Reverb2016 Frequently Asked Questions

Signal Input/Output

How can I control input routing?

The Reverb 2016 allows you to select either input 1 or 2 or both as the audio source. This affects the digital input as well as analog and can be handy when you want to feed the product a mono signal. To do this, press the "System" button once. The display will show the current input routing by alternating between "inP" (Input) and the current choice. Turn the preset knob to select either "in1" "in2" or "bth" (both). When "in1" is selected, Channel 1's input signal is applied to the reverb algorithm and both LED bar graphs monitor Channel 1's input. Also, Channel 1's input provides the "dry" signal for the output Mix at each output. When "in2" is selected, Channel 2's signal provides the source in the same way as described for Channel 1.

When "bth" is selected the routing uses both inputs. For "MONO" algorithms, the inputs are summed and applied to the reverb algorithm. The summed signal provides the dry signal for the Mix control.

With "bth" selected for either the "Stereo" or "New Stereo" reverb types, the two input channels drive the reverb algorithm separately and the LED bar graphs monitor the input channels separately. For the Mix control, each input provides an independent dry signal to its corresponding output channel.

What does the "MONO" LED indicate?

It indicates that the reverb algorithm only accepts a Mono source. Use the Input Routing select function in System mode to drive the reverb from channel 1 or channel 2's input (for mono sources) or the sum of channels 1 and 2 (when using both inputs).

What does "Kill" do?

The Kill switch disables the input to the reverb algorithm. Kill solos the reverb 'tail.' Kill does not disable the dry contribution to the output mix, so if you're set to <100% Mix, you'll still hear dry audio when Kill is on.

Why is the input signal clipped?

Check the rear panel balanced/unbalanced switch. When depressed, this push button switch provides an additional 10dB of gain for instrument level input signals. If you've connected a line level source, the analog input stage will clip.

Input levels are less than 0dB yet both Clip LEDs are lit. What's going on?

Digital clipping. The reverb algorithms perform lots of additions and the result of any of these operations may exceed the dynamic range of the DSP chip. The result is digital clipping (saturation). The combination of long decay times and low EQ boost are one sure way to achieve digital clipping. In fact, at the extreme the reverb becomes unstable. Occasional digital clipping may not be audible. If it is, back off on the input level, decay time, position, and/or low EQ boost.

Why is the "Dig In" LED flashing?

You've selected the digital input mode without connecting a digital input signal. The LED is lit solidly when the Reverb 2016 locks on to a valid S/PDIF input clock signal.

Are the SPDIF outputs always enabled?

Yes.

The Algorithms

What are the algorithms?

Three of the six "Stereo" "Room" and "Plate" are reverse-engineered copies of the three most popular algorithms shipped with the original Eventide SP2016 back in the early 80's. The other three are enhanced versions of the three originals.

How close to the originals are the "originals"?

As close as we could get (short of modeling the original analog circuitry). The digital processing is identical. As is the sample rate. Analogically, there are differences. The original Eventide SP2016 used a 16-bit, dual-slope, run-down analog-to-digital converter and a simple 16-bit digital-to-analog converter. The Reverb 2016 uses 24-bit oversampling converters. One of the advantages of modern oversampling converters is that they eliminate the requirement for complex anti-aliasing filters. The SP2016 had (required) complex analog filters with non-linear phase at high audio frequencies.

What's a "Stereo" algorithm?

Stereo is an unfortunate name for a reverb algorithm but we use it here for historical reasons. The first reverb developed for the Eventide SP2016 was the "Room" algorithm and it was MONO in only. While the outputs are decorrelated, the input is MONO. Users asked for a stereo version and "Stereo Room" was developed. Stereo Room creates separate paths for each channel's early reflections.

In what way are the new algorithms 'enhanced'?

The "New" algorithms take advantage of the extra DSP horsepower of the new hardware. Diffusion and EQ controls have been added to Room and Plate. Position

control has been added to Plate. For all three new algorithms, the Diffusion range has been expanded – Diffusion in the original was rather subtle. Hi freq EQ has also been brightened a tad at the 0, -1, and -2 settings.

The Parameters

What does "Position" do?

Simulates the effect of being in the front of the enclosure (close to the sound source), at the rear, or any place in between. Note that when using the Stereo or New Stereo algorithms, with signal applied to only one input and input routing set to "bth", as you move Position towards the front, the output levels will be dramatically different. When using the Stereo algorithms with one input channel, select the appropriate input routing ("in1" or "in2").

What does "Diffusion" do?

Diffusion simulates different types of reflecting surfaces. At its minimum setting, the reflections are hard and discrete as if the surface were composed of a hard flat surface (tile, metal, glass). At maximum setting, the reflections are complex and spread over time simulating a diffusing surface.

Some of the Parameter LED indicator[1]s go dark sometimes. Why?

The original Room and Plate algorithms did not have EQ or Diffusion controls, so these parameters are not available in these algorithms. The LEDs are then turned off for these parameters. The original Plate algorithm did not have a Position control.

What's causing the horrendous, clipped, low frequency rumble?

Long Decay time combined with low frequency EQ boost. With decay times >10 seconds, the reverb matrix is on the verge of instability. Boosting the low end sends it over the edge resulting in a low frequency, clipped oscillation. Either back off Decay time or low EQ boost to make it go away.

How many presets does the 2016 have? Can I add my own?

The Reverb 2016 can store up to 99 presets. Units shipped from the factory are programmed with unique presets stored in locations 1-89. Preset numbers 90-99 are blank. We recommend saving user presets in locations 90-99. Presets 1-89 can be overwritten if desired.

How do I restore the factory presets if they have been overwritten or modified?

To restore factory presets, hold the 'System' key while powering up. The display will read "FAC" and the 'System' LED will blink while restore is in progress. Note that restoring factory presets will overwrite all presets including any user presets.

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