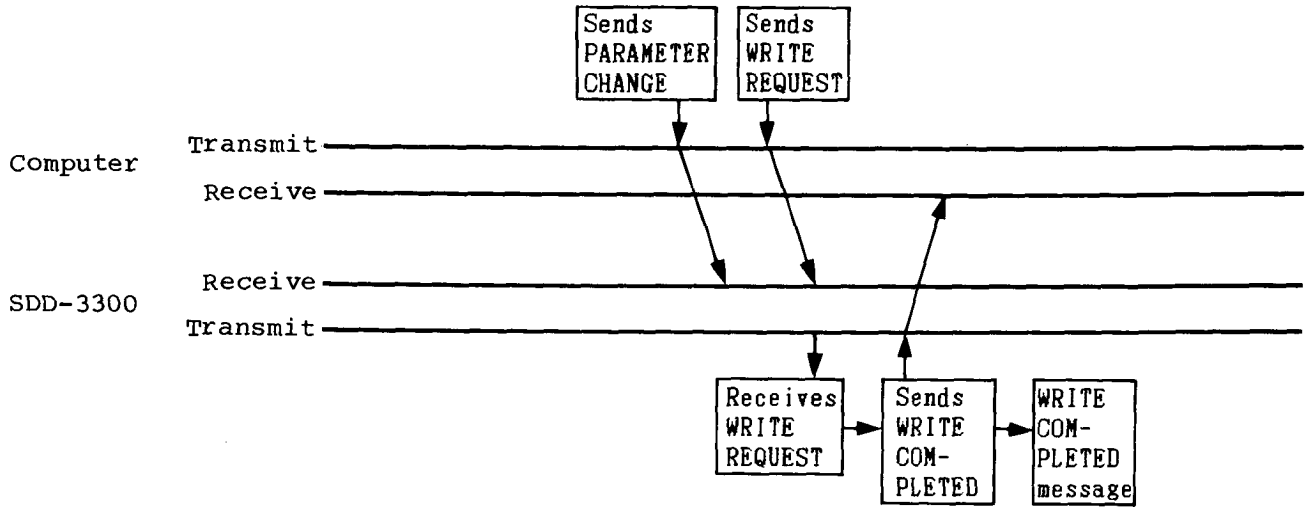
If ALL PROGRAM DUMP message is not sent within one second of ALL PROGRAM DUMP REQUEST. - - → DUMP ERROR message

■ Communicating with a Computer

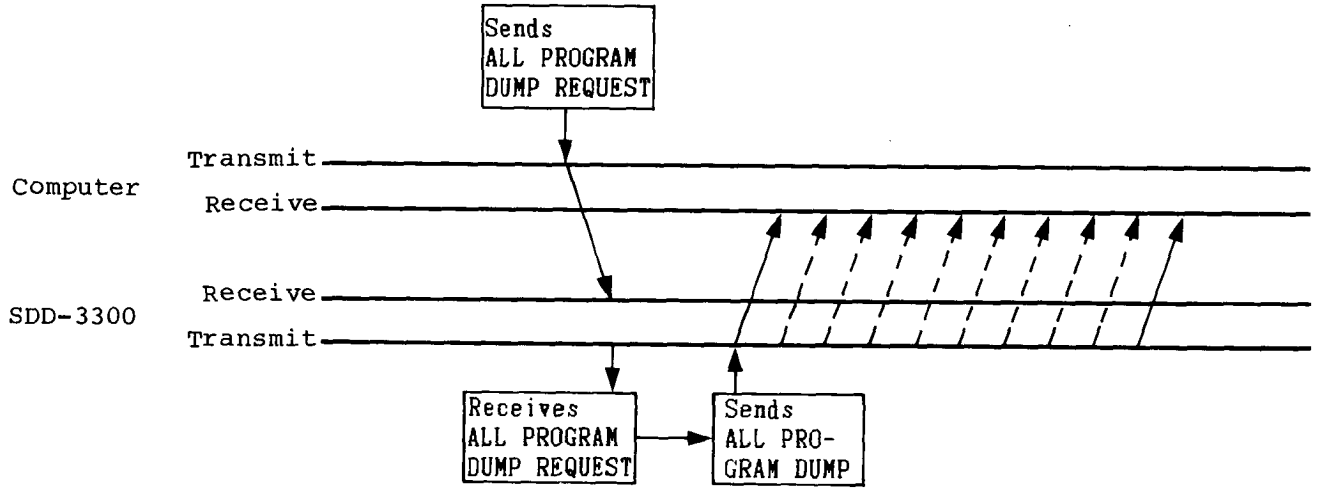
1. To find ID number for device connected to computer.



