

# ULTRAVERB™ II

DIGITAL MULTI-EFFECTS PROCESSOR

## OPERATING GUIDE



# Part 1: Introduction and Hookup

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## 1.0 What's an Ultraverb II?

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The Ultraverb II is an updated and improved version of Peavey's original Ultraverb. In addition to synthesizing mono and stereo reverberant spaces, from tiny bathrooms to huge cathedrals (and beyond), the Ultraverb II includes a new family of effects—stereo delay, chorus/flange, tapped echoes, dual band parametric equalization, and "exciter."

Several of these are available simultaneously for even greater flexibility. These various combinations of effects are called *multieffect algorithms* (a typical example is Pre-delay-> Reverb -> Chorus -> Tapped Echo, which can add a great deal of variety to the basic reverb sound). Each effect can also be used individually, if you want to, say, add chorus to a guitar sound or parametric equalization to a vocal track. You'll have a hard time running out of sounds, as there are 600 patch locations.

For maximum expressiveness, the Ultraverb II offers the option of real time MIDI control for particular parameters. This lets you do tricks like increase the amount of reverb according to keyboard pressure or note velocity, or perform sequencer control as you mix, thus freeing your hands to do other things. If you already have automated level mixing, the Ultraverb II brings a degree of automated effects mixing to your setup as well.

The user interface features an easily readable LED display and several two-color LEDs to indicate which functions are selected. After a little bit of familiarization time, aided by the parameter descriptions in section 3.2, programming becomes second nature.

The Ultraverb II is equally at home in the recording studio, inserted in the line-level effects loop of a guitar amp, added to a keyboard stack, or plugged into a PA mixer. Ready? Let's start.

### *Note*

Throughout this manual, button names are shown in ALL CAPS and messages shown on the display are in **bold**.

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## 1.1 Hookup and Rear Panel Connections

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### 1.1A Installation

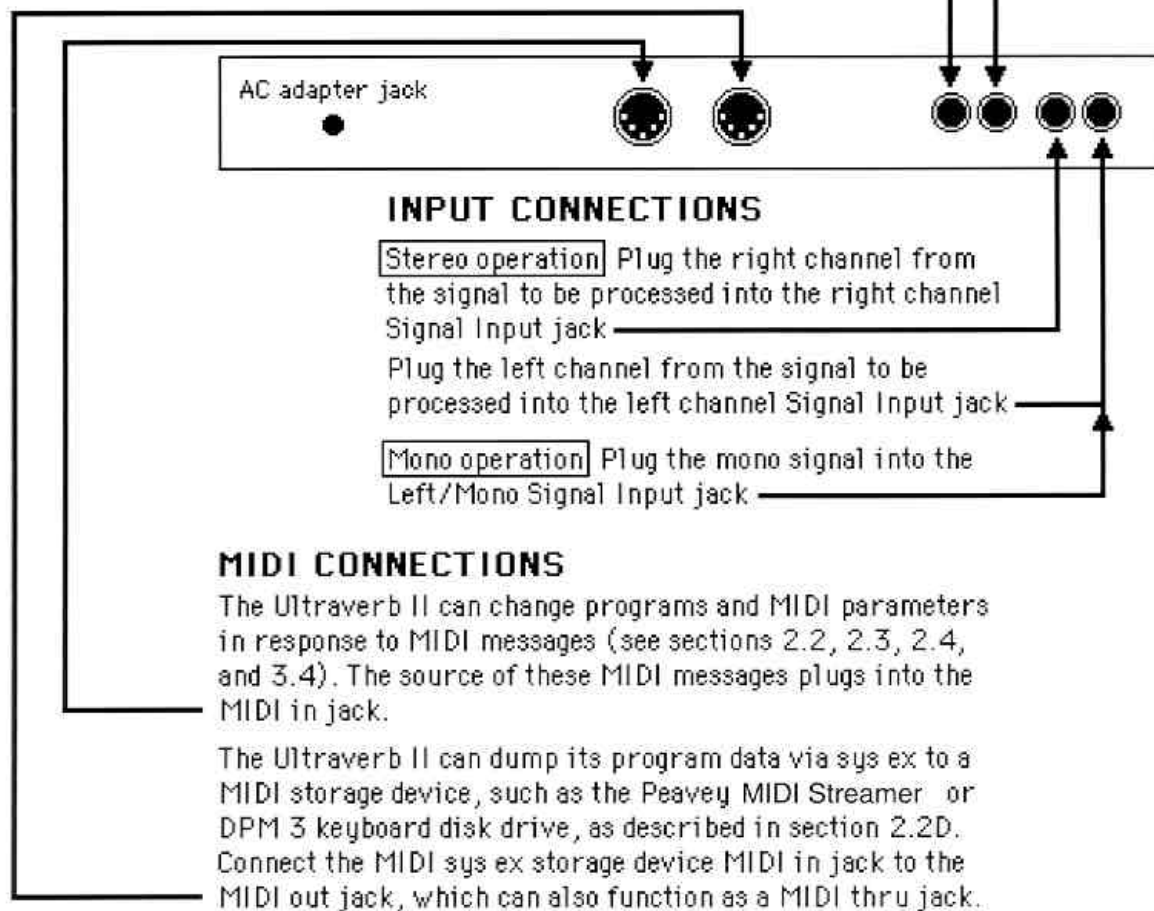
The Ultraverb II will generally mount in a rack frame. It is not necessary to leave an empty space for ventilation above or below the unit because the Ultraverb II is energy-efficient and generates very little heat.

### 1.1B Connections and Hookup

#### OUTPUT CONNECTIONS

**Stereo operation** Use both outputs

**Mono operation** The Ultraverb II synthesizes a stereo field from a mono input, so you can use both outputs even with a mono source. If you must have a mono feed, mix the two outputs together. You can use one output or the other, but this will not make full use of the Ultraverb II's sound quality.



## 1.1C Power jack

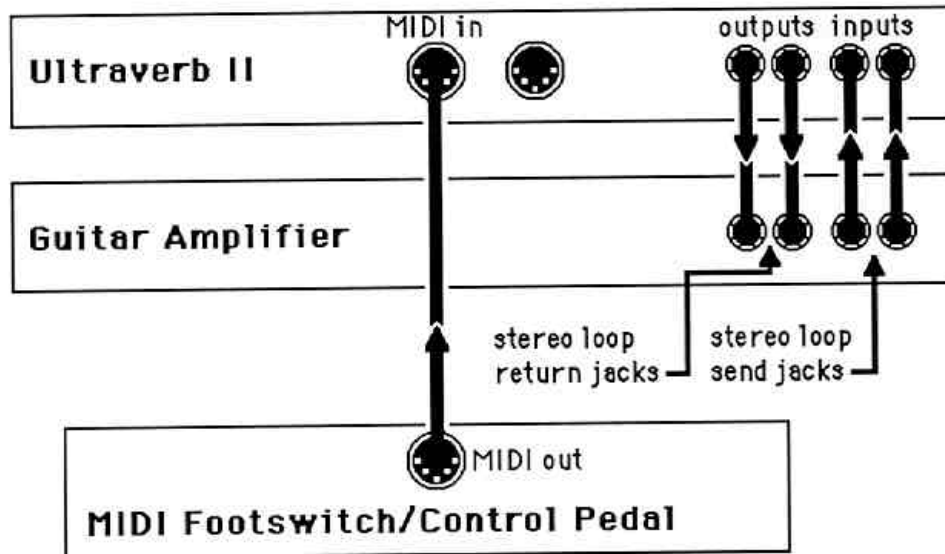
Plug the output of the AC adapter supplied with the Ultraverb II into the 16VAC power jack. *Do not use any other adapter—this may damage your unit and void the warranty.*

The Ultraverb II has no on-off switch. Plug the AC adapter transformer and your other gear into a switched barrier strip so that turning off the barrier strip turns off all power.

