PFT

Pan Filter Tool User Manual

Vain Audio 2025

Pan Filter Tool

Pan Filter Tool (PFT) is a multi filter plugin that allows you to modulate filter parameters in each audio channel differently. It has four macros and four modulators that can be applied to nearly every parameter in the plugin. This combination offers you the ability to sculpt your sound in new ways.

Getting Started

Installation

The PFT installers for Mac and Windows are available from our download page. Once downloaded, run the installers and follow the onscreen prompts to install PFT. The Windows installer will install VST3 and CLAP formats. The Mac installer will install AU, VST3, and CLAP formats.

Activation

Some of PFT's features are restricted in the free basic edition. Clicking on the lock icon by a restricted feature's UI element will open the activation popup. Enter a purchased license key here to unlock PFT's full feature set. The basic version is not time restricted. Try it for as long as you need to make sure it fits into your workflow before buying.

Modulator Quality

The sampling quality of modulators can be adjusted at the bottom of the About Page. Modulations in PFT are calculated at the beginning of each audio buffer. For added accuracy in calculating filter positions, incoming buffers can be split into sub sections. Filter cutoffs calculated with these smaller buffers will be more accurate to the true movement of the modulators. PFT offers three choices:

- **Low:** Use the buffer size provided by the DAW
- **Standard**: Split into maximum 5 ms chunks. This should be enough for most use cases.
- **High:** Split into maximum 0.5 ms chunks.

Each option will use the minimum buffer size between its size and what is provided by the DAW. If the DAW renders its audio buffers at a length of 3 ms, both **Low** and **Standard** quality will calculate modulations at 3 ms intervals.

Plugin Options

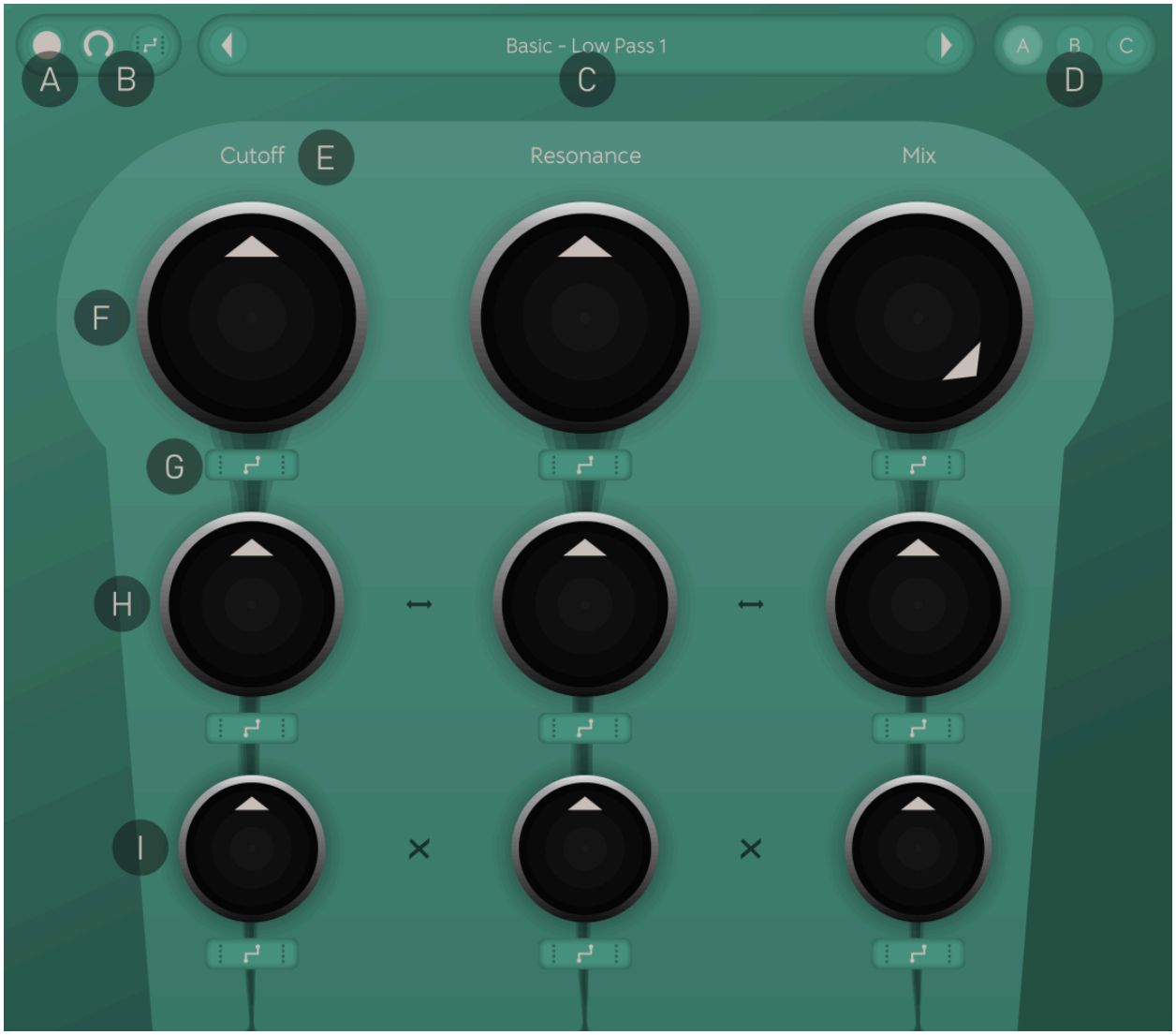
Clicking on the PFT logo in the bottom left of the UI will open the About Page. You can find additional settings like color scheme and UI scaling as well as version information here.

