Addverb™ III

24-Bit Digital Stereo FX Processor

PEAVEY®

OPERATION MANUAL

Intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

Intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

CAUTION: Risk of electrical shock – DO NOT OPEN!
CAUTION: To reduce the risk of electric shock, do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

WARNING: To prevent electrical shock or fire hazard, do not expose this appliance to rain or moisture. Before using this appliance, read the operating guide for further warnings.

In the Beginning...

INTRODUCTION

We would like to begin the manual by saying thank you for purchasing the ADDVERB™ III and supporting products made in the U.S.A. The ADDVERB III is designed to provide you with a true stereo, digital multi-effects processor that can be used in sound reinforcement and live instrument applications.

The ADDVERB III has more choices of equalization, noise suppression, compression, and full independent stereo pitch-shifting algorithms, making it the most flexible multi-effect processor available today. In addition, all of the processing power of the ADDVERB III can be focused on a single "ultra"-effect, providing the best possible performance for a given application.

FEATURES

- True stereo inputs and outputs
- 35 different effect types
- Up to 8 simultaneous effects
- User-definable algorithms
- Independent control of effects in each stereo channel and in series or parallel combinations
- Two independent pitch shifters and choruses
- MIDI-controllable
- 128 factory presets, 128 user patches
- Up to 8 continuous controllers per program
- TRS and TS ¼" balanced and unbalanced inputs/outputs
- Sysex: dump/load single or banks of 10 programs, entire setup, or edit buffer
- 16 x 1 Liquid Crystal Display
- Single rack space

ABOUT THIS MANUAL

Wow—you're actually reading the manual! Well give yourself a big pat on the back for making someone's hard work worth the effort. We will try to make it as quick and painless as possible to learn how to use your new ADDVERB III stereo effects processor.

This manual contains two main sections:

Section 1, **Quick and Easy**, provides you with a brief overview of the buttons, their functions and adjusting parameters. This section is ideal for users who normally don't need (or want) all the background information usually provided in these manuals, but would rather dive right in and do something fun (or at least learn something useful!) Here's a quick look at what each chapter contains:

- Chapter 1, **ADDVERB III Overview**, provides some basic connection diagrams and front and back panel illustrations of the ADDVERB III.
- Chapter 2, **Using the ADDVERB III–Nothing to it (really!)**, dives right into tutorials for using your ADDVERB III. These range from setting global parameters to editing parameters and creating your own effects.

Section 2, **For those who like it all...**, provides you with everything we could come with, including a MIDI implementation chart and system exclusive command definitions.

- Chapter 3, **About operating and input/output levels**, discusses what the ADDVERB III can do and where to find these parameters.
- Chapter 4, **Definitions/Abbreviations**, lists common terms (and their meaning) used in this manual as well as abbreviations that you will see on the display.
- Chapter 5, **The Buttons**, provides information on the parameters available when any of the buttons on the front panel is pressed. (We also try to explain each parameter available.)
- Chapter 6, **And then there were Effects**, details each of the effects available with the ADDVERB III.
- Appendix A, **MIDI Support**, shows MIDI implementation in this handy-too-look-at MIDI Implementation chart.
- Appendix B, **System Exclusive**, delves into the world of MIDI System Exclusive commands and formats.
- Appendix C, **Specifications**

Contents

Section 1 Quick and Easy

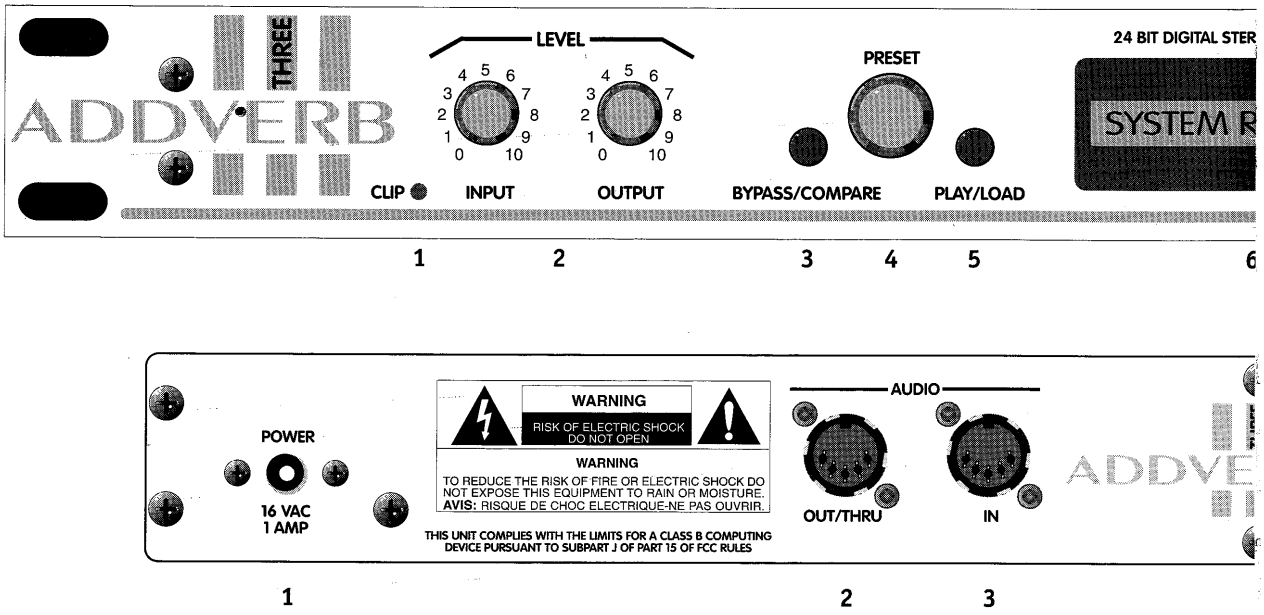
What you'll find in this section:

- Chapter 1, **Overview**, provides a detailed description of the front and back panels of the Addverb III as well as connection diagrams for common connection schemes.

- Chapter 2, **Using the Addverb III**, provides tutorials on:

  - ☛ Editing and Storing Presets
  - ☛ Program Mapping
  - ☛ And the following Global Options:
    - ✓ Setting the View Angle
    - ✓ Setting the MIDI Receive Channel
    - ✓ Setting the MIDI Transmit Channel
    - ✓ Dumping a Preset via MIDI
    - ✓ Loading a Preset via MIDI

Chapter 1 Overview



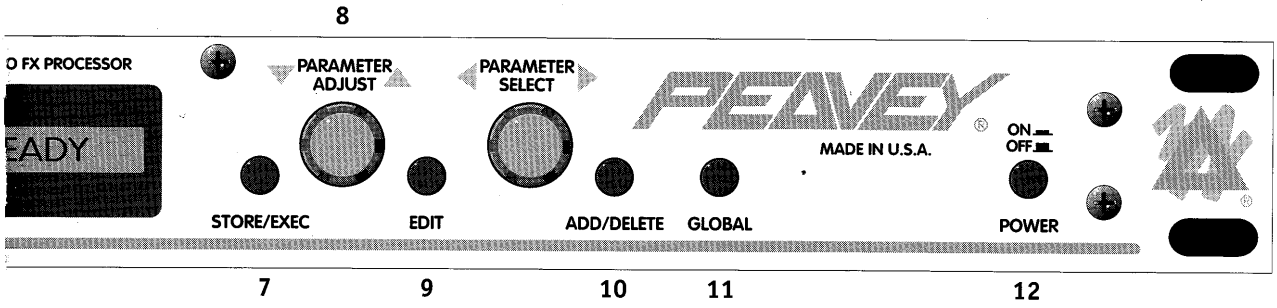
1.1 A LOOK AT THE FRONT AND BACK OF YOUR ADDVERB III

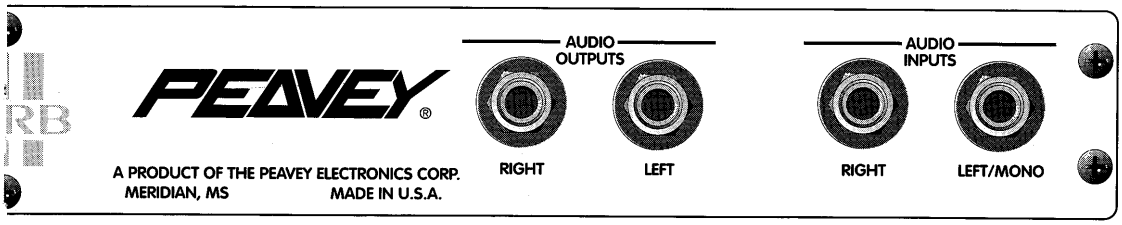
(Front)

1. **Bicolor Clip LED**
   Use this LED to monitor your levels. When the LED illuminates red, your signal is within 6 dB of "clipping." The ideal setting is to have the LED illuminate red only on program peaks. Some programs with high gain (such as Compression, Distortion, and Reverb) may clip when the LED illuminates red. Care should be taken when adjusting the internal levels of these effects.

Note: The clip LED is assignable, i.e., it may be placed anywhere within the effects chain. This allows you to locate and eliminate any overload conditions. The clip LED defaults to input level at power up.

2. **Input/Output Level Controls**
   The operating levels are ***global*** (one setting for all presets) and are made from the front panel controls.
3. **Bypass/Compare Button**
   When in the edit mode, use this button to compare any stored preset with the effect currently being edited. When in the play mode, use this to place the Addverb III into a "bypass" state. Bypass has two selectable modes: Bypass or Mute.
4. **Program/Preset Knob**
   Use this knob to increment/decrement the current program or preset.
5. **Play/Load Button**
   This button provides access to the preset selections and program mapping. When in any other mode, pressing this button will put you in play mode, when in play mode, pressing this button will load the current program into the DSP.
6. **Display Window**
   This is a 16 character by 1 line Liquid Crystal Display (LCD) with variable view angle adjustment for easy visibility.
7. **Store/Exec Button**
   This button is used to save and store changes to preset memory and initiate other system functions.





8. **Parameter Select and Parameter Adjust Knobs**
   Use these knobs to navigate through the menus on the display: left, right, up or down, and to increment or decrement selected values. Typically the Parameter Select Knob moves through parameters while the Parameter Adjust Knob changes parameter values.
9. **Edit Button**
   Use to access the editing functions for either constructing new presets or editing existing ones.

Note: Pressing the **Edit** button allows you to select the effect to be edited. Once the effect is chosen, place the cursor under the effect and press the **Edit** button again. This allows you to access the parameters that make up the effect.

10. **Add/Del Button**
    Use this button when you want to "add" or "delete" effects from an effect chain.
11. **Global Button**
    This button is used to adjust the view angle, clip LED assignment, MIDI settings, and continuous controller assignments.
12. **Power Switch**
    This turns the Addverb III On and Off.

(Back)

1. **Power Jack**
   Use only the 16.5 volt, 1A, power adapter provided (Peavey part #00710160).

Caution: Use only the Peavey 16.5 volt power supply provided with this product. If the original supply must be replaced, consult your Peavey dealer or the factory for the correct replacement. Failure to use the correct power supply could result in fire, shock hazard, extensive circuit damage, decreased performance or non-operation.

2. **MIDI Out/Thru Jack**
   The Addverb III is capable of sending MIDI commands to other MIDI devices. The Addverb III is also capable of transmitting MIDI commands it receives at the MIDI In jack to other MIDI devices through the MIDI Out/Thru jack. This allows you to connect the Addverb III in the middle of a MIDI chain and still have MIDI commands reach MIDI devices that are further down the chain than the Addverb III.

Note: Since valid Program Change or Continuous Controller commands the unit receives will be out of the MIDI Out/Thru jack, care should be taken to avoid looping the output back to the input.

3. **MIDI In Jack**
   This is used to receive MIDI commands and system exclusive information from an external MIDI device.

4. **Right and Left Audio Outputs**
   Right and left outputs are provided for true stereo effects. For mono output operation, either output may be utilized.

5. **Right and Left/Mono Audio Inputs**
   Right and left inputs are provided for true stereo. For mono input use the jack labeled *left/mono.*

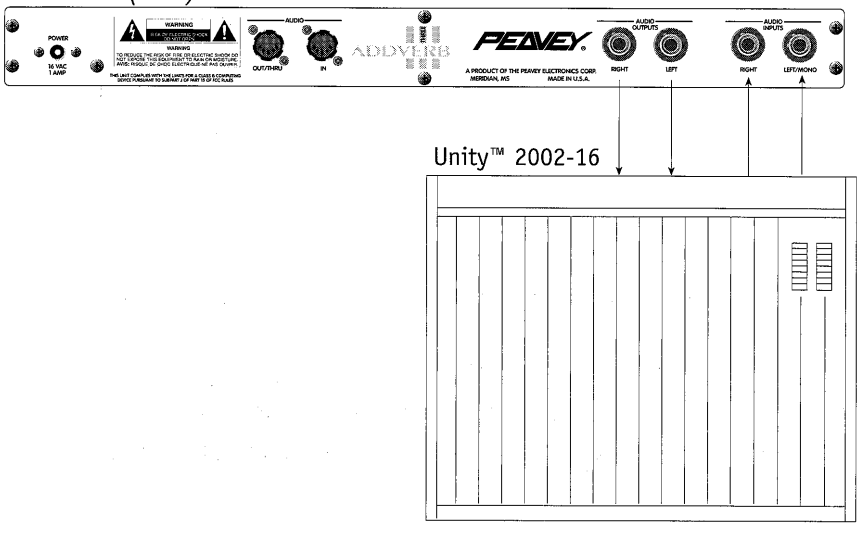
1.2 SOME CONNECTION POSSIBILITIES

The inputs and outputs on the Addverb III are a "transformer-like" electronically balanced circuit. The Addverb III can accept ring-tip-sleeve (stereo) ¼" input plugs or single-ended tip-sleeve (mono) ¼" input plugs. The outputs on the Addverb III are work the same.

