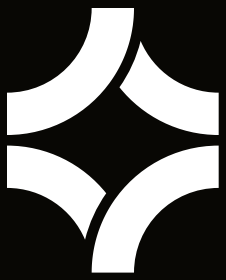


Pivot-Lite

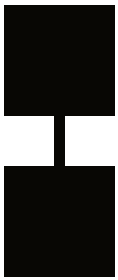
Pivot-Lite is a 2OP FM synth, the smaller sibling of Pivot.

With a zero-fuss interface paired with the bells and whistles of the 4-pole morphing filter and stereo effects, Pivot-Lite is a formidable instrument in itself.

It also serves as the perfect introduction to FM synthesis, with its simple structure and easy to explore controls.

Once you’re ready to take the leap, sounds you have made in the Lite version can be loaded into Pivot as well.

Together they form a perfect pair and we think you’ll find yourself reaching for one or the other depending on the occasion.



Pivot-Lite is a plugin instrument and needs a host to run.

It's available in the CLAP, VST3 and AUv2 formats and is compatible with any host (such as a DAW) that supports any of these formats.

Pivot-Lite is compatible with macOS (Universal), Windows and Linux.

Minimum supported OS versions are

macOS 10.13 (High Sierra)
Windows 10
Ubuntu 22

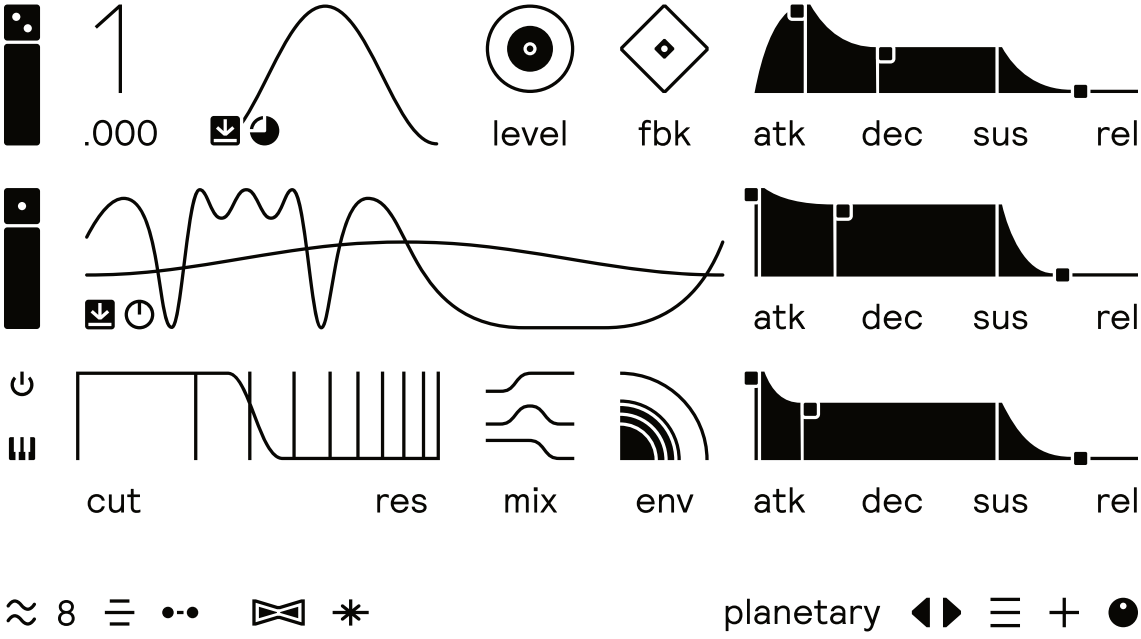
The parameters in Pivot-Lite can be adjusted with your cursor, scrolling and via direct keyboard input.

Click and drag the icon above the parameter name to change the value. Hold Shift to increase the sensitivity.

Click on the parameter name to enter a value by typing.

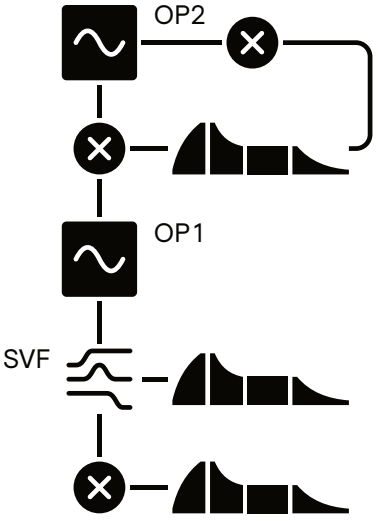
Double-click on a parameter icon to reset the value.

Interface



Pivot-Lite only has one screen centered on its FM synthesis controls, paired with a 4-pole morphing filter and a handful of global controls at the bottom.