UI Overview

PFT's UI is split into two distinct sections. The top section is called the filter section. This is where you'll find controls that directly affect the audio being processed. The bottom section, called the modulator section, contains tools that are applied to the parameters in the filter section to add character to your sound. The interactions between these two sections are key to understanding how PFT works and how to best leverage it in your productions.

Filter Section

PFT has three filters that process audio sequentially. You can access the different filters using the buttons at the top right of the plugin window. The meat of the filter section consists of nine sliders in three columns. Each column represents a single characteristic of the current filter type that can be adjusted. The top slider adjusts the characteristic of the filter itself whereas the bottom two sliders adjust how the characteristic is applied differently between the left and right audio channels.

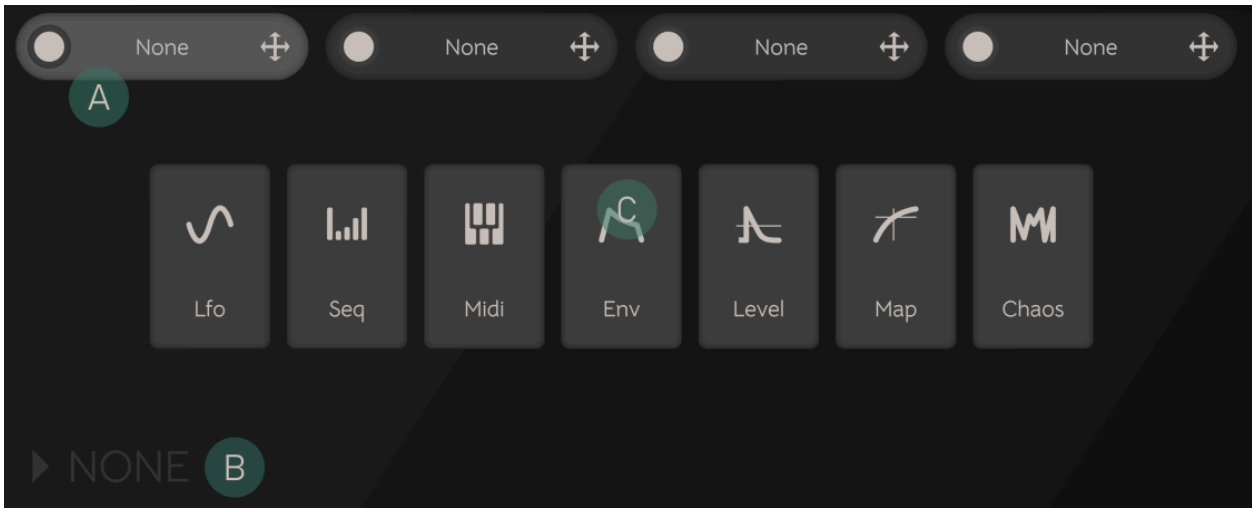


A. **Filter Enable:** Enable or disable the currently selected filter.
B. **Filter Mix:** Adjust the mix of the currently selected filter.

C. **Filter Type Selector:** Choose the type of the currently selected filter. Click on the text to open a popup with every filter option or click through them all using the left and right arrows.
D. **Filter Selector:** Choose one of PFT's three sequential filters to focus the UI on.
E. **Filter Parameter Label:** Each label shows the characteristic of the current filter that the column of sliders adjusts. These labels will change to reflect the current filter type.
