Verb
User Guide

Eventide®

Contents

1 Tverb Introduction

> "I only had the one track left, so I couldn't record these microphones on separate tracks. What I did is put a gate on microphone two and another gate on microphone three; so when he sang with a quiet deep voice those gated microphones wouldn't open up, you wouldn't hear the ambience in the room. When he sang with a fairly loud voice, the middle microphone would open up and you'd start to hear the room. When he sang in the loudest voice possible, almost screaming (he called it 'Bowie histrionics'), all three microphones would be open and the massive reverb you hear on that recording is only that glorious room." – Tony Visconti

Inspired by the legendary Heroes session at Hansa Tonstudio in 1977 Berlin, this plug-in was developed with the encouragement and support of Tony Visconti.

The historic Meistersaal concert hall, built in 1910, was Hansa's studio 2. It's a large room designed for classical music concerts. Mr. Visconti, impressed by the acoustics of the room, had an idea. Why not utilize the hall's acoustics to augment Bowie's vocal? From his many years of collaboration with David, Tony knew both the power of that voice and Bowie's willingness to explore new sonic vistas. The result was and is iconic.

Tverb provides an intuitive interface to recreate the three vocal channels that came together to become this classic title track. A close mic offers clean or compressed signal while two gated mics can be moved anywhere in the virtual room for customizable gated reverb.

Tverb features:

- 2 Moveable microphones to adjust reverb size and tone
- Custom Eventide reverb algorithm with EQ, diffusion, and decay control
- 1 Compression module
- 2 Linkable post-reverb gate modules
- Complete automation support

2 About This Manual

While we're confident you'll be able to use your new plug-in without reading this manual, we urge you to have a quick look. Tverb offers several unique features and interesting options – even a cursory glance will illuminate any features you may overlook. We'll try to keep it all relevant and highlight any tips and cool tricks for you.

We won't cover the operation of your plug-in host or the Macintosh or Windows environments as their owner's manuals or online help should provide you with the answers you need. We've made every attempt to integrate the standard controls and features from the major plug-in hosts into our Tverb plug-in so that you shouldn't have to learn anything new. If you find the need to get more information from us than what is provided in this manual, please visit our support forum available via our website (`https://www.eventideaudio.com/community/forum/plug-ins`).

Note that you can access this manual directly from the plug-in by clicking the 'i' button in the preset bar.

Figure 1: Preset Bar

3   Registration, Activation, and Installation

Eventide uses PACE's ilok.com licensing system, with or without an iLok hardware dongle, to license our plug-in products. Each license provides two activations which can reside on either your computer or on an iLok license dongle. Once you've purchased your plug-in you'll need to register it on Eventide's website, activate your license, and install the plug-in on to your computer.

3.1   Registering your Plug-in

When you purchase a Tverb plug-in you'll receive a Serial Number and License Key. The Serial Number has the letters TV followed by 6 numbers, for example, TV-######. The License Key is 3 sets of 4 characters (letters and/or numbers), for example, XXXX-XXXX-XXXX.

Once you've received these codes, you can register your plug-in on the Eventide website. To do so, please log in to `https://www.eventideaudio.com/user/login`. Create a new account if you don't already have one. Next, select Register a New Product and fill out the form by selecting Native Plug-in (VST, AU, AAX) in the Product Category field, Tverb in the Product field, and your serial number, license key, and ilok account name in the remaining fields. If you don't yet have an ilok.com account, you can create one for free at `http://www.ilok.com`. Once you've done so, press Register.

Once you've entered this information and pressed the Register button, Eventide will send the applicable plug-in license to your ilok.com account, which you will need to activate to your computer or iLok dongle.

3.2   Activating your License

To activate and manage your plug-in licenses you'll need to install PACE's iLok License Manager software which you can download from `http://www.ilok.com`. If you don't have this software installed, please download and install it now.

