Exponential AUDIO

PhoenixVerb /R2

PhoenixVerb /R2

Welcome to *PhoenixVerb* and *R2* , two plugins from Exponential Audio. *PhoenixVerb* is an easy-to-use stereo reverb with the flexibility to fit into many sorts of mixes--music of all sorts, foley, FX, dialog--and it comes with a large assortment of built-in presets to get you right to work. *R2* has all of the features of *PhoenixVerb* with a different sound, as well as chorus and gate features. They both feature a novel keyword architecture that makes it easy to find just what you're looking for. And of course, they both sound great. *PhoenixVerb* is extremely pure and natural, while *R2* has the more active attributes that make it popular with users of 'vintage' reverbs.

PhoenixVerb and *R2* can work in any of the following formats:

- Mono
- Stereo
- Mono to Stereo

Most operations of the two plugins are identical (even though the sound is different). The *PhoenixVerb* graphics will be used for illustration, except for those features that are unique to *R2* .

1. System Requirements

1.1. Mac

These plugins require an Intel-based Mac running OSX 10.6 (Snow Leopard) or later. It does not run and will not be supported on older version of OSX. It has not been tested on non-Apple hardware (hackintoshes). While some users may have success on other system variants, those systems will not be tested or supported by Exponential Audio.

1.2. Windows

These plugins may be operated on Windows 7 or 8 as 32 or 64-bit plugins. Windows Vista is not recommended for audio applications and will not be tested or supported by Exponential Audio. Windows XP is not supported.

2. General Requirements

It is recommended that you use a multicore CPU with a clock speed in excess of 2 GHz. For processing of higher sample rates (especially 192K), something closer to 3GHz is a good idea.
It is recommended that you have *at least* 2GB of RAM in your system. The more RAM, the better.
It is recommended that your monitor have greater than 1024 x 768 pixels.

2.1. iLok

A second-generation iLok (iLok2) is required to operate these plugins. iLok is a product of Pace and may be purchased directly from www.ilok.com or from any music retailer. No form of non-iLok licensing is available or under consideration. That includes host-based licensing.

3. Supported Plugin Formats

3.1. Mac

- Audio Units 32/64-bit
- VST 32/64-bit
- VST3 32/64-bit[1]
- RTAS 32-bit under ProTools 9 or ProTools10. ProTools 7 is not supported and ProTools 8 has not been tested.
- AAX 32/64-bit

3.2. Windows

- VST 32/64-bit
- VST3 32/64-bit[1]
- RTAS - 32-bit
- AAX - 32/64-bit

The core features of the plugins are available in every format. Some extended features (such as ProTools GUI automation) may only be available in certain formats.

[1] VST3 bypass is not currently supported for Mac. VST3 is not recommended at the current time and is provided purely for cases in which it *must* be used.

4. Installation and Removal

4.1. Install the iLok License Manager

The iLok License Manager may be downloaded from www.ilok.com. Even if you already use the iLok, it's always a good idea to verify that your driver is up-to-date. Some systems may have an older iLok driver. This must be updated to the License Manager in order to use these plugins. Please be sure to install or update your driver before installing *PhoenixVerb* . But before doing so, please check any *read me* files in your installer package.

4.2. Make sure you have your license authorization

When you purchased these plugins (or decided to test a demo version) you will have received a license key (a long sequence of digits). That key must be entered into the License Manager and dragged to the appropriate iLok. Alternatively you may have received a message that your authorization is already waiting for you at iLok. In that case, simply drag the license to the appropriate iLok using the License Manager.

4.3. Run the Installer

You'll need administrator privileges to install, but no reboot is needed.
Windows users will need to set their DAWs to scan the plugin folders so the plugins can be loaded. Those locations are shown in the Where things go on Windows section.

4.4. To Uninstall

On Windows, *PhoenixVerb* and *R2* can be removed just like any other program. Launch the control panel for uninstalling programs, find the plugin, and remove it. On Mac, find the uninstaller script on the original installer disk image and run it. Your user presets will not be removed (just in case). See the following section to learn how to find those files if you wish to remove them.

4.5. Where things go on the Mac

Apple provides a very formalized set of locations for plugins and support files. You can find factory presets and other support files in:

/Library/Application Support/ExponentialAudio

The plugins go in specific areas for each plugin format:

- AU are in /Library/Audio/Plug-Ins/Components
- VST are in /Library/Audio/Plugin-Ins/VST
- RTAS are in /Library/Application Support/Digidesign/Plug-Ins/ExponentialAudio
- AAX are in /Library/Application Support/Avid/Audio/Plug-Ins/ExponentialAudio

Your user presets and favorites are stored in ~/Library/Application Support/ExponentialAudio/

4.6. Where things go on Windows

On 32-bit systems:

Shared components of the plugins are stored in C:\ProgramData\ExponentialAudio\
The DLL of PhoenixVerb is stored by default in C:\ProgramData\Vstplugins\
This may be changed during installation if the user wishes.

On 64-bit Systems:

Shared components of 32-bit plugins are stored in C:\ProgramData (x86)\ExponentialAudio\
Shared components of 64-bit plugins are stored in C:\ProgramData\ExponentialAudio\
The 32-bit VST DLLs of the plugins are stored by default in C:\ProgramData (X86)\Vstplugins\
This may be changed during installation if the user wishes.
The 64-bit Vst DLLs of the plugins are stored by default in C:\ProgramData\Vstplugins\
This may be changed during installation if the user wishes.

Your user presets and favorites are stored in YourName\AppData\Roaming\ExponentialAudio\

4.7. Logfiles

PhoenixVerb and R2 keep a logfile with diagnostic information that may be of use in the event of a problem. The location of that logfile may be seen on the info window.

5. Walkthrough

The following walkthrough will show you how to begin using your plugins.

5.1. The Plugin Windows

Note: The plugin window will be embedded in a window provided by your workstation program (not shown).

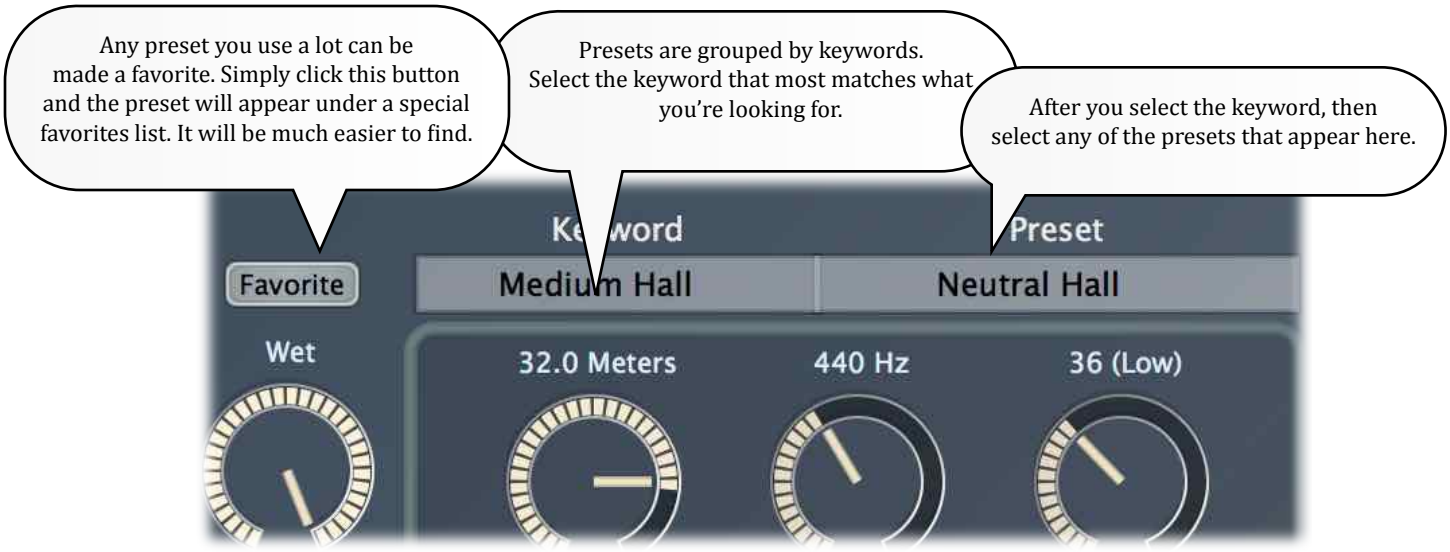
PhoenixVerb

R2

5.2. Loading Presets

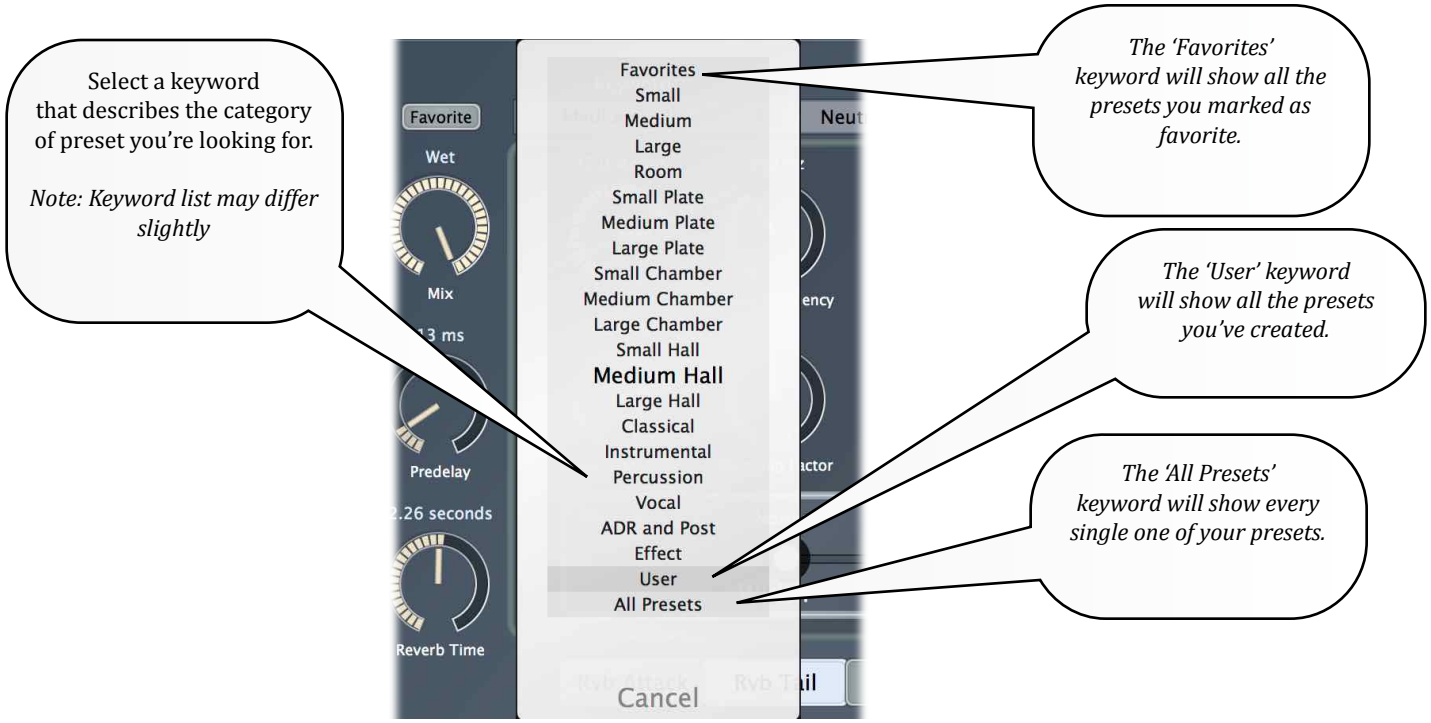
The first thing you'll want to do is to listen to the many presets that come with *PhoenixVerb* or *R2*. On the upper right corner of the plugin window, you'll see a pair of combo boxes (popup menus). The left box shows Keywords, which are something like the old idea of banks (but more powerful). The right box shows Presets (you might know them as patches) which are the actual sounds you can load.

Tip: In just a few more pages there are some tricks about changing keywords and presets rapidly.



