Stealth Delay

User Guide

Version 1.0

PolygonSheep

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Introduction

Thank you for your interest in Stealth Delay. This user guide will help explain the layout of Stealth Delay along with its features. Of course the best way to use this user guide is to download the free Stealth Delay demo so you can click around the interface while learning the functionality. You can always get the latest version of the Stealth Delay demo from www.polygonsheep.com. Please note: **the Stealth Delay demo will briefly mute the audio every 45 seconds.** The main readout display will alert you when this mute happens. Registering the demo with a license key will remove this limitation.

Installation

Stealth Delay comes available as a 32-bit and 64-bit VST2 plugin as well as a 64-bit Audio Units plugin. If your DAW accepts 64-bit plugins it is recommended you install the 64-bit version. However, you can install either the 32-bit version, the 64-bit version, or both.

If you are using a Windows system, your computer will need to be running Windows 7 or later and must support Direct2D. The Windows demo comes as a zip file containing installers for the 32-bit version and 64-bit version separately. If you install both, it does not matter which one you install first. They will share the same presets folder and registration key. During installation you will be asked where to install Stealth Delay and you should chose the VST directory where your DAW normally looks for plugins. The presets folder will be installed into the following location on Windows:

- /Users/<username>/My Documents/PolygonSheep/StealthDelay/Presets

If you are using a Mac, your computer will need to be running MacOSX 10.7 or later. The preset folder will be installed into the following location:

- MacHD/Library/Audio/Presets/PolygonSheep/StealthDelay/

Header Section

The header section consists of the main readout display, the A-B comparison, preset save icon, main power button, as well as preset, resize, options, and register buttons. If you have already entered your license key, the register button will not appear.

The main readout display shows the current preset selected and also displays the control names and values as you mouse over the various control knobs. The other buttons and functions are:

- A-B Button - comparison button will allow you to jump back and forth between two different presets or allow you to compare two different sets of control value changes you make.
- Save Icon - clicking the save icon brings up the Save Preset Dialog where you can save off your current control values for Stealth Delay. You will have to provide a preset name, author, and description for the preset. The preset will be saved into the most recently used preset folder (e.g. Basics, User, etc.)
- Presets Button - Toggles the Presets Manager window. The Presets Manager is described in more detail below.
- Options Button - Toggles the Options Panel. The Options Panel is described in more detail below.
- Resize Button - Allows you to change the GUI size of the current instance of Stealth Delay. If you would like to change the default GUI size for all future instances, that option is available in the Options Panel.
- Registration Button - If using the demo, the registration button will appear. Clicking will bring up the Registration Dialog where you can enter your license information. Once Stealth Delay is registered, you will not see the registration button anymore.
- Power Button - This is the main bypass for Stealth Delay. When the button is in the off state, the audio is passed unaltered through Stealth Delay. When the button is on the on state, Stealth Delay processed the audio normally. **Tip:** *If changing various control values has no effect, make sure the power button is "on".*

The main panel of Stealth Delay is organized left to right in order of the audio signal flow. The signal first passes through the delay section, followed by the feedback, effects, and modulation sections in that order. We'll take a look at each of these sections next.

Delay Section

The delay section contains knobs for setting the delay amounts, tempo sync buttons, a link button, and the delay mode choice. When opening a new instance of Stealth Delay the left and right channel will be linked. When the left and right are linked, the single knob sets the same delay amount to both the left and right. Likewise, the tempo sync button will sync both the left and right. The delay amount will go up to 2 seconds when not tempo synced. The delay amounts when tempo synced will depend upon your DAW's tempo.

To have independent control over the left and right delay amounts click the link button. The left and right will unlink and you will see two knobs. Each channel can now set its own delay amount and tempo sync independently.

Below the delay knob(s) is a selection for the delay mode. Stealth Delay offers three different delay modes.

- Normal - This is a basic stereo delay mode with the left and right channels operating independently with no crossover feedback.