Once you have installed and launched iLok License Manager you should be able to log in to your account by clicking the large Sign In button in the upper left hand corner of the application. Once you have, you should be able to see available licenses by choosing the Available tab at the top of the iLok License Manager application. If you have successfully registered your plugin, your Tverb Native license will be available in this list. Please activate this license by dragging it to either your computer or iLok dongle listed on the left. When you do so, you will be asked to confirm the activation, and you will be able to see it by clicking on the location you have chosen. At this point your license is activated.

3.3   Installing your Plug-In

You should have been given a link to the Eventide Native plug-in installer when you purchased your plug-in, but if you haven't, you can find downloads for all of Eventide's Native Plug-Ins at `https://www.eventideaudio.com/products/plugins`. Please download and launch the correct installer for your system.

Once you've launched the plug-in installer, it will take you through several pages of options. We have tried to choose defaults for these options which will best serve the majority of users, but it is worth a minute to make sure you understand these options before clicking through to the next page. Once you have followed through the installer, your plug-ins and presets should be in your chosen locations, and you can hit finish to end the installer application.

At this point you should be ready to use your Tverb plug-in.

3.4   Moving or Removing and Activation

If, at any point, you decide to move your plug-in activation you can do so in iLok license manager. To move an activation between an iLok dongle and your computer, simply plug the iLok in, locate the license in its current location and drag it to its new location. To deactivate an activation, find it in its location, right click on it, and choose deactivate.

Remember that each Eventide Native Plug-In License comes with two activations which can be used on either a computer or iLok dongle, meaning you can use Tverb in two locations at the same time.

4   Tverb Overview

Figure 2: Tverb Plugin

The Tverb UI is divided into 2 components: the room and the console. The room provides an intuitive way to place the 2 distant mics in the hall, while the console provides post-reverb channel processing for each individual mic and the master.

The following features apply to all Tverb controls:

- Values can be changed by typing into the corresponding text box or by dragging the text box up or down

- Double clicking or Opt + clicking on any control will revert it to its default value

- Cmd + dragging on any control will result in more precise range of motion

- All controls are automatable

5   Tverb Room

The room view recreates Tony Visconti's view of the Meistersaal hall from Hansa's control room during the Heroes session. You can see the three mics that he set up. They are labeled mic 1, mic 2, and mic 3, corresponding to the console channels.

Figure 3: Tverb Room

5.1   Mono vs. Stereo Microphones

Tverb comes in 'Mono In, Mono Out" (MIMO), "Mono In, Stereo Out" (MISO), and "Stereo In Stereo Out" (SISO) modes. Depending on which instance is selected, the mics are either mono or stereo. In MISO and SISO instances, we simulate stereo microphones to capture a wide stereo reverb sound and to preserve the stereo image of the input sound source captured by the close mic. In MIMO instances of Tverb, we simulate traditional mono microphones summing the room sound to a mono signal.

5.2   Microphone 1

The interface assumes the input sound source is coming from the front of the room so Microphone 1 is fixed in place, representing David Bowie's close mic. While it cannot be moved throughout the room, its settings can be adjusted by hovering your cursor over the microphone.

- Omni - This polar pattern is the wettest of the 3 since it picks up a full radius of ambient room sound.
- Cardioid - This polar pattern is the cleanest of the three, it only picks up the clean signal with no additional reverb.
- Figure 8 - This polar pattern captures less ambience than omni.
- Low Cut - Attenuates by 12 dB/octave below 150Hz.
- High Cut - Attenuates by 12 dB/octave above 8kHz.

5.3   Microphones 2 and 3

These are the near and far mics of the Heroes session and can be moved anywhere in the room.

- Distance Control - Moving a mic farther in the room adds predelay and modifies the reverb's early reflections corresponding to the mic's position.
- Lateral Control - In stereo instances of Tverb, the lateral position affects the balance of the signal picked up by the microphone. For example, if a mic is along the left wall, it will capture more of the stereo input's left channel than the right channel.

5.4   Key Commands

A handful of key commands are provided for ease of mic placement:

- Shift + mic drag - Solos the mic being dragged. This will temporarily override the solo settings of the console until the mic is released. It will not override the mute if it is engaged.