## 1.1D Setting Levels

For the best signal-to-noise ratio, turn up the Input Level control so that the Clip/Signal LED is green most of the time. An occasional red flash is acceptable, but consistent flashing means you should turn down the Input Level. Effect Mix varies the blend of dry (full counterclockwise) and processed (full clockwise) signals; set halfway for a 50-50 mix. Set Output Level as required to interface with the rest of your system.

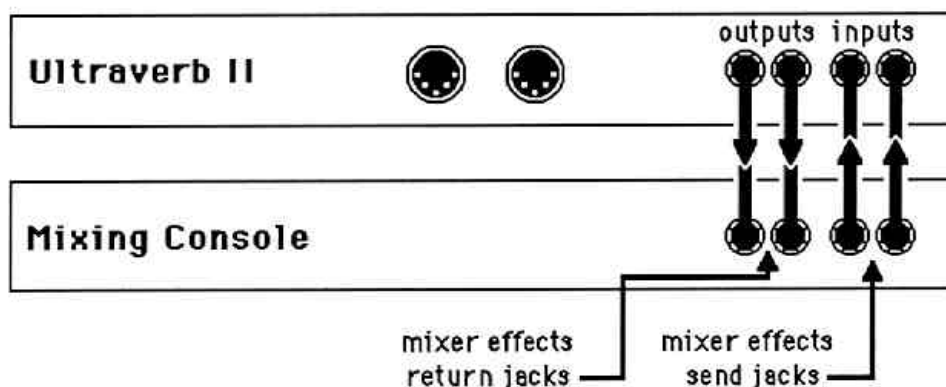
## 1.1E Typical Hookup 1: Guitar Amplifier with Optional MIDI Footswitch



The Ultraverb II plugs into the stereo effects loop of a guitar amp. If the loop level is adjustable, it should be set to line level (not guitar level). If the loop is mono, plug the loop send into the Ultraverb II left/mono jack, and patch either Ultraverb II output into the loop return jack. Set the Ultraverb II's

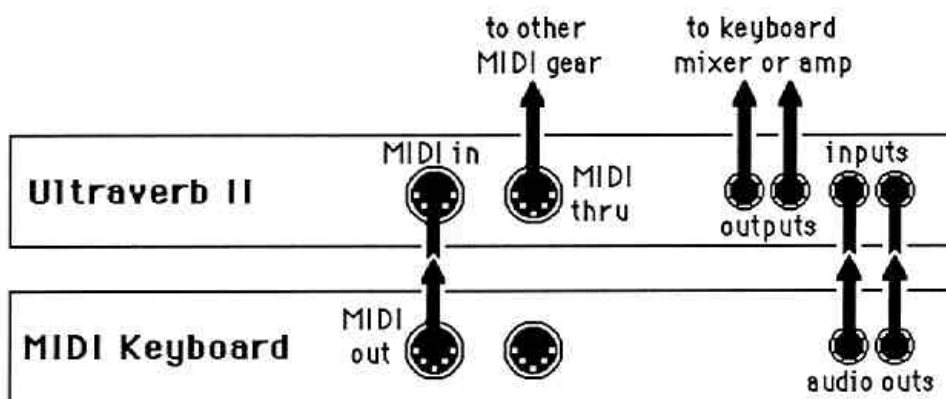
Effect Mix control for the desired amount of processed signal. An optional MIDI footswitch (for program change control) and/or control pedal (to vary a parameter in real time) can connect to the MIDI in.

### 1.1F Typical Hookup 2: Interfacing with a Mixing Console



Generally, you'll want to insert the Ultraverb II into the mixing or PA console's stereo effects send/return connections. Set the Ultraverb II's Effect Mix control fully clockwise so that it passes only the processed signal; adjust the mixer's send levels for the proper Ultraverb II signal level (as indicated by the Clip/Signal LED), and use the mixer's return controls to set the desired blend of processed sound in relation to the overall mix.

### 1.1G Typical Hookup 3: Using the Ultraverb II with a MIDI Keyboard



Patch the keyboard's audio outputs into the Ultraverb II's inputs, then send the Ultraverb II's outputs to a keyboard mixer or other amplification system. Patch the keyboard's MIDI out to the Ultraverb II's MIDI in; this allows the Ultraverb II to change patches as you change programs on the keyboard, as well as respond to keyboard parameters such as pressure, pitch bend, etc.

## Part 2: Ultraverb II Basic Operation

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### 2.0 About Ultraverb II Patches

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The Ultraverb II's 600 patches are divided into:

- 300 Factory preset patches (F000-F299). These are permanently stored in ROM memory and cannot be overwritten. However, they can be edited and saved to one of the...
- 300 User patches (U000-U299). These are stored in battery-backed RAM. User patches can be edited and saved to any of the user memory patch locations.

Many musicians and engineers like the convenience of simply dialing up particular patches as needed and do not want to spend time editing. The 300 Factory patches have been carefully programmed to cover most common musical needs, and for many users, these patches will be all that is needed.

For those with unusual applications or who want to customize existing patches, the quickest approach is to select a Factory patch that's close to what you want, edit it, then save it as a User patch.

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### 2.1 Selecting Patches

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There are two main Ultraverb II modes, *Patch* (for patch selection) and *Edit* (for editing the selected patch or MIDI parameters). If any of the bicolor LEDs (located between the two rows of number buttons) is lit, the Ultraverb II is in edit mode; otherwise, it's in patch mode. To select patches:

1. If necessary, press PATCH to enter patch mode.
2. The USER/FACTORY button toggles between User and Factory patches, as indicated by a U or F in the display respectively. Select User or Factory, as required.
3. Enter the three-digit patch number with the number keys. For single- or two-digit patch numbers, enter a "leading 0." *Example:* To select patch 64, enter 064.
4. The number you entered will flash. The previously-selected patch will remain active as long as the number is flashing. This feature lets you cue up a new patch at any time, then have it take effect as described in the next step.
5. To activate the new patch, press PATCH. The display will stop flashing and the new patch will be active.