1. **Connecting the Addverb III to a Mixing Console**
   The Addverb III may be connected directly into the channel or effect loop of a mixing console.

   - ✍ Connect the left and right outputs of the Addverb III to the inputs of the mixer (either available channels or "effects" returns or auxiliary inputs.
   - ✍ Connect the mixer "effects" sends or other auxiliary outputs of the mixer to the left and right inputs of the Addverb III.

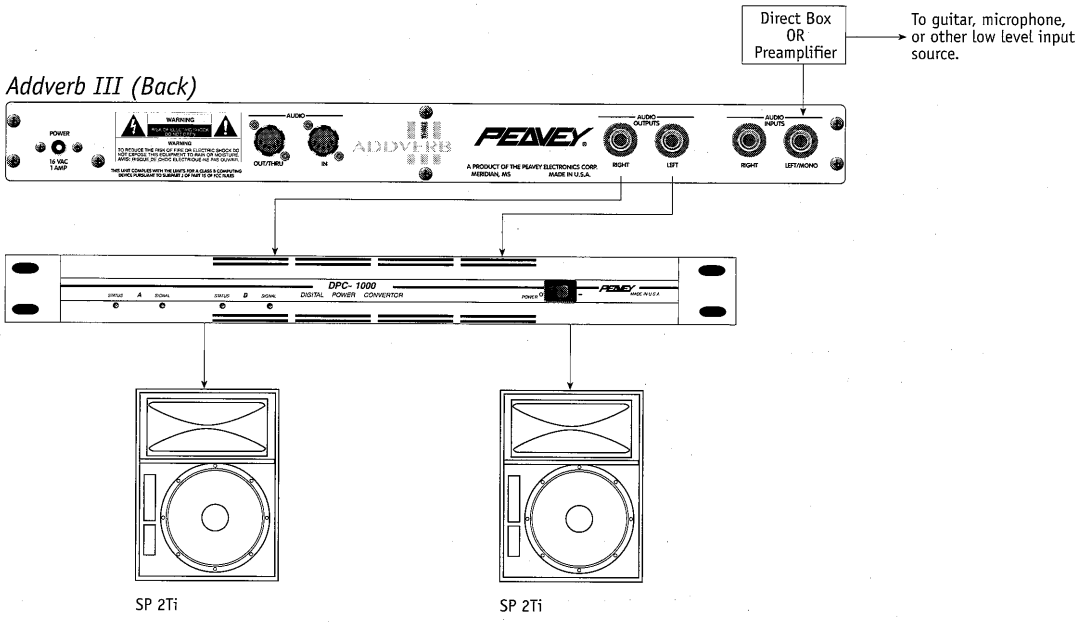
Addverb III (Back)



2. Using the Addverb III with a separate amplifier and speakers

The following diagram shows the Addverb III in a system composed of a preamplifier, Peavey DPC™ 1000 amplifier, and Peavey SP™ 2XT speaker enclosures.

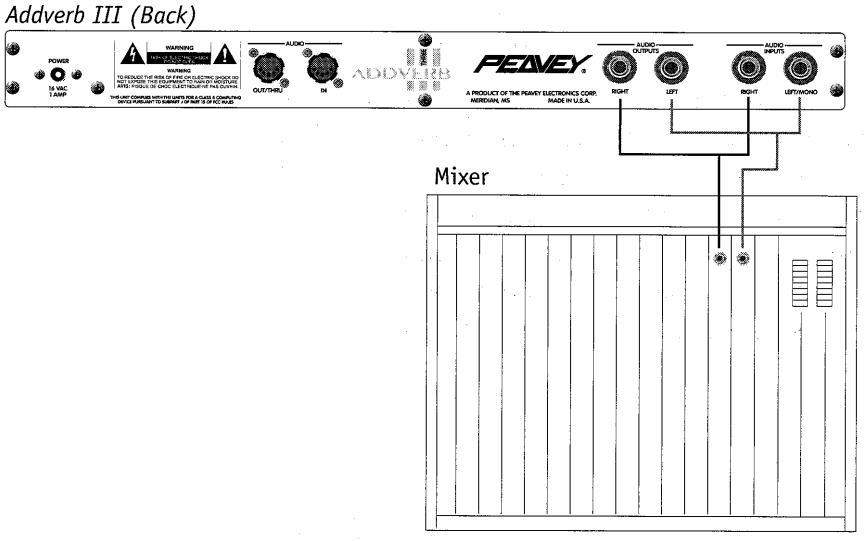
- ✍ Connect the output of the Direct Box or preamp to the Left/Mono input of the Addverb III. **Do not** connect your guitar, microphone, or other low level input source directly to the Addverb III.
- ✍ Connect the left and right outputs of the Addverb III to the left and right inputs of the amplifier.
- ✍ Connect the left and right outputs of the amplifier to the left and right speakers.



3. Connecting the Addverb III to the Patch Points of a Mixing Console

- ✍ Using "Y" cables, connect the left and right inputs of the Addverb III to the patch points of the mixer.

Note: The tip of the ¼" jack sends signals from the mixer to the Addverb III; the ring of the ¼" jack returns a signals from the Addverb III to the mixer.



Chapter 2 Using the Addverb III

In this chapter we will provide several of the most common functions performed with the Addverb III in tutorial form.

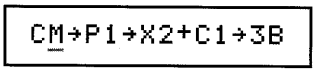
Let the tutorials begin!

Editing and Storing a Preset

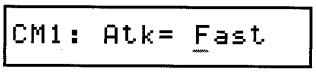
Why edit a preset? Well, while we try to provide presets that are useful, sometimes it is necessary to adjust parameter settings to achieve the sound you are looking for. The easiest way to do that is to edit an existing preset and store it to a user location (since the factory presets are "read-only"). Initially you may notice that the factory presets and the user presets look identical—they are. They are also identical whenever the Addverb III is initialized. This is because the Addverb III copies all the factory presets to the user preset locations when initialized. So if you don't want to lose your presets, we suggest you save them via MIDI. The MIDI Streamer™, a MIDI Data Storage Processor, from Peavey is an excellent choice for doing this. Let's edit.

1. Press the **Play/Load** button and use the *Program/Preset Knob* to select the preset you want to edit. The preset name/number in this example is **Fresh A8**

2. Press the **Edit** button one time.



3. Position the cursor under the effect you want to edit. Use the *Parameter Select Knob* to move the cursor.
4. Press the **Edit** button again.



5. Use the *Parameter Select Knob* to select the parameter you want to change.
6. Change the value using the *Parameter Adjust Knob.* (Go ahead, experiment!)
7. Repeat steps 2 through 6 until all changes are made.
8. Now its time to store the changes you made (you don't want lose your changes, do you?).
9. Press the **Store/Exec** button.

10. From this display it is possible to change the name of the preset and set the storage location.
11. To change the name: Rotate the *Parameter Select Knob* until the cursor is under the first character of the name, then use the *Parameter Adjust Knob* to change the character.
12. To change the storage location: Rotate the *Parameter Select Knob* until the cursor is under the storage location, then use the *Parameter Adjust Knob* to select the new user storage location.
13. Press the Store/Exec button again to save the changes.
14. That's it! You have just successfully edited and stored a preset. Congratulations!

Program Mapping

'Twas the night before Christmas and all through the house not a creature was stirring, not even a mouse...whoops, wrong story.

Once upon a time there lived a musician who was very discouraged with the trouble he had to go through to change from one preset to the next (he had only one button to use, and all it did was go up one preset at a time...gasp!). He wished that it was possible to take his favorite and most useful presets and place them in such a way that he could move from one to the next with ease, but he didn't want to reprogram them, that would be too cumbersome. It was then that this young musician discovered a wondrous invention—program mapping. This magical thing called a Program Map allowed the musician to place all his favorite presets in whatever order he chose—it was a dream come true, and he programmed happily ever after.

Okay, maybe a Program Map isn't "wondrous" or even "magical" but it is a useful way to move from one preset to the next when you are using the front panel, or a foot controller with an increment and decrement button.

A Program Map is simply a diagram that points from a **program** (say, A1) to a **preset** (for instance, XComp U 1).

When new, or reinitialized, the Addverb III restores the Program Map to the factory default settings, where the program number corresponds one-to-one with the preset number (e.g., A0=U0...A50=U50, etc.)

The following tutorial should help to illustrate the usefulness of the Program Map.

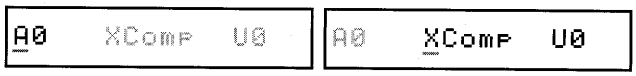
Suppose you have the following presets that you use all the time and you want to be able to have quick access to them from the front panel of the Addverb III:

Preset #	Preset Name	Current Program Map #	Target Program Map #
U110	Lezlee	A110	A0
F112	Grunge	B112	A1
U12	QdComp	A12	A2
F64	HiVerb	B64	A3

Going from one preset to the next without mapping them would be nearly as bad as what our young musician had to put up with. (Just think about changing from Lezlee to Grunge using the *Program/Preset Knob!*)

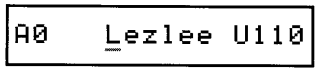
Luckily, we are going to show you an easier way using the Program map. Pay attention, we're only going to do this once.

1. Press the **Play/Load** button. This places you in the play mode. In this mode you can view both the program number and the preset name/number on one screen. For instance:

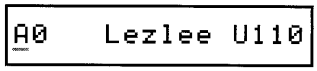


2. Turn the *Parameter Select Knob* to the right one click to place the cursor under the preset name. This leaves you in program number A0, but allows you to change the preset name/number assigned to A0.

3. Use the *Program/Preset Knob* to change **XComp U0** to **Lezlee U110**. At this point you are telling the Addverb III—"I want to stay in program number **A0**, but I want to change the preset that program number **A0** calls up from **XComp U0** to **Lezlee U110**."



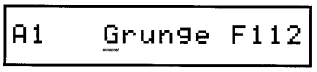
4. Turn the *Parameter Select Knob* to the left one click to place the cursor under the program number. (Notice that when the cursor is under the program number, both the program number and the preset name/ number change when either the *inc* or *dec* button is pressed.)



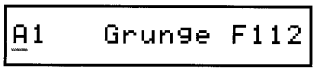
5. Turn the *Program/Preset Knob* to the right one click to move to program number A1. This is like saying—"Okay, I'm through with program number **A0**, now I want to go to program number **A1** and assign a preset to it."

6. Turn the *Parameter Select Knob* to the right one click to place the cursor under the preset name.

7. Turn the *Program/Preset Knob* to change **2Korus U1** to **Grunge F112**.

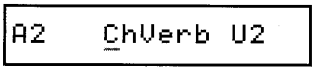


8. Turn the *Parameter Select Knob* to the left one click to place the cursor under the program number.



9. Turn the *Program/Preset Knob* to the right one click to move to program number **A2**.

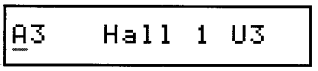
10. Turn the *Parameter Select Knob* to the right one click to place the cursor under the preset name.



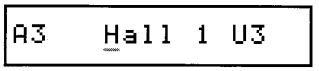
11. Turn the *Program/Preset Knob* to the left one click to change **Acous U2** to **QdComp U12**.

12. Turn the *Parameter Select Knob* to the left one click to place the cursor under the program number.

13. Turn the *Program/Preset Knob* to the right one click to move to program number **A3**.



14. Turn the *Parameter Select Knob* to the right one click to place the cursor under the preset name.



15. Turn the *Program/Preset* to change **Hall 1 U3** to **HiVerb F64**.

16. Congratulations! You are now a Program Mapping pro.

Global Stuff Utility, MIDI and Controller Screens

These mini-tutorials provide instruction on several of the most common global settings for the Addverb III. Each mini-tutorial is independent of the previous mini-tutorials. This allows you to learn what you want when you want to and proceed without wondering if you missed anything in a previous mini-tutorial!

Setting the View Angle

1. From play mode, press the **Global** button one time. The following screen is displayed:

2. Use the *Parameter Adjust Knob* to adjust the display to a comfortable viewing angle.

Setting the MIDI Receive Channel

1. From play mode, press the **Global** button two times. This takes you to the MIDI screen.

2. Use the *Parameter Adjust Knob* to change the channel over which MIDI messages are received.

Setting the MIDI Transmit Channel

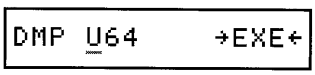
1. From play mode, press the **Global** button two times. This takes you to the MIDI screen.

2. Turn the *Parameter Select Knob* to the right one click. Use the *Parameter Adjust Knob* to change the channel over which MIDI messages are transmitted.