2. To edit SDD-3300 parameters via computer.



3. To transmit all 64 programs to computer memory (SAVE)



SDD-3300 BIT MAP

PARAMETER OFFSET	PARAMETER VALUE								
	b 7	b 6	b 5	b 4	b 3	b 2	b 1	b 0	
0	0	0	0	0	0	0	Delay A mode		NOTE 1
1	0	0	0	0	0	0	Delay B mode		
2	0	0	0	0	0	0	Delay C mode		
3	0	Delay A VALUE							NOTE 2
4	0	Delay B VALUE							
5	0	Delay C VALUE							
6	0	0	0	0	0	Lo-cut A			NOTE 3
7	0	0	0	0	0	Lo-cut B			
8	0	0	0	0	0	Lo-cut C			
9	0	0	0	0	0	Hi-cut A			
10	0	0	0	0	0	Hi-cut B			
11	0	0	0	0	0	Hi-cut C			
12	0	0	0	LFO 1 SPEED A					NOTE 4
13	0	0	0	LFO 1 SPEED B					
14	0	0	0	LFO 1 SPEED C					
15	0	0	0	LFO 1 INTENSITY A					
16	0	0	0	LFO 1 INTENSITY B					
17	0	0	0	LFO 1 INTENSITY C					
18	0	0	0	LFO 2 SPEED A					
19	0	0	0	LFO 2 SPEED B					
20	0	0	0	LFO 2 SPEED C					
21	0	0	0	LFO 2 INTENSITY A					
22	0	0	0	LFO 2 INTENSITY B					
23	0	0	0	LFO 2 INTENSITY C					
24	0	0	0	INPUT MIXER A input A					NOTE 5
25	0	0	0	INPUT MIXER A input B					
26	0	0	0	INPUT MIXER A input C					
27	0	0	0	INPUT MIXER A Delay A					
28	0	0	0	INPUT MIXER A Delay B					
29	0	0	0	INPUT MIXER A Delay C					
30 ～ 35	0	0	0	INPUT MIXER B					
36 ～ 41	0	0	0	INPUT MIXER C					
42	0	0	0	OUTPUT MIXER A Direct A					
43	0	0	0	OUTPUT MIXER A Direct B					
44	0	0	0	OUTPUT MIXER A Direct C					
45	0	0	0	OUTPUT MIXER A Effect A					
46	0	0	0	OUTPUT MIXER A Effect B					
47	0	0	0	OUTPUT MIXER A Effect C					
48 ～ 53	0	0	0	OUTPUT MIXER B					
54 ～ 59	0	0	0	OUTPUT MIXER C					
60	0	0	0	0	0	PHASE LFO 1 A			NOTE 6
61	0	0	0	0	0	PHASE LFO 1 B			
62	0	0	0	0	0	PHASE LFO 1 C			
63	0	0	0	0	0	PHASE LFO 2 A			
64	0	0	0	0	0	PHASE LFO 2 B			
65	0	0	0	0	0	PHASE LFO 2 C			
66 ～ 82	0	NAME CHARACTER CODE × 17chr							NOTE 7

NOTE 1: Delay Mode Setting

b 1	b 0	Mode
0	0	Delay Mode
0	1	Sampling REC Mode
1	0	Sampling PLAY Mode
1	1	Specification prohibited

NOTE: 2 Delay Value Setting

- o In the Delay Mode
  DELAY VALUE = 0000000(0)-1111111(127)
  Refer to related chart for corresponding Delay Times.
- o In the Sampling REC or PLAY Mode.
  DELAY VALUE = 0000000(0)-0011111(31)

■ Relationship between DELAY VALUE and DELAY TIME

DELAY VALUE	DELAY TIME
No. 0	0.5ms
No. 1	0.6ms
No. 2	0.7ms
No. 3	0.8ms
No. 4	0.9ms
No. 5	1.0ms
No. 6	1.1ms
No. 7	1.2ms
No. 8	1.3ms
No. 9	1.4ms
No. 10	1.5ms
No. 11	1.6ms
No. 12	1.7ms
No. 13	1.8ms
No. 14	1.9ms
No. 15	2.0ms
No. 16	2.1ms
No. 17	2.2ms
No. 18	2.3ms
No. 19	2.4ms
No. 20	2.5ms
No. 21	2.6ms
No. 22	2.7ms
No. 23	2.8ms
No. 24	2.9ms
No. 25	3.0ms
No. 26	3.2ms
No. 27	3.4ms
No. 28	3.6ms
No. 29	3.8ms
No. 30	4.0ms
No. 31	4.2ms

