

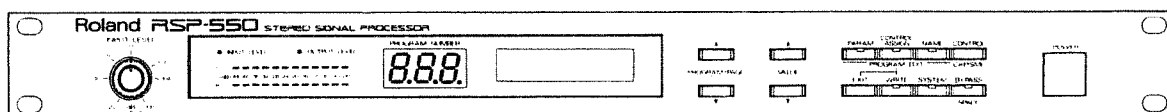
# Roland



STEREO SIGNAL PROCESSOR

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# RSP-550

OWNER'S MANUAL



	<b>CAUTION</b> RISK OF ELECTRIC SHOCK DO NOT OPEN	
<b>ATTENTION</b> : RISQUE DE CHOC ELECTRIQUE NE PAS OUVRIR		
<b>CAUTION:</b> TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.		



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



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

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

## IMPORTANT SAFETY INSTRUCTIONS

**WARNING** — When using electric products, basic precautions should always be followed, including the following:


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

## SAVE THESE INSTRUCTIONS

**WARNING:** THIS APPARATUS MUST BE EARTHED

**IMPORTANT:** THE WIRES IN THIS MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE.  
GREEN-AND-YELLOW: EARTH, BLUE: NEUTRAL, BROWN: LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured GREEN-AND-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol  or coloured GREEN or GREEN-AND-YELLOW.

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

For the U.K.

The product which is equipped with a THREE WIRE GROUNDING TYPE AC PLUG must be grounded.

# INTRODUCTION

Thank you, and congratulations on your choice of the Roland RSP-550 Stereo Signal Processor.

The RSP-550 is equipped with a wide variety of high-quality effects which are suited to a great range of applications; whether it be for line signal processing or for enhancing musical instrument sounds.

Moreover, by using MIDI to connect the unit with external devices, a great number of other performance possibilities can be enjoyed.

Before starting out, please take the time to read this manual thoroughly.

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## ■ TABLE OF CONTENTS

IMPORTANT NOTES .....	5	<b>SECTION III USING MIDI</b>	
PANEL DESCRIPTIONS .....	6	What MIDI Allows You To Do .....	32
<b>SECTION I PRODUCING SOUND</b>		Setting the MIDI Channel .....	33
Making the Connections .....	8	Changing Program Numbers .....	34
Getting Ready .....	9	Transfer of Data .....	36
Selection of Effects Programs .....	10	<b>SECTION IV REFERENCE</b>	
Turning BYPASS On and Off .....	11	About MIDI .....	40
<b>SECTION II CHANGING SETTINGS</b>		Troubleshooting .....	43
Introduction to Effects Creation .....	14	Error Messages .....	45
Making Settings for Effects Programs .....	15	Restoring the Factory Presets (Initialize) .....	46
Settings for Control Assign .....	18	Roland Exclusive Messages .....	47
Altering the Name of an Effects Program .....	22	MIDI Implementation .....	49
Storing Setting Changes in Memory:		MIDI Implementation Chart .....	67
The Write Procedure .....	23	Specifications .....	68
Copying .....	25	Index .....	69
Using the System Functions .....	26		
Turning Memory Protection ON and OFF .....	26		
Selecting the Function Bypass Will Have .....	27		
Setting the Active Range for Pedal Changes			
in Program Numbers .....	28		
Switching the Level Meter .....	29		
Adjusting the Display Contrast .....	29		

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## ■ Features

### [2-In, 2-Out Routing]

The RSP-550 provides true stereo performance, thanks to its 2-In, 2-Out system. Moreover, it allows you to obtain stereo processing even when using mono input, such as when using the Send>Returns on a mixer.

### [Provides a Wide Selection of Algorithms]

The RSP-550 contains a complete range of Algorithms, each providing immediately usable and practical combinations of the on-board effects. All 39 were carefully designed to accommodate a particular musical situation. Algorithms include Stereo Reverb, Multi-tap Delay, and Keyboard Multi.

These Algorithms also contribute towards greater convenience and ease whenever you wish to create your own Effects Programs, since a rich variety of sound possibilities can be obtained simply by changing the parameters of an Algorithm.

### [Store up to 160 Original Effects Programs]

In addition to the 39 Preset Effects Programs, you can also store up to 160 Effects Programs of your own. These programs can be selected instantaneously, simply by pressing panel buttons or depressing an external pedal.

### [Real-Time Parameter Control]

Simply by manipulating controls or by depressing a pedal, or an external MIDI device during performance, you can alter selected parameter values, or select a desired Effects Program whenever you wish.

### [Program Change Mapping]

A convenient Program Change Mapping function allows you to match MIDI Program Change Numbers with the Program Numbers of the RSP-550.

## ■ How to use this Manual

This manual is divided into four main sections. Together they explain the available functions, and how they are used in performance. Also provided is a guide to all possible settings, and instructions on how to make them. The Table of Contents should be referred to when necessary. In addition, an alphabetical index is provided at the back.

*\* The separate "Algorithm Guide" provides explanation for each of the algorithms and the parameters that go with them. Please refer to this publication when wishing to make settings for the effects or for Control Assign.*

The content of each section is as follows:

### SECTION I: PRODUCING SOUND

This section explains how to connect the RSP-550 with your other equipment, how to select Effects Programs, and most of the other basic operational procedures.

### SECTION II: CHANGING SETTINGS

Explained here are the procedures to: Store a newly created Effects Program at a Program Number; use Control Assign; and set the Effect name. Instructions on the use of a variety of other convenient functions are provided as well. Refer to this section when you wish to create a new Effects Program, or when you want to alter the unit's basic functions.

### SECTION III: USING MIDI

In this section the unit's MIDI features, which allow you to exchange Effects data, are explained. For example, you can use an external MIDI device to change (and control) the Effects Programs on the RSP-550. Refer to this section when you wish to incorporate the RSP-550 into a MIDI setup.

### SECTION IV: REFERENCE

This section provides a basic introduction to the concept of MIDI, and documents the unit's factory default settings. You will also find instructions on what to do when your RSP-550 is not responding as expected, along with additional useful information.

# ■ IMPORTANT NOTES

In addition to the items listed under Safety Precautions on page 2, please read and adhere to the following:

## [Power Supply]

- When making any connections with other devices, always turn off the power to all equipment first; this will help prevent damage or malfunction.
- Do not use this unit on the same power circuit with any device that will generate line noise, such as a motor or variable lighting system.

## [Placement]

- Using the unit near power amplifiers (or other equipment containing large transformers) may induce hum.
- This unit may interfere with radio and television reception. Do not use this unit in the vicinity of such receivers.

## [Maintenance]

- For everyday cleaning wipe the unit with a soft, dry cloth (or one that has been slightly dampened with water). To remove stubborn dirt, use a mild neutral detergent. Afterwards, be sure to wipe the unit thoroughly with a soft, dry cloth.
- Never use benzene, thinners, alcohol or solvents of any kind, to avoid the risk of discoloration and/or deformation.

## [Additional Precautions]

- Protect the unit from strong impact.
- Never strike or apply strong pressure to the display.
- A small amount of heat will radiate from the unit, and thus should be considered normal.
- Before using the unit in a foreign country, consult with qualified service personnel.
- A small amount of noise may be heard from the display, and thus should be considered normal.

## [Memory Backup]

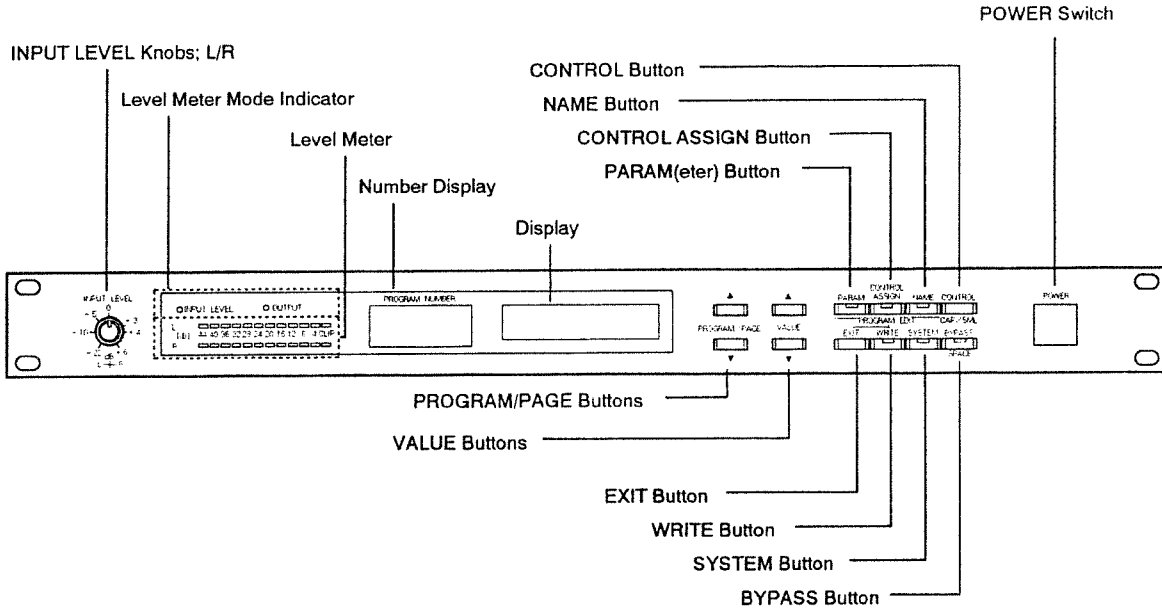
- The unit contains a battery which maintains the contents of memory while the main power is off. The expected life of this battery is 5 years or more. However, to avoid the unexpected loss of memory data, it is strongly recommended that you change the battery every 5 years. Please be aware that the actual life of the battery will depend on the physical environment (especially temperature) in which the unit is used. When it is time to change the battery, consult with qualified service personnel.
- The unit's battery functions during normal operation as well as maintaining the contents of memory when the main power supply is turned off. When the battery becomes weak, there is a risk of losing the contents of the memory. To avoid the unexpected loss of memory data, replace the battery before it becomes weak.
- When the battery becomes weak, the following message will appear in the display. Please change the battery as soon as possible to avoid the loss of memory data.

```
Battery low !
Please change !
```

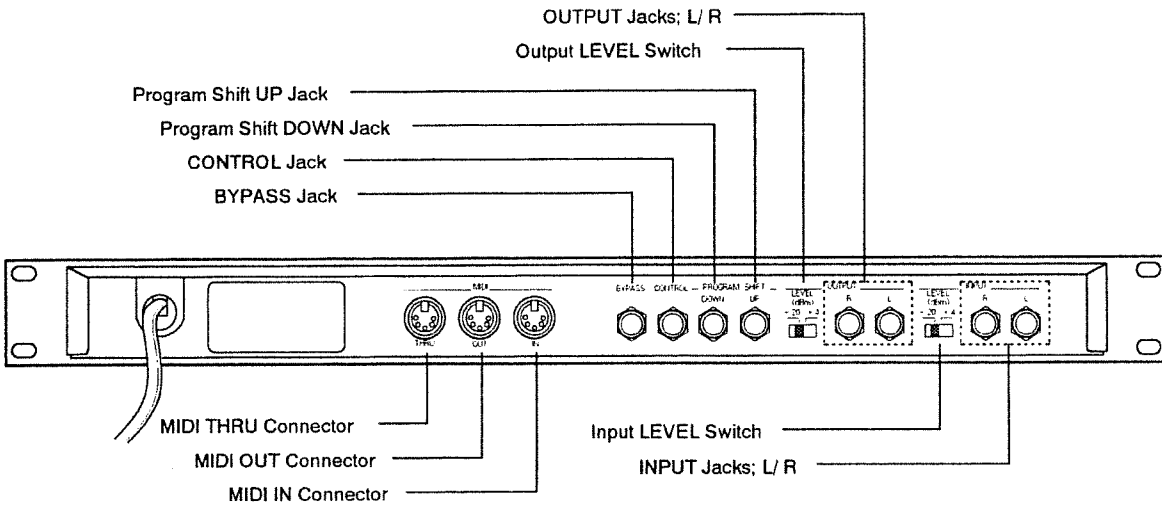
- Please be aware that the contents of memory may at times be lost; when the unit is sent for repairs or when by some chance a malfunction has occurred. Important data should be stored in another MIDI device (eg. a sequencer), or written down on paper. During repairs, due care is taken to avoid the loss of data. However, in certain cases, (such as when circuitry related to memory itself is out of order) we regret that it may be impossible to restore the data.

# PANEL DESCRIPTIONS

## << Front Panel >>



## << Rear Panel >>



**SECTION I**

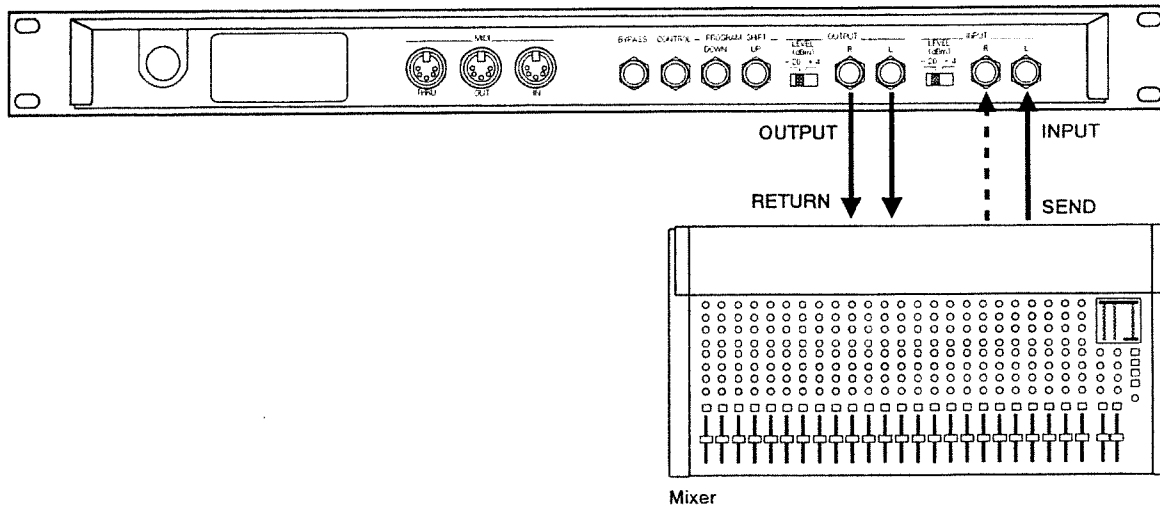
# **PRODUCING SOUND**

# ■ Making the Connections

Depending on the application you have in mind, make the connections with the RSP-550 following one of the examples below.

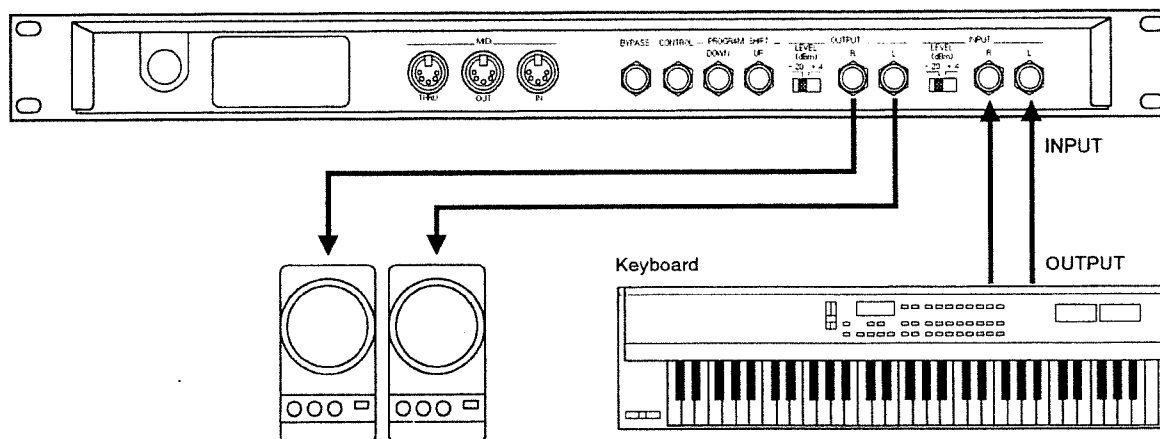
*\* Always have the volume on your amplifier turned down, and have power to all devices turned off before connecting/disconnecting any cords.*

## ● Setup using a Mixer's Send/Return



*\* Check the position of the Level Switch. It should match the input/output level used by the mixer.*

## ● Setup using a Keyboard



*\* Ordinarily, the Level Switch should be set to -20 dBm.*

*\* For a mono setup, use only the L jack.*



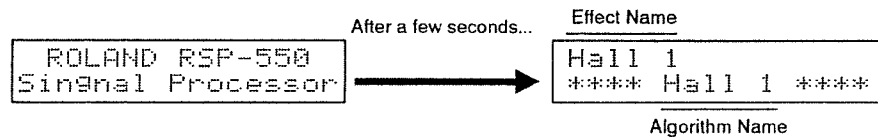
# ■ Getting Ready

## □ Turning on the Power

Once you are sure all connections have been made properly, switch the RSP-550 on.

The opening display will appear.

After a few seconds... the unit will be in the Play mode (ready for performance).

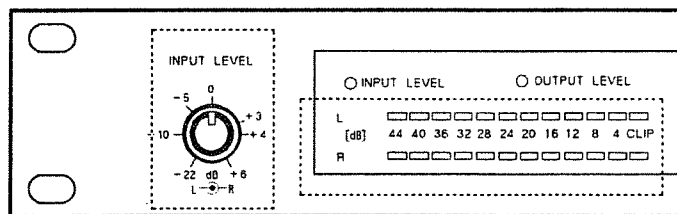


- \* The volume on your amplifier should be raised only after power on every connected unit has been turned on.
- \* Since the RSP-550 is equipped with a circuitry protection feature, it requires a few moments after power is turned on before it becomes operable.
- \* Each time the unit is turned on, the last selected Program Number will again be selected.
- \* In certain situations the display may be difficult to read. Adjust the display contrast as necessary (p. 29).

## □ Adjusting the Input Level

Adjust the INPUT LEVEL knobs until the input level is suited to the level of the output provided by the device you have connected.

The knobs provide independent control for the left and right channels. Adjust them so "CLIP" in the Level Meter does not light at the moments of greatest input.



**CAUTION:** Whenever the "CLIP" indicators light, the unit will not be able to process the input signals reliably.

- \* If you wish, the Level Meter can be switched so that it indicates the Output Level instead. To take advantage of this selection, refer to "Switching the Level Meter" (p. 29).

# ■ Selection of Effects Programs

The Effects Programs are organized and stored according to their Program Number. Available Program Numbers range from 1 through 199, and you select the appropriate number whenever you want to use a particular Effects Program. This selection can be made by either pressing the panel buttons, or by using an external pedal.

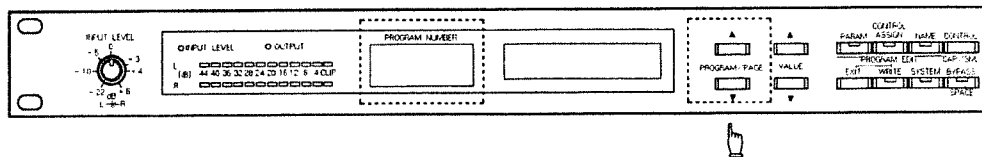
*\* In addition, Effects Programs can be selected using MIDI messages from an external unit. For details, refer to "Selecting Program Numbers" (p. 34).*

## □ Selection using the Panel

Use the PROGRAM ▲▼ buttons to select a Program Number.

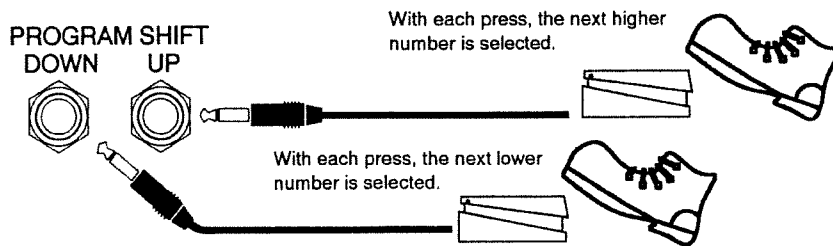
With each press of ▲, the Program Number will increase by one. With each press of ▼, the Program Number will decrease by one. When either of the PROGRAM buttons [▲▼] is held down while you then press the other button, you can advance rapidly through the numbers.

In every case, the currently selected Program Number appears in the Number Display.

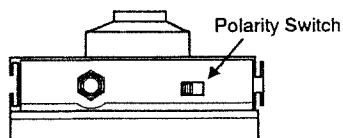


## □ Selection Using a Pedal

Once you connect a pedal switch (optionally available DP-2, FS-5U [BOSS], etc.) to a PROGRAM SHIFT jack (UP/DOWN), you then can switch to the next Program Number each time the pedal is depressed.



- \* Be sure to have the power turned off whenever you connect a pedal switch. An unexpected change in Program Numbers may otherwise occur.
- \* When using a pedal switch, you cannot move continuously through the Program Numbers even though you keep the pedal depressed.
- \* For instructions on how to shift among Program Numbers within a specified range, refer to "Setting the Active Range for Pedal Changes in Program Numbers" (p. 28).
- \* When using the FS-5U, set the polarity switch on it to the setting shown below.



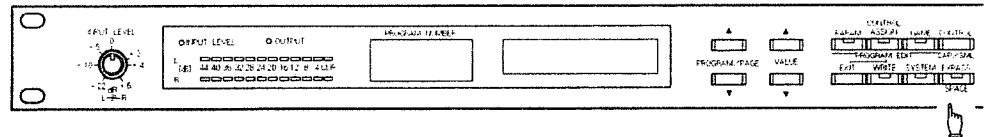
# ■ Turning BYPASS On and Off

There may be times when you require direct sound output (no effects). In such a case, BYPASS should be "On". The On/Off selection for BYPASS can be made using either the panel buttons or a pedal.

\* The BYPASS function can also be changed to have other functions (MUTE, among others). For details, refer to "Selecting the Function Bypass Will Have" (p. 27).

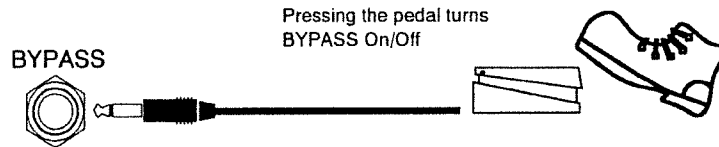
## □ Selection using the Panel

The BYPASS button switches BYPASS On and Off. When BYPASS is On, the button indicator will be lit, and only the direct, dry sound will be output.

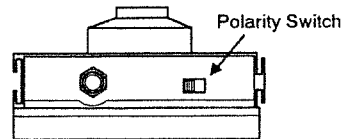


## □ Selection using a Pedal

Once you connect a pedal switch (optionally available DP-2, FS-5U [BOSS], etc.) to the BYPASS jack, you then can switch BYPASS On or Off each time the pedal is depressed.



\* When using the FS-5U, set the polarity switch to the setting shown below.





**SECTION II**

# **CHANGING SETTINGS**

# Introduction to Effects Creation

The following explains some of the basics you will need to know about Effects Programs before you begin creating your own.

## ● About Algorithms

An algorithm is a unit which contains instructions on which type of effectors to use, and supplies the values for all relevant parameters (basic elements of sound creation); all in a manner designed to produce a desired effect. The RSP-550 offers a selection of 39 such algorithms.

Since all algorithms are carefully designed for a particular musical situation, and incorporate settings that have proved to be effective, they can save you a lot of time and effort when setting up the effects you need. Moreover, should there be an effector included in an algorithm which you do not want, it can simply be turned off.

## ● About Program Numbers

Program Numbers 1 through 160 comprise the “**User Area**”. The settings for each of these can be altered and stored at any time. Program Numbers 161 through 199 are in the “**Preset Area**” and cannot be changed.

These Presets provide a collection of essential Effects Programs that use all the algorithms in a representative manner. Note, however, that you can save whatever changes you make to an Effects Program from the Preset Area, as long as you write it to a new location in the User Area.

The Program Numbers in the User Area allow the settings shown below to be stored with them.

Type of the algorithm Settings for the Effects Program corresponding to algorithms used.
Control Assign (4 types) : Settings for these are made when you wish to have a pedal or an external MIDI device control certain parameters.
Effect Name Bypass On/Off

*\* All changes made in a program's settings are only temporary. They will revert to their original values if you turn the power off, or change to the Play mode. In order to save your changes, you must perform the Write operation and store the program in memory at a Program Number in the User Area.*

# ■ Making Settings for Effects Programs

Although each algorithm may carry a different number of parameters, and its composition will be different, the basic procedure you need to use to create an Effects Program is the same. The following explains how to make settings for the parameters.

*\* For information on the parameters each algorithm carries, and how they work, refer to a separate volume.*

## 1. Select the Parameters Edit mode

① **Select the number of the Effects Program (Algorithm) which you are going to work on.**

② **Press PARAM.**

The button indicator will light, showing that you are in the Parameter Edit mode.

### 2-1. With Algorithms using a Single Effector

With algorithms that use only one effector, the unit is ready to accept changes for all the parameter values upon entering the Parameter Edit mode.

③ **Using PAGE ▲▼, select the parameter you wish to work with.**

If two parameters appear in the display, use PAGE ▲▼ to move the cursor (underline) until it is positioned at the value you wish to change.

```
Flanging Mode
+ < Bi-Flanger >
```

④ **Using VALUE ▲▼, make the change in value.**

When either the ▲ or ▼ button is held down while you press the other button, you can change the value more rapidly.

### 2-2. With Algorithms which combine Multiple Effectors

When you select the Parameter Edit mode for algorithms which combine two or more effectors, you are presented with a page which allows you to select whether individual effectors are to be On or Off.

③ **To turn effectors On or Off, use the PAGE ▲▼ buttons to move the cursor (underline) until it is positioned under the name of the effector you wish to turn On or Off. Then use the VALUE ▲▼ buttons to switch it On or Off.**

```
Block Select
ReverbGate | EQ
```

ON: The effector name is visible.

OFF: “ \* \* ” appears alternately along with the effector’s name.

*\* The effector which is most essential in forming the algorithm cannot be turned off.*

- ④ To alter the parameters for an effector, use PAGE   to move the cursor to the effector you wish to change, and press .

Once  is pressed, parameters will be displayed.

```
Rev:Reverb Time
--+ 5.0 sec
```

*\* No changes can be made in the parameters for an effector which is turned off.*

- ⑤ Using PAGE  , move the cursor until it is positioned at the parameter value you wish to change. Then, using VALUE  , make the change in value.

When either the  or  button is held down while you press the other button, you can change the value more rapidly.

- ⑥ If you also wish to alter the settings for another effector, first press . Repeat the procedure, starting with the steps under ③.

*\* You can also switch to pages used for setting other effectors using these shortcuts:*

*To switch to the next effector: Simultaneously press both PAGE  and VALUE .*

*To switch to the previous effector: Simultaneously press both PAGE  and VALUE .*

- ⑦ If you wish to change the Total Level (or Direct Level): From the page you are in at step ③, press PAGE   to select the page shown below. Then using VALUE  , make the change in value.