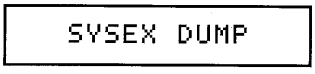
Dumping a Preset

1. From play mode, press the **Global** button two times. This takes you to the MIDI screen.
2. Turn the *Parameter Select Knob* to the right one click. Use the *Parameter Adjust Knob* to change the channel over which MIDI messages are transmitted. (Make sure the receiving unit is set to receive on the channel selected.)

3. Turn the *Parameter Select Knob* to the right two clicks. Use the *Parameter Adjust Knob* to select the preset to dump via MIDI.



4. Press the **Store/Exec** button to send the preset. The following display is shown:

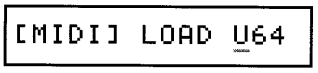


Loading a Preset (to a new location)

(Loading a preset to its original location does not require a procedure. Simply send the preset from the transmitting unit. The Addverb III will automatically store it in its original location.)

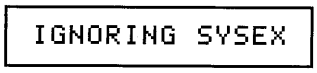
1. From play mode, press the **Global** button two times. This takes you to the MIDI screen.
2. Use the *Parameter Adjust Knob* to change the channel over which MIDI messages are received.

3. Turn the *Parameter Select Knob* to the right four clicks. Use the *Parameter Adjust Knob* to select the user location the incoming preset will load into.



4. Now send the preset to the Addverb III from the transmitting unit. You should see the following display:

If you see:



You need to:

- Set the receive channel on the Addverb III to the MIDI channel shown in the display.
- Send the preset again from the transmitting unit.

Section 2 For those who like it all...

- Chapter 3, **Definitions/Abbreviations**, lists definitions to some common terms used in this manual and provides abbreviations (and their meanings) shown on the display.
- Chapter 4, **Buttons & Knobs**, provides a detailed description of each button on the front panel and the parameters that can be accessed by them.
- Chapter 5, **And then there were Effects**, gives a detailed list of parameters for each effect.
- Appendix A, **MIDI Support**, is the MIDI Implementation chart showing the MIDI commands and messages recognized by the Addverb III.
- Appendix B, **System Exclusive**, is a detailed description of the MIDI System Exclusive command set.
- Appendix C, **Specifications**, lists the specifications for the Addverb III.

Chapter 3 Definitions and Abbreviations

3.1 DEFINITIONS

Preset: A *Preset* is a storage location (*e.g.*, U1) that holds the preset name (*e.g.*, PianoStage), the effect chain, and all the user adjustable parameters and continuous controller settings. There are 256 preset locations, 128 user and 128 factory. Any factory preset can be edited and stored in a user preset location.

Program: A *Program* is a pointer to a *Preset.* There are 256 program locations in the Addverb III.

3.2 ABBREVIATIONS

3.2a Global Button Abbreviations

The Global button abbreviations are listed by display. The display name is shown in brackets [].

[UTIL] Display

BYPS	-	Bypass Mode
LR IN	-	Left/Right Input
LR OUT	-	Left/Right Output
1E OUT	-	First Effect output
2E OUT	-	Second Effect output
3E OUT	-	Third Effect output
4E OUT	-	Fourth Effect output
5E OUT	-	Fifth Effect output
6E OUT	-	Sixth Effect output
7E OUT	-	Seventh Effect output

[MIDI] Display

DMP	-	Dump
RCV CH	-	Receive Channel
LD	-	Load
XMT CH	-	Transmit Channel
XMT PRG	-	Transmit Program Change
EXE	-	Execute

[CONT] Display

CNTR#, CNTRL#	-	Controller #
CHAN	-	Channel
PRAM	-	Parameter

3.2b Play Button Abbreviations

The Play button abbreviations are listed alphabetically by effect name. The abbreviations for each effect are shown in the same order they appear in their display.

2-Channel Mixer Effect

MX	-	2-Channel Mixer
Lin	-	Left Input
Lout	-	Left Output
Rin	-	Right Input
Rout	-	Right Output

3-Band Midrange Sweepable Effect

3B	-	3-Band Midrange Sweepable
L.Gain	-	Low Gain
M.Frq	-	Midrange Frequency
M.Gain	-	Midrange Gain
H.Gain	-	High Gain

4-Band Parametric Equalizer Effect

4B	-	4-Band Parametric Equalizer
Para	-	Parametric
Freq	-	Frequency
BW	-	Band Width

5-Band Equalizer Effect

5B	-	5-Band Equalizer

Auto Pan Effect

PN	-	Auto Pan

Chorus Effects

C1	-	Chorus 1
C2	-	Chorus 2
Dly	-	Delay
Fdbk	-	Feedback

Classic Equalizer Effect

CQ	-	Classic Equalizer
Md	-	Midrange
Shft	-	Shift

Compressor Effect

CM	-	Compressor
Atk	-	Attack
Rel	-	Release
Sustn	-	Sustain
NG Thr	-	Noise Gate Threshold

Delay Effect

DL	-	Delay
L. Dly	-	Left Delay
L. Fbk	-	Left Feedback
R. Dly	-	Right Delay
R. Fbk	-	Right Feedback
TS	-	Tape Simulator

Distortion Effect

DS	-	Distortion
Reson	-	Resonance

Envelope Filter Effect

EF	-	Envelope Filter
Sens	-	Sensitivity
Freq	-	Frequency
BandW	-	Band Width
Typ	-	Type
LP-Slo	-	Low Pass-Slow
LP-Fst	-	Low Pass-Fast
BP-Slo	-	Band Pass-Slow
BP-Fst	-	Band Pass-Fast

Exciter 1 Effect

X1	-	Exciter 1
Freq	-	Frequency

Exciter 2 Effect

X2	-	Exciter 2
Bal	-	Balance

Noise Gate Effect

NG	-	Noise Gate
Relese	-	Release
Thr	-	Threshold
Sen	-	Sensitivity

Overdrive Effect

OD	-	Overdrive
LoRol	-	Low Frequency Rolloff
NORM	-	Normal
PreDrv	-	PreDrive

Pitch Shift 1 & 2 Effects

P1	-	Pitch Shift 1
P2	-	Pitch Shift 2
InLR	-	Left Input—Right Input
PDly	-	PreDelay
Fdbk	-	Feedback
L. Mix	-	Left Mix
R. Mix	-	Right Mix
ms	-	milliseconds

Reverb Effect

RV	-	Reverb
PDly	-	PreDelay
REVRS	-	Reverse Gated

Speaker Simulator Effect

SS	-	Speaker Simulator
Ty	-	Type
Clsd	-	Closed
Cabt	-	Cabinet
Brit	-	British

Stereo Simulator Effect

ST	-	Stereo Simulator
LoPas	-	LowPass Filter

Ultra-Reverb Effect

UR, ULT-REV	-	Ultra-Reverb
PD	-	PreDelay
Dly	-	Delay
Fdbk	-	Feedback
5B	-	5-band Equalizer
RV	-	Reverb

Chapter 4 Knobs & Buttons

4.1 THE PLAY BUTTON

The **Play/Load** button on the Addverb III is where you will select the program number, preset number, and program volume for each program to be played.

4.1a Setting up the Programs

4.1a1 Manually

The programs in the Addverb III are arranged into two banks: bank A and bank B. Any preset may be assigned to any program bank location.

To select a program from the front panel, place the cursor under the Program Number (this will be either **A**, for bank A, followed by a number or **B**, for bank B, followed by a number). Using either the *data knob* or the *up* or *down arrow* buttons, select the Program Number you want.

4.1a2 Via MIDI (Program Change and Bank Select)

To select a program via MIDI, the following table shows the correlation between MIDI program numbers and the program numbers.

MIDI Program Change #	Program #
0	0
1	1
...	...
127	127

The Addverb III responds to MIDI Program Change commands and Bank Select commands. Programs are arranged in two banks: bank A and bank B. A MIDI Program Change command will switch the unit to another program in the bank previously selected from either the front panel or via MIDI Bank Select message. If a MIDI Bank Select is sent to the unit, the next MIDI Program Change will switch the unit to a program in the selected bank **unless** a new program was selected via the front panel between reception of the Bank Select and the Program Change commands.

MIDI Bank Select has no effect on front panel operation.

The format of the MIDI Bank Select message is:

B0 00 00 20 00/01
(all numbers in hexadecimal)

where:

B0 00 = MIDI continuous controller 0 (bank select)
00 = bank high byte (always 0)

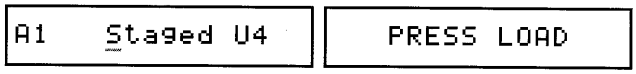
20 = MIDI 2 byte data indicator
00/01 : 00 selects bank A, 01 selects bank B

4.1b Assigning Presets to Programs

Any of the presets in the Addverb III can be mapped to a particular program location. *For example*, if you are using presets [U7], [U24], and [F30] in one song, you may map them to program numbers A1, A2, and A3 if you so desire.

Example: Mapping Staged [U4] to program location number A1. Press the **Play/Load** button and the display will show:

Turn the *Parameter Select Knob* until the cursor is under the preset name. Then use the *Parameter Adjust Knob* to select preset number 4.



Press **Play/Load** to load the new preset.

4.1c User and Factory Presets

There are two banks of 128 presets available in the Addverb III 128 user presets and 128 factory presets. Any program in either Bank A or Bank B can point to any of the factory or user presets.

When new, and after factory re-initialization, the user presets are identical to the factory presets. Program Bank A points to the 128 user presets and Program Bank B points to the 128 factory presets.

Selecting any of the factory or user presets puts that preset into the edit buffer where it may be modified. However, the modified presets may only be stored into one of the 128 user preset locations.

Modifications made in the edit buffer **do not** affect the preset storage location until stored using the front panel or the Remote Store command.

4.2 THE EDIT BUTTON

Introduction

The Addverb III has been designed to offer user-friendly editing capabilities. Each preset in the Addverb III can be customized from the basic effect chain to the specific variable parameters to each effect. Up to eight effects can be chained together in any order or configuration.

Note: All editing is performed in the edit buffer. If you change the preset number that you are working on before storing it, you will automatically lose your previous changes. *Original PRESET settings are not affected until your modified preset has been stored in that location.*

4.2a Editing an Effect

The Addverb III has two Edit displays the *Chain Edit* display and the *Effect Edit* display. The *Chain Edit* display will show all (up to eight) of the effects in the chain, while the *Effect Edit* display shows the parameters in each effect.

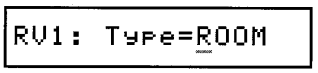
To Edit an Effect:

1. Turn on the Addverb III.
2. Press the **Edit** button. This step is only necessary if the last function performed was anything other than editing an effect, since the Addverb III will return to the same display as when the power was last turned off.
3. This will bring up a typical display, which is a *Chain Edit* display:

4. To edit any effect in this display, position your cursor under that effect. Let's place the cursor under **RV**; you do this by turning the *Parameter Select Knob* to the right twice.

Note: You should notice that the first time you turn the knob, the cursor is placed under the *arrow*. This tells you that effects **EF** and **RV** are in series with each other.

4. Press the **Edit** button again.
6. The new display is an *Effect Edit* display:



7. Select the parameter to edit by turning the *Parameter Select Knob*. The **RV1** parameter should be selected. (The "1" indicates the first parameter. A "2" would indicate the second, etc.) Notice the display changes to show the current setting(s) for the parameter selected.
8. To view the available settings for the *Type* parameter, use the *Parameter Adjust Knob*.
9. Continue through each of the parameters and Effects Blocks until you feel comfortable with the user-interface of the Addverb III.

Note: For descriptions of each effect and its parameters, see Chapter 5.

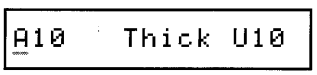
4.2b Creating a Custom Multi-Effect Chain

The first step to creating a custom multi-effect is to choose a preset which will be your starting point. If you want to create a preset which is very similar to an existing preset, you may find it advantageous to edit the existing preset and then save the edited preset to a new location. If you are creating an entirely new preset, you may edit any preset, then save the edited preset to a new location.

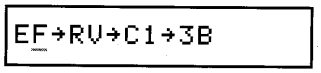
In the following example you will create a custom multi-effect and store it in preset location 10.

Note: The preset currently stored in user location 10 will be replaced by the new preset.

The effect chain that you create will have the following effects: *Overdrive*, *Delay*, and *Noise Gate*.



Press the **Edit** button to enter the edit display.



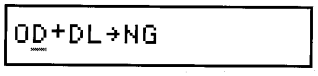
Now eliminate the undesired effects in the chain. To do this you must:

1. Use the *Parameter Select Knob* to place the cursor under the *effect name* to be deleted.
2. Press the **Add/Del** button. This will delete the effect.
3. Do this for each effect to be deleted.

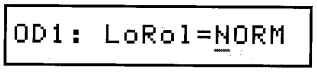
Next, build the basic effect chain:

1. With the cursor under the first effect, use the *Parameter Adjust Knob* to change to the desired effect.
2. Next, use the *Parameter Select Knob* to move the cursor one position to the right.
3. Press the **Add/Del** button. This will add an effect.
4. To change the *Path* between two effects, place the cursor between the effects and use the *Parameter Adjust Knob* to set parallel (+) or series (→) paths.
5. Repeat steps 1 through 4 until the basic chain is complete.

After the basic effect chain is complete, you will want to edit the effect parameters. To do this, turn the *Parameter Select Knob* until the cursor is under **OD** (Overdrive).