DELAY VALUE	DELAY TIME
No. 32	4.4ms
No. 33	4.6ms
No. 34	4.8ms
No. 35	5.0ms
No. 36	5.2ms
No. 37	5.4ms
No. 38	5.6ms
No. 39	5.8ms
No. 40	6.0ms
No. 41	6.2ms
No. 42	6.4ms
No. 43	6.6ms
No. 44	6.8ms
No. 45	7.0ms
No. 46	7.4ms
No. 47	7.8ms
No. 48	8.2ms
No. 49	8.6ms
No. 50	9.0ms
No. 51	9.5ms
No. 52	10.0ms
No. 53	11.0ms
No. 54	12.0ms
No. 55	13.0ms
No. 56	14.0ms
No. 57	15.0ms
No. 58	16.0ms
No. 59	17.0ms
No. 60	18.0ms
No. 61	19.0ms
No. 62	20.0ms
No. 63	21.0ms

DELAY VALUE	DELAY TIME
No. 64	22.0ms
No. 65	23.0ms
No. 66	24.0ms
No. 67	25.0ms
No. 68	26.0ms
No. 69	27.0ms
No. 70	28.0ms
No. 71	29.0ms
No. 72	30.0ms
No. 73	32.0ms
No. 74	34.0ms
No. 75	36.0ms
No. 76	38.0ms
No. 77	40.0ms
No. 78	42.0ms
No. 79	44.0ms
No. 80	46.0ms
No. 81	48.0ms
No. 82	50.0ms
No. 83	52.0ms
No. 84	54.0ms
No. 85	56.0ms
No. 86	58.0ms
No. 87	60.0ms
No. 88	62.0ms
No. 89	64.0ms
No. 90	66.0ms
No. 91	68.0ms
No. 92	70.0ms
No. 93	74.0ms
No. 94	78.0ms
No. 95	82.0ms

DELAY VALUE	DELAY TIME
No. 96	86.0ms
No. 97	90.0ms
No. 98	95.0ms
No. 99	100.0ms
No. 100	110.0ms
No. 101	120.0ms
No. 102	130.0ms
No. 103	140.0ms
No. 104	150.0ms
No. 105	160.0ms
No. 106	170.0ms
No. 107	180.0ms
No. 108	200.0ms
No. 109	210.0ms
No. 110	220.0ms
No. 111	230.0ms
No. 112	240.0ms
No. 113	250.0ms
No. 114	260.0ms
No. 115	270.0ms
No. 116	280.0ms
No. 117	300.0ms
No. 118	320.0ms
No. 119	340.0ms
No. 120	360.0ms
No. 121	380.0ms
No. 122	400.0ms
No. 123	420.0ms
No. 124	440.0ms
No. 125	460.0ms
No. 126	480.0ms
No. 127	500.0ms

NOTE 3: Filter Setting
VALUE = 000(0)-111(7)

NOTE 4: Setting of LFO 1 and LFO 2
VALUE = 00000(0)-11111(31)

NOTE 5: Mixer Setting
VALUE = 00000(-15)-01111(0)
-11110(+15)

