ADDVERB™ II

DIGITAL STEREO REVERB/DELAY PROCESSOR

OPERATING GUIDE

INTRODUCTION TO THE ADDVERB™ II

Your new AddVerb™ II is the result of advanced digital technology and acoustical research designed to provide a wide range of superb effects for both the performing and recording environment. The AddVerb™ II Digital Stereo Reverb/Delay Processor features the most advanced DSP (Digital Signal Processing) techniques utilizing highly refined VLSI (Very Large Scale Integration) technology. The AddVerb II features an assortment of 100 effects comprehensive enough to suit most studio and performance applications. Many effects have comprehensive parameter control which will allow you to design custom effects to your taste. In addition, you are also able to create and save any of your custom effects in any of the 100 preset locations for instant recall. Your AddVerb II can create a variety of stereo effects such as reverb, delay, echo, chorus, vibrato, and flanging. Since the AddVerb II is MIDI-compatible, it can easily be controlled by a wide variety of MIDI-compatible devices.

Your AddVerb II Digital Stereo Reverb/Delay Processor will prove extremely useful in creating an unlimited assortment of musical expressions in a variety of applications: PA, studio, MIDI instrument, voice, electric, or recording. In order to get the most out of your AddVerb II, we urge you to read this manual thoroughly; however, for those of you who can't wait to hear what this incredible processor can do, go on to the "getting started" section for a preview.

THE NEW ADDVERB II

The AddVerb II features expanded programming and preset storage capabilities which allow factory and custom-made effects to be stored in any one of the 100 Preset memory locations accessible through either the front panel or via MIDI. The AddVerb II maintains all of the features and controls of the original AddVerb.™

You can start using the AddVerb II as an effect processor right away using the factory presets, or you can program your own effects and store them in any PRESET location. It is best to have a basic understanding of how these algorithms work in order to most efficiently program desired effect combinations, but you are strongly encouraged to experiment freely with the various parameters. Any of the factory presets can be recalled into any Preset location at any time, so don't worry about losing them. It is not until you have created an effect that you don't wish to lose that you must take care not to inadvertently store new data in that preset location.

ADDVERB II OVERVIEW GENERAL FEATURES

100 PRESETS

Any effect, either FACTORY or CUSTOM can be stored in any preset location.

128 PATCHES

Any Preset can be mapped into any Patch number. This allows you to group presets in any desired order and access them in PATCH MODE via either the front panel or MIDI without the need to move the effect into another PRESET location. (See the PATCH MAPPING section).

100 LIBRARY ALGORITHMS

Each AddVerb II Effect is based upon a special DSP (Digital Signal Processing) Algorithm. A LIBRARY ALGORITHM consists of a pre-programmed effect and factory pre-set parameters. Any of these LIBRARY ALGORITHMS may be placed into any PRESET location using LIBRARY MODE, and many of them may be further modified using PARAMETER MODE. These Algorithms are arranged in groups of the same type of effect such as REVERBS, FLANGES, CHORUS, DELAYS, ECHOES and SPECIALS.

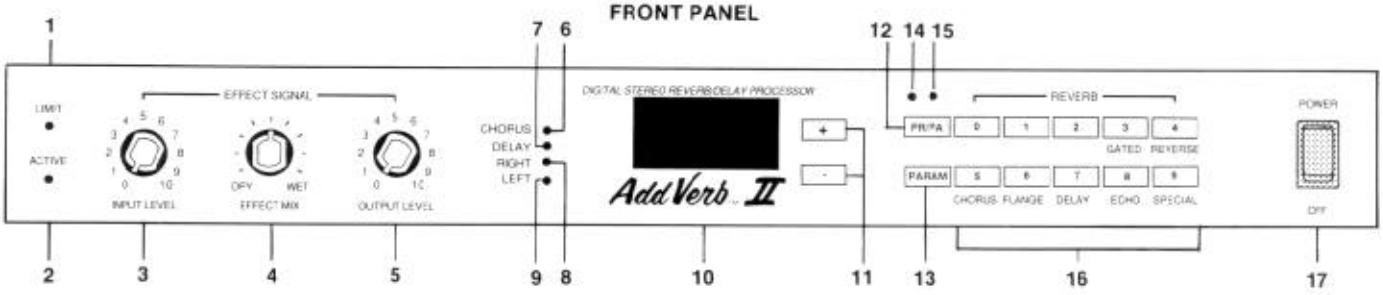
VARIABLE EFFECT PARAMETERS

Some Library Algorithms are single effects with little or no parameter control. Others have parameters such as DELAY TIME, FEEDBACK, CHORUS RATE, DEPTH, and others which you may vary to create custom effects. (See the PARAMETER MODE section).

MIDI PROGRAM CHANGE

Program changes of both presets and patches may be made using MIDI. (See the MIDI CONTROL section)

FRONT PANEL



LIMIT LED (1)

Illuminates to indicate that the effect computation is within 6 dB of limiting. Adjust the source signal and the Input Level control to allow illumination of this LED only on program peaks. Continuous illumination means there is risk of distortion and/or reduced signal processing performance.

ACTIVE LED (2)

Provides an indication of the minimum recommended signal level necessary for operation of the processor. The LED illuminates approximately 20 dB below the onset of clipping and should illuminate frequently during a performance.

INPUT LEVEL CONTROL (3)

Adjusts the input sensitivity for optimum matching with the input signal. The control should be adjusted to a level that allows the Limit LED to light occasionally on program peaks. Failure to adjust the Input Level control correctly may cause increased distortion and degrade the signal-to-noise performance of the unit.

EFFECT MIX (4)

Sets the mix ratio for the Effect/Dry signals at the outputs. Range is from dry, unprocessed signal only (full counter-clockwise position), to wet, effect-only signal (full clockwise position). The 12 o'clock position yields a 1:1 mix ratio.

