OWNERS MANUAL



ULTRAVERB™

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.

INTRODUCTION TO THE ULTRAVERB™

Your new UltraVerb™ 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 UltraVerb Digital Stereo Multi-Effect Processor features the most advanced DSP (Digital Signal Processing) techniques utilizing highly refined VLSI (Very Large Scale Integration) technology. The UltraVerb 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 UltraVerb can create a variety of stereo effects such as reverb, delay, echo, chorus, vibrato, and flanging. Furthermore, multi-effects, combining these basic effects, can be achieved through the use of some special effect algorithms. Since the UltraVerb is MIDI-compatible, it can easily be controlled by a wide variety of MIDI-compatible devices.

Your UltraVerb Digital Stereo Multi-Effects Processor will prove extremely useful in creating an unlimited assortment of musical expressions in a variety of applications: PA, studio, MIDI instrument, acoustic, electric, or recorded. In order to get the most out of your UltraVerb, 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 ULTRAVERB

The new UltraVerb is similar in many ways to the Peavey AddVerb™ Digital Stereo Reverb/Delay Processor. It contains all 100 of the original AddVerb™ factory presets as well as six new Multi-Effect algorithms. The UltraVerb also 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 UltraVerb maintains all of the features and controls of the original AddVerb™.

You can start using the UltraVerb as an effect processor right away by 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 program desired effect combinations most efficiently, 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.

ULTRAVERB™ OVERVIEW
GENERAL FEATURES

100 PRESETS

Any effect, either ***Factory*** or ***Custom*** can be stored in any peset 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 the ***Patch Mode*** via either the front panel or remote MIDI, without the need to move the effect into another ***Preset*** location (See the ***Patch Mapping*** section).

105 LIBRARY ALGORITHMS

Each UltraVerb Effect is based upon a special DSP (Digital Signal Processing) Algorithm. A ***Library Algorithm*** consists of both a preprogrammed effect and various factory preset parameters. Any of these ***Library Algorithms*** may be placed into any ***Preset*** location using the ***Library Mode,*** and many of them may be further modified using the ***Parameter Mode.*** These Algorithms are arranged in groups of the same type of effect such as ***Reverbs, Flanges, Chorus, Delays, Echoes*** and 6 new ***Multi-Effects*** algorithms.

VARIABLE EFFECT PARAMETERS

Some Library Algorithms are single effects with little or no control over their parameters. Others, such as the Multi-Effects, have adjustable parameters such as ***Delay Time, Feedback, Chorus Rate, Depth,*** and there are others which you may vary to create custom effects. (See the ***Parameter Mode*** section.)

TRUE MULTI-EFFECTS PROCESSING

The Library Algorithms numbered 100 through 105 are special programs which allow you to build custom effects using several basic effect blocks arranged in various serial and parallel configurations. (See the section entitled ***Multi-Effect Blocks***.)

MIDI PROGRAM CHANGE

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

EXAMPLE 1
GETTING STARTED

1. Connect the power supply provided to the supply socket located on the left side of the rear panel of the UltraVerb and plug the power supply into a standard A/C outlet
2. With the UltraVerb 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 UltraVerb Power Switch. The LED Display will show "Ch xx" momentarily and will then 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 UltraVerb 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 UltraVerb. For a listing of the Factory Presets, see the list of Library Banks.

By now you should be developing a feel for the remarkable sound capabilities of the UltraVerb, but there is a great deal more to discover, so keep reading.

CREATING A CUSTOM EFFECT
A Guided Tour

The UltraVerb offers great 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'***). Your experimentation will not accidentally change a preset that you like and you can 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 will 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
CHANGING YOUR EFFECT SETTINGS

This tutorial will show you how to modify the factory presets to create your own custom effects. First we'll give you a step by step example showing you how to modify a chorus effect. Then we'll explain what we have done and how to modify one of the more complex Multi-Effect Algorithms.

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

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

3. Press the red ***"Store"*** (Param) button momentarily. "L 67" will appear in the LED Display Window. The UltraVerb is now in Library mode. ***"Library"*** is a very important mode as it enables you to select new ***"Library Algorithms"*** for modification or the facility to recall a factory preset. For now, we will not use the Library mode. (See the section on ***Library Mode).***

4. Press the red ***"Store"*** (Param) button a second time. The UltraVerb is now in ***Parameter Mode.*** The ***"Chorus" LED*** will come on and the LED Display Window will show "r 40". This indicates that you are working on a Chorus-type effect and that the ***Rate*** is set to 40. Press the red ***"Store"*** (Param) button momentarily and the display will switch to "d203," indicating chorus ***Depth*** set to 203. Pressing the ***"Store"*** (Param) button again will return you back to the ***Rate*** parameter.