Direct Level (the level at which direct sound is output): 0 to 100.

```
Direct Level
----+ 100 %
```

Total Level (the level at which both effected sound and direct sound are output): 0 to 100.

```
Total Level
----+ 100 %
```

*\* For certain algorithms the setting for the Direct Level is not available.*



---

### 3-1 When Completed

- Thereafter, if you wish to make settings for Control Assign, press **CONTROL ASSIGN** to enter the Control Assign mode. For details, see (p. 18).
- Thereafter, if you wish to change the name of the Effects Program, press **NAME** to go to the Name Edit mode. For details, see (p. 22).
- To store the setting changes in memory, carry out the Write procedure (p. 23).

### 3-2 To Cancel the Operation

- Press **EXIT** and the following page will appear in the display. Press **EXIT** once again, and the unit returns to the Play mode, and edited settings revert to their original values. (Press **PARAM** instead if you want to continue making setting changes for the Effects Program.)

```

Sure ? (Yes/No)
(Y→EXIT, N→PARAM)
```

- \* *If you have altered parameter settings for algorithms which combine multiple effectors, press **EXIT** twice.*
- If the power is turned off (and then on again), the settings will revert to their original values.

# ■ Settings for Control Assign

Settings which assign functions to specific controls can be made whenever you wish to use a pedal or external MIDI unit to control the RSP-550. With respect to each Program Number, four different settings (Assign Numbers 1 to 4) can be made. These settings determine the types of controllers and the parameters over which they will have control.

## ● Controllers which can be Specified

The types of controllers which can be specified are as follows:

- 1) The CONTROL button on the panel, or a pedal switch connected to the CONTROL jack (optionally available DP-2, FS-5U [BOSS], FS-5L [BOSS], etc.).
- 2) The following types of messages received from an external MIDI device:
  - Pitch Bend: Conveys the action of the pitch bend lever (wheel).
  - Aftertouch: Represents the pressure with which keys on a keyboard are pressed.
  - Note Number: Conveys the location (pitch) of keys played.
  - Velocity: Represents the force (speed) at which keys on a keyboard are pressed.
  - Control Change (0 to 31, 64 to 120): Convey the action of sliders, pedals, etc.

*\* For further details on MIDI messages, refer to "About MIDI" (p. 40).*

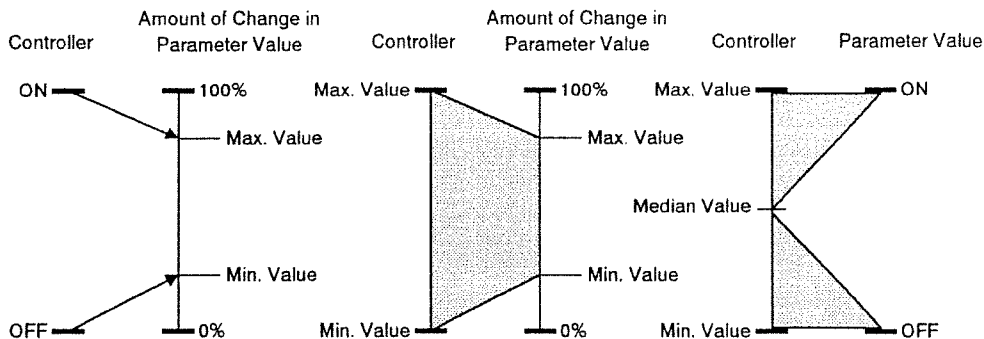
## ● Parameters which can be Controlled

The parameters that can be controlled vary depending on the algorithm. For details, refer to a separate volume.

The range over which parameter values can be changed is set by specifying a "Minimum Value" and "Maximum Value".

With controllers that act as On/Off switches (such as the unit's CONTROL button), "On" is the "Maximum Value" and "Off" is the "Minimum Value".

With controllers that handle consecutive, linear changes (such as a pitch bend lever), the parameter value will change within the range defined by "Minimum Value" and "Maximum Value". In cases where the parameter value is simply an On/Off switch; if the value of the MIDI message received is greater than the median value, it is turned On. If less, it is turned Off.



*\* Any values for parameters which have been altered in the course of performance using controllers are only temporary. Such settings will revert to their original settings once you change to another Program Number.*

1. Select the Control Assign Edit mode

① Select the number of the Effects Program for which you wish to make settings.

② Press **CONTROL ASSIGN**.

The button indicator will light, showing that you are in the Control Assign Edit mode. In the display you will see the page used to switch each Assign Number On/Off.

```
Ext. Control
 1 | 2 | 3 | 4
```

2. Turn on the Assign Numbers you need for control

③ Using PAGE **▲▼**, move the cursor until it is positioned at the Assign Number. Then using VALUE **▲▼**, turn it On or Off.

```
Ext. Control
 1 | 2 | 3 | *
```

ON: The Assign Number is displayed normally.

OFF: “\*” appears alternately with the Assign Number.

3. Select the Assign Number you wish to set

④ Using PAGE **▲▼**, move the cursor until it is positioned at the Assign Number, and press **CONTROL ASSIGN**.

```
Ext. Control
 1 | 2 | 3 | *
```

4. Select the controller, parameter to be controlled, and the manner in which control is to take place.

⑤ Using PAGE **▲▼**, change to the next page, then use VALUE **▲▼** to set the value.

[Controller]

```
Control Source
Control SW
```

Select the controller from those listed below.

Control SW	The panel's CONTROL button, or a pedal connected to the CONTROL jack.
Pitch Bender	Pitch Bend messages.
Aftertouch	Aftertouch messages.
Note Number	Note messages (Turn on/off specified note).
Velocity	Velocity messages.
Control	Control Change messages (# 0 to 31, # 64 to 120).

**[Parameter Which is Controlled]**

Available parameters vary depending on the algorithm selected.

```
Control Target
Total Level
```

**[Manner Control Takes Place]**

The possible choices vary depending on the type of parameter that is to be controlled.

- If a parameter that is switched on or off has been specified, you will see the page used to select the switch mode.

```
Switch Mode
OFF ←--→ ON
```

There are three selections available for the switch mode, as shown below.

OFF ↔ ON	<ul style="list-style-type: none"> <li>● If operating the panel's CONTROL button, the parameter will be ON only while the button is pressed.</li> <li>● If operating an unlatched-type pedal, the parameter will be ON only while the pedal is depressed.</li> <li>● If the parameter has been placed under the control of a MIDI message, it will be switched ON whenever the value surpasses the median value.</li> </ul>
ON ↔ OFF	The reverse of OFF ↔ ON takes place.
ON/OFF Toggle	<ul style="list-style-type: none"> <li>● If operating the panel's CONTROL button, the parameter is toggled ON or OFF each time the button is pressed.</li> <li>● If operating an unlatched-type pedal, the parameter is toggled ON or OFF each time the pedal is depressed.</li> </ul>

*\* "ON/OFF Toggle" is an effective choice when "Control SW" is the controller. If MIDI messages are being used for control, select either "OFF ↔ ON" or "ON ↔ OFF".*

- Whenever a parameter that is not simply switched on or off is selected, you are directed to the pages used to select the range of permissible change. This range is delimited by means of a minimum and a maximum value.

<Minimum Value>

<Maximum Value>

```
Value Minimum
_ ←--→
```

```
Value Maximum
←--→ _
```

- 
- \* If you change the parameter that is to be controlled after the settings for Minimum and Maximum values have been made, you may find that these values have changed. To avoid this, always reset the Minimum and Maximum values each time you select a new parameter to be controlled.
  - \* If you set a Minimum value that is higher than the Maximum value, you obtain changes in a reversed direction.
  - \* The unit will allow you to specify that multiple controllers all affect the same parameter. However, in such situations, you must avoid using more than one controller at the same time since this can generate noise.

⑥ If you wish to make settings for another Assign Number, first press **EXIT**. Repeat the procedure, starting with the steps under ④.

#### 5-1. When Completed

- Thereafter, if you wish to make settings for Effects Programs, press **PARAM** to enter the Parameters Edit mode. For details, see (p. 15).
- Thereafter, if you wish to change the name of the Effects Program, press **NAME** to select the Name Edit mode. For details, see (p. 22).
- To store the edited changes into memory, carry out the Write procedure (p. 23).

#### 5-2. To Cancel the Operation

- If you press **EXIT** while in the page for selecting Assign Number, the following page will appear in the display. Press **EXIT** once again, and the unit returns to the Play mode (all parameters are reset to their original values). (Press **CONTROL ASSIGN** instead if you want to continue making setting changes for Control Assign.)

```

Sure ? (Yes/No)
(Y→EXIT, N→CONT)
```

- If the power is turned off (then on again), the settings will revert to their original values.

# ■ Altering the Name of an Effects Program

A name of up to 16 characters can be assigned to each Program Number. The name could be one that calls to mind the type of sound it creates, or could be the name of a song it is intended to be used with.

## 1. Go to the Name Edit mode

① Select the Program Number having the name you are going to edit.

② Press **NAME**.

The button indicator will light, and you will be in the Name Edit mode.

```
ROLAND RSP-550
* NAME EDIT *
```

## 2. Assign a Name

③ Using **PAGE** **▲** **▼**, move the cursor (underline) until it is positioned under the letter you wish to change. Select the new letter using the **VALUE** **▲** **▼** buttons.

The characters which are available are shown below. You can switch between capital letters and small letters by pressing **CAP/SML**. To insert a space, press **SPACE**.

```
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
0 1 2 3 4 5 6 7 8 9 & # ! ? , . ; ' " * + - - / < = >
```

### 3-1. When Completed

- Otherwise, if you wish to make settings for an Effects Program, press **PARAM** to enter the Parameters Edit mode. For details, see (p. 15).
- Thereafter, if you wish to make settings for Control Assign, press **CONTROL ASSIGN** to enter the Control Assign mode. For details, see (p. 18).
- To store the edited changes into memory, carry out the Write procedure (p. 23).

### 3-2. To Cancel the Operation

- From the page used to select the Assign Number, press **EXIT** and the following page will appear in the display. Press **EXIT** once again, and the unit returns to the Play mode (all parameters will revert to their original values). (Press **NAME** instead if you want to continue making changes in the name of the Effects Program.)

```
Sure ? (Yes/No)
(Y→EXIT, N→NAME)
```

- If power is turned off (then on again), the settings will revert to their original values.

# ■ Storing Edited Changes in Memory: The Write Procedure

All changes made in the settings for Effects Programs, Control Assign, and the Effects Program Name are only temporary. They will revert to their original values if you turn power off, or return to the Play mode. In order to save your new settings, perform the steps below to Write the edited program into memory.

*\* If a message appears in the display during the course of the Write procedure, and you cannot continue, refer to "Error Messages" (p. 45).*

## 1. Turn Memory Protection Off

Memory Protection serves in protecting your settings (in Program Numbers 1 to 160) from being inadvertently erased. It can be turned on and off like a switch. Ordinarily it is left on, but whenever you wish to write to memory, it must be turned off.

- ① Press **SYSTEM**.

The button indicator will light, showing you are in the System mode.

- ② Using **PAGE** **▲** **▼** change to the Memory Protect page, then use **VALUE** **▲** **▼** to turn it Off.

```
Memory Protect
----> < on >
```

- ③ Press **SYSTEM** (or **EXIT**) once again.

The button indicator will go out, showing you have left the System mode.

## 2. Store Settings in Memory

- ④ Press **WRITE**.

The button indicator will light, showing you are in the Write mode.

```
Select Prog No.
and Press WRITE
```

- ⑤ To write your Effects Program to a different Program Number, use the **PROGRAM** **▲** **▼** buttons to select the destination. (If you want the Program Number to remain the same, go to the next step.)

When changing the Program Number, the display shows the destination Program Number and the name of the Effects Program stored there.

```
111 | Hall 1
**** Hall 1 ****
```

---

*\* You cannot store anything in Program Numbers 161 to 199 (these are preset positions). Choose another writing destination if necessary.*

*\* Should you wish to cancel the Write procedure, press **EXIT**. You will then be able to resume making changes in parameter values.*

**⑥** Press **WRITE** again, and the program is stored at the specified Program Number.

Once the program is successfully stored, the unit returns to the Play mode.

**⑦** Turn Memory Protect “On” again by following steps **①** through **③**.



# ■ Copying

Use the Copy procedure whenever you wish to make a new Effects Programs that is in many ways similar to an existing one, or when you wish to arrange Effects Programs in a specific order.

## 1. Turn Memory Protection Off

Memory Protection serves in protecting your settings (in Program Numbers 1 to 160) from being inadvertently erased. It can be turned on and off like a switch. Ordinarily it is left on, but whenever you wish to write to memory, it must be turned off.

- ① Press **SYSTEM**.

The button indicator will light, showing you are in the System mode.

- ② Using PAGE **▲▼**, select the Memory Protect page, then use VALUE **▲▼** to turn it Off.

```
Memory Protect
----> < on >
```

- ③ Press **SYSTEM** (or **EXIT**) once again.

The button indicator will go out, showing you have left the System mode.

## 2. Perform the Copy

- ④ Select the original Program Number.

- ⑤ Press **WRITE**.

The button indicator will light, showing you are in the Write mode.

```
Select Prog No.
and press WRITE
```

- ⑥ Use the PROGRAM **▲▼** buttons to select the copy destination.

When changing Program Numbers, the display shows the Program Number at the copy destination and the name of the Effects Program stored there.

```
1111
Hall 1
***** Hall 1 *****
```

\* You cannot copy anything to Program Numbers 161 to 199.

\* Should you wish to cancel the Copy procedure, press **EXIT**. The unit will return to the Play mode.

- ⑦ Press **WRITE** again, and the program is copied to the specified Program Number.

Once it has been copied, the unit returns to the Play mode.

- ⑧ Turn Memory Protect "On" again by following steps ① through ③.

## ■ Using the System Functions

---

The following explains the range of System Functions that the RSP-550 provides. They can be used to match your particular needs.

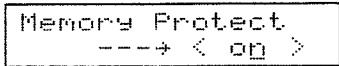
The System Functions are as follows:

- MIDI Channel / OMNI Mode
- On/Off Switch for Reception of MIDI Program Change Messages
- MIDI Program Change Map
- Transmission of Data Using MIDI (Bulk Dump)
- Reception of Data Using MIDI (Bulk Load)
- Memory Protect
- Function Selection for Bypass
- Active Range for Pedal Changes in Program Numbers
- Meter Display
- Display Contrast

*\* For information on settings which affect MIDI communications, refer to "Using MIDI" (p. 31).*

### □ Turning Memory Protection ON and OFF

Memory Protect is a function which protects the settings stored in Program Numbers (in the User Area) from being inadvertently erased. It can be turned on and off like a switch. Ordinarily it is left on, but whenever you wish to write to memory, it must be turned off.

- ① Press **SYSTEM** to select the System mode.  
The button indicator will light.
- ② Using PAGE **▲▼**, select the Memory Protect page.  

- ③ Use VALUE **▲▼** to switch it ON or OFF.
- ④ Press **SYSTEM** (or **EXIT**) again to return to the Play mode.  
The button indicator will go out.

## □ Selecting the Function Bypass Will Have

The functions shown below are available as options when using the Bypass feature. With the default settings, the unit is set at "Circuit Bypass". When set to other options, its operation will change as explained in the following.

**Circuit Bypass:** When Bypass is turned On, all signals arriving at the INPUT jacks are sent directly from the OUTPUT jacks. (Effect sounds are not produced.) Moreover, when Bypass is On, you no longer can adjust the input level using the INPUT LEVEL knobs, and the Level Meter will not display the level.

**DSP Through:** When Bypass is turned On, all signals arriving at the INPUT jacks are routed through the internal circuitry before being sent out from the OUTPUT jacks. (Effect sounds are not produced.) Even when Bypass is On, you will be able to adjust the input level using the INPUT LEVEL knobs, and the Level Meter will display the level.

**Output Mute:** When Bypass is switched On, sound will no longer be output from the OUTPUT jacks. (Mute On.) Even when Mute is On, you will be able to adjust the input level using the INPUT LEVEL knobs, and the Level Meter will display the level.

- ① Press **SYSTEM** to select the System mode.

The button indicator will light.

- ② Using PAGE **▲▼**, select the BYPASS page.

```
Bypass Key Def.
+ Circuit Bypass
```

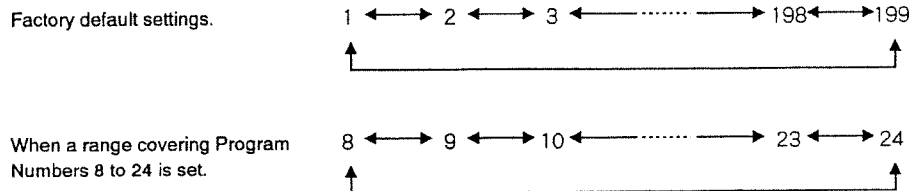
- ③ Use VALUE **▲▼** to select the BYPASS function.

- ④ Press **SYSTEM** (or **EXIT**) again to return to the Play mode.

The button indicator will go out.

## □ Setting the Active Range for Pedal Changes in Program Numbers

Carry out the steps below to set the desired range when you wish to use a pedal connected to a PROGRAM SHIFT jack (UP/DOWN) to select Program Numbers within a specific range only.



- ① Press **SYSTEM** to select the System mode.  
The button indicator will light.
- ② Using PAGE **▲▼**, select the Program Shift page. (The cursor should be at the value on the left.)

```
Prog. Shift Area
Prog#001->Prog#199
```

- ③ Use VALUE **▲▼** to specify the lowest Program Number.
- ④ Using PAGE **▲▼**, move the cursor to the right. Specify the highest Program Number using VALUE **▲▼**.

```
Prog. Shift Area
Prog#008->Prog#199
```

*\* The highest Program Number cannot be set to a number that is smaller than the lowest Program Number.*

- ⑤ Press **SYSTEM** (or **EXIT**) again to return to the Play mode.  
The button indicator will go out.

## □ Switching the Level Meter

The Level Meter can be set to display either the Input Level (INPUT) or the Output Level (OUTPUT). With default settings, the meter provides display of the Input Level. If you would prefer to monitor the output level, carry out the steps below.

- ① Press **SYSTEM** to select the System mode.  
The button indicator will light.
- ② Using PAGE **▲▼**, select the page shown below.  

```
Meter Select
----> INPUT LEVEL
```
- ③ Use VALUE **▲▼** to select “OUTPUT LEVEL”.
- ④ Press **SYSTEM** (or **EXIT**) again to return to the Play mode.  
The button indicator will go out.

*\* The mode for the Level Meter can also be changed by simultaneously pressing VALUE **▼** and **EXIT** while you are in the Play (or Parameter Edit) modes.*

## □ Adjusting the Display Contrast

Depending on the situation, the display may not be easy to read. Adjust the display contrast as necessary.

- ① Press **SYSTEM** to select the System mode.  
The button indicator will light.
- ② Using PAGE **▲▼**, select the following page.  

```
LCD Contrast
----> 50
```
- ③ Use VALUE **▲▼** to adjust the contrast. (Value range: 0 to 100)
- ④ Press **SYSTEM** (or **EXIT**) again to return to the Play mode.  
The button indicator will go out.



**SECTION III**

# **USING MIDI**

# ■ What MIDI Allows You To Do

---

## ● Changing Program Numbers

In response to MIDI messages directing the unit to change to a different sound (Program Change Messages), the RSP-550 will change its Program Number. The relationship between Program Change Numbers and RSP-550 Program Numbers can be specified. Altering the Program Change Map allows you to create the desired correspondence.

You should alter the settings when, for example, you wish to use an external MIDI device to select Program Numbers higher than 128. You could also arrange your units so Patch numbers on a keyboard match RSP-550 Program Numbers.

## ● Controlling Specified Parameters

The value of specified parameters can be changed in real-time (during performance) by means of Aftertouch, Pitch Bend, or Control Change messages.

For example, you could set Aftertouch messages to control Chorus Rate. Then, the more pressure you put on keyboard keys, the greater the chorus effect would become.

*\* For information on which type of MIDI messages can be used to control which parameters, and how, refer to "Settings for Control Assign" (p. 18).*

## ● Transferring Data

By employing Exclusive messages, data such as that describing the settings for the Effects Programs stored in the RSP-550, can be transferred to another MIDI device. This allows you to set another RSP-550 to exactly the same settings, or to save settings for the Effects Programs into a sequencer or other device.



# ■ Setting the MIDI Channel

---

The MIDI channel used to send and receive MIDI messages is set as follows:

*\* With the default settings, the unit is set to "OMNI" (Omni On).*

- ① Press **SYSTEM** to select the System mode.

The button indicator will light.

```

MIDI Channel
----> OMNI
```

- ② Use VALUE **▲** **▼** to select the MIDI Channel.

When set to "OMNI" (Omni On), the controlling features will be active, no matter which MIDI channel the messages arrive on.

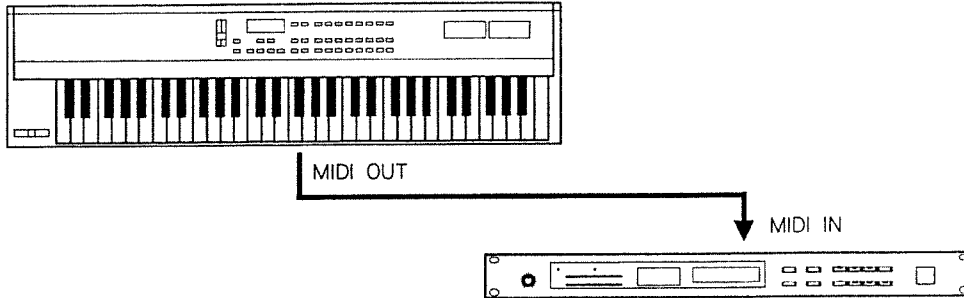
*\* When set to "OMNI", channel 1 will be used for transmission.*

- ③ Press **SYSTEM** (or **EXIT**) again to return to the Play mode.

The button indicator will go out.

# ■ Changing Program Numbers

Through the use of Program Change messages (from an external MIDI unit), you can obtain changes in RSP-550 Program Numbers. For example, you can have the Effects Programs on the RSP-550 changed at the instant you change the sound being used on a synthesizer or other keyboard instrument.

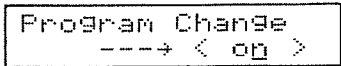


When shipped from the factory, this unit is set to respond to MIDI Program Changes by switching to the Effects Program which has the same number as the message which was sent. So, for example, if you select Program Change No. 8 on your synthesizer, the RSP-550 will switch to Effects Program No. 8.

To set the Effects Programs in a specified order, simply alter the Program Change Map. The Program Change Map contains information that determines which Program Change Numbers will select which Program Numbers on the RSP-550. The RSP-550's Program Change Map feature eliminates the need for moving Effects Programs around, since you can easily alter the correspondence to suit your needs.

## □ Turning On/Off Reception of Program Change Messages

The setting below allows you to determine whether or not the unit will respond to Program Change messages. Ordinarily, you should set it to "On". If, however, you do not wish the unit to respond to Program Change messages, set it to "Off".

- ① Press **SYSTEM** to select the System mode.  
The button indicator will light.
- ② Using **PAGE** **▲** **▼**, select the Program Change Reception page.  

- ③ Use **VALUE** **▲** **▼** to select either ON or OFF.
- ④ Press **SYSTEM** (or **EXIT**) again to return to the Play mode.  
The button indicator will light.

## □ Setting the Program Change Map

Carry out the procedure below to alter the correspondence between Program Change Numbers (messages) and Program Numbers.

- ① Press **SYSTEM** to select the System mode.

The button indicator will light.

- ② Using PAGE **▲▼**, select the Program Change Map page. (The cursor should be at the value on the left.)

```
Prog Change Map
MIDI#001→Pr#001
```

- ③ Use VALUE **▲▼** to select the Program Change Number for which the correspondence is to be altered.

- ④ Using PAGE **▲▼**, move the cursor to the right. Specify the Program Number to switch to using VALUE **▲▼**.

```
Prog Change Map
MIDI#016→Pr#016
```

- ⑤ Repeat steps ② through ④ until you have the desired correspondence between Program Change Numbers (messages) and Program Numbers.

- ⑥ Press **SYSTEM** (or **EXIT**) again to return to the Play mode.

The button indicator will go out.

# ■ Transferral of Data

The RSP-550 provides for the use of MIDI Exclusive messages to exchange data (such as that containing the settings for the Effects Programs) with external MIDI units. This allows you to easily set another RSP-550 to exactly the same settings, or to place data for the Effects Programs into a sequencer for storage. “**Bulk Dump**” refers to the sending of Exclusive messages, and “**Bulk Load**” refers to their reception.

## □ Data which can be Transferred

The types of data which can be transferred are listed below. When carrying out the transfer of data, you can specify a particular category. Then only the types of data falling into that category will be dealt with.

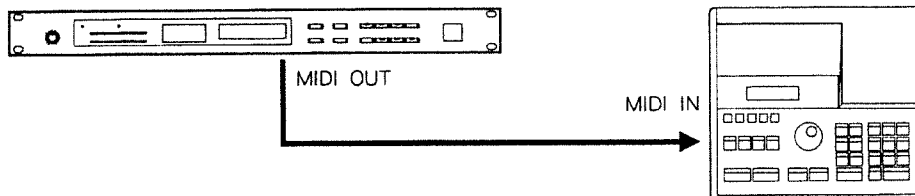
Display	Data Transmitted
SYSTEM	Program Change Map Bypass Setting Active Range for Pedal Changes in Program Numbers Level Meter Mode Display Contrast
TEMP	Temporary Data (Temporary data consists of the edited settings for the currently selected Program Number.)
No. 1 to 160	Settings for Program Numbers 1 to 160 Type of the algorithm Settings for Effects Programs corresponding to algorithms Control Assign Effects Program Name Bypass On/Off

## □ Transmission of Data (Bulk Dump)

< How the connections are made >

### ● To Store Data in a Sequencer

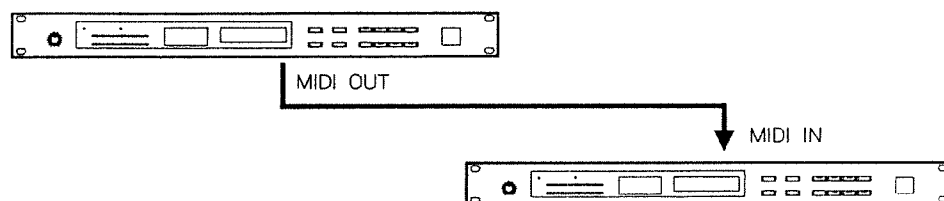
Connect the units as shown below. Set the sequencer to receive Exclusive messages.



\* Refer to your sequencer manual for instructions.

● Sending a Copy of Data to another RSP-550

Connect the units as shown below. Set the same MIDI channel on both units. Next, set the receiving unit so it is ready to receive Exclusive messages. To set the RSP-550 to the reception mode, refer to "Data Reception" (p. 38).