Note that an audible drop in signal level may occur at the 1:1 mix ratio position (12 o'clock control position) due to cancellation of certain frequencies corresponding to 180° phase shifts.

OUTPUT LEVEL (5)

Adjusts the overall signal level available at the Left and Right outputs.

CHORUS LED (6)

Indicates that the value displayed in the LED window is a parameter affecting the CHORUS effect block.

DELAY LED (7)

Indicates that the value displayed in the LED window is a parameter affecting DELAY effect blocks (Predelay, Echo Right, Echo Left).

RIGHT LED (8)

Indicates that the value displayed in the LED window is a parameter affecting the RIGHT channel Echoes.

LEFT LED (9)

Indicates that the value displayed in the LED window is a parameter affecting the LEFT channel Echoes.

LED WINDOW (10)

Displays Effect Preset Number, MIDI Patch Number, and all Variable Parameter values while in PARAMETER MODE.

PARAMETER INCREMENT (+) AND DECREMENT (-) KEYS (11)

Used to increase (+) or decrease (-) the displayed numerical parameter. A quick press-and-release of either key will change the displayed parameter by one increment. When adjusting modulation or delay settings, pressing and holding either key will continuously increase or decrease the displayed parameter value until released.

PRESET/PATCH (PR/PA) KEY (12)

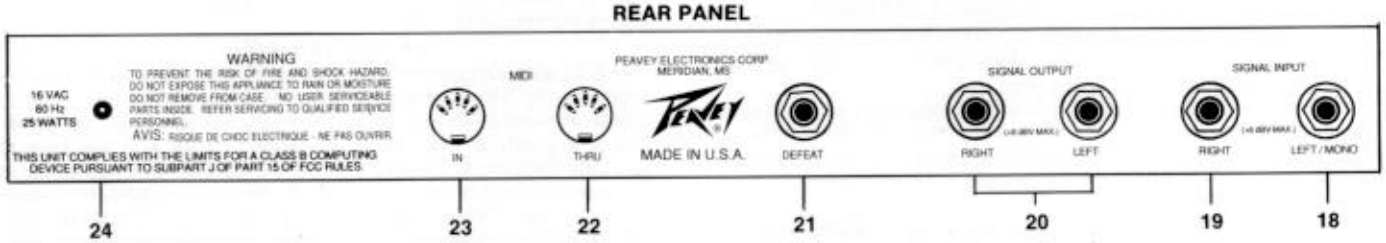
Selects either the Preset mode or the Patch mode. In the **Preset Mode,** Effect *Preset Numbers* are displayed in the LED window and key strokes (increment, decrement, or numeric keys) select Effect *Presets*. Range is 0 to 99.

In the **Patch Mode,** MIDI *Patch numbers* are displayed in the LED window and keystrokes (increment, decrement, or numeric keys) select MIDI *Patches.* Range is from 1 to 128
Note: On initial power-up (first time used), all MIDI *Patch numbers* correspond one-to-one with Effect *Preset numbers.* Since the *Effect Presets* may be "remapped" to any *Patch Number,* the one-to-one relationship can be altered. (See Patch Mapping elsewhere in this manual.)

PARAM KEY (13)
When in PRESET (PR) or PATCH (PA) MODE, pressing the PARAM key switches the AddVerb II into LIBRARY MODE. The Library number will be displayed. During this time the LIBRARY ALGORITHM may be changed using the "+" and "-" keys. Pressing the PARAM key a second time switches the AddVerb II PARAMETER MODE, and the first variable parameter value is displayed in the LED window. During PARAMETER MODE, this key is used to step to the next variable parameter. Holding the PARAM key for a few moments shift the unit into STORE MODE. At this time, the preset to which you wish to store your changes is selected. Press and hold the PARAM key one more time and the storage is completed. After storage is complete, the letters "CPL" are displayed in the LED window.

PRESET LED (14)
Indicates when in *Preset* mode.
PATCH LED (15)
Indicates when in *Patch* mode.
NUMERIC KEYS (16)
Used only during PRESET or PATCH MODE, these keys directly enter the Preset number or Patch number. Two of the keys have special functions during other modes as follows:
5/PARAM-
During PARAMETER MODE, this key steps the LED window display to the previous parameter.
POWER SWITCH (17)
Depress to "On" position to turn on. When off, the MIDI mapping and delay parameter values are stored in memory. When power is reapplied, the memory is recalled and the processor is configured as when it was turned off.
Note: To minimize turn on/turn off transient noises, set the Output Level control to "0" before switching on/off.

REAR PANEL



LEFT/MONO INPUT (18)
Use this input for processing mono sources or the "Left" program material from stereo sources. Mono sources input are here processed into "stereo" at the Left and Right outputs.
MONO IN/STEREO OUT OPERATION
Mono signal sources should be connected to the Left/Mono input. Mono signals are here processed to generate "left" and "right" reverb images. Left reverberant signal is then remixed with the mono input signal for the Left Output. Likewise, right reverberant signal is remixed with the mono input signal for the Right Output. In this manner, a stereo reverb effect is processed from a mono source. The mix ratio of reverb-to-dry is adjusted via the Effect Mix control.
For mono output operation, either of the two outputs may be used with equally realistic reverb performance.
RIGHT INPUT (19)
Use this input for processing "Right" program material from stereo sources.
STEREO IN/STEREO OUT OPERATION
Stereo input signals at the Left and Right inputs are processed to generate stereo reverb images. The resultant left and right reverberant signals are then remixed with the original Left and Right input signals. Continuity and "imaging" of the original stereo program is maintained. The mix ratio of reverb-to-dry is adjusted via the Effect Mix control.