F. **Primary Slider:** The top row of sliders adjust their respective parameters directly.
G. **Modulation Editor Button:** Click this to access the parameter modulation editor for each slider. This editor shows you a list of applied modulations and gives you some controls for adjusting them.
H. **Skew Slider:** The middle row of sliders affect the primary slider's value. They skew the values differently between the left and right audio channels. For a basic filter sliding the skew parameter to the right will cause the right channel's filter cutoff to be higher than the left channel's.
I. **Multiplier Slider:** The third row of sliders scales the skew amount applied to the primary parameter.

Modulator Section

PFT offers seven modulators that can be applied to almost any parameter in the plugin. Modulators can modulate other modulators' parameters but cannot modulate their own.

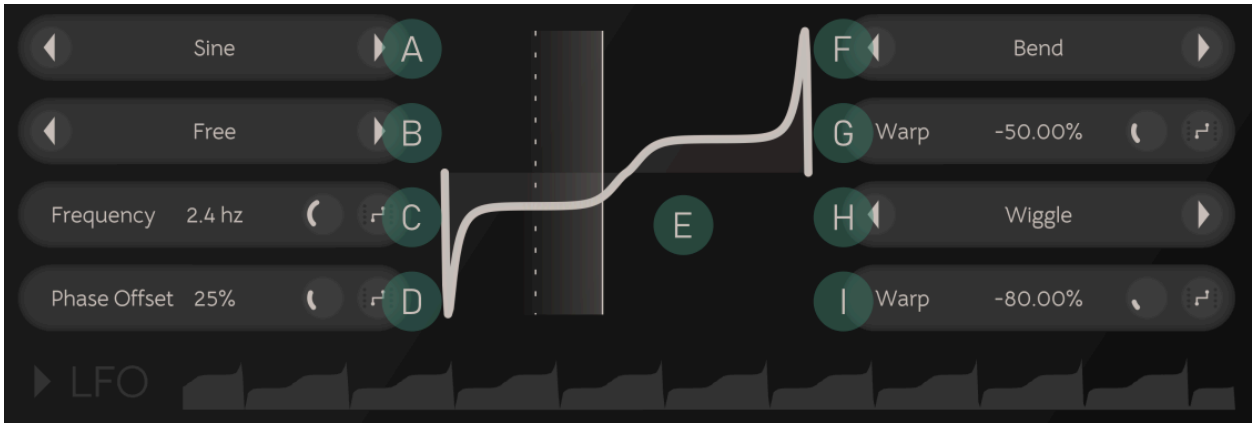


A. **Modulator Tab:** Shows the currently loaded modulator for each modulation slot. Right click on the modulator name to swap in a new modulator. The toggle button on the left of the tab enables and disables the modulator. The drag icon on the right can be used to assign the modulator to a parameter by dragging it onto a slider.
B. **Modulation Visualizer:** Shows the name of the currently loaded modulator as well as a graph of its output over time. Click the arrow at the left of the modulator's name to choose a new modulator.
C. **Initial Modulator Selector:** When no modulator is loaded these buttons will let you select a new modulator to assign to this modulation slot.