*\* If the MIDI channel on the transmitting unit is set to "OMNI", transmission will take place on MIDI channel 1.*

< Data Transmission >

- ① Press **SYSTEM** to select the System mode.  
The button indicator will light.
- ② Using PAGE **▲** **▼**, select the Bulk Dump page. (The cursor should be at the value on the left.)

```

Bulk Dump Area
SYSTEM->Pr#160
    
```

- ③ Use VALUE **▲** **▼** to select the start point for data to be sent.
- ④ Using PAGE **▲** **▼**, move the cursor to the right. Specify the end point for data to be sent using VALUE **▲** **▼**.

```

Bulk Dump Area
Pr#001->Pr#100
    
```

*\* The end point cannot be set to a value lower than the start point.*

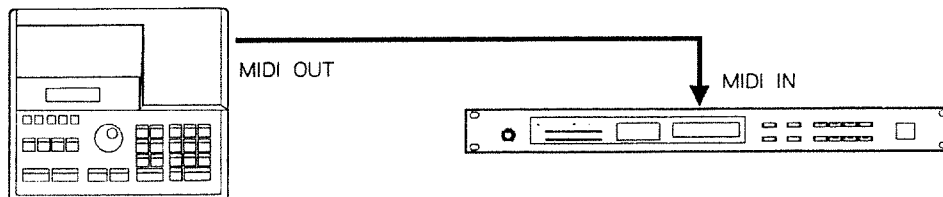
- ⑤ Press **WRITE** and transmission will begin.  
Once the data has been sent, the unit returns to the page it was in before transmission.
- ⑥ Press **SYSTEM** (or **EXIT**) again to return to the Play mode.  
The button indicator will go out.

## □ Reception of Data (Bulk Load)

### < How the Connections are Made >

#### ● Sending Data that was saved in a Sequencer back to the RSP-550

Connect the units as shown below. Set the RSP-550 to the same MIDI channel that was used when the data was originally saved into the sequencer.



*\* Refer to your sequencer manual for instructions.*

### < Data Reception >

- ① Press **SYSTEM**.

The button indicator will light, showing you are in the System mode.

- ② Using PAGE **▲▼**, select the Memory Protect page. Use VALUE **▲▼** to switch it OFF.

```
Memory Protect
----> < off >
```

- ③ Using PAGE **▲▼**, select the Bulk Load page.

The unit will now be ready for reception of data.

```
Bulk Load
waiting.....
```

- ④ Have the transmitting unit start sending data.

After the data has been received, the following page will appear.

```
Bulk Load
idling.....
```

*\* Data can be received even while this page is displayed.*

- ⑤ Press **SYSTEM** (or **EXIT**) again to return to the Play mode.

The button indicator will go out.

**SECTION IV**

**REFERENCE**

# ■ About MIDI

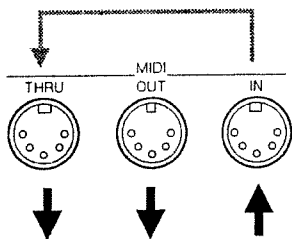
MIDI is the acronym for “Musical Instrument Digital Interface”. It is an international standard that allows for data (such as that representing the music played, or for changes in sounds used) to be exchanged among various instruments and computers. As long as they are MIDI compatible, all devices, regardless of model or manufacturer, can exchange whatever performance data they are both equipped to understand.

MIDI converts every event occurring while an instrument is played into MIDI data. When received by another instrument, this stream of MIDI data can be used to “play” it, as if that instrument itself were being played.

## □ The Exchange of MIDI Data

The exchange of MIDI data is carried out as follows.

### ● About MIDI Connectors



In carrying out the exchange of MIDI data, the 3 types of connectors shown below are used. MIDI cables are connected to these connectors in various ways, depending on how they are to be used.

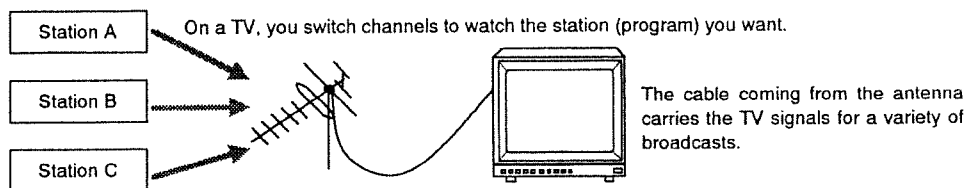
- MIDI IN:            Receives data from another MIDI device.
- MIDI OUT:          Transmits data originating in the unit.
- MIDI THRU:         Sends out an exact copy of the data received at MIDI IN.

*\* In theory, any number of MIDI devices could be connected together using MIDI THRU connectors; but it is best to consider 4 to 5 devices as being the practical limit. This is because the further down the line a device is located, the more likely signal delay is to occur, and the chance of error due to deterioration in signal quality increases.*

### ● MIDI Channels

With MIDI, a single cable can be used for carrying differing sets of performance information, for a number of MIDI devices. This is possible thanks to MIDI channels.

MIDI channels are in some ways similar to the channels on a television set. On a TV, a variety of programs broadcast from different stations can be viewed by switching channels. This is because the information on any particular channel is conveyed only when the receiver is set to the same channel that is being used for transmission.



The channels available with MIDI range from 1 through 16. When a musical instrument (the receiver) is set so its channel matches the MIDI channel used by the transmitting device, MIDI data is conveyed.

*\* When Omni mode is set to ON, MIDI data arriving on all channels can be received, regardless of any setting for a particular channel. The unit can be left at Omni On unless there is a specific need to receive messages on a specific channel.*



## □ MIDI Messages Recognized by the RSP-550

In order to convey the great variety of expression possible with music, MIDI has been provided with a large range of data types (messages). MIDI messages can be divided into two main types: Messages that are handled on each channel (Channel messages); and messages that are handled independently of channels (System messages).

### < Channel Messages >

These messages are used to convey the events of a performance. In most circumstances, they alone are sufficient for providing the necessary control. The specific results obtained by the various types of MIDI message are determined by the settings of the sound source (instrument) receiving them.

#### ● Program Change Messages

These messages are used for conveying information about changes to another sound. Sounds are changed using Program Change Numbers, numbered from 1 through 128. The Program Numbers on the RSP-550 correspond to MIDI Program Change Numbers. This correspondence between Program Numbers and Program Change Numbers can be changed simply by altering the Program Change Map. You should revise the settings when you wish to use an external MIDI device to select Program Numbers higher than 128, or when you wish to setup your equipment so sounds on a keyboard coordinate with the RSP-550's Program Numbers.

#### ● Control Change Messages

These messages are used to enhance the expressiveness of a performance. Each function is identified by a Control Number. The functions which are available for control will vary depending on the instrument. On the RSP-550, Control Change messages can be assigned to control selected parameters.

#### ● Aftertouch Messages

These messages convey Aftertouch, the information related to pressure applied to a keyboard key. There are two types of Aftertouch; Channel and Polyphonic.

Channel Aftertouch provides control based on each MIDI channel. No matter which key it is that is pressed, the effect is applied equally to all notes on the same MIDI channel. Polyphonic Aftertouch provides control on an individual key (note) basis. Even though it may share the same MIDI channel with other notes, any particular key that has more pressure put on it will produce a unique effect.

The RSP-550 responds to Channel Aftertouch messages which can be assigned to control a selected parameter.

#### ● Pitch Bend Messages

These messages convey the data of the Pitch Bend Lever (wheel) found on many synthesizers. On the RSP-550, Pitch Bend messages can be used to control a selected parameter.

---

● Note Messages

Note messages convey what is played, such as which keys are pressed on a keyboard. On the RSP-550, Note messages of specific Note Numbers (key positions), and the Velocity (speed at which keys are pressed) can be used to control selected parameters.

< System Messages >

System messages include Exclusive messages, messages necessary for synchronization, as well as MIDI diagnostic messages. Of these, the RSP-550 handles mainly Exclusive messages.

● Exclusive Messages

Exclusive messages handle information such as that related to a device's own unique sounds. Generally, such messages can be exchanged only between devices of the same model by the same manufacturer. Exclusive messages can be employed to save the settings for Effects Programs into a sequencer, or for transferring such data to another RSP-550.

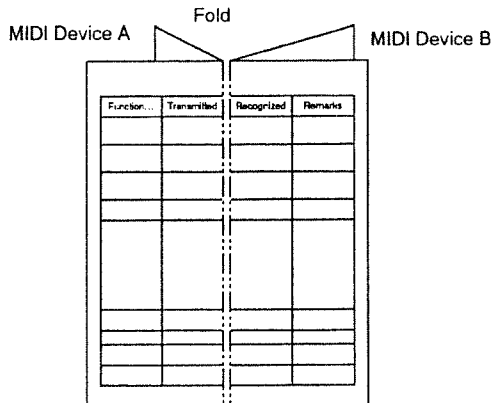
Whenever Exclusive messages are to be used for communication, both instruments need to be set to the same Unit Number. On the RSP-550, the Unit Number is the same as the MIDI channel number.

● MIDI Implementation Chart

MIDI has made it possible for a wide range of musical instruments to communicate with each other. That doesn't necessarily mean, however, that the many types of data will all be understood.

Communication between MIDI devices occurs only when both units understand the data being exchanged.

It is for this reason that every Owner's Manual, for all kinds of MIDI devices, includes a MIDI Implementation Chart. This chart provides a quick reference to the types of MIDI messages an instrument is capable of handling. You should compare the MIDI Implementation Charts for any devices you use in order to find out which types of data can be exchanged. Since the size and layout of these charts is standardized, you can place them so they overlap. This way you can easily compare the receiving device with the transmitting device.



\* For detailed information on how MIDI data is handled on this unit, refer to "Roland Exclusive Messages" (p. 47), and "MIDI Implementation" (p. 49).

# ■ TROUBLESHOOTING

If for some reason you do not hear the sound you expect to, or suspect that something is wrong with the way the unit is operating, first check through the items that follow. If even after trying the remedies, the problem still persists, consult with the retailer where purchased, or contact the nearest Roland Service Station.

*\* Whenever an unfamiliar message has appeared in the display during use of the unit, check "Error Messages" (☞ p. 45) for an explanation.*

## No Sound Produced/Level Is Too Low

- Are you sure connections with all other devices have been made properly?
- Have you checked to make sure that power is on, and the volume on the amplifier and/or mixer you are using is at a suitable level?
- Are you sure the Input Level knobs are not set too low?
- Do you have "BYPASS" turned ON?  
If BYPASS is set at "Output Mute," and if you then turn on BYPASS, not even the direct sound will be produced. (☞ p. 11, p. 27)
- Is the sound produced normally if you first try selecting a different Program Number, and then come back and select the one in question again?  
If so, it means that the volume was being suppressed temporarily due to a change in the value of a parameter specified for Control Assign.  
If sound is not produced normally after trying the above, you should recheck every setting that pertains to volume for the questionable Program Number (Total Level, Control Assign, etc.).
- Have you checked for damaged cables?  
Replace any damaged cables.

## Sound is Distorted (CLIP in Level Meter Lights Frequently)

- Could you possibly have the Input Level knobs turned too high? (☞ p. 9)
- Do you have the INPUT/OUTPUT Level switch on the rear panel set to the position appropriate for the devices you have connected?
- Could the level being output by the external unit you have connected be too great?
- Is the distortion eliminated when you try switching to another Program Number?  
If so, you should recheck every setting that pertains to volume for the Program Number in question (Total Level, Control Assign, etc.).

---

### Bypass Cannot Be Turned On/Off

- Are you possibly in the mode where alterations in the Effect Name are made?  
If so, press **EXIT** to return to the Play mode.

### Expected Control of Parameter Specified for Control Assign Not Obtainable

- Have you checked to make sure the Effect containing the assigned parameter is not OFF?  
(☞ p. 15)
- Recheck the settings made for the parameter to be controlled. Make sure they are correct, and, for example, any selected range of change is not too narrow.
- Could you be in the mode where alterations in the Effect Name are made?  
If so, press **EXIT** to return to the Play mode.
- Recheck to make sure you have MIDI channels matched properly if set to use MIDI messages to control a parameter.

### Cannot Write to Memory

- Is the SYSTEM indicator lit?  
If so, press **SYSTEM** or **EXIT**, then perform the Write.

### Expected Changes in Program Numbers Not Obtained

- Make sure you are not in a mode where settings are made.  
If so, press **EXIT** to return to the Play mode.
- If it is a pedal connected to the PROGRAM SHIFT jack that does not provide the expected changes in Program Number, recheck the settings for Program Shift. (☞ p. 28)
- Check to make sure you have the MIDI channels on all devices being used matched properly.
- Could the switch controlling reception of Program Change messages possibly be OFF? (☞ p. 34)
- Recheck the settings for the Program Change Map if using altered Program Change number relationships. (☞ p. 35)

# ■ ERROR MESSAGES

---

An error message will appear in the display whenever an error has been made during operation, or when the unit is incapable of processing a task in a reliable manner. Please attend to the displayed message and alleviate the cause of error.

Battery low !  
Please change !

The lithium battery essential to the unit in maintaining the settings it has stored has worn down. Have the battery replaced at the nearest Roland Service Station.

Block Select  
Not Available!

You have specified an effector which is set at OFF. After altering the settings for an effector, always make sure that it is turned ON.

Memory  
Protected !!

Data could not be stored to memory because memory protection remained ON. Try the procedure again after turning memory protection OFF.

Preset Area  
Cannot Write !

The write could not be performed since a Program Number in the Preset area (161 to 199) was specified. Specify a Program Number in the User area (1 to 160) as the target.

Bulk Load  
Memory Protected



Exclusive messages could not be received because memory protection remained ON. Try the procedure again after turning memory protection OFF.

# ■ RESTORING THE FACTORY PRESETS (Initialization)

To restore the RSP-550 to its Factory Presets, follow the steps below. You can either initialize all settings, or only specific types that you select.





The types of data which can be initialized are as follows:

Displayed	Data Initialized	Initial Value
SYSTEM	MIDI Transmit/Receive Channel	Omni On
	On/Off Switch for Reception of MIDI Program Change Messages	On
	Program Change Map	Program Nos./Program Change Nos. Identically Matched
	Memory Protect	On
	Bypass Function	Circuit Bypass
	Range of Program Numbers Selectable With Footswitch	1 to 199
	Level Meter Mode	Input Level
	Display Contrast	50
No. 1	Program Number 1	-----
No. 2	Program Number 2	-----
No. 3	Program Number 3	-----
No. 160	Program Number 160	-----

- ① Turn power OFF.
- ② While holding down both the PROGRAM  and  buttons, turn power ON.  
You are presented with the page used to specify the range of data to be initialized.

```

Factory Preset
SYSTEM → No.160
    
```

- ③ To specify the range of data which you wish to initialize, do so using PAGE   (to move cursor) and VALUE   (to select start and end points).  
When you wish to initialize all settings, proceed directly to step 4.

For example: The following will cause initialization of the System Data and Program Nos. 1 to 10:

```

Factory Preset
SYSTEM → No. 10
    
```

- ④ Press **WRITE**, and the initialization takes place. (To cancel, press **EXIT**.)  
Once the initialization has been completed, you are returned to the normal Play mode.

# Roland Exclusive Messages

## 1. Data Format for Exclusive Messages

Roland's MIDI implementation uses the following data format for all exclusive messages (type IV):

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
CMD	Command ID
[BODY]	Main data
F7H	End of exclusive

- MIDI status: F0H, F7H  
An exclusive message must be flanked by a pair of status codes, starting with a Manufacturer-ID immediately after F0H (MIDI version 1.0).
- Manufacturer-ID: 41H  
The Manufacturer-ID identifies the manufacturer of a MIDI instrument that triggers an exclusive message. Value 41H represents Roland's Manufacturer-ID.
- Device-ID: DEV  
The Device-ID contains a unique value that identifies the individual device in the multiple implementation of MIDI instruments. It is usually set to 00H - 0FH, a value smaller by one than that of a basic channel, but value 00H - 1FH may be used for a device with multiple basic channels.
- Model-ID: MDL  
The Model-ID contains a value that uniquely identifies one model from another. Different models, however, may share an identical Model-ID if they handle similar data.

The Model-ID format may contain 00H in one or more places to provide an extended data field. The following are examples of valid Model-IDs, each representing a unique model:

01H  
02H  
03H  
00H, 01H  
00H, 02H  
00H, 00H, 01H

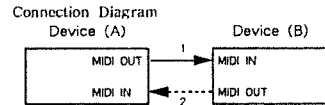
- Command-ID: CMD  
The Command-ID indicates the function of an exclusive message. The Command-ID format may contain 00H in one or more places to provide an extended data field. The following are examples of valid Command-IDs, each representing a unique function:
- 01H  
02H  
03H  
00H, 01H  
00H, 02H  
00H, 00H, 01H
- Main data: BODY  
This field contains a message to be exchanged across an interface. The exact data size and contents will vary with the Model-ID and Command-ID.

## 2. Address-mapped Data Transfer

Address mapping is a technique for transferring messages conforming to the data format given in Section 1. It assigns a series of memory-resident records-waveform and tone data, switch status, and parameters, for example-to specific locations in a machine-dependent address space, thereby allowing access to data residing at the address a message specifies.

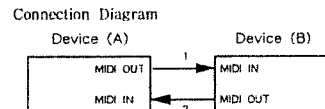
Address-mapped data transfer is therefore independent of models and data categories. This technique allows use of two different transfer procedures: one-way transfer and handshake transfer.

- One-way transfer procedure (See Section 3 for details.)  
This procedure is suited for the transfer of a small amount of data. It sends out an exclusive message completely independent of a receiving device status.



Connection at point 2 is essential for "Request data" procedures. (See Section 3.)

- Handshake-transfer procedure  
(This device does not cover this procedure)  
This procedure initiates a predetermined transfer sequence (handshaking) across the interface before data transfer takes place. Handshaking ensures that reliability and transfer speed are high enough to handle a large amount of data.



Connection at points 1 and 2 is essential.

- Notes on the above two procedures
- \* There are separate Command-IDs for different transfer procedures.
  - \* Devices A and B cannot exchange data unless they use the same transfer procedure, share identical Device-ID and Model ID, and are ready for communication.

## 3. One-way Transfer Procedure

This procedure sends out data all the way until it stops and is used when the messages are so short that answerbacks need not be checked. For long messages, however, the receiving device must acquire each message in time with the transfer sequence, which inserts intervals of at least 20 milliseconds in between.

Types of Messages

Message	Command ID
Request data # 1	RQ1 (11H)
Data set 1	DT1 (12H)

- Request data # 1: RQ1 (11H)  
This message is sent out when there is a need to acquire data from a device at the other end of the interface. It contains data for the address and size that specify designation and length, respectively, of data required.

On receiving an RQ1 message, the remote device checks its memory for the data address and size that satisfy the request. If it finds them and is ready for communication, the device will transmit a "Data set 1 (DT1)" message, which contains the requested data. Otherwise, the device will send out nothing.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
11H	Command ID
aaH	Address MSB
⋮	⋮
⋮	LSB
ssH	Size MSB
⋮	⋮
⋮	LSB
sum	Check sum
F7H	End of exclusive

**Roland Exclusive Messages**

- \* The size of the requested data does not indicate the number of bytes that will make up a DT1 message, but represents the address fields where the requested data resides.
- \* Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
- \* The same number of bytes comprises address and size data, which, however, vary with the Model-ID.
- \* The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

■ Data set 1: DT1 (1211)

This message corresponds to the actual data transfer process. Because every byte in the data is assigned a unique address, a DT1 message can convey the starting address of one or more data as well as a series of data formatted in an address-dependent order.

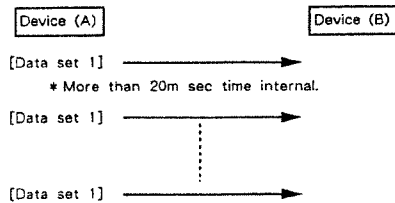
The MIDI standards inhibit non-real time messages from interrupting an exclusive one. This fact is inconvenient for the devices that support a "soft-through" mechanism. To maintain compatibility with such devices, Roland has limited the DT1 to 256 bytes so that an excessively long message is sent out in separate segments.

Byte	Description
F0H	Exclusive
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
12H	Command ID
aaH	Address MSB
⋮	⋮
	LSB
ddH	Data
⋮	⋮
sum	Check sum
F7H	End of exclusive

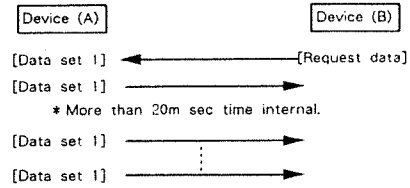
- \* A DT1 message is capable of providing only the valid data among those specified by an RQ1 message.
- \* Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
- \* The number of bytes comprising address data varies from one Model ID to another.
- \* The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

■ Example of Message Transactions

- Device A sending data to Device B  
Transfer of a DT1 message is all that takes place.



- Device B requesting data from Device A  
Device B sends an RQ1 message to Device A. Checking the message, Device A sends a DT1 message back to Device B.





**1. Transmitted data**

## ■ System Exclusive Message

Status	
F0H	System Exclusive
F7H	EOX (End Of System Exclusive)

When requested externally or when bulk dump is directed, transmits setting parameter of the internal program.

**2. Recognized receive data**

## ■ Channel Voice Message

## ● Note On

Status	Second	Third
9nH	kkH	vvH

n = MIDI Channel    0H - FH (1 - 16)  
kk = Note Number    00H - 7FH (0 - 127)  
vv = Velocity        01H - 7FH (1 - 127)

Real time control of a parameter is possible by assigning a note number or velocity to that parameter.

## ● Control Change

Status	Second	Third
BnH	ccH	vvH

n = MIDI Channel    0H - FH (1 - 16)  
cc = Control Number 00H - 1FH (0 - 31) 40H - 7FH (64 - 120)  
vv = Control Value   00H - 7FH (0 - 127)

Real time control of a parameter is possible by assigning the control change to that parameter.

## ● Program Change

Status	Second
CnH	ppH

n = MIDI Channel    0H - FH (1 - 16)  
pp = Program Number 00H - 7FH (0 - 127)

The program number of the internal memory, that corresponds to the received program number, can be called.

## ● Channel pressure

Status	Second
DnH	vvH

n = MIDI Channel    0H - FH (1 - 16)  
vv = Control Value   00H - 7FH (0 - 127)

Real time control of a parameter is possible by assigning the channel pressure to that parameter.

## ● Pitch Bend Change

Status	Second	Third
EnH	lH	mmH

n = MIDI Channel                    0H - FH (1 - 16)  
l = Control Value (Data LSB)        00H - 7FH (0 - 127)  
mm = Control Value (Data MSB)      00H - 7FH (0 - 127)

The value LSB is ignored.  
Real time control of a parameter is possible by assigning the pitch bender to that parameter.

## ■ System Exclusive Message

Status	
F0H	System Exclusive
F7H	EOX (End Of System Exclusive)

Requesting or writing of internal program or a setting parameter in the temporary area can be made using system exclusive message. For details, refer to para. 3. Exclusive Communications.

**3. Exclusive Communications**

The RSP - 550 can transfer setting parameters between external MIDI devices by using exclusive message.

By executing bulk dump, the system data or data stored in the internal memory can be bulk dumped in units of program number.

When set for data loading and ready for receiving, the RSP - 550 can receive exclusive message and store the data into the internal memory area.

With the RSP - 550, all exclusive communications use the following format (Roland Exclusive Format, Type IV), one - way communications.

## Request Data (One way) RQ1 11H

When the RSP - 550 receive this message whose address matches a parameter address and the size is 1 or more, it sends the corresponding data using the data set (DT1) message in units of program number.

The value of the device ID is smaller by one than that of the MIDI channel set on the RSP - 550.

The RSP - 550 does not send this message.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID : DEV = 0 - FH (1ch - 16ch)
38H	Model ID ( RSP - 550)
11H	Command ID (RQ1)
0AH	Address MSB
BBH	Address
CCH	Address LSB
ssH	Size MSB
ssH	Size
ssH	Size LSB
sum	Checksum
F7H	EOX (End Of Exclusive)

## Data set (One way) DT1 12H

The RSP - 550, stores the received data to internal memory when it has been set to data load mode and is ready for data receiving.

The RSP - 550 sends this message in the following cases.

Upon receiving the request data, sends the specified data.

When bulk dump is executed, sends the parameters in units of program number.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID : DEV = 0 - FH (1ch - 16ch)
38H	Model ID ( RSP - 550)
12H	Command ID (DT1)
0AH	Address MSB
BBH	Address
CCH	Address LSB
ddH	Data
:	:
sum	Checksum
F7H	EOX (End Of Exclusive)

#### 4. Address Mapping Of Parameters

The address is displayed under 7 - bit hexadecimal notation.

Address	MSB	LSB
7bits Hex:	0A	BB CC
Binary	0000_0aaa	0bbb_bbbb 0ccc_cccc
<b>&lt;Description&gt;</b>		
0A		
0000_0000 : System		
0000_0010 : Temporary		
0000_0011 : Internal Memory 1-128		
0000_0100 : Internal Memory 129-160		
BB		
0000_0000 : System 1 (System)		
0000_0001 : MIDI Mapping 1 (System)		
0000_0010 : MIDI Mapping 2 (System)		
0000_0000 : Temporary		
0bbb_bbbb : Program Number (Internal Memory)		
(1-128 : No.nnn -1 = data)		
(129-160 : No.nnn -129 = data)		
CC		
0000_0000 : System Flag (System)		
0000_0ccc : Program Shift (System)		
0ccc_cccc : Program Change Number (MIDI Mapping)		
0ccc_cccc : Parameter Address (Temporary/Internal Memory)		

The actual address of each parameter is the start address of the block plus the offset address.