- Right Click + mic drag - Restricts the mic movement to only one dimension, Distance or Lateral, depending on which direction is engaged first. You can right-click drag in conjunction with any of the other microphone key commands.

- Cmd + mic drag - As with all controls, this provides additional precision when moving the cursor.

- Opt + mic click - As with all GUI controls, this returns to the default value.

- Double-click mic - As with all gui controls, this returns to the default value.

- Text box - Instead of dragging the microphone, you can type a value into the text boxes to position the microphone.

5.5 Microphone Overlap

While dragging mics 2 and 3 around the room, you'll notice that they cannot be placed in exactly the same spot. However, if you type the same distance and lateral values into both microphones' text box, one mic will disappear behind the other at exactly the same position. This is a feature not a bug!
When mics 2 and 3 are perfectly overlapping, engaging one of their invert switches will cause 100% phase cancellation and no reverb will be heard. This is an asset because if you add a gate to one of these mics, you can achieve an "Inverse Tverb" effect where reverb appears when a gate closes rather than opens. More details about this technique are provided in the Tips And Tricks section.

6 Console Overview

Inspired by the 70's Neve that Tony Visconti used in the Heroes session, the console provides mixing and signal processing for the three microphones. Since the room mics are virtually plugged in to the console, all console processing occurs post-reverb.

Mimicking Tony Visconti's console settings from the Heroes session, mic 1 has a compressor module while mic 2 and mic 3 have linkable gate modules. The master channel includes an additional module that affects the tone of the room reverb.

Figure 4: Tverb Console

7   Compressor Module

As in the original session, a compressor is applied to the close mic, microphone 1. The polar pattern of this microphone will determined how 'clean' this signal is. Cardioid captures the direct, dry signal whereas omni and figure 8 add a bit of room ambience.

Figure 5: Compressor Modules

7.1   Controls

- On - Whether the compressor is bypassed or not.
- Threshold - The threshold at which the compressor begins attenuating.
- Ratio - The ratio at which the compressor attenuates the signals above the threshold.
- Attack - The speed at which attenuation kicks in.
- Release - The speed at which attenuation releases.
- Gain - Provides additional 24 dB of gain after the compressor attenuation.

7.2   Meters

- In - Displays the input level of the compressor module.
- GR - Displays the amount of attenuation.

8 Gate Modules

Channels 2 and 3, corresponding to microphones 2 and 3, have a gate module rather than a compressor which can be used for dynamic gated reverb effects.

Figure 6: Gate Modules

8.1 Controls

- On - Whether the gate is bypassed or not.

- Threshold - The signal level at which the gate begins to open.

- Attack - Determines how rapidly the gate responds (opens) when the threshold is reached.

- Release - Determines how quicky the gate responds (closes) when the signal level falls below the threshold.

- Hold - The minimum length of time the gate will remain open once the signal has gone above threshold.

- Pre - If Pre is selected, the mic 1 signal (post polar pattern, pre compressor) is used as the key to both gates. By default, Pre is not selected and each gate's key is the same as its input. Pre is useful if you want to trigger the gates with a pre-reverb signal.

- Link - Links the controls of the two gates. With Link 'ON', all of gate 2's values will change to match gate 1's values. Any further changes to either gate will affect both. Furthermore, the inputs to the gate thresholds will also be linked, so if one gate opens, the other will too, even if the other didn't receive enough signal to open on its own.

8.2 Meters

- In - Displays the input level of the gate modules.

- GR - Displays how open the gate is. It does not display how much the input signal is being reduced. For example, when the gate is closed, the GR meter will be fully illuminated regardless of whether signal is attempting to pass through.

9 Room Module

Suspend your disbelief: this mixer module allows you to adjust the tone of the room. It isn't a post-reverb effect, it's controlling the sound of the room itself!

Figure 7: Room Control Module

9.1 Controls

- Decay - The length of the room's reverb tail.
- Diffusion - The level of diffusion in the room.
- High Frequency - The center frequency of the high band.
- High Frequency Gain - The attenuation of the selected frequency.
- Low Frequency - The center frequency of the low band.
- Low Frequency Gain - The boost or cut of the selected frequency.