5. While playing some sustained notes on your instrument, use the "+" and "-" keys to vary the ***Rate*** and ***Depth*** parameters while listening to its effect on your sound. The Chorus LED and the decimal after the last digit on the LED Display Window will start flashing to indicate that the parameters you are hearing 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 red ***"Store"*** button. The Display Window will show "to 67," showing that the changes will be stored to Preset Location 67 by presssing and holding the ***"Store"*** 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 ***"Store"*** 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 to return to the preset mode. If you use the "+" "-" or numeric keys to change presets at this time, your changes will not be stored.

LIBRARY MODE

To those interested in creating banks of custom effects, the Library mode is probably the most important mode of the UltraVerb. 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 to which you are listening; such as: Reverb, Chorus, Delay, Echo, or Multi (combinations of these basic effect types). Each Library Algorithm has its own set of sounds within that effect group. Many algorithms allow you to modify the parameters to create custom effects - practically endless in their variety.

The Library Algorithms are arranged in ***Banks*** according to their Effect type. A list of those types follows:

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)
100 - 105	Multi-effects

Changing the Library number while in Library mode moves the 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 and the special Multi-Effects residing at 100 - 106.

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 - 50, and the factory specials reside at Library 90 - 99. All of the others have two or more parameters which may be varied. While in ***Library*** mode, pressing the red ***"Store"*** (Param) ***Button*** will switch the UltraVerb to the ***Parameter*** mode. The first variable parameter will be displayed. You can scroll forward or back through the parameters by pressing the ***"Param ^"*** or ***"Param v"*** 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/Store*** button briefly, the UltraVerb is now in ***Library Mode,*** use the "+" and "-" keys to select a new Library Algorithm.

NOTE: Some of the Library Algorithms (#1 - 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 which parameters are used to build up the effect on which you are working. 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 UltraVerb.

TABLE OF VARIABLE PARAMETERS

The Parameter values are identified by a combination of indicator lights and the 4-digit LED display window. 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.)
(delay LED illuminated)	P=Predelay - Up to 340 ms of delay placed before all other effects. This is very useful for separating the effect from the attack and the initial pure sound of the signal.
	Er=Early Reflections - 4 possible Early Reflection Patterns.
	rS=Room Size - 4 possible Room Sizes (Small, Medium, Large, Extra-Large)
	Co=Color - 4 Coloration Schemes (Dark, Smooth, Warm, Bright)
	rt=Reverb Time - 99 possible Reverb Times in order of duration. From ≈ 0 sec. to 40 sec.

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:

(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.
Gated Reverb:	s=Gated Reverb Shape - 3 possible gate shapes (flat, shallow, deep reverse)
	t=Gated Reverb Time - Up to 650 ms of gate duration.
(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	Blank Window=Right Channel Delay Time - Up to 340 ms for ***Parallel*** echoes Up to 680 ms for ***Tapped*** echoes
(delay and left LEDs illuminated	Fb=Left 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

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 how your changes sound.

NOTE: The more you use your UltraVerb 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. This allows you to change your effects as much as you like.

5. If you are satisfied with the changes that you have made, you may wish to ***Store*** the result. Push and hold the ***Param/Store*** button until the display window switches to "to xx". Then use the numeric keys to select the preset location in which 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 ***PR/PA*** button. The green LED will come on, and you can continue to select from the other presets.

MULTI-EFFECTS

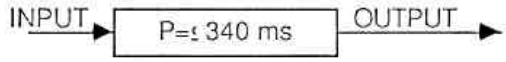
With the UltraVerb, Peavey introduces true Multi-Effect processing. This means that the basic effect-blocks available individually in the AddVerb (***Reverb, Chorus, Echo, Delay)*** are now ***combined*** in the six new ***Multi-Effect*** Algorithms in Library numbers 100 to 105.