SIGNAL OUTPUT (RIGHT & LEFT) (20)
Right and Left outputs are provided for stereo effects. For mono operation, either output may be used.
DEFEAT JACK (21)
Provided for connection of an optional footswitch for remote defeat (bypass) of the effect. With the Effect Mix control set fully to "wet", the bypass mode yields a no-output condition.
MIDI THRU (22)
Provided to allow chaining of MIDI-capable devices. All MIDI data received at the MIDI In socket are echoed, unaltered to this socket.
MIDI IN (23)
Allows for MIDI control interface. All patches in the processor may be selected via MIDI Program Change commands from a MIDI controller.
POWER SUPPLY SOCKET (24)
Provided for connection of the external power supply. Insert the power supply jack fully into the socket before making the AC outlet connection.
CAUTION: Use only the power supply provided with this product. If the original power supply must be replaced, consult your dealer or the factory for assistance in obtaining the correct replacement. Failure to use the correct power supply could result in fire or shock hazard, extensive circuit damage, decreased performance, or non-operation.

EXAMPLE 1
GETTING STARTED

1. Connect the provided power supply to the supply socket located on the left side of the rear panel of the AddVerb II and plug the power supply into a standard A/C outlet.

2. With the AddVerb II turned off, connect the output of the instrument (guitar, keyboard, drum machine, etc.) into the signal input jack on the rear labeled LEFT/MONO input. Connect the signal output (right or left) to the input of a high-quality amplification system.

3. With the output level set to "0", turn on the AddVerb II Power Switch. The LED Display will show "Ch xx" momentarily and then will display a number. Make sure the volume of your amplifier is turned down, then turn it on.

4. Play a few notes on the instrument and, as you do so, slowly increase the input level control until the "Active" LED light frequency flashes and the "Limit" LED flashes only at your loudest playing levels.

5. Set the "Effect Mix" control to the center position pointing straight up.

6. Set the "Output Level of the AddVerb II to "5" and slowly increase the level on your amplifier to a desirable level.

7. Press the blue "PR/PA" (preset/patch) button momentarily until the green "PR" light (on the left above the button) comes on.

8. Now by using the +/- buttons, you can step through all 100 presets (00-99) in the AddVerb II. For a listing of the Factory Presets, see the list of Library Banks.

By now you should be pretty impressed with the AddVerb II's sound capability, but there is much more to the AddVerb II than meets the eye, so keep reading and you'll find out all about it.

CREATING A CUSTOM EFFECT
A Guided Tour

The AddVerb II offers a tremendous amount of flexibility in creating excellent custom effects. This guided tour will provide you with the tools to easily create your own custom effects and store them in any desired Preset location.

THE EDIT BUFFER

First a word about the Edit buffer. The Edit buffer is a memory location where effect parameters reside while they are being played or modified. Any changes you make to the edit buffer are not stored as a preset until you store them by pressing and holding the red "STORE" button (see the section entitled 'PARAMETER MODE'), do not fear that your experimentation will accidently change a preset that you like, and experiment freely. Even if you do change a factory preset, you can get it back (see the Recalling Factory Presets section).

If you do not wish to save your changes, press the "PR/PA" button to return to Preset/Patch mode. Flashing indicator lights show that you have modified the contents of the edit buffer, but have not stored the changes to main memory. Changing the Preset/Patch at this time will discard the contents of the edit buffer and load the selected Preset from main memory.

EXAMPLE 2
HOW TO CHANGE YOUR EFFECT SETTINGS

This tutorial will show you how to modify the factory presets to create your own custom effects. We'll give you a step by step example of modifying a chorus effect.

1. The first step to creating a custom effect is to enter Preset Mode. If the green "PR" LED is glowing, then you are in Preset mode already. If the red "PA" LED is on, you are in Patch mode; if so, press the blue "PR/PA" (Preset/Patch) button momentarily and the green LED will come on.

2. Select a Preset to modify using the "+" or "-" buttons or the numeric keys. For our guided tour, select preset 67.

3. Press the PARAM button momentarily. "L 67" will appear in the LED Display. The AddVerb II is now in Library mode. Library mode is a very important mode where you can select new "Library Algorithims" to modify or recall a factory preset. For now, we will not use Library mode. (See the section on LIBRARY MODE)

4. Press the PARAM button a second time. The AddVerb II is now in PARAMETER MODE. The "CHORUS" LED will come on and the LED Display will show "r 40". This indicates that you are working on a Chorus-type effect and the RATE is set to 40. Press the PARAM button momentarily, and the display will switch to "d203" indicating chorus DEPTH set to 203. Pressing the PARAM button again switches the display to "t 90" indicating a Chorus Delay TIME of 90 milliseconds. Press the PARAM button once more and "Fb 11" is displayed. This is the Chorus FEEDBACK. One further press of the PARAM button returns you to RATE programming. Pressing the PARAM button advances you one parameter; pressing the "5 (PARAM BACK)" button steps back to the last parameter.

5. While playing some sustained notes on your instrument, use the "+" and "-" keys to vary the parameters while listening to their effect on the sound. The Chorus LED and the decimal after the last digit on the LED Display will start flashing to indicate that the parameters you hear are not the ones presently stored in this Preset location.

6. Once you have made a custom sound that you like, you can store it by pressing and holding the PARAM button. The display will show "to 67", showing that the changes will be stored to Preset Location 67 by pressing and holding the PARAM button again. You may also store this preset to any other location at this time by using the numeric keys to select a new Preset location and holding the PARAM button until "CPL" is displayed. If you do not wish to store your changes, press the "PR/PA" button to return to PRESET mode.

7. If you do not wish to keep your changes, pressing the "PR/PA" button at any time will return you to Preset mode. The green "PR" LED will flash indicating that you still can save your changes or return to parameter mode. If you use the "+/-" or numeric keys to change presets at this time, your changes will not be stored.