Lfo

The Lfo modulator gives you a couple of basic wave types and some tools for shaping them into something more complex. It also allows you to set its rate in hertz or sync it to the tempo of the DAW.

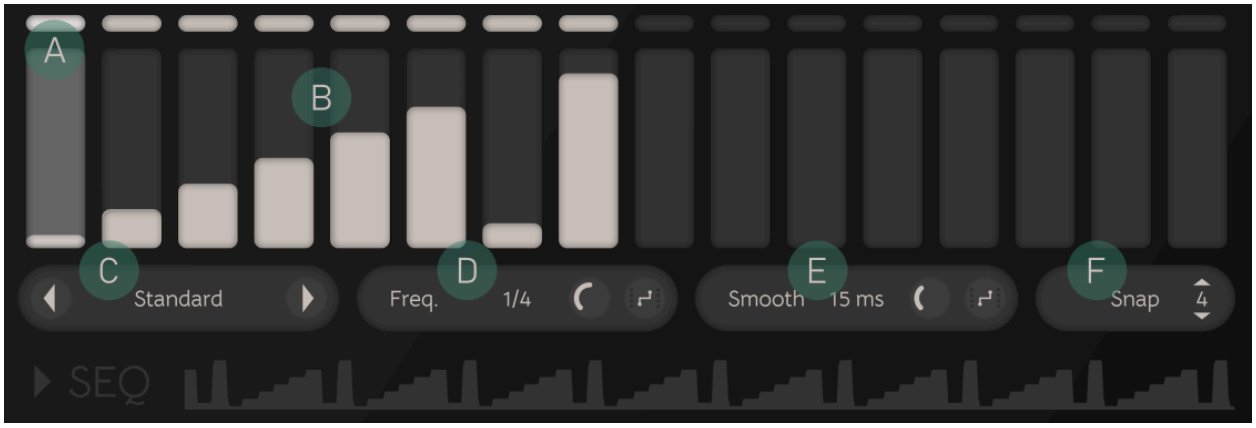
Two sequential warp modes shape your curve. They work by remapping the phase of the oscillator. To give yourself a visual idea of how each warp mode affects the phase, load up the standard saw wave and watch how it changes as you apply different warp modes to it.



A. **Lfo Type Selector:** Choose from the basic Lfo types
B. **Sync Type Selector:** Choose how to sync the phase of the modulator. Free syncs the Lfo to a frequency measured in Hz. Standard, Triplet, and Standard/Triplet sync the frequency to the DAW's tempo.
C. **Frequency:** Adjust the frequency of the Lfo. The value text will adapt to the currently selected sync type.
D. **Phase Offset:** Adjust the phase offset of the Lfo. Setting the frequency to zero and modulating the Phase Offset allows you to create more complex waveforms by leveraging phase modulation.
E. **Lfo Visualizer:** Shows the current output of the Lfo modulator as well as the current phase.
F. **Warp 1 Type:** The first warp type to be applied to the wave.
G. **Warp 1 Amount:** The amount of the first warp type to be applied to the wave.
H. **Warp 2 Type:** The second warp type to be applied to the wave.
I. **Warp 2 Amount:** The amount of the second warp type to be applied to the wave.