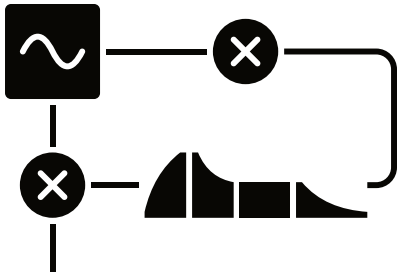
Signal flow



Pivot-Lite is based around 2OP FM where the top operator (OP2) modulates the bottom carrier operator (OP1)

At the end of the signal chain is a 4-pole resonant filter that can morph from lowpass to bandpass to highpass.

Operators



FM Operators are basically oscillators with an integrated amplitude envelope and internal feedback path. When they connect together, they introduce timbral complexity in the oscillator that receives the signal.

Operators are usually referred to as Modulators and Carriers. Modulators send signals and Carriers receive.

While FM stands for Frequency Modulation, Pivot-Lite implements Phase Modulation just like almost all classic and modern FM synths. The term FM is widely accepted as the categorization of PM-based synthesizers.

In a digital system, the difference is minute, but Phase Modulation has the benefit of being able to feed its signal back into itself without affecting the pitch of the oscillator.

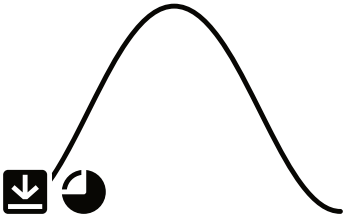
Ratio controls the frequency multiplication of each operator. This multiplies the base frequency and results in different overtone patterns when introduced as modulation.

The base frequency of the operators is simply the MIDI note that is being sent to Pivot-Lite.

The top number is the Coarse control which multiplies the base frequency by whole numbers while the bottom Fine control lets you adjust in smaller increments.

Typically, whole numbers will result in a stable and harmonic timbre while non-integers will sound more inharmonic and fluctuating.

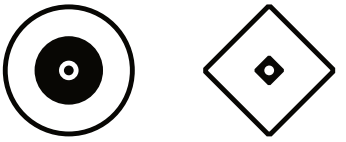
The waveform display of each operator will show the resulting waveform of its row including the modulating operator if there is any.



The arrow button controls whether the phase of the operator should be reset per note-on. This is useful to maintain a more consistent timbre while turning it off can sound a bit more organic.

The circular dial controls the phase offset of the operator and is only relevant when the phase sync is on. This is useful for intricate waveshapes or to improve transient response.

Level and Feedback (fbk) controls the amplitude of the modulator's (OP2) output being sent out and back into itself respectively.



level fbk

Level controls the amount of modulation the operator outputs and is "where the FM happens" as you say.

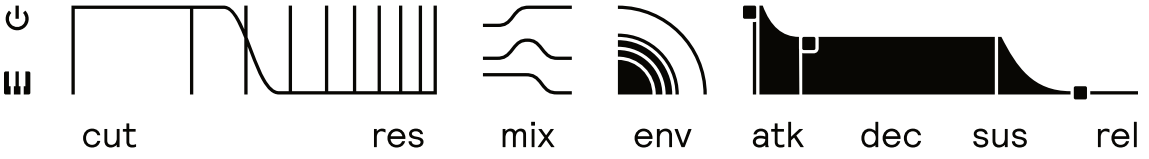
Feedback controls the amount of modulation the operator is sending back into itself. This results in a sharper waveform at lower values devolving into noise-like patterns at higher values.

Each operator has an ADSR envelope which controls its dynamics, meaning the amplitude over time.

Attack (atk) controls the fade-in time of the envelope. Decay (dec) controls the time it takes from where the attack stops to settle into the Sustain (sus) level. Release (rel) controls the final fade-out time.

Turning up release to its max will let the envelope be infinitely open, maintaining the sustain level until a new note is received.

Morphing Filter



The filter in Pivot-Lite is a 4-pole resonant State Variable Filter which can mix between each stage– Lowpass, Bandpass and Highpass.

The filter can be completely bypassed by pressing the power button (top left) and can be keytracked by turning the piano keys button on or off.