These new algorithms combine the basic effect-blocks, as described below, into various schemes (see the ***Multi-Effect Libraries*** section) and allow comprehensive control of all parameters. Thousands of new effects are now possible and easy to program while you listen. Each new effect you create can then be stored in any of the 100 preset locations for later recall.

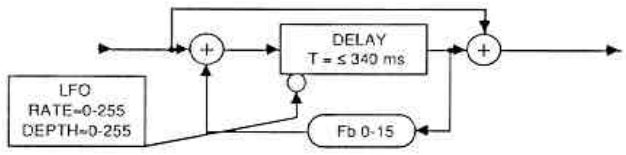
Here is a detailed description of the individual effect-blocks and their parameters. The next section describes the way that these blocks are combined to make up the Libraries numbered 100-105.

A DETAILED DESCRIPTION OF THE MULTI-EFFECT BLOCKS

PREDELAY: Predelay is placed on the input of each of the library algorithms. The predelay allows up to 340 milliseconds of straight delay prior to the effect of any other block. This can be used to delay the effect with respect to the original signal. When used with ***Wet/Dry*** mix, ***Predelay*** allows the original instrument attack to get through before the effect begins.



CHORUS: The UltraVerb adds a new dimension to the usual low frequency modulation provided by conventional chorus effects. Up to 340 milliseconds of delay Time (t), and 15 levels of Feedback (Fb) can be programmed into the chorus alone. This allows the chorus to act as an additional delay or echo. 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. The Chorus is placed in parallel with the Reverb in Library 100, and in Series in 101, 102, and 103.



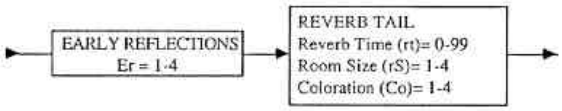
REVERB: When sound is produced in a room, the first thing that a listener hears is the direct sound. This is rapidly followed by the first reflections of the sound from the various surfaces in the room (walls, floor, ceiling, tables, etc.) These "early" reflections are then reflected many more times until there is reverberation.

Four ***Early Reflection Patterns*** are variable with the "ER" parameter.

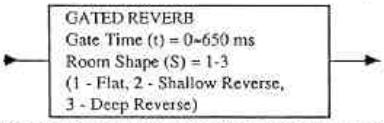
Four ***Room Sizes*** are variable with the "RS" parameter. The Room Size determines the texture of the reverb because of the way the sound reflects over and over again to create rich, full reverberation.

Four ***Coloration*** schemes are adjustable with the "CO" parameter. In natural reverberation, the type of surface the sounds are reflected from determines how bright, warm, or dark the sound is. (The tiles of a bathroom would create a much brighter reverb than the carpets and padded benches of a church sanctuary!)

99 REVERB TIMES are available by using the "RT" parameter. The Reverb time adjusts the duration the reverb will last, allowing you to create quite natural (or unnatural) sounding effects. Think of the longest tunnel that you have ever shouted down, or heard a car horn in, then try "RT99"!

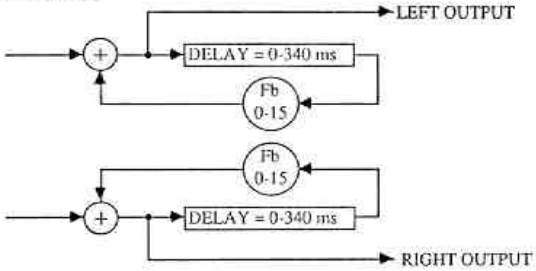


GATED REVERB: A multi-tap reverberation unit. Programmable with up to 650 milliseconds of reverb Time (t) with one of three Slope (S) models (Flat, Shallow Reverse, and Deep Reverse).

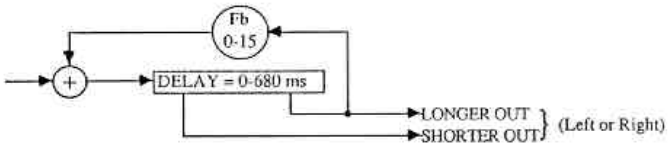


ECHO: There are two types of echo used in the UltraVerb Library Algorithms:

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



Stereo Multi-tap Echo: 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.