Press the **Edit** button and the Effect Edit display will appear.



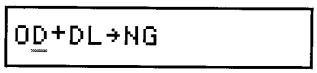
Using the *Parameter Adjust Knob*, select the desired value for each parameter. Use the *Parameter Select Knob* to select the parameter to be edited.

Note: A different set of parameters will be displayed for each effect being edited. For a complete listing of these parameters, see Chapter 5.

4.2c *Effect Level Control*

The user has control of the output levels of each of the eight effect "slots" in the chain. The purpose of this control is for setting relative effect output levels when two or more effects are in series or parallel.

For example, in the following chain:



When effects are in parallel, their output levels are added together prior to entering the next effect in the chain. In the above example, the output level from Overdrive and Delay are added to each other. In this case the input level to the Noise Gate is twice the level of either the Overdrive or Delay effect individually.

Play around varying the effect levels in both series and parallel chains until you feel you understand how this feature affects the effects chain.

To set the output level:

1. Place the cursor under the **+** immediately following **OD** (Overdrive), then press the **Edit** button. The following screen will appear.

2. Turn the *Parameter Adjust Knob* until the **Level** parameter is **50**.
3. Place the cursor under the "→" following **DL** (Delay) and repeat steps 1 & 2 for the delay output level.

4.2d Storing Your Preset

Press the **Store/Exec** button and the store display will appear.

1. Turn the *Parameter Select Knob* until the cursor is under the first letter of the preset name.

2. Using the *Parameter Adjust Knob,* change the first letter of the preset name. Repeat the first two steps until all the letters are changed.

3. Once the preset name is what you want, you will need to store the preset in a preset location. To do this, turn the *Parameter Select Knob* until the cursor is under the preset number.

4. Use the *Parameter Adjust Knob* to select the new preset location.

Note: If you do not want to store your changes over the existing preset, press the **Edit** or **Play/Load** buttons at this time to abort the store command.

Press either the **Store/Exec** button to store the new preset. The display will briefly show:

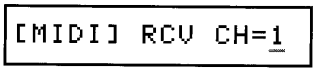
4.3 THE GLOBAL BUTTON

The **Global** button contains the display menus for the *MIDI, Control,* and *Utility* functions. The **Global** button switches you between these three menus. The MIDI menu accesses the MIDI Channel/System Exclusive display and the Control menu accesses the MIDI Dynamic Effect Parameter Control display.

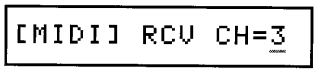
4.3a MIDI Channel/System Exclusive Display

4.3a1 MIDI Receive Channel

The MIDI receive channel determines which channel the Addverb III will receive MIDI program changes and System Exclusive information. Press the *Global* button until the MIDI Channel/Sysex Display appears.



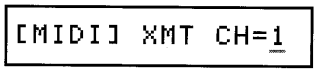
The receive channel (1-16 or OMNI) may be selected using the *Parameter Adjust Knob.* In this example we choose channel **3**.



Note: In order to receive System Exclusive messages previously dumped, the receive channel must be set to the same MIDI channel the System Exclusive was dumped on.

4.3a2 MIDI Transmit Channel

The MIDI Transmit Channel determines which channel the Addverb III will send program changes and System Exclusive information. In the MIDI Channel/Sysex display, turn the *Parameter Select Knob* until this screen is displayed.

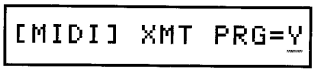


Select the transmit channel using the *Parameter Adjust Knob.* In this example choose channel **3**.

Note: The MIDI transmit channel of the Addverb III must be set the same as the MIDI receive channel on the external device unless the external device is set to *Omni.*

4.3a3 Transmit Program Change Enable/Disable

The Transmit Program Change function enables the Addverb III to send a program change to an external MIDI device. In the MIDI Channel/Sysex Display, turn the *Parameter Select Knob* until this screen is displayed.



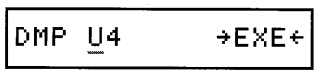
Use the *Parameter Adjust Knob* to enable (Y) or disable (N).

4.3a4 System Exclusive Dump and Load Functions

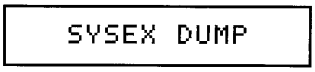
The Addverb III can use MIDI System Exclusive (Sysex) to transmit (dump) and receive (load) preset data to and from external storage devices.

☛ **System Exclusive Dump Functions**
The Addverb III can dump either a single preset, all the presets, or what is in the edit buffer.

To dump a single preset to an external storage device (or another): In the MIDI Channel/Sysex display, press the *Parameter Select Knob* until the following screen is displayed.



Use the *Parameter Adjust Knob* to select the preset(s) (1-128, All, or Edit Buf) to be dumped. Press the **Store/Exec** button to execute the dump. The display will briefly show:



Note: The MIDI transmit channel of the Addverb III must be set the same as the MIDI receive channel on the external device unless the external device is set to *Omni.*

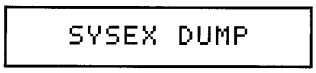
The Addverb III can also dump sets of presets. The sets are arranged as follows:

Set 0	0-9
Set 1	10-19
Set 2	20-29
Set 3	30-39
Set 4	40-49
Set 5	50-59
Set 6	60-69
Set 7	70-79
Set 8	80-89
Set 9	90-99
Set 10	100-109
Set 11	110-119
Set 12	120-127

To dump a set of presets to an external device (or another Addverb III): In the MIDI Channel/Sysex display, turn the *Parameter Select Knob* until the cursor is under DS (dump set).

Use the *Parameter Adjust Knob* to select the set (0-12) to be dumped. Press the **Store/Exec** button to execute the dump.

The display will briefly show:



Note: The MIDI transmit channel of the Addverb III must be set the same as the MIDI receive channel on the external device unless the external device is set to *Omni.*

☛ **System Exclusive Load Functions**

The Addverb III can load either a single preset or a set of presets. When loading presets back into their original locations, you need only to send the dump to the Addverb III and the presets will automatically be placed in their original locations. Presets may also be loaded to any other location by following these steps:

To load a single preset from an external storage device (or another): In the MIDI Channel/Sysex display, turn the *Parameter Select Knob* until the following screen is displayed.

```
[MIDI] LOAD U4
```

Select the preset to be loaded using the *Parameter Adjust Knob*. Transmit the Sysex information from the external device to the Addverb III.

Note: The MIDI receive channel of the Addverb III must be the same as the channel the data was originally transmitted on. An error message will appear if they are not the same.

```
IGNORING SYSEX
```

If this occurs, set the receive channel to the channel shown in the message and transmit again.

As with single presets, sets can be loaded into their original location by transmitting the data to the Addverb III at any time. To load a set into a different location, follow these steps:

To load a set of presets from an external storage device (or another Addverb III): In the MIDI Channel/Sysex Display, turn the *Parameter Select Knob* until the following screen is shown.

```
[MIDI] LD SET 0
```

Select the set (0-12) to be loaded using the *Parameter Adjust Knob*. Transmit the Sysex information from the external device to the Addverb III.

Note: The MIDI receive channel of the Addverb III must be set the same as the MIDI transmit channel on the external device.

4.3b MIDI Dynamic Effect Parameter Control Display

MIDI dynamic parameter control introduces a vast variety of expression possibilities. This could include changing delay or reverb times, EQ frequencies or gains, effect levels, and many other parameters in real time with any MIDI continuous controller device.

Each preset in the Addverb III has nine selectable controls. Eight of these controllers can be assigned to any of the variable parameters of the available effects within the preset. The MIDI continuous controllers are stored along with the preset. (Controller #9 is permanently set to Program Volume.)

In this example you will select preset U1. Press the **Play/Load** button and select program A1.

```
A1   2Korus U4
```

Press the **Global** button until **[CNTRL]** appears in the top right of the menu. The cursor will be flashing under control #1. In this example you will assign control #1 to "Distortion Drive" using MIDI controller #1.

1. **Setting the Parameter to be Controlled**
   Use the *Parameter Adjust Knob* to select the control number.

   Turn the *Parameter Select Knob* to advance the cursor to the parameter setting. Using the *Parameter Adjust Knob*, you may view all the variable parameters for preset #1. In this example you will choose "Distortion Drive."

2. **MIDI Controller Number**
   Turn the *Parameter Select Knob* to advance the cursor to the controller number setting. Use the *Parameter Adjust Knob* to select MIDI controller 1.

Note: The available MIDI controllers are 0-120, aftertouch, pitch wheel, or note position.

3. **MIDI Controller Receive Channel**
   Turn the *Parameter Select Knob* to advance the cursor to the MIDI Controller Receive Channel setting.

   Use the *Parameter Adjust Knob* to select the desired MIDI Controller Receive Channel. All controllers default to the MIDI receive channel; however, they may also be set to MIDI channels 1-16 or OMNI.

4. **MIDI Parameter Control Scale Factor**
   The MIDI Parameter Control Scale Factor allows the control range to be adjusted from full range to some percentage of full range.

Here's how the *Scale* factor works:
MIDI continuous controllers output a *Value* between 0 and 127. The Addverb III biases these values around 64 so that, with a scale factor of 100%, a controller output of 0=-100%, 64=0%, and 127=+100%.

MIDI Value:	0	64	127
Addverb III Value:	-100%	0%	+100%

To understand what the Scale feature can do, it is important to understand how continuous controllers affect the parameters to which they are assigned. In the Addverb III, continuous controllers vary individual parameters about their programmed value. For example: Reverb mix is variable from 0 to 100. Let's say the mix is set to 50 in the current preset. If a continuous controller is assigned to this parameter, it will vary it about that nominal value. A MIDI controller value of 64, which is the middle of the range of controller values, will correspond to the programmed value for that parameter in the preset (in this case, 50). Controller values above or below 64 will change the value of the affected parameter accordingly. The amount of change is controlled by the Scale factor. The scale factor is a percentage of the total range of values for a specific parameter, and may be set from 0% to 100%. For instance, in the case of the Reverb mix parameter (which has a range of 0 to 100), a scale factor of 30% would allow a maximum change of ±30, since 30% of 100 is 30. With the parameter set to 50, it could be varied from 20 (50-30) to 80 (50+30). MIDI controller value 0 would result in a mix level of 20, MIDI controller value of 64 would result in a mix level of 50 (the programmed value), and a MIDI controller value of 127 would result in a mix level of 80. All values between 0 and 127 would be scaled accordingly.

Setting the Scale factor to a negative number flips the controller output so that increasing controller values decreases the value of the controlled parameter.

5. **Set MIDI Scale Factor**
   Turn the *Parameter Select Knob* to advance the cursor to the Scale Factor setting. Select the desired Scale Factor using the *Parameter Adjust Knob.*

   MIDI SCALE=+100%

6. Store the controllers. See section 4.2d for more information.

4.3c The Utility Menu

The Utility display accesses the View Angle, Bypass Mode, and MIDI Thru and Clip Assignment.

1. **Setting the View Angle**
   Because the Addverb III may have to be viewed from a variety of angles, the LCD contrast may be adjusted to provide comfortable visibility.
   ☛ Press the **Global** button until the *Utility* display appears.

   [UTL] VIEW ANGLE

   The cursor will be flashing under VA (view angle).

   ☛ Use the *Parameter Adjust Knob* to adjust the view angle for maximum clarity.

2. **Setting the Bypass Mode**
   There are two modes: Direct and Muted. This parameter determines how the **Bypass** button will function. In the Direct mode the output equals the input, and in the Muted mode the outputs are muted.

   [UTL] MODE= BYPS

3. **Setting MIDI Thru**
   This allows you to set whether or not incoming MIDI messages will be sent (unaltered) to the next MIDI device in your chain via the MIDI Out/Thru jack.

   [UTL]MIDI THRU=Y

4. **Setting the Clip LED Assignment**
   The Clip LED may be placed anywhere within the effects chain. LRIN (default at power up) = Left/Right input of the DSP. LROUT = Left/Right Output of the DSP. 1E = output of the first effect, 2E = output of the second effect...7E = output of the seventh effect.

   [UTL]CLIP=LR IN

4.4 THE ADD/DEL BUTTON

This button is used to add effects to a chain or delete effects from the chain.

To add an effect:

1. Use the *Parameter Select Knob* to place the cursor under an arrow, plus, or blank space.
2. Press the **Add/Del** button.

To delete an effect:

1. Use the *Parameter Select Knob* to place the cursor under the effect to be deleted.
2. Press the **Add/Del** button.

4.5 THE STORE/EXEC BUTTON

The **Store/Exec** button allows you to save effects chain edits into any preset location for quick and easy retrieval. See section 4.2d for more information.

4.6 THE BYPASS/COMPARE BUTTON

When in the play mode, the **Bypass/Compare** button will toggle the unit into bypass where the output = input, or an *Outputs Muted* mode. The Bypass Mode is set in the *Utility* menu under the **Global** button.

Note: Any normal front panel or remote operation may be performed while in the Bypass mode. The unit will remain bypassed until the **Bypass/Compare** button is pressed again. While in bypass, any button pressed will return the display to the mode it was in prior to pressing bypass. From there, any other function may be performed and the unit will remain bypassed. You may even select a new program, and the unit will switch to that program yet remain bypassed. When the **Bypass/Compare** button is pressed a second time, the unit will come out of bypass and play the newly selected program. If no functions are performed for approximately 20 seconds, the display will return to the bypassed display.

