

**S-DISC™
PROCESSING**

RP-10

Guitar Signal Processor/Foot Controller and Preamp

Owner's Manual

	Table Of Contents	1
	Introduction	4
	Safety Precautions	4
	Lithium Battery Warning	5
	Warranty	5
SECTION 1 - STARTUP		
	Supplying power	7
	Line Conditioning	7
	Front Panel Controls	7
	Pedalboard	7
	Display Window	8
	Program Keys	8
	Parameter Keys	8
	Effects Access	8
	Global Buttons	9
	Main Output Level	9
	Continuous Control Treadle	9
	Rear Panel Connections	9
	Input	9
	Right Main Output	9
	Left Main Output	9
	Headphone Output	9
	AC Line Input	9
	MIDI In	9
	MIDI Out / Thru	10
	MIDI and Audio Setups	11
SECTION 2 - BASIC OPERATIONS		
	Program Architecture	12
	About Performance Mode	12
	Accessing Factory Programs	13
SECTION 3 - PROGRAMMING		
	More Special Characters	14
	The Effects Access Keys	14
	About the I / O Module	15
	Modifying Factory Programs	15
	Basic Program Creation	15
	Selecting an Algorithm	15
	Storing / Naming Programs	17
	Using the Function Keys	17
SECTION 4 - EFFECTS AND PARAMETERS		
	About the Effects Library	20
	Analog Effects	20
	Compressor	20
	Distortion	20
	Equalizers	21
	Cabinet Emulator	22
	Reverbs	23
	Gated Reverbs	27
	Diy / Smp	29
	Delays	29
	Sampler	31

Pitch Shifters	33
Detuners	34
Whammy™	34
Arpeggiators	35
Modulation Effects	36
Choruses	36
Flangers	37
Phasers	37
Tremolos	38
Auto Panners	38
Mixers	39
More	40
Noise Gates	40
Dist/Clean Level	41
Wahs	41
Duckers	41
Phase Inverter	42
SECTION 5 - RP-10 FUNCTIONS	
About the RP-10's Internal Functions	43
Pedalboard Functions	43
MIDI functions	43
Tuning with the RP-10	43
Changing the Tuning Reference	43
SECTION 6 - PEDALBOARD SET-UP	
About the Pedalboard Set-Up	43
Pedals	45
Pedal Assignments	45
Program Changes	45
Program Up & Down	46
List Up & Down	47
Bank Up & Down	48
Toggle CC 0-127	49
CC Pedal 0-127	50
CC Pedal	49
Assign CC Pedal	49
CCPedal	49
Transmit	49
Calibrate Pedal	49
PrgList Assign	50
List size	50
Steps	50
LED Assign	51
SECTION 7 - RP-10 SET-UP	
Contrast	52
Output Mode	52
Cabinet Emulation	53
Sales Banner	53
Reinitializing the RP-10	54

SECTION 8 - MIDI SET-UP

About the MIDI Set-Up	55
MIDI Channel	55
Send Program	55
Program send map	56
Devices	56
Device Map	56
Program receive map	57
Assign CC # to a Parameter	57
Display CCs	60
Bulk Dump	60
Program Dump	61
MIDI merge	62

SECTION 9 - APPENDIX

Specifications	63
Factory Algorithm Diagrams	64
Block Diagram	73
Preset List	75

4

INTRODUCTION

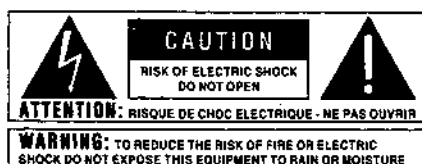
RP-10 Owner's Manual

Congratulations, and thank you for purchasing the DigiTech RP-10 Guitar Signal Processor / Preamp. The RP-10 offers you a fresh approach to guitar sound creation, giving you the hottest tones and total control of the best digital effects in the industry. DigiTech's revolutionary S-DISC™ processor makes it all happen. Its digital multi-effects are second to none, and when you combine its power with the warmth and clarity of the best analog preamp on the market with up to 10 real-time continuous controller links per Program, nothing else even comes close. Special features of the RP-10 include:

- Full bandwidth effects (20-20kHz).
- 24-bit signal path, 48-bit internal data transmission.
- Stereo Effects.
- Instant Module and Parameter access.
- Programmable cabinet emulation for running direct to a mixing console (great for both studio and live applications).
- Built in FX Continuous Controller Pedal.
- Built-in MIDI merging (MIDI output can act as a standard out or as a merged out).
- MIDI Transmit and Receive mapping
- Extensive real-time MIDI control of effects and parameters.
- Chromatic Tuner

For the first time, all of your effects needs can be filled by a single unit with 16-bit digital clarity. This owner's manual is your key to understanding the powerful world of the RP-10. Read it carefully. After you've had time to familiarize yourself with the unit, try experimenting with unusual effects settings. You may achieve some interesting results.

SAFETY PRECAUTIONS



The symbols shown above are internationally accepted symbols that warn of potential hazards with electrical products. The lightning flash with arrowpoint in an equilateral triangle means that there are dangerous voltages present within the unit. The exclamation point in an equilateral triangle indicates that it is necessary for the user to refer to the owner's manual.

These symbols warn that there are no user serviceable parts inside the unit. Do not open the unit. Do not attempt to service the unit yourself. Refer all servicing to qualified personnel. Opening the chassis for any reason will void the manufacturer's warranty. Do not get the unit wet. If liquid is spilled on the unit, shut it off immediately and take it to a dealer for service. Disconnect the equipment during storms to prevent damage.

U.K. ONLY - A moulded mains plug that has been cut off from the cord is unsafe. Discard the mains plug at a suitable disposal facility. NEVER UNDER ANY CIRCUMSTANCES SHOULD YOU INSERT A DAMAGED OR CUT MAINS PLUG INTO A 13 AMP POWER SOCKET. Do not use the mains plug without the fuse cover in place. Replacement fuse covers can be obtained from your local retailer. Replacement fuses are 13 amps and MUST be ASTA approved to BS1362.

LITHIUM BATTERY WARNING

CAUTION! This product contains a lithium battery. There is danger of explosion if battery is incorrectly replaced. Replace only with an Eveready CR 2032 or equivalent. Make sure the battery is installed with the correct polarity. Discard used batteries according to manufacturer's instructions.

ADVARSEL! Lithiumbatteri - Eksplosjonsfare. Ved utskifting benyttes kun batteri som anbefalt av apparatfabrikanten. Brukt batteri returneres apparatleverandøren.

ADVARSEL! Lithiumbatteri - Eksplosjonsfare ved feilagtig håndtering. Utskiftning må kun ske med batteri av samme fabrikat og type. Levér det brukte batteri tilbake til leverandøren.

VAROITUS! Paristo voi räjähtää, jos se on virheellisesti asennettu. Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

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

WARRANTY

1. The warranty registration card must be mailed within ten days after purchase date to validate this warranty.
2. DigiTech warrants this product, when used solely within the U.S., to be free from defects in materials and workmanship under normal use and service.

3. DigiTech liability under this warranty is limited to repairing or replacing defective materials that show evidence of defect, provided the product is returned to DigiTech WITH RETURN AUTHORIZATION, where all parts and labor will be covered up to a period of one year. A Return Authorization number may be obtained from DigiTech by telephone. The company shall not be liable for any consequential damage as a result of the product's use in any circuit or assembly.
4. Proof-of-purchase is considered to be the burden of the consumer.
5. DigiTech reserves the right to make changes in design or make additions to or improvements upon this product without incurring any obligation to install the same on products previously manufactured.
6. The foregoing is in lieu of all other warranties, expressed or implied, and DigiTech neither assumes nor authorizes any person to assume for it any obligation or liability in connection with the sale of this product. In no event shall DigiTech or its dealers be liable for special or consequential damages or from any delay in the performance of this warranty due to causes beyond their control.

DigiTech™, S-DISC™, Whammy™ and Silencer™ are registered trademarks of DOD Electronics Corporation.

The information contained in this manual is subject to change at any time without notification. Some information contained in this manual may also be inaccurate due to undocumented changes in the product or operating system since this version of the manual was completed. The information contained in this version of the owner's manual supersedes all previous versions.

SECTION 1 - STARTUP

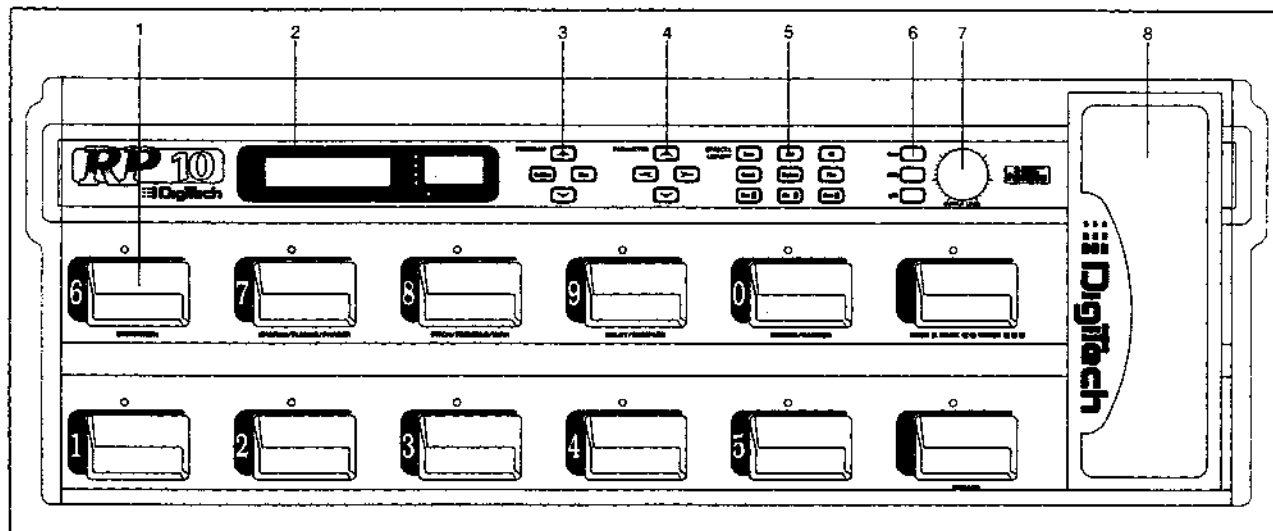
SUPPLYING POWER

Line Conditioning - The RP-10, like any piece of computer hardware, is sensitive to voltage drops, spikes, and surges. Interference such as lightning or power "brownouts" can seriously, and in extreme cases, permanently damage the circuitry inside the unit. Here are some ways to avoid this type of damage:

- **Spike/Surge Suppressors** - This is an inexpensive solution to all but the severest of AC line conditions. Surge protected power strips usually cost only slightly more than unprotected strips, making them a worthy investment for protection of all your valuable gear.
- **AC Line Conditioners** - This is the best way to go for total protection from improper line voltages, albeit the more expensive way. Line conditioners constantly monitor for excessively high or low voltages and adjust accordingly, thus delivering consistent power levels.

FRONT PANEL CONTROLS

The front panel controls and functions of the RP-10 are as follows (refer to diagram):



- 1) **Pedalboard** - The RP-10's pedalboard consists of twelve switches and a real-time Continuous Controller Pedal (more on the Pedal later). The ten main switches are labeled 1 - 0 (10) and can be set to turn effects on or off, change Programs, or toggle continuous controllers. The Bypass switch (bottom row, far right) bypasses all the effects functions of the RP-10, including analog effects such as distortion and compression. When the RP-10 is in Bypass mode, the instrument sound is passed directly from the input to the out-

puts without effects. The Bank/Program/Tuner Select Switch (top row, far right) allows you recall any Program in the RP-10's memory, access any Bank of sounds within the unit, or access the tuner.

2) Display Window - The display window shows all current operating and programming information and is comprised of several parts: the LCD display, the input level meter, the Program number indicator, and DSP Clip indicator LEDs. The LCD display shows all Program names, Parameters and Parameter values, and is the communication interface between you and the RP-10. The input level meter monitors the level of the signal entering the digital section. In the Program number indicator window you will find the currently selected Program number. This changes as you scroll through the available Programs. The functions of the Input Level Meter and DSP Clip indicator LEDs are as follows:

- **Input Level Meter** - Displays the strength of the signal after the preamp section in 6 dB steps, entering the digital section.
- **DSP Clip** - Indicates digital information overflow in the processor. When lit, distortion may be heard in the output signal. The guideline for this indicator is **let your ears be the judge**. If this indicator lights regularly and no audible distortion is present, it can be ignored. If distortion is audible in the output signal, one or more of the internal analog effects levels or the DSP Master level in the Program must be turned down to eliminate the problem.

3) Program Keys - The Program <UP> and <DOWN> keys allow you to scroll through the RP-10's effects Programs. The <STORE> key allows you to store a Program in memory for later recall. The <COMPARE> key allows comparison of an edited Program with the original unedited version before it is stored.

4) Parameter Keys - The Parameter keys perform several different functions. When the Program Title is displayed, the <UP> and <DOWN> Parameter keys do nothing. The <RIGHT> key will move you to the algorithm section, through the modules of the algorithm and into the parameters of the program. The <LEFT> key moves you in the opposite direction (see the diagram on page 11 for further explanation). Once you have accessed the algorithm screen or parameter screen with the <LEFT> and <RIGHT> parameter keys, the <UP> and <DOWN> keys allow you to increase or decrease the displayed values.

5) Effects Library keys - This group of buttons allows you to jump directly to the first Parameter of Modules in the currently selected Algorithm. The buttons in this group are: <COMP>, <DIST>, <EQ>, <REVERB>, <DLY/SMP>, <PITCH>, <MOD>, <MIX>, and <MORE>. Also included in this section and sharing buttons with the <MOD>, <MIX>, and <MORE> buttons are the Function keys

(indicated by **1**, **2**, and **3**) which act as menu selection keys in the Utility, MIDI, and Naming menus.

6) Global Buttons - These buttons perform global functions. Some of these functions include, Utility functions such as LCD contrast and Pedalboard setup, and MIDI setups (including transmit and receive maps). Buttons in this group are: <NAME>, <UTILITY>, and <MIDI>.

7) Main Output Level - This controls the overall output level of the RP-10. It also controls the overall level of the headphones.

8) Continuous Control Pedal - This volume-type pedal allows real-time control over Parameters in the RP-10.

REAR PANEL CONNECTIONS

The RP-10 rear panel connectors and functions are as follows:



1) Input - This is the audio input to the RP-10. Plug your instrument in here.

2) Right Output - This is the right main audio output of the RP-10. Use both left and right outputs when Programs are set up to take advantage of stereo effects.

3) Left/Mono Output - This is the left main audio output of the RP-10. Use both left and right outputs when Programs are set up to take advantage of stereo effects. Use either output when the RP-10 is set to mono output.

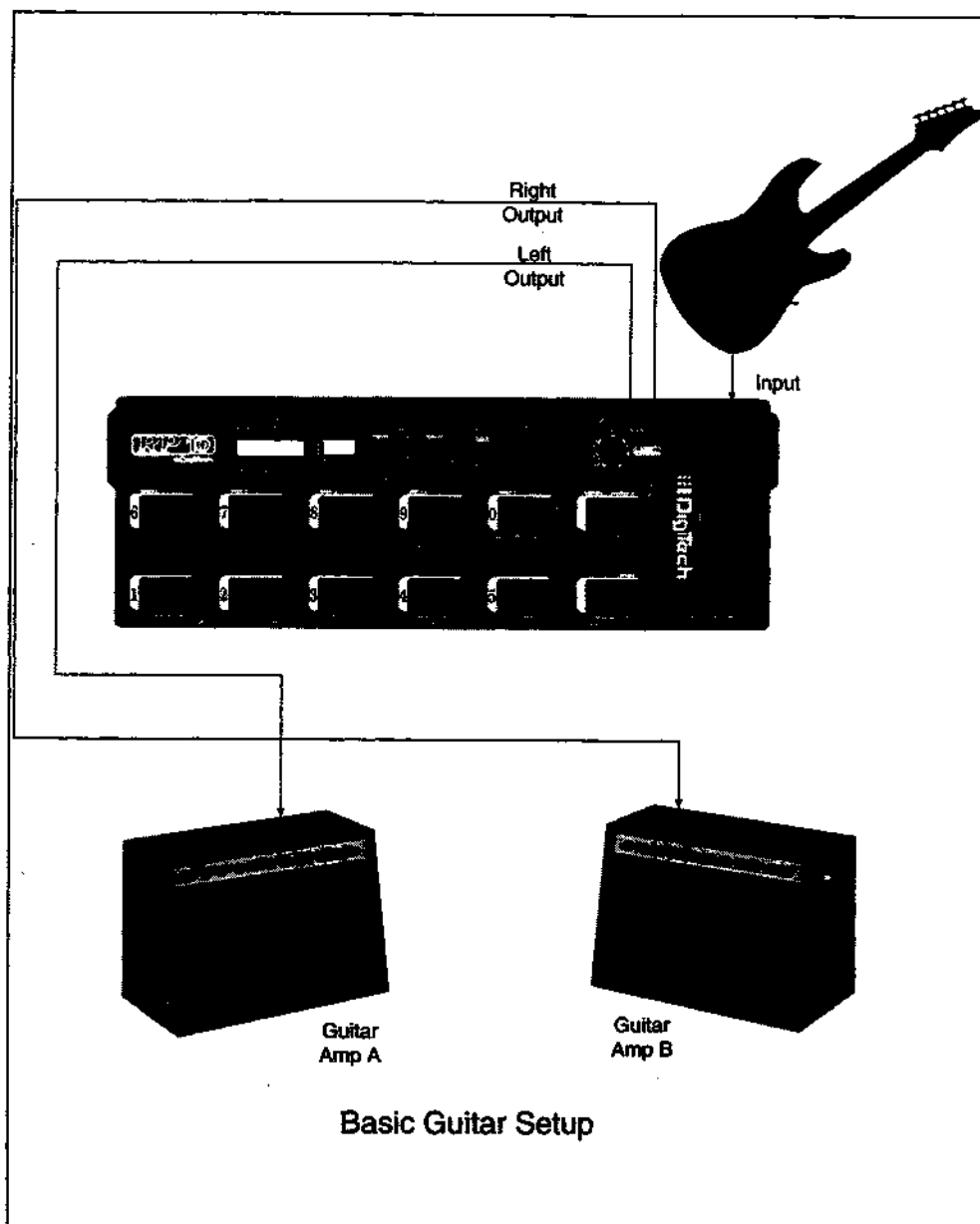
4) Headphone Output - 1/4" stereo plug for headphones. The headphone level is controlled by the main output level knob.