#### System Area

Address	Description
00 00 00H: 0ef0_00ggB	System Flag
	e: Meter Select input:0 output:1
	f: Program Change off:0 on:1
	g: Bypass Define Circuit Bypass:00
	DSP Through:01
	Output Mute:11
00 00 01H: 0000_000dB	Program Shift Max MSB (0-198)
00 00 02H: 0ddd_ddddB	Program Shift Max LSB
00 00 03H: 0000_000dB	Program Shift Min MSB
00 00 04H: 0ddd_ddddB	Program Shift Min LSB
00 01 00H: 0000_000dB	MIDI Mapping Prg 1 MSB (0-198)
00 01 01H: 0ddd_ddddB	MIDI Mapping Prg 1 LSB
00 01 : :	:
00 01 : :	:
00 01 7EH: 0000_000dB	MIDI Mapping Prg 64 MSB
00 01 7FH: 0ddd_ddddB	MIDI Mapping Prg 64 LSB
00 02 00H: 0000_000dB	MIDI Mapping Prg 65 MSB
00 02 01H: 0ddd_ddddB	MIDI Mapping Prg 65 LSB
00 02 : :	:
00 02 : :	:
00 02 7EH: 0000_000dB	MIDI Mapping Prg 128 MSB
00 02 7FH: 0ddd_ddddB	MIDI Mapping Prg 128 LSB

#### Temporary Area

Address	Description
02 00 00H: 0ddd_ddddB	Temporary Name 1
02 00 01H: 0ddd_ddddB	Temporary Name 2
02 00 : :	: 32 - 127 (ASCII CODE)
02 00 0FH: 0ddd_ddddB	Temporary Name 16
02 00 10H: 0000_0000B	Temporary End Of Name
02 00 11H: 0ddd_ddddB	Temporary Algorithm *Table 1 - 39
02 00 12H: 0efg_hijkB	Temporary Bypass/Block on/off

02 00 13H: 01nn_opqrB	Temporary Block on/off
	e: Bypass off:0 on:1
	f: Block 13 off:0 on:1
	g: Block 12 off:0 on:1
	:
	:
	q: Block 2 off:0 on:1
	r: Block 1 off:0 on:1
02 00 14H: 0ddd_ddddB	Temporary Parameter 1
02 00 15H: 0ddd_ddddB	Temporary Parameter 2
02 00 : :	:
02 00 : :	:
02 00 44H: 0ddd_ddddB	Temporary Parameter 49
02 00 45H: 0ddd_ddddB	Temporary Parameter 50
02 00 46H: 0000_efghB	Temporary Ext Control on/off
	e: Ext Control 4 off:0 on:1
	f: Ext Control 3 off:0 on:1
	g: Ext Control 2 off:0 on:1
	h: Ext Control 1 off:0 on:1
02 00 47H: 0ddd_ddddB	Temporary Ext Control 1 Source (Table 40 - 41)
02 00 48H: 0ddd_ddddB	Temporary Ext Control 1 Target (Table 1A - 39A)
02 00 49H: 0ddd_ddddB	Temporary Ext Control 1 Min MSB
02 00 4AH: 0ddd_ddddB	Temporary Ext Control 1 Min LSB
02 00 4BH: 0ddd_ddddB	Temporary Ext Control 1 Max MSB
02 00 4CH: 0ddd_ddddB	Temporary Ext Control 1 Max LSB
02 00 4DH: 0ddd_ddddB	Temporary Ext Control 2 Source (Table 40 - 41)
02 00 4EH: 0ddd_ddddB	Temporary Ext Control 2 Target (Table 1A - 39A)
02 00 4FH: 0ddd_ddddB	Temporary Ext Control 2 Min MSB
02 00 50H: 0ddd_ddddB	Temporary Ext Control 2 Min LSB
02 00 51H: 0ddd_ddddB	Temporary Ext Control 2 Max MSB
02 00 52H: 0ddd_ddddB	Temporary Ext Control 2 Max LSB
02 00 53H: 0ddd_ddddB	Temporary Ext Control 3 Source (Table 40 - 41)
02 00 54H: 0ddd_ddddB	Temporary Ext Control 3 Target (Table 1A - 39A)
02 00 56H: 0ddd_ddddB	Temporary Ext Control 3 Min MSB
02 00 57H: 0ddd_ddddB	Temporary Ext Control 3 Min LSB
02 00 58H: 0ddd_ddddB	Temporary Ext Control 3 Max MSB
02 00 59H: 0ddd_ddddB	Temporary Ext Control 3 Max LSB
02 00 5AH: 0ddd_ddddB	Temporary Ext Control 4 Source (Table 40 - 41)
02 00 5BH: 0ddd_ddddB	Temporary Ext Control 4 Target (Table 1A - 39A)
02 00 5CH: 0ddd_ddddB	Temporary Ext Control 4 Min MSB
02 00 5DH: 0ddd_ddddB	Temporary Ext Control 4 Min LSB
02 00 5EH: 0ddd_ddddB	Temporary Ext Control 4 Max MSB
02 00 5FH: 0ddd_ddddB	Temporary Ext Control 4 Max LSB
02 00 60H: 0000_0000B	Temporary SOUND CHANGE REQUEST

\* Sound change request is a parameter resides only in the temporary area. Upon receiving this parameter and checksum after receiving data in the temporary area, the tone is changed.

#### Internal Memory Area

Address	Description
03 00 00H: 0ddd_ddddB	Number 1 Name 1
03 00 01H: 0ddd_ddddB	Number 1 Name 2
03 00 : :	: 32 - 127 (ASCII CODE)
03 00 0FH: 0ddd_ddddB	Number 1 Name 16
03 00 10H: 0000_0000B	Number 1 End Of Name
03 00 11H: 0ddd_ddddB	Number 1 Algorithm *Table 1 - 39
03 00 12H: 0efg_hijkB	Number 1 Bypass/Block on/off
03 00 13H: 01nn_opqrB	Number 1 Block on/off
03 00 14H: 0ddd_ddddB	Number 1 Parameter 1
03 00 15H: 0ddd_ddddB	Number 1 Parameter 2
03 00 : :	:
03 00 : :	:
03 00 44H: 0ddd_ddddB	Number 1 Parameter 49
03 00 45H: 0ddd_ddddB	Number 1 Parameter 50
03 00 46H: 0000_efghB	Number 1 Ext Control on/off
03 00 47H: 0ddd_ddddB	Number 1 Ext Control 1 Source
03 00 48H: 0ddd_ddddB	Number 1 Ext Control 1 Target
03 00 : :	:
03 00 : :	:
03 00 5EH: 0ddd_ddddB	Number 1 Ext Control 4 Max MSB
03 00 5FH: 0ddd_ddddB	Number 1 Ext Control 4 Max LSB
03 00 60H: 0000_0000B	Number 1 End Of Data
03 00 : :	:
03 00 : :	:
03 00 7F 00H: 0ddd_ddddB	Number 128 Name 1
03 00 7F : :	:
03 00 7F 0FH: 0ddd_ddddB	Number 128 Ext Control 4 Max LSB
03 00 7F 60H: 0000_0000B	Number 128 End Of Data
04 00 00H: 0ddd_ddddB	Number 129 Name 1

04 00 :	:	:	:
04 00 5FH: 0ddd_dddB	Number 129 Ext Control 4 Max LSB	:	:
04 00 60H: 0000_0000B	Number 129 End Of Data	:	:
04 1F 00H: 0ddd_dddB	Number 160 Name 1	:	:
04 1F :	:	:	:
04 1F 5FH: 0ddd_dddB	Number 160 Ext Control 4 Max LSB	:	:
04 1F 60H: 0000_0000B	Number 160 End Of Data	:	:

5	EQ:High Level	0 - 48
6	EQ:Mid Level	0 - 48
7	EQ:Low Level	0 - 48
8	EQ:Total Level	0 - 48
9	Total Level	0 - 100
10	Bypass	0 - 2 (Ignore)

\* When the settable range of the parameter is 8 bits (128) or more, a pair of MSB and LSB of the parameter must be sent.

Table 01 to 39

Binary value in the "Description" field indicates the format of the parameter value and decimal value in the right hand indicates the settable range of the parameter.

\* Send "0" where offset address is missing.

\* Settable range of EXT Control MIN/MAX varies with parameters to be assigned.

Refer to Table 1A to 39A.

\*Table 1  
Hall 1 (161)

Offset	Address	Description
00H	0ddd_dddB	Name 1
:	:	:
0FH	0ddd_dddB	Name 16
10H	0000_0000B	End Of Name
11H	0001_1000B	Algorithm 24
12H	0e00_0000B	Bypass/Block on/off
13H	0000_0p01B	Block on/off
:	:	e:Bypass off:0 on:1
:	:	p:EQ on/off off:0 on:1
:	:	q:Gate on/off off:0 on:1
17H	0ddd_dddB	Par 4 EQ:High Level 0 - 48
18H	0ddd_dddB	Par 5 EQ:Mid Frequency 0 - 14
19H	0ddd_dddB	Par 6 EQ:Mid Level 0 - 48
1AH	0ddd_dddB	Par 7 EQ:Low Level 0 - 48
1BH	0ddd_dddB	Par 8 EQ:Total Level 0 - 48
1CH	0ddd_dddB	Par 9 Gate:Threshold Level 1 - 100
1DH	0ddd_dddB	Par 10 Gate:Hold Time 0 - 127
1EH	0ddd_dddB	Par 11 Gate:Attack Time 1 - 78
1FH	0ddd_dddB	Par 12 Gate:Release Time 1 - 121
20H	0ddd_dddB	Par 13 Gate:Leftover 0 - 100
21H	0ddd_dddB	Par 14 Rev:Reverb Time(LSB)
22H	0ddd_dddB	Par 15 Rev:Reverb Time(MSB) 1 - 247
23H	0ddd_dddB	Par 16 Rev:Pre Delay(LSB)
24H	0ddd_dddB	Par 17 Rev:Pre Delay(MSB) 0 - 450
25H	0ddd_dddB	Par 18 Rev:HF Damp Frequency 0 - 7
26H	0ddd_dddB	Par 19 Rev:HF Damp Level 0 - 4
27H	0ddd_dddB	Par 20 Rev:Diffusion 1 - 12
28H	0ddd_dddB	Par 21 Rev:ER Pre Delay(LSB)
29H	0ddd_dddB	Par 22 Rev:ER Pre Delay(MSB) 0 - 450
2AH	0ddd_dddB	Par 23 Rev:ER Level 0 - 100
2BH	0ddd_dddB	Par 24 Rev:Reverb Level 0 - 100
2CH	0ddd_dddB	Par 25 Rev:Direct Level 0 - 100
45H	0ddd_dddB	Par 50 Total Level 0 - 100
46H	0000_efghB	Ext Control on/off
47H	0ddd_dddB	Ext Control 1 Source (Table 40)
48H	0ddd_dddB	Ext Control 1 Target (Table 1A)
49H	0ddd_dddB	Ext Control 1 Min MSB
:	:	:
5FH	0ddd_dddB	Ext Control 4 Max LSB
60H	0000_0000B	End Of Data

Table 1A Hall 1  
External Control Target

Data	Target	MIN	MAX
0	Rev:Reverb Time	1 - 247	
1	Rev:Reverb Level	0 - 100	
2	Gate:on/off	0 - 2 (Ignore)	
3	Gate:Hold Time	0 - 127	
4	EQ:on/off	0 - 2 (Ignore)	

\*Table 2  
Hall 2 (162)

Offset	Address	Description
00H	0ddd_dddB	Name 1
:	:	:
0FH	0ddd_dddB	Name 16
10H	0000_0000B	End Of Name
11H	0001_1001B	Algorithm 25
12H	0e00_0000B	Bypass/Block on/off
13H	0000_0p01B	Block on/off
:	:	e:Bypass off:0 on:1
:	:	p:EQ on/off off:0 on:1
17H	0ddd_dddB	Par 4 EQ:High Level 0 - 48
18H	0ddd_dddB	Par 5 EQ:Mid Frequency 0 - 14
19H	0ddd_dddB	Par 6 EQ:Mid Level 0 - 48
1AH	0ddd_dddB	Par 7 EQ:Low Level 0 - 48
1BH	0ddd_dddB	Par 8 EQ:Total Level 0 - 48
21H	0ddd_dddB	Par 14 Rev:Reverb Time(LSB)
22H	0ddd_dddB	Par 15 Rev:Reverb Time(MSB) 1 - 247
23H	0ddd_dddB	Par 16 Rev:Pre Delay(LSB)
24H	0ddd_dddB	Par 17 Rev:Pre Delay(MSB) 0 - 450
25H	0ddd_dddB	Par 18 Rev:HF Damp Frequency 0 - 7
26H	0ddd_dddB	Par 19 Rev:HF Damp Level 0 - 4
27H	0ddd_dddB	Par 20 Rev:Diffusion 1 - 12
2BH	0ddd_dddB	Par 24 Rev:Reverb Level 0 - 100
2CH	0ddd_dddB	Par 25 Rev:Direct Level 0 - 100
45H	0ddd_dddB	Par 50 Total Level 0 - 100
46H	0000_efghB	Ext Control on/off
47H	0ddd_dddB	Ext Control 1 Source (Table 40)
48H	0ddd_dddB	Ext Control 1 Target (Table 2A)
49H	0ddd_dddB	Ext Control 1 Min MSB
:	:	:
5FH	0ddd_dddB	Ext Control 4 Max LSB
60H	0000_0000B	End Of Data

Table 2A Hall 2  
External Control Target

Data	Target	MIN	MAX
0	Rev:Reverb Time	1 - 247	
1	Rev:Reverb Level	0 - 100	
2	EQ:on/off	0 - 2 (Ignore)	
3	EQ:High Level	0 - 48	
4	EQ:Mid Level	0 - 48	
5	EQ:Low Level	0 - 48	
6	EQ:Total Level	0 - 48	
7	Total Level	0 - 100	
8	Bypass	0 - 2 (Ignore)	

\*Table 3  
Hall 3 (163)

Offset	Address	Description
00H	0ddd_dddB	Name 1
:	:	:
0FH	0ddd_dddB	Name 16
10H	0000_0000B	End Of Name
11H	0001_1010B	Algorithm 26
12H	0e00_0000B	Bypass/Block on/off
13H	0000_0p01B	Block on/off
:	:	e:Bypass off:0 on:1
:	:	p:EQ on/off off:0 on:1
17H	0ddd_dddB	Par 4 EQ:High Level 0 - 48

18H	0ddd_ddddB	Par 5	EQ:Mid Frequency	0 - 14
19H	0ddd_ddddB	Par 6	EQ:Mid Level	0 - 48
1AH	0ddd_ddddB	Par 7	EQ:Low Level	0 - 48
1BH	0tkd_ddddB	Par 8	EQ:Total Level	0 - 48
21H	0ddd_ddddB	Par 14	Rev:Reverb Time (LSB)	
22H	0ddd_ddddB	Par 15	Rev:Reverb Time (MSB)	1 - 247
23H	0ddd_ddddB	Par 16	Rev:Pre Delay (LSB)	
24H	0ddd_ddddB	Par 17	Rev:Pre Delay (MSB)	0 - 450
25H	0ddd_ddddB	Par 18	Rev:HF Damp Frequency	0 - 7
26H	0ddd_ddddB	Par 19	Rev:HF Damp Level	0 - 4
27H	0ddd_ddddB	Par 20	Rev:Diffusion	1 - 12
28H	0ddd_ddddB	Par 21	Rev:ER Pre Delay (LSB)	
29H	0ddd_ddddB	Par 22	Rev:ER Pre Delay (MSB)	0 - 450
2AH	0ddd_ddddB	Par 23	Rev:ER Level	0 - 100
2BH	0ddd_ddddB	Par 24	Rev:Reverb Level	0 - 100
2CH	0ddd_ddddB	Par 25	Rev:Direct Level	0 - 100
45H	0ddd_ddddB	Par 50	Total Level	0 - 100
46H	0000_efghB	Ext Control	on/off	
47H	0ddd_ddddB	Ext Control 1	Source (Table 40)	
48H	0ddd_ddddB	Ext Control 1	Target (Table 3A)	
49H	0ddd_ddddB	Ext Control 1	Min MSB	
5FH	0ddd_ddddB	Ext Control 4	Max LSB	
60H	0000_0000B	End Of Data		

46H	0000_efghB	Ext Control	on/off	
47H	0ddd_ddddB	Ext Control 1	Source (Table 40)	
48H	0ddd_ddddB	Ext Control 1	Target (Table 4A)	
49H	0ddd_ddddB	Ext Control 1	Min MSB	
5FH	0ddd_ddddB	Ext Control 4	Max LSB	
60H	0000_0000B	End Of Data		

Table 4A Room 1  
External Control Target

Data	Target	MIN	MAX
0	Rev:Reverb Time	1	247
1	Rev:Reverb Level	0	100
2	Gate:on/off	0 - 2	(Ignore)
3	Gate:Hold Time	0	127
4	EQ:on/off	0 - 2	(Ignore)
5	EQ:High Level	0	48
6	EQ:Mid Level	0	48
7	EQ:Low Level	0	48
8	EQ:Total Level	0	48
9	Total Level	0	100
10	Bypass	0 - 2	(Ignore)

Table 3A Hall 3  
External Control Target

Data	Target	MIN	MAX
0	Rev:Reverb Time	1	247
1	Rev:Reverb Level	0	100
2	EQ:on/off	0 - 2	(Ignore)
3	EQ:High Level	0	48
4	EQ:Mid Level	0	48
5	EQ:Low Level	0	48
6	EQ:Total Level	0	48
7	Total Level	0	100
8	Bypass	0 - 2	(Ignore)

\*Table 5  
Room 2 (165)

Offset	Address	Description
	00H	0ddd_ddddB Name 1
		:
	0FH	0ddd_ddddB Name 16
	10H	0000_0000B End Of Name
	11H	0001_1011B Algorithm 27
	12H	0e00_0000B Bypass/Block on/off
	13H	0000_0p01B Block on/off
		e:Bypass off:0 on:1
		p:EQ on/off off:0 on:1
		q:Gate on/off off:0 on:1
		:
	17H	0ddd_ddddB Par 4 EQ:High Level 0 - 48
	18H	0ddd_ddddB Par 5 EQ:Mid Frequency 0 - 14
	19H	0ddd_ddddB Par 6 EQ:Mid Level 0 - 48
	1AH	0ddd_ddddB Par 7 EQ:Low Level 0 - 48
	1BH	0ddd_ddddB Par 8 EQ:Total Level 0 - 48
		:
	21H	0ddd_ddddB Par 14 Rev:Reverb Time (LSB)
	22H	0ddd_ddddB Par 15 Rev:Reverb Time (MSB) 1 - 247
	23H	0ddd_ddddB Par 16 Rev:Pre Delay (LSB)
	24H	0ddd_ddddB Par 17 Rev:Pre Delay (MSB) 0 - 450
	25H	0ddd_ddddB Par 18 Rev:HF Damp Frequency 0 - 7
	26H	0ddd_ddddB Par 19 Rev:HF Damp Level 0 - 4
	27H	0ddd_ddddB Par 20 Rev:Diffusion 1 - 12
		:
	2BH	0ddd_ddddB Par 24 Rev:Reverb Level 0 - 100
	2CH	0ddd_ddddB Par 25 Rev:Direct Level 0 - 100
		:
	45H	0ddd_ddddB Par 50 Total Level 0 - 100
	46H	0000_efghB Ext Control on/off
	47H	0ddd_ddddB Ext Control 1 Source (Table 40)
	48H	0ddd_ddddB Ext Control 1 Target (Table 5A)
	49H	0ddd_ddddB Ext Control 1 Min MSB
		:
	5FH	0ddd_ddddB Ext Control 4 Max LSB
	60H	0000_0000B End Of Data

\*Table 4  
Room 1 (164)

Offset	Address	Description
	00H	0ddd_ddddB Name 1
		:
	0FH	0ddd_ddddB Name 16
	10H	0000_0000B End Of Name
	11H	0001_1011B Algorithm 27
	12H	0e00_0000B Bypass/Block on/off
	13H	0000_0p01B Block on/off
		e:Bypass off:0 on:1
		p:EQ on/off off:0 on:1
		q:Gate on/off off:0 on:1
		:
	17H	0ddd_ddddB Par 4 EQ:High Level 0 - 48
	18H	0ddd_ddddB Par 5 EQ:Mid Frequency 0 - 14
	19H	0ddd_ddddB Par 6 EQ:Mid Level 0 - 48
	1AH	0ddd_ddddB Par 7 EQ:Low Level 0 - 48
	1BH	0ddd_ddddB Par 8 EQ:Total Level 0 - 48
	1CB	0ddd_ddddB Par 9 Gate:Threshold Level 1 - 100
	1DH	0ddd_ddddB Par 10 Gate:Hold Time 0 - 127
	1EH	0ddd_ddddB Par 11 Gate:Attack Time 1 - 78
	1FH	0ddd_ddddB Par 12 Gate:Release Time 1 - 121
	20H	0ddd_ddddB Par 13 Gate:Leftover 0 - 100
	21H	0ddd_ddddB Par 14 Rev:Reverb Time (LSB)
	22H	0ddd_ddddB Par 15 Rev:Reverb Time (MSB) 1 - 247
	23H	0ddd_ddddB Par 16 Rev:Pre Delay (LSB)
	24H	0ddd_ddddB Par 17 Rev:Pre Delay (MSB) 0 - 450
	25H	0ddd_ddddB Par 18 Rev:HF Damp Frequency 0 - 7
	26H	0ddd_ddddB Par 19 Rev:HF Damp Level 0 - 4
	27H	0ddd_ddddB Par 20 Rev:Diffusion 1 - 12
	28H	0ddd_ddddB Par 21 Rev:ER Pre Delay (LSB)
	29H	0ddd_ddddB Par 22 Rev:ER Pre Delay (MSB) 0 - 450
	2AH	0ddd_ddddB Par 23 Rev:ER Level 0 - 100
	2BH	0ddd_ddddB Par 24 Rev:Reverb Level 0 - 100
	2CH	0ddd_ddddB Par 25 Rev:Direct Level 0 - 100
		:
	45H	0ddd_ddddB Par 50 Total Level 0 - 100

Table 5A Room 2  
External Control Target

Data	Target	MIN	MAX
0	Rev:Reverb Time	1	247
1	Rev:Reverb Level	0	100
2	EQ:on/off	0 - 2	(Ignore)
3	EQ:High Level	0	48
4	EQ:Mid Level	0	48
5	EQ:Low Level	0	48
6	EQ:Total Level	0	48
7	Total Level	0	100
8	Bypass	0 - 2	(Ignore)

\*Table 6  
Plate 1 (166)

Offset	Address	Description
00H	0ddd_ddddB	Name 1
0FH	0ddd_ddddB	Name 16
10H	0000_0000B	End Of Name
11H	0001_1101B	Algorithm 29
12H	0e00_0000B	Bypass/Block on/off
13H	0000_0p01B	Block on/off
		e:Bypass off:0 on:1
		p:EQ on/off off:0 on:1
		q:Gate on/off off:0 on:1
17H	0ddd_ddddB	Par 4 EQ:High Level 0 - 48
18H	0ddd_ddddB	Par 5 EQ:Mid Frequency 0 - 14
19H	0ddd_ddddB	Par 6 EQ:Mid Level 0 - 48
1AH	0ddd_ddddB	Par 7 EQ:Low Level 0 - 48
1BH	0ddd_ddddB	Par 8 EQ:Total Level 0 - 48
1CH	0ddd_ddddB	Par 9 Gate:Threshold Level 1 - 100
1DH	0ddd_ddddB	Par 10 Gate:Hold Time 0 - 127
1EH	0ddd_ddddB	Par 11 Gate:Attack Time 1 - 78
1FH	0ddd_ddddB	Par 12 Gate:Release Time 1 - 121
20H	0ddd_ddddB	Par 13 Gate:Leftover 0 - 100
21H	0ddd_ddddB	Par 14 Rev:Reverb Time (LSB)
22H	0ddd_ddddB	Par 15 Rev:Reverb Time (MSB) 1 - 247
23H	0ddd_ddddB	Par 16 Rev:Pre Delay (LSB)
24H	0ddd_ddddB	Par 17 Rev:Pre Delay (MSB) 0 - 450
25H	0ddd_ddddB	Par 18 Rev:HF Damp Frequency 0 - 7
26H	0ddd_ddddB	Par 19 Rev:HF Damp Level 0 - 4
27H	0ddd_ddddB	Par 20 Rev:Diffusion 1 - 12
28H	0ddd_ddddB	Par 24 Rev:Reverb Level 0 - 100
2CH	0ddd_ddddB	Par 25 Rev:Direct Level 0 - 100
45H	0ddd_ddddB	Par 50 Total Level 0 - 100
46H	0000_efghB	Ext Control on/off
47H	0ddd_ddddB	Ext Control 1 Source (Table 40)
48H	0ddd_ddddB	Ext Control 1 Target (Table 7A)
49H	0ddd_ddddB	Ext Control 1 Min MSB
5FH	0ddd_ddddB	Ext Control 4 Max LSB
60H	0000_0000B	End Of Data

1AH	0ddd_ddddB	Par 7 EQ:Low Level 0 - 48
1BH	0ddd_ddddB	Par 8 EQ:Total Level 0 - 48
21H	0ddd_ddddB	Par 14 Rev:Reverb Time (LSB)
22H	0ddd_ddddB	Par 15 Rev:Reverb Time (MSB) 1 - 247
23H	0ddd_ddddB	Par 16 Rev:Pre Delay (LSB)
24H	0ddd_ddddB	Par 17 Rev:Pre Delay (MSB) 0 - 450
25H	0ddd_ddddB	Par 18 Rev:HF Damp Frequency 0 - 7
26H	0ddd_ddddB	Par 19 Rev:HF Damp Level 0 - 4
27H	0ddd_ddddB	Par 20 Rev:Diffusion 1 - 12
28H	0ddd_ddddB	Par 24 Rev:Reverb Level 0 - 100
2CH	0ddd_ddddB	Par 25 Rev:Direct Level 0 - 100
45H	0ddd_ddddB	Par 50 Total Level 0 - 100
46H	0000_efghB	Ext Control on/off
47H	0ddd_ddddB	Ext Control 1 Source (Table 40)
48H	0ddd_ddddB	Ext Control 1 Target (Table 7A)
49H	0ddd_ddddB	Ext Control 1 Min MSB
5FH	0ddd_ddddB	Ext Control 4 Max LSB
60H	0000_0000B	End Of Data

Table 7A Plate 2  
External Control Target

Data	Target	MIN	MAX
0	Rev:Reverb Time	1	247
1	Rev:Reverb Level	0	100
2	EQ:on/off	0 - 2	(Ignore)
3	EQ:High Level	0	48
4	EQ:Mid Level	0	48
5	EQ:Low Level	0	48
6	EQ:Total Level	0	48
7	Total Level	0	100
8	Bypass	0 - 2	(Ignore)

\*Table 8  
Gate Reverb (168)

Offset	Address	Description
00H	0ddd_ddddB	Name 1
0FH	0ddd_ddddB	Name 16
10H	0000_0000B	End Of Name
11H	0001_0000B	Algorithm 16
12H	0e00_0000B	Bypass/Block on/off
13H	0000_0p01B	Block on/off
		e:Bypass off:0 on:1
		q:EQ on/off off:0 on:1
16H	0ddd_ddddB	Par 3 EQ:High Level 0 - 48
17H	0ddd_ddddB	Par 4 EQ:Mid Frequency 0 - 14
18H	0ddd_ddddB	Par 5 EQ:Mid Level 0 - 48
19H	0ddd_ddddB	Par 6 EQ:Low Level 0 - 48
1AH	0ddd_ddddB	Par 7 EQ:Total Level 0 - 48
1BH	0ddd_ddddB	Par 8 Rev:Gate Mode 0 - 2
1CH	0ddd_ddddB	Par 9 Rev:Gate Time (LSB)
1DH	0ddd_ddddB	Par 10 Rev:Gate Time (MSB) 10 - 600
1EH	0ddd_ddddB	Par 11 Rev:Pre Delay (LSB)
1FH	0ddd_ddddB	Par 12 Rev:Pre Delay (MSB) 0 - 450
20H	0ddd_ddddB	Par 13 Rev:Density 1 - 20
21H	0ddd_ddddB	Par 14 Rev:Thickness 0 - 100
22H	0ddd_ddddB	Par 15 Rev:Accent Delay (LSB)
23H	0ddd_ddddB	Par 16 Rev:Accent Delay (MSB) 0 - 200
24H	0ddd_ddddB	Par 17 Rev:Accent Level 0 - 100
25H	0ddd_ddddB	Par 18 Rev:Reverb Level 0 - 100
26H	0ddd_ddddB	Par 19 Rev:Direct Level 0 - 100
45H	0ddd_ddddB	Par 50 Total Level 0 - 100
46H	0000_efghB	Ext Control on/off
47H	0ddd_ddddB	Ext Control 1 Source (Table 40)
48H	0ddd_ddddB	Ext Control 1 Target (Table 8A)
49H	0ddd_ddddB	Ext Control 1 Min MSB
5FH	0ddd_ddddB	Ext Control 4 Max LSB
60H	0000_0000B	End Of Data

Table 6A Plate 1  
External Control Target

Data	Target	MIN	MAX
0	Rev:Reverb Time	1	247
1	Rev:Reverb Level	0	100
2	Gate:on/off	0 - 2	(Ignore)
3	Gate:Hold Time	0	127
4	EQ:on/off	0 - 2	(Ignore)
5	EQ:High Level	0	48
6	EQ:Mid Level	0	48
7	EQ:Low Level	0	48
8	EQ:Total Level	0	48
9	Total Level	0	100
10	Bypass	0 - 2	(Ignore)