- Mid-Side - This mode is similar to a stereo widener. A width slider will be displayed ranging from 0% to 200%. This sets the width (0% center, 200% sides) of the delayed signal. **Tip:** *You can use Stealth Delay as a stereo widener with no echos by using this mode and setting the delay amount to 0 and the dry / wet mix to 100%.*
- Ping Pong - This is a classic ping pong mode where the delayed signal will repeat first in the left channel and then the right channel. With the left and right delay amounts separated you can create some really interesting rhythms.

Feedback Section

Like the delay section, the feedback section has the ability to link or unlink the left and right feedback channels. When linked the single knob will control both the left and right feedback amounts. Click the link button to gain independent access to the left and right feedback amounts.

Notice that the feedback amount can go up to 100%. At 100% the delay will continue echoing at the same input volume forever. If you have a continuous input source playing while the feedback is at 100% the volume could grow very loud. It's recommended to use a channel limiter when using a high feedback setting.

Below the feedback knob(s) are the feedback filters. There is a low pass filter (high cut) and a high pass filter (low cut). The low cut can be disabled by setting the knob all the way to the left. The high cut can be disabled by setting the knob all the way to the right.

Effects Section

The effects section offers five non-modulated effects that can be applied to the wet signal. Of course you can use your DAW's automation to modulate these effects if you like. The follow effects are available:

- Diffusion - Provides a lush reverb tail to the wet signal. **Tip**: *Set the delay amounts to 0 and the dry / wet control to 100% and you can use Stealth Delay as a reverb plugin.*
- Overdrive - Adds subtle distortion to the wet signal. Input level will have an effect on how strong the overdrive behaves.
- Ducking - Adds compression to the delayed signal whenever there is an input signal. This reduces the volume of the delayed signal to allow the input signal to be heard more clearly and prevent the sound from becoming muddy. As the ducking value increases more compress (reduction) will be added.

- Reverse - Reverses the delayed signal based on the delay amount. This value blends the forward and reversed signals with 0% being completely forward and 100% being completely reversed.
- Gate - Applies an on/off gate to the wet signal. The gate count is the number of on/off cycles that happens in the delay amount time. (e.g. a gate count of 4 with a delay of 1 second will produce 4 on/off gate cycles per second) With the delay set to 0, this control has no effect.

Tip: *These effects are only applied to the wet signal, so if it sounds like the effects aren't doing anything to the sound, make sure the dry / wet control is set above 0%.*

Modulation Section

The modulation section provides LFO modulated effects. These effects can be applied to the wet signal (Premix) or the combined mix of wet and dry (Postmix). To use the modulation section click the modulation power button beneath the title "MODULATION". This button will toggle the modulation section on and off. When the modulation is off all the controls and lists will be grayed out.

The left hand side of the modulation section allows you to select whether the modulation should happen pre or post mix as well as select the modulation effect. There are six modulated effects you can chose from:

- LPF - A low pass filter. You can select the frequency cutoff, modulation depth, LFO rate, and resonance. **Tip**: *Setting the depth to 0 acts as non-modulated cutoff filter.*
- Notch - A notch filter with selectable cutoff, depth, rate, and bandwidth. The bandwidth slider controls how wide the notch should be.
- HPF - A high pass filter with selectable cutoff, depth, rate, and resonance.
- Phaser - Creates a sweeping effect. The depth controls the sweep range while the rate controls the sweep speed. The intensity controls the amount of feedback to amplify the effect.
- Chorus - Basic chorus to simulate multiple voicings. Keeping the rate below 0.3 Hz will add thickness to the sound while adjusting the rate above 0.5 Hz will produce more alien type sounds.
- Volume - The volume modulation acts a volume gate on the signal. With the depth all the way to 100% the volume will range from 0 to full volume. At 50% the range is half volume to full volume. Play around with the difference LFO waves to get some interesting results.