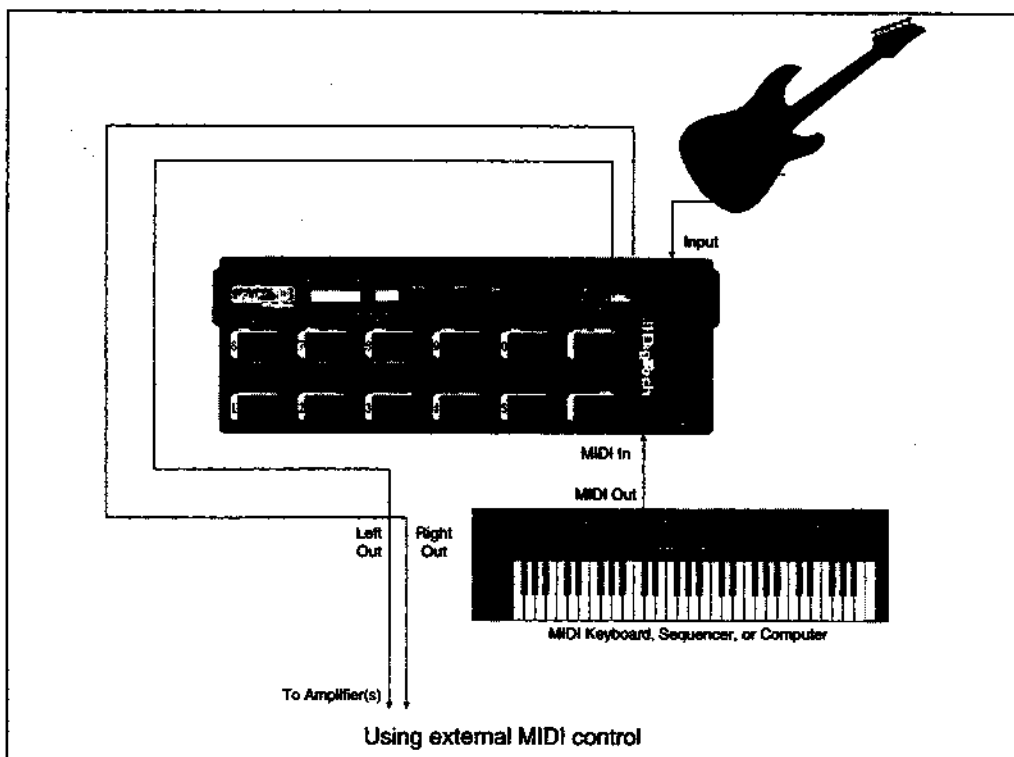
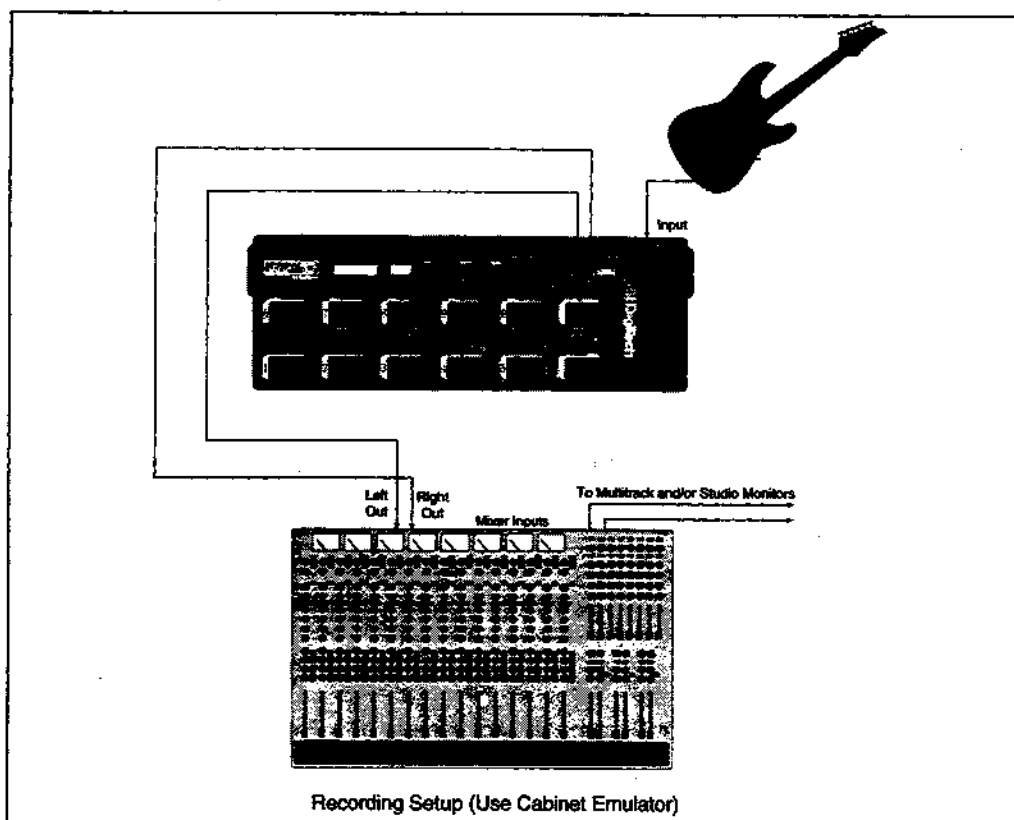
5) AC Line Input - This is the power supply receptacle.

6) MIDI In - The MIDI In port allows the RP-10 to respond to incoming MIDI messages, including Program Change, Continuous Control, and System Exclusive data.

7) MIDI Out / Thru - Sends out MIDI data generated by the RP-10 to other devices. It also passes MIDI data transmitted on the RP-10's MIDI channel through to other devices.

The following diagrams show possible MIDI and audio routing setups for the RP-10.





12

SECTION 2 - BASIC OPERATIONS

PROGRAM ARCHITECTURE

The Program's Parameter architecture in the RP-10 has been designed to be a linear series of items rather than a multiple-level menu (see diagram). In other words, instead of including several sub-menus under a single Parameter heading, all Parameters are included in a single level, and are accessed using the <LEFT> and <RIGHT> Parameter keys. This makes access to specific Parameters of a Program quick and easy, and provides a much clearer picture of exactly where you are in the Program.

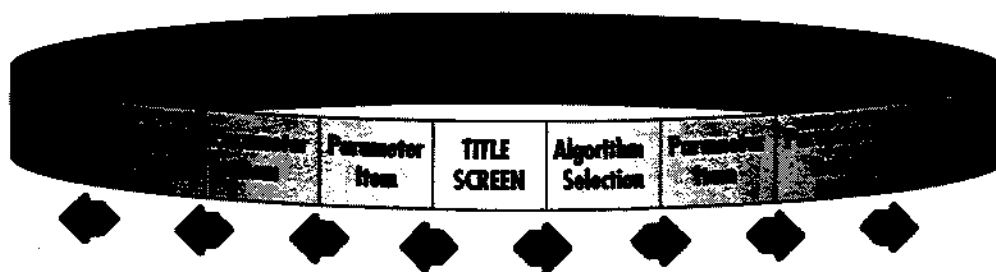


Fig. 2-2 Linear Parameter Architecture of a Program

The diagram above shows the linear arrangement of the Parameters in the RP-10. Notice that if you press the <RIGHT> Parameter key from the last item in the list (the Parameter item to the left of the title screen), the display jumps, or "wraps around to" the first item in the Program (in this case, the title screen).

Likewise, if the <LEFT> Parameter key is pressed from the title screen, the display will wrap to the last Parameter in the list. This wraparound menu feature is provided so that Parameters that appear near the end of a long list of items can be just as easily reached as items near the beginning of the menu. If you press and hold either the <LEFT> Parameter key or the <RIGHT> Parameter key, the RP-10 will begin scrolling at high speed through the available Parameters.

ACCESSING FACTORY PROGRAMS There are three methods for recalling factory Programs. The first method uses the <UP> and <DOWN> Program keys. The procedure is as follows:

- From the title screen, press the Program <UP> key. Note that the Program shown in the display changes and the number shown in the LED display increments by one each time the Program <UP> key is pressed. Pressing the Program <DOWN> key causes the reverse to occur: the RP-10 decrements through the Programs in memory.
- To scroll at high speed through the Programs in memory, press and hold either the <UP> or <DOWN> Program key.

The second method uses the RP-10 pedalboard. When you change programs using the pedalboard, any unstored modifications you have made to a Program will be lost. The procedure is as follows:

- Press the Bank/Program Select switch (in the upper right corner of the RP-10 pedalboard) once. The foot controller display reads:

PROGRAM NUMBER?

- Using the numbered foot switches, enter the number of the Program you want to recall. If the Program number is less than three digits long, press the Bank/Program Select switch again to accept the selected Program number, or wait for the RP-10 to accept it on its own.
- Programs that are assigned to numbered pedals 1-5 can be accessed by pressing the pedal itself. Pedals 1-5 have been established from the factory to control a Program in every Bank.

The third method is through the use of MIDI. This method will be covered later in the MIDI section of this manual, pg. 55.

14

SECTION 3 - PROGRAMMING

USING THE FUNCTION BUTTONS

The RP-10 has three Function keys. They are located in the bottom row of the Effects Access buttons and they share buttons with the <MOD>, <MIX>, and <MORE> options. Each Function key is numbered and performs several functions in the Utility and MIDI modes (depending on the selected menu screen). These buttons are also used in the Program naming process (see Storing/Naming on page 17). See pg. 45 for more on the Utility Button. See pg. 55 for more on the MIDI Button.



are used in the display to indicate which function key to use.

MORE SPECIAL CHARACTERS

There are several special characters that the RP-10 uses to tell you at a glance exactly what it is doing. Some special characters in the RP-10 are in inverted type, that is, reversed out of a black background, and they will usually appear in the upper right-hand corner of the Program Title screen.

Indicates that the Cabinet Emulator is currently active.



Indicates that a MIDI continuous controller is linked to the Parameter.



Characters from this group are used for distinguishing between Modules of the same name in a single Algorithm. This is an instance in which a special character will immediately follow the Module name rather than appear in the corner of the display.



Indicates a Program has been modified.



Indicates the value within the brackets is a stored or saved value.

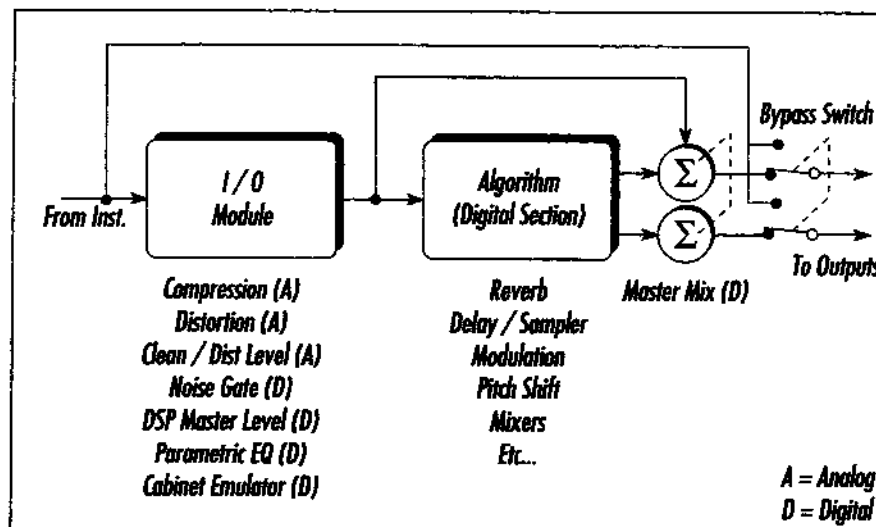
THE EFFECTS LIBRARY BUTTONS

The Effects Library buttons are used to jump to specific places in a Program. For example, if a Program contains two choruses and you want to change the delay time on only one of them, you could press the <MOD> Effects Library button from Program Title screen and you would jump to the first Parameter of the first chorus in the Algorithm. Press the button again, and you are taken to the first Parameter of the next chorus in the Algorithm.

ABOUT THE I/O MODULE

Each Program in the RP-10 is equipped with Compression, Distortion, Clean / Distortion Level, Noise Gate, DSP Master Level, Parametric EQ, Mode Mix, and Cabinet Emulator controls. These items are permanent residents of every Algorithm in the unit.

This group of items is called the Input / Output Module (or I/O Module) because they are always a part of both the input and output audio paths of the RP-10. The following diagram shows how the I/O Module affects the signal as it flows through the unit.



The RP-10's Compression, Distortion, and Clean / Distortion Level are analog for warmth and power. The Noise Gate, DSP Master Level, Parametric EQ, Mode Mix and Cabinet Emulator are all accomplished in the digital for absolute flexibility and precision.

MODIFYING FACTORY PROGRAMS

After you've had time to familiarize yourself with the RP-10, you may find that there are several factory Programs that are very close to what you're looking for, but that need a few small tweaks to get them perfect. Program 2 (CLASSIC JAZZ) has a chorus, BigVerb. Let's suppose that in order to work in your application, it needs to have a 60Hz chorus speed. Using this Program as an example for Program modification, the procedure for changing the delay time is as follows:

- From the Program title screen, scroll to Program 2 using the <UP/DOWN> Program buttons. The display reads:

Classic Jazz
Chorus→BigVerb

- Using the <RIGHT> and <LEFT> Parameter buttons, scroll to the CHORUS SPEED Parameter.

The display reads:

Chorus Speed
(0.30Hz)

NOTE: By pressing the <MOD> key you can skip directly to the first Parameter of the Chorus effect within the Algorithm, then continue scrolling with the <RIGHT> Parameter key to the desired Chorus Speed.

- Using the <UP> Parameter key, scroll upward until you reach 0.60Hz. The display reads:

Chorus Speed
0.60Hz

If you change Programs at this point, either through MIDI, the pedal-board, or the Program buttons, any modifications that you have made to the Program will be lost. In order for the RP-10 to remember the changes that you have made, you must store the Program in memory. The procedure for storing Programs is covered in more detail on pg. 17.

BASIC PROGRAM CREATION

There are three requirements for creating a Program on the RP-10. The first is that an Algorithm needs to be assigned to the Program; second, Parameters must be modified to your liking, and third, the Program must be stored in memory in order to be recalled for later use.

SELECTING AN ALGORITHM

The Algorithm you choose for a Program determines the basic function of the Program. It is therefore necessary to choose an Algorithm that contains all the Modules you want to use in an appropriate configuration (for a complete listing of the RP-10's algorithms, see page 75). The Algorithm selection screen for all Programs in the RP-10 is one screen to the right of the title screen.

NOTE: It may be easiest to select a Program that uses the Algorithm you want and begin editing Parameters from there.

The Algorithm selection screen works in conjunction with the LED display to show the currently selected Algorithm number. When in the Algorithm selection screen, the LCD display looks something like this:

```
Wham→2TD1y→Reurb
Comp Dist MVol→
```

To select an Algorithm for a Program, the procedure is as follows:

- From the title screen, press the <RIGHT> Parameter key once. This is the Algorithm selection screen. The name of the currently selected Algorithm is shown on the top line of the display, while the bottom line shows the effects in the Algorithm.

NOTE: When there are more effects in the Algorithm than will fit on a single line of the display, an arrow will appear in the first and/or last character of the bottom line of the display. These arrows indicate that there is more information about the effects that could not be displayed on a single screen. To see the remaining information, simply press the <RIGHT> or <LEFT> Parameter key (depending on the arrow direction indicated in the display).

- Use the <UP> and <DOWN> Parameter buttons to select the Algorithm you want to use with the Program. The LED display now shows the Algorithm number as you scroll up or down.
- Use the <RIGHT> and <LEFT> Parameter buttons to begin modifying the Parameters of the currently selected Algorithm to suit your purpose.

NOTE: When you change the currently selected Algorithm, the default Parameters selected for the new Algorithm are taken from the first Factory Program in memory that uses that Algorithm.

Once you have selected the Algorithm you want to use and modified its Parameters, an asterisk appears in the upper right corner of the title screen. This asterisk indicates that the Program has been modified and any changes you have made will be lost if not stored in the RP-10's memory.

STORING / NAMING PROGRAMS

In order for modified Programs to be available for later recall, you must store them in memory. This is accomplished using the <STORE> key. The RP-10 also allows you to give your Programs custom names up to 15 characters in length. This is accomplished using the <NAME> key. The naming procedure uses the <UP> and <DOWN> Parameter buttons, and the Function buttons **F1**, **F2** & **F3** to change the letters of the alphabet. The <MOD **F1**> key changes the

character from upper to lower case and back, and jumps you to the letters of the character set.. The <MIX []> key puts a space into the Program name, and jumps you to the special characters in the character set. The <MORE []> key puts a '0' and jumps you to the numbers section of the character set. The complete procedure for naming and storing a Program is as follows:

- After you have made all the necessary modifications to the Algorithm, press the <NAME> button once. The RP-10 is now in Name mode. The display shows:

```
[PROGRAM NAME]
[CAPS] [SPC] [NUM]
```

The blocked numbers preceding each option on the bottom line indicate the Function key that will perform the function shown.

- Using the <UP/DOWN> Parameter buttons, scroll to the character you want to use, or press one of the Function buttons. When you have selected the character you want, press the <RIGHT> Parameter key. Note that the cursor moves to the next character. Repeat this procedure until the Program name is satisfactory.

Unique to the RP-10 naming process are several special naming functions. The <COMPARE> and <STORE> buttons allow you bump an entire name or section of a name either left or right in one-space increments. The procedure is as follows:

- In Name mode, use the <RIGHT> and <LEFT> Parameter buttons to place the cursor underneath the character to be moved.
- Press the <COMPARE> or <STORE> buttons to move the characters either left or right.

The Program <UP> key copies the character the cursor is under into memory. This allows you to place a copy of that character (using the Program <DOWN> key) anywhere else in the name that you want. The procedure is as follows:

- In Name mode, use the <RIGHT/LEFT> Parameter buttons to place the cursor under the character to be copied.
- Press the Program <UP> key. The selected character is copied into memory.
- Move the cursor to the location into which you want to place a copy of the character and press the Program <DOWN> key. A copy of the character appears in the location you selected.

NOTE: Press the <UTILITY> button to abort the operation. When you change programs the original name will return.

- When the Program name appears as you want it, press the <NAME> button to exit the name selection mode.
- Once you have exited the name selection mode, press the <STORE> button. The display reads:

```
Store To Pr9 ##
[PROGRAM NAME]
```

This screen allows you to select the Program location in which you want to store the new Program.

- Using the <UP> and <DOWN> Program buttons, scroll to the Program number location in which you want to store the new Program.
- To store the Program in the selected location, press the <STORE> key again. The display briefly reads:

```
***Storing***
```

after which you will automatically be returned to the previous mode. To abort the command, press <COMPARE>.

The Store function can also be used to copy Programs from one memory location to another. If no changes have been made to the selected Program and the <STORE> button is pressed, the display reads:

```
Copy To Pr9 ##
[PROGRAM NAME]
```

Select the memory location in which you want to place a copy of the selected Program using the <UP> and <DOWN> Program buttons, and press <STORE> again. The display briefly reads:

```
***Copying***
```

after which you will automatically be returned to the previous mode. To abort the command and return to the Program, press <COMPARE>.