You can also select the next higher-numbered patch by pressing + and the next lower-numbered patch by pressing -. *Example:* If the display shows **F008**, press + to select **F009** or - to select **F007**. This method of patch selection activates the new patch as soon as you press either the + or - button; the display doesn't flash, and you need not press PATCH.

### Notes

- If you enter a number larger than 299, the display will flash for several seconds to scold you for entering an illegal number and then revert to the previously-selected patch number.
- It is not necessary to enter all three digits if you only want to change the last one or two digits. *Examples:* To change from patch 100 to patch 101, enter 1 (display shows **101**, with the last digit flashing) then press PATCH. To change from patch 234 to 273, enter 73 (display shows **273**, with the last two digits flashing) then press PATCH.
- When switching between the Factory and User patches, the Ultraverb II remembers the previously selected patch. *Example:* Suppose you select Factory patch **F079**, toggle over to the User patches by pressing **USER/FACTORY**, then select User patch **U104**. If you press **USER/FACTORY** again, the Ultraverb II will return to patch **F079**. If you press **USER/FACTORY** again, the Ultraverb II will return to patch **U104**.

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## 2.2 Editing Basic MIDI Parameters

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Although the Ultraverb II works just fine as a stand-alone, plug-in-and-play processor, it can also be used as part of a MIDI system and be controlled via a sequencer, MIDI keyboard/guitar/drum pad/wind controller, MIDI footswitch, or other MIDI controller. These can call up Ultraverb II patches on command, or change parameters in real time. To enter the world of MIDI control:

1. Press EDIT.
2. Press MIDI UTILITY.
3. There are four "pages" of options. Successive presses of MIDI UTILITY take you to each page in the following order. (Note: if you had previously selected a particular MIDI Utility page, it will be re-selected the next time you press MIDI UTILITY. In an initialized unit, the Select MIDI Channel page always shows up first.)



## 2.2A Select MIDI Channel

**CH** Selects the MIDI channel over which the Ultraverb II will receive MIDI commands. Use + and - to select a channel from 1 to 16, or scroll past 16 to select **o** (Omni; receives messages appearing on any of the 16 MIDI channels).

## 2.2B Program Change Response

**PC** Determines whether the Ultraverb II will respond to program change messages. Press + for **yes** (responds to changes), - for **no** (ignores changes).

## 2.2C Convert MIDI Out to MIDI Thru

**EC** The MIDI out can "echo" data appearing at the MIDI in, thus turning the MIDI out into a MIDI thru. Press + to echo data, - to leave MIDI out as out only.

*Note*

Ultraverb II system exclusive messages that appear at MIDI in (from, for example, a sys ex librarian or other Ultraverb II) will *not* be echoed.

## 2.2D Dump User Patch Data Via MIDI System Exclusive Messages

**db** Patch information can be dumped as MIDI system exclusive data through the MIDI out jack, and captured by a MIDI system exclusive storage device such as the Peavey MIDI Streamer, DPM 3, DPM SE, etc. Since this data can later be loaded back into the Ultraverb II, system exclusive dumps are a convenient way to back up the internal user patches to guard against loss, or build up a library of custom patches.

To dump patch information as sys ex:

1. Connect the Ultraverb II MIDI out to the system exclusive storage device's MIDI in.
2. Set up the storage device to receive MIDI data (refer to the particular piece of equipment's manual). Make sure it is set to the same MIDI channel as the Ultraverb II (if the Ultraverb II is set to Omni, set the storage device to channel 1).
3. Choose which patches to dump with the + and - buttons, as shown in the display:



db 0 Dumps patches U000-U099  
db 1 Dumps patches U100-U199  
db 2 Dumps patches U200-U299  
dALL Dumps patches U000-U299 and all global parameters (program mapping, MIDI parameters, etc.)

4. Press EXEC. The display shows - - - for the duration of the dump; the storage device should indicate that it is receiving MIDI data.

*Note*

- A group of 100 patches under 5,000 bytes of sys ex storage. "Dump all" requires under 15,000 bytes of sys ex storage.
- Some sys ex storage devices have limited memory capacities. If such a device cannot accept a dump of all patches, save each group of patches individually.

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## 2.3 MIDI Bank Selection

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The original MIDI spec only allowed for 128 different patches, and with devices like the Ultraverb II that include several hundred patches, this is not sufficient. MIDI Bank Select messages, a relatively recent addition to the MIDI spec, select individual banks of 128 patches to circumvent the 128 program limit. Although only a limited amount of MIDI gear can send Bank Select messages at this time, Peavey has included the bank select option to help forestall obsolescence.

The following Bank Select messages select the following patch groups:

000 U000-U099  
001 U100-U199  
002 U200-U299  
003 F000-F099  
004 F100-F199  
005 F200-F299

Individual programs can also be selected within a bank, as described next.

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## 2.4 MIDI Program Change Mapping

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Sending MIDI program change messages from a sequencer, MIDI footswitch, keyboard, etc. can select various Ultraverb II patches. *Mapping* allows any of the 128 MIDI program change messages (000-127) to select a particular patch.

*Example:* Program change 001 does not have to select patch F001 or U001 but could be mapped to select patch F073, or U199, or for that matter any User or Factory patch. To set up a program change map:

1. Press EDIT.
2. Press MIDI (MAPPING).
3. Use the +/- buttons to select the MIDI program change number that should select a particular patch. The display shows **P** and the three-digit program number.
4. Press INT (MAPPING).
5. Use the +/- buttons to select the Ultraverb II patch to be called by a particular MIDI program change number. Scrolling past the F299 accesses the user patches.
6. Repeat steps 2-5 to map more patches.

### Notes

- With MIDI (MAPPING) selected, scrolling past 127 selects **init**. This initializes mapping so that MIDI program change 000 calls up Ultraverb II patch F000, program change 001 calls up patch F001, etc. up to program change 127 calling up patch F127.
- With MIDI (MAPPING) selected, scrolling below 000 selects **off**. The Ultraverb II now responds only to program changes between 000-099; these affect the current bank of 100 patches (selected either via the front panel or from MIDI Bank Select commands).
- *MIDI Weirdness Alert!* Not all units that generate MIDI program changes number them as 000-127. Some use 001-128 and some number changes in (groan) "octal." If this becomes confusing, initialize the program change map, then make a chart that shows which program changes from the master unit call up which Ultraverb II patches.

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## 2.5 Initialization

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Initialization clears all User memory locations and runs a self-test routine on the Ultraverb II's internal software. *Caution: If you have User programs that you want to keep, save them via system exclusive storage (section 2.2D) since all your work will be wiped out during the initialization process! You can then reload the programs after initialization is complete.*

There are two main reasons you might want to initialize:

- Peavey's engineers are seemingly never satisfied, and may announce upgraded software at a later date that requires installing a new EPROM chip. It is usually necessary to initialize after EPROM installation.