When in the edit mode, a compare mode is available which will allow comparison between the parameters currently being edited and any of the factory presets. Pressing the **Bypass/Compare** button will toggle in and out of compare mode. Turning the *Parameter Adjust Knob* or *Program/Preset knob* while in the compare mode will allow selection of any other preset for comparison.

Chapter 5 And then there were Effects

Ultra-Reverb

Note: Accessing the individual effect parameters in the Ultra-Reverb is slightly different than it is for other effect types. With the cursor under UR in the chain edit menu, pressing the **Edit** button once will display the three effect blocks that make up the Ultra-Reverb. Place the cursor under the block to be modified, then press the **Edit** button to access the parameter edit menu. Pressing **Edit** again will return you to the individual effects display. You must press the **Play/Load** button followed by the **Edit** button to return to the chain edit display.

Digital Reverberation is a field of continuing research and development. Numerous approaches are available, each with its own advantages and disadvantages. The engineers at Peavey have developed an improved Digital Reverberation algorithm that requires more memory and processing power than our "multi-effect" reverb. This new algorithm is available under the effect **Ultra-Reverb**. Unlike the other effects, it is only available as a single effect and will appear in the *Chain Edit* display only if there is one effect in the chain. This effect consists of three main sections:

- *Pre-Delay*
- *5-Band Equalizer*
- *Reverb*

Parameters

PreDelay

Delay: The *Delay* parameter is used to select the amount of delay. The range is 0-740 ms.

Feedback: The *Feedback* parameter is used to select the amount of delay feedback. The range is 0-100%.

LowPass: The *LowPass* parameter is used to select the lowpass filter cutoff setting. The range is 125 Hz, 250 Hz, 500 Hz, 1 kHz, 2 kHz, 4 kHz, 8 kHz, and Off.

Mix: The *Mix* parameter sets the direct/effect mix, 0 to 100%.

The 5-Band equalizer is identical to the **5-Band Equalizer** *effect described later in this chapter.*

Reverb

There are eight types of Reverb, each with fully adjustable parameters.

Types:

Hollow	*Room 1*
Smooth	*Room 2*
Gated 1	*Room 3*
Gated 2	*Hall*

Parameters

Size: The *Size* parameter determines the size of the reverb being used. The range is Small, Medium, Large, and Huge.

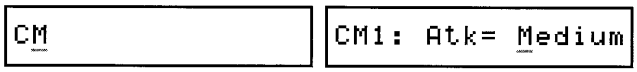
Time: The *Time* parameter sets the decay time of each reverb. The range is 0 to 30 seconds.

Damping: The *Damping* parameter controls the tonality of the reverb being produced. The range is 125 Hz, 250 Hz, 500 Hz, 1 kHz, 2 kHz, 4 kHz, 8 kHz, and Off. A low setting (250 Hz) results in high frequency reverberations being decayed very quickly; higher settings (4 kHz, 8 kHz, or Off) allow the high frequencies to continue on in the reverberations.

Mix: The *Mix* parameter controls the direct/effect mix at the output of the effect block. The range is 0 to 100%.

Compressor

The Compressor effect suppresses high input levels while boosting small signal levels as the input decreases. The net result is a more consistent output volume and increased sustain.



Parameters

Attack: The *Attack* parameter adjusts the speed at which the compressor responds to increases in signal level. Range is from extra slow to extra fast.

Release: The *Release* parameter adjusts the time for the output signal to decay. Setting the release to extra fast results in a very rapid decay and setting the release to extra slow results in a very slow decay.

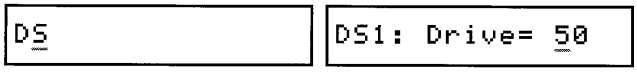
Sustain: Seven levels of sustain vary the maximum amount of gain that can be achieved by the compressor at small signal levels. Range 0-6.

Level: The *Level* parameter adjusts the maximum output of the compressor. Range is from 0-100%.

Noise Gate: At low signal levels a compressor's gain may be very high, raising the level of noise output with no signal present. Ten levels of noise suppression are available on the output of the compressor. Range 1-10.

Distortion

The Distortion effect consists of a distortion followed by an equalizer section. Distortion is a mono effect.



Parameters

Drive: The *Drive* parameter controls the amount of distortion by pre-filtering and boosting the input signal. The parameter range is 0-100.

Post Gain: The *Post Gain* parameter is used to reduce the signal level to prevent overdriving the EQ section of the effect. Range 0-100.

Fat: The *Fat* parameter controls the low frequency gain. Parameter range ±50.

Edge: The *Edge* parameter controls the high frequency gain. Parameter range ±50.

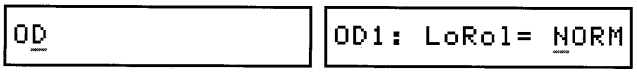
Body: The *Body* parameter controls the mid frequency gain. Parameter range ±50.

Shift: The *Shift* parameter is used to select the center point of the mid frequency range. The shift frequency is adjustable from 300 Hz to 900 Hz in 10 Hz increments.

Resonance: The *Resonance* parameter adjusts the bandwidth of the mid frequency range. Parameter range 0.1 to 4.9.

Overdrive

The Overdrive effect consists of an overdrive type distortion. Overdrive is a mono effect.



Parameters

Low Rolloff: The *Low Rolloff* parameter is used to adjust the tonality by rolling off the low frequencies in 100 Hz increments to 1900 Hz. The range of the low rolloff is Normal and 0.1 to 1.9.

Pre Drive: The *Pre Drive* parameter is a gain control with a range from 1 to 10 which is used to overdrive the signal.

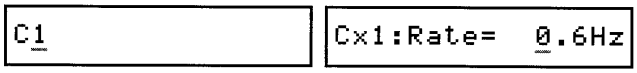
Clip: The *Clip* parameter is a "soft-clipping" control which provides increased sustain. Reducing the clip level increases the sustain. Range 0-99.

Note: As clip level is reduced, the overall output level of the overdrive is reduced. Therefore, very low clip levels will require a large increase in output volume. This can greatly decrease the dynamic range of the unit and increase output noise level.

Level: Adjusts the output level of the Overdrive effect. Range 0-100%.

Chorus #1 and #2

The versatile Chorus effect allows for generation of all the common modulated effects (Chorus, Flange, Vibrato) and many uncommon effects. The Chorus effect can create a stereo effect from a mono input, or maintain the stereo integrity of a stereo input.



Parameters

Rate: The *Rate* parameter controls the Chorus rate and has a range of 0-9.9 Hz.

Depth: The *Depth* parameter controls the Chorus depth and has a range of 0-100%.

Delay: The *Delay* parameter controls the width of the Chorus modulation. The range is from 0-18.9 ms.

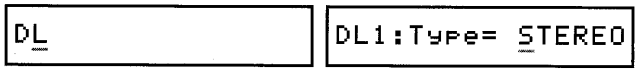
Feedback: The *Feedback* parameter is used to create Flange effects. The range is from ±99.

Mix: The *Mix* parameter sets the direct/effect mix, ±100 respectively.

Note: Adding both Chorus 1 and Chorus 2 to an effects chain can create some exciting results when the parameters are set differently in each chorus.

Delay

The Addverb III offers three types of delays: Stereo, Tapped, and Mono. Each of these delays offers the ability to set the delay time using a special MIDI Sync Delay feature. The Left and Right delay times can be set independently to track MIDI clock messages sent from a sequencer or other MIDI timing devices. Decrementing the delay time below 0 ms will put the delay into Sync Delay mode. The abbreviation "clks" will appear after the delay time. The maximum allowable delay time is the same as for the normal mode of delay operation. Therefore, if it takes longer than this amount of time for the set number of MIDI clocks to be received, the delay time will be set to the maximum time. When the sequencer stops sending MIDI clocks, the delay time will remain fixed at the time set during the last received clock.



Stereo Delay

A true stereo delay with delay times from 0 to 255 clks if using the MIDI sync feature or 0 to 361 ms if using a normal delay.

Parameters

Left Delay: Used to select the amount of delay on the left channel 0-361 ms.

Left Feedback: Used to select the amount of delay feedback on the left channel. This generates a repeating or echoing sound 0-99%.

Right Delay: Used to select the amount of delay on the right channel 0-361 ms.

Right Feedback: Used to select the amount of delay feedback on the right channel. This generates a repeating or echoing sound 0-99%.

Tape Simulator: This is used as a low pass filter before the signal is put through the feedback circuit. This feature is used to simulate a warmer, more realistic room sound. Range 1K, 2K, 4K, 8K, or off.

Mix: Used to set the direct/effect mix of the delay effect. Range ±100.

Tapped Delay

This delay creates a stereo delay from a mono source. The range is from 0 to 255 clks if MIDI sync feature and 0 to 724 ms if using a normal delay.

Parameters

Left Delay: Used to select the amount of delay on the left channel. Range 0 to 255 clks or 0 to 724 ms.

Right Delay: Used to select the amount of delay on the left channel. Range 0 to 255 clks or 0 to 724 ms.

Feedback: Used to select the amount of delay feedback. Feedback is always taken from the longest delay output. Range 0-99%.

Tape Simulator: This is used as a low pass filter before the signal is put through the feedback circuit for gain enhancement. This feature is used to simulate a warmer, more realistic room sound. Range 1K, 2K, 4K, 8K, or off.

Mix: Used to set the direct/effect mix of the delay effect. Range ±100.

Mono Delay

A Mono delay with delay times ranging from 0 to 255 clks if using the MIDI Sync feature or 0 to 724 ms if using a normal delay.

Parameters

Delay: Used to select the amount of delay. Range 0 to 724 ms.

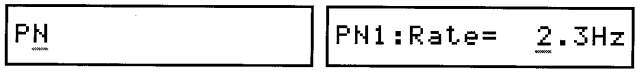
Feedback: Used to select the amount of delay feedback. Feedback is always taken from the longest delay output. Range 0-99%.

Tape Simulator: This is used as a low pass filter before the signal is put through the feedback circuit. This feature is used to simulate a warmer, more realistic room sound. Range 1K, 2K, 4K, 8K, or off.

Mix: Used to set the direct/effect mix of the delay effect. Range ±100.

Auto Pan

The Auto Pan effect is used to pan the output signal between the left and right outputs. The panning rate and depth are both user-selectable. The Auto Pan is a stereo effect.



Parameters

Rate: The *Rate* parameter is used to select the speed at which the signal pans between the two outputs. The range is from 0.0 Hz to 99.9 Hz.

Depth: The *Depth* parameter determines the amount of signal being panned. Selecting a depth setting of 10% would yield a less defined pan, and setting the depth to 90% would result in a strongly defined pan. The range is from 0 to 100%.

Reverb

The versatile stereo Reverb effect contains eight types of reverb, each with fully adjustable parameters.

Types

Plate: The *Plate* reverb produces a smooth reverb similar to that achieved with plate reverbs.

Tunnel: The *Tunnel* reverb produces the many echoes associated with the acoustics of a tunnel.

Spring: The *Spring* reverb simulates the reverb produced by a spring reverb machine.

Room: The *Room* reverb has the ambiance of a live room.

Stage: The *Stage* reverb has the ambiance associated with a club stage.

Hall: The *Hall* reverb has the reverberation ambiance associated with a concert hall.

Gated: A gated reverb is a smooth rolling reverb that cuts off sharply rather than decaying away.

Reverse: A reverse gated reverb builds from a quiet attack to a sharp decay, giving the impression of an instrument sound being played in reverse.

Parameters

Size: The *Size* parameter determines the size of the reverb being used. Parameter range is Small, Medium, Large, Huge.

PreDelay: The *PreDelay* parameter determines the amount of delay that is to be added before the reverberations begin. Range 0 to 46 ms.

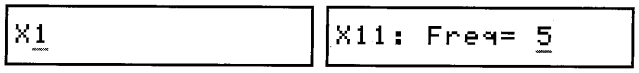
Time: The reverb time of each reverb can range from 0 to 30 seconds. For Gated and Reverse types, the range is from 25 to 365 ms.

Damping: The *Damping* parameter controls the tonality of the reverb being produced. The setting range is 125 Hz to 8 kHz and Off. A low setting (250 Hz) results in high frequency reverberations being decayed very quickly; higher settings (4 kHz, 8 kHz, or Off) allow the high frequencies to continue on in the reverberations.

Mix: The *Mix* parameter controls the direct/effect mix at the output of the effect. The range is 0 to 100%.

Exciter 1

The Exciter 1 effect is a special digital filter which can be used to emphasize or de-emphasize harmonics.



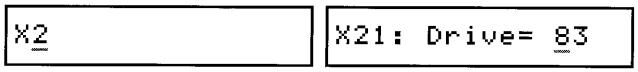
Parameters

Frequency: When the phase parameter is set to a positive number, the *Frequency* parameter controls the amount of harmonics being emphasized. When the phase parameter is set to a negative number, the *Frequency* parameter controls the amount of harmonics being de-emphasized.

Phase: The *Phase* parameter is used to select the emphasis or de-emphasis of harmonics. Setting the *Phase* to a positive number will emphasize harmonics and setting the *Phase* to a negative number will de-emphasize harmonics.

