# Poltergeist

## About Poltergeist and EffectiveFX

Poltergeist uses multiple stages to generate intricate, fractal-like phasing patterns on audio input. This vast and unique soundscape can be used to produce 1) bold new sounds, 2) subtle textural depth and beauty, 3) thrilling reimaginations of traditional analog effects, and 4) everything in between. The many possible uses of Poltergeist are largely unexplored - tread bravely.

EffectiveFX is an independent, experimental audio technology studio that strives to create totally unique, often unusual, and always exciting creative tools for musicians in search of new sounds.

## Installation and Support

Installation instructions and a contact form for technical support can also be found here.

To install Poltergeist:

1. Either:
   a. Download files directly from the Poltergeist downloads page.
   b. On the project main page, in the box labeled "Email free download links:", enter an email address that is valid and accessible to you. You'll receive an email with several download links. Open the email on the device you're installing the plugin on. Click the download link that corresponds to the operating system (Windows or macOS) and plugin format (AU, VST3, etc) that you want to download and install.
2. Run the installer and follow the installer instructions to ensure the plugin installs in a folder accessible to your DAW.
3. Open your DAW and find the plugin you just installed. You'll be prompted for a registered email address that is valid and accessible to you. A confirmation code will be sent to that email.
4. Open the registered email and enter the confirmation code into the plugin window. Note that the confirmation code will expire 20 minutes after it's sent.

# Controls

Poltergeist is a unique plugin with multiple stages of effects that can interact with each other in many different ways to produce sounds far outside the confines of traditional effects plugins. With so many variables to control, it might feel a little overwhelming when you first open Poltergeist. The many presets are a great place to start, and blind experimentation definitely has its merits, but if you have specific sound design goals in mind, learning each control in-depth will help you get the most out of this powerful tool.

***Tips and Tricks:*** Start with the "Low" preset which minimizes the effect Poltergeist has on the input signal, and slowly turn the settings up.

***Tips and Tricks:*** To fine tune all settings, press and hold the "Control" button on your computer well adjusting the knobs in the plugin window.
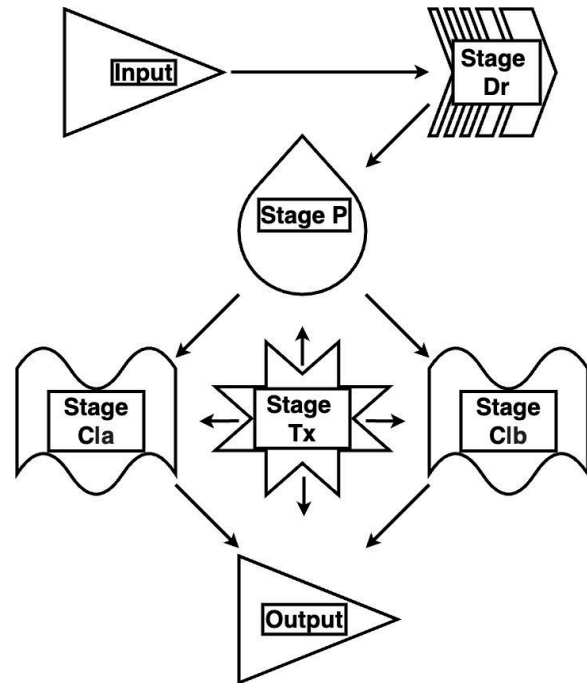
## Main Controls

Poltergeist has four top level "master" controls. These are Mix, Output Gain, and on/off switches for the C|a and C|b stages. In addition to the top level controls there are three toolbar controls at the top of the plugin window: Undo and Redo, Reset (to default), and Clear.

### Mix

The mix knob impacts the overall effect mix of the plugin, functioning as a conventional dry/wet control. If set to 0%, the signal will be completely dry and un-effected. At 100%, the signal is all Poltergeist.