\*Table 7  
Plate 2 (167)

Offset	Address	Description
00H	0ddd_ddddB	Name 1
0FH	0ddd_ddddB	Name 16
10H	0000_0000B	End Of Name
11H	0001_1110B	Algorithm 30
12H	0e00_0000B	Bypass/Block on/off
13H	0000_0p01B	Block on/off
		e:Bypass off:0 on:1
		p:EQ on/off off:0 on:1
17H	0ddd_ddddB	Par 4 EQ:High Level 0 - 48
18H	0ddd_ddddB	Par 5 EQ:Mid Frequency 0 - 14
19H	0ddd_ddddB	Par 6 EQ:Mid Level 0 - 48

Table 8A Gate Reverb  
External Control Target

Data	Target	MIN	MAX
0	Rev:Gate Time	10	600
1	Rev:Density	1	20
2	Rev:Thickness	0	100
3	Rev:Accent Level	0	100
4	Rev:Reverb Level	0	100
5	EQ:on/off	0 - 2	(Ignore)
6	EQ:High Level	0	48
7	EQ:Mid Level	0	48
8	EQ:Low Level	0	48
9	EQ:Total Level	0	48
10	Total Level	0	100
11	Bypass	0 - 2	(Ignore)

\*Table 9  
Reverse Gate (169)

Offset	Address	Description
00H	0ddd_ddddB	Name 1
:	:	:
0FH	0ddd_ddddB	Name 16
10H	0000_0000B	End Of Name
11H	0001_0001B	Algorithm 17
12H	0e00_0000B	Bypass/Block on/off
13H	0000_00q1B	Block on/off
		e:Bypass off:0 on:1
		q:EQ on/off off:0 on:1
16H	0ddd_ddddB	Par 3 EQ:High Level 0 - 48
17H	0ddd_ddddB	Par 4 EQ:Mid Frequency 0 - 14
18H	0ddd_ddddB	Par 5 EQ:Mid Level 0 - 48
19H	0ddd_ddddB	Par 6 EQ:Low Level 0 - 48
1AH	0ddd_ddddB	Par 7 EQ:Total Level 0 - 48
1BH	0ddd_ddddB	Par 8 Rev:Gate Mode 0 - 1
1CH	0ddd_ddddB	Par 9 Rev:Gate Time(LSB)
1DH	0ddd_ddddB	Par 10 Rev:Gate Time(MSB) 10 - 600
1EH	0ddd_ddddB	Par 11 Rev:Pre Delay(LSB)
1FH	0ddd_ddddB	Par 12 Rev:Pre Delay(MSB) 0 - 450
20H	0ddd_ddddB	Par 13 Rev:Density 1 - 20
21H	0ddd_ddddB	Par 14 Rev:Thickness 0 - 100
22H	0ddd_ddddB	Par 15 Rev:Accent Delay(LSB)
23H	0ddd_ddddB	Par 16 Rev:Accent Delay(MSB) 0 - 200
24H	0ddd_ddddB	Par 17 Rev:Accent Level 0 - 100
25H	0ddd_ddddB	Par 18 Rev:Reverb Level 0 - 100
26H	0ddd_ddddB	Par 19 Rev:Direct Level 0 - 100
45H	0ddd_ddddB	Par 50 Total Level 0 - 100
46H	0000_e1ghB	Ext Control on/off
47H	0ddd_ddddB	Ext Control 1 Source (Table 40)
48H	0ddd_ddddB	Ext Control 1 Target (Table 9A)
49H	0ddd_ddddB	Ext Control 1 Min MSB
:	:	:
5FH	0ddd_ddddB	Ext Control 4 Max LSB
60H	0000_0000B	End Of Data

Table 9A Reverse Gate  
External Control Target

Data	Target	MIN	MAX
0	Rev:Gate Time	10	600
1	Rev:Density	1	20
2	Rev:Thickness	0	100
3	Rev:Accent Level	0	100
4	Rev:Reverb Level	0	100
5	EQ:on/off	0 - 2	(Ignore)
6	EQ:High Level	0	48
7	EQ:Mid Level	0	48
8	EQ:Low Level	0	48
9	EQ:Total Level	0	48
10	Total Level	0	100
11	Bypass	0 - 2	(Ignore)

\*Table 10  
Ambience (170)

Offset	Address	Description
00H	0ddd_ddddB	Name 1
:	:	:
0FH	0ddd_ddddB	Name 16
10H	0000_0000B	End Of Name
11H	0000_1111B	Algorithm 15
12H	0e00_0000B	Bypass/Block on/off
13H	0000_0pqrB	Block on/off
		e:Bypass off:0 on:1
		p:Ambience on/off off:0 on:1
		q:Edge Expander on/off off:0 on:1
		r:EQ on/off off:0 on:1
17H	0ddd_ddddB	Par 4 EQ:High Level 0 - 48
18H	0ddd_ddddB	Par 5 EQ:Mid Frequency 0 - 14
19H	0ddd_ddddB	Par 6 EQ:Mid Level 0 - 48
1AH	0ddd_ddddB	Par 7 EQ:Low Level 0 - 48
1BH	0ddd_ddddB	Par 8 EQ:Total Level 0 - 48
1CH	0ddd_ddddB	Par 9 Edge:Sensitivity 0 - 100
1DH	0ddd_ddddB	Par 10 Edge:Release Time 0 - 100
1EH	0ddd_ddddB	Par 11 Edge:Mix Level 0 - 100
1FH	0ddd_ddddB	Par 12 Amb:Pre Delay(LSB)
20H	0ddd_ddddB	Par 13 Amb:Pre Delay(MSB) 0 - 140
21H	0ddd_ddddB	Par 14 Amb:ER Level 0 - 100
22H	0ddd_ddddB	Par 15 Amb:MIX Level 0 - 100
23H	0ddd_ddddB	Par 16 Amb:Direct Level 0 - 100
45H	0ddd_ddddB	Par 50 Total Level 0 - 100
46H	0000_e1ghB	Ext Control on/off
47H	0ddd_ddddB	Ext Control 1 Source (Table 40)
48H	0ddd_ddddB	Ext Control 1 Target (Table 10A)
49H	0ddd_ddddB	Ext Control 1 Min MSB
:	:	:
5FH	0ddd_ddddB	Ext Control 4 Max LSB
60H	0000_0000B	End Of Data

Table 10A Ambience  
External Control Target

Data	Target	MIN	MAX
0	Total Level	0	100
1	Bypass	0 - 2	(Ignore)

\*Table 11  
Mod.Reverb (171)

Offset	Address	Description
00H	0ddd_ddddB	Name 1
:	:	:
0FH	0ddd_ddddB	Name 16
10H	0000_0000B	End Of Name
11H	0010_0100B	Algorithm 36
12H	0e00_0000B	Bypass/Block on/off
13H	0000_0pqr1B	Block on/off
		e:Bypass off:0 on:1
		p:EQ on/off off:0 on:1
		q:Modulation on/off off:0 on:1
1EH	0ddd_ddddB	Par 11 EQ:High Level 0 - 48
1FH	0ddd_ddddB	Par 12 EQ:Mid Frequency 0 - 14
20H	0ddd_ddddB	Par 13 EQ:Mid Level 0 - 48
21H	0ddd_ddddB	Par 14 EQ:Low Level 0 - 48
22H	0ddd_ddddB	Par 15 EQ:Total Level 0 - 48
23H	0ddd_ddddB	Par 16 Mod:LFO Waveform 0 - 1
24H	0ddd_ddddB	Par 17 Mod:Rate 1 - 100
25H	0ddd_ddddB	Par 18 Mod:Depth 0 - 100
37H	0ddd_ddddB	Par 36 Rev:Reverb Time(LSB)
38H	0ddd_ddddB	Par 37 Rev:Reverb Time(MSB) 1 - 247
39H	0ddd_ddddB	Par 38 Rev:Pre Delay(LSB)
3AH	0ddd_ddddB	Par 39 Rev:Pre Delay(MSB) 0 - 140
3BH	0ddd_ddddB	Par 40 Rev:Filter LPF 0 - 14
3CH	0ddd_ddddB	Par 41 Rev:Filter HPF 0 - 15
3DH	0ddd_ddddB	Par 42 Rev:HF Damp Frequency 0 - 7
3EH	0ddd_ddddB	Par 43 Rev:HF Damp Level 0 - 4

40H	0ddd_ddddB	Par 45	Rev:Reverb Level	0 - 100
41H	0ddd_ddddB	Par 46	Rev:Cross Mix	0 - 100
42H	0ddd_ddddB	Par 47	Rev:Direct Level	0 - 100
45H	0ddd_ddddB	Par 50	Total Level	0 - 100
46H	0000_efghB	Ext Control	on/off	
47H	0ddd_ddddB	Ext Control 1	Source (Table 40)	
48H	0ddd_ddddB	Ext Control 1	Target (Table 11A)	
49H	0ddd_ddddB	Ext Control 1	Min MSB	
5FH	0ddd_ddddB	Ext Control 4	Max LSB	
60H	0000_0000B		End Of Data	

Table 11A Mod.Reverb External Control Target

Data	Target	MIN	MAX
0	Rev:Reverb Time	1 - 247	
1	Rev:Reverb Level	0 - 100	
2	Rev:Cross Mix	0 - 100	
3	Mod:on/off	0 - 2 (ignore)	
4	Mod:Rate	1 - 100	
5	Mod:Depth	0 - 100	
6	EQ:on/off	0 - 2 (ignore)	
7	EQ:High Level	0 - 48	
8	EQ:Mid Level	0 - 48	
9	EQ:Low Level	0 - 48	
10	EQ:Total Level	0 - 48	
11	Total Level	0 - 100	
12	Bypass	0 - 2 (ignore)	

\*Table 12 8 Tap Delay (172)

Offset	Address	Description
	00H	0ddd_ddddB Name 1
	0FH	0ddd_ddddB Name 16
	10H	0000_0000B End Of Name
	11H	0001_1111B Algorithm 31
	12H	0e00_00kB Bypass/Block on/off
	13H	01an_opqrB Block on/off
		e:Bypass off:0 on:1
		j:EQ on/off off:0 on:1
		k:Tap8 on/off off:0 on:1
		l:Tap7 on/off off:0 on:1
		m:Tap6 on/off off:0 on:1
		n:Tap5 on/off off:0 on:1
		o:Tap4 on/off off:0 on:1
		p:Tap3 on/off off:0 on:1
		q:Tap2 on/off off:0 on:1
		r:Tap1 on/off off:0 on:1
14H	0ddd_ddddB	Par 1 Tp1:Delay Time(LSB)
15H	0ddd_ddddB	Par 2 Tp1:Delay Time(MSB) 1 - 2700
16H	0ddd_ddddB	Par 3 Tp1:Feedback 0 - 120
17H	0ddd_ddddB	Par 4 Tp1:Pan 0 - 100
18H	0ddd_ddddB	Par 5 Tp1:Mix Level 0 - 100
19H	0ddd_ddddB	Par 6 Tp2:Delay Time(LSB)
1AH	0ddd_ddddB	Par 7 Tp2:Delay Time(MSB) 1 - 2700
1BH	0ddd_ddddB	Par 8 Tp2:Feedback 0 - 120
1CH	0ddd_ddddB	Par 9 Tp2:Pan 0 - 100
1DH	0ddd_ddddB	Par 10 Tp2:Mix Level 0 - 100
1EH	0ddd_ddddB	Par 11 Tp3:Delay Time(LSB)
1FH	0ddd_ddddB	Par 12 Tp3:Delay Time(MSB) 1 - 2700
20H	0ddd_ddddB	Par 13 Tp3:Feedback 0 - 120
21H	0ddd_ddddB	Par 14 Tp3:Pan 0 - 100
22H	0ddd_ddddB	Par 15 Tp3:Mix Level 0 - 100
23H	0ddd_ddddB	Par 16 Tp4:Delay Time(LSB)
24H	0ddd_ddddB	Par 17 Tp4:Delay Time(MSB) 1 - 2700
25H	0ddd_ddddB	Par 18 Tp4:Feedback 0 - 120
26H	0ddd_ddddB	Par 19 Tp4:Pan 0 - 100
27H	0ddd_ddddB	Par 20 Tp4:Mix Level 0 - 100
28H	0ddd_ddddB	Par 21 Tp5:Delay Time(LSB)
29H	0ddd_ddddB	Par 22 Tp5:Delay Time(MSB) 1 - 2700
2AH	0ddd_ddddB	Par 23 Tp5:Feedback 0 - 120
2BH	0ddd_ddddB	Par 24 Tp5:Pan 0 - 100
2CH	0ddd_ddddB	Par 25 Tp5:Mix Level 0 - 100
2DH	0ddd_ddddB	Par 26 Tp6:Delay Time(LSB)

2EH	0ddd_ddddB	Par 27	Tp6:Delay Time(MSB)	1 - 2700
2FH	0ddd_ddddB	Par 28	Tp6:Feedback	0 - 120
30H	0ddd_ddddB	Par 29	Tp6:Pan	0 - 100
31H	0ddd_ddddB	Par 30	Tp6:Mix Level	0 - 100
32H	0ddd_ddddB	Par 31	Tp7:Delay Time(LSB)	
33H	0ddd_ddddB	Par 32	Tp7:Delay Time(MSB)	1 - 2700
34H	0ddd_ddddB	Par 33	Tp7:Feedback	0 - 120
35H	0ddd_ddddB	Par 34	Tp7:Pan	0 - 100
36H	0ddd_ddddB	Par 35	Tp7:Mix Level	0 - 100
37H	0ddd_ddddB	Par 36	Tp8:Delay Time(LSB)	
38H	0ddd_ddddB	Par 37	Tp8:Delay Time(MSB)	1 - 2700
39H	0ddd_ddddB	Par 38	Tp8:Feedback	0 - 120
3AH	0ddd_ddddB	Par 39	Tp8:Pan	0 - 100
3BH	0ddd_ddddB	Par 40	Tp8:Mix Level	0 - 100
3CH	0ddd_ddddB	Par 41	EQ:High Level	0 - 48
3DH	0ddd_ddddB	Par 42	EQ:Mid Frequency	0 - 14
3EH	0ddd_ddddB	Par 43	EQ:Mid Level	0 - 48
3FH	0ddd_ddddB	Par 44	EQ:Low Level	0 - 48
40H	0ddd_ddddB	Par 45	EQ:Total Level	0 - 48
44H	0ddd_ddddB	Par 49	Direct Level	0 - 100
45H	0ddd_ddddB	Par 50	Total Level	0 - 100
46H	0000_efghB	Ext Control	on/off	
47H	0ddd_ddddB	Ext Control 1	Source (Table 40)	
48H	0ddd_ddddB	Ext Control 1	Target (Table 12A)	
49H	0ddd_ddddB	Ext Control 1	Min MSB	
5FH	0ddd_ddddB	Ext Control 4	Max LSB	
60H	0000_0000B		End Of Data	

Table 12A 8 Tap Delay External Control Target

Data	Target	MIN	MAX
0	Tap1:on/off	0 - 2 (ignore)	
1	Tap1:Feedback	0 - 120	
2	Tap1:Mix Level	0 - 100	
3	Tap2:on/off	0 - 2 (ignore)	
4	Tap2:Feedback	0 - 120	
5	Tap2:Mix Level	0 - 100	
6	Tap3:on/off	0 - 2 (ignore)	
7	Tap3:Feedback	0 - 120	
8	Tap3:Mix Level	0 - 100	
9	Tap4:on/off	0 - 2 (ignore)	
10	Tap4:Feedback	0 - 120	
11	Tap4:Mix Level	0 - 100	
12	Tap5:on/off	0 - 2 (ignore)	
13	Tap5:Feedback	0 - 120	
14	Tap5:Mix Level	0 - 100	
15	Tap6:on/off	0 - 2 (ignore)	
16	Tap6:Feedback	0 - 120	
17	Tap6:Mix Level	0 - 100	
18	Tap7:on/off	0 - 2 (ignore)	
19	Tap7:Feedback	0 - 120	
20	Tap7:Mix Level	0 - 100	
21	Tap8:on/off	0 - 2 (ignore)	
22	Tap8:Feedback	0 - 120	
23	Tap8:Mix Level	0 - 100	
24	Total Level	0 - 100	
25	Bypass	0 - 2 (ignore)	

\*Table 13 4 Tap Delay (173)

Offset	Address	Description
	00H	0ddd_ddddB Name 1
	0FH	0ddd_ddddB Name 16
	10H	0000_0000B End Of Name
	11H	0010_0000B Algorithm 32
	12H	0e00_0000B Bypass/Block on/off
	13H	00an_opqrB Block on/off
		e:Bypass off:0 on:1
		m:EQ on/off off:0 on:1
		n:Feedback on/off off:0 on:1
		o:Tap4 on/off off:0 on:1
		p:Tap3 on/off off:0 on:1
		q:Tap2 on/off off:0 on:1
		r:Tap1 on/off off:0 on:1

14H	0ddd_ddddB	Par 1	Tap1:Delay Time (LSB)	
15H	0ddd_ddddB	Par 2	Tap1:Delay Time (MSB)	1 - 2700
16H	0ddd_ddddB	Par 3	Tap1:Mix Level	0 - 100
17H	0ddd_ddddB	Par 4	Tap1:LFO Waveform	0 - 1
18H	0ddd_ddddB	Par 5	Tap1:Pan Rate	1 - 100
19H	0ddd_ddddB	Par 6	Tap1:Pan Depth	0 - 100
1AH	0ddd_ddddB	Par 7	Tap2:Delay Time (LSB)	
1BH	0ddd_ddddB	Par 8	Tap2:Delay Time (MSB)	1 - 2700
1CH	0ddd_ddddB	Par 9	Tap2:Mix Level	0 - 100
1DH	0ddd_ddddB	Par 10	Tap2:LFO Waveform	0 - 1
1EH	0ddd_ddddB	Par 11	Tap2:Pan Rate	1 - 100
1FH	0ddd_ddddB	Par 12	Tap2:Pan Depth	0 - 100
20H	0ddd_ddddB	Par 13	Tap3:Delay Time (LSB)	
21H	0ddd_ddddB	Par 14	Tap3:Delay Time (MSB)	1 - 2700
22H	0ddd_ddddB	Par 15	Tap3:Pan	0 - 100
23H	0ddd_ddddB	Par 16	Tap3:Mix Level	0 - 100
24H	0ddd_ddddB	Par 17	Tap4:Delay Time (LSB)	
25H	0ddd_ddddB	Par 18	Tap4:Delay Time (MSB)	1 - 2700
26H	0ddd_ddddB	Par 19	Tap4:Pan	0 - 100
27H	0ddd_ddddB	Par 20	Tap4:Mix Level	0 - 100
28H	0ddd_ddddB	Par 21	FB:Position (LSB)	
29H	0ddd_ddddB	Par 22	FB:Position (MSB)	1 - 2700
2AH	0ddd_ddddB	Par 23	FB:Feedback	0 - 120
2BH	0ddd_ddddB	Par 24	FB:HF Damp Frequency	0 - 7
2CH	0ddd_ddddB	Par 25	FB:HF Damp Level	0 - 4
2DH	0ddd_ddddB	Par 26	FB:FB Filter	0 - 12
3CH	0ddd_ddddB	Par 41	EQ:High Level	0 - 48
3DH	0ddd_ddddB	Par 42	EQ:Mid Frequency	0 - 14
3EH	0ddd_ddddB	Par 43	EQ:Mid Level	0 - 48
3FH	0ddd_ddddB	Par 44	EQ:Low Level	0 - 48
40H	0ddd_ddddB	Par 45	EQ:Total Level	0 - 48
44H	0ddd_ddddB	Par 49	Direct Level	0 - 100
45H	0ddd_ddddB	Par 50	Total Level	0 - 100
46H	0000_efghB	Ext Control	on/off	
47H	0ddd_ddddB	Ext Control 1	Source (Table 40)	
48H	0ddd_ddddB	Ext Control 1	Target (Table 13A)	
49H	0ddd_ddddB	Ext Control 1	Min MSB	
:	:	:	:	:
5FH	0ddd_ddddB	Ext Control 4	Max LSB	
60H	0000_0000B		End Of Data	

Table 13A 4 Tap Delay External Control Target

Data	Target	MIN	MAX
0	Tap1:on/off	0 - 2	(Ignore)
1	Tap1:Mix Level	0 - 100	
2	Tap2:on/off	0 - 2	(Ignore)
3	Tap2:Mix Level	0 - 100	
4	Tap3:on/off	0 - 2	(Ignore)
5	Tap3:Mix Level	0 - 100	
6	Tap4:on/off	0 - 2	(Ignore)
7	Tap4:Mix Level	0 - 100	
8	FB:on/off	0 - 2	(Ignore)
9	FB:Level	0 - 120	
10	EQ:on/off	0 - 2	(Ignore)
11	EQ:High Level	0 - 48	
12	EQ:Mid Level	0 - 48	
13	EQ:Low Level	0 - 48	
14	EQ:Total Level	0 - 48	
15	Total Level	0 - 100	
16	Bypass	0 - 2	(Ignore)

\*Table 14 Stereo Delay (174)

Offset	Address	Description
00H	0ddd_ddddB	Name 1
:	:	:
0FH	0ddd_ddddB	Name 16
10H	0000_0000B	End Of Name
11H	0000_0101B	Algorithm 5
12H	0e00_0000B	Bypass/Block on/off
13H	0000_0pql1B	Block on/off
:	:	e:Bypass off:0 on:1
:	:	p:EQ on/off off:0 on:1
:	:	q:Modulation on/off off:0 on:1

18H	0ddd_ddddB	Par 5	Delay Time (LSB)	
19H	0ddd_ddddB	Par 6	Delay Time (MSB)	1 - 1300
1AH	0ddd_ddddB	Par 7	Diy:Feedback	0 - 120
1BH	0ddd_ddddB	Par 8	Diy:Cross Feedback	0 - 120
1CH	0ddd_ddddB	Par 9	Diy:HF Damp Frequency	0 - 7
1DH	0ddd_ddddB	Par 10	Diy:HF Damp Level	0 - 4
1EH	0ddd_ddddB	Par 11	Diy:FB Filter	0 - 12
1FH	0ddd_ddddB	Par 12	Diy:Mix Level	0 - 100
20H	0ddd_ddddB	Par 13	Diy:Direct Level	0 - 100
21H	0ddd_ddddB	Par 14	Mod:LFO Waveform	0 - 1
22H	0ddd_ddddB	Par 15	Mod:Rate	1 - 100
23H	0ddd_ddddB	Par 16	Mod:Depth	0 - 100
24H	0ddd_ddddB	Par 17	Mod:LR Polarity	0 - 1
25H	0ddd_ddddB	Par 18	EQ:High Level	0 - 48
26H	0ddd_ddddB	Par 19	EQ:Mid Frequency	0 - 14
27H	0ddd_ddddB	Par 20	EQ:Mid Level	0 - 48
28H	0ddd_ddddB	Par 21	EQ:Low Level	0 - 48
29H	0ddd_ddddB	Par 22	EQ:Total Level	0 - 48
:	:	:	:	:
45H	0ddd_ddddB	Par 50	Total Level	0 - 100
46H	0000_efghB	Ext Control	on/off	
47H	0ddd_ddddB	Ext Control 1	Source (Table 40)	
48H	0ddd_ddddB	Ext Control 1	Target (Table 14A)	
49H	0ddd_ddddB	Ext Control 1	Min MSB	
:	:	:	:	:
5FH	0ddd_ddddB	Ext Control 4	Max LSB	
60H	0000_0000B		End Of Data	

Table 14A Stereo Delay External Control Target

Data	Target	MIN	MAX
0	Diy:Feedback	0 - 120	
1	Diy:Mix Level	0 - 100	
2	Mod:on/off	0 - 2	(Ignore)
3	Mod:Rate	1 - 100	
4	Mod:Depth	0 - 100	
5	EQ:on/off	0 - 2	(Ignore)
6	EQ:High Level	0 - 48	
7	EQ:Mid Level	0 - 48	
8	EQ:Low Level	0 - 48	
9	EQ:Total Level	0 - 48	
10	Total Level	0 - 100	
11	Bypass	0 - 2	(Ignore)

\*Table 15 Tempo Delay (175)

Offset	Address	Description		
00H	0ddd_ddddB	Name 1		
:	:	:		
0FH	0ddd_ddddB	Name 16		
10H	0000_0000B	End Of Name		
11H	0010_0001B	Algorithm 33		
12H	0e00_0000B	Bypass/Block on/off		
13H	0000_0pql1B	Block on/off		
:	:	e:Bypass off:0 on:1		
:	:	p:EQ on/off off:0 on:1		
:	:	q:Modulation on/off off:0 on:1		
17H	0ddd_ddddB	Par 4	Diy:Tempo (LSB)	
18H	0ddd_ddddB	Par 5	Diy:Tempo (MSB)	46 - 280
19H	0ddd_ddddB	Par 6	Diy:Interval	0 - 5
1AH	0ddd_ddddB	Par 7	Diy:Feedback	0 - 120
1CH	0ddd_ddddB	Par 9	Diy:HF Damp Frequency	0 - 7
1DH	0ddd_ddddB	Par 10	Diy:HF Damp Level	0 - 4
1EH	0ddd_ddddB	Par 11	Diy:FB Filter	0 - 12
1FH	0ddd_ddddB	Par 12	Diy:Separation	0 - 100
20H	0ddd_ddddB	Par 13	Diy:Mix Level	0 - 100
21H	0ddd_ddddB	Par 14	Diy:Direct Level	0 - 100
23H	0ddd_ddddB	Par 16	Mod:LFO Waveform	0 - 1
24H	0ddd_ddddB	Par 17	Mod:Rate	1 - 100
25H	0ddd_ddddB	Par 18	Mod:Depth	0 - 100
28H	0ddd_ddddB	Par 21	EQ:High Level	0 - 48
29H	0ddd_ddddB	Par 22	EQ:Mid Frequency	0 - 14
3AH	0ddd_ddddB	Par 23	EQ:Mid Level	0 - 48
3BH	0ddd_ddddB	Par 24	EQ:Low Level	0 - 48



3CH	0000_0000B	Par 25	EQ:Total Level	0 - 48
45H	0000_0000B	Par 50	Total Level	0 - 100
46H	0000_0fghB	Ext Control	on/off (Table 16A)	0 - 2
47H	0000_0000B	Ext Control 1	Source (1 - 4 Source : ignore)	
48H	0000_0000B	Ext Control 1	Target (1 - 4 Target : ignore)	
49H	0000_0000B	Ext Control 1	Min MSB (1 - 4 Min : ignore)	
:	:	:	:	:
:	:	:	:	:
5FH	0000_0000B	Ext Control 4	Max LSB	
60H	0000_0000B	End Of Data		

Table 15A Tempo Delay  
External Control on/off

Data	Tempo Control
0	No Control
1	Control SW
2	MIDI Tempo Clock

\*Table 16  
Simple Delay (176)