LIBRARY MODE

Library mode is probably the most important mode of the AddVerb II to those interested in creating banks of custom effects. It is from Library Mode that a new LIBRARY ALGORITHM can be selected for any preset. The Library Algorithm is the DSP program that actually creates the digital effect you are listening to, such as Reverb, Chorus, Delay, Echo, or Specials. Each Library Algorithm has its own set of Factory Parameters which further modify it to create a particular sound within that effect group. Many algorithms allow you to modify their parameters to create custom effects in practically endless variety.

The Library Algorithms are arranged in BANKS according to their Effect type. A list of those types follow:

LIST OF LIBRARY BANKS

0	Bypass
1 - 29	Various reverbs
30 - 39	Gated reverbs
40 - 49	Reverse gated reverbs
50 - 59	Chorus
60 - 69	Flanges
70 - 79	Delays
80 - 89	Echoes
90 - 99	Specials (non-programmable)

Changing the Library number while in Library mode moves that Algorithm and its Factory Parameters into the Edit buffer. In this way, any factory preset may be moved into any Preset Location. Further customization of the Preset is allowed for Library Algorithms numbered 50 - 90.

PARAMETER MODE

Many Library Algorithms have various parameters which may be modified. All changes are stored in the Edit Buffer and may be heard immediately. Some libraries may not be modified at all. These algorithms are Library numbers 1 - 49 and the factory specials residing at Library 90 - 99. All others have two or more parameters which may be varied. While in LIBRARY mode, pressing the PARAM BUTTON will switch the AddVerb II to PARAMETER mode. The first variable parameter will be displayed. You can scroll forward or backwards through the parameters by pressing the "PARAM +" or "PARAM -" keys. The Parameter values may be changed using the "+" and "-" keys.

1. Press the PR/PA button until the Green PR LED is illuminated.

2. Use the +/- buttons or the numeric keys to select the number of the program that you wish to modify. (You can later STORE it into any other location you wish or recover the original FACTORY PRESET, if you wish).

3. Push the PARAM button briefly; the AddVerb II is now in LIBRARY mode; use the "+" and "-" keys to select a new Library Algorithm.

NOTE: Some of the Library Algorithms (#1 to 49 and 90 - 99) are not user reprogrammable. In the rest of the effects, some parameters are user-modifiable. It is a good idea at this point to briefly press the PARAM button several times to get an idea of which parameters are used in this particular Algorithm. Look at the code below to identify what parameters are used to buildup the effect that you are working on. There's no need to study this table closely at this point. If you prefer, you can go on and refer to these symbols as you find them in your AddVerb II.

4. Use the +/- keys to change values in the effect that you have chosen to modify while making a sound on your instrument to hear what your changes sound like.

NOTE: The more that you use your AddVerb II in this way, the more familiar you will become with it. Since all the information that you're experimenting with is contained in the ***edit buffer***, it is in a temporary state until you STORE it, so that you can afford to change your effects as much as you like.

5. If you are now satisified with the changes that you have made, you may wish to STORE the result. Push and hold the PARAM button until the display switches to "to xx", then use the numeric keys to select the preset location you wish your new effect to reside. Press and hold the "STORE" key once again until "CPL" is displayed.

If you do not wish to STORE this effect and want to go back to the presets, simply press the PA/PR button. The green LED will come on, and you can continue to select from the other presets.

TABLE OF VARIABLE PARAMETERS

The Parameter values are identified by a combination of indicator lights and 4-digit LED display. The indicator lights are:

CHORUS O
DELAY O
RIGHT O
LEFT O

Indicator Lights Display	7-Segment Window Display
	L=Library (this will appear with a number; e.g., L1=library number 1, etc.)

Chorus: A versatile chorus block allows for generation of all the common modulated effects (CHORUS, FLANGE, VIBRATO) and many uncommon effects. The user has control over the following:

(chorus LED illuminated)	r=Chorus Rate - LFO (low frequency oscillator): RATE variable from 0 to 10 Hz in 255 steps.
(chorus LED illuminated)	d=Chorus Depth - LFO DEPTH: variable in 255 steps.
(chorus LED illuminated)	t=Chorus Delay Time - DELAY TIME: up to 340 milliseconds in the chorus alone.
(chorus LED illuminated)	Fb=Chorus Feedback - FEEDBACK: 15 levels of stable feedback within the chorus.

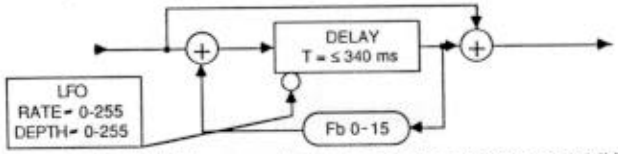
Echo/Delays: An echo is simply a delay with feedback. The AddVerb II uses two types of Echo/Delay Algorithms— the PARALLEL STEREO ECHO (Libraries 70-74 and 80-84), and the MULTITAP STEREO ECHO (Libraries 75-79 and 85-89). (See the section titled DETAILED DESCRIPTION OF EFFECT BLOCKS).

(delay and left LEDs illuminated)	Blank Window=Left Channel Delay Time - Up to 340 ms for PARALLEL echoes Up to 680 ms for TAPPED echoes
(delay and left LEDs illuminated)	Fb=Right Channel Echo Feedback Up to 15 levels of stable feedback
(delay and right Leds illuminated)	Fb=Right Channel Echo Feedback Up to 15 levels of stable feedback
(delay and both right and left LEDs illuminated)	Fb=TAPPED ECHO FEEDBACK Up to 15 levels of stable feedback is taken from the longest delay and fed back into both channels

A DETAILED DESCRIPTION OF EFFECT BLOCKS

The following is a detailed description of the individual effect blocks and their parameters.