Exciter 2

The Exciter 2 effect uses a "distortion technique" to add harmonics. Using this technique does not, in fact, result in a distorted sound, but instead produces an exciter effect.



Parameters

Drive: The *Drive* parameter setting determines the amount of harmonics added. The range is 0 (no harmonics) to 100 (maximum harmonics).

Tune: The *Tune* parameter controls the amount of emphasis. The range is from 0.1K (excites lower frequencies) to 4.9K (excites higher frequencies).

Type: The *Type* parameter is used to select between three different distortion types which produce three different sounds. Type 1 adds even harmonics, Type 2 adds odd harmonics, Type 3 adds even and odd harmonics.

Balance: The *Balance* parameter is used to set the balance between excited (100) and direct (0).

Envelope Filter

The Envelope Filter effect is an amplitude modulated filter. As the input signal level to the envelope filter changes, the filter frequency changes. This effect is sometimes referred to as an automatic "wah."

Parameters

Sensitivity: The *Sensitivity* parameter is used to adjust the sensitivity to changing input signal levels. If the sensitivity is set to a positive number, then the filter frequency will increase with a louder input signal. If the sensitivity is set to negative number, then the filter frequency will decrease with a louder input signal. The sensitivity ranges from ±100.

Frequency: The *Frequency* parameter adjusts the starting point of the filter frequency. From there the filter will sweep up or down (depending on sensitivity) as the playing level changes. When the sensitivity is negative, the frequency values 0-100 correspond to the starting frequency ranging from 2K to 5K, respectively. When the sensitivity is positive, the frequency values correspond to the frequency range 100 Hz to 2 kHz.

Bandwidth: When the Bandpass filter type is selected, the *Bandwidth* parameter is used to adjust the width of the Bandpass filter (0 is narrowest, 100 is widest). When the Lowpass filter type is selected, the *Bandwidth* parameter is used to adjust the slope of the Lowpass filter cutoff (0 is steepest, 100 is least steep slope).

Type: The *Type* parameter is used to select the filter type. There are two filter types: Bandpass and Lowpass. The width of the Bandpass filter and the slope of the Lowpass filter are determined by the resonance parameter.

Mix: The *Mix* parameter is used to control the direct/effect mix at the output of the effect. Range is 0 to 100%.

Classic EQ

The Classic Equalizer effect is a sweepable mid-EQ used on many guitar amplifiers.

Parameters

Low: The *Low* parameter controls the level of the low frequency range. The level can be adjusted from 0 to 100.

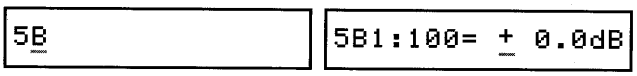
Mid: The *Mid* parameter controls the level of the mid frequency range. The level can be adjusted from 0 to 100.

Shift: The *Shift* parameter is used to select the center of the mid frequency. Range is 0-100.

High: The *High* parameter controls the level of the high frequency range. The level can be adjusted from 0 to 100.

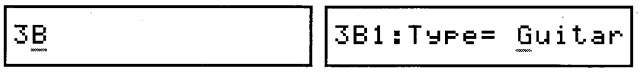
5-Band Graphic Equalizer

The 5-Band Graphic Equalizer effect is a full stereo, five-band EQ with ±12 dB gain on each frequency band, allowing emphasis or de-emphasis of any of the 5 bands. The center frequencies of the 5 bands are as follows: 100 Hz, 330 Hz, 1 kHz, 3 kHz, 10 kHz.



3-Band EQ with Sweepable Mid

The 3-Band Sweepable Mid EQ effect is a standard stereo EQ with ±12 dB of gain on each frequency band.



Parameters

Type: Guitar, Voice, Drastic.

Low Gain: The *Low Gain* parameter adjusts the gain of the low frequency band parameter. Range is ±50.

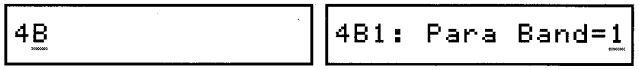
Mid Frequency: The *Mid Frequency* parameter is used to select the center frequency of the Mid Frequency band. The range is 99 Hz to 3.3 kHz.

Mid Gain: The *Mid Gain* parameter adjusts the gain of the mid frequency band parameter. Range is ±50.

High Gain: The *High Gain* parameter adjusts the gain of the high frequency band parameter. Range is ±50.

4-Band Parametric EQ

The Parametric Equalizer is a four-band stereo equalizer with individually adjustable center frequencies, bandwidths, and gains for each of the four bands.



Parameters

Band: The *Band* parameter is used to select any one of the four bands. After a band has been selected, the frequency, bandwidth, and gain setting may be made for that particular band.

Frequency: The *Frequency* parameter is used to select the center frequency point of each band. Range is 20 Hz to 16 kHz.

Bandwidth: The *Bandwidth* parameter determines the width of the band from 1 octave to $1/100$ of an octave.

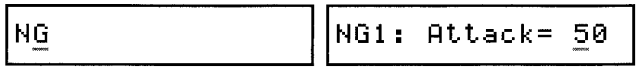
Gain: The *Gain* parameter adjusts the gain of the band. Depending upon the particular setting, the gain can be used to emphasize (+dB) or de-emphasize(-dB) the particular band. Ranges from -24 dB to +12 dB.

Noise Gate

The Noise Gate effect is a downward expander.

$$\text{GAIN} = 1 - \frac{(\text{Threshold} - \text{Peak Level}) \times \text{Sensitvity}}{\text{Threshold}}$$

The Peak level is determined by the input signal plus attack and decay variables which set the speed at which the peak can change.



Parameters

Attack Time: The *Attack Time* parameter is used to remove sharp attack transients. The larger this number, the longer the attack will take to open the gate once closed. Range 0 to 99.

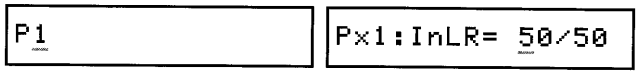
Release Time: The larger this number, the longer it will take for a decaying signal to drop below the threshold. Range 1 to 99.

Threshold: The *Threshold* parameter sets the level in dB below digital clipping that the gate will begin to close. Range -2 to -90 dB.

Sensitivity: This determines the peak level below threshold that the gate will be fully closed. Range 1-9.

Pitch 1 and Pitch 2

In order to allow stereo pitch shifting, yet still have a pitch shifter available which does not use a large amount of effect space, we have developed a pitch shift effect with a panning input and independent left and right mix control. This effect is the only one that can be used in two locations in the chain simultaneously, thus allowing true stereo and independently controllable pitch shifting in each channel. By placing two pitch shifters in parallel or series and setting their inputs and mix levels panned to opposite sides, independent stereo detuning will be available.



Parameters

Input: The *Input* parameter controls the left/right input pan.

PreDelay: Up to 46 milliseconds of delay can be set before the pitch transposition begins. This creates a doubling or chorusing type sound.

Pitch: The *Pitch* parameter is used to select large amounts of transposition in half step increments. The range of the Pitch parameter is ±12 semitones (1 octave).

Cents: The *Cents* parameter is used to fine tune the transposed pitch when necessary. The range is ±50. ($\frac{1}{2}$ step is 100 cents)

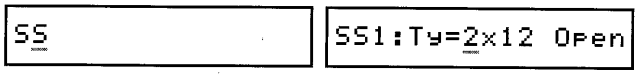
Feedback: The *Feedback* parameter controls the amount of output signal that is sent back to the input of the *Predelay*. This can be used to create climbing or descending pitch type effects. Range 0-99%.

Left Mix: The *Left Mix* parameter controls the direct/effect mix to the output of the effect for the left output channel. Range 0-100%.

Right Mix: The *Right Mix* parameter controls the direct/effect mix to the output of the effect for the right output channel. Range 0-100%.

Speaker Simulation

The Addverb III has four stereo speaker simulation curves:



2X12 Open: Simulates the frequency response of the Peavey Scorpion speaker in an open backed cabinet.

2X12 Closed: Simulates the frequency response of the Peavey Scorpion speaker in a closed backed cabinet.

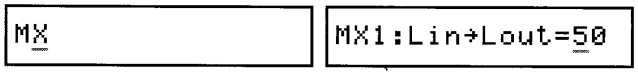
4X12 Cabinet: Simulates the sound of four 12″ speakers in a single cabinet.

4X12 British: Simulates the frequency response of a well known British manufacturer's guitar speaker setup.

These speaker simulation curves are convenient for both live performance and recording applications where the guitar is directly connected to a mixing console.

2 Channel Mixer

The 2 Channel Mixer effect simulates a 2-channel stereo mixer.



Parameters

Lin→Lout: The *Lin→Lout* parameter will set the percentage of the input signal (at the *left/mono* input jack) that will be sent to the left output jack.

Lin→Rout: The *Lin→Rout* parameter will set the percentage of the input signal (at the *left/mono* input jack) that will be sent to the right output jack.

Rin→Lout: The *Rin→Lout* parameter will set the percentage of the input signal (at the *right* input jack) that will be sent to the left output jack.

Rin→Rout: The *Rin→Rout* parameter will set the percentage of the input signal (at the *right* input jack) that will be sent to the right output jack.

Stereo Simulator

A transverse filter approach is used to simulate stereo separation of a mono signal. Signals from the right and left channel are summed. (If no jack is plugged into the right input, the signal into the left input appears on both the right and left channels). The resulting mono signal is fed into a comb filter, and the output and input is summed in the right channel and subtracted from the left channel. The resulting output simulates stereo separation of frequency bands.

Parameters

LowPass: The *LowPass* parameter is a lowpass filter which, when on, will keep the bass centered between the two channels.

Tune: The *Tune* parameter adjusts the distance between the separated frequency bands. Range is 100 Hz to 500 Hz.

Depth: The *Depth* parameter is the depth of the stereo separation. Range is 0 to 100.

5.2 Stereo and Mono Effects

Most effects are **Stereo** input and output and maintain channel separation throughout. The following effects are exceptions

Reverb: Takes the average of the right and left channel inputs and creates a stereo reverberant field. This reverb output is mixed with the right and left channels independently, depending on the *Mix* level.

Distortion: Takes the average of the right and left inputs and creates a mono output in both channels.

Overdrive: Takes the average of the right and left inputs and creates a mono output in both channels.

Stereo Simulator: Averages the right and left inputs and creates a simulated stereo output.

5.3 Special Notes on Continuous Controllers

1. All parameters of all available effects may be controlled by MIDI continuous controllers with the following exceptions
   Speaker Simulator Type, Stereo Simulator LowPass Filter (in or out), Reverb Type, Reverb Size, Delay Type, 3 Band Mid Sweep EQ Type.

The reason for this is the above parameters are **Types** and not continuous variables. They would not be useful parameters to control externally.

2. All controllers for **Delay** are available regardless of what **Type** delay is selected. For **Mono** type delay, the *Delay Time* is controlled by the **Left Delay** time controller, and the *Feedback* is controlled by the **Left Feedback** controller. For the *Tapped Delay,* the *Feedback* is controlled by the **Left Feedback** controller.
3. Continuous controllers can be set to respond to **MIDI Aftertouch**, **Pitch Change**, and **MIDI Note Position** messages. To set these as continuous controllers, increment the controller number past 120. ***AFTR*** will appear for the Aftertouch controller, ***PCHW*** will appear for Pitch Wheel, and ***NOTE*** will appear for MIDI Note Position.

4. Continuous controllers can respond independently to channels 1 through 16, OMNI and RECEIVE. *RECEIVE* is the default (factory) setting for all controllers. When in *RECEIVE,* the controllers will respond to valid messages on the channel set as the Addverb III's *RECEIVE* channel which is set in the MIDI menu. This includes OMNI settings.

How to write a Continuous Controller "Wah" Patch based on the Parametric EQ

In order to do a continuous controlled wah patch in the Addverb III you will need a continuous controller pedal and a MIDI foot controller with a jack for the CC pedal.

This patch will take advantage of the Addverb III's ability to have one continuous controller pedal control up to eight different parameters (you can use two different pedals at the same time to control up to sixteen parameters).

For this wah patch we will need to simultaneously slide the frequency notch up and down in each of the four bands of the Parametric EQ.

To start, write a patch with the Digital Distortion (DS) first and then the 4-band Parametric EQ (4B) in the effects chain. Set the Digital Distortion (DS) to your favorite rock lead sound. If you have a lot of gain in the preamp, add Noise Gate (NG) after the Digital Distortion (DS).

Assuming you are still in the edit mode after writing the patch: move the cursor under 4B and push the **Edit** button. A screen will appear with the parameters for the 4-band Parametric EQ. Now, push the **Global** button. The **[CNRTL]** screen should appear. Move the cursor under **Pram** and use the *Parameter Adjust Knob* to select **PARAMT Frq1**. We can toggle back and forth between Global and the 4-band Parametric EQ parameters as needed to build the continuous controlled wah effect.