10   Levels Modules

Everything in this section occurs post-reverb and post-gate/compressor processing. The Master channel sums the three mic channels.
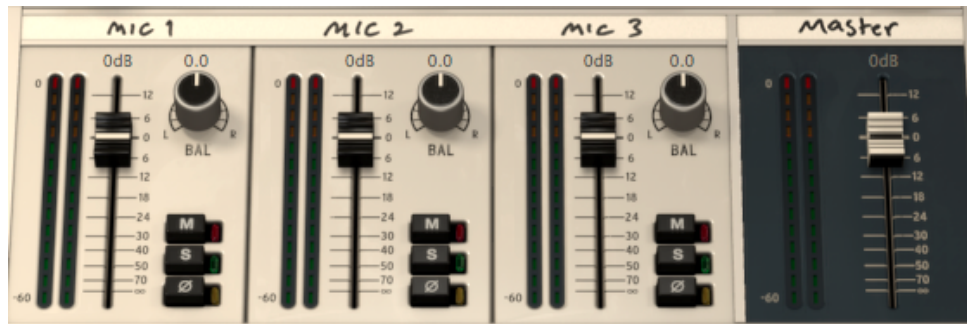

Figure 8: Levels Modules

10.1   Controls

- Fader - The output level of the channel.
- Balance - The channel's balance value. The balance knobs are only present in MISO and SISO. In MIMO the balance controls are hidden.
- Mute - Mutes the signal, overrides solo.
- Solo - Solo is exclusive by default but multiple channels can be soloed by shift-clicking multiple solo buttons.
- Invert - Inverts the signal. This is useful when mics 2 and 3 are placed close together and experience phase cancellation.

The faders of mic 2 and mic 3 can be grouped by holding down the Shift key while dragging either fader.

10.2   Meters

- Channel Meter - Displays the output level of each channel.

11   Preset Bar

Figure 9: Preset Bar

11.1   Saving and Recalling Plug-In Settings

When Tverb is installed, a library of settings is placed into the
<user>/Documents/Eventide/Tverb/Presets folder. These presets have a .tide extension and can be
saved or loaded from the Tverb preset bar in any supported DAW.

In Pro Tools there is an additional generic preset bar that saves .tfx presets to a separate location. This
is a Pro Tools format that can only be loaded from a Pro Tools session. We recommend saving your
presets using the Eventide preset bar to ensure that your presets will be accessible from any DAW.

11.2   Compare

Compare becomes illuminated when a preset has changed. Clicking Compare toggles between the unal-
tered preset and the adjusted state of the preset.

Figure 10: Preset Bar

11.3   Info

The "i" button enables easy access to documentation from the preset bar. Clicking on it opens this user
guide in your default PDF viewer. This user guide is located along with your presets in your
<user>/Documents/Eventide/Tverb folder.

11.4   Mix and Mix Lock

The Mix text box determines the mix value of the Tverb plug-in. Right-clicking on the mix value toggles
between the current mix value and the dry signal.

Figure 11: Preset Bar

When Mix Lock is illuminated, the current Mix value will remain unchanged as new presets are loaded.
This is especially useful on an effect return track where the mix should always be set to 100.

12 Tverb Tips And Tricks

12.1 Not Just For Vocals

Tverb is a great sounding reverb. Try it on other sound sources and instruments! Eventide has compiled an extensive list of artist and factory presets to get you started. Use the drop down from Tverb's preset bar and explore, or "Throw a cat in a bucket and put it through Tverb" - Tony Visconti

12.2 To Gate Or Not To Gate

By their nature, gates are level dependent so some source material may not be optimally suited to interact with the gates. As well, sources with transients and wide dynamic range can make the best use of them. To effectively use the gates on other sources, like vocals, you'll need to find the point in the track where you'd like each mic to kick in and adjust each gate accordingly.