SECTION 4 EFFECTS AND PARAMETERS

ABOUT THE EFFECTS LIBRARY

The Effects Library consists of all the effects Modules you can find in the RP-10. Broken down into individual categories, specific Modules and their abbreviated library names are as follows:

Analog Effects

Module Name	Module Abbrev.	Description
<i>Compressor</i>	<i>Compr</i>	<i>Analog compressor tailored for instruments</i>
<i>Distortion</i>	<i>Distrt</i>	<i>Analog distortion (3 solid-state types)</i>

The analog section of the RP-10 includes the compressor and the distortion section. These two items are always available in all Programs. The analog effects and their Parameters are as follows:

COMPRESSOR

The RP-10's compressor is a high-quality, low-noise circuit specially designed for guitars. Compression can be used to increase sustain and to tighten up guitars, and is particularly useful on clean sounds. Parameters of the RP-10 compressor are as follows:

Comp On / Bypass Turns the Module on or off. When Modules are bypassed their Parameters disappear from the Parameter menu. To see the Parameters, you must turn the Module on.

Comp Amount Controls the amount of compression applied to the signal. Higher settings yield a tighter, more focused sound, while lower settings allow better dynamics. Ranges from 0 to 31.

Comp Level Sets the output level of the compressor before feeding to the distortion. Higher settings send more signal level into the distortion, yielding extra gain and drive. Varies from 1 to 7.

DISTORTION

The distortion section of the RP-10 is capable of producing three distinctly different types of distortion. These three solid-state distortion sounds range from lightly overdriven to screaming grunge. The Grunge setting gives you extremely high-gain distortion, free from the mush and tonal sacrifices typical of other manufacturers' products.

Dist On / Bypass Turns the Module on or off. When Modules are turned off, their Parameters disappear from the Parameter menu. To see the Parameters, you must turn the Module on.

Distortion Type Selects the type of distortion to be used in the Program. Options are: OVERDRIVE - Solid-



state overdrive with extra punch. **HEAVY** SUSTAIN - Smooth, warm distortion sound with lots of sustain. **GRUNGE**- Height gain distortion. Tight and highly focused for powerful rhythms and leads.

Distortion Gain Controls the amount of distortion produced by the RP-10. High settings produce greater gain and drive for effortless soloing, while low settings offer better nuance and touch control. Ranges from 0 to 11.0.

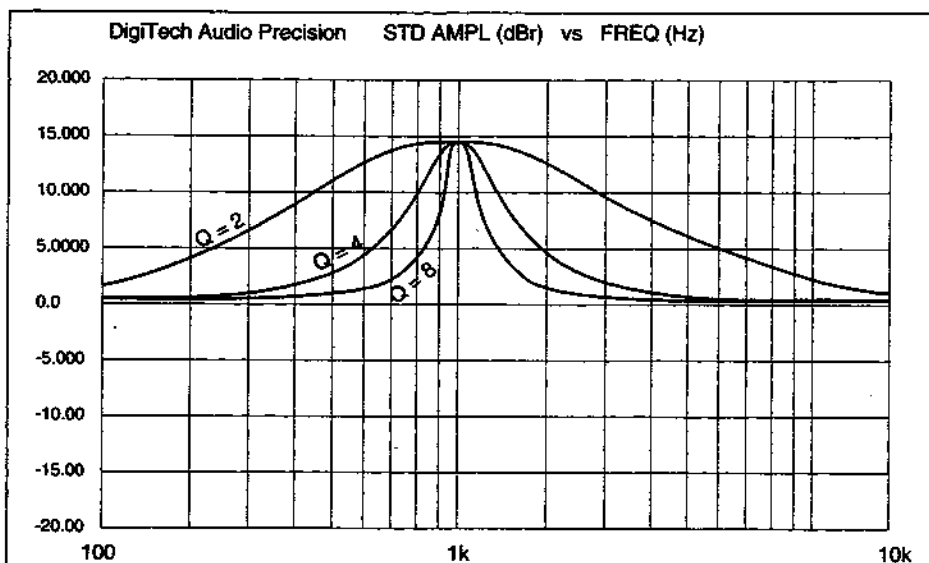
Dist/Clean Level This Parameter allows two separate levels to be set. If the Distortion is turned on, the Distortion level can be adjusted. If the Distortion is turned off, the Clean level can be adjusted. Both level settings are saved when the Program is stored. Settings include MUTE or ranging from -60dB to +12dB.

Equalizers

Module Name	Module Abbrev.	Description
10 Band GEQ	GEQ10	Full bandwidth 10-band graphic equalizer
4Bnd ParamtrcEQ	PEQ4	4-band parametric equalizer w/adjustable Q
Cabinet Emulator	CabEm	Full-bore stack sound direct-to-console

The equalizer Modules provided in the RP-10 offer superb noise performance, and allow accurate tonal shaping of many different types of sound sources. There is a standard 4-band parametric equalizer with adjustable Q available in all Algorithms. The RP-10 also features a 10-band graphic equalizer. All equalizer Modules offer silent, accurate (double-precision) tonal shaping.

Adjustable Q equalizers offer the ability to control the bandwidth of the boost/cut ranges. High Q settings yield extremely narrow bandwidth, where boost and cut have minimal effect on adjacent frequencies of the program material. Low Q settings affect a wider number of frequencies when the selected band is boosted or cut.



With a Q setting of 2, you can see that a large number of frequencies are affected by boosting the center frequency. Now take a look at the middle and lower curves in the diagram, and notice the much narrower bandwidth of the curves with a Q setting of 4 and 8.

CABINET EMULATOR

The RP-10's programmable Cabinet Emulator circuitry allows you to use it in both recording and live situations without lugging heavy amps and/or cabinets around. Just connect the RP-10 outputs to a mixing console and kick in the Cabinet Emulator. No miking hassles, no heavy equipment; just full on miked cabinet sound. Programs can be stored with different Cabinet Emulator settings so you can customize your banks or set lists for whatever sound types you need. The Cabinet Emulator can be controlled globally from the <UTILITY> Menu (see page 43). Parameters are as follows:

Cabinet On / Bypass.....Turns the Module on or off. When Modules are turned off, their Parameters disappear from the Parameter menu. To see the Parameters, you must turn the Module on.

Cabinet Type.....Selects the tonal characteristics of the simulated cabinet. There are 10 different cabinet types; 3 warm cabinets, 3 medium cabinets, 3 bright cabinets, and 1 full bandwidth cabinet for maximum frequency response. The full bandwidth cabinet is useful when the Cabinet Emulator is set globally on (in the Utility menu) and a full bandwidth sound is still desired.

Reverbs

Module Name	Module Abbrev.	Description
<i>BigVerb</i>	<i>Big</i>	<i>Studio-quality reverb.</i>
<i>MXF Reverb</i>	<i>MVerb</i>	<i>Appears in multi-effects Algorithms.</i>
<i>Gated Reverb</i>	<i>Grvb</i>	<i>Professional gated reverb</i>

BIG VERB/MFX REVERB

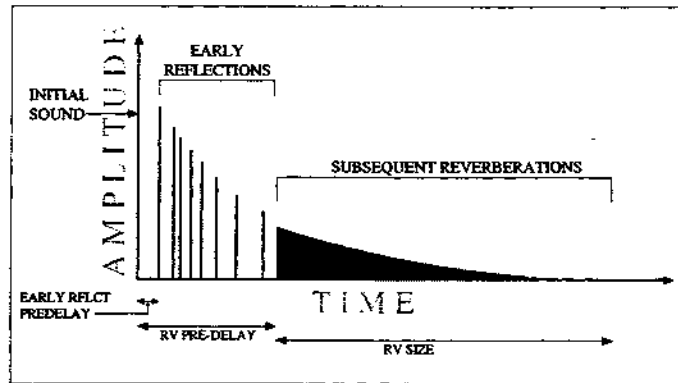
Bigverb is the flagship reverb Module of the RP-10. It contains 14 Parameters, giving exceptional soundfield and tonal shaping control over reverberation. Bigverb is capable of producing reverberation of virtually any size, shape, depth, timbre or soundfield location.

MXF Reverb is a slightly trimmed version of the Bigverb, offering much of the same flexibility and controls as Bigverb, but in less memory space. MXF Reverb allows you to achieve high-quality reverb in conjunction with other effects.

Before covering all the reverb Parameters and their definitions in detail, however, let's discuss the benefits and theory behind reverberation Algorithms.

Ambience, or reverberation, is produced when sound energy is reflected off room surfaces and objects. Using reverberation in recorded program material gives the listener a sense that the material is being performed in an actual room or hall. It is this similarity to actual acoustic spaces that makes reverberation a useful tool for going direct to board.

The RP-10 uses early reflections to better emulate the natural sound of a hall. Early reflections are short clusters of direct reflections from the closest room walls. In an average size hall, these direct reflections usually occur within the first 30 to 100 milliseconds, depending on the size of the room and the placement of the sound source within the room. Adding these early reflections to the reverberation increases the perceived reverberation time and the apparent size of the reverberant space, but adding more than small amounts tends to make the reverb sound unnatural.



The BigVerb's ER SPREAD, ER SHAPE and ER DIFFUSION controls allow you to modify the build/decay of the early portion of the reverberation envelope and the relative reverberation time of the midrange reverb frequencies. The ER Shape Parameter controls the shape of the early reflection envelope. The ER SPREAD sets the time over which this early reflection shape is achieved, and the ER diffusion controls the smoothness of the early reflection. A chart showing all 10 early reflection shapes can be found on pg. 25.

The RV SIZE control is the master control for the apparent room size. The RV RT60 Parameter varies in relation to the setting of the RV SIZE. This means that as RV SIZE is modified, the RV RT60 Parameter changes to correspond with the selected room size (the RV RT60 value is calculated automatically). The RV SIZE Parameter, on the other hand, does not vary when RV RT60 is modified.

These few controls, in conjunction with the RV DIFFUSION, RV HI-FREQ DECAY, and RV HI-FREQ ROLLOFF controls, give your simulated environment its reflectivity characteristics, and can be used to simulate the presence of nearly any type of large-area reflective surface in a reverberant space, such as wood, carpet, glass, metal, etc.

Reverb Parameters and their functions are as follows:

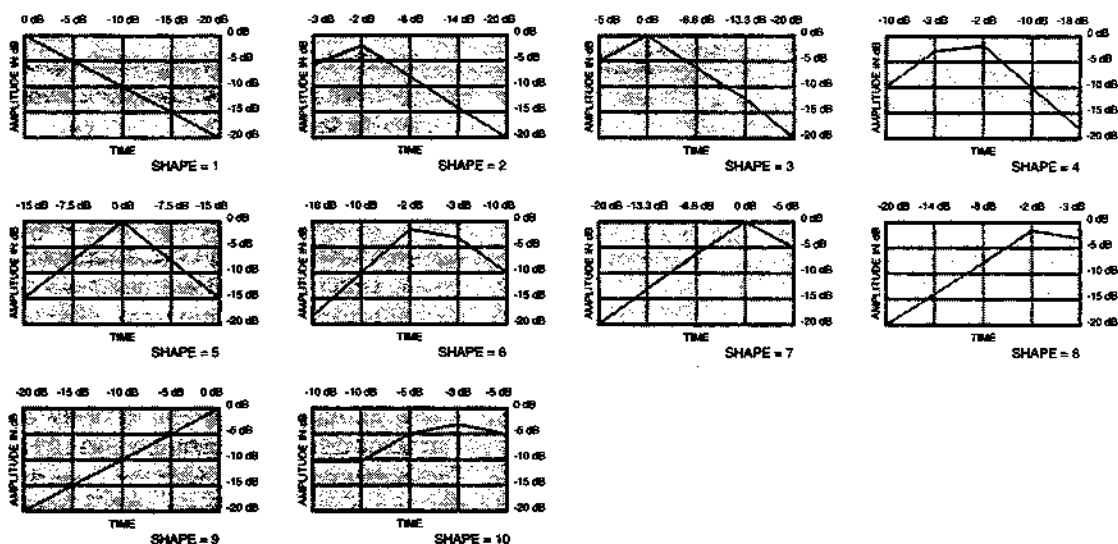
Reverb On / Off Turns the Module on or off. When Modules are turned off, their Parameters disappear from the Parameter menu. To see the Parameters, you must turn the Module on.

ER Predelay Controls the length of time before the early reflections are heard. Ranges in milliseconds from 0 to 100. (ER settings in BigVerb only.)

ER Spread Controls the length of time over which the early reflections occur. Low settings yield a dense, smooth cluster of early reflections while higher settings spread the same number

of reflections out over a longer period of time. Ranges from 25 to 300 milliseconds (ER settings in BigVerb only).

ER Shape Controls the shape of the early reflection envelope. There are 10 different early reflection envelope shapes. The following diagram shows all the available early reflection envelope shapes. The numbers across the top of each envelope shape graph represent the relative level of the signal at each point in the envelope. (ER settings in BigVerb only.)



ER Diffusion Controls the smoothness of the early reflections. Ranges from 1 to 10. (ER settings in BigVerb only.)

ER Level Master level control for early reflections. Ranges from 0 to 100. (ER settings in BigVerb only.)

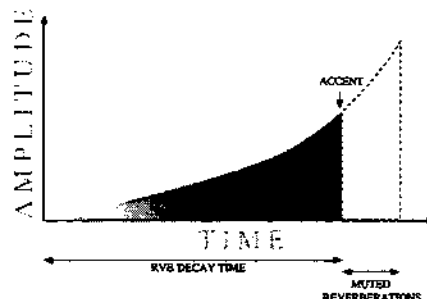
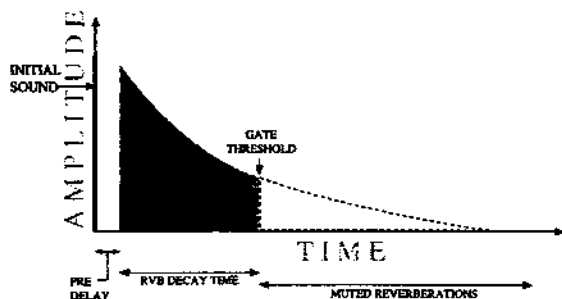
RV Predelay Controls the amount of time before the first room reverberations are heard. In an actual acoustic space, the amount of reverberation predelay depends largely on the shape and size of the room and the placement of both listener and sound source within the room. Long RV PREDELAY settings place the reverberation after the program material rather than in sync with it. Ranges in milliseconds from 0 to 100.

- RV Spread.....Controls the dispersal and density of reverberations through the course of the early portion of RV RT60. BigVerb's RV SPREAD varies in 20 ms increments from 20-180 ms. MFX Reverb's RV SPREAD varies in 10 ms increments from 10-100 ms.
- RV Diffusion.....RV DIFFUSION controls the smoothness of the reverberation. In a real room, reverberation is naturally diffused by air. However, diffusion can also be affected by temperature, humidity, and the presence of absorptive or diffusive materials in the reverberant space. Ranges from 1 to 10.
- RV Hi-Freq Decay.....Controls the decay length (damping) of the high frequency reverberations. Variable from 25Hz to 18kHz.
- RV Hi-FrqRolloff.....This is a low-pass filter that sets the rolloff frequency of the Reverb. This is a band-limiting control, and the frequencies above the setting of this Parameter will be rolled off rapidly. Variable from 25Hz to 18kHz.
- RV Size.....Sets the apparent size of the reverberant space. As the setting of RV SIZE is increased or decreased, the setting of RV RT60 changes to correspond with the new room size setting. However, changing the setting of RV RT60 does not affect the setting of RV SIZE. Ranges from 1 to 10.
- RV RT60.....Controls the length (RT60) of the reverb. Ranges in seconds from 0.01 to 20.00.
- RV Level.....Sets the overall level of the reverberations. Varies from 0 to 100.

GATED REVERBS

Gated reverbs usually include adjustable thresholds to set the point at which the reverberations will be gated (cut off). The RP-10's RVB DECAY TIME control behaves in a similar way, except that instead of setting the length by level (threshold), the length is set by time (in milliseconds). In the left side of the diagram that follows, you can see that reverberations occurring after RVB GATE TIME are muted. This causes the reverb to cut off abruptly.

Gated reverbs are most commonly used on percussion, but there are other ways to employ the unique sound they produce. For instance, using a REVERSE envelope shape, a reverse gate can be accomplished. Rather than decaying out to be cut off by the gate, a reverse gate builds for a specific amount of time, and is cut off by the gate. Reverse envelopes are similar in sound to playing a record backwards. The right diagram below shows how a Reverse envelope works.



The accent point shown in the diagram allows placement of the actual sound, either before or after the gate has cut off the reverberation.

The RP-10 offers three different envelope shapes in the Gated Reverb Algorithm: DECAYING, FLAT, and REVERSE. DECAYING is a standard gated reverb envelope, with a linear decay to the cutoff point. In most applications, the DECAYING envelope doesn't need an accent point, although it can produce some interesting unnatural sounds. In instances where an accent point is not needed, simply turn down the left and right REVERB ACCENT DLY Parameters.

Using a FLAT envelope shape, the reverberation neither decays nor builds, but remains at a constant level for a specified amount of time (determined by the setting of RVB DECAY TIME). This shape is particularly useful for short, percussive sounds.

A REVERSE envelope allows creation of dramatic reverse gate reverb effects, with placement of the accent point ± 50 milliseconds either before or after the end of RVB DECAY TIME. Gated reverbs can be found in the <REVERB> library, and their Parameters are as follows:

Gated Reverb On / Off.....Turns the Module on or off.

Reverb Pre-Delay.....Sets the amount of time before the reverberations are heard. Adjustable from 0 to 100 milliseconds.

Rvb Decay Time.....Controls the amount of time before the gate cuts off the reverberations. Variable from 20 to 1000 milliseconds.

Rvb Envelope.....Sets the shape of the reverberation envelope (DECAYING, FLAT, or REVERSE).

Rvb Diffusion.....Controls the smoothness of the reverberations. Variable from 1 to 10.

Rvb LPF FrequencyReverb low-pass filter. Sets the frequency below which reverberations will be heard. Adjustable from 25Hz to 18kHz.

Rvb Accent DelayAllows placement (in time) of the actual sound, ± 50 milliseconds from the reverb gate point.

Rvb Accent LeftControls the level of the accent in the left side of the stereo soundfield. Variable from 0 to 100.

Rvb Accent Right.....Controls the level of the accent in the right side of the stereo soundfield. Variable from 0 to 100.

Rvb Level Left.....Sets the output level of reverberations heard in the left channel. Variable from 0 to 100.

Rvb Level Right.....Sets the output level of reverberations heard in the right channel. Variable from 0 to 100.

Delays/Sampler

Module Name	Module Abbrev.	Description
Mono Delay x.x	Dly	1-tap digital delay
2Tap Delay x.x	2TDly	2-tap digital delay
4Tap Delay x.x	4TDly	4-tap digital delay
Stereo Delay	SDly	Stereo digital delay
Modulated Delay	ModDly	Digital delay with pitch modulation
Sampler	Smpl1.5	1.5 second sampler

DELAYS

All the delays in this group have the same basic Parameters for controlling the behavior of the Module. General Parameters include DELAY ON/OFF, DELAY LEVEL, DELAY TIME, DELAY FEEDBACK, and DELAY REPEAT HOLD. The only differences between them lie in the number of taps available and the total amount of delay time. The multi-tap delays also include independent delay time controls for each tap with a feedback control on the last tap in the series. Modulated Delay sounds like a delayed chorus due to the pitch modulation.

