

# Music Unfolding OttoPhilter Audio Unit User Guide



## **Requirements:**

OS X 10.4 or higher is required. OttoPhilter requires an Audio Unit (AU) capable host. A host that supports Cocoa user interfaces (UI) for AU's is preferred. Please check OttoPhilter's operation in your host of choice for suitability before purchasing.

## **Installation:**

OttoPhilter can be installed in any of the standard Audio Unit component locations. These are commonly /Library/Audio/Plug-Ins/Components and ~/Library/Audio/Plug-Ins/Components (where "~" stands for the user's home directory). Drag OttoPhilter.component into the Components directory and relaunch your AU host software. The included presets also need to be installed into one of the standard locations (/Library/Audio/Presets/MusicUnfolding/OttoPhilter and ~/Library/Audio/Presets/MusicUnfolding/OttoPhilter). If you already have a MusicUnfolding directory in your "Presets" directory, then drag the OttoPhilter directory into this location. If not, drag the MusicUnfolding directory that contains the OttoPhilter presets directory into the "Presets" directory.

## Introduction:

First, a quick introduction to the editing controls for OttoPhilter. All controls are set using the same knob. Click the desired control readout to select and then move the knob to control. The active (selected) control is indicated by the green end caps. The knob works with a circular control motion. The closer to the center you are dragging the knob, the rougher the increments. Moving farther out makes the increments finer. You can even click the surface of the knob and drag out of the surface of the knob and then move in a circular motion if you want finer control. To set a parameter to an exact value, double click the parameter readout. This brings up a text box where the parameter value can be set exactly. Double-clicking the knob sets the selected parameter to its default value. The knob will act with a linear, logarithmic, or power response depending on the parameter that is selected.

The controls also support click-and-drag directly on the surface of the readout. Clicking-and dragging in a vertical direction changes the parameter values. Dragging in a horizontal manner causes the value to change ten times slower. The control behavior (linear, log or power) is the same as it is while using the knob for parameter control. In addition, hovering the mouse over the control and using the scroll wheel also changes the control value. If you have a mouse with a horizontal scroll wheel motion, scrolling horizontally changes the parameter value with 10 times finer control.

The colors of the parameter displays can be changed in the preferences/registration panel. To bring up the panel, click on the name tag/badge for the AU. Select the colors of your choice and then to see the new colors in effect, you must close and reopen the AU. The preference is applied in all hosts for a given user. Note that these color preferences apply to all of the Twister series AU's. Setting your color preference in one will apply this preference to all of the Twister AU's.

OttoPhilter is an auto/touch wah filter with LFO control and sub-octave generation. OttoPhilter has two filter sections that are independently controlled by the output of an envelope follower. The input stream is split in two and feed into the two filters. The second stream can be set to provide a suboctave. This gives a wide range of touch/auto/filter sweep effects. And, it's really fun to play.

## The Sections:

**Mix:** Let's start with the easy one. The mix section has one switch marked "Filter Two," and three level controls. The switch allows you to choose the setting for the audio input streams going to the filters. The effect can be configured to provide one audio stream on the main filter (the "Off" setting), two streams with the second in suboctave mode (the "Suboctave" setting), the suboctave filter alone (the "Suboctave Solo" setting), or both filters working on the input data unchanged (the "Twin Filters" setting). The output levels are in dB. The output level for the two filter streams are set independently. The Dry

Level sets how much dry signal is mixed in. This is really useful for tailoring a nice wah tone when using the filters in bandpass mode.

**Input Follower:** Now let's tackle the hard one. Actually the controls are easy. But, you are going to have to set these to match your playing style. The Attack and Release times set how fast the input follower responds to the changes in the dynamics of your playing. When in "Sweep" mode, the Sensitivity sets the level in dB of the trigger threshold of the touch envelope. The Sensitivity level shows up as the dark blue region on the level meter. The input follower level is in green. When the two overlap, the touch wah is triggering. The touch envelope will repeat for as long as the input follower level is above the sensitivity. You can use this to set up a second oscillator behavior that follows the envelope settings. When in "Track" mode, the "Sensitivity" sets the input amplitude that will cause the filter to reach the highest cutoff frequency. The "Track Envelope Shape" parameter adjusts how fast the envelope tracking puts the filter cutoff into the upper portion of the frequency sweep. In "Track" mode, you want the green portion of the level just touching the blue when you play your hardest.

**Filters:** There are two independent filters working on two independent input streams. The second input stream can be configured to be a generated sub-octave. Each filter can be set to be low pass, high pass, or band pass independently. Each filter type has four different possible settings based on the number of filter stages. They have resonance and drive settings.

**Envelopes:** The envelope section sets the envelope for the touch wah filter setting. There are four modes. "None" simply turns the touch envelope section off. "Sweep Up" and "Sweep Down" set the envelope to trigger and do a timed sweep. "Track Up" and "Track Down" follow the input signal volume.

In the "Sweep" modes, when the input follower is triggered, it kicks off the the envelope, which sweeps through the frequency range set by the "Filter Envelope Sweep." The sweep can be up or down. When in up mode, the filter sweeps from the base filter frequency set in the filter section through the sweep range. When in down mode, the filter sits at the filter base frequency + the sweep range and then sweeps down to the base filter frequency setting. The attack time is how long it takes for the initial sweep. The release time is the length of time in milliseconds to return to the initial frequency.

In the "Track Up" mode, the filter cutoff frequency tracks the input volume level. The cutoff frequency ranges from the base value set in the filter section to a maximum of the base + "Filter Envelope Sweep." The maximum is attained when the input level just hits the sensitivity level.

In the "Track Down" mode, the filter cutoff frequency also tracks the input volume level. But, the cutoff frequency ranges from the "Filter Frequency" base + "Filter Envelope Sweep" down to the "Filter Frequency." The minimum is attained when the input level just hits the sensitivity level.

If the LFO's are engaged, the sweeps from the envelope section are added together with the frequency that is currently set by the LFO. Combined together, you can get settings that are like touch wahs with trills.

**LFO:** There is one LFO for both the sub-octave and main filters. The LFO can be applied to the two filters independently and the sweep range is set independently. The oscillator can be shaped using the LFO Modulation Factor and the LFO Modulation Index parameters. The formula for the oscillators is  $o(t) = \sin(f + M \sin(n f))$  where M is the "LFO Modulation Index" parameter and n is the "LFO Modulation Factor" parameter. Usually, these will be integers. But, they don't have to be. On the other hand, this is one of those cases where very precise values can make a big difference. Double-clicking the parameter readouts for the "LFO Modulation Index" and "LFO Modulation Factor" parameters will allow you to enter exact values. The presets have some examples of what various values will do. The readout shows the shape of the LFO waveform for one period of the oscillator.

## Hints:

In "Track" mode, set the sensitivity so that the green level just touches the blue portion of the level meter when you play your hardest.

When in "Sweep" modes, you want to set the sensitivity so that the green level overlaps the blue region for the length of time that you want the sweep to repeat. If you set the sensitivity to just overlap when you hit the dynamic level that you want to trigger a sweep, then you can get good control over when the sweeps are triggered.

The "Track Envelope Shape" parameter is only active when you are in "Track" mode. Testing has shown that a value of 0.25 is a good starting point. Adjust to taste from here.