12.3 Gate Adjustment

When using gates, keep in mind that Tverb's gate threshold is usually the most important gate parameter to adjust. As a starting point for gate setup:

- Use a room decay time of around 3 seconds.
- Turn attack, release, and hold to their quickest, most counter-clockwise positions.
- Loop a portion of audio in your DAW, centered around the section and level where you want the gates to open.
- Adjust threshold so that the gates are only triggered for the desired audio section's level, but not at a lower level.
- After finding a good threshold, adjust attack, release, and hold, to taste.

Experimentation is key and remember that the artist and factory presets may need some gate threshold adjustment depending on your material. Also note that the gates are triggered from the mic returns listening to the room, i.e. post-reverb. To trigger the gates using the input to Tverb, engage the pre switch.

12.4 Long Decay Times

Tverb's reverb is designed to model the acoustics of Hansa Meistersaal and does a faithful job at normal decay times. For the plug-in we've extended the decay time to an unnatural 7 seconds to provide for more extreme creative control. At these extremes the reverb begins to sound unnatural because it models a hall with very hard, reflective surfaces.

12.5 Mic Position Automation

One of the features of Tverb is its real-time, smooth, and clip-free sound processing while changing mic 2 and mic 3 positions. Exploit this interactive and dynamic sound effect to its fullest using plug-in automation. Labeled as 'Distance' & 'Lateral' automation parameters, try judicious use of mic position automation to create your own interesting reverberant effects. It's like having two studio assistants moving mics around a live room, in real-time, just for you.

12.6 Room Equalization

Tverb allows you to tailor the frequency response of the room giving you creative flexibility seldom available in a real studio. Here are some room EQ tricks to try:

- On snare, try lowering the room's high frequency gain to remove the snare "sizzle" from the reverb tails. Also try this with bright sound sources.

- On some instruments, lowering the low frequency gain can remove boominess and can sometimes create more separation between the instrument and its reverberation.

- Try cutting both low and high frequency gains at the same time for a band-pass filtered reverb effect.

12.7   Image Shifted Effects

You can use mic distance together with balance control to create image shifting (panning) effects. Different mic distances will change each mic's early reflections (in addition to other tones) which can be used to create a type of panning called Haas panning. Try this as a starting point:

- Set room decay below 3 seconds.

- Mute mic 1 from the console.

- Move mic 2 near the front of the room.

- Place mic 3 further toward the back of the room.

- As a starting point, adjust console balance controls hard left for mic 2 and hard right for mic 3.

With this setup, mic 2 will pick up more early reflections than mic 3. When panned in the manner above, the listener will perceive the sound to be coming more from the left despite similar mic 2 and 3 levels.

12.8   Inverse Tverb Effect

By entering the same distance and lateral values into the text boxes of mic 2 and mic 3, they'll be placed in the exact same position and mic 3 will dissapear behind mic 2. This is a feature that enables a useful effect that we call "Inverse Tverb". Whereas Tverb usually passes reverb when a gate is open and blocks reverb when a gate is closed, Inverse Tverb does the opposite: reverb is blocked when a gate is open and passes when a gate is closed.
Here's how to recreate it:

- Place mic 2 and mic 3 in the exact same location within the room. You can only achieve this by entering text values, we prevent mic overlap caused by mic dragging.

- Engage the invert switch on channel 2. This will cause 100% phase cancellation and no reverb will come through on either channels.

- Turn on the gate of channel 2. When channel 2's gate is open, there is full cancellation between the channels and no reverb will be heard. However, as gate 2 closes, the phase cancellation melts away and reverb begins to pass on channel 3.

- Fader 2 and fader 3 need to be at the same level to maintain 100% phase cancellation. If you want to adjust the reverb level, try holding down the Shift key while moving fader 2 or 3; this controls both faders at the same time.

An effect like this could be useful on a complicated piano track. Perhaps you want a clean signal when the piano part is busy but you'd like reverb to creep in as the part slows down and more space is introduced between chords. This is possible with Inverse Tverb!