- The Ultraverb II "locks up" (the buttons have no effect) due to some unforeseen problem such as a huge spike on the power line, static electricity discharge, etc. This is a very rare occurrence but should it happen, initialization will often unscramble the unit's memory and save you a trip to the repair shop.

To initialize:

1. If the Ultraverb II is on, turn off power by unplugging the AC adapter transformer.
2. Wait 30 seconds.
3. Press and hold the + and 9 buttons, and *keep them held down* while turning on power. Keep holding these two buttons down until the display shows **init**.
4. Release the buttons. The Ultraverb II is now initialized.

## Part 3: Editing

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### 3.0 About Ultraverb II Algorithms

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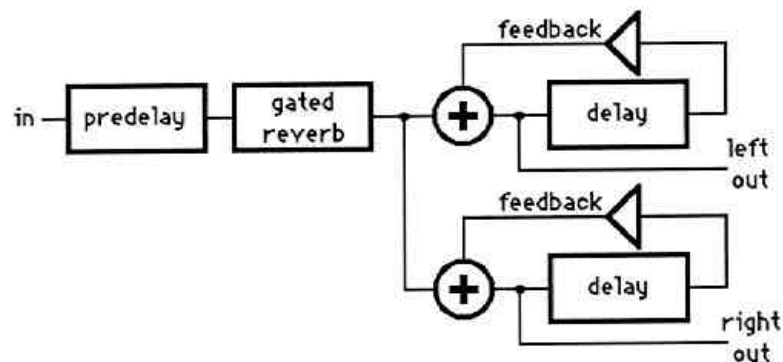
The Ultraverb II includes four "modules" other than reverb: chorus, delay, equalization, and "exciter" (a unique tone-enhancing circuit that relies on phase and amplitude changes). Different patches use different combinations of these modules, from a single module to up to four modules. A particular combination is called a *multieffects algorithm* or simply an *algorithm*. (The delay actually provides two modules in many algorithms—a pre-delay that goes at the beginning of the algorithm and a tapped or stereo delay that goes at the end of the algorithm.)

The Ultraverb II offers a wide variety of algorithms, as shown on the patch chart included with the Ultraverb II. Most of these are editable but some special-purpose algorithms are not.

In an editable algorithm, each module has several editable parameters. Editing is the process of changing parameters to customize the sound to your liking. The edited sound can then be saved to a User patch location, overwriting any existing data in that location.

Following is a series of block diagrams of the available multieffects algorithms (along with each associated display mnemonic, described later, that identifies the algorithm).

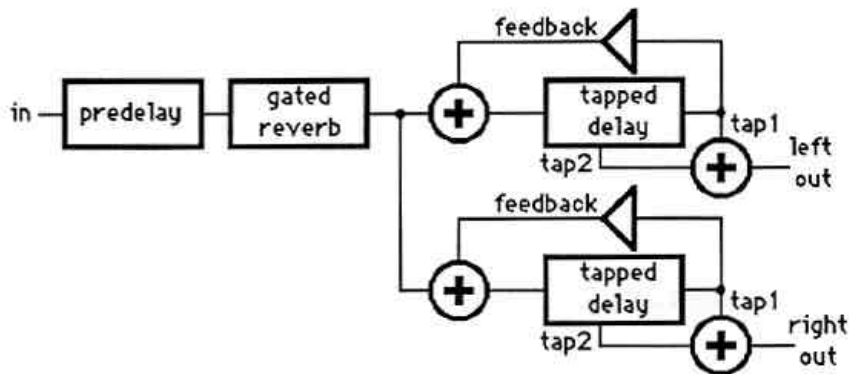
#### 3.0A Predelay->Gated Reverb->Stereo Echo (gtSE)



Note that each channel's output is taken from the associated delay input,

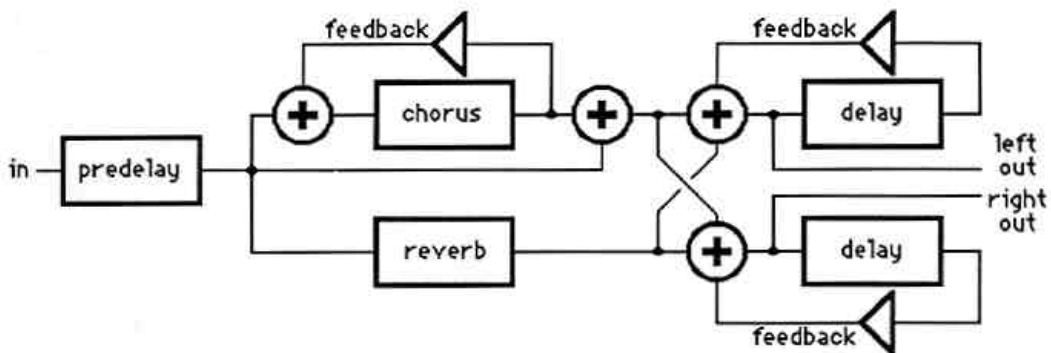
but is post-feedback. As a result, the feedback setting must be greater than 0 for any delay effects to be audible. Setting feedback to 0 is equivalent to turning off the delay.

### 3.0B Predelay->Gated Reverb->Tapped Echo (gttE)



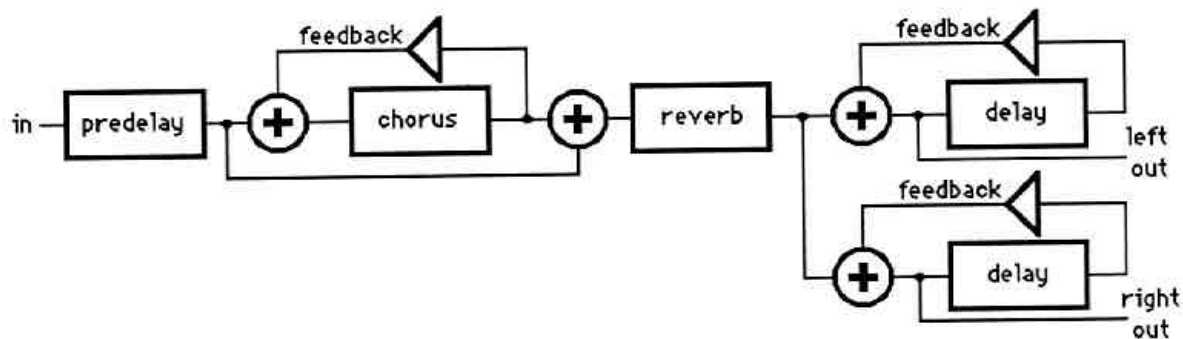
With tapped echo, the feedback is derived from the longest tap (tap 1).