Seq

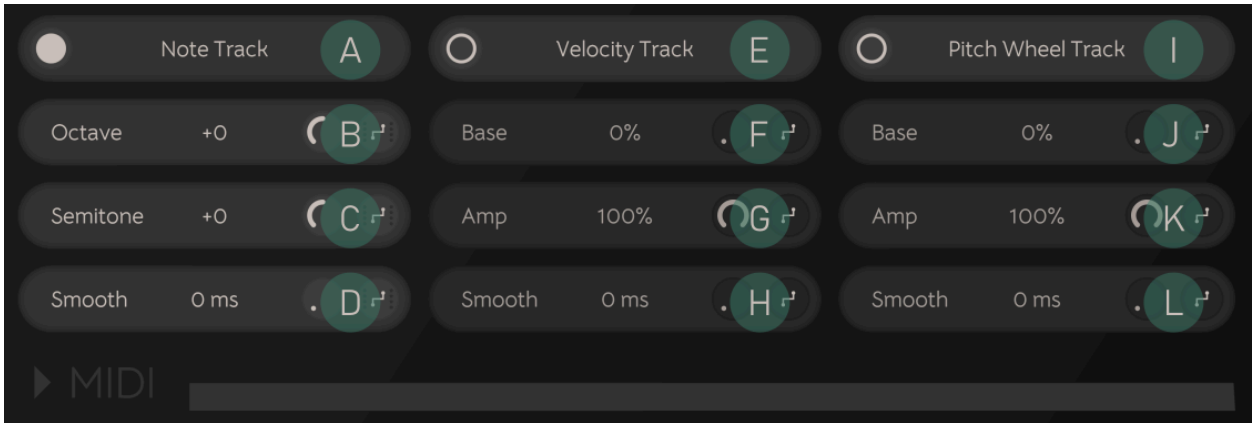
The Sequence Modulator allows you to create a sequence of individual levels that can be looped through at a specified frequency in hertz or synced to the tempo of the DAW. Hold ctrl while adjusting levels to snap it to a grid. Click and drag with the right mouse button to draw a line.



A. **Cycle Length:** Adjust the number of sequence stages that the modulator loops through in an entire cycle.
B. **Levels:** Adjust the individual levels of the sequence. Hold ctrl to snap the value to the number specified by the Snap parameter (F). Drag with the right mouse button to align the levels to a straight line.
C. **Sync Type Selector:** Choose how to sync the phase of the modulator. Free syncs the Sequence to a frequency measured in Hz. Standard, Triplet, and Standard/Triplet sync the frequency to the DAW's tempo.
D. **Frequency:** Adjust the frequency of the Sequence. The value text will adapt to the currently selected sync type.
E. **Output Smoothing:** Smooth the output of the modulator to avoid clicks in the audio output.
F. **Snap:** Specify the distribution to snap the levels to while editing. Hold ctrl to snap the levels.

Midi

The Midi modulator accepts MIDI note messages from the DAW and translates them into the modulator's output level. Note, velocity, and pitch wheel information can be extracted from the incoming MIDI messages. When applied to the entire range of a filter's frequency parameter, the note modulation value aligns exactly with the frequency of the filter. This means you can use the Midi modulator musically.



A. **Key Track Enable:** Enable or disable note key tracking.
B. **Key Track Octave Shift:** Shift the output of the note key track by octaves.
C. **Key Track Semitone Shift:** Shift the output of the note key track by semitones. Modulate this by the Sequence modulator snapped to 12 to create arpeggiators.
D. **Key Track Output Smoothing:** Smooth the output of the note key tracker.
E. **Velocity Track Enable:** Enable or disable note velocity tracking.
F. **Velocity Track Base:** Adjust the start level of the output.
G. **Velocity Track Amp:** Adjust the amount that the output level changes as the input velocity changes.
H. **Velocity Track Output Smoothing:** Smooth the output of the note velocity tracker.
I. **Pitch Wheel Track Enable:** Enable or disable pitch wheel tracking.
J. **Pitch Wheel Track Base:** Adjust the start level of the output.
K. **Pitch Wheel Track Amplitude:** Adjust the amount that the output level changes as the input pitch wheel amount changes.
L. **Pitch Wheel Track Output Smoothing:** Smooth the output of the pitch wheel tracker.