Next, move the cursor under **C#** and select **7** (if you MIDI sends continuous controller signals on a channel other than 7, select that channel instead of 7). Move the cursor under **Ch** and select **RCV**. Move the cursor under **SC** and select **5%**. If you want to have reverse wah, simply select -5%. Move the cursor under **#1** and select **#2**. Now move the cursor back under **Pram** and turn the *Parameter Adjust Knob* until **PARAMT Frq2** appears. Move the cursor under **C3** and select **7**, move the cursor under **Ch** and select **RCV**, move the cursor under **SC** and select **5%**, move

the cursor under, you guessed it, **#2** and select **#3**. Now move the cursor back under **Pram** and turn the *Parameter Adjust Knob* until **PARAMT Frq3** appears and repeat the whole process. Move the cursor under **C3** and select **7**, move the cursor under **Ch** and select **RCV**, move the cursor under **SC** and select **5%**, move the cursor under, you guessed it, **#3** and select **#4**. Fun, isn't it? Move the cursor back under **Pram** and turn the *Parameter Adjust Knob* until **PARAMT Frq4** appears. Move the cursor under **C3** and select **7**, move the cursor under **Ch** and select **RCV**, move the cursor under **SC** and select **5%**, move the cursor under, you guessed it, **#4** and select **#5**. That's right, move the cursor back under **Pram**, but this time select **OFF**. Move the cursor to **#5** and select **#6**. Move the cursor back under **Pram** and select **OFF** if it isn't already. Repeat this process for **#7** and **#8**. Next, push the **Global** button a few times until the screen titled **VOLUME** appears. Check to see that the parameter titled **midi** is set to **OFF**. If not, move the cursor under **midi** and select **OFF**. Next push the **Global** button a few more times until the **Recv** screen appears. The cursor should be under **RC**, if not move it there and select **1** or **OMNI**. Move the cursor under **TC** and select **7** (or the CC channel indicated by your MIDI pedal). Push the **Edit** button to toggle back to the 4B parameters.

Now we'll set the wah sound.

Since this is a matter of taste, we'll give you a starting point, but ultimately the final sound is up to you. The cursor should already be under **Band 1**. Move the cursor under **Frq** and select **990**. Move the cursor under **BW** and select **1/3**. Move the cursor under gain and select **+12.0 dB**. Move the cursor back under **Band 1** and select **Band 2**. Move the cursor under **Frq** and select **990**. Move the cursor under **BW** and select **1/3**. Move the cursor under gain and select **+12.0 dB**. Move the cursor back under **Band 2** and select **Band 3**. Move the cursor under **Frq** and select **990**. Move the cursor under **BW** and select **1/3**. Move the cursor under gain and select **+12.0 dB**. Move the cursor back under **Band 3** and select **Band 4**. Move the cursor under **Frq** and select **990**. Move the cursor under **BW** and select **1/3**. Move the cursor under gain and select **+12.0 dB**. Now, push the Store/Exec button twice.

If you want to tweak the sound, focus first on the frequency band of 990 and selecting and alternate band. Then check the band width. You may like 1/4 octave band width instead of 1/3. Remember, if you make a change you will need to make the change to all four bands of the EQ. You can also try adjusting the scale in the MIDI section by selecting something other that 5%. However, this can take some additional experimenting, so we recommend adjusting the frequency band and width first.

5.4 Reinitialization

The Addverb III comes from the factory with all preset and program numbers mapped one-to-one and all the parameters set to create specific effects. All factory presets and program mapping may be restored as follows

Caution: *Reinitializing will replace all your changes with the factory settings. If you wish to keep any or all of your changes, either save them via System Exclusive Dump, or make notes of the specific changes.*

1. Turn power off.
2. Hold the **Add/Delete** and **Global** buttons while turning the power on.

Appendix A MIDI Implementation

MIDI Implementation

Model: Addverb III

Date: 8/95
Version: 1.0

Function	Transmitted	Recognized	Remarks
Basic Channel — Default Channel — Changed	1-16	1-16	Memorized
Mode — Default Messages Altered	3 X X	1, 3 X X	
Note Number — True Voice	X	O	MIDI Dynamic Effects Controller
Velocity — Note On Note Off	X X	X X	
After-touch — Key's Ch's	X X	O X	MIDI Dynamic Effects Controller
Pitch Bender	X	O	MIDI Dynamic Effects Controller
Control Change	X	0-120	MIDI Dynamic Effects Controller
Program Change — True#	0-127	0-127	
System Exclusive	O	O	
System Common : Songs Pos : Song Sel : Tune	X X X	X X X	
System Real Time : Clock : Commands	X X	O X	Sync Delay
Auxiliary Messages : Local On/Off : All Notes Off : Active Sense : Reset	X X X X	X X X X	

Mode 1 : OMNI ON, POLY **Mode 2 : OMNI ON, MONO**
Mode 3 : OMNI OFF, POLY **Mode 4 : OMNI OFF, MONO**

O : Yes
X : No

Appendix B System Exclusive

SYSEX Command Format

The following is the format for the *System Exclusive* dump and load requests

F0 00 00 1B 09 06 ch cm nn data ... cksum (data ... cksum ...) F7

Where:

ch	=	MIDI receive channel.
cm	=	MIDI command. (See Table of Commands)
nn	=	Number of selected User Preset or Bank. (Include only for Dump One Preset, Dump One Controller, or Dump Bank requests. Do not include in Dump All Presets, Controllers, or Programs.) Only User presets and banks can be dumped. To dump Factory Presets, they must be stored in a User Preset storage location.
data	=	parameter data included only in load messages.
cksum	=	modulo 128 checksum included only in load messages.

Note: For valid SYSEX DUMP requests, the data and checksum is not included.

Table of Commands
(Note: All numbers are in hexadecimal)

cm nn

00 nn Dump One Preset (nn = 00-7F)
02 nn Dump Preset Set (nn = 00-0B)
04 — Dump All Presets (nn not included)
06 nn Dump One Preset's Controllers (nn = 00-7F)
08 nn Dump Bank's Controllers (nn = 00-0B)
0A — Dump All Continuous Controllers
0C — Dump All Programs
0E — Dump Edit Buffer

Dump One Preset:	Dumps one preset's parameter data and continuous controllers.
Dump Preset Set:	Dumps ten presets' parameter data and continuous controllers.
Dump All Presets:	Dumps all 128 USER presets' parameter data, continuous controllers, and the program/volume map.
Dump One Preset's Controllers:	Dumps only the continuous controller data.
Dump Set's Controllers:	Dumps ten sets of continuous controllers.
Dump All Continuous Controllers:	Dumps 128 USER controller settings.
Dump All Programs:	Dumps the program/volume map.
Dump Edit Buffer:	Dumps contents of name, chain, parameter, and continuous controller from edit buffer.

System Exclusive Dump Examples

To dump preset #1 (00H) over MIDI channel 1 (00H), send the following string:

F0 00 00 1B 09 06 00 00 00 F7

To dump set #3 (02H) over MIDI channel 4 (03H), send the following string:

F0 00 00 1B 09 06 03 02 02 F7

To dump all presets over MIDI channel 1 (00H), send the following string:

F0 00 00 1B 09 06 00 04 F7

To dump all programs over MIDI channel 10 (09H), send the following string:

F0 00 00 1B 09 06 09 0C F7

To dump the edit buffer over MIDI channel 2 (01H), send the following string:

F0 00 00 1B 09 06 01 0E F7

SYSEX Dump File Format

Following the Sysex Load Header, each block of preset parameter, continuous controller, and program map data is followed by its own mudulo 128 checksum. All data is in NIBBLE form, so every pair of transmitted bytes represents the high nibble and low nibble of 1 byte of internal data.

Preset Parameter Data: 10 NAME bytes, 9 FX CHAIN bytes, 123 parameter bytes, checksum.
Continuous Controller Data: 45 bytes per preset, checksum.
Program/Volume Map: 512 bytes. 256 preset/volume pairs, checksum.
Set Dumps: 10 presets, each with its own checksum, followed by 10 controllers, each with its own checksum.

Remote Editing Via SYSEX

The Sysex command is of the following format

F0 00 00 1B 09 03 ch 10 fx_type pram datH datL (00 datH2 datL2) F7

where:
ch is the MIDI channel number the unit is set to receive on.
fx_type is the effect indicator (EBI).
pram is the offset to the parameter.
datH datL is the first byte in form.
00 indicates that this is a 2 byte variable (optional).
datH2 datL2 is the second byte in form (optional).

Any parameter in the edit buffer can be remotely edited using the Remote Editing SYSEX commands. This includes the effects chain, effects levels, all effect parameters, the preset name, and the eight continuous controllers.

All remote editing changes are made to the preset in the EDIT buffer. User Presets will not be affected until the change is made permanent by storing it either remotely or from the front panel.

The REMOTE Store buffer command is of the following format:

F0 00 00 1B 09 06 ch 11 dest F7

where:
dest is the User preset storage location (0-127).

The following is a detailed look at the exact edit buffer locations being accessed by each FX_TYPE, PRAM pair:

Remote Editing Example

If the following chain is present in the edit buffer:
RV→3B

And you want to edit the reverb size (Pram 1) in the Reverb Effect (FX–Type 6) to Size=Huge (03H) via SysEx MIDI channel 2 (01H), you would send the following string:

F0 00 00 1B 09 06 01 10 06 01 00 03 F7

where the "00 03" is the nybbilized equivalent of (01H),

FX_TYPE 0: Effect Chain

This is the command to edit the effect chain. Pram is a number between 0 and 7 which corresponds to the location of the effect in the chain. The data corresponds to each effect as follows:

(all numbers in hexadecimal)
Data
00= End of Chain
01= Compressor
02= Chorus
03= Delay
04= Pan
05= Pitch 1
06= Reverb
07= Exciter 1
08= Exciter 2
09= Envelope Filter
0A= 5 Band Graphic Equalizer
0B= 3 Band Mid Sweep Equalizer
0C= 4 Band Parametric Equalizer
0D= Hum Filter
0E= Speaker Simulator
0F= Distortion
10= Overdrive
11= Classic EQ
12= Noise Gate
13= Pitch 2
14= Stereo Simulator
15= 2 Channel Mixer
16= Ultra Reverb

Effects can be added to the current end of the effect chain, or any existing effect can be changed to another type. Any attempt to add an effect beyond the end of the existing chain or to duplicate an existing effect will be ignored by the unit, and an error message will be displayed.

FX_TYPE 1: Compressor

This command allows remote access to the Compressor parameters. The data is stored as follows:

PRAM
0 = Attack Time
1 = Release Time
2 = Sustain
3 = Level
4 = Noise Gate Threshold (0-9 => 1-10)

FX_TYPE 2: Chorus #1

PRAM
0 = Rate (units) \ may be loaded as 1 byte or 2 bytes of data
1 = Rate (Tenths) /
2 = Depth
3 = Delay (units) \ may be loaded as 1 byte or 2 bytes of data
4 = Delay (tenths) /
5 = Feedback (0-200 => -100 to +100)
6 = Mix (0-200 => -100 to +100)

FX_TYPE 3: Delay

PRAM
0 = Left (mono) Delay (low byte) \ may be loaded as 1 byte or 2 bytes of data
1 = Left (mono) Delay (high byte) /
2 = Left (mono) Feedback
3 = Right Delay (low byte) \ may be loaded as 1 byte or 2 bytes of data
4 = Right Delay (high byte) /
5 = Right feedback
6 = Mix (0-200 => -100 to +100)
7 = Tape Sim / Delay Type
(high = tape sim freq, low = delay type)

FX_TYPE 4: Auto Pan

PRAM
0 = Rate (units) \ may be loaded as 1 byte or 2 bytes of data
1 = Rate (tenths) /
2 = Depth

FX_TYPE 5: Pitch Shift 1

PRAM
0 = Pitch (0-24 => -12 to +12)
1 = Cents (0-100 => -50 to +50)
2 = Feedback
3 = Left Mix
4 = PreDelay Length
5 = Right Mix
6 = Input Pan (0=full right, 100=full left)

FX_TYPE 6: Reverb

PRAM
0 = Type
1 = Size
2 = Time (seconds) \ may be loaded as 1 byte or 2 bytes of data
3 = Time (tenths) /
4 = Damping
5 = Mix
6 = Gated Reverb Time
7 = Pre-delay

FX_TYPE 7: Exciter 1

PRAM
0 = Frequency
1 = Phase

FX_TYPE 8: Exciter 2

PRAM
0 = Drive
1 = Tune (integer) \ may be loaded as 1 byte or 2 bytes of data
2 = Tune (fraction) /
3 = Type
4 = Balance

FX_TYPE 9: Envelope Filter

PRAM
0 = Sensitivity
1 = Frequency
3 = Resonance
4 = Type
5 = Mix

FX_TYPE $A: 5 Band Graphic Equalizer

PRAM
0 = 100 Hz Gain (0-48 => -12 to +12 in .5 dB steps)
1 = 330 Hz Gain (0-48 => -12 to +12 in .5 dB steps)
2 = 1 kHz Gain (0-48 => -12 to +12 in .5 dB steps)
3 = 3 kHz Gain (0-48 => -12 to +12 in .5 dB steps)
4 = 10 kHz Gain (0-48 => -12 to +12 in .5 dB steps)

FX_TYPE $B: 3 Band Mid Sweep Equalizer

PRAM
0 = Lo Gain (0-50)
1 = Mid Freq (mantissa) \ may be loaded as 1 byte or 2 bytes of data
2 = Mid Freq (exponent) /
3 = Mid Gain (0-50)
4 = High Gain (0-50)
5 = Type