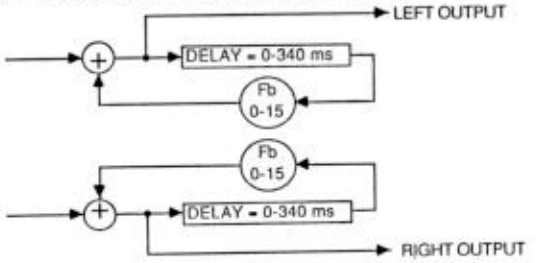
CHORUS: The AddVerb II adds a new dimension to the usual low frequency modulation provided by conventional chorus effects. Peavey's Modulated Effect Algorithm modulates a signal after a delay time which is programmable by the user. The output can then be fed back to the input to create a Flanging effect. Up to 340 milliseconds of delay Time (t), and 15 levels of Feedback (Fb) can be programmed into the chorus. This allows the chorus to act as an additional delay or echo, as well. The Low Frequency Oscillator (LFO) modulates the signal with a programmable Depth (d) from 0 to 255, at a Rate (r) variable in 255 steps from 0 to 10 Hz.



ECHO/DELAY: There are two types of echo used in the AddVerb II.

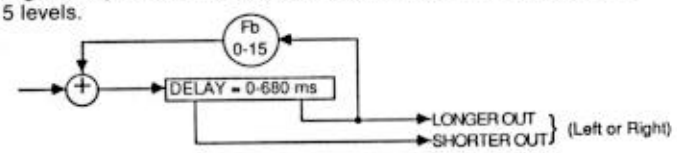
Parallel Stereo Echoes: (Libraries 70-74 and 80-84):

Left and Right Delays each have separately variable Delay times up to 340 milliseconds, and 15 levels of Feedback (Fb).



Stereo Multi-tap Echo (Libraries 75-79 and 85-89):

Offers up to 680 milliseconds of delay in either of the Left or Right Taps. A single Feedback (FB) is taken from the Tap with the longer delay time. This feedback is also programmable with up to 15 levels.



PATCH MAPPING

PATCH MODE allows you to remap the 100 Presets into 128 Patch locations. Now you can arrange the effects into your own banks and make it easier to recall the effects for a particular performance, set, song or recording session.

Patch mode is indicated by the red "PA" light just above the "PR/PA" button. When it is lighted, the "+" and "-" buttons, numeric keys, or MIDI Program change commands will recall the PATCH (and thus the corresponding Preset which you program into it.)

To reprogram the PATCH number:

1. Select PATCH MODE with the "PR/PA" button (Red "PA" light on).
2. Using the "+" or "-" or the Numeric keys, select the patch number you wish to modify.
3. Press and hold the "PR/PA" button until **both** the "PR" and "PA" lights are on.
4. Use the numeric keys to select the PRESET number that will correspond to that patch number. 0 (bypass) through 99 may be selected.
5. Store the Patch by pressing and holding the "PR/PA" button until "CPL" is displayed.

MIDI CONTROL

The AddVerb II can use MIDI (Musical Instrument Digital Interface) Program Change to switch the effect being played in either Preset or Patch mode. (If you are not familiar with MIDI, see the MIDI SUPPLEMENT enclosed with your new AddVerb II).

The AddVerb II will respond to Program Change 1-99 in Preset mode to directly recall a preset, or to Program Change 1 - 128 in Patch mode to recall a preset which has been programmed in that patch number.

NOTE: Preset 0 (BYPASS) cannot be selected via MIDI in Preset mode, but may be selected in Patch mode by programming Preset 0 into any Patch number from 1 - 128.

MIDI CHANNEL SETUP

The AddVerb II will listen for messages on any one of the 16 MIDI channels, or on all channels-depending on the MIDI Channel selected. Once a channel is selected, it is remembered until another channel is selected even if the AddVerb II is turned off. To select a new MIDI Channel:

1. Turn the Output level control to 0.
2. Turn off the AddVerb II with the power on/off switch.
3. Turn the AddVerb II back on; "Ch xx" is displayed for a short time. During this time, use the "+" or "-" keys to select the desired MIDI channel.

NOTE: MIDI channel 0 is "Omni".

4. The unit will switch to normal operation after a few seconds. If you need more time, simply repeat the off/on procedure again.

RECALLING FACTORY PRESETS

Factory Presets can be recalled one at a time by recalling the Library Algorithm in Library mode, and storing it as you would any other changes to that preset:

1. From PRESET mode, press the red PARAM button to get into LIBRARY mode.
2. Select the Library Algorithm number of the effect you wish to restore.
3. Press and hold the red PARAM button until "to xx" is shown. Select the Preset to restore (if not already selected) and press and hold the PARAM button again until "CPL" is displayed.

RESETTING THE ADVERB II

CAUTION: Performing a system reset will erase any changes you have made to the AddVerb II.

If you ever want to erase all of the changes that you have made in the unit and restore it to factory condition, simply turn the unit's output level to zero (this prevents turn on/turn off transients from reaching your amplifier's input); power down the unit by means of the Power on/off button. Press in the Decrement (-) and Number 5 buttons simultaneously and power up the AddVerb II again while

continuing to hold these buttons in until the MIDI channel message appears.

CAUTION: Don't forget that by doing this, you will be erasing any changes that you have previously made. If you wish to recreate them, make notes of how you achieved them ***before*** restoring the factory presets.

SPECIFICATIONS

EFFECT SETTINGS:
- 50 non-programmable REVERB settings
  - 30 REVERBS
  - 10 GATED REVERBS
  - 10 REVERSE REVERBS
- 10 programmable STEREO CHORUS settings
- 10 programmable STEREO FLANGE settings
- 10 programmable STEREO DELAY settings
- 10 programmable STEREO ECHO settings

SPECIAL EFFECTS
- 10 non-programmable SPECIAL EFFECTS settings
  - PANNED EFFECTS
  - COMBINATION EFFECTS
  - ETC.