Each delay Module has a number that immediately follows the name. These numbers represent, in seconds, the amount of delay time available to each Module. For example, if the Module name shown in the display reads MONO DELAY 1.4S, you know that the Module has a maximum of 1.4 seconds of delay time available.

The available delay time ranges are 0.4 seconds (400 milliseconds), 0.5 seconds (500 milliseconds), .8 seconds (800 milliseconds), 1.0 seconds (1000 milliseconds), and 1.4 seconds (1400 milliseconds). Delay Parameters are as follows:

Delay On / Off Turns the delay Module either on or off. When Modules are turned off, their Parameters disappear from the Parameter menu. To see the Parameters, you must turn the Module on.

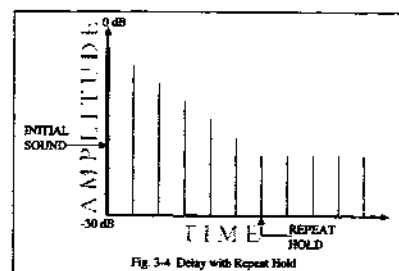
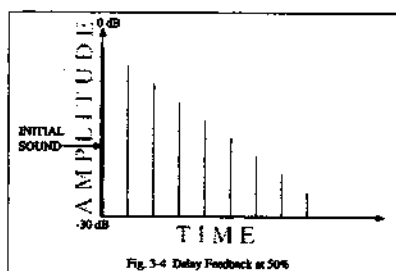
Delay Level Controls the level of the delay Module.
Variable from 1 to 100.

Delay Time (Tap #) Controls the delay time of the tap indicated in the display. If a mono delay is used, no tap number is shown. Delay time Parameters are editable in two different ranges to give the most flexibility and accuracy in the least amount of scrolling time. If you press the <UP> Parameter button when the cursor is in

the hundred milliseconds position (one place to the right of the decimal), you will increase the delay time in increments of 100 milliseconds. Pressing the <RIGHT> Parameter button moves the cursor to the third position to the right of the decimal point, or milliseconds position. Each press of the <UP> Parameter button from this position increases the delay time in single millisecond steps. Using this method of ranging allows you to scroll rapidly to large-value delay times without having to wait for the unit to scroll to it in single millisecond steps. Variable from 0.000 sec. to 1.400 sec.

Delay Feedback.....Controls the amount of feedback, or number of repeats, in the delay line. In multi-tap delays, this Parameter controls the feedback amount of the last tap in the series. Variable from 0 (Off) to 99%.

Delay Repeat Hold.....This is the infinite repeat Parameter. When turned on, the delay taps will repeat indefinitely until the Repeat Hold Parameter is disengaged. This Parameter is either ON or OFF.



LFO Speed.....Controls the speed of the modulation sweep. Variable from .06 Hz to 16.00 Hz. This Parameter appears **only** in Modulated Delays.

LFO Depth.....This Parameter sets the sweep depth (intensity) of the delay modulation. Variable from 0.00 to 40.00 milliseconds. This Parameter appears **only** in Modulated Delays.

LFO Waveform Type.....Controls the LFO (Low-frequency oscillator) waveform pattern of the delay modulation effect. SINE produces a smooth sine wave-type modulation with even transitions in and out of the turnaround points. TRIANGLE is a

linear modulation effect, and ramps the pitch of the wave up and down with resampling at turnaround points. LOGARITHMIC and EXPONENTIAL waveforms are more dramatic in their effect on the signal, producing a type of bouncy oscillation. This Parameter appears **only** in Modulated Delays.

SAMPLER

The RP-10 offers a studio-grade sampler Module for maximum flexibility and usefulness. It uses a 40 kHz sample rate for increased sound quality. Sample recording and playback can be triggered from the RP-10 pedalboard, or via MIDI (through continuous controller linkages). Sample recording can also be triggered upon detection of a sound source. Parameters of sampler Modules are as follows:

Sampler On / Off Turns the Module on or off.

Smpl Plybck Lev Determines the overall level of the sample when played back. Varies from 0 to 100.

Smpl Looping This Parameter has two settings: MANUAL and AUTO. When this Parameter is set to MANUAL: the sample must be triggered either manually or using an audio trigger. When the sample is finished playing, it resets and waits for another manual trigger. When this Parameter is set to AUTO, the sample begins playing. When the sample is finished playing, it is automatically retriggered from the beginning of the sample, and continues retriggering until the Parameter is switched back to MANUAL.

Smpl Record/Play Sets the mode of operation for the sampler Module. When set to RECORD, the sampler will record a new sample into memory when triggered. This parameter automatically changes to PLAYBACK after the sample in memory has been recorded.

NOTE: Samples can not be stored.

Manual Trigger This Parameter allows manual playback triggering of the sample in memory. To trigger the sample, simply press the <UP> Parameter button on this screen. To trigger the Sampler using MIDI, link this Parameter to a MIDI CC number (see Assigning CC links, pg. 57).

Smpl Trigg Mode Determines whether audio triggering or manual triggering is active. There are two audio

triggering options and one manual triggering option. They behave as follows: when set to MANUAL TRIG, samples and sampling are triggered using manual methods (pedalboard, front panel, etc.). When set to AUDIO TRG ONCE, the sample is triggered once using an audio source of a set level (determined by the setting of INPUT TRIG LEVEL), following which this Parameter is automatically reset to MANUAL. When set to AUDIO RE-TRIG, the sample is retriggered any time a signal over the level setting of SMPL TRIG LEVEL is detected.

- Smpl Trigg Level.....Sets the level at which the audio signal will trigger the sample. Variable from 0 to 100.
- Smpl Direct Lev.....Sets the level of the dry (non-effected) sound. Variable from 0 to 100.
- Smpl Start Point.....Determines the point at which the sample will begin playing. This Parameter can be used to eliminate unwanted sounds at the beginning of the sample; such as, empty space (silence), fret noise, amplifier buzz, wrong notes, etc. Each time this Parameter is changed, the sample is retriggered. This allows easy editing of start sample points. This control can be set at any point in the sample below the setting of SAMPLE STOP POINT. Like the DELAY TIME Parameter in delay Modules, this Parameter is controlled in two ranges. Refer to page 29 of the owner's manual on controlling the delay time of a delay Module for explanation of the ranges.
- Smpl Stop Point.....Determines the point at which the sample stops playing. This Parameter can be used to eliminate unwanted sounds from the end of the sample. This Parameter can be set at any point in the sample above the setting of SAMPLE START. Like the DELAY TIME Parameter of delay Modules, this Parameter is controlled in two ranges. Refer to page 29 of the owner's manual on controlling the delay time of a delay Module for an explanation of the ranges.

Pitch Shifters

Module Name	Module Abbrev.	Description
<i>Pitch Shift</i>	<i>Pch</i>	<i>1-voice pitch shifter</i>
<i>Mono Detune</i>	<i>Dtn</i>	<i>Single-voice pitch shifter</i>
<i>Dual Detune</i>	<i>DDtn</i>	<i>Mono dual detuner</i>
<i>Whammy</i>	<i>Wham</i>	<i>Foot-controlled pitch bending effects</i>
<i>Arpeggiator</i>	<i>Arp</i>	<i>Mono arpeggiator</i>

The <PITCH> group includes pitch shifters, mono and dual detuners, arpeggiators and DigiTech's exclusive Whammy™.

Pitch shifters allow you to change your input note by a specified interval and mix it with the original, creating a harmony. The effect is similar to two or more guitars playing different notes simultaneously.

Detuning is similar in sound to a chorus, except that its pitch remains constant, rather than modulating back and forth between two points. It is best visualized in terms of two guitar strings tuned to the same approximate pitch; both are tuned to the same note, but each is slightly out of tune with the other. Both notes are constant in pitch, but subtle additions in richness and overtones can be heard.

DigiTech's exclusive Whammy™ allows you to create mind-bending dive bombs and pitch bends with the continuous controller pedal on the RP-10 pedalboard. All the intervals are selectable and can be stored in memory for later use. You've never heard anything like it!

An arpeggiator is simply a pitch shifter in the feedback loop of a delay. Each time a note is fed back to the input of the pitch shifter, it is once again pitch shifted and sent to the delay, which, in turn, sends part of the signal to the output and the rest back into the pitch shifter to repeat the process. With high feedback settings and short delay times, the sound is reminiscent of an early analog synthesizer. Parameters are as follows:

PITCH SHIFTERS

Pitch On / Off Turns the Module on or off. When Modules are turned off, their Parameters disappear from the Parameter menu. To see the Parameters, you must turn the Module on.

Pitch Level Controls the overall level of the pitch shift. Variable from 0 to 100.

Pitch Shift Amount.....Sets the interval between the original note and the pitch shifted note. Variable from -24 to +24 (4 octaves).

Pitch Detune.....Determines the amount of detuning applied to the shifted note. Variable, in cents, from -100 to +100.

Pitch Tracking.....Controls the sound quality/tracking speed of the pitch shifted material. This control should be set in relation to the Pitch Shift Amount or the interval setting. There are 10 different tracking settings, and some overlap of intervals is provided to help you find the sound that works best for you more quickly. The final judge of this setting should be your ears.

Pitch Regenerate.....Controls the amount of pitch shifted material that is fed back to the input of the pitch shifter. High regeneration settings produce interesting unnatural sounds. Varies from -99% to +99%.

DETUNERS

Detune On / Off.....Turns the Module on or off. When Modules are turned off, their Parameters disappear from the Parameter menu. To see the Parameters, you must turn the Module on.

Detune Level.....Controls the overall level of the detuner Module. Varies from 0 to 100.

Detune Predelay.....Sets the amount of time, up to 100 ms, before the detuned note is heard.

Detune Amount.....Controls the amount of detuning. Variable, in cents, from -99 to +99.

WHAMMY™

Whammy On / Off.....Turns the Module on or off. When Modules are turned off, their Parameters disappear from the Parameter menu. To see the Parameters, you must turn the Module on.

Whammy Function.....Selects the function of the Whammy Module. There are 16 individual functions controlled by the CC Pedal available in regular Whammy Modules. They are as follows:
SHALLOWDETUNE, DEEP DETUNE, 1 OCTAVE ABOVE, 2 OCTAVES ABOVE, 2ND BELOW, 1 OCTAVE BELOW, 2 OCTAVES BELOW, 2NDABV- 3ABV, MIN3AB-MAJ3AB, 3RDABV-4THABV, 4THABV-5THABV,

5THABV-6THABV, 5THABV-7THABV,
4THBLW-3RDBLW, 5THBLW-4THBLW, AND
12BELOW-12ABV.

Whammy Pedal The WHAMMY PEDAL Parameter reflects the current setting of the continuous control device used to control the whammy effect. This Parameter can be modified using the RP-10's CC pedal, or manually modified using the <UP/DOWN> Parameter switches. As the Parameter is modified, the pitch of the original note will change in intervals according to the setting of the WHAMMY FUNCTION. Varies from 0 to 100.

ARPEGGIATORS

Arpeggiator On / Off Turns the Module on or off. When Modules are turned off, their Parameters disappear from the Parameter menu. To see the Parameters, you must turn the Module on.

Arpeggiator Level Controls the overall level of the arpeggiator. Variable from 0 to 100.

Arpeggio Shift Sets the interval between the original note and the shifted note. Variable from -24 to +24 (4 octaves).

Arpeggio Detune Determines the amount of detuning applied to the shifted note. Variable, in cents, from -99 to +99.

Arp Pch Tracking Controls the sound quality/tracking speed of the pitch shifted material. This control should be set in relation to the amount of pitch shifting being performed. That is, as the pitch shift interval increases, ARP PCH TRACKING should be increased to optimize sound quality. Ranges vary from 0-100 cents to 12-24 tones.

Arpeggio Delay Determines the amount of delay applied to the shifted note before being returned to the ARP input. Variable, in milliseconds, from 0 to 400.

Arpeggio Feedback Sets the amount of pitch shifted material that is fed back into the input of the arpeggiator. High settings of ARPEGGIO FEEDBACK produce interesting unnatural sounds.

Mod (Modulation Effects)

Module Name	Module Abbrev.	Description
Mono Chorus	Cho	1-in / 1-out chorus
Dual Chorus	DCho	1-input / 2-output dual chorus
4 Phase Chorus	4PCho	1-input/4-output chorus w/ 4 independent delay times
Mono Flange	Fla	Mono flange
Dual Flange	DFla	1-input / 2-output dual flange
Mono Phaser	Pha	Mono phaser
Dual Phaser	DPha	1-input / 2-output dual phaser
Mono Tremolo	Trm	1-in / 1-out tremolo
Stereo Tremolo	STrm	Stereo input / output tremolo
Auto Panner	Pan	1-in / 1-out auto panner

CHORUSES

The RP-10 offers a diverse selection of choruses, each unique in character and sound. The dual chorus and 4-phase chorus Modules offer exceptionally rich chorusing using multiple voices with different phasing characteristics. The dual chorus Modules use two choruses with their modulating waveforms set 180 degrees out of phase. The 4-phase chorus Modules have four chorus voices with their modulating waveforms set 90 degrees out of phase. Chorus Parameters are as follows:

Chorus On / Off Turns the Module on or off. When Modules are turned off, their Parameters disappear from the Parameter menu. To see the Parameters, you must turn the Module on.

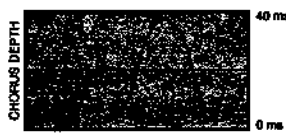
Chorus Level Controls the overall level of the chorus. Variable from 0 to 100.

Chorus Speed Controls the speed of the chorus sweep. Variable from 0.06 to 16.00 Hz.

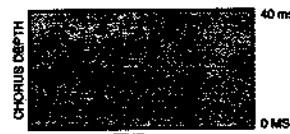
Chorus Depth This Parameter sets the sweep depth (intensity) of the chorus. Variable from 0.00 to 30.00 milliseconds.

Chorus Delay (#) Sets the amount of delay present in the chorus effect. Varies from 0 to 60.00 milliseconds.

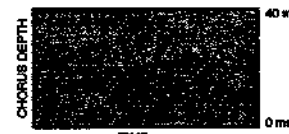
Chorus Waveform Controls the LFO waveform for the chorus effect. SINE produces a smooth sine wave-type chorus with even transitions in and out of the turnaround points. TRIANGLE is a linear chorus effect, and ramps the pitch of the wave up and down with no slowing at turnaround points. LOGARITHMIC and EXPONENTIAL waveforms are more dramatic in their effect on the signal (waveform selection is not available in 4 Phase Chorus, the waveform defaults to the sine form).



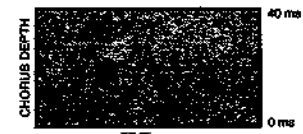
CHORUS WAVEFORM: SINE



CHORUS WAVEFORM: TRIANGLE



CHORUS WAVEFORM: LOGARITHMIC



CHORUS WAVEFORM: EXPONENTIAL

FLANGERS

The RP-10 also offers studio-quiet flanging. The dual flange Module offers exceptionally rich flanging using multiple voices with different phasing characteristics. The dual flange Module uses two flangers set 180 degrees out of phase. Flange Parameters are as follows:

Flange On / Off Turns the Module either on or off. When Modules are turned off, their Parameters disappear from the Parameter menu. To see the Parameters, you must turn the Module on.

Flange Level Controls the overall level of the flange. Variable from 0 to 100.

Flange Delay Sets the amount of delay present in the flange effect. Varies from 0 to 60.00 milliseconds.

Flange Feedback Controls the amount of flanged sound fed back to the input of the Module. High regeneration settings produce dramatic and interesting unnatural sounds. Varies from -99% to +99%. This Parameter can also be turned off.

Flange Speed Controls the speed of the flange sweep. Variable from 0.06 to 16.00 Hz.

Flange Depth This Parameter sets the sweep depth (intensity) of the flange. Variable from 0.00 to 30.00 milliseconds.

38

PHASERS

Flange Waveform Same as CHORUS WAVEFORM.

The Phaser produces animated, "swirling" type effects, it takes a normally flat sound of an instrument and makes it interesting. Phasers also provide that "surround sound" type of ambience.

Phaser On / Off Turns the Module either on or off. When Modules are turned off, their Parameters disappear from the Parameter menu. To see the Parameters, you must turn the Module on.

Phaser Level Controls the overall level of the phaser. Variable from 0 to 100.

Phaser Regeneration Controls the amount of phased sound fed back to the input of the Module. High regeneration settings produce dramatic sounds. Varies from -99% to +99%. This Parameter can also be turned off.

Phaser Speed Controls the speed of the phase sweep. Variable from 0.06 to 16.00 Hz.

Phaser Depth This Parameter sets the sweep depth (intensity) of the phaser. Variable from 0 to 100.

Phaser Waveform Same as CHORUS WAVEFORM.

TREMOLOS

Tremolo was one of the first real "effects", and appeared mostly on early guitar amplifiers. Because of this, tremolo is sometimes perceived as sounding "old" or "vintage". The RP-10, however, breathes new life into this classic effect, providing totally transparent volume modulation of sound sources.

Tremolo On / Bypass ... Turns the Module on or off. When Modules are turned off, their Parameters disappear from the Parameter menu. To see the Parameters, you must turn the Module on.

Tremolo Level Controls the output level of the tremolo effect.

Tremolo Speed Controls the tremolo speed (speed of modulation). Variable from 0.00 to 16.00 Hz.

Tremolo Depth Adjusts the intensity of the tremolo effect. Varies from 0 to 100.

AUTO PANNERS

An auto panner is a modern relative of the tremolo that, instead of modulating the volume of the entire sound, modulates the sound from left to right at a given rate. Both tremolo and auto panner Modules can be found in the <MOD> library. Parameters are as follows:

Panner On / Bypass.....Turns the Module on or off. When Modules are turned off, their Parameters disappear from the Parameter menu. To see the Parameters, you must turn the Module on.

Panner LevelControls the output level of the panning effect. Varies from 0 to 100.

Panner SpeedControls the panning speed (speed of modulation). Variable from 0.06 to 16.00 Hz.

Panner DepthAdjusts the intensity of the panning effect. Varies from 1 to 100.

Mixers (mono)

Mixers (stereo)

Mixers (3-out)

<i>Module Abbv.</i>	<i>Description</i>	<i>Module Abbv.</i>	<i>Description</i>	<i>Module Abbv.</i>	<i>Description</i>
2x1	2-in / 1-out mixer	3x2	3-in / 2-out mixer	3x3	3-in / 3-out mixer
3x1	3-in / 1-out mixer	4x2	4-in / 2-out mixer	4x3	4-in / 3-out mixer
5x1	5-in / 1-out mixer	5x2	5-in / 2-out mixer	5x3	5-in / 3-out mixer
		6x2	6-in / 2-out mixer		
		7x2	7-in / 2-out mixer		
		8x2	8-in / 2-out mixer		

The RP-10's Mixer modules enable the use of effects in parallel configurations. They allow multiple Module outputs to be connected to a single input of another Module. Each mixer channel is equipped with an input level to give you maximum control over levels coming from and going to different Modules. Mixer Modules appear in 1-out, 2-out, and 3-out configurations. 2-out and 3-out configurations include pan controls on the inputs. 3-out mixers are configured so that the first output is actually a mono sum of all the inputs while outputs two and three function as left and right outs respectively.