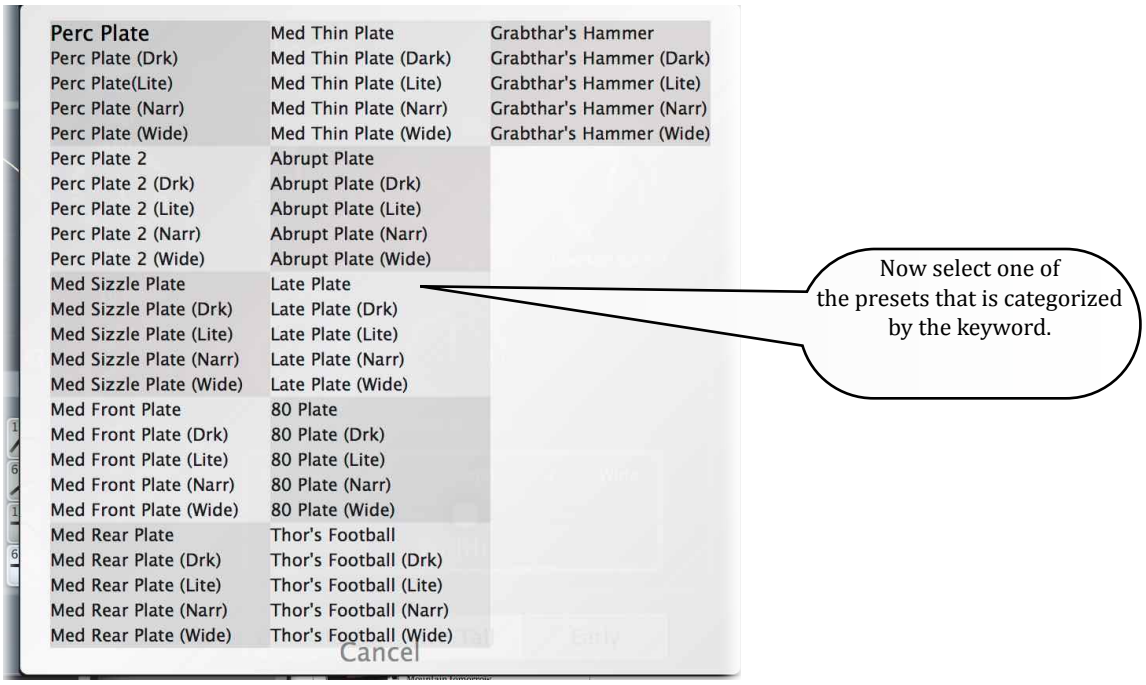
5.2.1. Keywords

Most mix engineers search for a preset that fits a specific need. Perhaps a small room for dialog. Perhaps a drum plate. Perhaps something for a wide exterior shot. Search for a keyword that describes the application. Remember that a preset might appear under several different keywords if the preset might be used in that application. When you create your own preset, you can use as many keywords as you like. You can even create your own!



5.2.2. Presets

Once a keyword has been selected, several presets will appear when you click the preset popup. Audition them until you find the right one. Don't be surprised to see the same preset showing up under several keywords--most presets have more than one application. This is the power of keyword organization. You can add keywords to any preset and save it for later use. If you don't like the choice of keywords, we'll show you how to create your own.



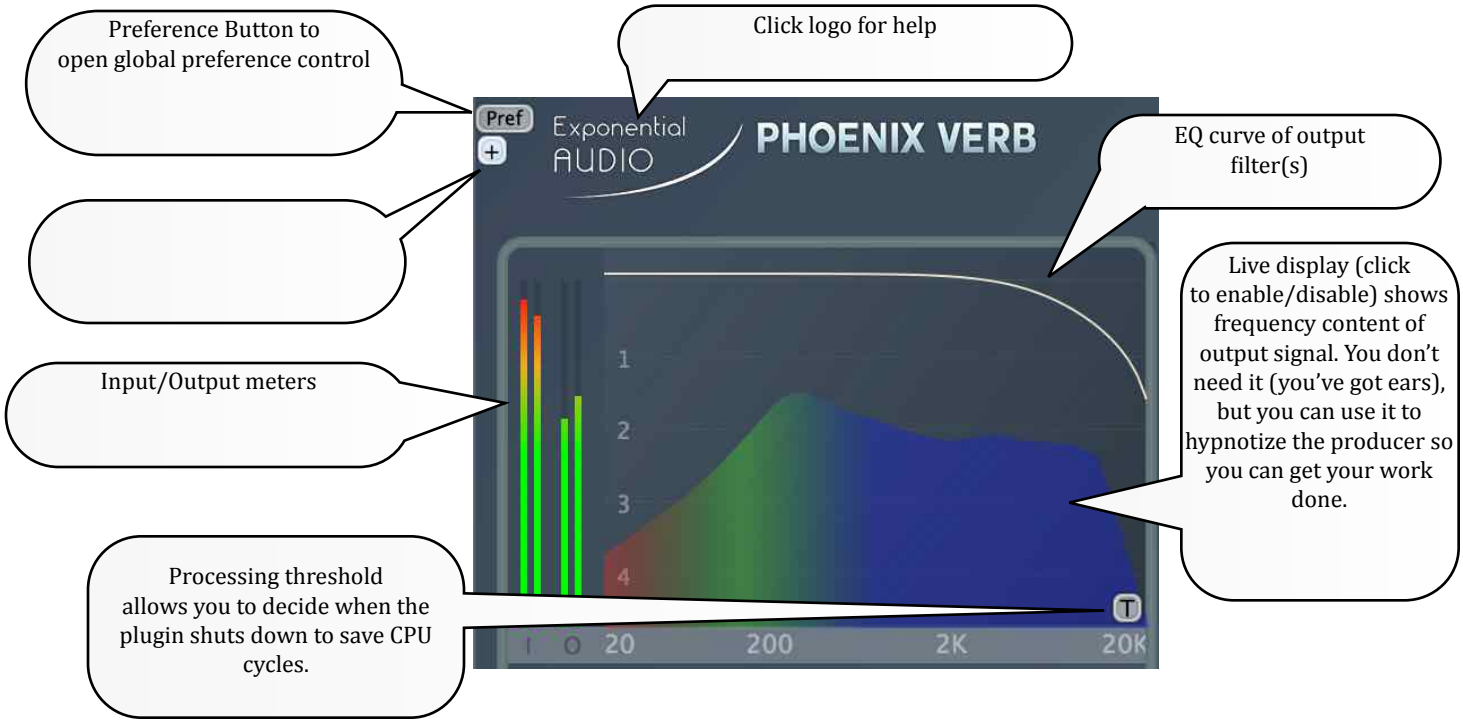
5.2.3. Tip for quick auditioning:

You actually don't even have to click on the Keyword or Preset menu to make changes. On most workstations, a simple up-arrow or down-arrow will advance the keyword. A left-arrow or right-arrow will select the next or previous preset. If that doesn't work on your DAW, try a combination like Command-arrow or Alt-arrow. This will let you focus on listening instead of operating the GUI.

You should also notice that presets are grouped. In the example on the previous page you'll see there are several variants of "Med Front Plate" for example—dark, light, narrow, wide. If you'd like an even quicker audition to see of the preset group is appropriate, use the "Page Up" and "Page Down" buttons on your keyboard. That will move from group to group instead of preset to preset.

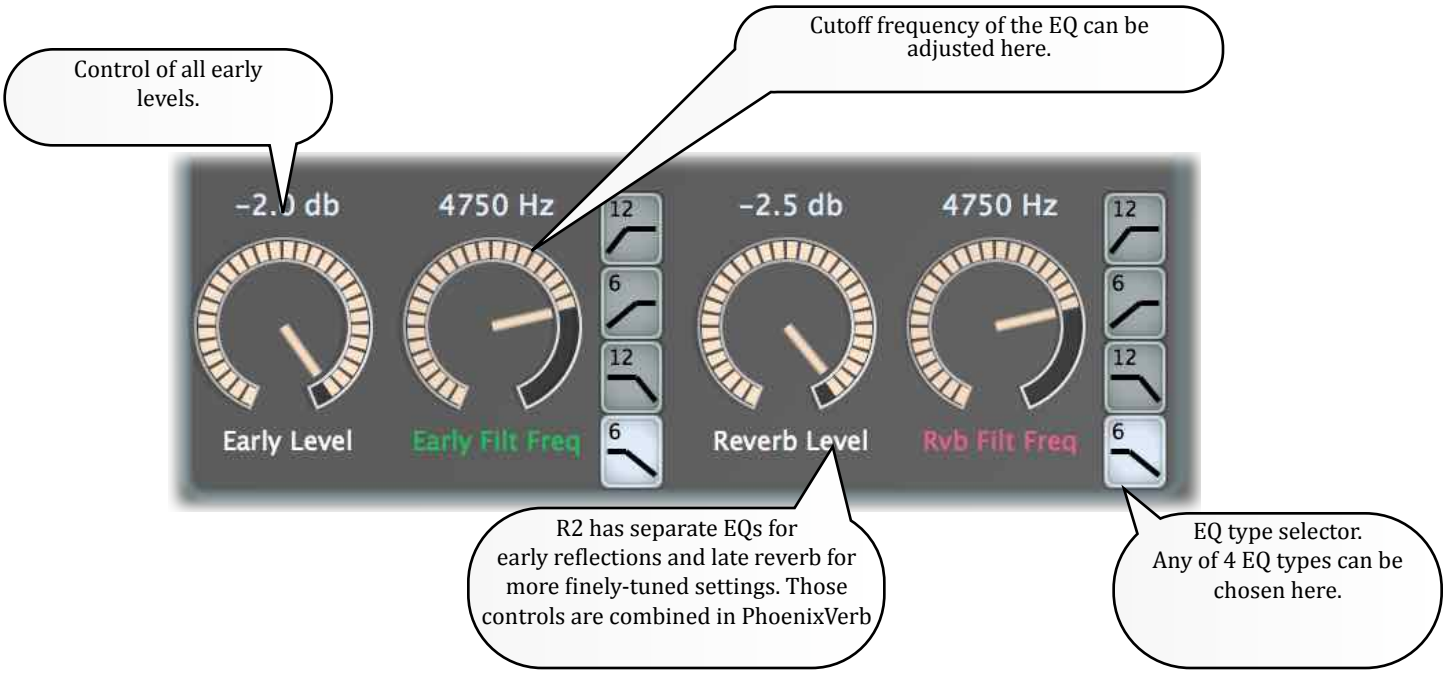
5.3. The Meter Area

The live meter area at the upper left portion of the plugin window provides feedback on the signals entering and leaving the plugin. It also provides access to many features of the plugin



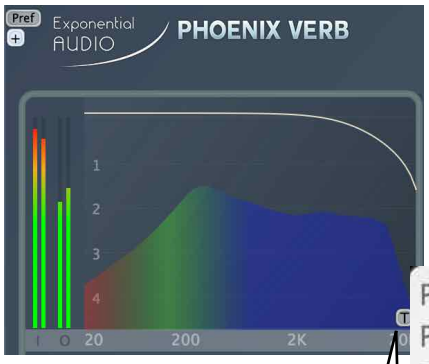
5.4. Output Controls

The output controls at the lower-left area allow the early reflections and late reverb levels to be balanced and equalized.

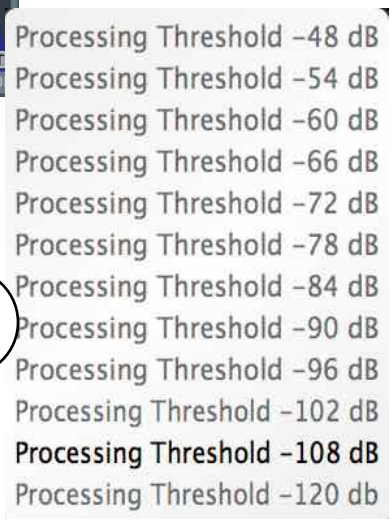


5.5.Processor Threshold

Conserving processor power is always important, especially in cases where the mix is made of small segments of audio. There's no reason for a reverb to run if there's not something in it. The threshold button allows you to determine just where the reverb stops and starts processing. When the signal falls below the threshold, reverb stops. When it passes above the threshold, it begins to run again. Response is instantaneous: you won't drop a single sample of new input. The default is set at -108 dB which is a good value for almost every application. If you're working on a complicated mix, you might improve your performance if you set the threshold to a lower value—say -96 or -102. If you're on a high-end classical mix, then why not try -120. When you can hear the reverb shut off you've probably gone too far.



Click the threshold button to bring up the dialog.