Offset	Address	Description
00H	0000_0000B	Name 1
:	:	:
0FH	0000_0000B	Name 16
10H	0000_0000B	End Of Name
11H	0000_0011B	Algorithm 3
12H	0e00_0000B	Bypass/Block on/off
13H	0000_0000B	Block on/off
:	:	e:Bypass off:0 on:1
14H	0000_0000B	Par 1 Delay Time(LSB)
15H	0000_0000B	Par 2 Delay Time(MSB)
:	:	:
1AH	0000_0000B	Par 7 Feedback
:	:	:
1FH	0000_0000B	Par 12 Mix Level
20H	0000_0000B	Par 13 Direct Level
:	:	:
45H	0000_0000B	Par 50 Total Level
46H	0000_0fghB	Ext Control on/off
47H	0000_0000B	Ext Control 1 Source (Table 40)
48H	0000_0000B	Ext Control 1 Target (Table 16A)
49H	0000_0000B	Ext Control 1 Min MSB
:	:	:
:	:	:
5FH	0000_0000B	Ext Control 4 Max LSB
60H	0000_0000B	End Of Data

Table 16A Simple Delay  
External Control Target

Data	Target	MIN	MAX
0	Total Level	0	100
1	Bypass	0 - 2	(ignore)

\*Table 17  
Penta Chorus (177)

Offset	Address	Description
00H	0000_0000B	Name 1
:	:	:
0FH	0000_0000B	Name 16
10H	0000_0000B	End Of Name
11H	0000_1011B	Algorithm 11
12H	0e00_0000B	Bypass/Block on/off
13H	0000_0000B	Block on/off
:	:	e:Bypass off:0 on:1
14H	0000_0000B	Par 1 Chorus Mode
15H	0000_0000B	Par 2 LFO Waveform
16H	0000_0000B	Par 3 Pre Delay
17H	0000_0000B	Par 4 Chorus Rate
18H	0000_0000B	Par 5 Chorus Depth

19H	0000_0000B	Par 6 Separation	0 - 100
1AH	0000_0000B	Par 7 Chorus Tone	0 - 48
1BH	0000_0000B	Par 8 Chorus Level	0 - 100
1CH	0000_0000B	Par 9 Direct Level	0 - 100
:	:	:	:
45H	0000_0000B	Par 50 Total Level	0 - 100
46H	0000_0fghB	Ext Control on/off	
47H	0000_0000B	Ext Control 1 Source (Table 40)	
48H	0000_0000B	Ext Control 1 Target (Table 17A)	
49H	0000_0000B	Ext Control 1 Min MSB	
:	:	:	:
:	:	:	:
5FH	0000_0000B	Ext Control 4 Max LSB	
60H	0000_0000B	End Of Data	

Table 17A Penta Chorus  
External Control Target

Data	Target	MIN	MAX
0	Chorus Rate	1	100
1	Chorus Depth	0	100
2	Chorus Level	0	100
3	Total Level	0	100
4	Bypass	0 - 2	(ignore)

\*Table 18  
Space Chorus (178)

Offset	Address	Description
00H	0000_0000B	Name 1
:	:	:
0FH	0000_0000B	Name 16
10H	0000_0000B	End Of Name
11H	0000_1100B	Algorithm 12
12H	0e00_0000B	Bypass/Block on/off
13H	0000_0000B	Block on/off
:	:	e:Bypass off:0 on:1
14H	0000_0000B	Par 1 Space Mode
15H	0000_0000B	Par 2 Direct Mix
:	:	:
45H	0000_0000B	Par 50 Total Level
46H	0000_0fghB	Ext Control on/off
47H	0000_0000B	Ext Control 1 Source (Table 40)
48H	0000_0000B	Ext Control 1 Target (Table 18A)
49H	0000_0000B	Ext Control 1 Min MSB
:	:	:
:	:	:
5FH	0000_0000B	Ext Control 4 Max LSB
60H	0000_0000B	End Of Data

Table 18A Space Chorus  
External Control Target

Data	Target	MIN	MAX
0	Total Level	0	100
1	Bypass	0 - 2	(ignore)

\*Table 19  
Stereo Chorus (179)

Offset	Address	Description
00H	0000_0000B	Name 1
:	:	:
0FH	0000_0000B	Name 16
10H	0000_0000B	End Of Name
11H	0000_1101B	Algorithm 13
12H	0e00_0000B	Bypass/Block on/off
13H	0000_0001B	Block on/off
:	:	e:Bypass off:0 on:1
:	:	q:EQ on/off off:0 on:1
16H	0000_0000B	Par 3 EQ:High Level
17H	0000_0000B	Par 4 EQ:Mid Frequency
18H	0000_0000B	Par 5 EQ:Mid Level
19H	0000_0000B	Par 6 EQ:Low Level

1AH	0ddd_ddddB	Par 7	EQ:Total Level	0 - 48
1BH	0ddd_ddddB	Par 8	Cho:Chorus Mode	0 - 1
1CH	0ddd_ddddB	Par 9	Cho:LFO Waveform	0 - 1
1DH	0ddd_ddddB	Par 10	Cho:Pre Delay	0 - 125
1EH	0ddd_ddddB	Par 11	Cho:Rate	1 - 100
1FH	0ddd_ddddB	Par 12	Cho:Depth	0 - 100
20H	0ddd_ddddB	Par 13	Cho:Mix Level	0 - 100
21H	0ddd_ddddB	Par 14	Cho:Direct Level	0 - 100
45H	0ddd_ddddB	Par 50	Total Level	0 - 100
46H	0000_efghB	Ext Control	on/off	
47H	0ddd_ddddB	Ext Control 1	Source (Table 40)	
48H	0ddd_ddddB	Ext Control 1	Target (Table 19A)	
49H	0ddd_ddddB	Ext Control 1	Min MSB	
5FH	0ddd_ddddB	Ext Control 4	Max LSB	
60H	0000_0000B		End Of Data	

49H	0ddd_ddddB	Ext Control 1	Min MSB	
5FH	0ddd_ddddB	Ext Control 4	Max LSB	
60H	0000_0000B		End Of Data	

Table 20A 4 Band Chorus External Control Target

Data	Target	MIN	MAX
0	Low:on/off	0 - 2	(Ignore)
1	Low:Rate	1 - 100	
2	Low:Depth	0 - 100	
3	Low:Mix Level	0 - 100	
4	L-Mid:on/off	0 - 2	(Ignore)
5	L-Mid:Rate	1 - 100	
6	L-Mid:Depth	0 - 100	
7	L-Mid:Mix Level	0 - 100	
8	H-Mid:on/off	0 - 2	(Ignore)
9	H-Mid:Rate	1 - 100	
10	H-Mid:Depth	0 - 100	
11	H-Mid:Mix Level	0 - 100	
12	High:on/off	0 - 2	(Ignore)
13	High:Rate	1 - 100	
14	High:Depth	0 - 100	
15	High:Mix Level	0 - 100	
16	Total Level	0 - 100	
17	Bypass	0 - 2	(Ignore)

Table 19A Stereo Chorus External Control Target

Data	Target	MIN	MAX
0	Cho:Rate	1 - 100	
1	Cho:Depth	0 - 100	
2	Cho:Mix Level	0 - 100	
3	EQ:on/off	0 - 2	(Ignore)
4	EQ:High Level	0 - 48	
5	EQ:Mid Level	0 - 48	
6	EQ:Low Level	0 - 48	
7	EQ:Total Level	0 - 48	
8	Total Level	0 - 100	
9	Bypass	0 - 2	(Ignore)

\*Table 21 2 Band Chorus (181)

Offset Address	Description
00H	0ddd_ddddB Name 1
0FH	0ddd_ddddB Name 16
10H	0000_0000B End Of Name
11H	0000_0010B Algorithm 16
12H	0e00_0000B Bypass/Block on/off
13H	0000_00qrB Block on/off
	e:Bypass off:0 on:1
	o:High Band on/off off:0 on:1
	p:High-Mid Band on/off off:0 on:1
	q:Low-Mid Band on/off off:0 on:1
	r:Low Band on/off off:0 on:1
18H	0ddd_ddddB Par 5 Low:LFO Waveform 0 - 1
19H	0ddd_ddddB Par 6 Low:Pre Delay 0 - 125
1AH	0ddd_ddddB Par 7 Low:Rate 1 - 100
1BH	0ddd_ddddB Par 8 Low:Depth 0 - 100
1CH	0ddd_ddddB Par 9 Low:Pan 0 - 100
1DH	0ddd_ddddB Par 10 Low:Mix Level 0 - 100
1EH	0ddd_ddddB Par 11 L-M:LFO Waveform 0 - 1
1FH	0ddd_ddddB Par 12 L-M:Pre Delay 0 - 125
20H	0ddd_ddddB Par 13 L-M:Rate 1 - 100
21H	0ddd_ddddB Par 14 L-M:Depth 0 - 100
22H	0ddd_ddddB Par 15 L-M:Pan 0 - 100
23H	0ddd_ddddB Par 16 L-M:Mix Level 0 - 100
24H	0ddd_ddddB Par 17 H-M:LFO Waveform 0 - 1
25H	0ddd_ddddB Par 18 H-M:Pre Delay 0 - 125
26H	0ddd_ddddB Par 19 H-M:Rate 1 - 100
27H	0ddd_ddddB Par 20 H-M:Depth 0 - 100
28H	0ddd_ddddB Par 21 H-M:Pan 0 - 100
29H	0ddd_ddddB Par 22 H-M:Mix Level 0 - 100
2AH	0ddd_ddddB Par 23 Hi:LFO Waveform 0 - 1
2BH	0ddd_ddddB Par 24 Hi:Pre Delay 0 - 125
2CH	0ddd_ddddB Par 25 Hi:Rate 1 - 100
2DH	0ddd_ddddB Par 26 Hi:Depth 0 - 100
2EH	0ddd_ddddB Par 27 Hi:Pan 0 - 100
2FH	0ddd_ddddB Par 28 Hi:Mix Level 0 - 100
44H	0ddd_ddddB Par 49 Direct Level 0 - 100
45H	0ddd_ddddB Par 50 Total Level 0 - 100
46H	0000_efghB Ext Control on/off
47H	0ddd_ddddB Ext Control 1 Source (Table 40)
48H	0ddd_ddddB Ext Control 1 Target (Table 21A)
49H	0ddd_ddddB Ext Control 1 Min MSB
5FH	0ddd_ddddB Ext Control 4 Max LSB
60H	0000_0000B End Of Data

\*Table 20 4 Band Chorus (180)

Offset Address	Description
00H	0ddd_ddddB Name 1
0FH	0ddd_ddddB Name 16
10H	0000_0000B End Of Name
11H	0000_1110B Algorithm 14
12H	0e00_0000B Bypass/Block on/off
13H	0000_00qrB Block on/off
	e:Bypass off:0 on:1
	o:High Band on/off off:0 on:1
	p:High-Mid Band on/off off:0 on:1
	q:Low-Mid Band on/off off:0 on:1
	r:Low Band on/off off:0 on:1
18H	0ddd_ddddB Par 5 Low:LFO Waveform 0 - 1
19H	0ddd_ddddB Par 6 Low:Pre Delay 0 - 125
1AH	0ddd_ddddB Par 7 Low:Rate 1 - 100
1BH	0ddd_ddddB Par 8 Low:Depth 0 - 100
1CH	0ddd_ddddB Par 9 Low:Pan 0 - 100
1DH	0ddd_ddddB Par 10 Low:Mix Level 0 - 100
1EH	0ddd_ddddB Par 11 L-M:LFO Waveform 0 - 1
1FH	0ddd_ddddB Par 12 L-M:Pre Delay 0 - 125
20H	0ddd_ddddB Par 13 L-M:Rate 1 - 100
21H	0ddd_ddddB Par 14 L-M:Depth 0 - 100
22H	0ddd_ddddB Par 15 L-M:Pan 0 - 100
23H	0ddd_ddddB Par 16 L-M:Mix Level 0 - 100
24H	0ddd_ddddB Par 17 H-M:LFO Waveform 0 - 1
25H	0ddd_ddddB Par 18 H-M:Pre Delay 0 - 125
26H	0ddd_ddddB Par 19 H-M:Rate 1 - 100
27H	0ddd_ddddB Par 20 H-M:Depth 0 - 100
28H	0ddd_ddddB Par 21 H-M:Pan 0 - 100
29H	0ddd_ddddB Par 22 H-M:Mix Level 0 - 100
2AH	0ddd_ddddB Par 23 Hi:LFO Waveform 0 - 1
2BH	0ddd_ddddB Par 24 Hi:Pre Delay 0 - 125
2CH	0ddd_ddddB Par 25 Hi:Rate 1 - 100
2DH	0ddd_ddddB Par 26 Hi:Depth 0 - 100
2EH	0ddd_ddddB Par 27 Hi:Pan 0 - 100
2FH	0ddd_ddddB Par 28 Hi:Mix Level 0 - 100
44H	0ddd_ddddB Par 49 Direct Level 0 - 100
45H	0ddd_ddddB Par 50 Total Level 0 - 100
46H	0000_efghB Ext Control on/off
47H	0ddd_ddddB Ext Control 1 Source (Table 40)
48H	0ddd_ddddB Ext Control 1 Target (Table 20A)

Table 21A 2 Band Chorus External Control Target

Data	Target	MIN	MAX
0	Low:on/off	0 - 2	(Ignore)
1	Low:Rate	1 - 100	
2	Low:Depth	0 - 100	
3	Low:Mix Level	0 - 100	
4	High:on/off	0 - 2	(Ignore)
5	High:Rate	1 - 100	
6	High:Depth	0 - 100	

7	High:Mix Level	0 - 100
8	Total Level	0 - 100
9	Bypass	0 - 2 (Ignore)

\*Table 22  
Ensemble (182)

Offset	Description	
Address	Description	
00H	Oddd_dddB	Name 1
0FH	Oddd_dddB	Name 16
10H	0000_0000B	End Of Name
11H	0001_0011B	Algorithm 19
12H	0e00_0000B	Bypass/Block on/off
13H	0000_0000B	Block on/off
		e:Bypass off:0 on:1
14H	Oddd_dddB	Par 1 Ensemble Mode 0 - 5
45H	Oxkd_ikkkB	Par 50 Total Level 0 - 100
46H	0000_efghB	Ext Control on/off
47H	Oddd_dddB	Ext Control 1 Source (Table 40)
48H	Oddd_dddB	Ext Control 1 Target (Table 22A)
49H	Oddd_dddB	Ext Control 1 Min MSB
5FH	Oddd_dkkdB	Ext Control 4 Max LSB
60H	0000_0000B	End Of Data

Table 22A Ensemble  
External Control Target

Data	Target	MIN	MAX
0	Total Level	0	100
1	Bypass	0 - 2	(Ignore)

\*Table 23  
Stereo Pitch Shifter (183)

Offset	Description	
Address	Description	
00H	Oddd_dddB	Name 1
0FH	Oddd_dddB	Name 16
10H	0000_0000B	End Of Name
11H	0001_0101B	Algorithm 21
12H	0e00_0000B	Bypass/Block on/off
13H	0000_00qrB	Block on/off
		e:Bypass off:0 on:1
		q:Shift 2 on/off off:0 on:1
		r:Shift 1 on/off off:0 on:1
16H	Oddd_dddB	Par 3 PS1:Shift Mode 0 - 1
17H	Oddd_dddB	Par 4 PS1:Chromatic 0 - 48
18H	Oddd_dddB	Par 5 PS1:Fine 0 - 100
19H	Oddd_dddB	Par 6 PS1:Pre Delay(LSB)
1AH	Oddd_dddB	Par 7 PS1:Pre Delay(MSB) 0 - 600
1BH	Oddd_dddB	Par 8 PS1:Feedback 0 - 120
1CH	Oddd_dddB	Par 9 PS1:Mix Level 0 - 100
1DH	Oddd_dddB	Par 10 PS2:Shift Mode 0 - 1
1EH	Oddd_dddB	Par 11 PS2:Chromatic 0 - 48
1FH	Oddd_dddB	Par 12 PS2:Fine 0 - 100
20H	Oddd_dddB	Par 13 PS2:Pre Delay(LSB)
21H	Oddd_dddB	Par 14 PS2:Pre Delay(MSB) 0 - 600
22H	Oddd_dddB	Par 15 PS2:Feedback 0 - 120
23H	Oddd_dddB	Par 16 PS2:Mix Level 0 - 100
44H	Oddd_dddB	Par 49 Direct Level 0 - 100
45H	Oddd_dddB	Par 50 Total Level 0 - 100
46H	0000_efghB	Ext Control on/off
47H	Oddd_dddB	Ext Control 1 Source (Table 40)
48H	Oddd_dddB	Ext Control 1 Target (Table 23A)
49H	Oddd_dddB	Ext Control 1 Min MSB
5FH	Oddd_dkkdB	Ext Control 4 Max LSB
60H	0000_0000B	End Of Data

Table 23A Stereo Pitch Shifter  
External Control Target

Data	Target	MIN	MAX
0	PS1:on/off	0 - 2	(Ignore)
1	PS1:Chromatic	0 - 48	
2	PS1:Fine	0 - 100	
3	PS1:Mix Level	0 - 100	
4	PS2:on/off	0 - 2	(Ignore)
5	PS2:Chromatic	0 - 48	
6	PS2:Fine	0 - 100	
7	PS2:Mix Level	0 - 100	
8	Total Level	0 - 100	
9	Bypass	0 - 2	(Ignore)

\*Table 24  
Quad Pitch Shifter (184)

Offset	Description	
Address	Description	
00H	Oddd_dddB	Name 1
0FH	Oddd_dddB	Name 16
10H	0000_0000B	End Of Name
11H	0001_0110B	Algorithm 22
12H	0e00_0000B	Bypass/Block on/off
13H	0000_0pqrB	Block on/off
		e:Bypass off:0 on:1
		o:Shift 4 on/off off:0 on:1
		p:Shift 3 on/off off:0 on:1
		q:Shift 2 on/off off:0 on:1
		r:Shift 1 on/off off:0 on:1
18H	Oddd_dddB	Par 5 PS1:Shift Mode 0 - 1
19H	Oddd_dddB	Par 6 PS1:Chromatic 0 - 48
1AH	Oddd_dddB	Par 7 PS1:Fine 0 - 100
1BH	Oddd_dddB	Par 8 PS1:Pre Delay(LSB)
1CH	Oddd_dddB	Par 9 PS1:Pre Delay(MSB) 0 - 600
1DH	Oddd_dddB	Par 10 PS1:Mix Level 0 - 100
1EH	Oddd_dddB	Par 11 PS1:Pan 0 - 100
1FH	Oddd_dddB	Par 12 PS2:Shift Mode 0 - 1
20H	Oddd_dddB	Par 13 PS2:Chromatic 0 - 48
21H	Oddd_dddB	Par 14 PS2:Fine 0 - 100
22H	Oddd_dddB	Par 15 PS2:Pre Delay(LSB)
23H	Oddd_dddB	Par 16 PS2:Pre Delay(MSB) 0 - 600
24H	Oddd_dddB	Par 17 PS2:Mix Level 0 - 100
25H	Oddd_dddB	Par 18 PS2:Pan 0 - 100
26H	Oddd_dddB	Par 19 PS3:Shift Mode 0 - 1
27H	Oddd_dddB	Par 20 PS3:Chromatic 0 - 48
28H	Oddd_dddB	Par 21 PS3:Fine 0 - 100
29H	Oddd_dddB	Par 22 PS3:Pre Delay(LSB)
2AH	Oddd_dddB	Par 23 PS3:Pre Delay(MSB) 0 - 600
2BH	Oddd_dddB	Par 24 PS3:Mix Level 0 - 100
2CH	Oddd_dddB	Par 25 PS3:Pan 0 - 100
2DH	Oddd_dddB	Par 26 PS4:Shift Mode 0 - 1
2EH	Oddd_dddB	Par 27 PS4:Chromatic 0 - 48
2FH	Oddd_dddB	Par 28 PS4:Fine 0 - 100
30H	Oddd_dddB	Par 29 PS4:Pre Delay(LSB)
31H	Oddd_dddB	Par 30 PS4:Pre Delay(MSB) 0 - 600
32H	Oddd_dddB	Par 31 PS4:Mix Level 0 - 100
33H	Oddd_dddB	Par 32 PS4:Pan 0 - 100
34H	Oddd_dddB	Par 33 PS4:Feedback 0 - 120
44H	Oddd_dddB	Par 49 Direct Level 0 - 100
45H	Oddd_dddB	Par 50 Total Level 0 - 100
46H	0000_efghB	Ext Control on/off
47H	Oddd_dddB	Ext Control 1 Source (Table 40)
48H	Oddd_dddB	Ext Control 1 Target (Table 24A)
49H	Oddd_dddB	Ext Control 1 Min MSB
5FH	Oddd_dddB	Ext Control 4 Max LSB
60H	0000_0000B	End Of Data

Table 24A Quad Pitch Shifter  
External Control Target

Data	Target	MIN	MAX
0	PS1:on/off	0 - 2	(ignore)
1	PS1:Chromatic	0 - 48	
2	PS1:Fine	0 - 4800	
3	PS1:Mix Level	0 - 100	
4	PS2:on/off	0 - 2	(ignore)
5	PS2:Chromatic	0 - 48	
6	PS2:Fine	0 - 4800	
7	PS2:Mix Level	0 - 100	
8	PS3:on/off	0 - 2	(ignore)
9	PS3:Chromatic	0 - 48	
10	PS3:Fine	0 - 4800	
11	PS3:Mix Level	0 - 100	
12	PS4:on/off	0 - 2	(ignore)
13	PS4:Chromatic	0 - 48	
14	PS4:Fine	0 - 4800	
15	PS4:Mix Level	0 - 100	
16	Total Level	0 - 100	
17	Bypass	0 - 2	(ignore)

Table 25A 2 Band Pitch Shifter  
External Control Target

Data	Target	MIN	MAX
0	L01:on/off	0 - 2	(ignore)
1	L01:Chromatic	0 - 48	
2	L01:Fine	0 - 4800	
3	L01:Mix Level	0 - 100	
4	L02:on/off	0 - 2	(ignore)
5	L02:Chromatic	0 - 48	
6	L02:Fine	0 - 4800	
7	L02:Mix Level	0 - 100	
8	H11:on/off	0 - 2	(ignore)
9	H11:Chromatic	0 - 48	
10	H11:Fine	0 - 4800	
11	H11:Mix Level	0 - 100	
12	H12:on/off	0 - 2	(ignore)
13	H12:Chromatic	0 - 48	
14	H12:Fine	0 - 4800	
15	H12:Mix Level	0 - 100	
16	Total Level	0 - 100	
17	Bypass	0 - 2	(ignore)

\*Table 25  
2 Band Pitch Shifter (185)

Offset	Address	Description
00H	0ddd_dddB	Name 1
:	:	:
0FH	0ddd_dddB	Name 16
10H	0000_000B	End Of Name
11H	0001_010B	Algorithm 20
12H	0e00_000B	Bypass/Block on/off
13H	0000_0pqrB	Block on/off
		e:Bypass off:0 on:1
		o:High Band 4 on/off off:0 on:1
		p:High Band 3 on/off off:0 on:1
		q:Low Band 2 on/off off:0 on:1
		r:Low Band 1 on/off off:0 on:1
18H	0ddd_dddB	Par 5 L01:Chromatic 0 - 48
19H	0ddd_dddB	Par 6 L01:Fine 0 - 100
1AH	0ddd_dddB	Par 7 L01:Pre Delay (LSB)
1BH	0ddd_dddB	Par 8 L01:Pre Delay (MSB) 0 - 600
1CH	0ddd_dddB	Par 9 L01:Mix Level 0 - 100
1DH	0ddd_dddB	Par 10 L01:Pan 0 - 100
1EH	0ddd_dddB	Par 11 L02:Chromatic 0 - 48
1FH	0ddd_dddB	Par 12 L02:Fine 0 - 100
20H	0ddd_dddB	Par 13 L02:Pre Delay (LSB)
21H	0ddd_dddB	Par 14 L02:Pre Delay (MSB) 0 - 600
22H	0ddd_dddB	Par 15 L02:Mix Level 0 - 100
23H	0ddd_dddB	Par 16 L02:Pan 0 - 100
24H	0ddd_dddB	Par 17 H11:Chromatic 0 - 48
25H	0ddd_dddB	Par 18 H11:Fine 0 - 100
26H	0ddd_dddB	Par 19 H11:Pre Delay (LSB)
27H	0ddd_dddB	Par 20 H11:Pre Delay (MSB) 0 - 600
28H	0ddd_dddB	Par 21 H11:Mix Level 0 - 100
29H	0ddd_dddB	Par 22 H11:Pan 0 - 100
2AH	0ddd_dddB	Par 23 H12:Chromatic 0 - 48
2BH	0ddd_dddB	Par 24 H12:Fine 0 - 100
2CH	0ddd_dddB	Par 25 H12:Pre Delay (LSB)
2DH	0ddd_dddB	Par 26 H12:Pre Delay (MSB) 0 - 125
2EH	0ddd_dddB	Par 27 H12:Mix Level 0 - 100
2FH	0ddd_dddB	Par 28 H12:Pan 0 - 100
43H	0ddd_dddB	Par 48 Crossover Freq 0 - 8
44H	0ddd_dddB	Par 49 Direct Level 0 - 100
45H	0ddd_dddB	Par 50 Total Level 0 - 100
46H	0000_efghB	Ext Control on/off
47H	0ddd_dddB	Ext Control 1 Source (Table 40)
48H	0ddd_dddB	Ext Control 1 Target (Table 25A)
49H	0ddd_dddB	Ext Control 1 Min MSB
5FH	0ddd_dddB	Ext Control 4 Max LSB
60H	0000_0000B	End Of Data

\*Table 26  
Multi Phaser (186)

Offset	Address	Description
00H	0ddd_dddB	Name 1
:	:	:
0FH	0ddd_dddB	Name 16
10H	0000_0000B	End Of Name
11H	0000_0001B	Algorithm 1
12H	0e00_0000B	Bypass/Block on/off
13H	0000_0000B	Block on/off
		e:Bypass off:0 on:1
14H	0ddd_dddB	Par 1 Phasing Mode 0 - 5
19H	0ddd_dddB	Par 6 Phasing Rate 1 - 100
1AH	0ddd_dddB	Par 7 Phasing Depth 0 - 100
1BH	0ddd_dddB	Par 8 Manual 0 - 100
1CH	0ddd_dddB	Par 9 Resonance 0 - 100
1DH	0ddd_dddB	Par 10 Step Rate 0 - 100
1EH	0ddd_dddB	Par 11 Modulation Phase 0 - 36
1FH	0ddd_dddB	Par 12 Tremolo Depth 0 - 100
45H	0ddd_dddB	Par 50 Total Level 0 - 100
46H	0000_efghB	Ext Control on/off
47H	0ddd_dddB	Ext Control 1 Source (Table 40)
48H	0ddd_dddB	Ext Control 1 Target (Table 26A)
49H	0ddd_dddB	Ext Control 1 Min MSB
5FH	0ddd_dddB	Ext Control 4 Max LSB
60H	0000_0000B	End Of Data

Table 26A Multi Phaser  
External Control Target

Data	Target	MIN	MAX
0	Phasing Rate	1 - 100	
1	Phasing Depth	0 - 100	
2	Manual	0 - 100	
3	Resonance	0 - 100	
4	Step Rate	0 - 100	
5	Tremolo Depth	0 - 100	
6	Total Level	0 - 100	
7	Bypass	0 - 2	(ignore)

\*Table 27  
Dynamic Phaser (187)