Mixers.....When the MIXERS Parameter is set to HIDDEN, mixer Parameters disappear from the Parameter menu. To see mixer Parameters, you must turn the Parameter to DISPLAYED or press the <MIX> button. The <MIX> button option allows you to temporarily show mixer Parameters without the need for turning this Parameter on each time.

NOTE: The next two Parameters use a 4x2 Mixer as an example.

The actual numbers in the screen will vary depending on the Mixer Module being used.

4 x 2 In 1 Level Controls the level of the input indicated in the display. Variable from 0 to 100.

4 x 2 In 1 Pan Controls the panning of the input indicated in the display from left to right. Variable from ALL LEFT to ALL RIGHT.

More

Module Name	Module Abbrev.	Description
Noise Gate	NGt	Mono noise gate
Stereo Ducker	SDuc	Stereo input / output automatic ducker
Phase Inverter	Inv	Inverts signal phase
Traditional Wah	TWah	Vintage wah effect
Automatic Wah	AWah	Automatic amplitude-based wah effect

NOISE GATES

The RP-10 utilizes Silencer™ digital noise reduction, which is unique to the S-DISC™, to perform its noise gating chores. The gate is actually found in the digital portion of the processing which makes it so unique. This means that when the gate is closed, it writes digital zeros (commonly known as digital black) which brings the processor to its quietest status. The Parameters are as follows:

Effect On / Bypass Turns the Module on or off. When Modules are turned off, their Parameters disappear from the Parameter menu. To see the Parameters, you must turn the Module on.

NG Threshold Sets the level at which the gate will open. Ranges from $-\infty$ to $+\infty$.

NG Hold Time Controls the amount of time the signal must remain below the off-threshold before NG RELEASE TIME begins. This control should be set long enough to prevent false triggering during long decay times. Ranges from 0 to 500 milliseconds.

NG Attack Time Controls the how fast the gate opens after detecting a signal above NG THRESHOLD. Large numbers yield slower attack times, while small numbers give a fast attack. Varies

from 0 to 2000 milliseconds (2 seconds).

NG Release Time Controls how fast the gate closes after the signal has fallen below NG THRESHOLD for the amount of time set by NG HOLD TIME. Large numbers yield slow release times, while small numbers give a fast release. Varies from 0 to 2000 milliseconds (2 seconds).

NG Attenuation Sets the amount of attenuation (signal reduction) when the gate is closed. Varies from 100 dB (eliminates the signal completely) to 0 dB (no attenuation).

NG Delay Time Allows placement of a slight delay on the source signal after the gate is triggered. This Parameter allows source material with a very fast attack time to be heard in its entirety without the lag in gate response that is common to inferior noise gates. Variable from 0 to 10 milliseconds.

DSP LEVEL

DSP Level Controls the overall signal fed to the digital section. Variable from 0 to -100.

WAHS

Effect On / Off Turns the Module on or off. When Modules are turned off, their Parameters disappear from the Parameter menu. To see the Parameters, you must turn the Module on.

Level Controls the overall level of the wah effect. Varies from 0 to 100.

Wah Pedal Position The PEDAL POSITION Parameter reflects the current setting of the continuous control device used to control the wah effect. This Parameter can be modified using the RP-10's pedal to perform the wah function. As the Parameter is modified, the tone of the original note will change. Varies from 0 to 127.

DUCKERS

This effect lowers the level of an Effect passing through the ducker when a signal is present at the third input. This allows the effect passing through the ducker to be more dynamic.

Effect On / Off Turns the Module on or off. When Modules are turned off, their Parameters disappear from the Parameter menu. To see the Parameters, you must turn the Module on.

Duc Threshold Sets the minimum input level required to trig-

ger the ducker (it is perhaps easier to think of this Parameter as the ducker sensitivity). Higher settings of DUC THRESHOLD require higher input levels to trigger the ducker. Lower settings make the ducking effect easier to trigger. Ranges in 1 dB steps from -100 to 0 dB.

Duc Hold Time Controls the amount of time before the ducker disengages after the signal has stopped. Varies from 0.000 to 5.000 seconds.

Duc Attenuation Adjusts the amount of level attenuation applied to the ducked effects when the ducker is engaged (ducker is engaged when the input level exceeds the setting of CONTROL THRESHOLD). Adjustable from -100 dB to 0 dB.

Duc Attack Rate Sets the amount of time over which the ducker will reach full attenuation. Adjustable in milliseconds from 0.00 to 5.00 seconds.

Duc Release Rate Sets the amount of time over which the ducker will disengage. Adjustable in milliseconds from 0.00 to 5.00 seconds.

PHASE INVERTER

Phase Inverter Flips the signal phase 180 degrees. Settings are either IN PHASE or OUT OF PHASE.

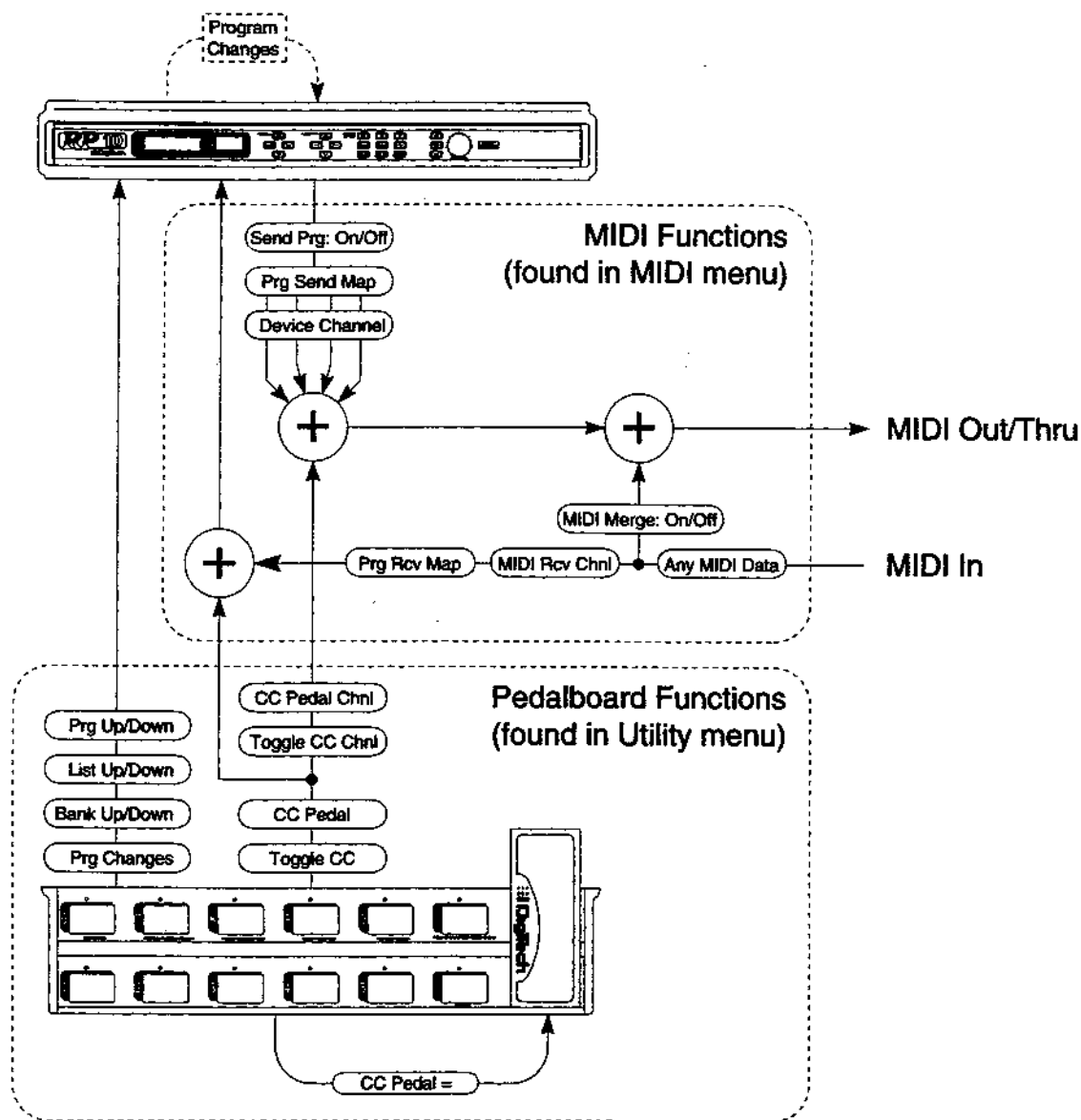
Phase Inv Level Set the level of the output signal from the Phase Inverter Module. Adjustable from 0 to 100.

SECTION 5 - RP-10 FUNCTIONS

INTERNAL FUNCTIONS

The RP-10 has two basic types of functions: Pedalboard functions and MIDI functions.

The Pedalboard functions can be broken down into two sections: Pedalboard functions that affect the processor directly and Pedalboard functions that interact with MIDI and then affect the processor.



The Pedalboard functions that affect the processor directly include: **Program changes, Program Up/Down, List Up/Down, Bank Up/Down, and Tuning**. The Pedalboard functions that interact with MIDI and then affect the processor include: **Toggle CC** and **CC Pedal**. The **CC Pedal channel** and **Toggle CC channel** allow MIDI CC information to be sent out the MIDI port allowing for control of the RP-10, external units, or both together. For more information on how to set up these functions, see page 48.

The MIDI functions can be broken down into two sections: MIDI Out/Thru and MIDI In. The MIDI Out/Thru functions include: **Program Send: On/Off, Program Send Map, Device Channel** and any **MIDI Merge** material if that feature is activated. The MIDI In includes: Any **MIDI data** received by the RP-10, **MIDI Receive Channel, Program Receive Map**. For more information on how to set up these functions, see page 48.

PEDALBOARD FUNCTIONS

Pedals assigned with **Program changes** allows any Pedal in any Bank of the RP-10 pedalboard to recall an RP-10 Program number. For more information on how to assign Program changes to pedals, see page 48.

Program Up, Program Down, Bank Up, and Bank Down perform exactly as the name implies in that they increment and decrement through Programs or Banks. For more information on how to set up these functions, see page 48.

NOTE: When using **Program Up/Down** or **Bank Up/ Down**, it is important to remember that they function only within their assigned Bank. When you leave the Bank in which they are assigned, they will take on their assigned function for newly selected Banks. These functions can be assigned to as many Banks in the RP-10 as you want, but remember that you must set up each Bank individually.

List Up, List Down is another useful pedalboard function that allows you to scroll through a custom sequence of Programs using a single pedal. This sequence is called a List and can be defined by the user (see pg 48). It can be up to 32 steps in length, and each step has its own Program number assignment. To use the List, assign a Pedal as List Up and another as List Down (see pg 48).

Toggle CC allows you to set up a Pedal to act as a Continuous Controller which toggles between values 0 and 127. You will find, for example, that Pedal 6 in every Bank is assigned as Toggle CC 21 at the factory. Each time footswitch 6 is pressed, it will toggle between values 0 and 127 of CC 21. By following the factory default Pedal/CC map this causes the Distortion to be turned On and Off since it is linked to CC 21 in all of the Factory Programs. To assign toggle CCs, see page 48.

While performing, the **CC Pedal=** command can be used to assign a different Continuous Controller number to the CC Pedal (defaulted to CC 4 at the factory). Upon hitting the assigned pedal, the CC pedal will be reassigned from its current controller number to the new continuous controller number. Hitting the footswitch again will assign the pedal back to the default CC number. Changing the Program will always cause the pedal to be assigned to the default CC number.

This function is especially useful if you want to use the CC pedal with a Program in more than one way. For example, you can control the level of Delay linked to CC4. Then, in real time, reassign the pedal to CC 10 which will control any Parameter in the Program linked to CC 10 (like a Reverb level). For more information on how to set up this function, see page 49. For more information on linking Parameters to CC's, see page 57.

MIDI FUNCTIONS

Send Prg: On/Off determines whether or not Program Changes will be sent out the RP-10 MIDI Out port as you select Programs on the RP-10. This Parameter is either ON or OFF, but will be ignored if all the Devices in the Program Send Map are disabled. See page 55 for more information.

Prg Send Map allows the RP-10 to act as a MIDI multiplexer for up to four other devices. Here's how it works: when you change from the current Program, or the RP-10 receives a Program Change message via MIDI, each external device you specify can receive independent Program Change messages on individual MIDI channels. This feature can allow you to control up to four separate MIDI devices with the RP-10.

You may map as many of the Program changes as you like. These are stored in memory automatically, and are always active until you change them or until the factory presets are restored. For more information on how to set up this function, see page 56.

Prg Rcv Map allows you to map incoming Program Change commands (1-128) to any Program on the RP-10. For example, suppose you want to access Program #146 using a MIDI Program Change command. Since MIDI only supports Program Change numbers 1 - 128, Program Change #146 would normally be impossible for the RP-10 to recognize. With the RP-10's flexible MIDI input mapping, however, you can assign a Program Change number to be received as Program #146 on the RP-10. For more information on how to set up this function, see page 57.

The **MIDI Merging** option allows incoming MIDI data to be merged with any MIDI data generated by the RP-10 before being sent to the MIDI Out port. This is a simple ON or OFF option. See page 63 for more information.

To access the Tuner using the RP-10 pedalboard, do the following:

- Press the Bank/Program Select switch (in the upper right corner of the pedalboard) three times. The display reads:

TUNER	A=440
-- --	-- --

- Begin tuning your instrument. As you tune, the note name is shown on the top line of the display, while vertical bars appear on the second line of the display and begin strobing. If the note is sharp, the bars will strobe from left to right. If the note is flat, they'll strobe from right to left. When the note is in tune, the strobing bars will stop moving and asterisks will appear around the note name on the top line of the display.

After a few seconds of tuner inactivity, the display returns to:

TUNER	A=440
-- --	-- --

- Exit Tuning Mode by pressing any pedal or button.

CHANGING THE TUNING REF

You can easily change the RP-10's tuning reference by using the <UP/DOWN> Parameter buttons while in tuner mode. The top line of the display will show the current setting. The default factory setting is: A=440 Hz. The tuning reference control ranges from 427 Hz to 453 Hz, which is the equivalent of ± 50 cents (1/2 semitone) in either direction from 440 Hz.

When you scroll down from 427 Hz the alternative tuning references are: A=A₄, A=G, and A=G₄.

When you use any of the alternate tuning as your reference, tune your instrument so that the display shows normal tuning (E, A, D, G, B, & E for guitars) and the RP-10 will do the rest (the display shows normal tuning, but you'll actually be tuning to the selected reference).

Exit by pressing one of the pedals to return you to the Program.

SECTION 6 - PEDALBOARD SET-UP

The Utility section of the RP-10 contains the pedalboard setup menu. This menu is reached by pressing the <UTILITY> button. The procedure is as follows:

- **(Step 1)** Press the <UTILITY> button once. The display reads:

```

┌ Pedalboard
└ Contrast 5  →
  
```

This is the main Utility options menu. From this selection screen, you are able to choose the option you want using the **F1**, **F2**, & **F3** Function buttons. The arrow indicates that more options can be found by pressing the <RIGHT> or <LEFT> Parameter button (depending on the direction of the arrow in the display). Note that each option is preceded by an inverse number. These numbers indicate the Function button you should press to reach each option or sub-menu.

Also, it is important to note that when you are several sub-menus below the main menu (such as in the pedalboard setup menu) you can press the Program <UP> button to take you back to the main menu one level at a time, or press the <UTILITY> button to return to the Program.

- **(Step 2)** Press Function button <MOD **F1**>. The display reads:

```

┌ Pedals  F2CC Ped
└ PrgList Assign→
  
```

Note: There are three available options in this sub-menu. Let us refer to this screen as the Pedalboard sub-menu. We will refer to this screen while pursuing each of these options in ascending order.

The **[Pedals]** option allows different functions to be assigned to each of the pedals on the pedalboard. From the beginning of the Pedalboard set-up section, follow step 1 and step 2 until the display reads:

```
[Pedals]  [CC Ped]
[PrgrList Assign]
```

•Press Function button <MOD **[F]**>. The display reads:

```
[Bank 1] [Pedal 1]
[Assignment] 1
```

There are 25 Banks available, each with 10 pedal assignments. As you scroll through the Banks or Pedals, you will notice the pedal assignment name and number located under option **[Assignment]** change according to each **[Pedal #]**.

Use Function button <MOD **[F]**> to select the **[Bank #]** option and scroll to the desired Bank. Function button <MIX **[F]**> selects the **[Pedal #]** option and allows you to scroll to the desired pedal in that bank.

Pedal Assignments

There are nine types of pedal assignments. They are: Program Changes, Program Up, Program Down, List Up, List Down, Bank Up, Bank Down, Toggle CC (0-127), and CC Pedal (0-127). For a description of these functions, refer to the RP-10 Functions section (pg 44).

Use Function button <MORE **[F]**> to select the **[Assignment]** option. At this point, press the <UP> and <DOWN> Parameter buttons to ascend or descend through the RP-10's Program numbers until you reach Program 200. If you continue to press the Parameter buttons, other assignments will be available in the following order: **[Program Up]**, **[Program Down]**, **[List Up]**, **[List Down]**, **[Bank Up]**, **[Bank Down]**, **[Toggle CC 0-127]**, **[CCPedal= CC 0-127]**.

CC PEDAL

This section allows you to assign the CC Pedal's CC number and transmit Channel number. From the beginning of the Pedalboard Set-up section, follow step 1 and step 2 until the display reads:

```

Pedals  CC Ped
PrgList Assign→
    
```

Assign CC Pedal

- Press Function button <MIX 2>. The display reads:

```

Assign CC Pedal
Calibrate Pedal
    
```

- Press Function button <MOD 1>. The display reads:

```

CCPedal:CC 4
Transmit:Ch 1 →
    
```

The cursor should be under the CC number in the display. Function button <MOD 1> selects the CC link number for the CC Pedal. Function button <MIX 2> selects the MIDI Transmit Channel for the CC Pedal. If you press the <RIGHT> Parameter button, the display reads:

```

Toggle Transmit
← Channel 1
    
```

On this screen, Function button <MOD 1> selects the MIDI Transmit Channel for the Toggle CC's.

Calibrating the CC Pedal

This sections explains how to Calibrate the RP-10's CC Pedal.

From the beginning of the Pedalboard set-up section, follow step 1 and step 2 until the display reads:

```


Pedals  CC Ped
PrgList Assign→
    
```


- Press Function button <MIX 2>. The display reads:


```


Assign CC Pedal
Calibrate Pedal
    
```

- Press Function button <MIX >. The display reads:

```
Set Pedal Down
(Forward) Press 
```

- Move the pedal to its full forward (toe down) position and press Function button <MOD >. The display reads:




```
Set Pedal Up
(Back), Press 
```

- Move the pedal to its full back (toe up) position and press Function button <MIX >. When the display returns to the Utility setup menu, you have successfully calibrated the CC pedal.

PRGLIST ASSIGN

This section explains the procedure of how to assign a List Size and assigning Program numbers to step numbers of the List.