### 3.0C Predelay->Reverb+Chorus->Stereo Echo (rCSE)



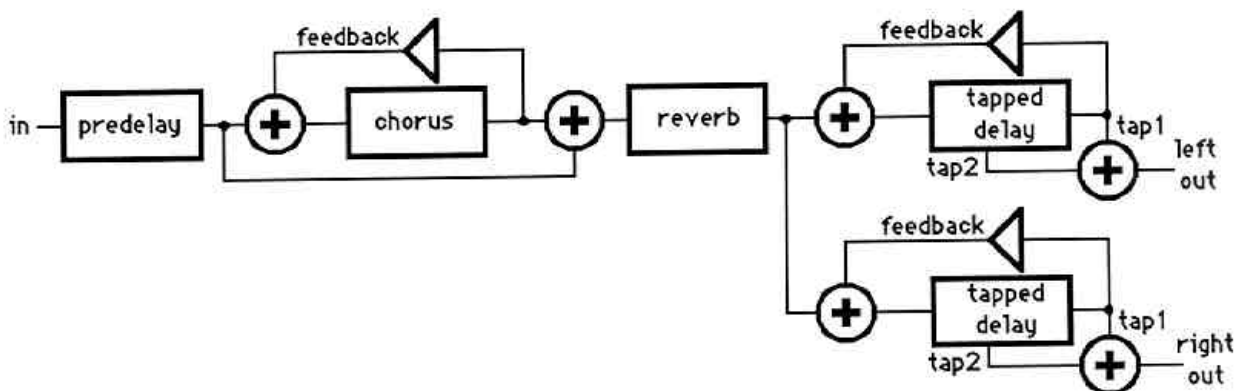
The Chorus and Reverb signals are both summed in the right and left channels.

### 3.0D Predelay->Chorus->Reverb->Stereo Echo (CrSE)

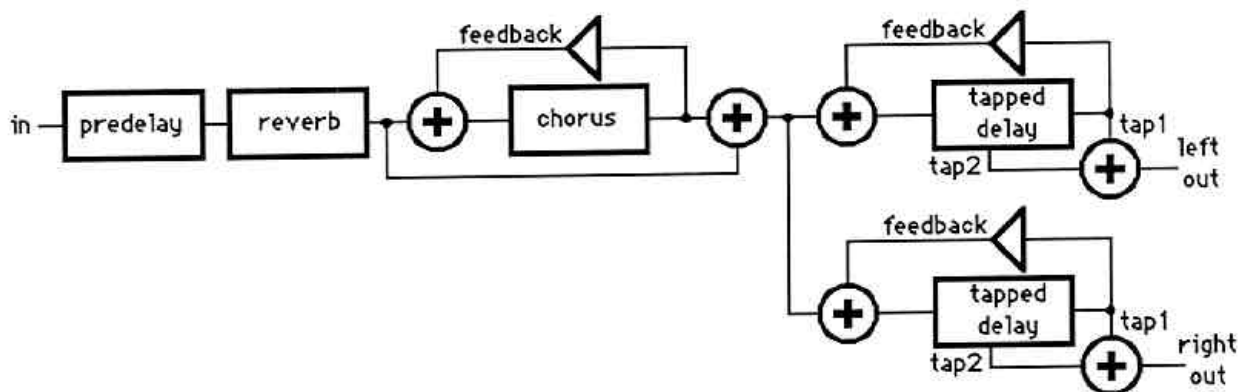


Since the chorus has up to 340 ms of delay, it can serve as an extra delay.

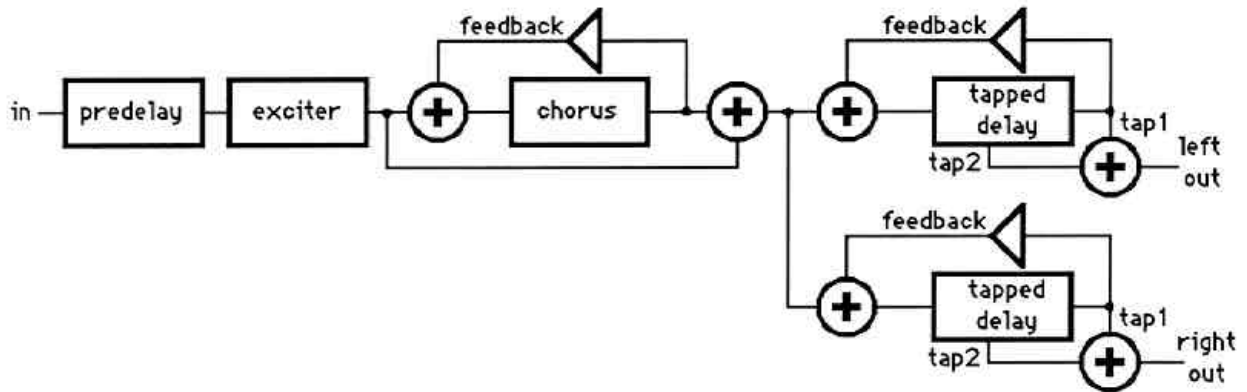
### 3.0E Predelay->Chorus->Reverb->Tapped Echo (CrTE)



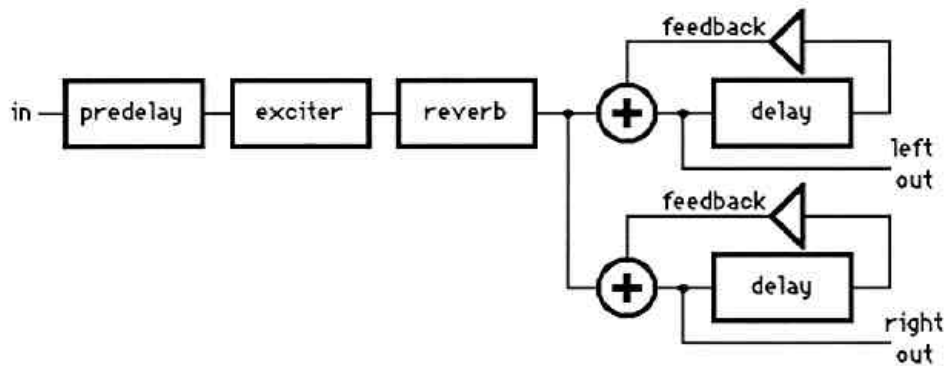
### 3.0F Predelay->Reverb->Chorus->Tapped Echo (rCTE)