To the upper right of the Rate knob is the tempo sync button. This will tempo sync the LFO rate to your DAW. You will notice the rate values change from Hz to musical time values.

At the bottom of the modulation section is the LFO wave selection and animation. There are four wave types available; triangle, sine, sawtooth, and square wave. The animation gives a visual representation of the LFO rate. If you prefer, you can turn off the LFO animation through the Options Panel described later in this guide.

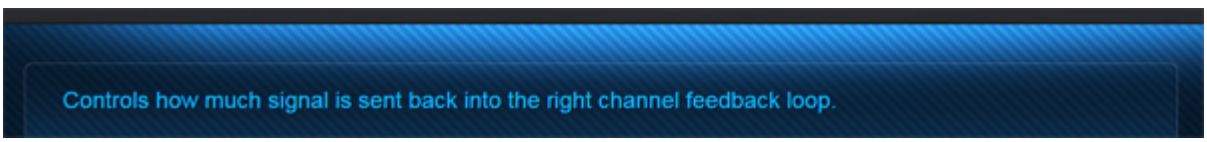
Mix Section

The mix section contains the input gain / attenuation knob, the output gain / attenuation knob, the dry / wet setting, and a sleep control. The input knob will increase or decrease the input signal. The output knob will increase or decrease the output signal. Both of these range from -12dB to +12dB.

The dry / wet knob controls the balance of the wet and dry signals. At 50% the wet and dry signals are blended equally. As the control drops below 50% the wet signal is decreased allowing more of the dry signal to be heard. Above 50% the dry signal is decreased allowing more of the wet signal to be heard.

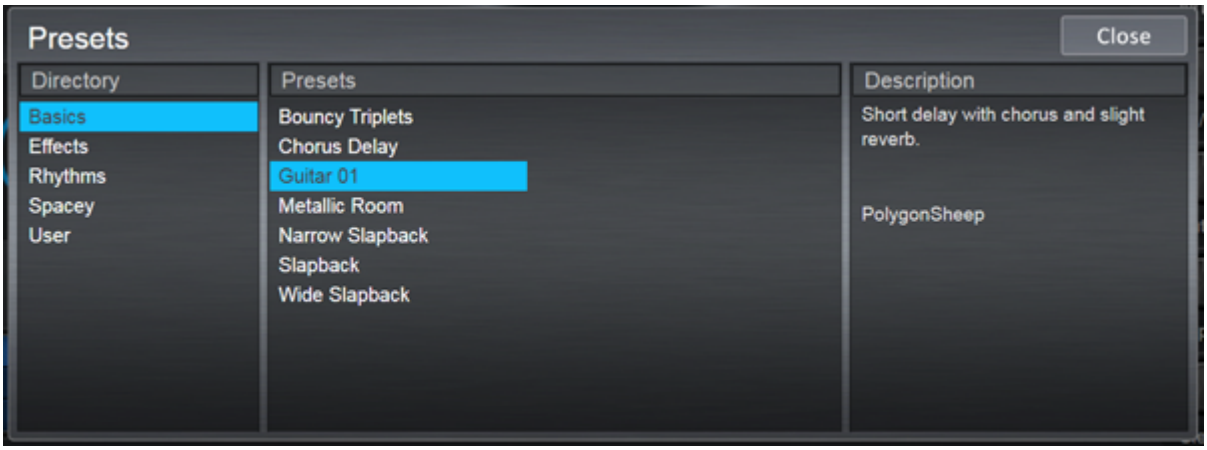
The sleep control helps reduce CPU load when the signal drops below the sleep threshold. By default, the sleep control is turned off. To use the sleep function increase the sleep value to your desired threshold in dB. If the input signal and any signal in the delay line or effects lines have dropped below that threshold the entire plugin is bypassed. Once an input signal is detected exceeding the threshold the plugin becomes active again. This is most useful when Stealth Delay is used on short audio parts with long silence in between parts.