From the beginning of the Utility Section, follow the first and second steps until the display reads:

```
 Pedals   CC Ped
 PrgrList Assign→
```


- Press Function button <MORE >. The display reads:

```
List Size:10
→
```

- Press the <UP> and <DOWN> Parameter buttons to select the list size you want. The list is set to be 10 steps long from the factory. However, you can assign up to 32 steps in a list.
- From the above screen press the <RIGHT> Parameter button. The display reads:

```
 Step Number  1
← [PROG NAME]  #
```

The cursor should be under the Step number on the above screen. At this point, each time you press the <UP> and <DOWN> Parameter buttons, you will scroll through the number of steps that you assigned from the above List Size. For example: if you assigned your List Size to be 6 steps, you will have 6 assignments available.

You may have noticed, as you increment and decrement the Step Number, the Program Name and number change with the step number. If you want to change the Program number assigned to the step, Press Function button <MIX >. The cursor should move under the Program number. The Step Number will remain stationary while you increment and decrement through the 200 available Programs, using the Parameter <UP> and <DOWN> buttons.

LED ASSIGN

This function gives you the option of choosing how the pedal's LEDs will illuminate. There are three options available: Normal, Reversed, and All on. Normal illuminates the LEDs of the Pedals in use. Reversed illuminates the LEDs of the Pedals that are not in use. All On illuminates all the LEDs.

From the beginning of the Utility Section, follow step 1 and step 2 until the display reads:

```

Pedals  ACC Ped
PrgList Assign→
    
```

- Press the <RIGHT> Parameter button. The display reads:

```

LEDs: Normal
←
    
```

- Press Function button <MOD > until the desired mode is displayed.

The Utility section of the RP-10 contains the Contrast Menu, Output Mode, Cabinet Emulation Menu, Sales Banner Menu, and the Reinitializing Menu. These menus are reached by pressing the <UTILITY> button. The procedure is as follows:

- **(Step 1)** Press the <UTILITY> button once. The display read:

```

┌ Pedalboard
└ Contrast 5  →
  
```

This is the main Utility options menu. From this selection screen, you are able to choose the option you want using the Function buttons. The arrow indicates that more options can be found by pressing the <RIGHT> or <LEFT> Parameter button (depending on the direction of the arrow in the display). Note that each option is preceded by an inverse number. These numbers indicate the Function button you should press to reach each option or sub-menu.

Also, it is important to note that when you are several sub-menus below the main menu, you can press the Program <UP> button to take you back to the main menu one level at a time, or press the <UTILITY> button to return to the Program.

LCD CONTRAST

The **Contrast 5** option allows you to change the LCD displays contrast, so you are able to see the display at various angles.

- Press Function button <MIX **5**> until the desired contrast is displayed.

OUTPUT

The **Output: Stereo** option allows you to set the output to stereo or mono. If mono is selected, the left and right outputs will be summed together before they are sent to the outputs.. From the beginning of the Set-up Section, follow step 1 until the display reads:

```

┌ Pedalboard
└ Contrast 5  →
  
```

- Press the <RIGHT> Parameter button. the display reads:

```

┌ Output: Stereo
└ CabEm: Local  →
  
```

- Press Function button <MOD **1**> to change the output from Stereo to Mono or visa versa.

CABINET EMULATOR

The **CabEm:** option allows you to select : All On, All Off, and Local. All On indicates the Cabinet Emulation Parameter will always be set to on. All Off indicates the Cabinet Emulation Parameter is always off. Local indicates the stored Parameter value is being used. From the beginning of the Utility Section, follow step 1 until the display reads:

```

Pedalboard
Contrast 5  →
    
```

- Press the <RIGHT> Parameter button. the display reads:

```

Output: Stereo
←CabEm: Local →
    
```

- Press Function button <MIX **F**> until the desired Cabinet Emulator setting is displayed.

SALES BANNER

The Sales Banner gives a brief description of the features of the RP-10. From the beginning of the Set-up Section, follow step 1 until the display reads:

```

Pedalboard
Contrast 5  →
    
```

- Press the <RIGHT> Parameter button, twice. the display reads:

```

Sales: Off
←Reinitialize
    
```

- Press Function button <MOD **F**> to turn the Sales Banner On and OFF.

54

REINITIALIZING THE RP-10

Reinitializing the RP-10, restores the factory presets and deletes any user presets stored or not stored. It will be exactly as it was the day it left the factory new. From the beginning of the Set-up Section, follow step 1 until the display reads:

Pedalboard
Contrast 5 →

- Press the <RIGHT> Parameter button, twice. The display reads:

Sales: Off
← Reinitialize

- Press Function button <MIX 2>. The display reads:

Restore Factory
Programs? Yes No

- Press Function button <MOD 1>. The display briefly reads:

This will erase
User Programs

followed by

Are You Sure?
Yes Cancel

- This is your last chance to change your mind. To abort the operation, press Function button 3. To restore all Programs to original factory condition, press Function button 2. The display briefly reads:

Resetting.
Please wait ...

after which you will be returned to the Program Title screen.

SECTION 6 - THE MIDI SET-UP

The RP-10's MIDI set-up allows you to access and change MIDI Parameters. This is where you are able to edit your MIDI channels, turn the Program send on or off, edit the Program send and receive maps, edit the Device number, assign CC numbers, dump MIDI SysEx data, and turn MIDI merging on or off. These menus are reached by pressing the <MIDI> button. The Procedure is as follows:

- **(Step 1)** Press the <MIDI> button once. The display reads:

```

MIDI Channel:1
Send Prg: Off →
    
```

This is the MIDI options menu. From this screen, you are able to choose the option you want using the Function buttons. The arrow indicates that more options can be found by pressing the <RIGHT> or <LEFT> Parameter button (depending on the direction of the arrow in the display). Note that each option is preceded by an inverse number. These numbers indicate the Function button you should press to reach each option or sub-menu.

Also, it is important to note that when you are several sub-menus below the main menu you can press the Program <UP> button to take you back to the main menu one level at a time, or press the <MIDI> button to return to the Program.

MIDI CHANNEL

The MIDI Channel Parameter allows you to select the MIDI channel on which the RP-10 will respond to MIDI data.

From the MIDI options menu (step 1) find **MIDI Channel:1**

- Press Function button <MOD 1>, until the desired MIDI Channel number is selected.

SEND PROGRAM

Send Prg determines whether or not MIDI Program Changes will be sent out the RP-10 MIDI port as you select Programs. From the MIDI options menu (step 1), find **Send Prg: Off**.

- Press Function button <MIX 2> to turn the Send Program function ON or OFF.

Device mapping allows the RP-10 to act as a controller for up to four other devices. From the MIDI options menu (step 1) find the <RIGHT> Parameter button.

- Press the <RIGHT> Parameter button. The display reads:

```

┌───┐
│Prg Send Map│
│←Prg Rcv Map→│
└───┘
  
```

- Press Function button <MOD 1>. The display reads:

```

┌───┐
│Device 1│
│MIDI Ch:1→│
└───┘
  
```

The cursor is now under the Device number on the above screen. At this point, each time you press Function button <MIX 2>, you should increment through the Device numbers. To choose your own custom name for the Device, follow the same steps used in custom naming a Program on pg.17.

- Press Function button <MIX 2>

The Cursor is now found under the MIDI Channel number. You can select the channel number you want to be assigned to the Device number you selected previously. There are 16 MIDI channel numbers, or you may choose to disable MIDI. Use the <UP> and <DOWN> Parameter buttons.

- Press the <RIGHT> Parameter button. The display reads:

```

┌───┐
│Device # Send│
│←Prg:1  As:1│
└───┘
  
```

This screen tells you that when the RP-10 changes to Program 1, the selected device will be sent Program Change number 1 on its designated MIDI channel.

- Press Function button <MIX 2> once.

The cursor appears under **PRG: 1**. Using the <UP> and <DOWN> Parameter buttons, select the RP-10 Program number (1-200) that will send the mapped Program Change to the external device.

- Press Function button <MORE 3> once.

The cursor now appears under **AS: (#)**. This Parameter determines the MIDI Program Change number that the external device will

receive when the appropriate Program Change number is received on the RP-10. If this Parameter is set to DISABL, the selected RP-10 Program Change will send nothing to the external device. Select the Program Change number that will be sent (1-128, DISABL) using the <UP/DOWN> Parameter buttons.

PROGRAM RCV MAP

The **PRG RCV MAP** function allows you to map incoming MIDI Program Changes to any Program in the RP-10. From the MIDI options menu (step 1) find the <RIGHT> Parameter button.

- Press the <RIGHT> Parameter button. The display reads:

```

┌ Prg Send Map
└ Prg Rcv Map →
    
```

- Press Function button <MIX **F**> . The display reads:

```

┌ Rcv MIDI Prg 1
└ As RP-10: 1
    
```

The cursor appears under **Rcv MIDI PRG: 1**. This display means that MIDI Program Change number 1 is currently set to activate Program number 1 on the RP-10.

- Using the Parameter <UP> Parameter button, set the **Rcv MIDI PRG** number.. Note that as you change this number, the **As RP-10** number changes with it.
- Press Function button <MIX **F**> once.

The cursor appears under **As RP-10: #**.

- Change the number using the <UP> and <DOWN> Parameter button. When you're finished, press the <MIDI> button to exit back to the Parameter screen you left.

Any number of Program Changes (up to the MIDI maximum of 128) can be mapped to recall any number of Programs on the RP-10.

ASSIGN CC # TO PARAMETER

You can create up to 10 continuous controller links that can be linked to any Parameter in the RP-10. Remember, CCs are active only when the Program to which they are linked is active. Make sure you on the Parameter you want link before you attempt to link the CC. As an example, let's link CC 23 to a Parameter. The procedure is as follows:

- From the Parameter screen press and hold the <MIDI> button. The display reads:

```

Link # = Nolink
Assign

```

NOTE: This screen can be reached from the MIDI options menu using the <RIGHT> Parameter button.

At this point you can select one of two options.

- Option 1: Press a pedal assigned as a toggle CC or move the CC Pedal on the Pedalboard. The Parameter is now linked to the CC# assigned to the pedal you selected.

NOTE: All presets have factory established CC Links. If the selected Parameter is not linked, it will select the next available CC link for assignment.

- Option 2: Press Function button <MIX  > once. The display reads:

```

[PARAMETER NAME]
No Link      →

```

NOTE: If you failed to pick a Parameter before attempting to assign it, you will see this display instead.

```

Move to Param to
Link Local CC

```

This simply means that you need to select the Parameter before you try to assign it to a CC Link.

- Using the <UP/DOWN> Parameter buttons, select the MIDI continuous controller number that will control the Parameter [0-127, CHPRESS (channel pressure), CC PEDAL, or NO LINK].

After assigning a parameter, the minimum and maximum values can be established. The procedure is as follows:

- Press the <RIGHT> Parameter button once. The display reads:

```

Minimum CC Value
←[PARAM VALUE] →

```

The value shown with this Parameter automatically defaults to the minimum Parameter value available.

NOTE: The MINIMUM CC VALUE and MAXIMUM CC VALUE Parameters allow you to limit the range of the continuous controllers in the full on and full off positions. The values you select on these two screens determine the behavior of the continuous controller. For example, if a Parameter ranges from 0-100 and MINIMUM CC VALUE is set at 40, the lowest the Parameter can go to via continuous control is 40. Likewise, if MAXIMUM CC VALUE is set at 90, the CC range would run from 40 to 90. It is also possible to set MINIMUM CC VALUE higher than MAXIMUM CC VALUE to reverse the action (polarity) of the continuous controller.

- Use the <UP/DOWN> Parameter buttons to set the minimum Parameter value when the CC pedal is at minimum.
- Press the <RIGHT> Parameter button once. The display reads:

Maximum CC Value
←[PARAM VALUE]

The number shown with this Parameter automatically defaults to the maximum Parameter value.

- Use the <UP/DOWN> Parameter buttons to set the maximum Parameter value when the CC pedal is at maximum.
- Press the <MIDI> button once to return to the Parameter screen. Note that the CC symbol appears in the upper right corner of the display. This symbol simply tells you that the Parameter is linked to a continuous controller.

At this point, you have successfully linked a CC # to control a Parameter. When you move your CC transmitting device (such as the CC Pedal of the Pedalboard), the RP-10 sweeps smoothly between the two values you selected (MINIMUM CC VALUE, MAXIMUM CC VALUE). The Program must now be saved or the CC Link assignment will be lost upon changing Programs (see Storing/Naming Programs, pg. 17).

NOTE: In order for the RP-10 to respond to incoming CCs, the RP-10 MIDI channel setting must match the channel designation of the incoming messages. The RP-10 MIDI channel can be set to any one of the 16 MIDI channels, or all channels (omni). Refer to MIDI Channel on pg 55.

Let's go back to the CC LINK screen for a moment and tackle another scenario: if the Local Link number you want already has a CC assignment, the CC LINK display will read:

```

Link # = CC#
New [PARAM NAME]

```

This screen gives you the option of either reassigning the link (NEW) or selecting a different Local CC Link number. To reassign the link:

- Press Function button <MIX []>. If a Parameter has not been selected for continuous control, the display briefly reads:

```

Move to Param to
Link Local CC

```

after which you are returned to the Program to select a Parameter for continuous control. If a Parameter has been selected, the old Parameter link will be overwritten by the new selection. From this point, the procedure is the same as previously outlined.

DISPLAY CCS

This is a simple option that allows you to see the CC values change in real time. From the MIDI options menu (step 1) find the <RIGHT> Parameter button.

- Press the <RIGHT> Parameter button, twice. The display reads:

```

CC Assignments
←Disp CC's:Qff→

```

- Press Function button <MIX []> until the display shows the setting you want.

NOTE: The RP-10's performance while using CCs will decrease if Display CCs is active

BULK DUMP

This option allows you to dump a SysEx copy of the entire contents of the RP-10 memory out the MIDI port. This is particularly useful for backing up the memory of the RP-10, or copying all the Programs from one RP-10 to another. From the MIDI options menu (step 1) find the <RIGHT> Parameter button.

- Press the <RIGHT> Parameter button, three times. The display reads:

```

Bulk Dump
<Program Dump>
    
```

- Press Function button <MOD 1> once. The display reads:

```

Dump MIDI Data?
Press 2 for Yes
    
```

- Press Function button <MIX 2>, to dump a SysEx copy of the entire contents of the RP-10 memory. To abort the operation, press <MIDI>.
- If Function button <MIX 2> is pressed the display briefly reads:

```

**Dumping MIDI**
  DATA
    
```

When the dump is finished, the display returns to:

```

Bulk Dump
<Program Dump>
    
```

PROGRAM DUMP

This option allows you to dump of individual Program, using SysEx, from the RP-10 out the MIDI port to another device. From the MIDI options menu (step 1) find the <RIGHT> Parameter button.

- Press the <RIGHT> Parameter button, three times. The display reads:




```

Bulk Dump
<Program Dump>
    
```

- Press Function button <MIX 2> once. The display reads:


```

Dump Prog:###
  as:### Start
    
```

- Using the <UP> and <DOWN> Parameter buttons, select the Program number you want to dump out the MIDI port.
- Press Function button <MIX > once. Note that the cursor moves under AS: 1.
- Using the <UP/DOWN> Parameter buttons, select the Program number location in which you want the dumped Program to appear. To abort the operation press the <MIDI> button.
- Press Function button <MORE > to start the SysEx dump. The display briefly reads:

```
* Sending      *
* Program ###  *
```


When the dump is finished, the display returns to:


```
Bulk Dump
<Program Dump →
```

MIDI MERGING

The MIDI Merging option allows incoming MIDI data to be merged with any MIDI data generated by the RP-10 before being sent to the MIDI out port. From the MIDI options menu (step 1) find the <RIGHT> Parameter button.

- Press the <RIGHT> Parameter button, four times. The display reads:

```
MIDI Merging
←      On
```

- To change the setting, press Function button <MOD >. When you're finished, press the <MIDI> button once to return to the Program.

SECTION 7 - APPENDIX

SPECIFICATIONS

A/D Converter: 16 bit PCM
D/A Converter: 16 bit PCM
Sampling Frequency: 40 kHz

DSP Section:

Architecture: Static-Dynamic Instruction Set Computer (S-DISC™)
Digital Signal Path Width: 24 bits (144.5 dB)
Internal Data Path Width: 48 bits (289 dB)
Dynamic Delay Memory: 64k x 24 bits (1.68 seconds)
Static Delay Memory: 256 24-bit registers (6.55 milliseconds)
Data ALU Processing: 10.0 MIPS
Address ALU Processing: 15.0 MIPS
Multiplier Size: 24 bits x 24 bits

Input Section:

Connector: 1/4" Unbalanced TRS
Nominal Level: -8 dBu
Maximum Level: +10 dBu
Impedance: 470 kohms

Output Section:

Connector: 1/4" TRS
Nominal Level: +4 dBu
Maximum Level: +18 dBu
Impedance: 50 ohms

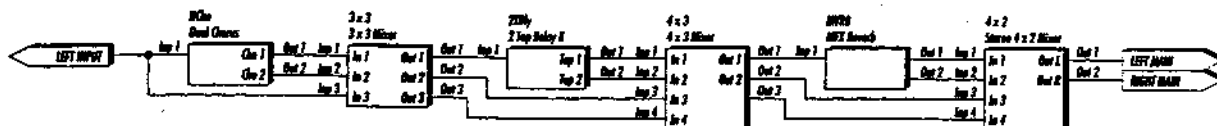
General:

Frequency Response: 20 Hz. - 20 kHz. +0, -3 dB
S/N ratio: Greater than 90 dB; ref = max signal, 22 kHz measurement bandwidth
Total Harmonic Distortion: Less than 0.04% (1 kHz.)
Memory Capacity:
 Factory: 100 programs, 33 algorithms
 User: 100 programs
Power Requirements:
 US and Canada: 120 V AC, 60 Hz
 Japan: 100 V AC, 50/60 Hz
 Europe: 230 V AC, 50 Hz
 UK: 240 V AC, 50 Hz
Power Consumption: 30 watts
Dimensions: 19" (482 mm) W x 1.75" (44 mm) H x 9" (229 mm) D

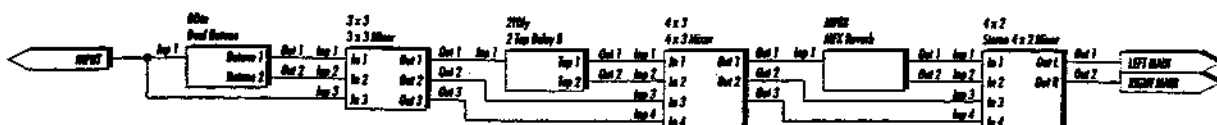
FACTORY ALGORITHM DIAGRAMS

Following are block diagrams of all the Factory Algorithms. These diagrams show all of the input and output information associated with each Module, as well as the signal path routings for each of the 33 Algorithms.