Offset	Address	Description
00H	0ddd_ddddB	Name 1
:	:	:
0FH	0ddd_ddddB	Name 16
10H	0000_0000B	End Of Name
11H	0000_0010B	Algorithm 10
12H	0e00_0000B	Bypass/Block on/off
13H	0000_0000B	Block on/off
		e:Bypass off:0 on:1
14H	0ddd_ddddB	Par 1 Phasing Mode 0 - 5
15H	0ddd_ddddB	Par 2 Sensitivity 0 - 100
16H	0ddd_ddddB	Par 3 LFO Rate MAX 1 - 100
17H	0ddd_ddddB	Par 4 Control Range 0 - 100
1AH	0ddd_ddddB	Par 7 Phasing Depth 0 - 100
1BH	0ddd_ddddB	Par 8 Manual 0 - 100
1CH	0ddd_ddddB	Par 9 Resonance 0 - 100
1DH	0ddd_ddddB	Par 10 Step Rate 0 - 100
1EH	0ddd_ddddB	Par 11 Modulation Phase 0 - 36
1FH	0ddd_ddddB	Par 12 Tremolo Depth 0 - 100
45H	0ddd_ddddB	Par 50 Total Level 0 - 100
46H	0000_efghB	Ext Control on/off
47H	0ddd_ddddB	Ext Control 1 Source (Table 40)
48H	0ddd_ddddB	Ext Control 1 Target (Table 27A)
49H	0ddd_ddddB	Ext Control 1 Min MSB
:	:	:
5FH	0ddd_ddddB	Ext Control 4 Max LSB
60H	0000_0000B	End Of Data

Table 27A Dynamic Phaser  
External Control Target

Data	Target	MIN	MAX
0	Phasing Depth	0	100
1	Manual	0	100
2	Resonance	0	100
3	Step Rate	0	100
4	Tremolo Depth	0	100
5	Total Level	0	100
6	Bypass	0 - 2	(Ignore)

\*Table 28  
Stereo Flanger (188)

Offset	Address	Description
00H	0ddd_ddddB	Name 1
:	:	:
0FH	0ddd_ddddB	Name 16
10H	0000_0000B	End Of Name
11H	0000_0010B	Algorithm 2
12H	0e00_0000B	Bypass/Block on/off
13H	0000_0000B	Block on/off
		e:Bypass off:0 on:1
14H	0ddd_ddddB	Par 1 Flange Mode 0 - 1
16H	0ddd_ddddB	Par 3 Flange Rate 1 - 100
17H	0ddd_ddddB	Par 4 Flange Depth 0 - 100
18H	0ddd_ddddB	Par 5 Flange Manual 0 - 100
19H	0ddd_ddddB	Par 6 Resonance Mode 0 - 1
1AH	0ddd_ddddB	Par 7 Resonance 0 - 100
1BH	0ddd_ddddB	Par 8 Modulation Phase 0 - 36
1CH	0ddd_ddddB	Par 9 Mix Level 0 - 100
1DH	0ddd_ddddB	Par 10 Tremolo Depth 0 - 100
1EH	0ddd_ddddB	Par 11 Direct Mix 0 - 1
45H	0ddd_ddddB	Par 50 Total Level 0 - 100
46H	0000_efghB	Ext Control on/off
47H	0ddd_ddddB	Ext Control 1 Source (Table 40)
48H	0ddd_ddddB	Ext Control 1 Target (Table 28A)
49H	0ddd_ddddB	Ext Control 1 Min MSB
:	:	:
5FH	0ddd_ddddB	Ext Control 4 Max LSB

60H 0000\_0000B End Of Data

Table 28A Stereo Flanger  
External Control Target

Data	Target	MIN	MAX
0	Flanging Rate	1	100
1	Flanging Depth	0	100
2	Manual	0	100
3	Resonance	0	100
4	Tremolo Depth	0	100
5	Total Level	0	100
6	Bypass	0 - 2	(Ignore)

\*Table 29  
Enhancer (189)

Offset	Address	Description
00H	0ddd_ddddB	Name 1
:	:	:
0FH	0ddd_ddddB	Name 16
10H	0000_0000B	End Of Name
11H	0010_0010B	Algorithm 34
12H	0e00_0000B	Bypass/Block on/off
13H	0000_00qrB	Block on/off
		e:Bypass off:0 on:1
		q:Rch. Enhancer on/off off:0 on:1
		r:Lch. Enhancer on/off off:0 on:1
16H	0ddd_ddddB	Par 3 Lch:Frequency 0 - 100
17H	0ddd_ddddB	Par 4 Lch:Mix Balance 0 - 100
18H	0ddd_ddddB	Par 5 Rch:Frequency 0 - 100
19H	0ddd_ddddB	Par 6 Rch:Mix Balance 0 - 100
45H	0ddd_ddddB	Par 50 Total Level 0 - 100
46H	0000_efghB	Ext Control on/off
47H	0ddd_ddddB	Ext Control 1 Source (Table 40)
48H	0ddd_ddddB	Ext Control 1 Target (Table 29A)
49H	0ddd_ddddB	Ext Control 1 Min MSB
:	:	:
5FH	0ddd_ddddB	Ext Control 4 Max LSB
60H	0000_0000B	End Of Data

Table 29A Enhancer  
External Control Target

Data	Target	MIN	MAX
0	Lch:on/off	0 - 2	(Ignore)
1	Lch:Frequency	0	100
2	Lch:Mix Balance	0	100
3	Rch:on/off	0 - 2	(Ignore)
4	Rch:Frequency	0	100
5	Rch:Mix Balance	0	100
6	Total Level	0	100
7	Bypass	0 - 2	(Ignore)

\*Table 30  
Rotary 1 (190)

Offset	Address	Description
00H	0ddd_ddddB	Name 1
:	:	:
0FH	0ddd_ddddB	Name 16
10H	0000_0000B	End Of Name
11H	0010_0111B	Algorithm 39
12H	0e00_0000B	Bypass/Block on/off
13H	0000_00q1B	Block on/off
		e:Bypass off:0 on:1
		q:Over Drive on/off off:0 on:1
18H	0ddd_ddddB	Par 5 Rot:Speed Select 0 - 1
19H	0ddd_ddddB	Par 6 Rot:Horn Speed Fast 1 - 100
1AH	0ddd_ddddB	Par 7 Rot:Rotor Speed Fast 1 - 100
1BH	0ddd_ddddB	Par 8 Rot:Horn Speed Slow 1 - 100

1CH	0ddd_ddddB	Par 9	Rot:Rotor Speed Slow	1 - 100
1DH	0ddd_ddddB	Par 10	Rot:RIse Time Horn	1 - 100
1EH	0ddd_ddddB	Par 11	Rot:RIse Time Rotor	1 - 100
1FH	0ddd_ddddB	Par 12	Rot:Fall Time Horn	1 - 100
20H	0ddd_ddddB	Par 13	Rot:Fall Time Rotor	1 - 100
21H	0ddd_ddddB	Par 14	Rot:Mix Balance	10 - 90
22H	0ddd_ddddB	Par 15	O.D:Gain	0 - 100
23H	0ddd_ddddB	Par 16	O.D:Drive	0 - 100
24H	0ddd_ddddB	Par 17	O.D:Level	0 - 100
45H	0ddd_ddddB	Par 50	Total Level	0 - 100
46H	0000_efghB	Ext Control	on/off	
47H	0ddd_ddddB	Ext Control 1	Source (Table 40)	
48H	0ddd_ddddB	Ext Control 1	Target (Table 30A)	
49H	0ddd_ddddB	Ext Control 1	Min MSB	
5FH	0ddd_ddddB	Ext Control 4	Max LSB	
60H	0000_0000B	End Of Data		

Table 30A Rotary 1  
External Control Target

Data	Target	MIN	MAX
0	Rot:Horn Speed	1	100
1	Rot:Rotor Speed	1	100
2	Rot:Fast/Slow	0 - 2	(Ignore)
3	O.D:Gain	0	100
4	O.D:Drive	0	100
5	O.D:Level	0	100
6	Total Level	0	100
7	Bypass	0 - 2	(Ignore)

\*Table 31  
Rotary 2 (191)

Offset	Address	Description
00H	0ddd_ddddB	Name 1
:	:	:
0FH	0ddd_ddddB	Name 16
10H	0000_0000B	End Of Name
11H	0001_0111B	Algorithm 23
12H	0e00_0000B	Bypass/Block on/off
13H	0000_00q1B	Block on/off
		e:Bypass off:0 on:1
		q:Over Drive on/off off:0 on:1
18H	0ddd_ddddB	Par 5 Rot:Speed Select 0 - 1
19H	0ddd_ddddB	Par 6 Rot:Horn Speed Fast 1 - 100
1AH	0ddd_ddddB	Par 7 Rot:Rotor Speed Fast 1 - 100
1BH	0ddd_ddddB	Par 8 Rot:Horn Speed Slow 1 - 100
1CH	0ddd_ddddB	Par 9 Rot:Rotor Speed Slow 1 - 100
1DH	0ddd_ddddB	Par 10 Rot:RIse Time Horn 1 - 100
1EH	0ddd_ddddB	Par 11 Rot:RIse Time Rotor 1 - 100
1FH	0ddd_ddddB	Par 12 Rot:Fall Time Horn 1 - 100
20H	0ddd_ddddB	Par 13 Rot:Fall Time Rotor 1 - 100
21H	0ddd_ddddB	Par 14 Rot:Mix Balance 10 - 90
22H	0ddd_ddddB	Par 15 O.D:Gain 0 - 100
23H	0ddd_ddddB	Par 16 O.D:Drive 0 - 100
24H	0ddd_ddddB	Par 17 O.D:Level 0 - 100
45H	0ddd_ddddB	Par 50 Total Level 0 - 100
46H	0000_efghB	Ext Control on/off
47H	0ddd_ddddB	Ext Control 1 Source (Table 40)
48H	0ddd_ddddB	Ext Control 1 Target (Table 31A)
49H	0ddd_ddddB	Ext Control 1 Min MSB
5FH	0ddd_ddddB	Ext Control 4 Max LSB
60H	0000_0000B	End Of Data

Table 31A Rotary 2  
External Control Target

Data	Target	MIN	MAX
0	Rot:Horn Speed	1	100
1	Rot:Rotor Speed	1	100
2	Rot:Fast/Slow	0 - 2	(Ignore)
3	O.D:Gain	0	100
4	O.D:Drive	0	100

5	O.D:Level	0 - 100
6	Total Level	0 - 100
7	Bypass	0 - 2 (Ignore)

\*Table 32  
Vocoder (192)

Offset	Address	Description
00H	0ddd_ddddB	Name 1
:	:	:
0FH	0ddd_ddddB	Name 16
10H	0000_0000B	End Of Name
11H	0000_0100B	Algorithm 4
12H	0e00_0000B	Bypass/Block on/off
13H	0000_0000B	Block on/off
		e:Bypass off:0 on:1
14H	0ddd_ddddB	Par 1 Gate Threshold 0 - 100
15H	0ddd_ddddB	Par 2 Mic Mix Level 0 - 100
16H	0ddd_ddddB	Par 3 Hiss Mix Level 0 - 100
17H	0ddd_ddddB	Par 4 Voice Character 200Hz 0 - 100
18H	0ddd_ddddB	Par 5 Voice Character 320Hz 0 - 100
19H	0ddd_ddddB	Par 6 Voice Character 500Hz 0 - 100
1AH	0ddd_ddddB	Par 7 Voice Character 800Hz 0 - 100
1BH	0ddd_ddddB	Par 8 Voice Character 1kHz 0 - 100
1CH	0ddd_ddddB	Par 9 Voice Character 1.8kHz 0 - 100
1DH	0ddd_ddddB	Par 10 Voice Character 2.7kHz 0 - 100
1EH	0ddd_ddddB	Par 11 Voice Character 4.4kHz 0 - 100
45H	0ddd_ddddB	Par 50 Total Level 0 - 100
46H	0000_efghB	Ext Control on/off
47H	0ddd_ddddB	Ext Control 1 Source (Table 40)
48H	0ddd_ddddB	Ext Control 1 Target (Table 32A)
49H	0ddd_ddddB	Ext Control 1 Min MSB
5FH	0ddd_ddddB	Ext Control 4 Max LSB
60H	0000_0000B	End Of Data

Table 32A Vocoder  
External Control Target

Data	Target	MIN	MAX
0	Character Hold	0 - 2	
1	Mic Mix Level	0 - 100	
2	Total Level	0 - 100	
3	Bypass	0 - 2	(Ignore)

\*Table 33  
Multi 1 (193)

Offset	Address	Description
00H	0ddd_ddddB	Name 1
:	:	:
0FH	0ddd_ddddB	Name 16
10H	0000_0000B	End Of Name
11H	0000_0111B	Algorithm 7
12H	0e00_0000B	Bypass/Block on/off
13H	0000_0pqrB	Block on/off
		c:Bypass off:0 on:1
		o:Reverb on/off off:0 on:1
		p:Delay on/off off:0 on:1
		q:Chorus on/off off:0 on:1
		r:EQ on/off off:0 on:1
18H	0ddd_ddddB	Par 5 EQ:High Level 0 - 48
19H	0ddd_ddddB	Par 6 EQ:Mid Frequency 0 - 14
1AH	0ddd_ddddB	Par 7 EQ:Mid Level 0 - 48
1BH	0ddd_ddddB	Par 8 EQ:Low Level 0 - 48
1CH	0ddd_ddddB	Par 9 EQ:Total Level 0 - 48
1DH	0ddd_ddddB	Par 10 Cho:LFO Waveform 0 - 1
1EH	0ddd_ddddB	Par 11 Cho:Pre Delay 0 - 125
1FH	0ddd_ddddB	Par 12 Cho:Rate 1 - 100
20H	0ddd_ddddB	Par 13 Cho:Depth 0 - 100
21H	0ddd_ddddB	Par 14 Cho:Mix Level 0 - 100
22H	0ddd_ddddB	Par 15 Cho:Cross Mix 0 - 100
23H	0ddd_ddddB	Par 16 Cho:Direct Level 0 - 100

30H	0d1d_dddB	Par 29	Dly:Delay Time(LSB)		
31H	0ddd_dddB	Par 30	Dly:Delay Time(MSB)	1 - 1600	
32H	0ddd_dddB	Par 31	Dly:Feedback	0 - 120	
33H	0ddd_dddB	Par 32	Dly:HF Damp Frequency	0 - 7	
34H	0ddd_dddB	Par 33	Dly:HF Damp Level	0 - 4	
35H	0ddd_dddB	Par 34	Dly:Mix Level	0 - 100	
36H	0ddd_dddB	Par 35	Dly:Direct Level	0 - 100	
37H	0ddd_dddB	Par 36	Rev:Reverb Time(LSB)		
38H	0ddd_dddB	Par 37	Rev:Reverb Time(MSB)	0 - 247	
39H	0ddd_dddB	Par 38	Rev:Pre Delay(LSB)		
3AH	0ddd_dddB	Par 39	Rev:Pre Delay(LSB)	0 - 140	
3BH	0ddd_dddB	Par 40	Rev:Filter LPF	0 - 14	
3CH	0ddd_dddB	Par 41	Rev:Filter HPF	0 - 15	
3DH	0ddd_dddB	Par 42	Rev:HF Damp Frequency	0 - 7	
3EH	0ddd_dddB	Par 43	Rev:HF Damp Level	0 - 4	
40H	0ddd_dddB	Par 45	Rev:Reverb Level	0 - 100	
41H	0ddd_dddB	Par 46	Rev:Direct Level	0 - 100	
45H	0ddd_dddB	Par 50	Total Level	0 - 100	
46H	0000_efghB	Ext Control	on/off		
47H	0ddd_dddB	Ext Control 1	Source (Table 40)		
48H	0ddd_dddB	Ext Control 1	Target (Table 33A)		
49H	0ddd_dddB	Ext Control 1	Min MSB		
5FH	0ddd_dddB	Ext Control 4	Max LSB		
60H	0000_0000B	End Of Data			

Table 33A Multi 1  
External Control Target

Data	Target	MIN	MAX
0	EQ:on/off	0 - 2	(Ignore)
1	EQ:High Level	0 - 48	
2	EQ:Mid Level	0 - 48	
3	EQ:Low Level	0 - 48	
4	EQ:Total Level	0 - 48	
5	Cho:on/off	0 - 2	(Ignore)
6	Cho:Rate	1 - 100	
7	Cho:Depth	0 - 100	
8	Cho:Mix Level	0 - 100	
9	Cho:Cross Mix	0 - 100	
10	Dly:on/off	0 - 2	(Ignore)
11	Dly:Feedback	0 - 120	
12	Dly:Mix Level	0 - 100	
13	Rev:on/off	0 - 2	(Ignore)
14	Rev:Reverb Time	1 - 247	
15	Rev:Reverb Level	0 - 100	
16	Total Level	0 - 100	
17	Bypass	0 - 2	(Ignore)

\*Table 34  
Multi 2 (194)

Offset	Address	Description
00H	0ddd_dddB	Name 1
0Fh	0ddd_dddB	Name 16
10H	0000_0000B	End Of Name
11H	0000_1000B	Algorithm 8
12H	0e00_0000B	Bypass/Block on/off
13H	0000_opqrB	Block on/off
		e:Bypass off:0 on:1
		o:Reverb on/off off:0 on:1
		p:Delay on/off off:0 on:1
		q:Pitch Shifter on/off off:0 on:1
		r:EQ on/off off:0 on:1
18H	0ddd_dddB	Par 5 EQ:High Level 0 - 48
19H	0ddd_dddB	Par 6 EQ:Mid Frequency 0 - 14
1AH	0ddd_dddB	Par 7 EQ:Mid Level 0 - 48
1BH	0ddd_dddB	Par 8 EQ:Low Level 0 - 48
1CH	0ddd_dddB	Par 9 EQ:Total Level 0 - 48
1DH	0ddd_dddB	Par 10 PS1:Shift Mode 0 - 1
1EH	0ddd_dddB	Par 11 PS1:Chromatic 0 - 48
1FH	0ddd_dddB	Par 12 PS1:Fine 0 - 100
20H	0ddd_dddB	Par 13 PS1:Mix Level 0 - 100
21H	0ddd_dddB	Par 14 PS1:Pan 0 - 100
22H	0ddd_dddB	Par 15 PS2:Shift Mode 0 - 1

23H	0ddd_dddB	Par 16	PS2:Chromatic	0 - 48	
24H	0ddd_dddB	Par 17	PS2:Fine	0 - 100	
25H	0ddd_dddB	Par 18	PS2:Mix Level	0 - 100	
26H	0ddd_dddB	Par 19	PS2:Pan	0 - 100	
27H	0ddd_dddB	Par 20	PS:Direct Level	0 - 100	
30H	0ddd_dddB	Par 29	Dly:Delay Time(LSB)		
31H	0ddd_dddB	Par 30	Dly:Delay Time(MSB)	1 - 1600	
32H	0ddd_dddB	Par 31	Dly:Feedback	0 - 120	
33H	0ddd_dddB	Par 32	Dly:HF Damp Frequency	0 - 7	
34H	0ddd_dddB	Par 33	Dly:HF Damp Level	0 - 4	
35H	0ddd_dddB	Par 34	Dly:Mix Level	0 - 100	
36H	0ddd_dddB	Par 35	Dly:Direct Level	0 - 100	
37H	0ddd_dddB	Par 36	Rev:Reverb Time(LSB)		
38H	0ddd_dddB	Par 37	Rev:Reverb Time(MSB)	0 - 247	
39H	0ddd_dddB	Par 38	Rev:Pre Delay(LSB)		
3AH	0ddd_dddB	Par 39	Rev:Pre Delay(LSB)	0 - 140	
3BH	0ddd_dddB	Par 40	Rev:Filter LPF	0 - 14	
3CH	0ddd_dddB	Par 41	Rev:Filter HPF	0 - 15	
3DH	0ddd_dddB	Par 42	Rev:HF Damp Frequency	0 - 7	
3EH	0ddd_dddB	Par 43	Rev:HF Damp Level	0 - 4	
40H	0ddd_dddB	Par 45	Rev:Reverb Level	0 - 100	
41H	0ddd_dddB	Par 46	Rev:Direct Level	0 - 100	
45H	0ddd_dddB	Par 50	Total Level	0 - 100	
46H	0000_efghB	Ext Control	on/off		
47H	0ddd_dddB	Ext Control 1	Source (Table 40)		
48H	0ddd_dddB	Ext Control 1	Target (Table 34A)		
49H	0ddd_dddB	Ext Control 1	Min MSB		
5FH	0ddd_dddB	Ext Control 4	Max LSB		
60H	0000_0000B	End Of Data			

Table 34A Multi 2  
External Control Target

Data	Target	MIN	MAX
0	EQ:on/off	0 - 2	(Ignore)
1	EQ:High Level	0 - 48	
2	EQ:Mid Level	0 - 48	
3	EQ:Low Level	0 - 48	
4	EQ:Total Level	0 - 48	
5	PS:on/off	0 - 2	(Ignore)
6	PS1:Fine	0 - 4800	
7	PS1:Mix Level	0 - 100	
8	PS2:Fine	0 - 4800	
9	PS2:Mix Level	0 - 100	
10	Dly:on/off	0 - 2	(Ignore)
11	Dly:Feedback	0 - 120	
12	Dly:Mix Level	0 - 100	
13	Rev:on/off	0 - 2	(Ignore)
14	Rev:Reverb Time	1 - 247	
15	Rev:Reverb Level	0 - 100	
16	Total Level	0 - 100	
17	Bypass	0 - 2	(Ignore)

\*Table 35  
Multi 3 (195)

Offset	Address	Description
00H	0ddd_dddB	Name 1
0Fh	0ddd_dddB	Name 16
10H	0000_0000B	End Of Name
11H	0000_0100B	Algorithm 6
12H	0e00_0000B	Bypass/Block on/off
13H	0000_opqrB	Block on/off
		e:Bypass off:0 on:1
		o:Reverb on/off off:0 on:1
		p:Delay on/off off:0 on:1
		q:Flanger on/off off:0 on:1
		r EQ on/off off:0 on:1
18H	0ddd_dddB	Par 5 EQ:High Level 0 - 48
19H	0ddd_dddB	Par 6 EQ:Mid Frequency 0 - 14
1AH	0ddd_dddB	Par 7 EQ:Mid Level 0 - 48
1BH	0ddd_dddB	Par 8 EQ:Low Level 0 - 48
1CH	0ddd_dddB	Par 9 EQ:Total Level 0 - 48
1DH	0ddd_dddB	Par 10 FL:Rate 1 - 100

1EH	Oddd_dddR	Par 11	FL:Depth	0 - 100
1FH	Oddd_dddB	Par 12	FL:Manual	0 - 100
20H	Oddd_dddB	Par 13	FL:Resonance Mode	0 - 1
21H	Oddd_dddB	Par 14	FL:Resonance	0 - 100
22H	Oddd_dddR	Par 15	FL:Modulation Phase	0 - 36
23H	Oddd_dddB	Par 16	FL:Mix Level	0 - 100
30H	Oddd_dddB	Par 29	Dly:Delay Time (LSB)	
31H	Oddd_dddB	Par 30	Dly:Delay Time (MSB)	1 - 1600
32H	Oddd_dddB	Par 31	Dly:Feedback	0 - 120
33H	Oddd_dddB	Par 32	Dly:HF Damp Frequency	0 - 7
34H	Oddd_dddB	Par 33	Dly:HF Damp Level	0 - 4
35H	Oddd_dddB	Par 34	Dly:Mix Level	0 - 100
36H	Oddd_dddB	Par 35	Dly:Direct Level	0 - 100
37H	Oddd_dddB	Par 36	Rev:Reverb Time (LSB)	
38H	Oddd_dddB	Par 37	Rev:Reverb Time (MSB)	0 - 247
39H	Oddd_dddB	Par 38	Rev:Pre Delay (LSB)	
3AH	Oddd_dddB	Par 39	Rev:Pre Delay (LSB)	0 - 140
3BH	Oddd_dddB	Par 40	Rev:Filter LPF	0 - 14
3CH	Oddd_dddB	Par 41	Rev:Filter HPF	0 - 15
3DH	Oddd_dddR	Par 42	Rev:HF Damp Frequency	0 - 7
3EH	Oddd_dddB	Par 43	Rev:HF Damp Level	0 - 4
40H	Oddd_dddB	Par 45	Rev:Reverb Level	0 - 100
41H	Oddd_dddB	Par 46	Rev:Direct Level	0 - 100
45H	Oddd_dddB	Par 50	Total Level	0 - 100
46H	0000_efgh	Ext Control	on/off	
47H	Oddd_dddB	Ext Control 1	Source (Table 40)	
48H	Oddd_dddB	Ext Control 1	Target (Table 35A)	
49H	Oddd_dddR	Ext Control 1	Min MSB	
:	:	:	:	:
5FH	Oddd_dddB	Ext Control 4	Max LSB	
60H	0000_0000B	End Of Data		

1EH	Oddd_dddB	Par 11	Cho:Pre Delay	0 - 125
1FH	Oddd_dddB	Par 12	Cho:Rate	1 - 100
20H	Oddd_dddB	Par 13	Cho:Depth	0 - 100
21H	Oddd_dddB	Par 14	Cho:Mix Level	0 - 100
22H	Oddd_dddB	Par 15	Cho:Direct Level	0 - 100
24H	Oddd_dddB	Par 17	Pan:Rate	1 - 100
25H	Oddd_dddB	Par 18	Pan:Depth	0 - 100
30H	Oddd_dddB	Par 29	Dly:Delay Time (LSB)	
31H	Oddd_dddB	Par 30	Dly:Delay Time (MSB)	1 - 1600
32H	Oddd_dddB	Par 31	Dly:Feedback	0 - 120
33H	Oddd_dddB	Par 32	Dly:HF Damp Frequency	0 - 7
34H	Oddd_dddB	Par 33	Dly:HF Damp Level	0 - 4
35H	Oddd_dddB	Par 34	Dly:Mix Level	0 - 100
36H	Oddd_dddB	Par 35	Dly:Direct Level	0 - 100
37H	Oddd_dddB	Par 36	Rev:Reverb Time (LSB)	
38H	Oddd_dddB	Par 37	Rev:Reverb Time (MSB)	0 - 247
39H	Oddd_dddB	Par 38	Rev:Pre Delay (LSB)	
3AH	Oddd_dddB	Par 39	Rev:Pre Delay (LSB)	0 - 140
3BH	Oddd_dddB	Par 40	Rev:Filter LPF	0 - 14
3CH	Oddd_dddB	Par 41	Rev:Filter HPF	0 - 15
3DH	Oddd_dddR	Par 42	Rev:HF Damp Frequency	0 - 7
3EH	Oddd_dddB	Par 43	Rev:HF Damp Level	0 - 4
40H	Oddd_dddB	Par 45	Rev:Reverb Level	0 - 100
41H	Oddd_dddB	Par 46	Rev:Direct Level	0 - 100
45H	Oddd_dddB	Par 50	Total Level	0 - 100
46H	0000_efgh	Ext Control	on/off	
47H	Oddd_dddB	Ext Control 1	Source (Table 40)	
48H	Oddd_dddB	Ext Control 1	Target (Table 36A)	
49H	Oddd_dddR	Ext Control 1	Min MSB	
:	:	:	:	:
5FH	Oddd_dddB	Ext Control 4	Max LSB	
60H	0000_0000B	End Of Data		