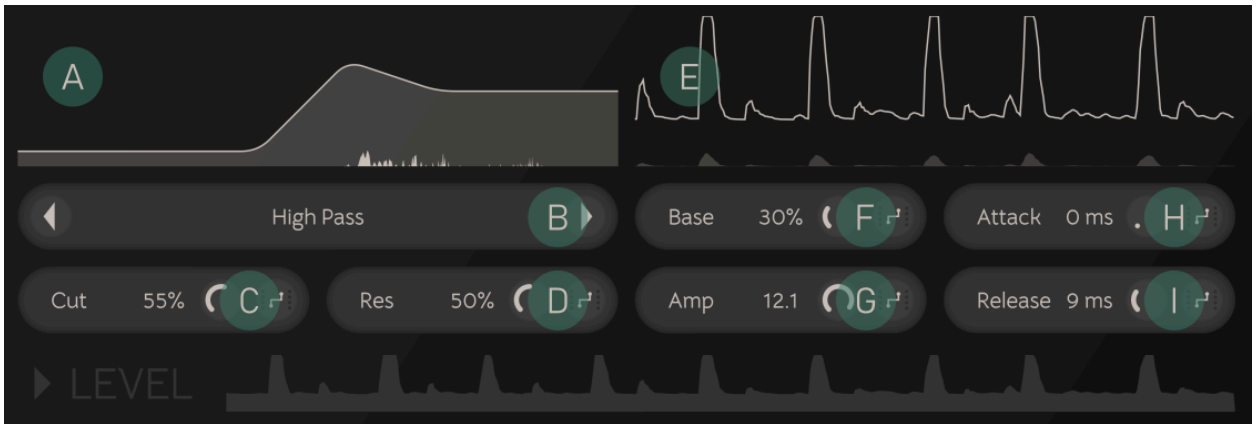
Env

The Envelope modulator accepts MIDI note messages from the DAW and outputs volume envelopes. Adjust the envelope using standard ADSR parameters along with section tensions.

A. **Attack:** Adjust the attack time of the envelope in milliseconds.
B. **Decay:** Adjust the decay time of the envelope in milliseconds.
C. **Sustain:** Adjust the sustain level of the envelope.
D. **Release:** Adjust the release time of the envelope in milliseconds.
E. **Attack Tension:** Adjust the tension of the envelope attack.
F. **Decay Tension:** Adjust the tension of the envelope decay.
G. **Release Tension:** Adjust the tension of the envelope release.

Level

The Level modulator measures the input volume of incoming pre-filter audio and creates a modulation signal to match it. The input filter allows you to generate the modulation signal based only on certain frequencies in the input signal.



A. **Input Filter Visualizer:** Monitor which frequencies the modulator output level will be measured from.
B. **Input Filter Type:** Choose from four basic filter types to filter the input signal by.
C. **Input Filter Cutoff:** Adjust the cutoff frequency of the input filter.
D. **Input Filter Resonance:** Adjust the resonance of the input filter.
E. **Input and Output Visualizer:** Visually monitor the input level from the filtered signal and the output level of the modulator.
F. **Base:** Adjust the start level of the output.
G. **Amp:** Adjust the strength of the output level relative to the input level. Negative values will stretch the output downwards from the base value.
H. **Attack:** Set the minimum attack time of the modulator output.
I. **Release:** Set the minimum release time of the modulator output.