Tool Tips



At the bottom of Stealth Delay is the tool tips area. As you mouse over the various control knobs help text will be displayed providing a brief description of each control. You can turn off tool tips in the Options Panel.

Presets Manager



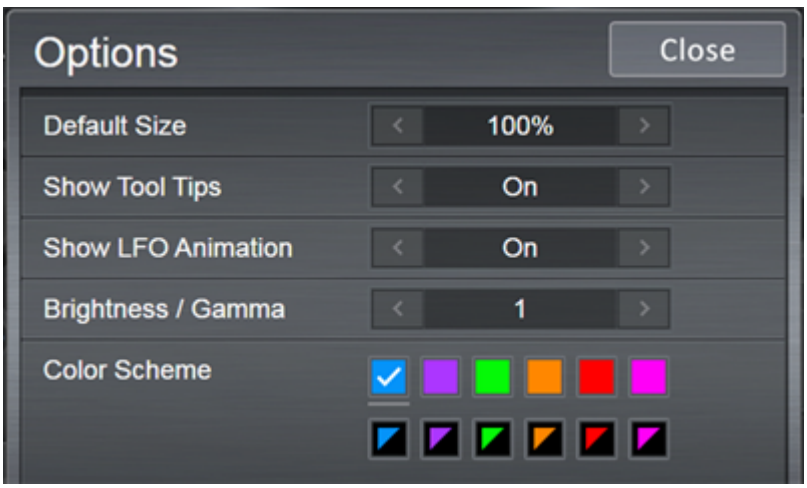
The Presets Manager can be opened by clicking the “Presets” button to the right of the main readout display. The Presets Manager is only for loading presets; you cannot save a preset from the manager. To save a preset, click the save icon in the main readout display.

The manager is divided into three sections. The left section displays all the folders/directories inside the presets folder. These folders help organize the presets and you can add new folders by opening the presets directory in Windows Explorer (Windows) or Finder (Mac) and creating a new folder.

The middle section lists all the presets in the active folder. If you move your mouse to the bottom of the middle section a scroll bar will appear allowing you to scroll left or right to see more presets if necessary. Clicking on a preset will instantly load that preset so you can hear the changes right away.

The right section shows a brief description of the currently selected preset along with the preset’s author. To close the Presets Manager click on the Close button in the upper right.

Options Panel



The Options Panel is where you can customize the look of Stealth Delay. It can be opened by clicking the Options button to the right of the main readout display. The options panel allows you to set the following options:

- Default Size - Set the size that take effect for new instances of Stealth Delay.
- Show Tool Tips - Toggles whether the tool tips are shown or not.
- Show LFO Animation - Toggles the animation in the modulation section that visually displays the LFO wave shape and the LFO rate. Turning this off might provide slightly better performance depending on your computer.
- Brightness / Gamma - This setting will increase the brightness of Stealth Delay. The values go from 1 darkest to 5 brightest.
- Color Scheme - Allows you to select the color scheme for Stealth Delay. Each new instance will use the color scheme selected.

The Options Panel is closed by clicking the Close button in the upper right of the panel.

Troubleshooting

Here are some quick troubleshooting tips:

- None of the controls affect the sound
    - Make sure the main power button in the upper right is “on”
- The Modulation section doesn’t affect the sound
    - If “Premix” is selected the modulation is only applied to the wet signal. Make sure the Mix isn’t set to 0% (dry).
- The Gate doesn’t affect the sound
    - The gate count is based on the delay amount. If the delay is set to 0 the gate will not work.
- The Sleep function won’t engage
    - If the sleep threshold is set too low it may take a long time for sleep mode to kick in as there could be a small signal left in the delay line or diffusion. Try increasing the sleep threshold.
- Audio cuts out occasionally
    - The demo version will mute the audio briefly every 45 seconds. This limitation is removed if you purchase a license key.