DELAY RANGE:
- Left: 0.0 to 680 milliseconds
- Right: 0.0 to 680 milliseconds

FREQUENCY RESPONSE:
- Dry Signal: 20 Hz to 20 kHz
- Effect Signal: 20 Hz to 11.5 kHz

QUANTIZATION:
- 16-Bit Linear PCM

SIGNAL-TO-NOISE RATIO:
- Dry Signal: 100 dB minimum
- Effect Signal: 96 dB minimum

INPUTS:
- Left/Mono: -20 dBV minimum, +10 maximum
- Right: -20 dBV minimum, +10 dBV maximum

OUTPUTS:
- Left: +6 dBV maximum
- Right: +6 dBV maximum

HEADROOM:
- Active: -20 dB down from maximum
- Limit: -6 dB down from maximum

VCO MODULATION: (Chorus)
- LFO Rate: 0.1 Hz to 10 Hz (0 to 255)
- LFO Depth: 0% to 100% (0 to 255)
- LFO Waveshape: Sine Wave

AUXILIARY FOOTSWITCH:
- Effect Defeat Switch (optional)

MIDI SPECIFICATION:
- 16 MIDI Channels
- 128 Program Presets
- 128 Re-Mappable Program Patches

FRONT PANEL CONTROLS:
- Input Level Control
- Effect Mix (Wet/Dry) Control
- Output Level Control
- Effect Select Switch Matrix
- Parameter Select / Store Switch
- Preset / Patch Mode Select Switch
- Slewing +/- Control Switches

FRONT PANEL INDICATORS:
- Signal "Active"
- Processor "Limit"
- Chorus Parameters LED
- Delay Parameters LED
- Right Channel Parameters LED
- Left Channel Parameters LED
- Parameter Display Window:
  - Preset/Patch
  - Chorus Rate/Chorus Depth/Chorus Delay/Chorus Feedback
  - Left Delay/Left Feedback/Right Delay/Right Feedback

REAR PANEL CONNECTORS:
- Left/Mono Input Jack
- Right Input Jack
- Left Output Jack
- Right Output Jack
- Effect Defeat Jack
- MIDI In Connector
- MIDI Thru Connector
- MIDI Out Connector
- AC Power Connector

POWER SUPPLY REQUIREMENTS:
- Use only Peavey 16.5V AC Power Supply

DANGER

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
1½	102
1	105
½	110
¼ 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 INSURE 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.

CAUTION

THIS MIXING CONSOLE/EFFECTS DEVICE/PREAMP HAS BEEN DESIGNED AND CONSTRUCTED TO PROVIDE ADEQUATE SIGNAL (VOLTAGE) FOR PLAYING MODERN MUSIC. IMPROPER USE OF THE GAIN/EQUALIZER CONTROLS AND/OR IMPROPER USE OF INTERNAL/EXTERNAL BUSSES **MAY** CREATE CLIPPING (SQUARE WAVES) AND POSSIBLY CAUSE SUBSEQUENT DAMAGE TO THE LOUDSPEAKER SYSTEMS. EXTENDED OPERATION OF THE GAIN/EQUALIZATION CONTROLS IN THEIR MAXIMUM POSITIONS IS THEREFORE **NOT** RECOMMENDED. PLEASE BE AWARE THAT **MAXIMUM POWER** CAN BE OPTAINED WITH VERY LOW SETTINGS OF THE **GAIN/EQUALIZATION** CONTROLS IF THE INPUT SIGNAL IS VERY STRONG.

IT IS COMMON PRACTICE AMONG USERS OF SOUND REINFORCEMENT EQUIPMENT TO IDENTIFY THE INDIVIDUAL CHANNELS WITH A STRIP OF TAPE PLACED ABOVE OR BELOW THE ROW OF VOLUME FADERS. MANY TYPES OR BRANDS OF TAPE HAVE A VERY STRONG ADHESIVE WHICH CAN INHIBIT THE PAINT ON THE FACEPLATE AND ACTUALLY REMOVE THE PAINT WHEN THE TAPE IS REMOVED. WE STRONGLY RECOMMEND THAT SCOTCH TAPE NOT BE USED ON PAINTED SURFACES NOR ANY OTHER TAPE THAT IS NOT ESPECIALLY DESIGNED FOR SUCH APPLICATIONS. MEDIUM OR LIGHT ADHESIVE MASKING OR MAKER LABEL TAPE IS RECOMMENDED IF TAPE IS USED. ANY TAPE LEFT ON PAINTED SURFACE FOR EXTENDED PERIODS WILL BE DIFFICULT TO REMOVE. NEVER USE CLEAR OR SCOTCH TAPE FOR THESE APPLICATIONS.

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.
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 to attempt to service this equipment. All service work should be done by a qualified service technician.

THIS LIMITED WARRANTY VALID ONLY WHEN PURCHASED AND REGISTERED IN THE UNITED STATES OR CANADA. ALL EXPORTED PRODUCTS ARE SUBJECT TO WARRANTY AND SERVICES TO BE SPECIFIED AND PROVIDED BY THE AUTHORIZED DISTRIBUTOR FOR EACH COUNTRY!
Ces clauses de garantie ne sont vaiables qu'aux Etats-Unis et au Canada. Dans tous les autres pays, les clauses de garantie et de maintenance sont fixees par le distributeur national et assuree par lui seion la legislation en vigueur.
Diese Garantie ist nur in den USA and Kanada gultig. Alle Export-Produkte sind der Garantie und dem Service des Importeurs des jeweiligen Landes unterworfen.
Esta garantia es valida solamente cuando el producto es comprado en E.U. continentales o en Canada. Todos los productos que sean comprados en el extranjero, estan sujetos a las garantias y servicio que cada distribuidor autorizado determine y ofrezca en los diferentes paises.