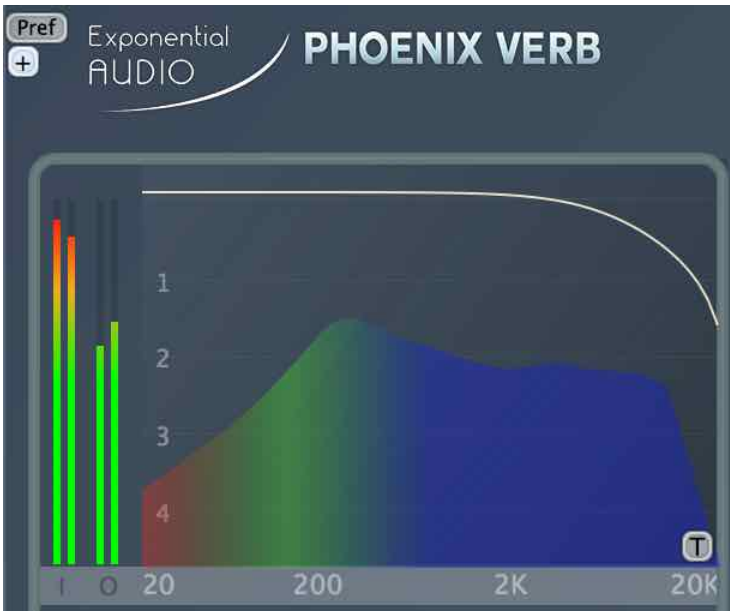


Tip: —54 dB sounds bad. -48 dB sounds *really* bad.

5.6.Scaleable Display

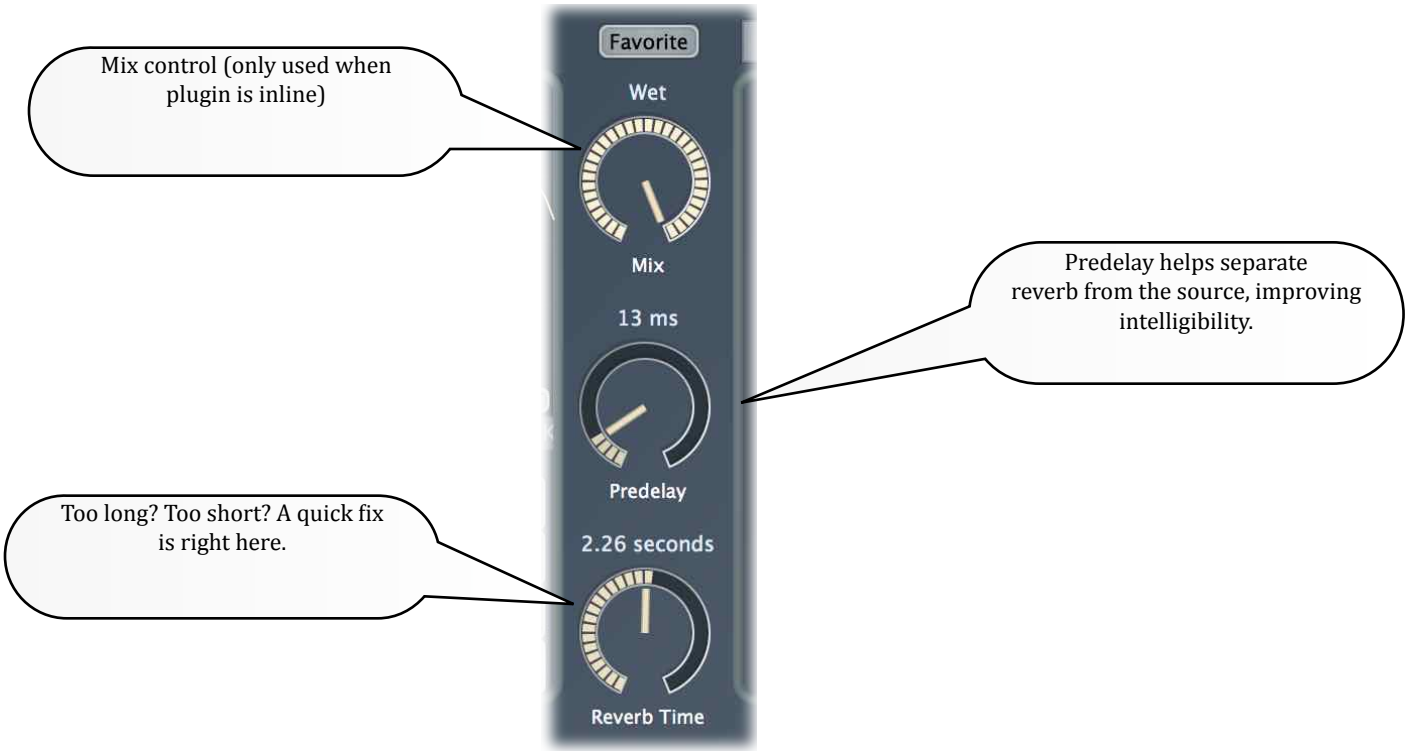
PhoenixVerb and *R2* will analyze your display size at startup and will give you options for window size. These options are shown as a Zoom button in the upper left corner of the plugin window. Pressing this button will double the size of the plugin window (the button will then change to "-"). If you save plugins with your project, window size and position will be recalled. When loading a new plugin instantiation, *PhoenixVerb* will default to the smallest window size. If zoom cannot be supported, the zoom button will not appear.

Zoom button to increase window size



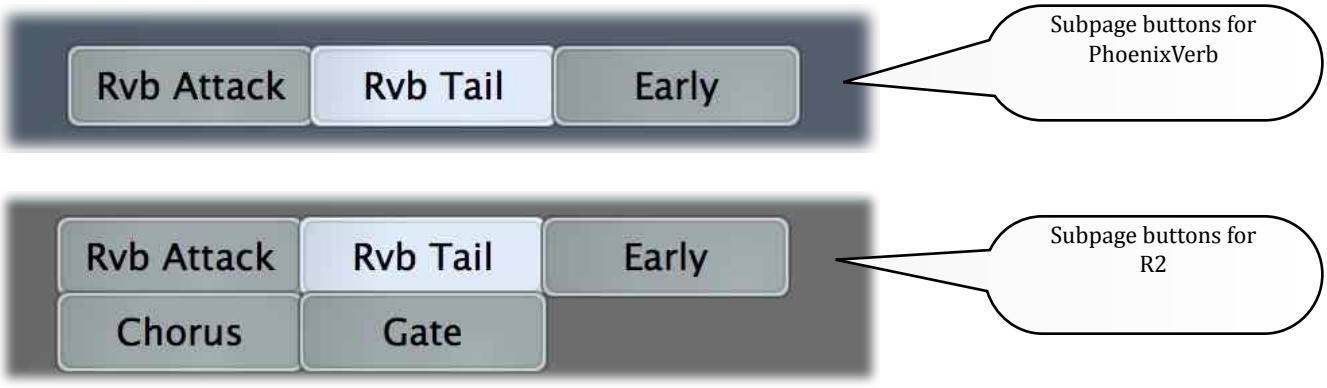
5.7. Basic Controls

In addition to the output EQ, mix engineers like to have three more controls front and center. Those are controls for Wet/Dry Mix, Predelay and Reverb time. In *PhoenixVerb* and *R2*, those controls are always available.



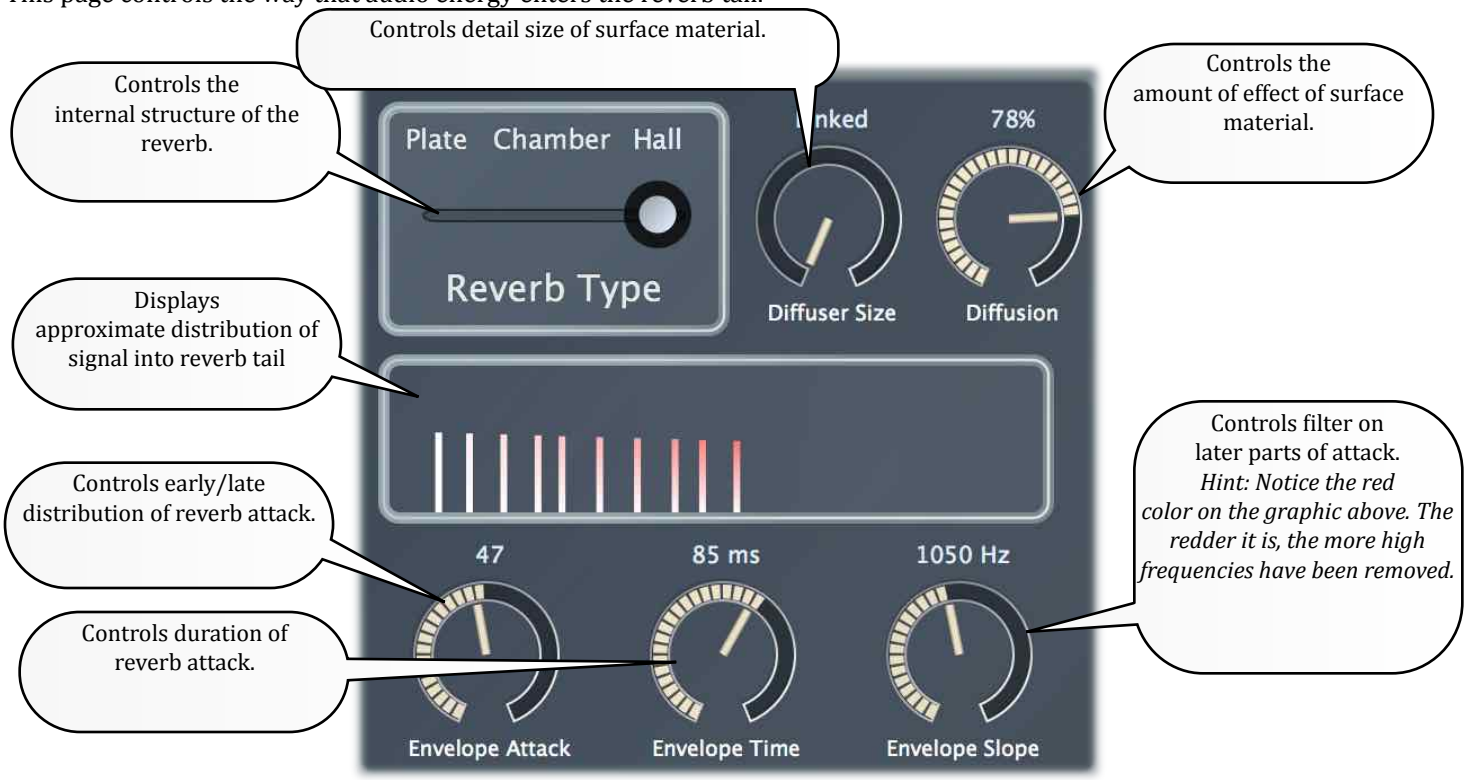
5.8. Edit Subpages

While *PhoenixVerb* and *R2* are designed for ease of use, a curious mix engineer may wish to get deeper into the plugin. The buttons at the lower right-hand portion of the window allow any of the remaining groups of parameters to be accessed.