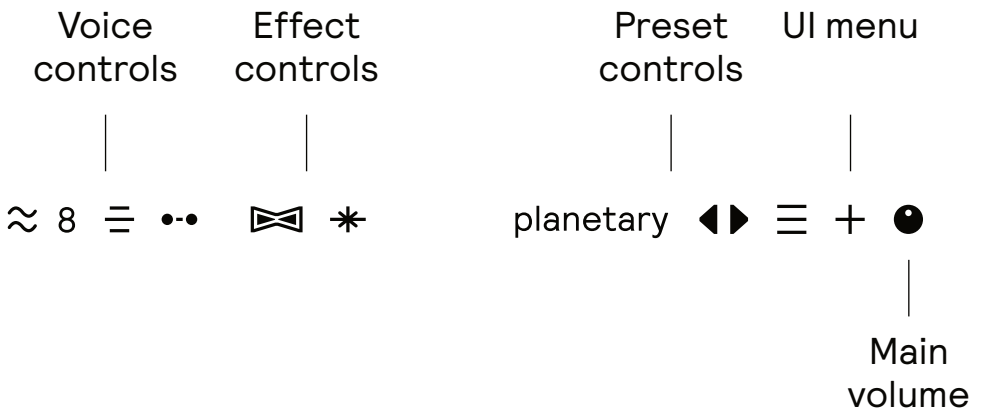
It has an ADSR envelope which can be used to modulate the cutoff frequency, this is controlled with the Env (depth) parameter.

Among complex FM spectras, a classic subtractive filter is a powerful tool that can be used to radically change the tonality of a sound. It’s the best of both worlds.

Random

The values of each row of controls on the FM screen can be randomized by clicking on the dice icon in each sidebar. The last row randomizes both OP1 and the filter.

Global Controls



Underneath the main rows of operators lies the global controls. These control things that affect the whole patch, such as the voice count, main volume, effects and preset switching.

Voice Controls

From left to right, the two waves denote Voice Count which lets you choose how many voices of polyphony are available, with a max of 16 voices. If this is set to 1 voice Pivot will operate in Mono mode, which allows legato play.

The three lines denote the Unison control, increasing this will add two stacks of the FM operators above and below the fundamental pitch.

The two dots with a line in between represents the Note Glide control, which will introduce a portamento / glide between each note being played.

In Mono mode, the voice will only glide when two notes are overlapping, behaving much like a classic monosynth.

Effect Controls

Width (left) controls the level of a stereo widening effect which acts like a very neutral chorus-like sound that simulates a wide stereo signal.

Distortion (right) controls the amount of distortion applied, from a subtle soft clip to absolute destruction.

Both effects are stereo effects and are applied in a chain and they process the final output of all voices.

Preset Controls

Presets can be browsed by pressing the arrows next to the preset name, or you can open up the menu (lines) to select a preset manually.

In the preset menu you can also initialize the current sound, or save it as a new preset in the User folder.

To name your sound, simply click on the preset name and enter a new name for it.

Presets that have been created with the Lite version of Pivot will show up in a sub-menu (Lite) and are fully compatible with the full version of Pivot.

Presets are stored in a common XML format in these locations:

macOS:

```
~/Library/Application Support/Pivot-Lite/Presets
```

Windows:

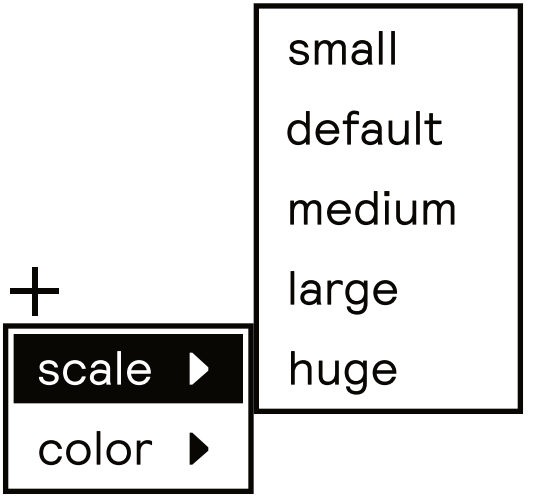
```
C:\Users\[name]\AppData\Roaming\Fors\Pivot-Lite\Presets
```

Linux:

```
~/.config/Fors/Pivot-Lite/Presets
```

For the full version of Pivot the location is the same, but of course in a folder just called Pivot instead.

UI Menu



Note that you can resize the window by dragging any corner out, but if this is not available in your host you can change the size from this menu.

The Color sub-menu lets you change the color theme used by Pivot-Lite. It comes with a handful of factory themes, but it’s also possible to make your own.

The color themes in Pivot-Lite are stored in a simple XML format using hex color codes, e.g #000000 for black. Please see the factory theme files for reference.

Color themes are installed in these locations:

macOS:

```
~/Library/Application Support/Pivot-Lite/Themes
```

Windows:

```
C:\Users\[name]\AppData\Roaming\Fors\Pivot-Lite\Themes
```

Linux:

```
~/.config/Fors/Pivot-Lite/Themes
```

You can of course manually make a custom theme, but we suggest using our Pivot Theme Creator on our website:

```
https://fors.fm/pivot-themes
```

And that’s that!

We hope you enjoy Pivot-Lite.

Fors

100% Digital Synthesis

Made in Sweden