Map

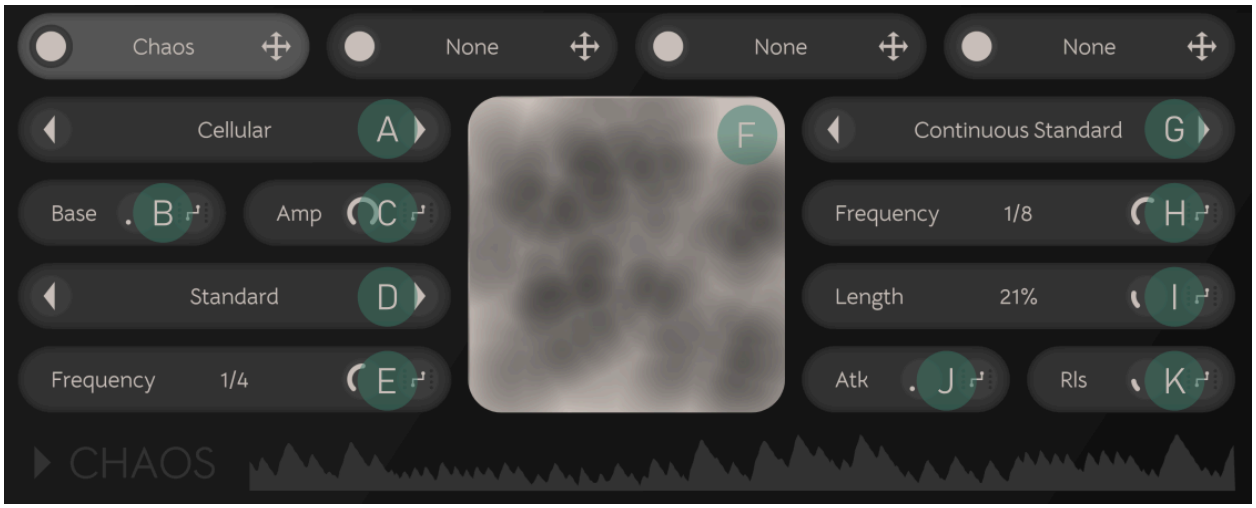
The Mapping modulator takes another modulator's output level as an input, transforming it into a new value. It can skew, scale, smooth, and trim the original value into a unique output value.

A. **Input Modulator Selector:** Choose which modulator to read an input signal from. Choosing the mapping modulator itself as a source is allowed. Doing so tends to not be useful.
B. **Control Point A X Coordinate:** Adjust the X coordinate of the first control point.
C. **Control Point A Y Coordinate:** Adjust the Y coordinate of the first control point.
D. **Control Point B X Coordinate:** Adjust the X coordinate of the second control point.
E. **Control Point B Y Coordinate:** Adjust the Y coordinate of the second control point.
F. **Tension:** Adjust the tension of the curve between the two control points.
G. **Attack:** Set the minimum attack time of the modulator output.
H. **Release:** Set the minimum release time of the modulator output.
I. **Top Trim:** Set the maximum level of the modulator output.
J. **Bottom Trim:** Set the minimum level of the modulator output.
K. **Map Visualizer:** Visualize and adjust the mapping curve. The X axis represents the input level and the Y axis represents the output.

Chaos

The Chaos Modulator generates pseudo random patterns and values. Sequences of randomness are generated at an interval, then sampled from at another interval. Each of these intervals can be synced independently. Select from three chaos engines to choose exactly what type of randomness to generate:

- **Twister:** Generates classic white noise randomness.
- **Perlin:** Generates cloud-like textures.
- **Cellular:** Generates organic textures. Also called Worley noise.



A. **Chaos Type:** Choose which algorithm should be used to generate the sequence of random values.
B. **Base:** Adjust the start of the range that values are generated within.
C. **Amp:** Adjust the size of the range that values are generated within.
D. **Regeneration Sync Type:** Choose at which interval to regenerate the pseudo random sequence.
E. **Regeneration Frequency:** Choose at which frequency to regenerate the pseudo random sequence.
F. **Visualizer:** Visual representation of the modulator's noise generation.
G. **Sequence Sync Type:** Choose at which interval the pseudo random sequence should be sampled from.
H. **Sequence Frequency:** Choose the frequency at which to sample from the pseudo random sequence.
I. **Attack:** Set the minimum attack time of the modulator's output.
J. **Release:** Set the minimum release time of the modulator's output.

Macros

PFT features four macros. They can be found at the bottom right of the plugin window. Each macro can be assigned to any modulatable parameter by dragging the drag icon onto a slider. Right click on the text directly below the macro slider to change its name.

Assigning Modulations

Modulating the plugin's parameters is the most powerful sound design tool that PFT offers. Nearly every single parameter in the plugin can be modulated. An assigned modulation will have two controls: an amount and a polarity. The polarity toggle decides whether the modulation is centered around the value of the base parameter or if it begins from it. The amount decides how strong the modulation is. Keep in mind the modulation amounts can be negative. The icon to the right of this paragraph indicates that a parameter is modulatable.