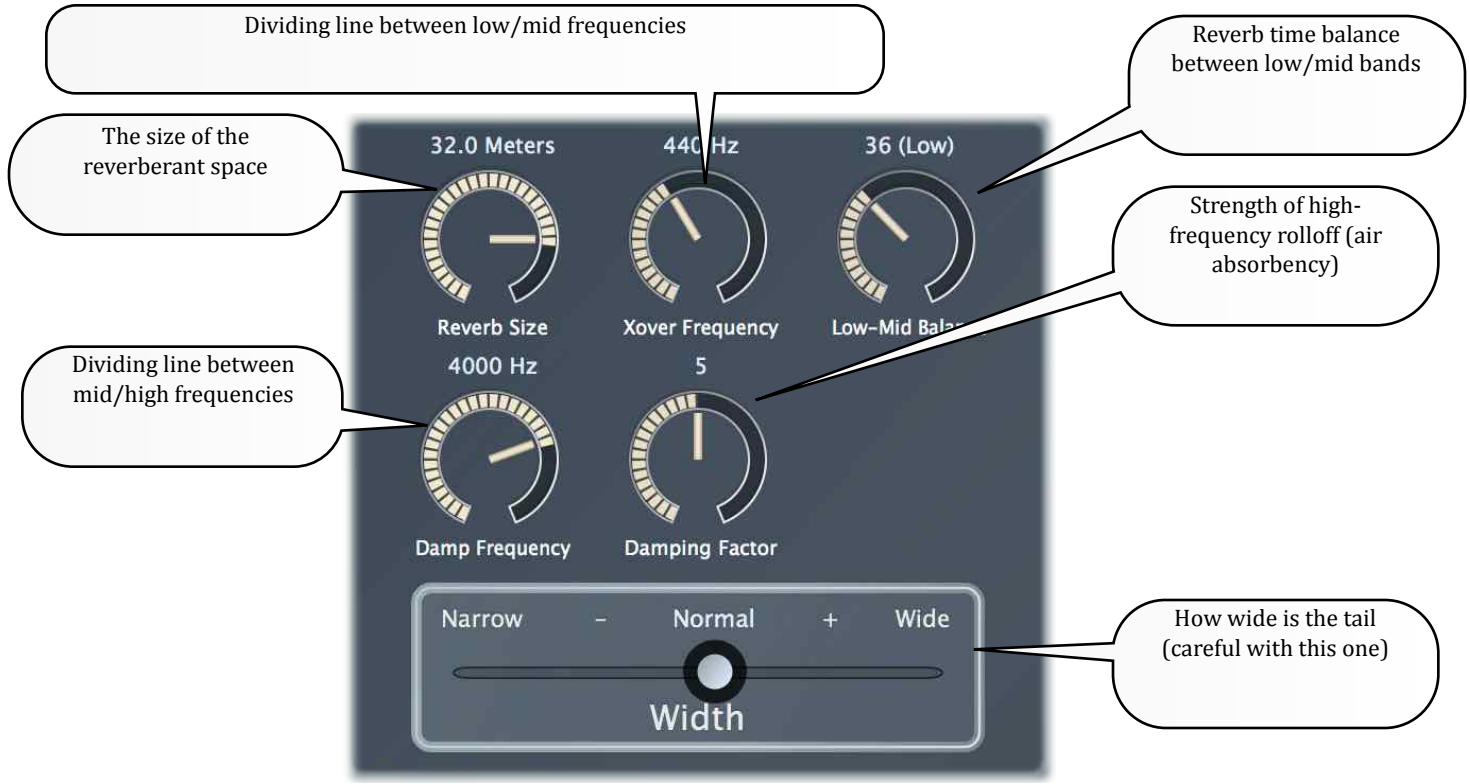
5.8.1.Reverb Attack

This page controls the way that audio energy enters the reverb tail.



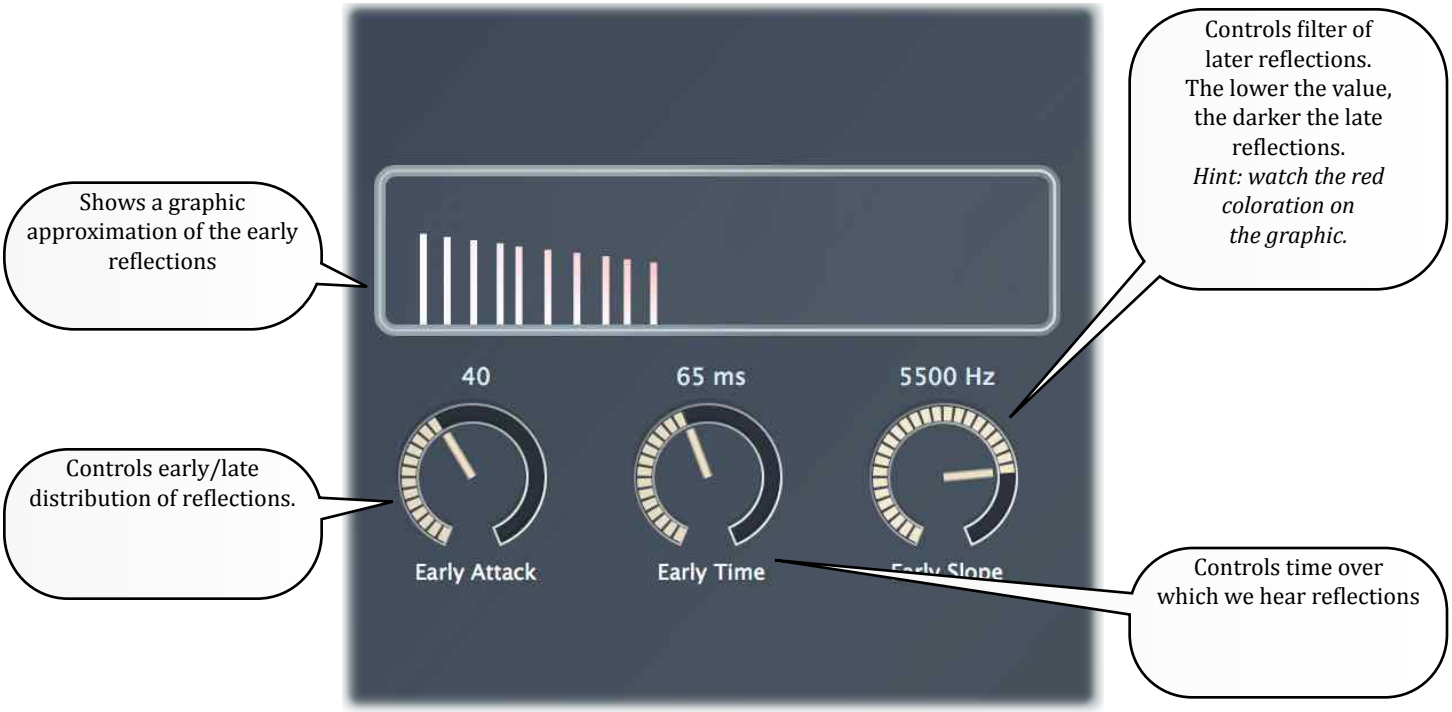
5.8.2.Reverb Tail

This page controls characteristics of the tail--the most noticeable part of a reverb.



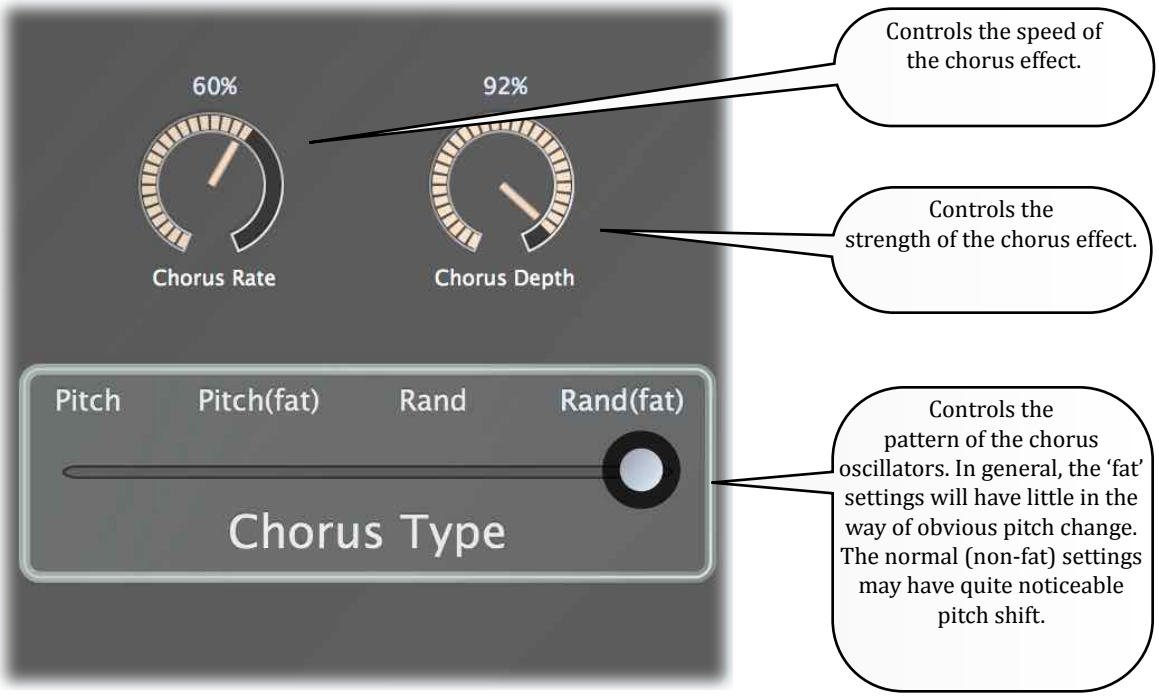
5.8.3.Early Reflection

Early reflections affect our sense of audio placement--distance and environment.



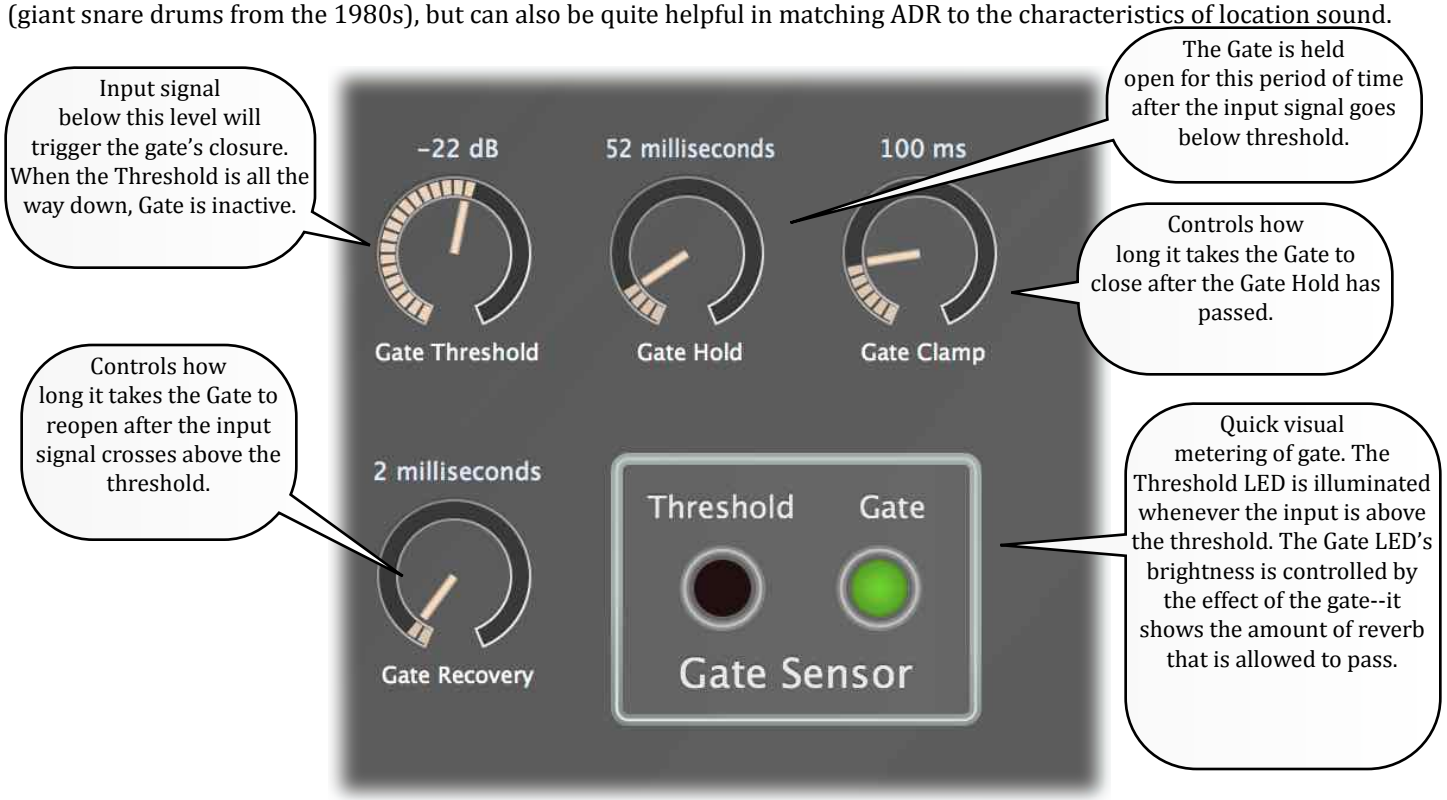
5.8.4.Chorus (R2 only)

These control features of the chorus. This adds character to the overall reverb. Chorus effects can go from unnoticeable to gently undulating or to wild vibratos.