We recommend adjusting the mix based on how you intend to use Poltergeist. Using Poltergeist as a provocative substitute for delay or reverb in a return track calls for higher values. If using Poltergeist on a single track, we recommend lower values (around 25-40%) so that the character of your original signal is preserved.

You may find it helpful to turn the mix up when building a particular sound before turning it back down once you've dialed in the effect you want. When applying to a group of tracks, Poltergeist can produce extreme results.

The output gain knob affects the volume of the overall output.

### C|a and C|b switches

The C|a and C|b switches turn the parallel C stages on or off. Stages Dr, P, and Tx are always on (although you can functionally turn off Stage P in its own tab), but using combinations of the C stages allow you to dial in more or less complexity from Poltergeist.

### Undo and Redo

The undo and redo arrows allow you to reverse or remake changes as you are dialing in settings in Poltergeist. Poltergeist can remember a maximum of 50 setting changes at a time.

### Reset (to default)

The reset function will restore all Poltergeist settings to the default preset. The reset function will undo control changes but cannot be used to reload a recently-used preset.

### Clear

The clear function can be used to clear all buffers, silencing all feedback currently being produced by Poltergeist. This is a useful setting for getting rid of excessive feedback produced by the plugin so you can hear setting adjustments as they are made.


## Dr Stage

The Dr or "drive" stage is the first stage in Poltergeist's unique signal chain. It stretches the input signal and drives the behavior of the subsequent stages. With low delay and higher feedback settings, audible distortion will be introduced.


### Feedback

The feedback knob controls the amount of feedback in this stage. Higher values will blend the modulation produced by other stages in Poltergeist's signal chain and produce longer echoes.

### Delay

The delay knob controls the degree of signal stretching. Higher values create an audible separation between your original signal and the output of Poltergeist's stages. Lower settings produce a simpler, textured modulation of the sound.


## P Stage

The P Stage is the second layer of signal modulation, and is an engine that drives phase shifts in the output. These phase shifts can be modulated by the later C Stages, if they are enabled.

To better understand the effect of the P Stage, it's sometimes useful to disable the C stages temporarily.

### Range

The range knob controls the range (in octaves) of P Stage modulation. Setting the range knob to zero minimizes the effect of this stage. Higher values create more movement in the phase shifts.

### Period

The period knob determines the speed of P modulations. Lower settings of the knob are akin to a tremolo "wobble." Higher values produce a more subtle effect that produces audible changes over a longer timeframe. If both C|a and C|b are active, medium settings will produce lush pattern variations that interact with each other.

### Center Frequency

The frequency knob controls the frequency "center" of P modulations, affecting the tonal range in which P modulations are audible. The frequency knob can be dialed between 20hz and 20khz.

### Layers

The layers knob controls the sonic depth of modulation for the P Stage. Lower values produce a softer and more subtle effect, while higher values create more complex and intricate patterns.

## C Stages

C|a and C|b are-parallel, complimentary stages that are symmetrically offset from each other. Turning C stages off reduces complexity, and it may be a good idea to start with one or none of them enabled.

***Tips and Tricks:*** Start with one C stage for sculpting lower register sounds before switching to the other C stage for higher registers.

### Delay

The delay knob controls the (pre)delay of the C stages. Lower values create modulation-like effects, medium settings produce reverb-like effects, and higher values create delay-like effects.

### Feedback

The feedback knob controls the feedback in the C stages. Higher values create echoes that modulate with more intensity the longer they continue. Lower values produce a cleaner sound that does not linger. Turning the knob to 100% will make the feedback oscillate forever under most conditions. To "exorcise" troubling excessive feedback, click the "C" button in the uppermost right-hand corner of the plugin window. This button clears buffers and silences all feedback instantly, functioning as a kill switch for any feedback produced by Poltergeist.

### Modulation Depth

The depth knob controls the depth of delay modulation. At zero, no depth modulation is produced.  Higher values introduce more audible variations in pitch, creating a greater depth in sound and possibly lessening the clarity of the original pitch.