Table 35A Multi 3  
External Control Target

Data	Target	MIN	MAX
0	EQ:on/off	0 - 2	(Ignore)
1	EQ:High Level	0 - 48	
2	EQ:Mid Level	0 - 48	
3	EQ:Low Level	0 - 48	
4	EQ:Total Level	0 - 48	
5	FL:on/off	0 - 2	(Ignore)
6	FL:Rate	1 - 100	
7	FL:Depth	0 - 100	
8	FL:Manual	0 - 100	
9	FL:Resonance	0 - 100	
10	Dly:on/off	0 - 2	(Ignore)
11	Dly:Feedback	0 - 120	
12	Dly:Mix Level	0 - 100	
13	Rev:on/off	0 - 2	(Ignore)
14	Rev:Reverb Time	1 - 247	
15	Rev:Reverb Level	0 - 100	
16	Total Level	0 - 100	
17	Bypass	0 - 2	(Ignore)

Table 36A Multi 4  
External Control Target

Data	Target	MIN	MAX
0	Ph:on/off	0 - 2	(Ignore)
1	Ph:Rate	1 - 100	
2	Ph:Depth	1 - 100	
3	Dly:on/off	0 - 2	(Ignore)
4	Dly:Feedback	0 - 120	
5	Dly:Mix Level	0 - 100	
6	Cho:on/off	0 - 2	(Ignore)
7	Cho:Rate	0 - 100	
8	Cho:Depth	0 - 100	
9	Cho:Mix Level	0 - 100	
10	Pan:on/off	0 - 2	(Ignore)
11	Pan:Rate	0 - 100	
12	Pan:Depth	0 - 100	
13	Rev:on/off	0 - 2	(Ignore)
14	Rev:Reverb Time	1 - 247	
15	Rev:Reverb Level	0 - 100	
16	Total Level	0 - 100	
17	Bypass	0 - 2	(Ignore)

\*Table 36  
Multi 4 (196)

Offset	Address	Description
:	:	:
00H	Oddd_dddB	Name 1
:	:	:
0FH	Oddd_dddB	Name 16
10H	0000_0000B	End Of Name
11H	0000_1001B	Algorithm 9
12H	0e00_0000B	Bypass/Block on/off
13H	000n_opqrB	Block on/off
:	:	e:Bypass off:0 on:1
:	:	n:Reverb on/off off:0 on:1
:	:	o:Pan on/off off:0 on:1
:	:	p:Chorus on/off off:0 on:1
:	:	q:Delay on/off off:0 on:1
:	:	r:Phaser on/off off:0 on:1
19H	Oddd_dddB	Par 6 Ph:Rate 1 - 100
1AH	Oddd_dddB	Par 7 Ph:Depth 0 - 100
1BH	Oddd_dddB	Par 8 Ph:Manual 0 - 100
1CH	Oddd_dddB	Par 9 Ph:Resonance 0 - 100

\*Table 37  
Multi 5 (197)

Offset	Address	Description
:	:	:
00H	Oddd_dddB	Name 1
:	:	:
0FH	Oddd_dddB	Name 16
10H	0000_0000B	End Of Name
11H	0010_0011B	Algorithm 35
12H	0e00_0000B	Bypass/Block on/off
13H	0000_0pqrB	Block on/off
:	:	e:Bypass off:0 on:1
:	:	p:Reverb on/off off:0 on:1
:	:	q:Delay on/off off:0 on:1
:	:	r:Vibrato on/off off:0 on:1
18H	Oddd_dddB	Par 5 Vtb:Rate 1 - 100
19H	Oddd_dddB	Par 6 Vtb:Depth 0 - 100
1AH	Oddd_dddB	Par 7 Vtb:Rise Time 1 - 100



18H	0ddd_ddddB	Par 8	Vib:Fall Time	1 - 100	25H	0ddd_ddddB	Par 18	Dly:Mod:Depth	0 - 100
1CH	0ddd_ddddB	Par 9	Vib:Pan:Mode	0 - 1					
1DH	0ddd_ddddB	Par 10	Vib:Pan:WaveForm	0 - 1	2FH	0ddd_ddddB	Par 28	Dly:Input Select	0 - 2
1EH	0ddd_ddddB	Par 11	Vib:Pan:Depth	0 - 100	30H	0ddd_ddddB	Par 29	Dly:Delay Time(LSB)	
					31H	0ddd_ddddB	Par 30	Dly:Delay Time(MSB)	1 - 1600
30H	0ddd_ddddB	Par 29	Dly:Delay Time(LSB)		32H	0ddd_ddddB	Par 31	Dly:Feedback	0 - 120
31H	0ddd_ddddB	Par 30	Dly:Delay Time(MSB)	1 - 1600	33H	0ddd_ddddB	Par 32	Dly:HF Damp Frequency	0 - 7
32H	0ddd_ddddB	Par 31	Dly:Feedback	0 - 120	34H	0ddd_ddddB	Par 33	Dly:HF Damp Level	0 - 4
33H	0ddd_ddddB	Par 32	Dly:HF Damp Frequency	0 - 7	35H	0ddd_ddddB	Par 34	Dly:Mix Level	0 - 100
34H	0ddd_ddddB	Par 33	Dly:HF Damp Level	0 - 4	36H	0ddd_ddddB	Par 35	Rev:Input Select	0 - 2
35H	0ddd_ddddB	Par 34	Dly:Mix Level	0 - 100	37H	0ddd_ddddB	Par 36	Rev:Reverb Time(LSB)	
36H	0ddd_ddddB	Par 35	Dly:Direct Level	0 - 100	38H	0ddd_ddddB	Par 37	Rev:Reverb Time(MSB)	0 - 247
37H	0ddd_ddddB	Par 36	Rev:Reverb Time(LSB)		39H	0ddd_ddddB	Par 38	Rev:Pre Delay(LSB)	
38H	0ddd_ddddB	Par 37	Rev:Reverb Time(MSB)	0 - 247	3AH	0ddd_ddddB	Par 39	Rev:Pre Delay(MSB)	0 - 140
39H	0ddd_ddddB	Par 38	Rev:Pre Delay(LSB)		3BH	0ddd_ddddB	Par 40	Rev:Filter LPF	0 - 14
3AH	0ddd_ddddB	Par 39	Rev:Pre Delay(MSB)	0 - 140	3CH	0ddd_ddddB	Par 41	Rev:Filter HPF	0 - 15
3BH	0ddd_ddddB	Par 40	Rev:Filter LPF	0 - 14	3DH	0ddd_ddddB	Par 42	Rev:HF Damp Frequency	0 - 7
3CH	0ddd_ddddB	Par 41	Rev:Filter HPF	0 - 15	3EH	0ddd_ddddB	Par 43	Rev:HF Damp Level	0 - 4
3DH	0ddd_ddddB	Par 42	Rev:HF Damp Frequency	0 - 7					
3EH	0ddd_ddddB	Par 43	Rev:HF Damp Level	0 - 4	40H	0ddd_ddddB	Par 45	Rev:Reverb Level	0 - 100
					41H	0ddd_ddddB	Par 46	Dly:Cross Mix	0 - 100
40H	0ddd_ddddB	Par 45	Rev:Reverb Level	0 - 100					
41H	0ddd_ddddB	Par 46	Rev:Direct Level	0 - 100	44H	0ddd_ddddB	Par 49	Direct Level	0 - 100
					45H	0ddd_ddddB	Par 50	Total Level	0 - 100
45H	0ddd_ddddB	Par 50	Total Level	0 - 100	46H	0000_0fgbB	Ext Control	on/off	
46H	0000_0fgbB	Ext Control	on/off		47H	0ddd_ddddB	Ext Control 1	Source (Table 40)	
47H	0ddd_ddddB	Ext Control 1	Source (Table 40)		48H	0ddd_ddddB	Ext Control 1	Target (Table 38A)	
48H	0ddd_ddddB	Ext Control 1	Target (Table 37A)		49H	0ddd_ddddB	Ext Control 1	Min MSB	
49H	0ddd_ddddB	Ext Control 1	Min MSB						
					5FH	0ddd_ddddB	Ext Control 4	Max LSB	
5FH	0ddd_ddddB	Ext Control 4	Max LSB		60H	0000_0000B	End Of Data		
60H	0000_0000B	End Of Data							

Table 37A Multi 5 External Control Target

Data	Target	MIN	MAX
0	Vib:on/off	0 - 2	(Ignore)
1	Vib:Rate	1 - 100	
2	Vib:Depth	0 - 100	
3	Vib:Pan:Depth	0 - 100	
4	Dly:on/off	0 - 2	(Ignore)
5	Dly:Feedback	0 - 120	
6	Dly:MIX Level	0 - 100	
7	Rev:on/off	0 - 2	(Ignore)
8	Rev:Reverb Time	1 - 247	
9	Rev:Reverb Level	0 - 100	
10	Total Level	0 - 100	
11	Bypass	0 - 2	(Ignore)

Table 38A Mod,Delay/Reverb External Control Target

Data	Target	MIN	MAX
0	Dly:on/off	0 - 2	(Ignore)
1	Dly:Feedback	0 - 120	
2	Dly:MIX Level	0 - 100	
3	Mod:on/off	0 - 2	(Ignore)
4	Mod:Rate	1 - 100	
5	Mod:Depth	0 - 100	
6	dEQ:on/off	0 - 2	(Ignore)
7	dEQ:Total Level	0 - 48	
8	Rev:on/off	0 - 2	(Ignore)
9	Rev:Reverb Time	1 - 247	
10	Rev:Reverb Level	0 - 100	
11	rEQ:on/off	0 - 2	(Ignore)
12	rEQ:Total Level	0 - 48	
13	Total Level	0 - 100	
14	Bypass	0 - 2	(Ignore)

\*Table 38 Mod,Delay/Reverb (198)

Offset	Address	Description
	00H	0ddd_ddddB Name 1
	:	:
	0FH	0ddd_ddddB Name 16
	10H	0000_0000B End Of Name
	11H	0010_010B Algorithm 38
	12H	0e00_0000B Bypass/Block on/off
	13H	000n_opqrB Block on/off
		e:Bypass off:0 on:1
		n:Reverb EQ on/off off:0 on:1
		o:Reverb on/off off:0 on:1
		p:Delay EQ on/off off:0 on:1
		q:Delay Modulation on/off off:0 on:1
		r:Delay on/off off:0 on:1
19H	0ddd_ddddB	Par 6 Dly:EQ:High Level 0 - 48
1AH	0ddd_ddddB	Par 7 Dly:EQ:Mid Frequency 0 - 14
1BH	0ddd_ddddB	Par 8 Dly:EQ:Mid Level 0 - 48
1CH	0ddd_ddddB	Par 9 Dly:EQ:Low Level 0 - 48
1DH	0ddd_ddddB	Par 10 Dly:EQ:Total Level 0 - 48
1EH	0ddd_ddddB	Par 11 Rev:EQ:High Level 0 - 48
1FH	0ddd_ddddB	Par 12 Rev:EQ:Mid Frequency 0 - 14
20H	0ddd_ddddB	Par 13 Rev:EQ:Mid Level 0 - 48
21H	0ddd_ddddB	Par 14 Rev:EQ:Low Level 0 - 48
22H	0ddd_ddddB	Par 15 Rev:EQ:Total Level 0 - 48
23H	0ddd_ddddB	Par 16 Dly:Mod:LFD Waveform 0 - 1
24H	0ddd_ddddB	Par 17 Dly:Mod:Rate 1 - 100

\*Table 39 Reverb/Reverb/Delay (199)

Offset	Address	Description
	00H	0ddd_ddddB Name 1
	:	:
	0FH	0ddd_ddddB Name 16
	10H	0000_0000B End Of Name
	11H	0010_010B Algorithm 37
	12H	0e00_0000B Bypass/Block on/off
	13H	0000_opqrB Block on/off
		e:Bypass off:0 on:1
		p:Delay on/off off:0 on:1
		q:Reverb 2 on/off off:0 on:1
		r:Reverb 1 on/off off:0 on:1
18H	0ddd_ddddB	Par 5 Rev1:Input Select 0 - 2
19H	0ddd_ddddB	Par 6 Rev1:Reverb Time(LSB)
1AH	0ddd_ddddB	Par 7 Rev1:Reverb Time(MSB) 0 - 247
1BH	0ddd_ddddB	Par 8 Rev1:Pre Delay(LSB)
1CH	0ddd_ddddB	Par 9 Rev1:Pre Delay(MSB) 0 - 140
1DH	0ddd_ddddB	Par 10 Rev1:Filter LPF 0 - 14
1EH	0ddd_ddddB	Par 11 Rev1:Filter HPF 0 - 15
1FH	0ddd_ddddB	Par 12 Rev1:HF Damp Frequency 0 - 7
20H	0ddd_ddddB	Par 13 Rev1:HF Damp Level 0 - 4
21H	0ddd_ddddB	Par 14 Rev1:MIX Level 0 - 100
2FH	0ddd_ddddB	Par 28 Dly:Input Select 0 - 2

30H	0ddd_ddddB	Par 29	Dly:Delay Time(LSB)	
31H	0ddd_ddddB	Par 30	Dly:Delay Time(MSB)	1 - 520
32H	0ddd_ddddB	Par 31	Dly:Feedback	0 - 120
33H	0ddd_ddddB	Par 32	Dly:HF Damp Frequency	0 - 7
34H	0ddd_ddddB	Par 33	Dly:HF Damp Level	0 - 4
35H	0ddd_ddddB	Par 34	Dly:Mix Level	0 - 100
36H	0ddd_ddddB	Par 35	Rev2:Input Select	0 - 2
37H	0ddd_ddddB	Par 36	Rev2:Reverb Time(LSB)	
38H	0ddd_ddddB	Par 37	Rev2:Reverb Time(MSB)	0 - 247
39H	0ddd_ddddB	Par 38	Rev2:Pre Delay(LSB)	
3AH	0ddd_ddddB	Par 39	Rev2:Pre Delay(MSB)	0 - 140
3BH	0ddd_ddddB	Par 40	Rev2:Filter LPF	0 - 14
3CH	0ddd_ddddB	Par 41	Rev2:Filter HPF	0 - 15
3DH	0ddd_ddddB	Par 42	Rev2:HF Damp Frequency	0 - 7
3EH	0ddd_ddddB	Par 43	Rev2:HF Damp Level	0 - 4
40H	0ddd_ddddB	Par 45	Rev2:Mix Level	0 - 100
44H	0ddd_ddddB	Par 49	Direct Level	0 - 100
45H	0ddd_ddddB	Par 50	Total Level	0 - 100
46H	0000_efghB	Ext Control	on/off	
47H	0ddd_ddddB	Ext Control 1	Source (Table 40)	
48H	0ddd_ddddB	Ext Control 1	Target (Table 39A)	
49H	0ddd_ddddB	Ext Control 1	Min MSB	
:	:	:	:	:
5FH	0ddd_ddddB	Ext Control 4	Max LSB	
60H	0000_0000B	End Of Data		

Table 39A Reverb/Reverb/Delay External Control Target

Data	Target	MIN	MAX
0	Rev1:on/off	0 - 2	(Ignore)
1	Rev1:Reverb Time	1 - 247	
2	Rev1:Mix Level	0 - 100	
3	Rev2:on/off	0 - 2	(Ignore)
4	Rev2:Reverb Time	0 - 247	
5	Rev2:Mix Level	0 - 100	
6	Dly:on/off	0 - 2	(Ignore)
7	Dly:Feedback	0 - 120	
8	Dly:Mix Level	0 - 100	
9	Total Level	0 - 100	
10	Bypass	0 - 2	(Ignore)

Table 40 External Control Source

Data	Source
0	Control SW
1	Pitch Bender
2	Channel After Touch
3	Note Number
4	Velocity
5 - 36	Control #000 - #031
37 - 93	Control #064 - #120

## MIDI Implementation Chart

Function ...		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	1 - 16 1 - 16	1 - 16 1 - 16	Memorized * 1
Mode	Default Messages Altered	× × *****	Mode 2, 4 × ×	Mode4 : m = 1  Memorized
Note Number	True Voice	× *****	* 2 0 - 127	* 3
Velocity	Note ON Note OFF	× ×	* 2 ×	* 3
After Touch	Key's Ch's	× ×	× * 2	* 3
Pitch Bender		×	* 2	* 3
Control Change	0 - 31	×	* 2	* 3
	64 - 120	×	* 2	* 3
Prog Change	True #	× *****	* 2 0 - 127	
System Exclusive		○	○	Parameter value
System Common	Song Pos Song Sel Tune	× × ×	× × ×	
System Real Time	Clock Commands	× ×	× ×	
Aux Messages	Local ON/OFF All Notes OFF Active Sense Reset	× × × ×	× × × ×	
Notes	* 1 Basic channel is common to transmit and receive and cannot be set separately. * 2 Can be set to ○ or × manually and memorized. * 3 Up to 4 parameters can be set and controlled.			

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

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

○ : Yes  
× : No

# SPECIFICATIONS

---

## RSP-550 Stereo Signal Processor

### ● Signal Processing

AD Conversion: 16 bit linear  
DA Conversion: 16 bit linear

### ● Sampling Frequency

48 kHz

### ● Programs/Memory Locations

199 in total      User Area: 1 to 160  
                         Preset Area: 161 to 199

### ● Algorithms

39

### ● Frequency Response

15Hz to 21 kHz

### ● Dynamic Range

95 dB (Bypass ON; DSP Through)

### ● Total Harmonic Distortion

0.02 % or less

### ● Nominal Input Level

- 20 / +4 dBm

### ● Input Impedance

47 k  $\Omega$

### ● Nominal Output Level

- 20 / +4 dBm

### ● Output Impedance

220  $\Omega$

### ● Controls

Input Level Knobs (L/R)  
Bypass Switch

### ● Displays

7-segments, 3-lines (LED)  
16-characters, 2-lines (backlit LCD)

### ● Indicators

Level Meter Indicators(Input/Output)  
Level Meter L/R (12 levels)

### ● Connectors

Input Jacks:                                 2  
Output Jacks:                                2  
MIDI Connectors:                         IN, OUT, THRU  
Program Shift Jacks:UP/DOWN  
Control Jack  
Bypass Remote Jack

### ● Power Supply

AC 117 V, AC 230 V, AC 240 V

### ● Power Consumption

25 W

### ● Dimensions

482 (W)  $\times$  310 (D)  $\times$  44 (H) mm  
19 (W)  $\times$  12 - 3/16 (D)  $\times$  1 - 3/4 (H) inches  
(Mounts on EIA-1U rack)

### ● Weight

3.4 kg  
7.5 lbs.

### ● Accessories

Owner's Manual  
Algorithm Guide

*\* The specifications for this product are subject to change without prior notice.*

# INDEX

About MIDI	40	OMNI Mode	33, 40
Aftertouch Messages	18, 41	Output Mute	27
Algorithm	14	Parameter Edit Mode	15
Assign Number	19	Pitch Bend Messages	18, 41
Bulk Dump	36	Preset Area	14
Bulk Load	36, 38	Program Change Map	35
Bypass	11, 27	Program Change Messages	34, 41
Channel Messages	41	Program Number	10, 14, 28, 34
Circuit Bypass	27	PROGRAM SHIFT Jacks	10, 28
Control Assign	18	Restoring the Factory Presets	46
Control Assign Edit Mode	19	Settings for Effects Programs	15
CONTROL Button	18	System Functions	26
Control Change Messages	18, 41	System Messages	42
CONTROL Jack	18	Temporary Data	36
Connections	8	Transferral of Data	36
Copy	25	Troubleshooting	43
Display Contrast	29	User Area	14
DSP Through	27	Velocity Messages	18
Effect Name	22	Write Mode	23
Error Messages	45	Write Procedure	23
Exclusive Messages	42		
Initialize	46		
Input Level	9		
Input Level Knobs	9		
Level Meter	9, 29		
Memory Protect	26		
MIDI Channel	33, 40		
MIDI Implementation	49		
MIDI Implementation Chart	42, 67		
Name Edit Mode	22		
Note Number Messages	18, 42		

# Information

● When you need repair service, call your local Roland Service Station or the authorized Roland distributor in your country as shown below.

## U. S. A.

Roland Corp US  
7200 Dominion Circle  
Los Angeles, CA. 90040 - 3647  
U. S. A.  
☎ (213)685 - 5141

## CANADA

Roland Canada Music Ltd.  
(Head Office)  
5480 Parkwood  
Richmond B. C., V6V 2M4  
CANADA  
☎ (604)270 - 6626

Roland Canada Music Ltd.  
9425 Transcanadienne  
Service Rd. N.,  
St Laurent, Quebec H4S 1V3  
CANADA  
☎ (514)335 - 2009

Roland Canada Music Ltd.  
346 Watline Avenue,  
Mississauga, Ontario L4Z 1X2  
CANADA  
☎ (416)890 - 6488

## AUSTRALIA

Roland Corporation  
(Australia) Pty. Ltd.  
(Head Office)  
38 Campbell Avenue  
Dee Why West, NSW 2099  
AUSTRALIA  
☎ (02)982 - 8266

Roland Corporation  
(Australia) Pty. Ltd.  
(Melbourne Office)  
50 Garden Street  
South Yarra, Victoria 3141  
AUSTRALIA  
☎ (03)241 - 1254

## NEW ZEALAND

Roland Corporation (NZ) Ltd.  
97 Mt. Eden Road, Mt. Eden,  
Auckland 3  
NEW ZEALAND  
☎ (09)398 - 715

## UNITED KINGDOM

Roland(UK)Ltd.  
Rye Close  
Ancells Business Park  
Fleet  
Hampshire GU13 8UY  
UNITED KINGDOM  
☎ 0252 - 816181

## GERMANY

Roland Elektronische  
Musikinstrumente  
Handelsgesellschaft mbH.  
Oststrasse 96,  
2000 Norderstedt  
GERMANY  
☎ 040/52 60 090

## BELGIUM/HOLLAND/ LUXEMBOURG

Roland Benelux N. V.  
Houtstraat 1  
B - 2431 Oevel - Westerlo  
BELGIUM  
☎ (0032)14 - 575811

## DENMARK

Roland Scandinavia as  
Langebrogade 6  
Box 1937  
DK - 1023 Copenhagen K.  
DENMARK  
☎ 31 - 95 31 11

## SWEDEN

Roland Scandinavia as  
Danvik Center 28 A, 2 tr.  
S - 131 30 Nacka,  
SWEDEN  
☎ 08 - 702 00 20

## NORWAY

Roland Scandinavia  
Ave. Norge  
Lilleakerveien 2  
Postboks 95 Lilleaker  
N - 0216 Oslo 2  
NORWAY  
☎ 02 - 73 00 74

## FINLAND

Fazer Musik Inc.  
Länsituulentie  
POB 169  
SF - 02101 Espoo  
FINLAND  
☎ 0 - 43 50 11

## ITALY

Roland Italy S. p. A.  
Viale delle Industrie 8  
20020 ARESE MILANO  
ITALY  
☎ 02 - 93581311

## SPAIN

Roland Electronics  
de España, S. A.  
Bolivia 239  
08020 Barcelona  
SPAIN  
☎ 93 - 308 - 1000

## SWITZERLAND

Musitronic AG  
Gerberstrasse 5, CH - 4410  
Liestal  
SWITZERLAND  
☎ 061/921 16 15

Roland CK (Switzerland) AG  
Hauptstrasse 21/Postfach  
CH - 4456 Tenniken  
SWITZERLAND  
☎ 061/98 60 55  
Repair Service by Musitronic AG

## FRANCE

Musikengro  
102 Avenue Jean - Jaures  
69007 Lyon Cedex 07  
FRANCE  
☎ (7)858 - 54 60

Musikengro  
(Paris Office)  
Centre Region Parisienne  
41 rue Charles - Fourier,  
94400 Vitry s/Seine  
FRANCE  
☎ (1)4680 86 62

## AUSTRIA

E. Dematte & Co.  
Neu - Rum Siemens - Strasse 4  
A - 6021 Innsbruck Box 591  
AUSTRIA  
☎ (0512)63 451

## GREECE

V. Dimitriadis & Co. Ltd.  
2 Phidiou Str., GR 106 78  
Athens  
GREECE  
☎ 1 - 3620130

## PORTUGAL

Casa Caius Instrumentos  
Musicais Lda.  
Rua de Santa Catarina 131  
Porto  
PORTUGAL  
☎ 02 - 38 44 56

## HUNGARY

Intermusica Ltd.  
Warehouse Area 'DEPO'  
Budapest. P.O. Box 3,  
2045 Torokbalint  
HUNGARY  
☎ (1)1868905

## ISRAEL

D.J.A. International Ltd.  
25 Pinsker St.,  
Tel Aviv  
ISRAEL  
☎ 03 - 283015

## BRAZIL

FORESIGHT Corporation  
R. Alvarenga 591  
CEP - 05509 Sao Paulo  
BRAZIL  
FAX: (011)210 - 0286

## HONG KONG

Tom Lee Music Co., Ltd.  
Service Division  
22 - 32 Pun Shan Street,  
Tsuen Wan,  
New Territories,  
HONG KONG  
☎ 415 - 0911

## SINGAPORE

Swee Lee Company  
Bras Basah Complex #03 - 23  
Singapore 0178  
SINGAPORE  
☎ 3367886

## THAILAND

Theera Music Co., Ltd.  
330 Verng Nakorn Kasem, Soi 2  
Bangkok 10100,  
THAILAND  
☎ 2248821

## MALAYSIA

Syarikat Bentley  
No.142, Jalan Bukit Bintang  
55100 Kuala Lumpur  
MALAYSIA  
☎ 2421288

## INDONESIA

PT Galestra Inti  
Kompleks Perkantoran  
Duta Merlin Blok C/59  
Jl. Gajah mada No.3 - 5  
Jakarta 10130  
INDONESIA  
☎ (021) 354604, 354606

## TURKEY

Barkat Sanayi ve Ticaret  
Siraselviler Cad. 86/6 Taksim  
Istanbul  
TURKEY  
☎ 149 93 24

## CYPRUS

Radex Sound Equipment Ltd  
17 Panteli Katelari Str.  
P.O.Box 2046, Nicosia  
CYPRUS  
☎ 453426, 466423

As of FEB 14, 1991

For Nordic Countries

## Apparatus containing Lithium batteries

### ADVARSEL!

Lithiumbatteri – Eksplosionsfare ved fejlagtig håndtering.  
Udskiftning må kun ske med batteri af samme fabrikat og type.  
Levér det brugte batteri tilbage til leverandøren.

### VARNING!

Explosionsfara vid felaktigt batteribyte.  
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.  
Kassera använt batteri enligt fabrikantens instruktion.

### ADVARSEL!

Lithiumbatteri – Eksplosjonsfare.  
Ved utskifting benyttes kun batteri som anbefalt av apparatfabrikanten.  
Brukt batteri returneres apparatleverandøren.

### VAROITUS!

Paristo voi räjähtää, jos se on virheellisesti asennettu.  
Vaihda paristo ainoastaan lailevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

For Germany

## Bescheinigung des Herstellers/Importeurs

Hiermit wird bescheinigt, daß der/die/das  
STEREO SIGNAL PROCESSOR RSP-550  
.....  
(Gerät. Typ. Bezeichnung)

in Übereinstimmung mit den Bestimmungen der  
Amtsbl. Vfg 1046/1984  
.....  
(Amtsblattverfugung)

funk-entstört ist.

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

Roland Corporation Osaka/Japan

.....  
Name des Herstellers/Importeurs

For the USA

## RADIO AND TELEVISION INTERFERENCE

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

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

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

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

For Canada

### CLASS B

### NOTICE

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

### CLASSE B

### AVIS

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

 Roland®

2604055200

UPC

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