PEAVEY ONE-YEAR LIMITED

WARRANTY/REMEDY

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:

PEAVEY 90-DAY LIMITED WARRANTY ON TUBES AND METERS

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.

CONDITIONS, EXCLUSIONS AND LIMITATIONS OF LIMITED WARRANTIES

These limited warranties shall be void and of no effect if:

a. The first purchase of the product is for the purpose of resale; or
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.

In the event of a defect in material and/or workmanship covered by this limited warranty, Peavey will:

a. In the case of tubes or meters, replace the defective component without charge;
b. In other covered cases (i.e., cases involving anything other than covers, footswitches, patchcords, tubes or meters), repair the defect in material or workmanship or replace the product, at Peavey's option;
and provided, however, that, in any case, all costs of shipping, if necessary, are paid by you, the purchaser.

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 PERSONAL WARRANTY IDENTIFICATION CARD **along with** 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
711 "A" STREET
MERIDIAN, MS 39301

including therewith a complete, detailed description of the problem, together with your PERSONAL WARRANTY IDENTIFICATION CARD **along with a legible** copy of the **original** PROOF OF PURCHASE, and a complete return address. Upon Peavey's receipt of the item:
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.

Peavey's liability to the purchaser for damages from any cause whatsoever and regardless of the form of action, including negligence, is limited to the actual damages up to the greater of $500.00 or an amount equal to the purchase price of the product that caused the damage or that is the subject of or is directly related to the cause of action. Such purchase price will be that in effect for the specific product when the cause of action arose. This limitation of liability will not apply to claims for personal injury or damage to real property or tangible personal property allegedly caused by Peavey's negligence. Peavey does not assume liability for personal injury or property damage arising out of or caused by a non-Peavey alteration or attachment, nor does Peavey assume any responsibility for damage to interconnected non-Peavey equipment that may result from the normal functioning and maintenance of the Peavey equipment.

UNDER NO CIRCUMSTANCES WILL PEAVEY BE LIABLE FOR ANY LOST PROFITS, LOST SAVINGS, ANY INCIDENTAL DAMAGES OR ANY CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PRODUCT, EVEN IF PEAVEY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

THESE LIMITED WARRANTIES ARE IN LIEU OF ANY AND ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE; PROVIDED, HOWEVER, THAT IF THE OTHER TERMS AND CONDITIONS NECESSARY TO THE EXISTENCE OF THE EXPRESS, LIMITED WARRANTIES, AS HEREINABOVE STATED, HAVE BEEN COMPLIED WITH, IMPLIED WARRANTIES ARE NOT DISCLAIMED DURING THE APPLICABLE ONE-YEAR OR NINETY-DAY PERIOD FROM DATE OF PURCHASE OF THIS PRODUCT.

SOME STATES DO NOT ALLOW LIMITATION ON HOW LONG AN IMPLIED WARRANTY LASTS, OR THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU. THESE LIMITED WARRANTIES GIVE YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH MAY VARY FROM STATE TO STATE.

THESE LIMITED WARRANTIES ARE THE ONLY EXPRESS WARRANTIES ON THIS PRODUCT, AND NO OTHER STATEMENT, REPRESENTATION, WARRANTY OR AGREEMENT BY ANY PERSON SHALL BE VALID OR BINDING UPON PEAVEY.

In the event of any modification or disclaimer of express or implied warranties, or any limitation of remedies, contained herein conflicts with applicable law, then such modification, disclaimer or limitation, as the case may be, shall be deemed to be modified to the extent necessary to comply with such law.

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 PERSONAL WARRANTY I.D. CARD along with your PROOF OF PURCHASE. In the event warranty service is required during the warranty period, you will need these documents. **There will be no other identification card issued by Peavey Electronics Corporation.**
   b. Defaced, mutilated or altered CARDS will not be honored.
2. IMPORTANCE OF WARRANTY REGISTRATION CARDS AND NOTIFICATION OF CHANGES OF ADDRESS:
   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.

AddVerb II Effect Table

EFFECT PRESET NUMBER	REVERB TIME	ROOM SIZE	TONALITY
01	0.2 Sec	Small	Bright
02	0.5 Sec	Small	Warm
03	0.6 Sec	Small	Warm
04	0.8 Sec	Small	Bright
05	1.2 Sec	Small	Warm
06	1.4 Sec	Small	Dark
07	2.1 Sec	Small	Bright
08	2.5 Sec	Small	Bright
09	2.8 Sec	Small	Warm
10	1.2 Sec	Medium	Warm
11	1.3 Sec	Medium	Bright
12	1.4 Sec	Medium	Bright
13	1.5 Sec	Medium	Bright
14	2.0 Sec	Medium	Bright
15	2.2 Sec	Medium	Bright
16	2.4 Sec	Medium	Warm
17	2.8 Sec	Medium	Warm
18	3.8 Sec	Medium	Warm
19	4.0 Sec	Medium	Dark
20	1.5 Sec	Large	Dark
21	1.8 Sec	Large	Dark
22	2.5 Sec	Large	Bright
23	2.7 Sec	Large	Bright
24	2.8 Sec	Large	Dark
25	4.0 Sec	Large	Warm
26	7.0 Sec	Large	Dark
27	9.0 Sec	Large	Warm
28	20 Sec	Large	Dark
29	28 Sec	Ex. Large	Bright