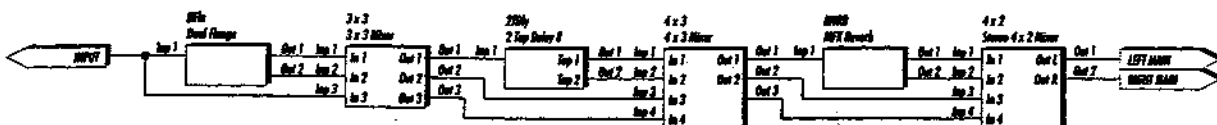
Algorithm #1
DCho -> 2TDly -> Revrb



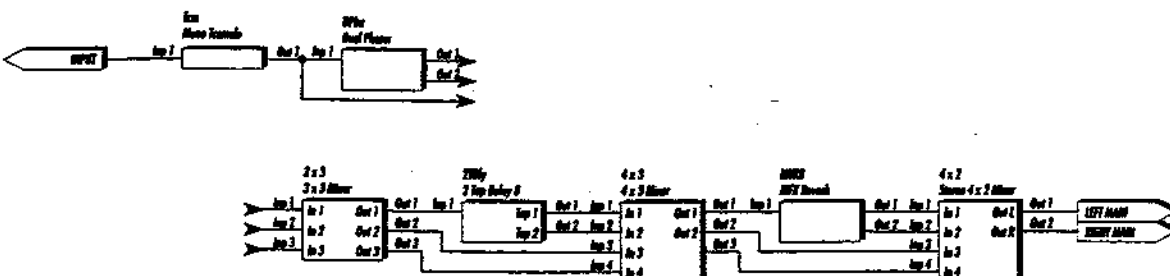
Algorithm #2
DDtn -> 2TDly -> Revrb



Algorithm #3
DFla -> 2TDly -> Revrb



Algorithm #4
DPha -> 2TDly -> Revrb

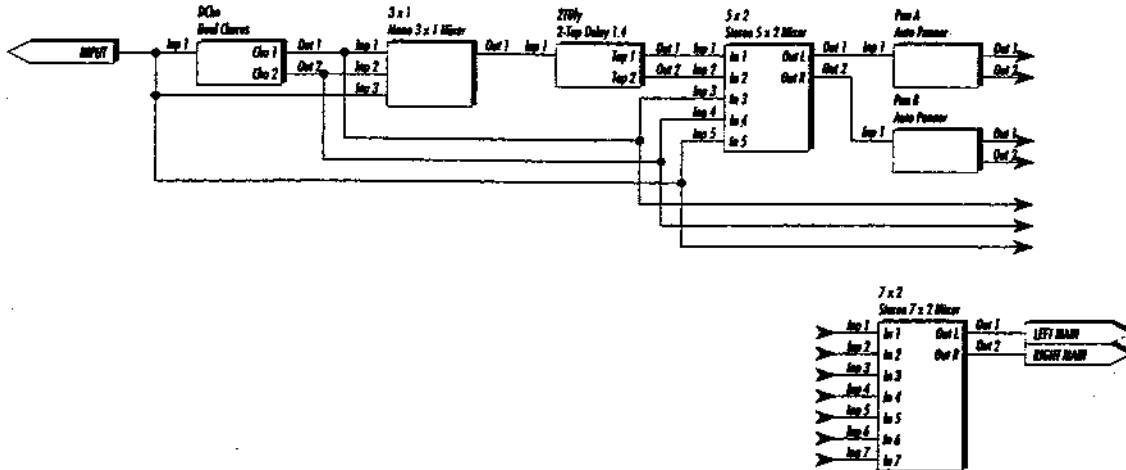


Algorithm #5
Pch -> 2TDly -> Revrb



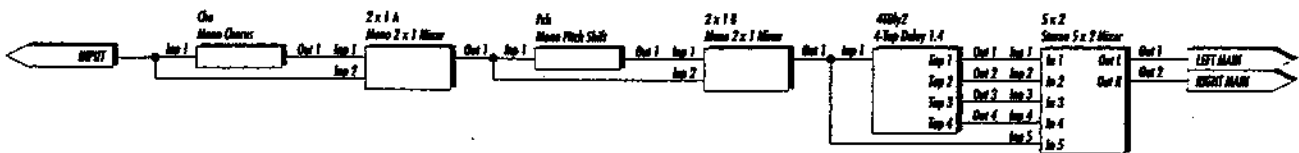
Algorithm #6

DCho -> 2TDly -> 2 Pans



Algorithm #7

Cho -> Pch -> 4TDly



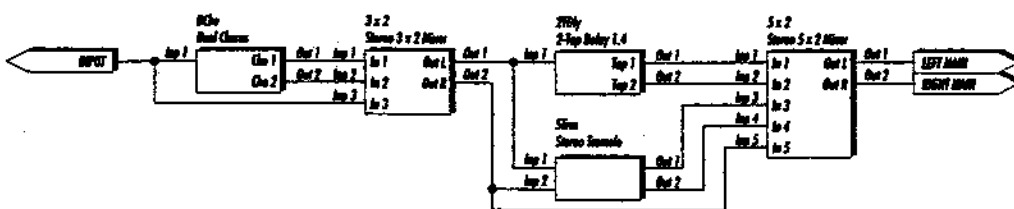
Algorithm #8

Dly -> Revrb -> SDec



Algorithm #9

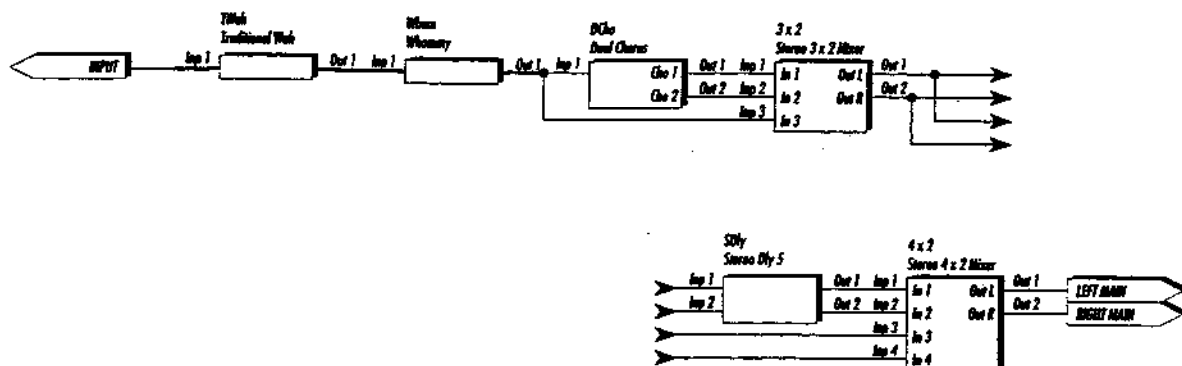
DCho -> 2TDly/STrem



66

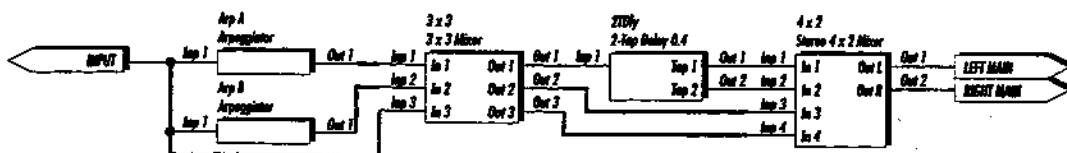
Algorithm #10

Wah -> Wham -> Cho -> Dly



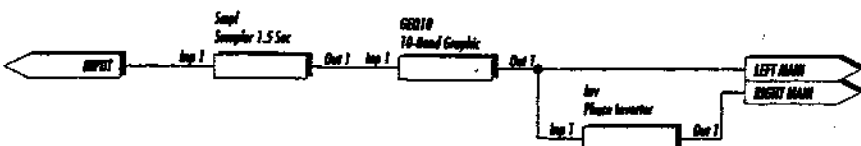
Algorithm #11

Arpeggio2 -> Dly



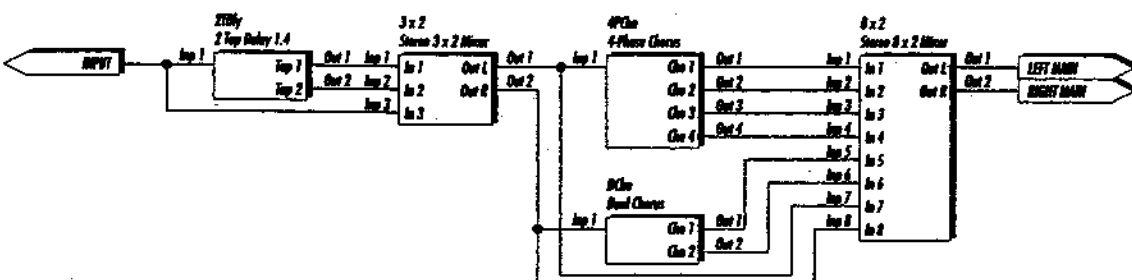
Algorithm #12

Sampler -> GEQ10

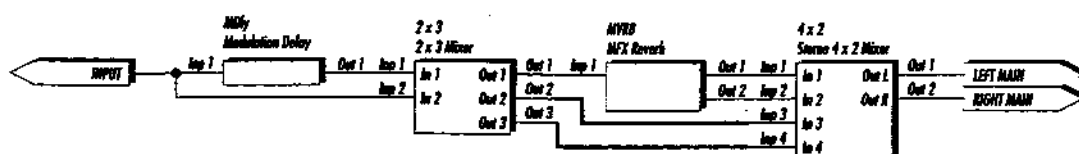


Algorithm #13

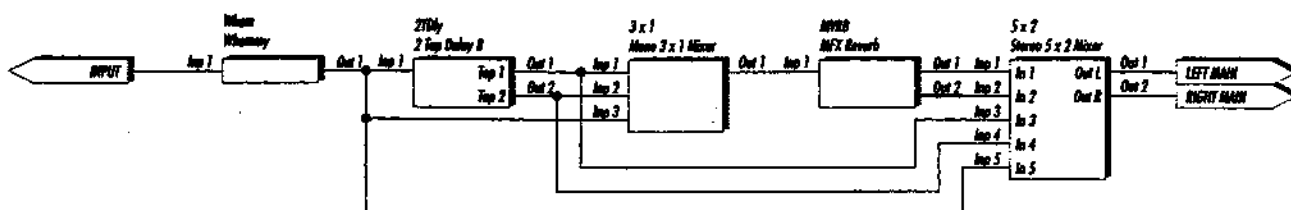
2TDly -> 6VoiceCho



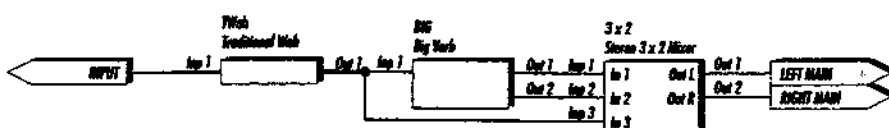
Algorithm #14
Mod Dly -> Revrb



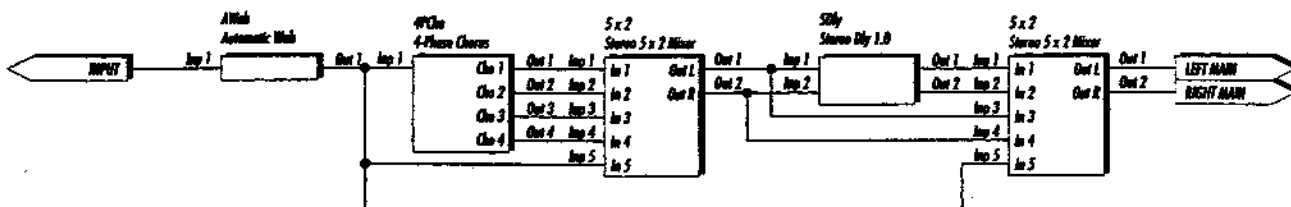
Algorithm #15
Wham -> 2TDly -> Revrb



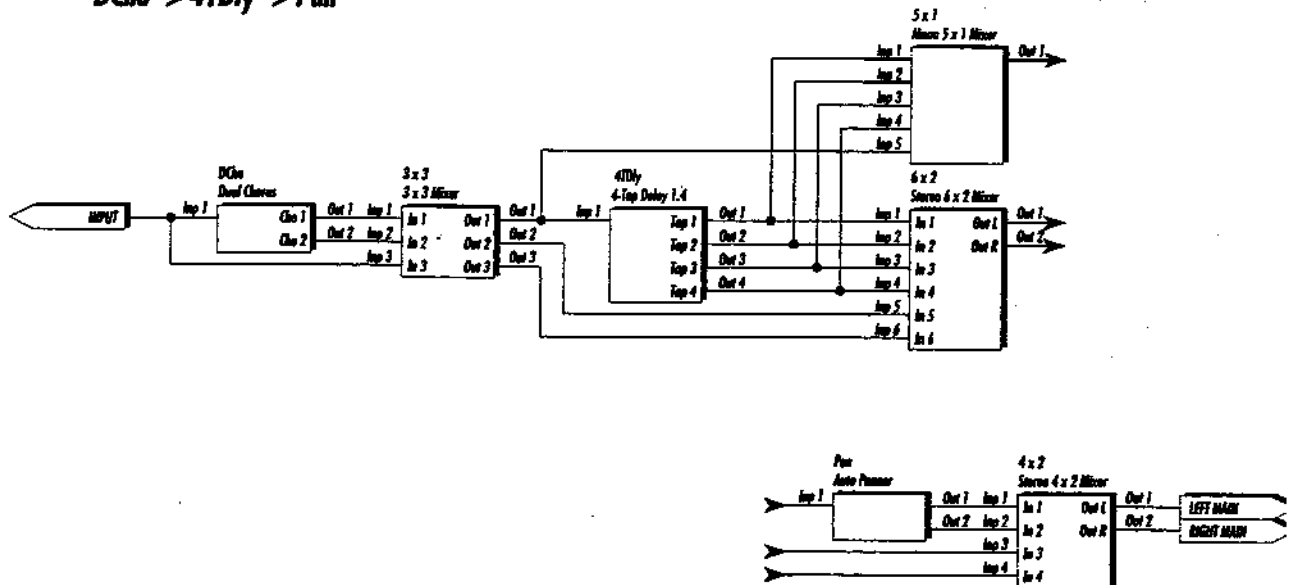
Algorithm #16
Woh -> BigVerb



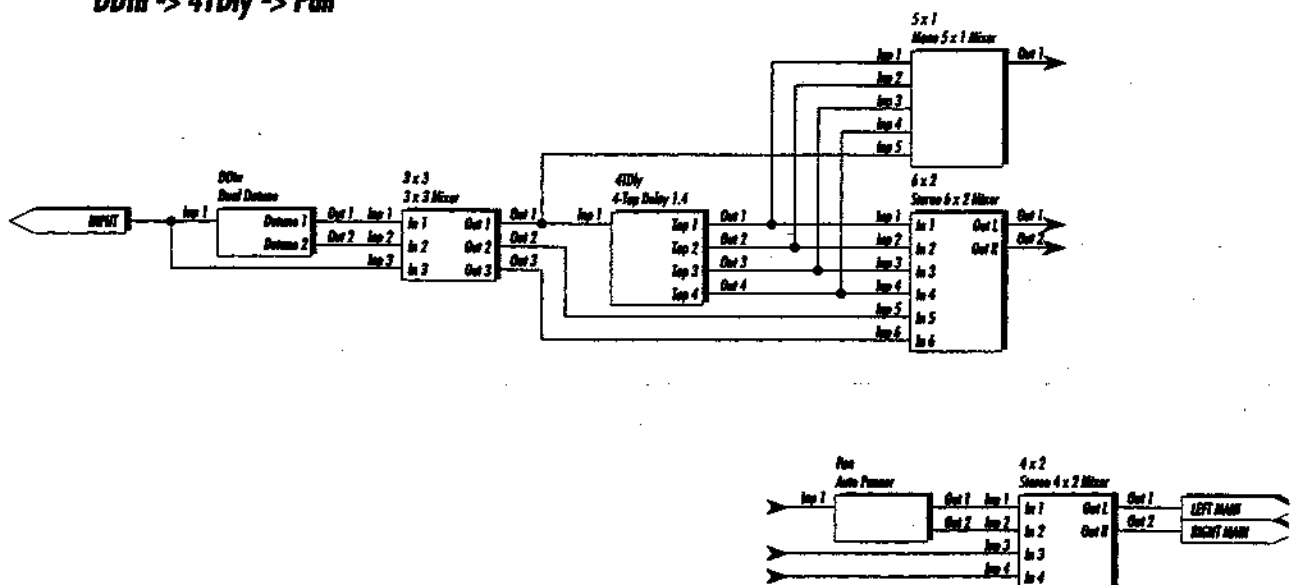
Algorithm #17
AWah -> Cho -> Dly



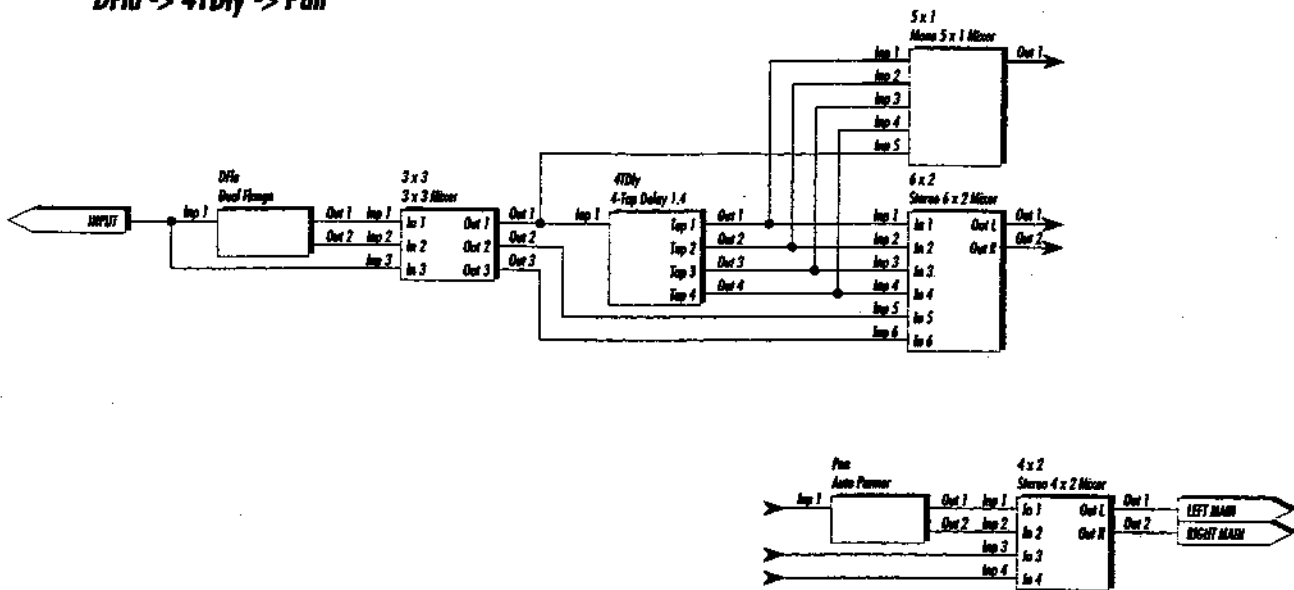
Algorithm #18 DCho -> 4TDly -> Pan



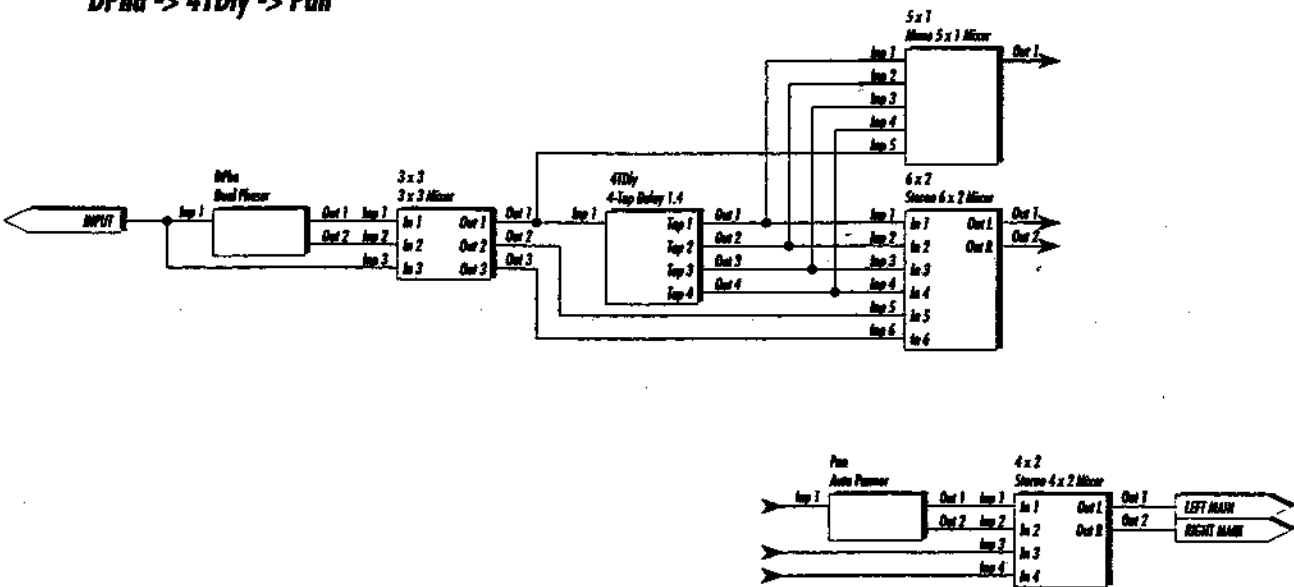
Algorithm #19 DDtn -> 4TDly -> Pan



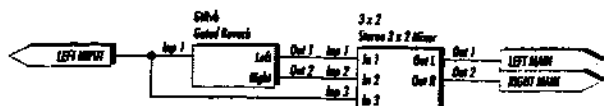
Algorithm #20
DFla -> 4TDly -> Pan



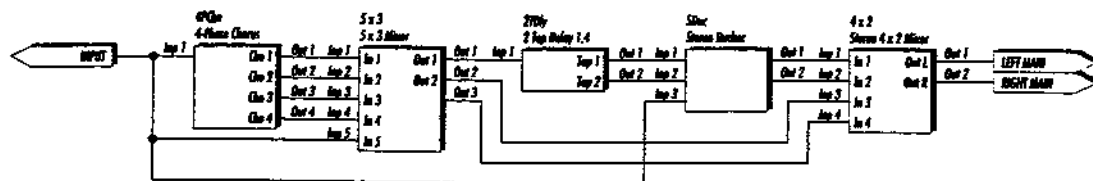
Algorithm #21
DPha -> 4TDly -> Pan



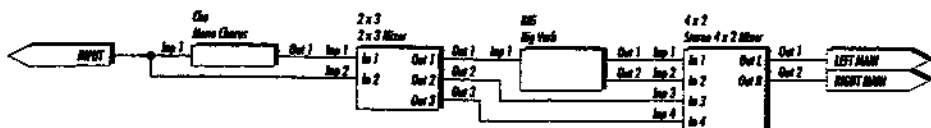
Algorithm #22 Gated Reverb



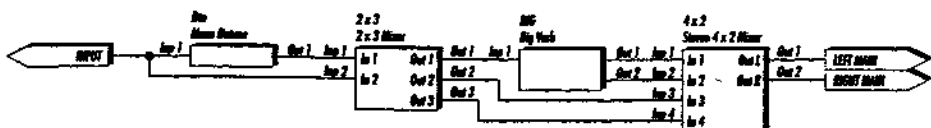
Algorithm #23 4PChor -> 2TDly -> SDur



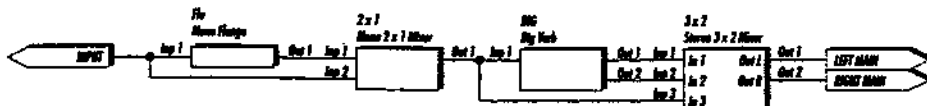
Algorithm #24 Chorus -> BigVerb



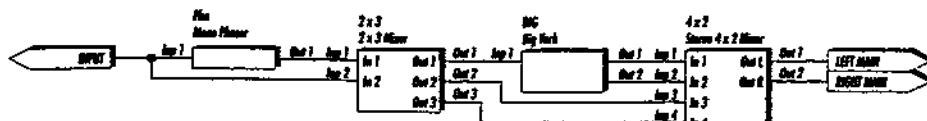
Algorithm #25 Detune -> BigVerb



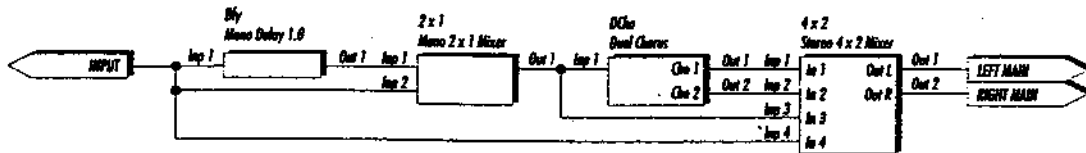
Algorithm #26 Flange -> BigVerb



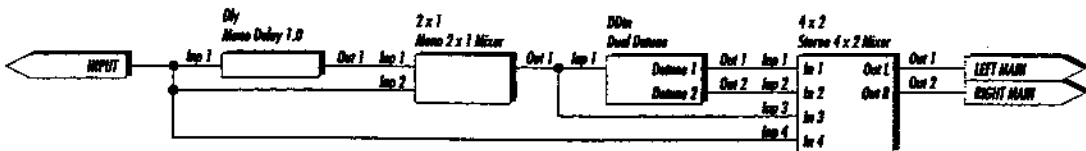
Algorithm #27 Phaser -> BigVerb



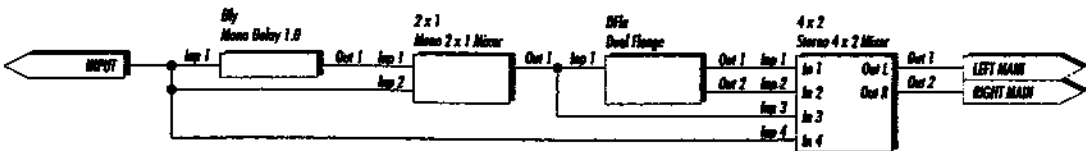
Algorithm #28
Dly -> Dual Chorus



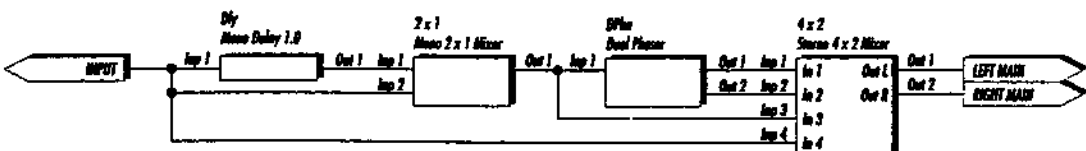
Algorithm #29
Dly -> Dual Detune



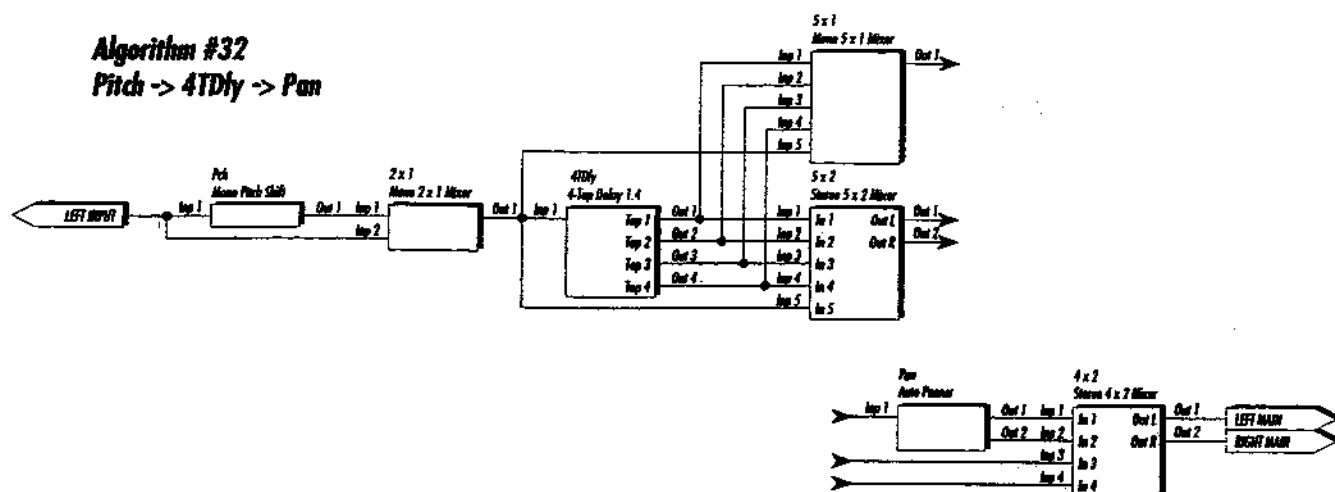
Algorithm #30
Dly -> Dual Flange



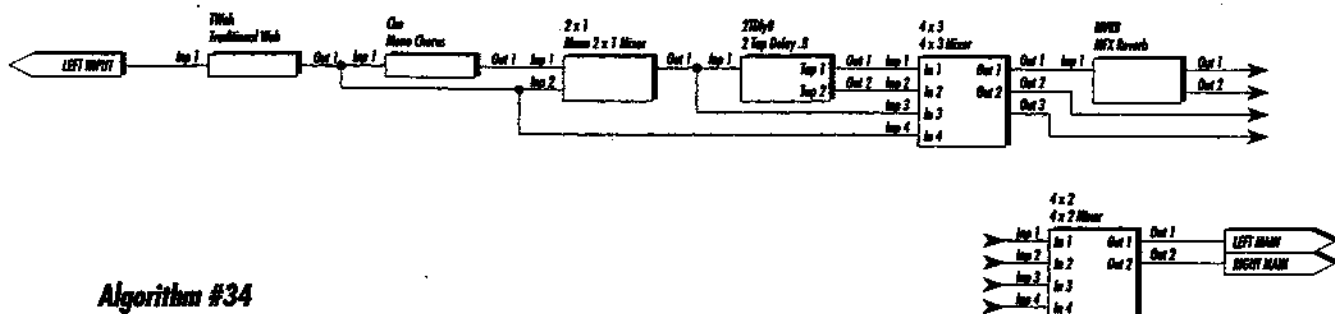
Algorithm #31
Dly -> Dual Phaser



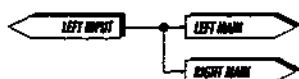
Algorithm #32 Pitch -> 4TDly -> Pan



Algorithm #33 Wah>Cho>Dly>Rvb

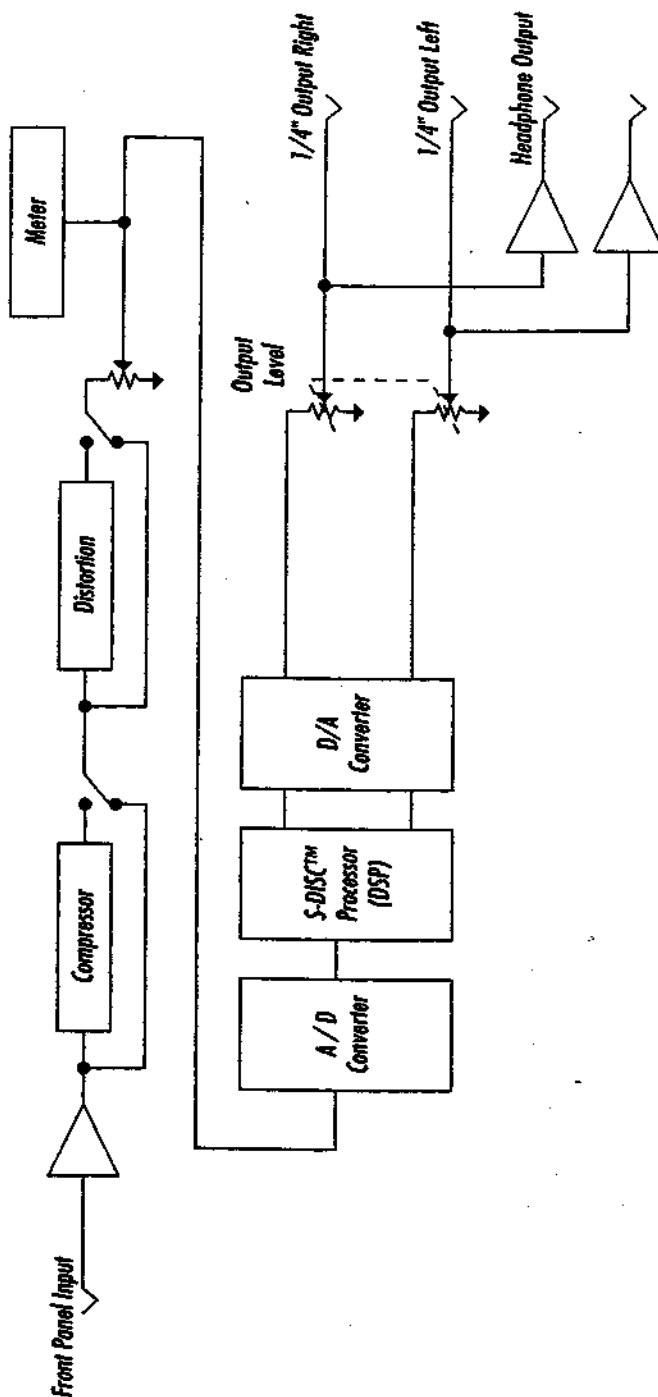


Algorithm #34 No Digital



BLOCK DIAGRAM

Following is a simplified block diagram of the RP-10.



Function...		Transmitted	Recognized	Remarks
Basic Channel	Default Channel	1-16 1-16	1-16 1-16	Memorized
Mode	Default Messages Altered	Mode 3 X X	Mode 3 X X	
Note Number	True Voice	X	X	
Velocity	Note ON Note OFF	X X	X X	
After Touch	Key's Ch's	X X	X O	