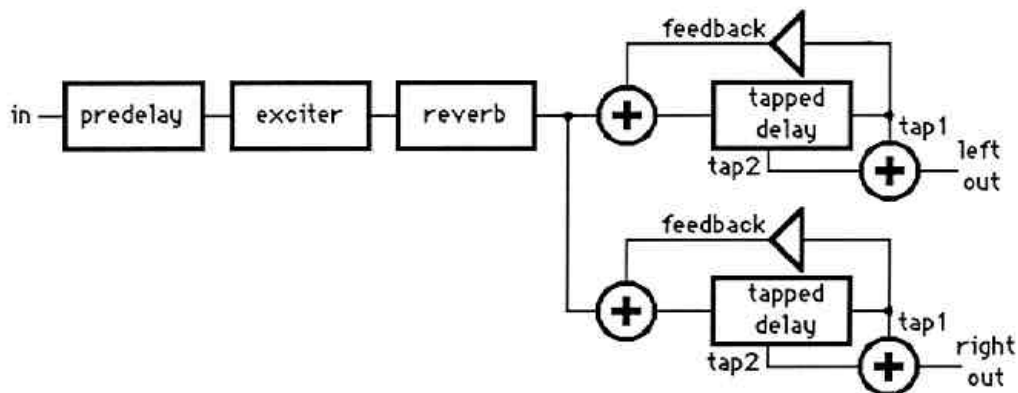
### 3.0G Predelay->Exciter->Chorus->Tapped Echo (ECtE)



### 3.0H Predelay->Exciter->Reverb->Stereo Echo (ErSE)

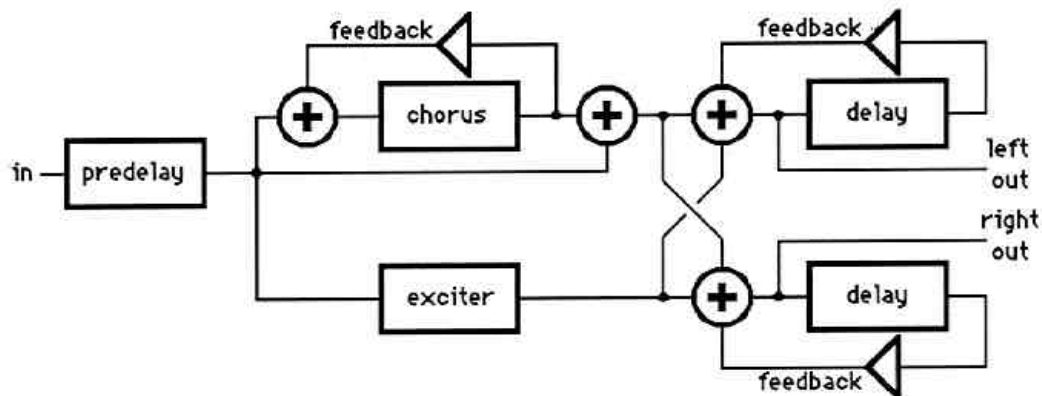


### 3.0I Predelay->Exciter->Reverb->Tapped Echo (ErtE)

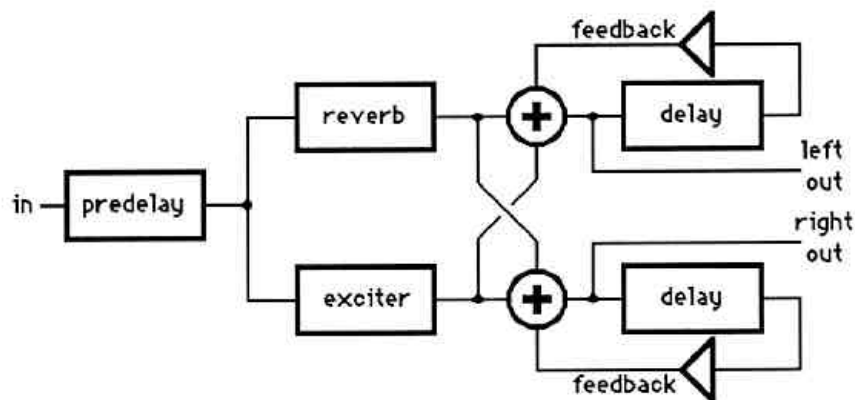




### 3.0J Predelay->Exciter+Chorus->Stereo Echo (ECSE)



### 3.0K Predelay->Exciter+Reverb->Stereo Echo (ErSE)



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## 3.1 Getting Around the User Interface

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Clever use of two-color LEDs and some fairly descriptive display abbreviations make programming surprisingly simple once you get the hang of it. When editing, the number buttons become edit function buttons. A green LED relates to the upper row of "module" buttons, while a red LED relates to the lower row of MIDI/execute buttons.

The basic parameter editing protocol is:

1. Call up the patch to be edited (Factory or User, but Factory patches can only be saved to User locations). This patch should contain the type of

algorithm you want to edit since the algorithm itself cannot be edited.

2. Press and *hold* EDIT to start the "light show." The green LEDs will light, in order, to show which modules make up the algorithm. After a brief pause, as long as EDIT remains held down, the green LEDs will cycle through again. The display will also show an abbreviation for the algorithm. *Example:* With the algorithm Pre-delay -> Exciter -> Chorus -> Tapped Echo, first the Delay button lights, then the Exciter, then Chorus, then Delay again (remember, the Delay can often provide two delay modules in the algorithm). Meanwhile, the display shows ECtE (for Exciter, Chorus, tapped Echo).

(Note: you can also trigger the light show while in patch mode by pressing and holding the PATCH button. This makes it easy to see which algorithm a patch uses.)

3. Press the button for the module you want to edit. If the associated LED won't light, that means the module is not contained in the algorithm. If no LEDs can be lit, the algorithm can't be edited.

4. The display's left side will show the abbreviation for a module parameter (e.g., rSL for Room Size Left); the right side, the parameter value.

5. If desired, change the parameter value with the +/- buttons.

6. Each module has multiple parameters. Press the module button again to access the next parameter. If desired, change the parameter value with the +/- buttons.

7. Repeat step 6 until all parameters are set as desired. Eventually you'll return to the parameter that appeared when you first pressed the module button.

8. Move on to the next module to be programmed.

9. If you want to save your masterpiece, do so. If you select a different patch without first saving your edits, the patch parameters will revert to what they were before you started editing.

The procedure for programming MIDI parameters is similar but will be described in detail in section 3.4.

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## 3.2 Parameter Descriptions

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The following shows all parameter abbreviations, full names, range of allowable values, and a description of how each parameter affects the sound. Not all parameters are available for all algorithms. *Example:* If a reverb algorithm includes individual left and right room size parameters, it will not include a master room size parameter because that would be redundant.

### 3.2A Reverb

*Reverberation* simulates what happens to sound in an acoustic space: it bounces off walls, gradually losing its energy (and generally its high frequency response) over time. *Gated reverb* is a special type of reverb that, rather than decaying to nothing, abruptly cuts off after a settable amount of time. This effect was popularized by the Phil Collins/Peter Gabriel drum sounds of the 80s and is so called because it was originally created by adding a noise gate after a standard reverb sound. With *Reverse reverb*, the reverb level increases over time rather than decreases.