NOTE 6: LFO Phase Settings

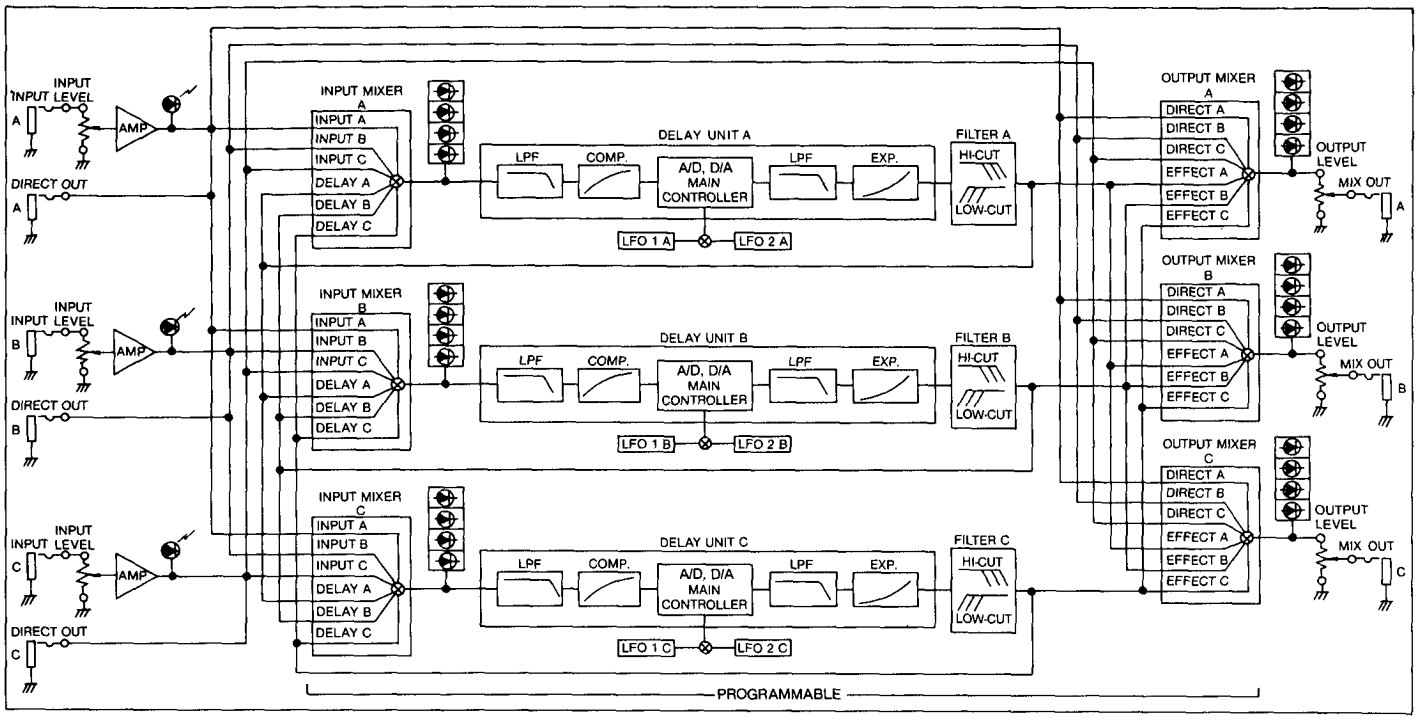
b2	b1	b0	Phase
0	0	0	0°
0	0	1	60°
0	1	0	90°
0	1	1	120°
1	0	0	180°
1	0	1	210°
1	1	0	240°
1	1	1	*** (asynchronous)

NOTE 7: Name Settings

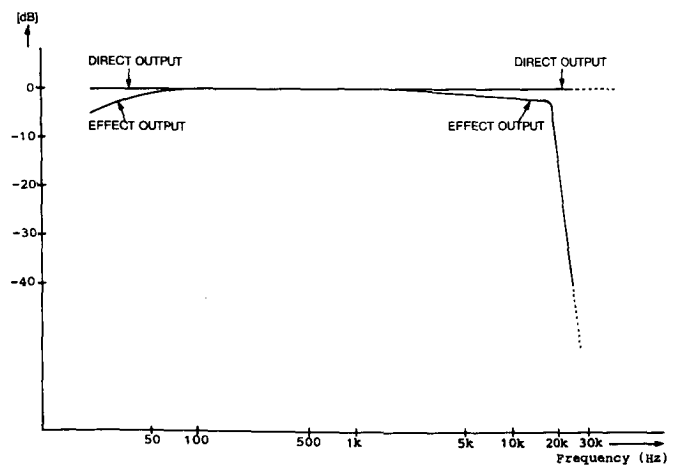
b6b5b4b3b2b1b0		CHARACTER
0100000	(32)	(SPACE)
0100001	(33)	!
0100010	(34)	"
0100011	(35)	#
0100100	(36)	$
0100101	(37)	%
0100110	(38)	&
0100111	(39)	'
0101000	(40)	(
0101001	(41)	)
0101010	(42)	*
0101011	(43)	+
0101100	(44)	,
0101101	(45)	-
0101110	(46)	.
0101111	(47)	/
1000000	(64)	@
0110001	(49)	1
0110010	(50)	2
0110011	(51)	3
0110100	(52)	4
0110101	(53)	5
0110110	(54)	6
0110111	(55)	7
0111000	(56)	8
0111001	(57)	9
0111010	(58)	:
0111011	(59)	;
0111100	(60)	<
0111101	(61)	=
0111110	(62)	>