5.8.5.Gate (R2 only)

The Gate allows the reverb levels to be controlled by the characteristics of the input signal. This can be used for special effects (giant snare drums from the 1980s), but can also be quite helpful in matching ADR to the characteristics of location sound.



5.9.Compare and Reload

At the bottom left of the plugin, you'll find ways to access the library as well as ways to compare and undo changes you've made to current settings.

When a preset has not been changed, only the Store button appears. This will take you to the user preset area where you can manage the user store.

If you change settings, these Reload and Compare buttons will appear.

Reload cancels all of your changes and takes the plugin back to the settings of the loaded preset.

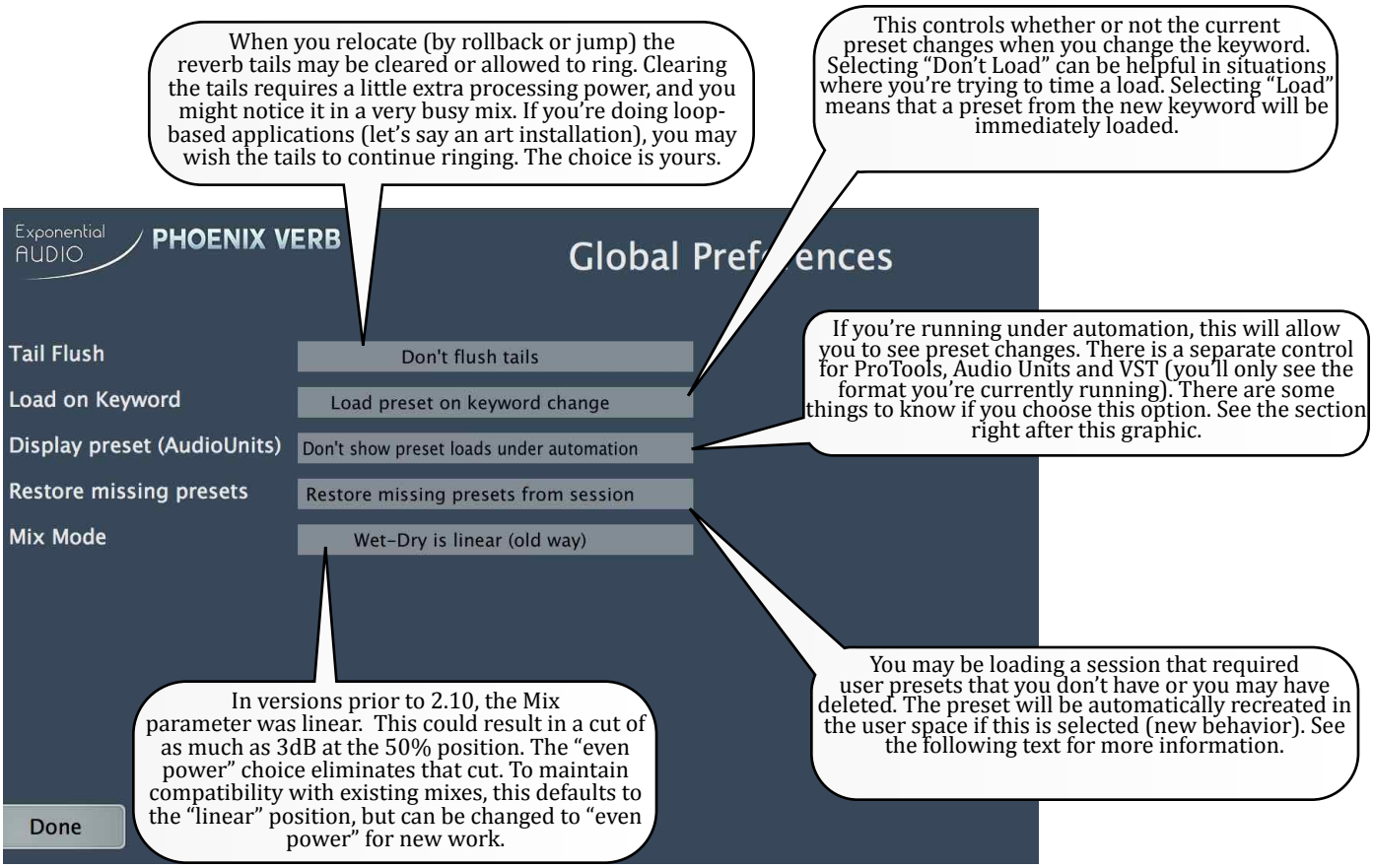
Compare temporarily takes the plugin back to the original preset (and freezes control as well) and allows you to compare the preset to the changes you've made. Press once to go into Compare and press again to resume editing.

5.10.Settings stored with job.

When you save a job, preset names are stored for each plugin, along with any adjustments you've made after loading the preset. Reloading that job will restore your *PhoenixVerb* and *R2* plugins back to the exact state they were when you saved the job. This is true even if the presets no longer exist on a system. Let's say you copy a job from one computer to another. The second computer does not have the user presets that exist on the first computer. *PhoenixVerb* and *R2* now have an option (on the Pref page) to restore those presets back into the user area.

5.11.Global Parameters

In some cases, you may wish to change the behavior of all copies of the plugin, wherever they are. For this, you can control global parameters through the Preferences Page. To launch the page, simply click the "Pref" button in the extreme upper-left corner of the plugin.



5.11.1.More about Global Parameters

The *Display Preset* option is a little complicated. It works by comparing all of the plugin's current parameters to the values stored for Factory and User presets. If there's a match, the matched preset name will appear in the preset field of the GUI. If there's no match, the preset name will not change. There are two basic rules to keep in mind:

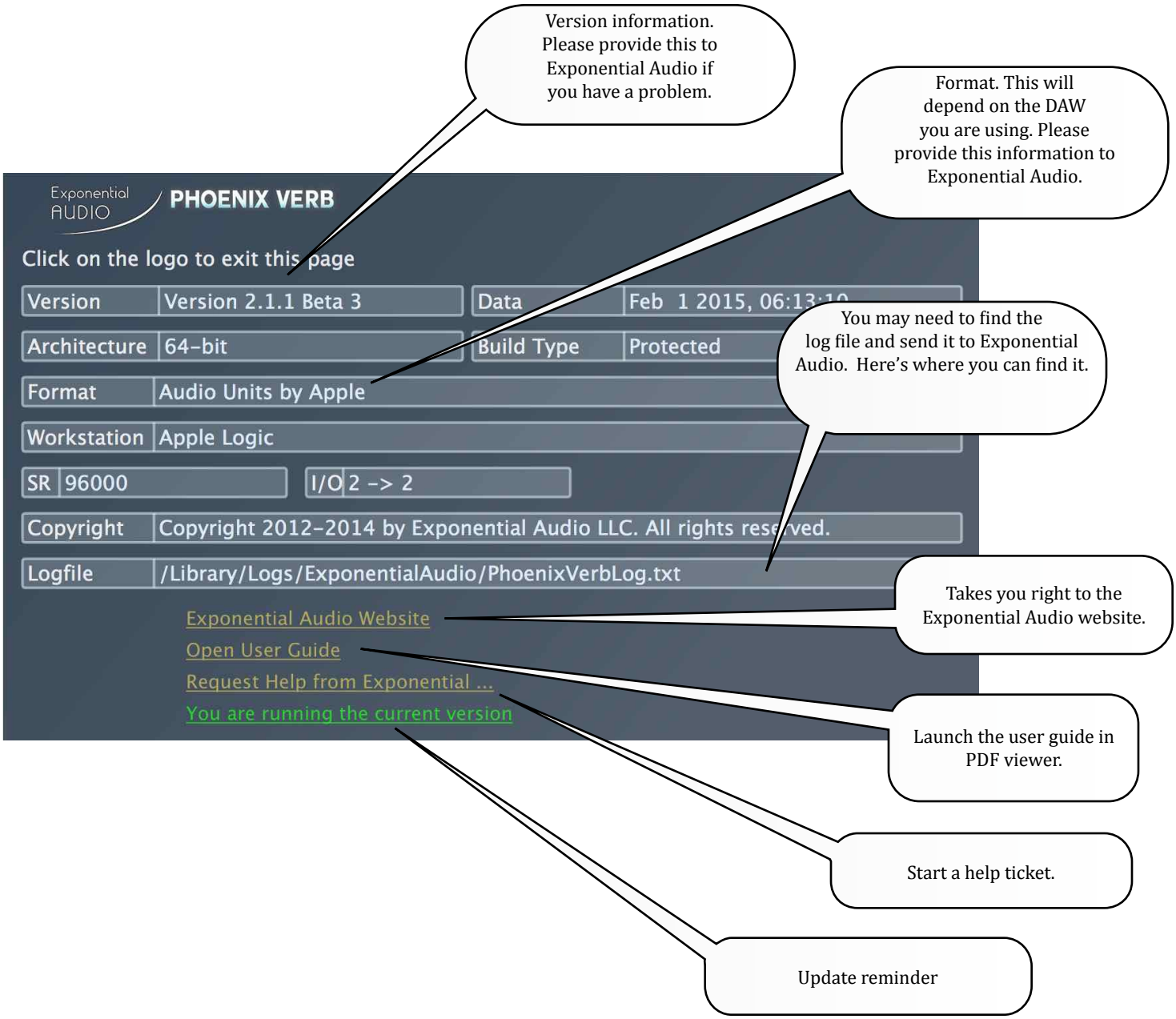
- You must automate all of the preset parameters (you can exclude bypass if you wish).
- Your workstation program (DAW) must not glide parameters.

Two DAWs work pretty will with this option: ProTools and Cubase. There are probably others. Some DAWs can't seem to turn off gliding (even with an option). Those include Logic and Digital Performer, but there are surely others.
So if you'd like to try this out, turn on the option, make sure all your parameters are automated and give it a try. If it doesn't work, turn it off.

The *Restore Missing Presets* option attempts to restore user presets from the session back into your user space. You may have received a job from someone else (they *should* have exported their user presets and sent them to you), or you may have deleted the user preset from your own folder. The restored preset may not completely match the missing original. Keyword data will be missing, and some parameters may have been edited. It's always best to export your user presets to an archive folder, but this option makes the best of an imperfect situation. You can turn the option off to restore the behavior of earlier versions of the plugin. In that case, the Keyword/Preset area will display a message that the preset is missing. In either case, the session data itself will be correct.

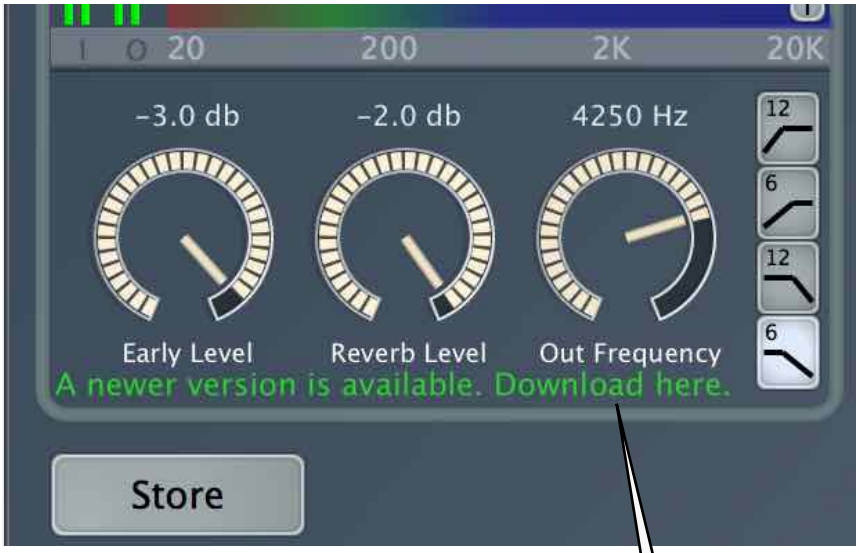
5.12. Getting Version Information and help

If you need version information for a support or upgrade issue, simply click on the Exponential Audio logo in the upper left corner of the plugin. You'll see a page with version information as well as links for this user guide and online help.



5.13. Update Notification

If your computer is connected to the web, you may see a notification like the one shown on this graphic (slightly different locations on PhoenixVerb and R2):



This notice is also a link

This indicates that a newer version of the plugin is available. If you click on the text, you'll be taken to the download page where you can get the newest version. The plugin will never be automatically updated, so you can update when it's convenient for you.