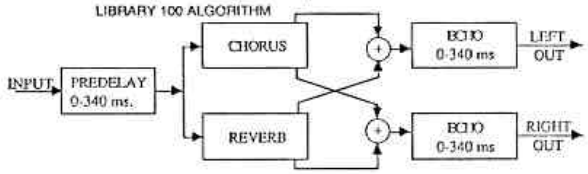


The Multi-Effect Library Algorithms

The following block diagrams are representations of the way in which the effect-blocks described above are arranged in each of the 6 Multi-Effect Library Algorithms:

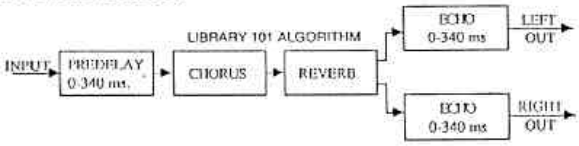
LIBRARY 100

After ***Predelay,*** the signal is sent to the ***Chorus*** and ***Reverb*** in parallel. Both output signals are summed in both the Right and Left channels and sent to the Parallel Echoes. The Echo outputs are sent on to the separate signal outputs.



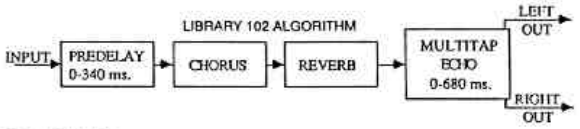
LIBRARY 101

The ***Predelay, Chorus*** and ***Reverb*** are in series. The ***Reverb*** output generates stereo images and sends them to the Right and Left ***Parallel Echoes.***



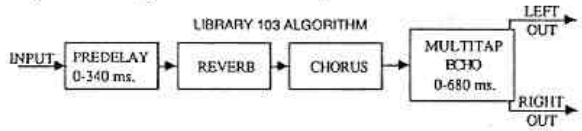
LIBRARY 102

The ***Predelay, Chorus*** and ***Reverb*** are in series, followed by a ***Stereo Multitap Echo.***



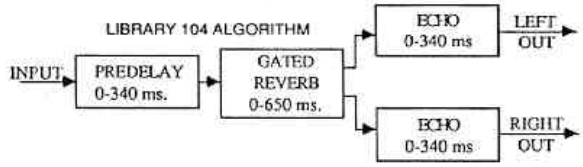
LIBRARY 103

The ***Predelay, Reverb,*** then ***Chorus*** are in series and the output is finally run through a ***Stereo Multitap Echo.***



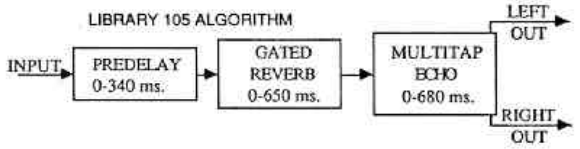
LIBRARY 104

After ***Predelay,*** a ***Gated Reverb*** with stereo outputs feeds through ***Parallel Stereo Echoes.***



LIBRARY 105

Predelay, Gated Reverb, and ***Stereo Multitap Echo.***



PATCH MAPPING

Patch Mode allows you to remap the 100 Presets into 128 Patch locations for recall using MIDI or from the front panel. This allows you to personalize the order of the effects without having to rewrite the preset locations. Now you can arange 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 lit, 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 the ***Patch Mode*** with the ***"PR/PA"*** button (Red ***"PA"*** light on).
2. Using the "+" or "-" or the Numeric keys, select the patch number that you wish to modify.
3. Press and hold the ***"PR/PA"*** until ***both*** the ***"PR"*** and ***"PA"*** lights are on.
4. Use the numeric keys to select the ***Preset*** number that you may wish to have corresponding 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 UltraVerb can use MIDI (Musical Instrument Digital Interface) Program Change to switch the effect being played in either Preset or Patch mode.

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

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

MIDI CHANNEL SETUP

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

1. Turn the Output level control to 0.
2. Turn off the Ultraverb with the power on/off switch.
3. Turn the Ultraverb 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

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

1) From ***Preset*** mode, press the red ***"Store"*** (Param) button to get into ***Library*** mode.

2) Select the Library Algorithm number of the effect that you wish to restore.

3. Press and hold the red ***"Store"*** (Param) button until "to xx" is shown. Select the Preset to restore (if not already selected) and press and hold the ***"Store"*** button again until "CPL" is displayed.