<b>Er</b>	<b>Early Reflection Pattern</b>	<b>0-3</b>
	Sets the character of the initial reverb reflections, and whether the initial reverb sound is more "scattered" or "tight."	
<b>rS</b>	<b>Room Size</b>	<b>0-3</b>
	Alters the room size, from small to large.	
<b>rSL</b>	<b>Room Size Left</b>	<b>0-4</b>
	Similar to above, but used with dual reverb algorithms. Lets you create different spaces in the left and right channels.	
<b>rSr</b>	<b>Room Size Right</b>	<b>0-4</b>
	See above.	
<b>t</b>	<b>Decay Time</b>	<b>00-99</b>
	Determines how long it takes for the reverb to decay into nothingness. In a multiple effects algorithm, a decay time of 0 will turn off the reverb and pass the input signal directly to the next stage.	
<b>tL</b>	<b>Decay Time Left</b>	<b>00-99</b>
	Similar to above, but used with dual reverb algorithms. Lets you create different decay times in the left and right channels.	
<b>tr</b>	<b>Decay Time Right</b>	<b>00-99</b>
	See above.	

- di Input damping** **0 or 1**  
When set to 1, filters highs from the input signal to produce an overall less bright reverb sound.
- dt Tail damping** **0 or 1**  
When set to 1, inserts a high-cut filter in the reverb feedback loop so that the signal becomes less and less bright as it decays.
- dl Tail Damping, Left** **0 or 1**  
Similar to above, but used with dual reverb algorithms. Lets you set damping independently for the left and right channels.
- dr Tail Damping, Right** **0 or 1**  
See above.
- SLP Gate Slope** **0-2**  
0 provides the most abrupt reverb cutoff, 1 a somewhat gentler reverb slope, and 2 a reverse reverb slope .
- t Gate Time** **000-.510 sec**  
Sets the time after which the gated reverb effect cuts off.

### 3.2B Chorus

*Chorus*ing simulates the sound of instruments playing *en ensemble* by creating a duplicate of the signal to be chorused, then slightly delaying it and modulating (sweeping) the delay time to create a subtle pitch shift. Chorusing helps thicken up the sounds of guitars, voices, synthesized strings, pads, and gives a sound more "texture."

At short delays (under 20 ms, but generally less than 15 ms), selecting a wide sweep range and slow modulation rate creates an effect called *flanging*. This produces a spacey, jet-airplane-like sound.

Note that when chorus is in a multiple effects algorithm, the output contains the chorus input signal mixed with the chorused signal.

- r Rate** **000-255**  
Varies the rate at which detuning occurs. Faster rates give more of a vibrato effect, slower rates a more grandiose "rolling" sound.
- d Depth** **000-255**  
Alters the amount of detuning. Lots of depth can create an out-of-tune feel unless the rate is very slow.

- t Delay Time** 000-.255 sec.  
Sets the initial delay of the duplicate signal.
- Fb Feedback** 00-94%  
Recirculates a variable amount of the output signal back to the input. Higher feedback percentages give a more intense, sharp sound.

### 3.2C Delay

*Delay* is different from reverb because delay produces discrete repetitions of a sound rather than creating a reverberant "wash" of sound. *Pre-delay* is often added before reverb since in an acoustic space, there will be a slight delay before waves emanating from the signal source start bouncing off of walls. Adding feedback produces a series of echoes, which each successive echo softer than the previous one.

- P Pre-Delay** 000-.255 sec  
Sets the amount of time before a signal is affected by other modules in a multi-module algorithm.
- L Left Delay** 000-2.00 sec (max)  
Determines the left channel signal delay time. Maximum delay time depends on the algorithm being used, and can vary from as little as .255 sec to 2.00 sec.
- r Right Delay** 000-2.00 sec (max)  
Same as above, but for the right channel.
- FL Feedback, Left** 00-94%  
Recirculates a variable amount of the left channel output signal back to the input to create a series of echoes that trails off.
- Fr Feedback, Right** 00-94%  
Same as above, but for the right channel.
- tF Tapped Feedback** 00-94%  
Provides multiple feedback signals at various delay times. Creates a "polyrhythmic" echo effect rather than the standard repetitive delay.

### 3.2D Equalization

*Equalization* (EQ for short) boosts or cuts response at specified frequencies to alter a sound's tonal characteristics. With a *lowpass* response, signals below a specific cutoff frequency are either boosted or cut. With a *highpass* response, signals above a specific cutoff frequency are either boosted or cut. A bandpass response boosts or cuts at a specific resonant frequency. The bandwidth setting determines the range of frequencies that are boosted or cut.

The Ultraverb II's EQ is a two stage type with each filter section connected in series. Thus, one stage could boost the bass, while the other stage provides a bandpass response at a higher frequency.

Each of the following parameters is preceded by a 1 or 2, indicating whether the parameter is part of the 1st or 2nd stage. XX indicates a two-digit number, YY two letters.

**YY Filter Type** **Lo, bP, Hi**  
Chooses the type of filter response: lowpass (Lo), highpass (Hi), or bandpass (bP).

**F.XX Filter Frequency** **.060-6.4 kHz**  
Sets the cutoff frequency for Lo or Hi modes, and the resonant frequency for the bP mode.

**b, cXX Amount of boost or cut** **0-24 dB**  
Determines the degree to which the selected frequencies will be either boosted or cut.

**o Bandwidth** **.09-2.5 octaves**  
Varies the range of frequencies to be boosted or cut. Smaller numbers give a sharper, more resonant response.

### 3.2E Exciter

The *Exciter* effect enhances a sound through a unique combination of phase shift and amplitude changes at various frequencies. Rather than spend the next three pages trying to describe what it does, just play with it and listen—you'll like it.

**F Frequency** **00-15**  
Determines the frequency at which excitement takes place. A setting of 0 will turn off the exciter, but setting the Contour parameter to 0 is preferable.



Controls the amount of excitation. A setting of 0 will shut off the exciter.

---

### 3.3 Saving Edited Patches

---

Before getting into MIDI control, here's how to save your work.

1. After doing your edits, press **USER/FACTORY** (which in this case assumes its alternate persona as a **STORE** button).
2. **U** will flash to remind you that you can only save to a User memory location.
3. Select the desired patch location with the +/- buttons.
4. Press **USER/FACTORY** a second time. The display shows **donE** to confirm that your work has been stored in the selected patch.

#### *Notes*

- You can back out of the saving process any time before step 4 by pressing any key except **STORE** or **PATCH**.
- If you are in edit mode, have altered parameters, and then select patch mode, the display will nervously flash the patch number. This is the Ultraverb II's way of saying "Hey! You've edited this patch! Do you want to save it or not?" If not, just select another patch in the normal way. Otherwise, press **EDIT** to scoot back into the edit mode, and save the patch as described above.

---

### 3.4 MIDI Dynamic Control

---

Real-time control of signal processing parameters via MIDI is one of the great remaining frontiers of musical electronics. Sure, that sounds like hype, but once you get into it you'll be hooked. Guaranteed.