NUMBER	EFFECT TYPE	TIME
30	Gated Reverb	150 mSec.
31	Gated Reverb	200 mSec.
32	Gated Reverb	225 mSec.
33	Gated Reverb	250 mSec.
34	Gated Reverb	300 mSec.
35	Gated Reverb	350 mSec.
36	Gated Reverb	400 mSec.
37	Gated Reverb	500 mSec.
38	Gated Reverb	600 mSec.
39	Gated Reverb	400 mSec.
40	Reverse Reverb	400 mSec.
41	Reverse Reverb	500 mSec.
42	Reverse Reverb	600 mSec.
43	Reverse Reverb	300 mSec.
44	Reverse Reverb	600 mSec.
45	Reverse Reverb	500 mSec.
46	Reverse Reverb	400 mSec.
47	Reverse Reverb	300 mSec.
48	Reverse Reverb	450 mSec.
49	Reverse Reverb	500 mSec with echo

NUMBER	EFFECT TYPE				
50-59	CHORUS	RATE	DEPTH	DELAY TIME	FEEDBACK
50	Chorus	30	30	0	0
51	Chorus	60	30	0	0
52	Chorus	90	35	30ms	6
53	Chorus	200	20	15ms	0
54	Chorus	50	72	120ms	5
55	Chorus	180	18	195ms	11
56	Chorus	40	200	60ms	5
57	Chorus	20	220	0	0
58	Chorus	30	255	0	0
59	Chorus	100	155	50	5
60-69	FLANGE	RATE	DEPTH	DELAY TIME	FEEDBACK
60	Flange	50	30	0	7
61	Flange	55	50	0	11
62	Flange	160	6	6ms	11
63	Flange	70	200	0	0
64	Flange	70	200	0	10
65	Flange	160	40	8ms	10
66	Flange	255	22	63ms	12
67	Flange	40	203	90ms	11
68	Flange	255	59	155ms	14
69	Flange	100	50	0	6
70-79	DELAY	RIGHT DELAY		LEFT DELAY	
70	Stereo Delay	50ms		25ms	
71	Stereo Delay	100ms		150ms	
72	Stereo Delay	150ms		200ms	
73	Stereo Delay	200ms		400ms	
74	Stereo Delay	250ms		340ms	
75	Multitap Delay	300ms		350ms	
76	Multitap Delay	350ms		450ms	
77	Multitap Delay	400ms		500ms	
78	Multitap Delay	500ms		250ms	
79	Multitap Delay	600ms		650ms	
80-89	ECHO	R. DELAY	R. FDBK	L. DELAY	L. FDBK
80	Stereo Echo	50ms	5	25ms	5
81	Stereo Echo	100ms	7	150ms	7
82	Stereo Echo	150ms	8	200ms	8
83	Stereo Echo	200ms	5	400ms	7
84	Stereo Echo	250ms	9	340ms	9
85	Multitap Echo	300ms	n/a	330ms	7
86	Multitap Echo	350ms	n/a	450ms	10
87	Multitap Echo	400ms	n/a	500ms	7
88	Multitap Echo	500ms	5	250ms	n/a
89	Multitap Echo	600ms	n/a	650ms	13
90-99	SPECIALS				
90	Special Gated Reverb				
91	Reverb With Echo Feedback of ½				
92	Special Effect Echo				
93	Channel A - Reverb Channel B - Reverb With Pre-Delay				
94	Grand Canyon				
95	Echo With Reverb				
96	300 mSec. Gated Reverb With Panning Outputs				
97	Multi-tap delay				
98	Reverb with 250 mSec. of Pre-Delay				
99	Special effect echo				

PARAM KEY (13)
When in PRESET (PR) or PATCH (PA) MODE, pressing the PARAM key switches the AddVerb II into LIBRARY MODE. The Library number will be displayed. During this time the LIBRARY ALGORITHM may be changed using the "+" and "-" keys. Pressing the PARAM key a second time switches the AddVerb II into PARAMETER MODE, and the first variable parameter value is displayed in the LED window. During PARAMETER MODE, this key is used to step to the next variable parameter. Holding the PARAM key for a few moments shifts the unit into STORE MODE. At this time, the preset to which you wish to store your changes is selected. Press and hold the PARAM key one more time and the storage is completed. After storage is complete, the letters "CPL" are displayed in the LED window.

NUMERIC KEYS (16)
Used only during PRESET or PATCH MODE, these keys directly enter the Preset number or Patch number.

1. Connect the provided power supply to the supply socket located on the left side of the rear panel of the AddVerb II and plug the power supply into a standard A/C outlet.
2. With the AddVerb II turned off, connect the output of the instrument (guitar, keyboard, drum machine, etc.) into the signal input jack on the rear labeled LEFT/MONO input. Connect the signal output (right or left) to the input of a high-quality amplification system.
3. With the output level set to "0", turn on the AddVerb II Power Switch. The LED Display will show "Ch xx" momentarily and then will display a number. Make sure the volume of your amplifier is turned down, then turn it on.
4. Play a few notes on the instrument, and as you do so, slowly increase the input level control until the "Active" LED light frequently flashes and the "Limit" LED flashes only at your loudest playing levels.

5. Set the "Effect Mix" control to the center position pointing straight up.
6. Set the "Output Level" of the AddVerb II to "5" and slowly increase the level on your amplifier to a desirable level.
7. Press the blue "PR/PA" (preset/patch) button momentarily until the green "PR" light (on the left above the button) comes on.
8. Now by using the ± buttons, you can step through all 100 presets (00-99) in the AddVerb II. For a listing of the Factory Presets, see the list of Library Banks.

By now you should be pretty impressed with the AddVerb II's sound capability, but there is much more to the AddVerb II than meets the eye, so keep reading, and you'll find out all about it.

Features and specifications subject to change without notice.
Peavey Electronics Corporation 711 A Street / Meridian, MS 39302-2898 / U.S.A. / (601)483-5365 / Telex 504115 / Fax 486-1278

#80300943
Printed in U.S.A. 9/93