Pitch Bender		X	X	
Control Change		O	O	Default Channel 1
Prog Change	True #	0-127	0-127 1-128	
System Exclusive		O	O	
System Common	:Song Pos :Song Sel :Tune	X X X	X X X	
System Real Time	:Clock :Commands	X X	X X	
Aux Mes-sages	:Local ON/OFF :All Notes Off :Active Sense :Reset	X X X X	X X X X	
Notes				

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

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

O : Yes
X : No

PRESET LIST

Following is a list of all the factory Programs in the RP-10.

#	Title	Alg#
1	Blue Moon	1
2	Classic Jazz	24
3	Huge 4ths	32
4	Dreamin'	13
5	Wah na Rock	10
6	Whammy Bar Down	15
7	Chiwhahwah	17
8	Gimme Grunge	33
9	Phse/Trem Morph	4
10	String Swell	18
11	Metal Hall	24
12	Suicide Flange	3
13	Tune Me Down	15
14	Bad Dog!	3
15	Sensitive Metal	24
16	Lazy Flight	8
17	Rickenbach 12	7
18	LA Popsicles	1
19	Round and Round	21
20	Slow Tublar	26
21	Stack in a Hall	2
22	Dirty Socks	2
23	Nosey	16
24	Rock Hall	24
25	Wide Overdrive	2
26	Studio Clean	1
27	Silky Effects	6
28	Dtune in Motion	19
29	Slapback Chorus	28
30	Rhythmic Delays	6
31	Solo in' Smooth	1
32	Blue Naked	33
33	Rock Detune	2
34	Demons	22
35	Delusions	4
36	GreenEggs & Ham	25
37	Ethos Musick	15
38	Plug My Nose	18
39	Flangelic	20
40	Phase Pedal	4
41	Flapjack	1
42	Haymaker	6
43	B-Bender Steel	15
44	Dansville	6

45	BottleSlide Pdl	15
46	Double Espresso	5
47	GiveMeSomeShim	5
48	Prime Octal	5
49	Floydian Fun	7
50	Down 4 Floors	7
51	Real Jazz	33
52	Jazzman Chorus	23
53	Analog Jazz Diy	28
54	Slow Clean	13
55	Duc My Echo	23
56	Super FuzzPhase	31
57	Electric	7
58	Old English 70	17
59	Wide Scratch	25
60	Classic 70's Dirt	27
61	Blue Halls	24
62	New Blues	14
63	Rotary Pedal	21
64	Hidden Blues	23
65	Funhouse Delay	2
66	Rhythm Fusion	2
67	Fusion Tone	1
68	Pdl Intensified	18
69	Octified Solo	5
70	Wide Body	10
71	Breathless	6
72	Fantasia 5ths	7
73	Rhythm Strum	7
74	Back in Time...	32
75	The Alien	1
76	Beach Phase	4
77	Diddleywinks	9
78	Hawaii five-oh	16
79	Half Stack	33
80	Wah in the Crib	16
81	Metal Hangover	5
82	Easy Over	4
83	Pedal Motion	24
84	Colossus Delay	29
85	Big Bottom	10
86	Sweet Acoustic	24
87	Delorus	29
88	Modern Acoustic	10
89	Plain & Simple	24
90	Copper Pan	6
91	Chinstrap	11
92	Det/Chor Morph	10
93	Sen no Sen	10
94	Horror Filmscore	11
95	Catch-Up Flange	30

96	Sound On Sound	32
97	1.5 Sec Sampler	12
98	Wee Wah Wah	17
99	Auto Whizzer	16
100	Travolta	16



8760 South Sandy Parkway
Sandy, Utah, 84070

Telephone (801) 566-8800
FAX (801) 566-7005

International Distribution: 3 Overlook Dr Unit 4
Amherst, New Hampshire 03031 U.S.A.
FAX (603) 672-4246

DigiTech™, S-DISC™, Whammy™ and
Silencer™ are registered trademarks
of DOD Electronics Corporation

Copyright © 1994
DOD Electronics
Corporation

Printed In U.S.A 1/95
Manufactured in the U.S.A.

RP-10 18-1625-D

OS v1.70



This manual
is made from
recycled
materials.