Parameters can be altered by the following types of MIDI messages (the abbreviation in bold is the mnemonic used in the display):

- Continuous Controllers 1-120; 32 and 96-101 are omitted (**CXXX**, where XXX is a three-digit number)
- Pitch wheel (**PiCH**)
- Monophonic or polyphonic pressure (**PrES**)
- Velocity (**UELC**)
- Note number (**notE**)



Here are some typical applications to give you an idea of the power of MIDI control:

- With keyboards, increase echo feedback when you bend pitch to leave a trail of echoes with bent notes. Use the mod wheel (or pressure) to increase chorus depth. Set up the chorus to simulate a rotating speaker sound, then use pressure to vary the rate so you can speed up or slow down the "speaker" by the amount of pressure you apply.
- With sequencers, automate the mixdown process by sequencing controller changes to bring reverb in and out, or increase reverb time drastically for that one mondo snare hit that comes in right after that dramatic pause before the hook.
- With guitar, use a continuous controller footpedal to vary parameters like delay feedback in real time. For a real kick in the studio, sequence these changes so you don't have to work the pedal and can concentrate on your playing.

You can select one parameter for MIDI control, along with its associated controller, for each patch. This assignment is memorized with the patch.

Programming consists of choosing the MIDI controller, the parameter to be controlled, and the amplitude scaling. These are all separate pages that are accessed by pressing the MODS button repeatedly.

1. If the Ultraverb II is not in edit mode, press EDIT.
2. Press MODS (red LED goes on above it). The display will tell you which page you're on:
  - If the left side shows **A** and the right side a two-digit number, you're in the amplitude scaling page.
  - If the display shows **C** followed by a three digit number, **PiCH**, **PrES**, **UELC**, or **notE**, you're in the MIDI controller selection page.
  - If the display shows some strange combination of letters (as de-mystified below), you're in the parameter-to-be-controlled page.
3. Select the MIDI controller page.
4. Use the +/- buttons to select the desired controller.
5. Press MODS again; you'll land on the parameter-to-be-controlled page. The chart below shows the display abbreviation and the full parameter name. Not all parameters lend themselves equally well to MIDI control so only the following parameters are modulatable via MIDI:

Ch r	Chorus Rate
Ch d	Chorus Depth
re t	Reverb Time (both left and right)
retL	Reverb Time Left
retr	Reverb Time Right
dLtP	Delay Pre-Delay
dL t	Delay Time (both left and right)
dLlL	Delay Time Left
dLtr	Delay Time Right
dLFb	Delay Feedback (both left and right)
dLFL	Delay Feedback Left
dLFr	Delay Feedback Right
dLFt	Delay Tapped Feedback

Another option, **off**, disables MIDI controller response.

- Use the +/- buttons to select the desired parameter to be controlled.
- Press MODS again to select the amplitude scaling page. The parameter value as programmed in the patch is the nominal value which will be either increased or decreased by the MIDI controller.

The scaling parameter is variable from -99 to 99. The closer the setting is to 0, the more the controller signal is attenuated. Thus, if you're using a pedal and want the full pedal to create only a small change, set a value close to 0. If you want it to create the maximum possible change, set a value closer to 99.

A negative number inverts the pedal motion. Example: If a setting of 99 increases the delay feedback as the controller value increases, a setting of -99 *decreases* the delay feedback as the controller value increases.

- After editing the MIDI parameters, remember to save the patch (section 3.3).

#### *Note*

It is helpful to understand how different controller values affect parameters. It is assumed that the controller works like a pitch bend wheel, which normally produces a value of 64. This value has no effect on the parameter being controlled. Rotating the pitch wheel away from you produces values 65-127 and increases the parameter, rotating it toward you produces values 0-63 and decreases the parameter. *Examples:* With a parameter that goes from 00-99 set to 0, a controller sweep of 64-127 will sweep the full range. If the parameter is set to 50, then 64-127 scaled to 50% will sweep the parameter from 50-99, and 0-64 scaled to 50% will sweep the parameter from 00-50.

---

## 3.5 Troubleshooting

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The Ultraverb II is a pretty non-critical piece of gear. Nonetheless, if something doesn't appear to be working, consider the following possibilities:

*MIDI dynamic control doesn't work*

- Is the correct MIDI channel selected? (section 2.2A)
- Is amplitude scaling set to 00? (section 3.4)
- Has dynamic control been turned off for that particular patch? (section 3.4)
- Is the MIDI controller source actually generating messages, and is the MIDI cable connected?

*No green LED goes on when pressing a module button*

- Is the algorithm you've chosen a non-editable one?
- Does the algorithm contain the module you're trying to edit?

*Program changes don't work right, or don't work at all*

- Is program change enabled? (section 2.2B)
- Have programs been mapped to the wrong patches? (sections 2.3, 2.4)

*MIDI thru doesn't work*

- Is MIDI Echo enabled? (section 2.2C)
- Are you trying to echo Ultraverb II sys ex data?

*My sys ex storage device won't store Ultraverb II patch data*

- Is there sufficient memory to hold a dump of all patches? (section 2.2D)
- Have you tried sending each User bank individually?

*Even though I used an Ultraverb II, my record didn't go gold*

- Does the song have a good hook and brilliant performances?
- Do you know how to endear yourself to radio program directors and record company promotion people?

## Appendix: Ultraverb II Specifications

### *Frequency Response*

Dry signal: 20 Hz - 20 kHz

Effect signal: 20 Hz - 15 kHz

### *Number of Programs*

300 Factory preset patches

300 User-programmable patches

### *Resolution*

16-bit linear PCM

### *Maximum Delay Range (either channel)*

0.0 - 2.00 seconds

### *Signal to Noise Ratio*

Dry signal: 100 dB minimum

Effect signal: 96 dB minimum

### *Recommended Input Level (either input)*

-20 dBv minimum, +10 dBv maximum

### *Nominal Output Level*

+6 dBv maximum

### *Headroom*

Active: 20 dB down from maximum

Limit: 6 dB down from maximum

### *Chorus LFO Modulation*

Rate: 0.1 Hz - 10 Hz

Depth: 0% - 100%

Waveshape: Sine wave

### *MIDI*

Modes: Poly/Omni/Off

Real time control signal recognized: Note number, velocity, pressure, pitch wheel, continuous controllers 1-120 (32 and 96-101 omitted)

Controllable parameters: 1 per patch

System exclusive: Dump or load by bank, or all

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**OR**

- b. Ship the defective item, prepaid, to:

PEAVEY ELECTRONICS CORPORATION  
International Service Center  
326 Hwy. 11 & 80 East  
MERIDIAN, MS 39301

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PEAVEY ELECTRONICS CORPORATION  
POST OFFICE BOX 2898  
MERIDIAN, MISSISSIPPI 39302-2898

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



## IMPORTANT SAFETY INSTRUCTIONS

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

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

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

According to OSHA, any exposure in excess of the above permissible limits could result in some hearing loss.

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

**SAVE THESE INSTRUCTIONS!**



Features and specifications subject to change without notice.

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