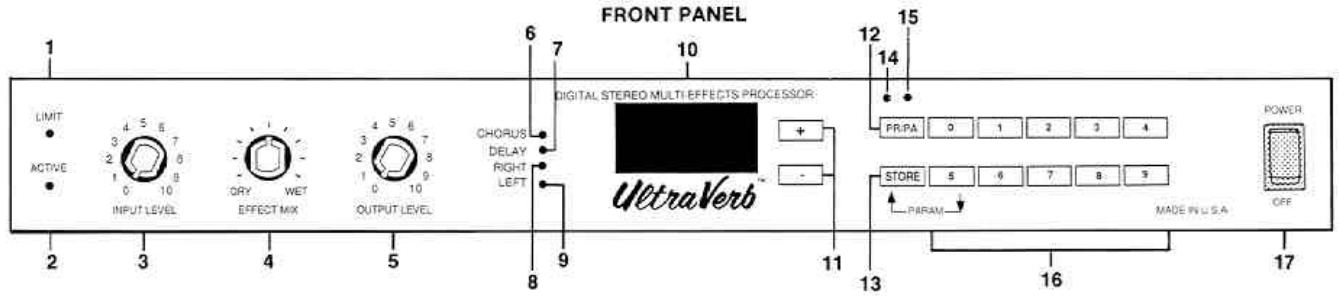
RESETTING THE ULTRAVERB

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

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 amplfier'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 UltraVerb again, 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 your changes, make notes of the way you achieved them *before* restoring the factory presets.

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 counterclockwise 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 180⁰ 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 display window is a parameter affecting the CHORUS effect block.

DELAY LED (7)
Indicates that the value displayed in the LED display window is a parameter affecting DELAY effect blocks (Predelay, Echo Right, Echo Left).

RIGHT LED (8)
Indicates that the value displayed in the LED display window is a parameter affecting the RIGHT channel Echoes.

LEFT LED (9)
Indicates that the value displayed in the LED display window is a parameter affecting the LEFT channel Echoes.

LED DISPLAY 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 Effect Remapping elsewhere in this manual.)

STORE (PARAM) KEY (13)
When in PRESET (PR) MODE, pressing the red "STORE (PARAM)" key switches the UltraVerb into LIBRARY MODE. The Library number will be displayed. During this time the LIBRARY ALGORITHM may be changed using the "+" and "-" keys. Pressing the STORE (PARAM) key a second time switches the UltraVerb 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 STORE (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 STORE (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.

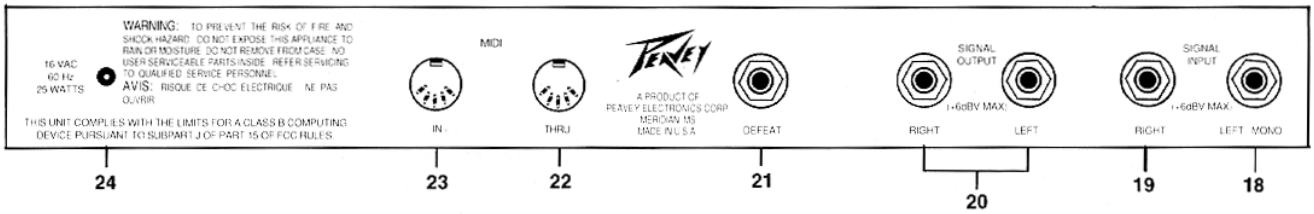
NUMERIC KEYS (16)
Used only during PRESET or PATCH MODE, these keys directly enter the Preset number or Patch number. Two of the keys have special functions during other modes as follows:

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 here are 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 here are 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 SWITCH 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.

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 vallda 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.

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

MULTI-EFFECT SETTINGS (5 Simultaneous Effects)
- 10 fully programmable MULTI-EFFECT SETTINGS
  - 2 PARALLEL REVERB and CHORUS with PREDELAY and ECHO
  - 2 SERIES REVERB then CHORUS with PREDELAY and ECHO
  - 4 SERIES CHORUS then REVERB with PREDELAY and ECHO
  - 2 GATED REVERBS with PREDELAY and ECHO

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

DELAY RANGE
- Left: 0.0 to 2.75 seconds
- Right: 0.0 to 2.75 seconds

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 dBV 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 Remappable 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
  - Predelay
  - Early Reflections/Room Size/Reberb Time/Coloration
  - Gated Reverb Time/Gated Reverb Slope
  - 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 OBTAINED 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 MIXER 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.

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: 484-4278
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