### Modulation Period

The period knob controls the cycle time of delay modulation in milliseconds, from 10 ms to 4.00 seconds. Turning the knob to the right increases the time length of modulations, and turning to the left reduces the time length of modulations, producing faster modulations. At lower settings, the modulation changes the quality of the sound itself. Medium settings create a wobble effect similar to a tremolo, and higher values produce slowly evolving changes.


## Tx Stage

The Tx or "texture" stage is a "meta stage" that affects all other stages, besides the Dr stage.

***Tips and Tricks:*** When dialing in a new preset setting, it may be useful to either start or end with this stage since it adds significant coloring to the other stages in the Poltergeist's signal chain.

### OSC

The OSC button turns an LFO on or off, and impacts the C and P stages. Turning it off removes much of the modulation that Poltergeist produces, allowing you to dial in cleaner and less complex sounds. Turning off the OSC also effectively disables stereo modulation (see below).

### Stereo

The stereo button enables or disables stereo modulation for the oscillator. When turned on, the modulation produced by Poltergeist will be symmetrically opposite across the L and the R channels, producing a wide panning effect. Turning the stereo setting off does not necessarily produce a mono signal, but the L and R channels will be modulated identically.

### Feedback

The feedback knob introduces early-stage feedback, which can produce a lush, "metallic" modulation of the signal, especially if your audio input source has a lot of sustain. Feedback should be applied gradually for best results, since higher settings of this effect can easily overwhelm and muddy your signal.

### Feedback Texture

The texture knob adds texture to the feedback produced in the texture stage. At higher levels, you will hear "sharper" and more overdriven textures. At lower levels, the feedback produced by the Tx Stage will have a "rounder", deeper character.

# User Presets

Poltergeist allows for easy saving of user-created, sharable presets to enable you to quickly access the unique combinations of settings you create. The file extension indicates Poltergeist version compatibility and follows the pattern ".pg<major version><minor version>" (for example, .pg10 indicates a preset for Poltergeist version 1.0).

To create a new preset, select "Save as" in the toolbar dropdown menu; to overwrite a preset, select "Save." Click "Browse/Open" to open the Presets folder location on your device for managing preset files. **Creating a folder inside the Preset folder allows you to create preset categories**. Poltergeist also allows you to compress your presets into a Preset Pack for easy sharing. To do so, mouseover "Preset Pack Options", and select "Create..." then select a *Preset category* (a folder inside the Presets directory) to create a Preset Pack for that category. To import settings from a compressed Preset Pack, click "Import…" and select the compressed Preset Pack file. This will place a new preset category in your Prest directory.

## Possible Use Cases

Poltergeist's unique signal chain lends itself to a range of applications, from individual synth, guitar, bass, drum or vocal tracks, to entire mixes. Below, we've compiled some suggested applications as you begin your Poltergeist journey.

- Apply Poltergeist **as a reverb in a return track** with multiple instruments coming in, starting with the mix at 100%. When working with multiple instruments you may find it useful to keep the settings of each stage low as you slowly dial in the sound you want.
- Set either (or both) **C stages to 100% Feedback**. Playing with the other controls on the C stage will allow you to change the sound of feedback over time to create pulsing, rumbling, or roaring feedback.
- Whether working with individual tracks or an entire mix, try experimenting with **automation to produce major dynamic shifts** in a section of a track - dialing the mix up to 80 or even 100% for 1 bar before sharply dropping the mix creates contrast and novelty that can be useful in many genres.
- If you have both C stages turned on, **try setting the C Delay knobs with *slightly different values on each stage***, one slightly higher and one slightly lower, to create a "doubling" effect.
- Create an interesting **trickling effect by turning the Mod Period of a C stage to be slightly less than its Delay**.
- Treat Poltergeist as a **modulation control for simple synthesizer instruments** such as a sine wave generator or a wavetable synth. We find that working with Poltergeist in this way is a good method to break out of rote synth patch creation.

Guide Date: 10/31/24