If you're not connected to the web, be sure to visit Exponential Audio from time to time so see if newer versions are available.

6. Editing, Saving, Importing and Exporting

6.1. Editing

There are many ways to edit parameters. Here's a quick look.

6.1.1. Editing by Knobs

Most parameters are edited by knobs. Simply click on the knob (you'll know you have it when the color changes) and drag the mouse up or down.

6.1.2. Editing by Typing Values

Parameters with knobs also have display areas. Sometimes it's simpler simply to type in the value you want. *PhoenixVerb* will do its best to make sense of what you've typed.

6.1.3. Editing by Switches

A few parameters (such as *Reverb Type*) use a multi-position switch. Just click where you want the switch to go.

6.1.4. Editing by Buttons

Some parameters--EQ types--use graphic buttons. Just click the button.

6.1.5. Editing by External Controller

Exponential Audio supports EUCON controllers as well as most recent Avid/Euphonix control surfaces. The quality of non-Avid EUCON implementations is spotty. The Cubase EUCON translator crashes pretty dependably. AudioUnits implementations display parameter values in the range of 0-1, but are often buggy.

6.1.6. Special treatment of Mix parameter

Nearly all parameters are saved with presets (built-in or user-created), but is one place where this rule is not followed. Although the mix parameter is saved when a project is saved, you may notice that it's not changed when you load new presets into a plugin instance. This is to help you in auditioning presets. Any wet/dry balance will be preserved as you try out different presets.

6.1.7. A word about preset format: Don't use the workstation's preset manager

You may notice that there are two ways to save presets. Your workstation program (Logic, ProTools, etc) will probably provide a way to store and recall user presets. That will appear at the top of your plugin window, in the wrapper area. Exponential Audio also provides a method that appears in the main body of the plugin window, and is accessed by the **Store** button. Why are there two methods and which should you use?

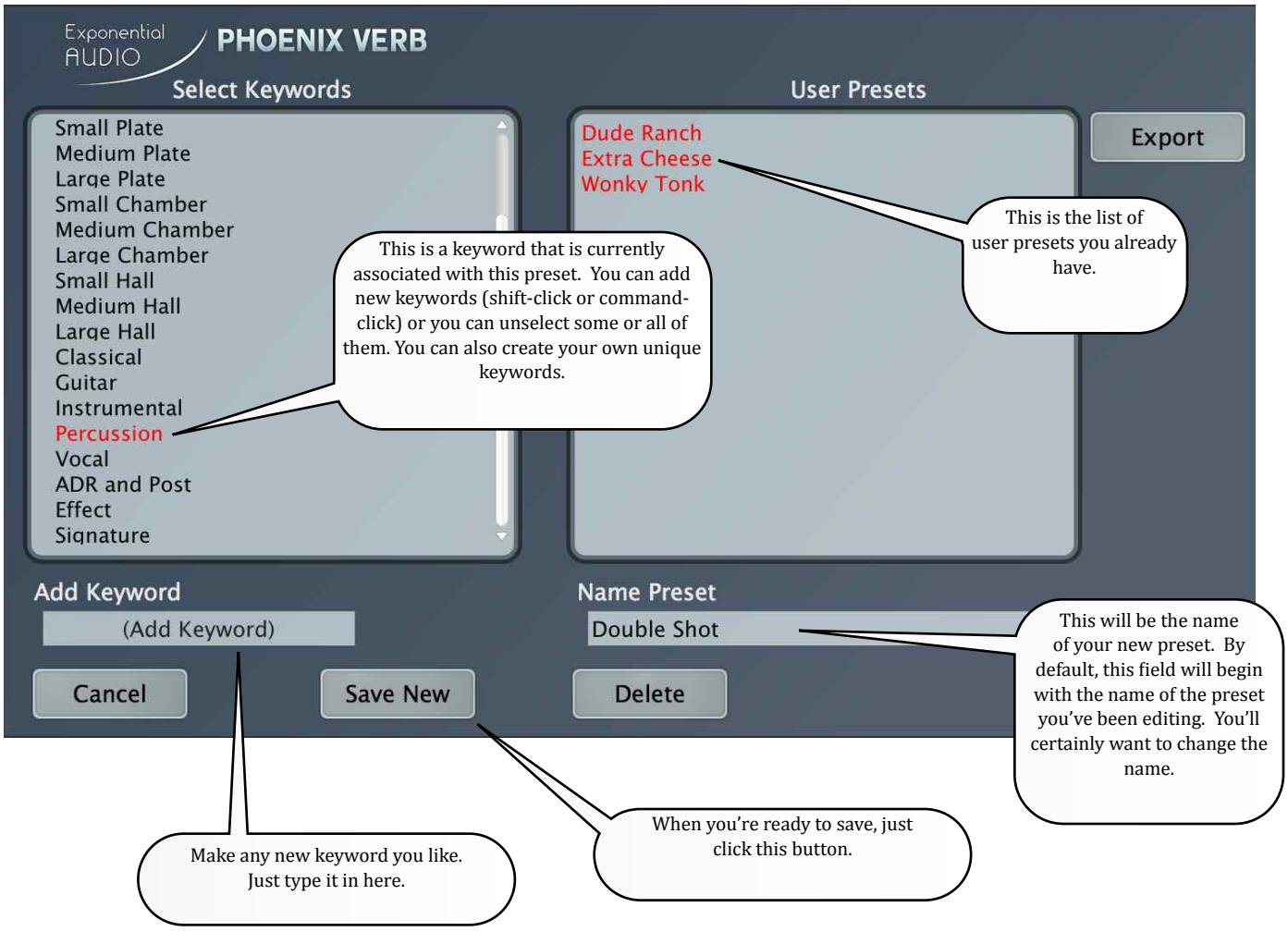
Most modern-day mix engineers use more than one workstation program. This often means that presets you created in one program are not available to another. This is especially true if the workstation program uses different plugin formats (AU, VST, etc). The workstation-specific method does not create portable presets. For this reason, Exponential Audio does not support the workstation-specific method. It might work and it might not. Instead, Exponential Audio creates truly portable presets. Any preset you create in one DAW is easily available in any other.

6.2. The Store Page

The Store Page is the way that you manage all user presets. In this page, you can save and delete presets. You can also export presets so that you can share them with others. And you can import presets that have been sent to you or shared by others in your facility.

6.2.1. Storing a preset you've created

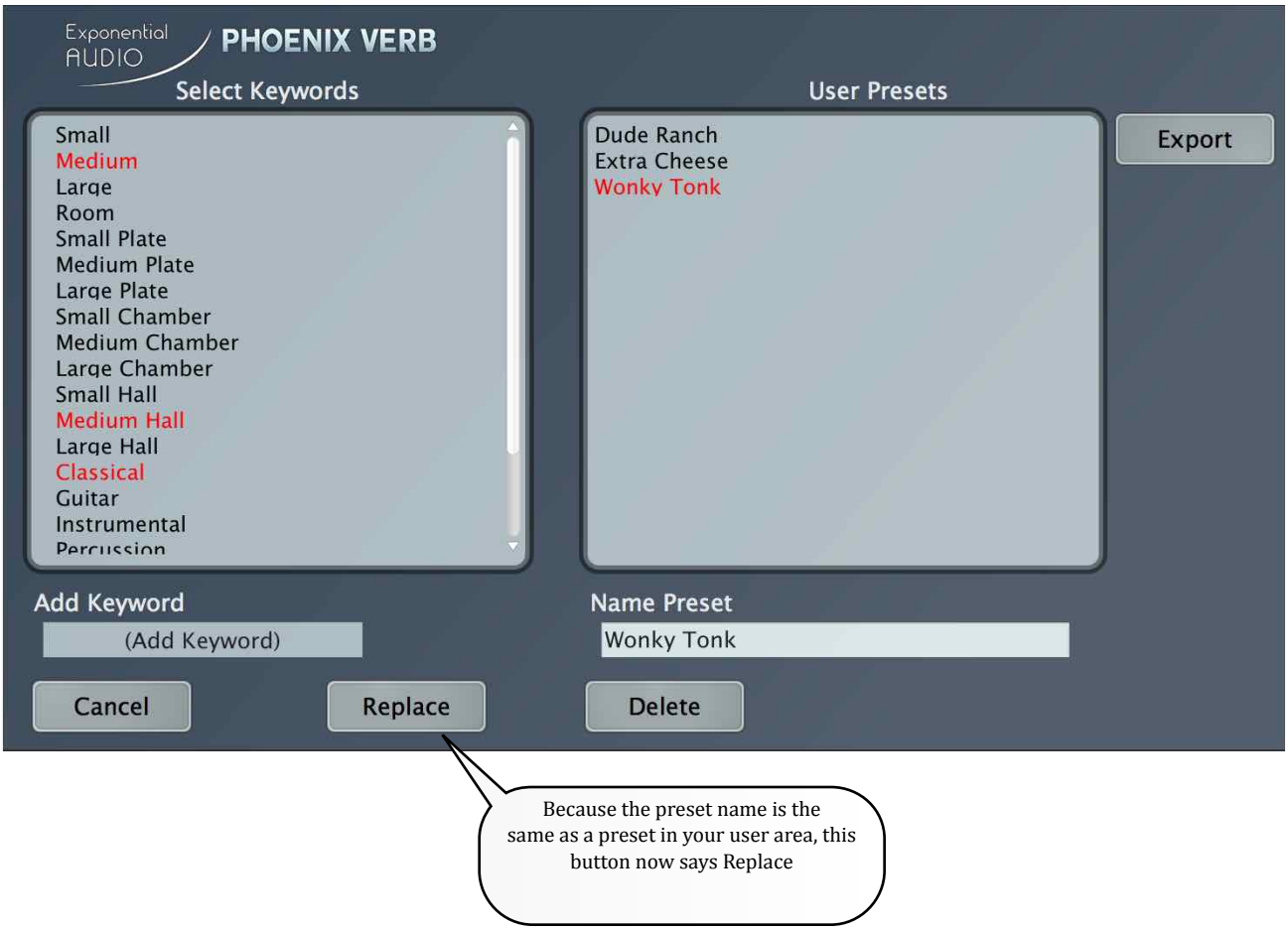
If you've edited the plugin in such a way that you'd like to use those settings again, it's time to create a preset. First press the Store button at the lower left corner of the main plugin window. You'll now see this window:



Simply select your keywords, name the preset and save it.

6.2.2. Making changes to an existing user preset

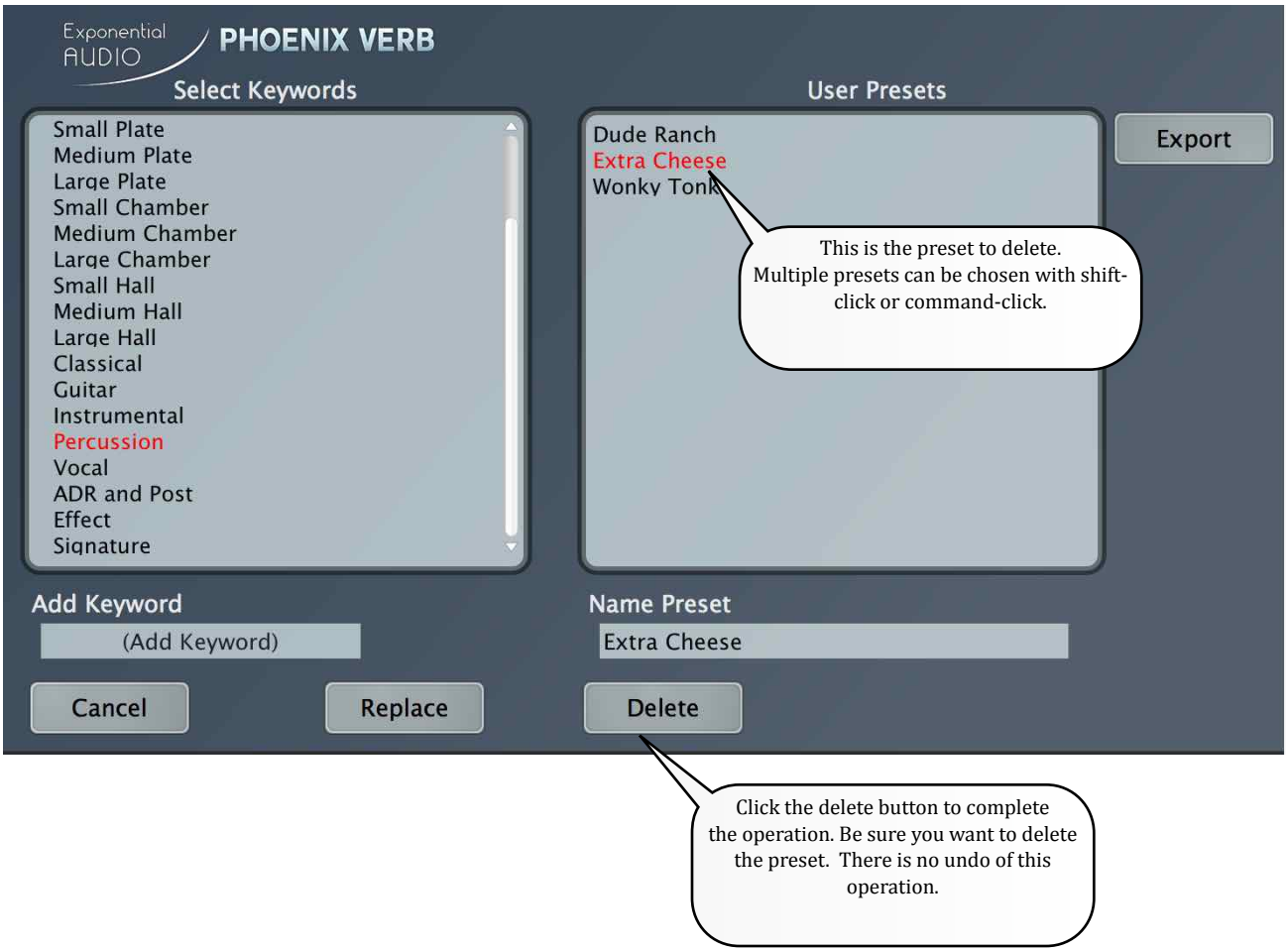
There are always a few changes you'd like to make after you save a preset. To make those changes, load the preset and edit. When you're ready, click the Store button. You'll notice a very small difference in the store page:



You can still change and add new keywords. As soon as you press the Replace button, your preset is updated. If you change the preset name, the button will revert to "Save New".

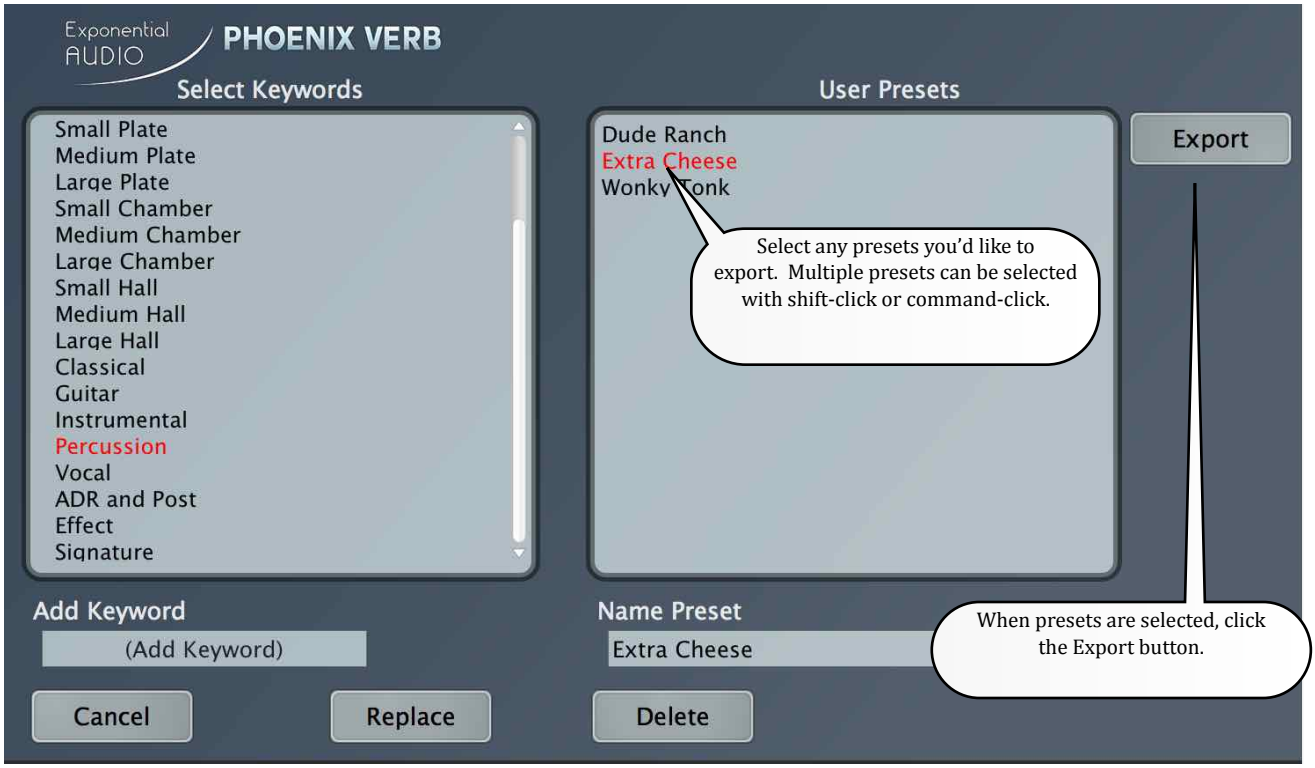
6.2.3. Deleting a preset

Once in a while, it's time to get rid of a user preset. Press the store button and select any presets you wish to eliminate:



6.2.4. Exporting presets

The easiest way to share or archive presets is to export them. To export, click the store button and select any or all of the user presets:

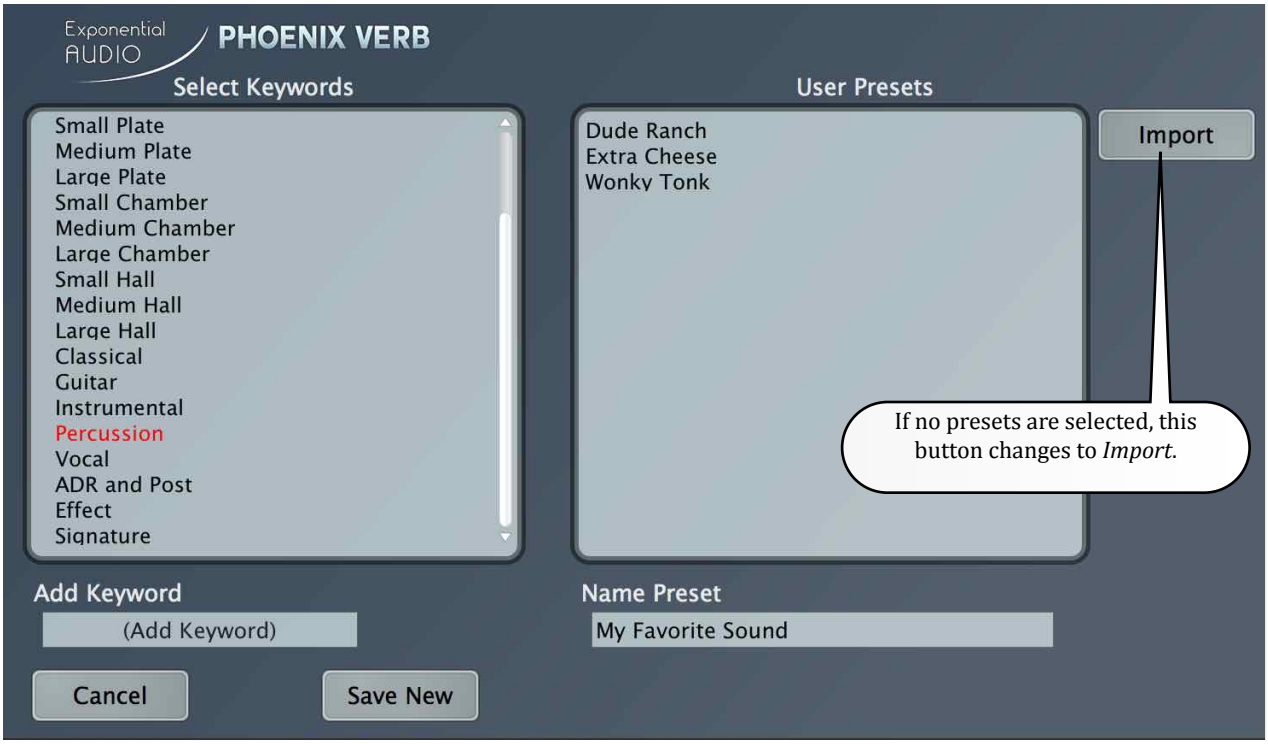


As soon as the Export button is clicked, you'll see a new window:

Your target folder may have presets of the same name. This gives you the choice to replace them or not. After you make your choice, you'll be taken to a standard Mac or Windows file saving window.

6.2.5. Importing presets

If someone has shared presets with you, you can easily add them to your internal preset area. Click the store button and make sure that no user presets are selected.



As soon as you click the Import button you'll be taken to this window:

This gives you the opportunity to determine how duplicate names will be handled. After you make your choice, you'll be taken to a Mac or Windows file window that will let you find the imported presets.

7. The Algorithms and their Parameters

7.1. Reverb for Newbies

If this is your first experience with reverb, you might be confused by some of the terms. The two most important terms are Early Reflections and Tail. The early reflections represent the first few bounces of sound--off the stage floor, off the sidewalls. After a hundred milliseconds or so, the number of reflections grows so much that you perceive only that pleasant effect of the sound gradually dying away. This second part is called the tail (although old hands might call it 'echo' as well).

PhoenixVerb and *R2* generate both of those components in ways that are both powerful and subtle. Experience is always the best teacher in learning how to get the most out of it. Experiment with the presets. See how they differ from each other and learn how parameter changes can affect the sound of the reverb.

Don't be afraid to use different presets on individual tracks or subgroups. Reverb can help place sounds into three dimensions and make each component sit in the mix more nicely. Reverb is almost always most effective when it's subtle. Many a mix has been ruined by the too-liberal application of reverb. Dial in what you think you need and then back off a notch.

7.2. Description of the Algorithms and their applications

PhoenixVerb and *R2* are designed to all-purpose reverbs--but with a few very special twists.

7.2.1. PhoenixVerb

If you're looking for a natural transparent sound, you've come to the right place. If the intent of your mix is to feel like it's in a real space, then *PhoenixVerb* is the one. It can gracefully move the sound from original through early reflections into reverberant tail. It never sounds like an added-on reverb: it simply becomes part of the source Whether the source comes from a studio or from spot mics onstage, *PhoenixVerb* helps you to move it into an absolutely convincing world.

7.2.2. R2

Sometimes reality just isn't enough. You're looking for that reverb that floats all around you. Maybe it's that guitar solo or maybe it's a choir. The chorusing features of R2 make a savory part of the mix. And there's more. If your a dialog editor trying to drop ADR into the middle of location dialog, the gate feature gives you that little halo of reverb that matches up naturally with room tone.

So which one should you use? Exponential Audio obviously hopes you'll choose both. But either *PhoenixVerb* or *R2* can cover your needs in ways no other reverb can.

7.3.Parameter Descriptions

7.3.1.Mix

Mix controls the ratio between wet (processed) signal and dry (unprocessed) signal. It should only be used when the plugin acts as an insert. There are many cases when a reverb is placed on a send path, shared by several channels. In that case, the mix should stay at 100% and reverb level should be controlled by changing the level of the channel strip holding the reverb. The reason is simple: there should only be one path of a signal to the output. If a plugin is on a send channel with a mix of less than 100%, there's the chance of dry signal reaching the output from both the reverb channel strip and the original signal channel. While DAWs are very good at delay compensation, there's always the chance of cancellation. Don't do it.

7.3.2.Predelay

Predelay is a delay added to the entire effect. In a general sense, it represents the difference in time between the direct audio signal and the first reflections reaching the ear of the listener. Practically, it adds a little (or a lot of) separation to the dry signal and the reverb. This can work wonders in increasing the clarity of the signal while still adding warm and enveloping reverb.

7.3.3.Reverb Time

Reverb Time works in conjunction with the Reverb Size parameter. Reverb Time may be seen as the reflectivity of the space you're modeling. More reflectivity (harder surfaces)—no matter the size of the room--will cause the reverberant energy to last longer. A small Reverb Size with a long reverb time will produce a long reverb with dense reflections and perhaps some coloration. A large reverb size with a shorter reverb time may also create a longer length with lower density and a more natural sound. It's best to test these parameters with impulses such as clicks or snare drum strikes.