FX_TYPE $C: 4-band Parametric Equalizer

PRAM
0 = Band 1 Frequency (mantissa) \ may be loaded as 1 byte or 2 bytes of data
1 = Band 1 Frequency (exponent) /
2 = Band 1 1/Bandwidth
3 = Band 1 Gain (0-72 => -24 to +12 in .5 dB steps)
4 = Band 2 Frequency (mantissa) \ may be loaded as 1 byte or 2 bytes of data
5 = Band 2 Frequency (exponent) /
6 = Band 2 1/Bandwidth
7 = Band 2 Gain (0-72 => -24 to +12 in .5 dB steps)
8 = Band 3 Frequency (mantissa) \ may be loaded as 1 byte or 2 bytes of data
9 = Band 3 Frequency (exponent) /
A = Band 3 1/Bandwidth
B = Band 3 Gain (0-72 => -24 to +12 in .5 dB steps)
C = Band 4 Frequency (mantissa) \ may be loaded as 1 byte or 2 bytes of data
D= Band 4 Frequency (exponent) /
Be= Band 4 1/Bandwidth
F = Band 4 Gain (0-72 => -24 to +12 in .5 dB steps)

FX_TYPE $D: Chorus #2

PRAM
0 = Rate (units) \ may be loaded as 1 byte or 2 bytes of data
1 = Rate (Tenths) /
2 = Depth
3 = Delay (units) \ may be loaded as 1 byte or 2 bytes of data
4 = Delay (tenths) /
5 = Feedback (0-200 => -100 to +100)
6 = Mix (0-200 => -100 to +100)

FX_TYPE $Be: Speaker Simulator

PRAM
0 = Type

FX_TYPE $F: Distortion

PRAM
0 = Drive
1 = Post Gain
2 = Fat (Bottom)
3 = Edge
4 = Body
5 = Shift
6 = Resonance (units) \ may be loaded as 1 byte or 2 bytes of data
7 = Resonance (tenths) /

FX_TYPE $10: Overdrive

PRAM
0 = LoRollOff (units) \ may be loaded as 1 byte or 2 bytes of data.
1 = LoRollOff (tenths) /
2 = PreDrive
3 = Clip Level
4 = Output Level

FX_TYPE $11: Classic EQ

PRAM
0 = Low Gain
1 = Mid Gain
2 = Mid Shift
3 = High Gain

FX_TYPE $12: Noise Gate

PRAM
0 = Attack Time
1 = Release Time
2 = Threshold
3 = Sensitivity

FX_TYPE $13: Pitch Shift 2

PRAM
0 = Pitch (0-24 => -12 to +12)
1 = Cents (0-100 => -50 to +50)
2 = Feedback
3 = Left Mix
4 = PreDelay Length
5 = Right Mix
6 = Input Pan (0 = full right, 100 = full left)

FX_TYPE $14: Stereo Simulator

PRAM
0 = Lowpass Filter (off/on)
1 = Tune
2 = Depth

FX_TYPE $15: 2-Channel Mixer

PRAM
0 = 1 Left
1 = 1 Right
2 = 2 Left
3 = 2 Right

FX_TYPE $16: Ultra Reverb

PRAM
0 = Predelay Delay (low byte) \ may be loaded as 1 byte or 2 bytes of data
1 = Predelay Delay (high byte) /
2 = Predelay Feedback
3 = Predelay Low Pass
4 = Predelay Mix
5 = EQ 100 Hz band
6 = EQ 330 Hz band
7 = EQ 1K Hz band
8 = EQ 3K Hz band
9 = EQ 10K Hz band

A = Reverb Type
B = Reverb Size
C = Reverb Time (integer) \ may be loaded as 1 byte or 2 bytes of data
D= Reverb Time (fraction) /
Be= Reverb Damping
F = Gate Time
10= Gate Slope
11= Reverb Mix

FX_TYPE $17: Name Buffer Edit

PRAM
Ten PRAMS each refer to a character position in the name buffer.

FX_TYPE $18-$1F: Continuous Controllers 1-8

FX_TYPE $18-$1F correspond to controllers 1-8. Each controller has 5 parameters; they are:

PRAM

0 = Effect Type \ may be loaded as 1 byte or 2 bytes of data
1 = Effect parameter /
3 = Continuous Controller Number (1-128)
4 = Channel 0-16 (16 is omni)
5 = Scale Factor (-100-100)
These Effect type / Parameter Pairs are identical to the pairs listed above. Each of the 2 byte parameters are referenced by the first PRAM of the pair. Some effects parameters do not have controllers available. An error message will appear if an unused FX_TYPE/Parameter pair is sent.

FX_TYPE $20: Effect Levels

PRAM
0 = Effect 1 level
1 = Effect 2 level

Appendix C Specifications

Frequency Response
20 Hz to 16.5 kHz +1, -2 dB

Total Harmonic Distortion
Less than 0.05% at 1 kHz (1 V RMS)

Signal-to-Noise Ratio
Greater than 89 dB "A" weighted

Input and Output Jacks
¼" differential or single-ended

Input Impedance
16.1K ohms (8.5K ohms in mono mode)

A/D Conversion
Rate: 44.1 kHz
Quantization: 18-bit
64x Oversampled

D/A Conversion
Rate: 44.1 kHz
Quantization: 16-bit

Presets/Programs
256 presets (128 user, 128 factory)
mappable to 256 programs

MIDI
MIDI In, MIDI Thru/Out

Simultaneous Effects
Up to 8 maximum (any order)

Effect Types
Compressor
Chorus 1 & 2
Delay:
- Stereo: 360 ms per channel maximum
- Tapped: 724 ms per channel maximum
- Mono: 724 ms per channel maximum

Auto Pan
Pitch Shift 1: One octave up or down maximum
Pitch Shift 2: One octave up or down maximum
Reverb:
- Plate
- Spring
- Tunnel
- Room
- Stage
- Hall
- Gated
- Reverse Gated

Exciter 1
Exciter 2
Envelope Filter
5 Band Graphic Equalizer
3 Band Sweep Mid Equalizer
4 Band Parametric Equalizer
Speaker Simulation:
- 2 x 12 Open Backed
- 2 x 12 Closed Backed
- 4 x 12 Cabinet
- 4 x 12 British

Distortion
Overdrive
Classic (guitar) Equalizer
Noise Gate
Stereo Simulator
2-Channel Mixer
Special Ultra-reverb effect:
- Pre-delay with Feedback and Mix Control
- 5-Band Graphic Equalizer
- 8 Room Types

User Interface
16 character by 1 line LCD
6 push-buttons
3 Data Knobs

Dimensions
Width: 17.75"
Depth: 5"
Height: 1.75"
Weight: 6 pounds

Power Supply requirements
16.5 VAC 1100 mA external wall mount transformer

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PEAVEY ELECTRONICS CORPORATION ("PEAVEY") warrants this product, EXCEPT for covers, footswitches, patchcords, tubes and meters, to be free from defects in material and workmanship for a period of one (1) year from date of purchase, PROVIDED, however, that this limited warranty is extended only to the original retail purchaser and is subject to the conditions, exclusions, and limitations hereinafter set forth:

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If this product contains tubes or meters, Peavey warrants the tubes or meters contained in the product to be free from defects in material and workmanship for a period of ninety (90) days from date of purchase; PROVIDED, however, that this limited warranty is extended only to the original retail purchaser and is also subject to the conditions, exclusions, and limitations hereinafter set forth.

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b. The original retail purchase is not made from an AUTHORIZED PEAVEY DEALER; or
c. The product has been damaged by accident or unreasonable use, neglect, improper service or maintenance, or other causes not arising out of defects in material or workmanship; or
d. The serial number affixed to the product is altered, defaced, or removed.

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THE WARRANTY REGISTRATION CARD SHOULD BE ACCURATELY COMPLETED AND MAILED TO AND RECEIVED BY PEAVEY WITHIN FOURTEEN (14) DAYS FROM THE DATE OF YOUR PURCHASE.

In order to obtain service under these warranties, you must:

a. Bring the defective item to any PEAVEY AUTHORIZED DEALER or AUTHORIZED PEAVEY SERVICE CENTER and present therewith the ORIGINAL PROOF OF PURCHASE supplied to you by the AUTHORIZED PEAVEY DEALER in connection with your purchase from him of this product.
If the DEALER or SERVICE CENTER is unable to provide the necessary warranty service you will be directed to the nearest other PEAVEY AUTHORIZED DEALER or AUTHORIZED PEAVEY SERVICE CENTER which can provide such service.

OR

b. Ship the defective item, prepaid, to:
PEAVEY ELECTRONICS CORPORATION
International Service Center
326 Hwy. 11 & 80 East
MERIDIAN, MS 39301

including therewith a complete, detailed description of the problem, together with a legible copy of the original PROOF OF PURCHASE and a complete return address. Upon Peavey's receipt of these items:
If the defect is remedial under these limited warranties and the other terms and conditions expressed herein have been complied with, Peavey will provide the necessary warranty service to repair or replace the product and will return it, FREIGHT COLLECT, to you, the purchaser.

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Your remedies for breach of these warranties are limited to those remedies provided herein and Peavey Electronics Corporation gives this limited warranty only with respect to equipment purchased in the United States of America.

INSTRUCTIONS — WARRANTY REGISTRATION CARD

1. Mail the completed WARRANTY REGISTRATION CARD to:
PEAVEY ELECTRONICS CORPORATION
POST OFFICE BOX 2898
MERIDIAN, MISSISSIPPI 39302-2898
   a. Keep the PROOF OF PURCHASE. In the event warranty service is required during the warranty period, you will need this document. There will be no identification card issued by Peavey Electronics Corporation.
2. IMPORTANCE OF WARRANTY REGISTRATION CARDS AND NOTIFICATION OF CHANGES OF ADDRESSES:
   a. Completion and mailing of WARRANTY REGISTRATION CARDS — Should notification become necessary for any condition that may require correction, the REGISTRATION CARD will help ensure that you are contacted and properly notified.
   b. Notice of address changes – If you move from the address shown on the WARRANTY REGISTRATION CARD, you should notify Peavey of the change of address so as to facilitate your receipt of any bulletins or other forms of notification which may become necessary in connection with any condition that may require dissemination of information or correction.
3. You may contact Peavey directly by telephoning (601) 483-5365.

IMPORTANT SAFETY INSTRUCTIONS

WARNING: When using electric products, basic cautions should always be followed, including the following.

1. Read all safety and operating instructions before using this product.
2. All safety and operating instructions should be retained for future reference.
3. Obey all cautions in the operating instructions and on the back of the unit.
4. All operating instructions should be followed.
5. This product should not be used near water, i.e., a bathtub, sink, swimming pool, wet basement, etc.
6. This product should be located so that its position does not interfere with its proper ventilation. It should not be placed flat against a wall or placed in a built-in enclosure that will impede the flow of cooling air.
7. This product should not be placed near a source of heat such as a stove, radiator, or another heat producing amplifier.
8. Connect only to a power supply of the type marked on the unit adjacent to the power supply cord.
9. Never break off the ground pin on the power supply cord. For more information on grounding, write for our free booklet "Shock Hazard and Grounding."
10. Power supply cords should always be handled carefully. Never walk or place equipment on power supply cords. Periodically check cords for cuts or signs of stress, especially at the plug and the point where the cord exits the unit.
11. The power supply cord should be unplugged when the unit is to be unused for long periods of time.
12. If this product is to be mounted in an equipment rack, rear support should be provided.
13. Metal parts can be cleaned with a damp rag. The vinyl covering used on some units can be cleaned with a damp rag or an ammonia-based household cleaner if necessary. Disconnect unit from power supply before cleaning.
14. Care should be taken so that objects do not fall and liquids are not spilled into the unit through the ventilation holes or any other openings.
15. This unit should be checked by a qualified service technician if:
    a. The power supply cord or plug has been damaged.
    b. Anything has fallen or been spilled into the unit.
    c. The unit does not operate correctly.
    d. The unit has been dropped or the enclosure damaged.
16. The user should not attempt to service this equipment. All service work should be done by a qualified service technician.
17. This product should be used only with a cart or stand that is recommended by Peavey Electronics.
18. Exposure to extremely high noise levels may cause a permanent hearing loss. Individuals vary considerably in susceptibility to noise induced hearing loss, but nearly everyone will lose some hearing if exposed to sufficiently intense noise for a sufficient time.

The U.S. Government's Occupational Safety and Health Administration (OSHA) has specified the following permissible noise level exposures.

Duration Per Day In Hours	Sound Level dBA, Slow Response
8	90
6	92
4	95
3	97
2	100
1 1/2	102
1	105
1/2	110
1/4 or less	115

According to OSHA, any exposure in excess of the above permissible limits could result in some hearing loss.
Ear plugs or protectors in the ear canals or over the ears must be worn when operating this amplification system in order to prevent a permanent hearing loss if exposure is in excess of the limits as set forth above. To ensure against potentially dangerous exposure to high sound pressure levels, it is recommended that all persons exposed to equipment capable of producing high sound pressure levels such as this amplification system be protected by hearing protectors while this unit is in operation.

SAVE THESE INSTRUCTIONS!

Features and specifications subject to change without notice.

Peavey Electronics Corporation 711 A Street / Meridian, MS 39301 / U.S.A. / (601) 483-5365 / Fax 486-1278

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