Assigning a modulator is easiest accomplished by dragging it onto a slider. Close to the modulation tabs and the macro sliders are icons with four arrows pointing in the cardinal directions. These icons can be dragged and dropped onto a slider to assign the associated modulator to it. When you begin a drag, valid drop targets will be highlighted white.

The main filter sliders have modulation controls that can be accessed by hovering over the slider. You can use them to quickly assign and adjust modulations.

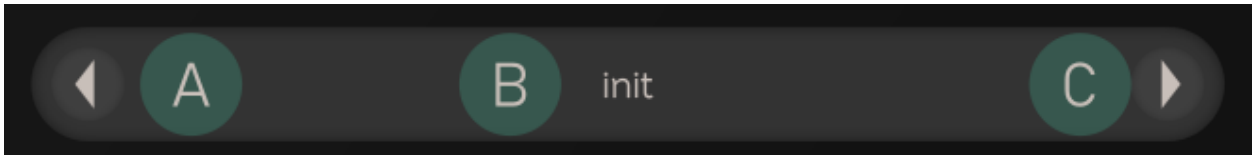
A. **Quick Modulation Editor:** Hover over a filter slider to get quick access to its modulations.
B. **Modulation Editor Button:** Click the modulation editor popup button to access the modulation editor.

The modulation editor gives you more information about all assigned modulators as well as a means to remove them. Click the plus button to assign a new modulator. Click the x button to remove a modulation.

The modulator section offers mostly the same controls. The main difference is that modulator parameters do not have quick modulation editors. To edit a modulator parameter's assigned modulations open the modulation editor using the modulation button directly next to the main slider:

Presets

PFT ships with a preset library that you can browse using the built in preset browser. The preset can be opened by clicking on the preset name located at the bottom right of the plugin window. From the preset browser you can save the current configuration to a new preset or load the initial preset. To edit the structure of the preset listing, click the file icon in the top left of the preset browser popup. This will open the native directory that contains PFT's preset files.



A. **Previous Preset:** Loads the previous preset from the preset directory.
B. **Preset Name:** Shows the name of the currently loaded preset. Click here to open the preset browser.
C. **Next Preset:** Loads the next preset from the preset directory.

Troubleshooting

Here are a couple important installation directories and files to check if you have problems:

Windows

- **Vst3:** C:\Program Files\Common Files\VST3\VainAudio\PanFilterTool.vst3
- **Clap:** C:\Program Files\Common Files\CLAP\VainAudio\PanFilterTool.clap
- **System Presets:** C:\ProgramData\VainAudio\PFT\Presets\
- **User Presets:** C:\Users\{}\AppData\Roaming\VainAudio\Pft\User Presets
- **Properties:** C:\Users\{}\AppData\Roaming\VainAudio\

Mac

- **Au:** /Library/Audio/Plug-Ins/Components/PanFilterTool.component
- **Clap:** /Library/Audio/Plug-Ins/CLAP/PanFilterTool.clap
- **Vst3:** /Library/Audio/Plug-Ins/VST3/PanFilterTool.vst3
- **System Presets:** /Library/Audio/Presets/VainAudio/PFT/Presets
- **User Presets:** /Users/{}/Library/Audio/Presets/Vain Audio/Pft/User Presets
- **Properties:** /Users/{}/Library/Application Support/VainAudio/

If you run into any issues that you can't solve please don't hesitate to drop us an email so we can assist you.

Acknowledgments

VST is a trademark of Steinberg Media Technologies GmbH, registered in Europe and other countries.

---

clap-juce-extensions
Copyright 2019-2020, Paul Walker

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Entropia File System Watcher

Copyright (c) 2020 Martín Lucas Golini

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

This software is a fork of the "simplefilewatcher" by James Wynn (james@jameswynn.com)

http://code.google.com/p/simplefilewatcher/ also MIT licensed.

---

git_version

MIT License

Melatonin Blur
MIT License

SignalSmith DSP

MIT License