

# Sanford Reverb

v2.0

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# Credits

Special thanks to the following people who have helped make the Sanford Reverb possible:

- Rick Christy
- Mike McFarland
- Alexander Stoica
- João Fernandes
- Brent Randall
- Donovan Stringer

# Introduction

The Sanford Reverb is a true stereo reverb. It is capable of simulating everything from small rooms to giant cavernous spaces. Its sound is dense, clean, and crisp making it perfect for most situations.

Left and right input channels each have a set of 3 early reflections that can be independently set. The filter section lets you shape the tone of the reverb's output, and damping is provided to simulate wall absorption. Together these features let you shape the reverb sound to simulate almost any room.

Modulation is also provided to add motion to the reverb tail. The result is a more animated and lively reverb.

## Key features

- Control over 6 early reflections, 3 for each channel
- Pre-filter section for shaping the input's tone
- Damping for simulating wall absorption
- Tail Modulation
- Freeze Mode
- MIDI Learn
- Low CPU usage

# Top Section



The Top Section provides a set of controls that affect global settings. Clicking on the logo on the left will bring up a popup menu with the following choices:

- About
- Cancel MIDI Learn
- Clear All MIDI Learn

Selecting the About menu item brings up an “About Box” with information about the Sanford Reverb. Selecting the Cancel MIDI Learn menu item cancels MIDI Learn if it is currently in affect. Selecting the Clear All MIDI Learn menu item clears all MIDI Learn data from the bank.

The LCD to the right of the logo displays information about the current parameter you are editing. Also, when the mouse cursor hovers over a control, the value of that control is displayed.

The Bypass switch lets you set the Sanford Reverb's operating mode. When set to On, the reverb processes sound passing through it; when set to Bypass, it passes sound through unaffected.

# MIDI Learn

MIDI Learn is the ability to associate a parameter in the plugin with a MIDI control message. You begin using this functionality by right clicking on any control. Click on the MIDI Learn menu item. At this point, the plugin is in MIDI Learn mode; it's waiting for the next MIDI control message. If you would like to cancel MIDI Learn, click on the logo at the top and choose the Cancel MIDI Learn menu item.

Once it receives the next MIDI control message, it will associate that message with the parameter represented by the control you clicked. From then on, any time the plugin receives the same MIDI control message; it will use that message to change the value of the targeted parameter.

If at some point you would like to erase MIDI Learn, right-click on the parameter again, and choose the Forget option.

MIDI Learn is stored with the bank data. When you save a bank, you save the MIDI Learn settings along with it. To erase all of the MIDI Learn settings, click on the logo at the top and choose the Clear All MIDI Learn menu item. You'll receive a warning dialog message. Click Ok if you are sure you want to erase all of the MIDI Learn data for the bank.

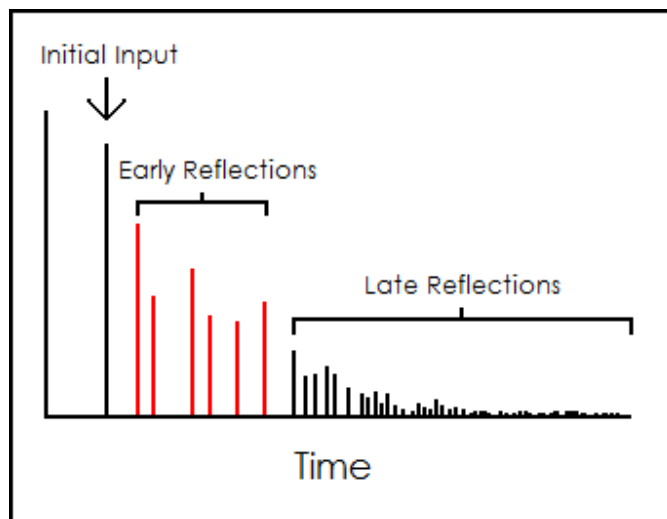
# Reflections

Reverb is made up of a series of echoes. The echoes are so close together in time until we no longer hear them as being distinct from one another. These echoes are called reflections; they are the result of the sound being reflected off of the surfaces of the room in which the sound occurs.

We can broadly divide the reflections into two types: early reflections and late reflections. Early reflections are the initial reflections. Generally, they occur between 20ms and 80ms after the initial sound.

As the reflections begin interacting with each other over time, they become much more diffused. These diffused reflections are called the late reflections.

Below is a graph illustrating how reflections evolve over time:



## Early Reflections Section



The Sanford Reverb features 6 early reflections, 3 for each channel. Each early reflection has a set of controls for setting its delay time, pan position, and level. In addition, each early reflection has a switch for turning it on and off.



## Mixing



The Sanford Reverb gives you three controls for mixing the overall output and one control for determining the output level.

The DRY control determines how much of the original input is passed through to the output. The ER control determines the level of the early reflections, and the LR control determines the level of the late reflections. The OUTPUT sets the overall level of the reverb.

## Filter



The Filter section is responsible for filtering the sound coming out of the reverb. This gives you a chance to shape the sound's tone, and this in turn affects the tone of the reverb.

The LOW CUT filter control lets you set the cutoff frequency for a highpass filter. Frequencies below the cutoff are increasingly filtered out. Turning the cutoff frequency up gives the sound a “lighter” quality.

The HIGH CUT filter control lets you set cutoff frequency for a lowpass filter. Frequencies above the cutoff off are increasingly filtered out. Turning the cutoff frequency down gives the sound a “warmer” quality.

# Reverb Section



The reverb section provides a set of controls for controlling how the reverb sound evolves over time.

The Pre-Delay control determines how much the sound is delayed before entering the reverb algorithm. In an actual room, it takes time before the sound after leaving its source reaches the first surface and bounces back. The larger the room, the longer this takes. The Pre-Delay control lets you simulate this aspect of reverb.

The Reverb Time control determines how long the sound reverberates. Essentially, it lets you set how long it takes for the late reflections to fade.

The Damping control determines the damping frequency. The lower it's set, the more quickly the reverb will lose higher frequencies. This helps simulate the absorbent quality of a room. For example, a room with carpet on the floor will lose higher frequencies more quickly than an uncarpeted room.

The Freeze switch lets you turn on and off the Freeze mode. When the Freeze mode is off, the reverb behaves normally. When the Freeze mode is on, the content of the reverb's buffers is "frozen." The result is that whatever sound is currently in the reverb is played continuously without fading away. The sound is played endlessly until the Freeze mode is turned off.

# Modulation



Modulation lets you modulate the reverb's tail. This can add motion to the sound making the reverb more lively and animated.

The On/Off switch turns on and off the modulation.

The Depth control determines how much the reverb is modulated.

The Speed control determines the speed, or frequency, of the modulation.