0111111	(63)	?
1000001	(65)	A
1000010	(66)	B
1000011	(67)	C
1000100	(68)	D
1000101	(69)	E
1000110	(70)	F
1000111	(71)	G
1001000	(72)	H
1001001	(73)	I
1001010	(74)	J
1001011	(75)	K
1001100	(76)	L
1001101	(77)	M
1001110	(78)	N
1001111	(79)	O
1010000	(80)	P
1010001	(81)	Q
1010010	(82)	R
1010011	(83)	S
1010100	(84)	T
1010101	(85)	U
1010110	(86)	V
1010111	(87)	W
1011000	(88)	X
1011001	(89)	Y
1011010	(90)	Z
1011011	(91)	[
1011100	(92)	¥
1011101	(93)	]
1111110	(126)	→
1111111	(127)	←

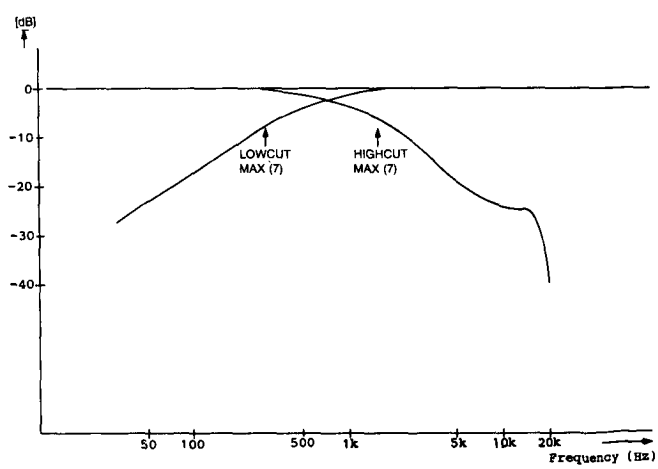
BLOCK DIAGRAM



FREQUENCY CHARACTERISTICS



FILTER CHARACTERISTICS



SPECIFICATIONS & OPTIONS

1. **INPUT (200Hz)**
   INPUT LEVEL (-20dBm), IMPEDANCE (1M),
   MAX CLIP LEVEL (+15dBm)
2. **OUTPUT (200Hz)**
   DIRECT...OUTPUT LEVEL (-10dBm),
   IMPEDANCE (1kΩ),
   MAX CLUP LEVEL 200Hz (+15dBm)
   EFFECT...OUTPUT LEVEL (-10dBm),
   IMPEDANCE (1kΩ),
   MAX CLIP LEVEL 200Hz (+3dBm)
3. **FREQUENCY RESPONSE**
   DIRECT....20Hz~20kHz ±1dB
   EFFECT....30Hz~16kHz ±1dB, -3dB
4. **DYNAMIC RANGE**
   EFFECT....Over 93dB (IHF-A)
5. **S/N RATIO**
   EFFECT....Over 80dB (IHF-A)
6. **DISTORITION (200Hz)**
   DIRECT....under 0.05%
   EFFECT....under 1.0% (0.3%Typ)
7. **DELAY TIME**
   0.5mSec~500mSec (128 positions)
8. **FILTERS**
   High-cut....Variable Cutoff Frequency
   (800Hz and over: 8 position)
   Low-cut.....Variable Cutoff Frequency
   (700Hz and under: 8 position)
9. **MODULATION**
   Waveform (sine wave),
   Frequency (0.05~10Hz),
   Delay Mod Range (4:1)
10. **SIGNAL PROCESSING**
    Sampling Frequency (88kHz),
    non-modulated in DELAY mode
    Method (12bit digitalized + analog
    logarithm compression)
11. **MIDI TERMINALS**
    IN, OUT, THRU
12. **DIMENSIONS**
    88(H)x429.5(W)x280.7(D)mm
13. **WEIGHT**
    5.7kg
14. **POWER SUPPLY**
    Local voltage
15. **POWER CONSUMPTION**
    16W
16. **ACCESSORIES**
    AC Power cord, rack mount adaptor,
    mounting screws, MIDI cable (3m)
17. **OPTIONS**
    Pedal switch PS-1, PS-2,
    Twin cables TWC-030 (3m)
    MIDI cable (7, 10, 12m), SYNC/MIDI cable (1.5, 3, 5m), 2U rack case HC-2U

[1~10 are uniform for Units A, B, and C.]

*Specifications subject to change without notice.

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