7.3.4.Early Level

The early signal may be thought of as the energy that's only been reflected off one or two surfaces. It can give the listener a sense of position relative to the sound source (near/far) and also give some sense of the area immediately around the source (boxy, open, etc). The Master Early Level parameter gives the mix engineer control over the level of this component. If the studio is blessed with a good recording space, it might make sense to reduce this level. If a sample library is in use, or if a vocal or drum booth has been used, a little more early signal can help to place the audio into a real space.

7.3.5.Reverb Level

Reverb Level is used to control the amount of reverb 'tail' in the signal. The tail is the most noticeable part of the reverb--the energy that dies away slowly and gives the sense of a small or large space. Balancing the Reverb Level and Early Level can give a good sense of microphone placement. For example, a low level with a long reverb tail might indicate close micing in a large space. If the reverb tail is higher and early level is lower, that might give a sense of more distant micing.

7.3.6.Out Frequency

This controls the cut-off frequency of the output filter. This value is frequently adjusted. This may be for reasons of material--getting the most natural sound with the source audio--or to slot into a busy mix.

7.3.7.Output Filter Type

While reverbs may sound most natural with a gentle lowpass filter on the output, there are situations that can change that. For example, live performance venues may be somewhat 'boomy' and need some cut on low frequencies. A 'vintage' style mix may need a steeper cutoff to mimic the characteristics of low-bandwidth processors. *PhoenixVerb* give you the choice of four filter types:

- 1-pole (6dB per octave) lowpass
- 2-pole (12dB per octave) lowpass
- 1-pole highpass
- 2-pole highpass

7.3.8.Reverb Type

This control adjusts many of the internal characteristics of the plugin. In general, plates are the most dense, with a little potential coloration. Chambers are also quite dense, but without coloration. Halls are the least dense, with a little more obvious back-wall effects.

7.3.9.Diffuser Size

Diffuser Size controls the feature size of the imaginary material that covers the wall of our space. Feature size is one way to describe what might be lined up along the wall. Your shelves full of Grammys would be small features. A row of life-sized Greek statues would be larger. In most cases, the 'linked' choice is best. Diffuser Size will be linked to Reverb Size. But the diffuser size can be controlled independently as well. In most cases, it's best to test with percussion and short reverb times.

7.3.10.Diffusion

When a sharp transient hits a wall, the way it reflects is driven by the shape of the wall, that row of Grammys, and the material that makes up the wall. There may be a single hard reflection, or there may be many smaller reflections with tiny time delays between them. This is diffusion. The diffusion control, unsurprisingly, controls the overall amount of diffusion. Once the basic Reverb Type and Diffuser Size parameters have been adjusted, this is used to make final adjustments. As a rule of thumb, sharper transients will benefit from more diffusion. But rules are made to be broken. Feel free to experiment.

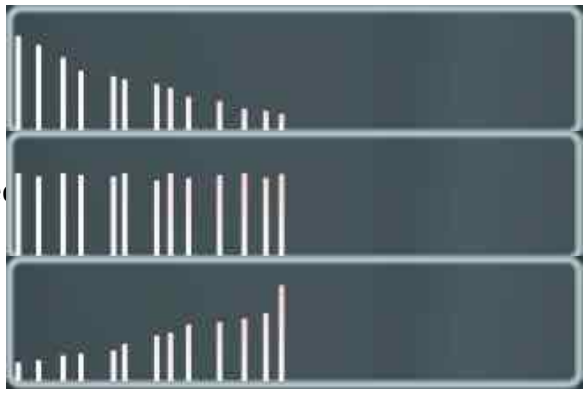
7.3.11.Envelope Attack

The envelope parameters are among the harder parameters to understand. They control the way that the audio signal enters the reverb. In some cases they may affect your sense of microphone placement. In others they may affect your sense of *listener* placement. The user interface gives a strong sense of what's going on with these parameters. The narrow vertical bars indicate reflections (the number of bars and relational placement are only approximations for the purpose of illustration). *Note: it's easier to hear the effect of the envelope parameters by turning early level off and using a short reverb time.*

Low Attack Value
Early audio is stronger

Medium Attack Value
Audio evenly distributed

High Attack Value
Late audio is stronger

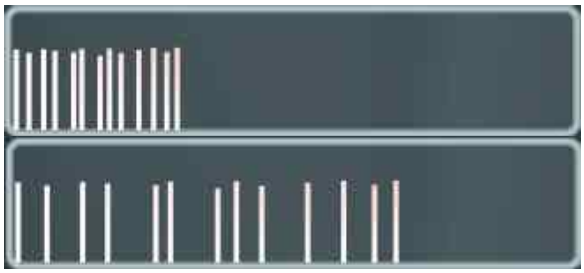


7.3.12.Envelope Time

The time parameter adjusts the overall time of the reverb envelope. This can have a great effect on the sense of reverb distance and depth.

Short Envelope Time
Signal injection in a short time window

Long Envelope Time
Signal injection in a longer time window

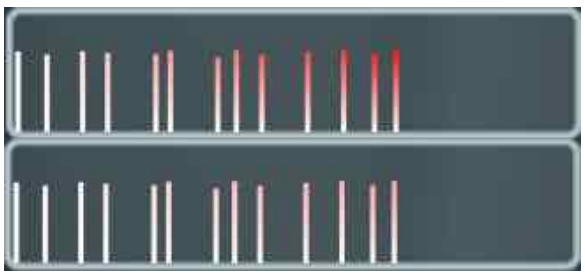


7.3.13.Envelope Slope

The reverb envelope has a lowpass filter for each delayed signal. Those filters are adjusted by this parameter. The lower the slope value, the more filtering on later signals. In many ways this is a model of air absorption. The red coloration on the delay bars helps to illustrate the effect.

Low Slope
Later energy is highly filtered

High Slope
Later energy is slightly filtered



7.3.14.Reverb Size

Reverb Size works hand-in-hand with the Reverb Time parameter. The size parameter gives you a general sense of the overall size of the space you're modeling (expressed in meters) and the time parameter controls the reflectivity of the walls. A larger size will lower the density of reflections and is generally more natural-sounding. But there's nothing like experimentation.

7.3.15.Xover Frequency

Natural reverberation in a large space typically lasts longest at the lowest frequencies. In very small reverberent spaces (locker rooms, for example). the lower frequencies may die away sooner. The reverb passes through a crossover filter, which is typically set to divide the low range from the mid range. This parameter controls that frequency. The Low-Mid Balance parameter controls how the reverb time is affected.

7.3.16.Low-Mid Balance

This parameter controls the way the reverb operates below and above the Xover Frequency. In the center position, low and midrange reverb time stays approximately the same (reverb time is always affected by the sort of audio material you use). Lower values of the parameter favor the low frequencies, meaning the midrange dies away sooner. Higher values favor the midrange and the lower frequencies die sooner.

7.3.17.Damp Frequency

In the real world, the highest frequencies die away sooner than midrange and low frequencies. This has many causes, including air absorbency and room treatment. Air absorbency is a function of basic humidity as well as humidity cause by a room full of breathing people. Room treatment typically means carpeting, absorbers on the walls, ceiling tile and so on. *PhoenixVerb* gives you the ability to control the way these highest frequencies die away. The Damp Frequency parameter allows you to set the frequency above which this damping takes place.

7.3.18.Damping Factor

This parameter controls how quickly frequencies above Damp Frequency actually die away. The middle range approximates normal damping (*your* normal may differ). Lower values mean that the sound is darker and higher values mean it is lighter. Lower damping values may be used to simulate band-limited vintage equipment.

7.3.19.Width

The reverb tail in *PhoenixVerb* is naturally wide and enveloping. Depending on your application, you may need to vary this. A wider tail will open up the space. High widths may cause some cancellation upon fold-down. A narrower tail might be useful in focusing the source more tightly, especially when centering dialog. It's important to note that the width control applies only to the tail: Early reflections are not affected.

7.3.20.Early Time

The time parameter adjusts the overall time of the early reflections. This can have a great effect on the sense of soundstage. It can also be used to smooth the harshness of close mics. This parameter works in the same manner as Envelope Time

7.3.21.Early Slope

The reflection group has a lowpass filter for each delayed signal. This parameter affects the early reflections in the same manner as the reverb Attack Slope parameter.

7.3.22.Chorus Type (R2 only)

This parameter lets you choose from four basic chorus types:

- Pitch - a regular modulation of pitch. This was a key feature of many reverbs in the late '70s and '80s.
- Pitch(fat) - similar to Pitch, except that pitch moves in two directions simultaneously. The effect is more a fattening of the sound than a chorus.
- Rand - pitch modulation that happens on a more random basis. If you wish to avoid the regularity of the 'Pitch' setting, then try this.
- Rand(fat) - Similar to Rand, except that pitch moves in two directions simultaneously. The effect is more a fattening of the sound than a chorus.

7.3.23.Chorus Rate (R2 only)

Adjusts the rate of the chorus effect.

7.3.24.Chorus Depth (R2 only)

Adjusts the depth of the chorus effect.

7.3.25. Gate Threshold (R2 only)

The level of signal that must be coming into the reverb in order for the gate to stay open. When signal falls below this level, the gate will start to close over the time specified by Gate Clamp. If the threshold is off, then then gate will remain open and the reverb will be unaffected. Threshold is a sensitive parameter. The value you select will be determined by the material you are processing.

7.3.26. Gate Hold (R2 only)

When the input signal falls below the gate threshold level, the Gate Hold parameter comes into effect. This is the amount of time that must pass before the gate begins to close. If new signal comes in before this time passes, the gate will remain open. This parameter is useful in shaping the gated reverb. It is also useful with choppy material and will keep the gate from thrashing open and closed.

7.3.27. Gate Clamp (R2 only)

This controls how rapidly the gate will close after the Gate Hold period has passed. Short value cause the classic gate effect. Longer values are more natural in effect and may simply help to clear out the mix.

7.3.28. Gate Recovery (R2 only)

This controls how quickly the gate will reopen when new signal enters the system. Generally short values are best, but longer values can create an interesting pumping effect.

8. Getting Help

8.1. Exponential Audio Website

If you're having difficulty with the plugin, the first place to look is www.exponentialaudio.com. If you encounter what you believe to be a bug, then please report it by going to the info page of the plugin (click on the logo in the upper left corner) then clicking the "Request Help from Exponential Audio" link. This will prepare an email with important system information and a log that may include your problem. In the email, please describe what you were doing when you encountered the bug, and the best ways to reproduce the problem. Then send it along.

If *PhoenixVerb* or *R2* have difficulty connecting with your email program, it will place the log file on your desktop. Please send this file to support@ExponentialAudio.com, along with a description of your problem.

8.2. iLok Website

If you're having problem with licensing or with your iLok, then be sure to visit www.ilok.com.

8.3. Public Forums

Exponential Audio maintains a presence on several popular forums and blogs.

8.4. Known Problems

Check the FAQ on the Exponential Audio website.

9. Updates

Be sure to check www.exponentialaudio.com periodically for bug fix updates to *PhoenixVerb* and *R2* . While you're there, be sure to check out new products coming available.

10. Tech Notes

Most modern DAW programs handle plugin delay compensation automatically. But if you need to know, the delay of a dry signal through PhoenixVerb varies depending on the sample rate:

- 44.1/48K - 32 samples
- 88.2/96K - 64 samples
- 176.4/192K 128 samples
- Anything above - 256 samples

If you are loading down your DAW (and who doesn't), be sure to put away the GUI when you no longer need it. It does take processor cycles to run the user interface, and there's no need to burn the cycles if you don't need to control the plugin. The live frequency display also takes cycles, so most of the time it's best to leave it off: its default position. Turn the display on to hypnotize the producer so he'll let you get your work done!About Exponential Audio
Exponential Audio is a new company with a long tradition. It was founded by a lifetime audio professional whose designs and algorithms have long been part of films, television programs and recordings of all sorts. It's a company dedicated to the established and new professional alike. Exponential Audio makes tools that sound good and are easy to use. This is a personal and professional commitment to you.

11. Acknowledgements

Exponential Audio would like to thank the many audio professionals who've provided helpful feedback, test-verification and general encouragement. Their generosity has made *PhoenixVerb* and *R2* much better.