



Philtor

User Manual - Version 1.0

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1.1 Device Overview

Philtor is a high quality advanced filter bank with extensive controls for sequencing the volume of the 12 filter banks. The quality crossover filter bank is completely transparent when on its widest setting. The use of the built-in sequencer, integration of Ableton Live's MIDI clips or using an external keyboard give many option in triggering the filter bank.

1.2 System Requirements

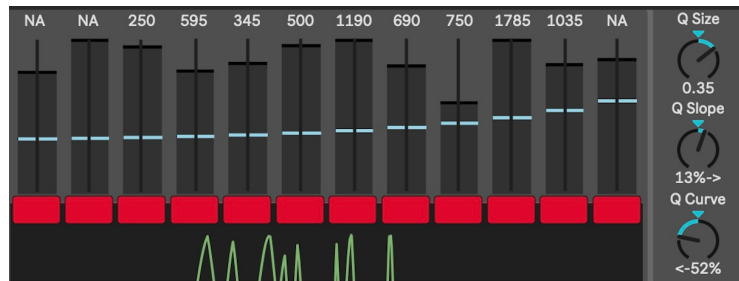
- Ableton Live 11 or 12.
- Max for Live (included with Live Suite).

1.2 Installation

- Double-click the installation file or drag it directly onto an open instance of Ableton Live.
- A dialogue box will appear with a notice and ask if you'd like to continue.
- Click Yes
- The device will now be installed under: Packs > Philtor
- Drag the device onto a Audio track or a MIDI track that has an synth or other sound generating device in Live to begin using it.

2.1 Device Structure

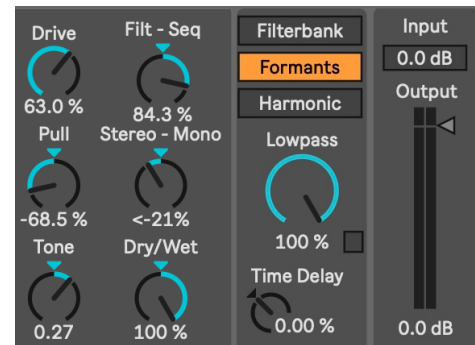
- The Filter Bank Section: selects the 12 banks, gain, Q, and curve controls.



- The Sequencer, MIDI Section: Sequence the volume of the filter banks with a built-in sequencer or use MIDI clips or a keyboard. A complex saturator/compressor, and width control.



- The Utility area holds the powerful saturator/comp/tone algorithm to tame volatile filter extremes and/or add colour and character, panning/width control, sequencer/filter blend, gain staging, and sequence delay.

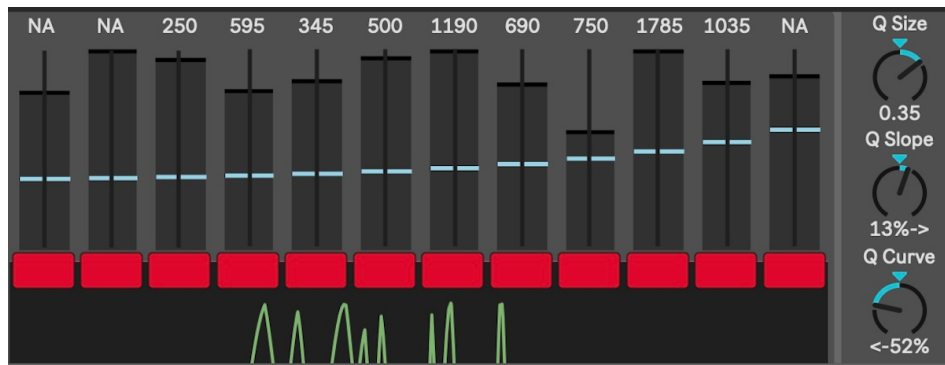


- The Filter Frequency Section: offers three different options for selecting the 12 frequencies. Built-in sequencer for creating dynamic filter sounds.

1. A stock / user controlled filter range
2. 16 Vowel Formant filter ranges
3. Harmonic series filter ranges



3.1 Filter Bank Section



- This section has 12 filter banks with corresponding sliders to control volume. Below each bank is a box that turns red when assigning banks to the sequencer section of the plugin (explained in the next section).
- Below the red boxes is a logarithmic scaled representation of the filter bank frequencies. This helps quickly see where your banks frequencies are located in the sonic spectrum.

All three dials control all 12 filter banks. There is no control over individual banks. This allows for universal control for working quicker and more precisely.

- The Q Size Dial controls how narrow the filter bank frequency bandwidth is. By turning the dial the blue markers on each banks moves accordingly. The higher the markers, the more narrow the bandwidth causing ringing pitched-like tones. Set at zero the filter bank is transparent and all the filters sum to the original signal.
- The Q Slope creates an angle on all the filters giving the ability to Quilty scale the Q across the bands.
- The Q Curve creates a curve to the angle and has no effect if the Q slope is not engaged.

4.1 Sequencer Section - Built-in Sequencer



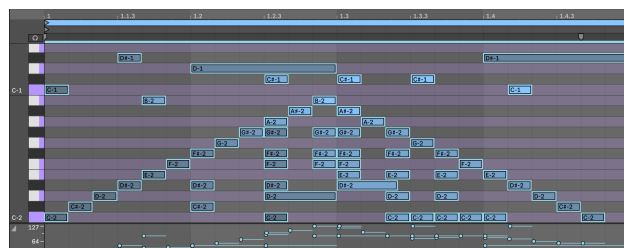
The Sequencer section has 2 options for sequencing the opening and closing of the filter banks.

- Built-in sequencer. This is for quick gestures and working at a faster pace. Attack and Decay are based on size of the trigger. They are directly controlled by the Duration dial. When the Duration dial is set to 1.00x the length of the trigger is based on the notes that come after. So if one creates a quarter notes, each trigger is 4 times longer than if you had 16th notes. If the Duration dial is set closer to zero the Decay becomes as long as a 16th note. The triggers are locked and can't be retriggered until the duration time is finished so setting the Duration past 1.00x creates swing feels and other odd rhythms because the locked duration time over-rides any triggers during the duration. Experimentation is always the best way to understand is functionality.
- Ran Trigger and Velocity add the probability of the trigger be activated or not. The S/A next to the Ran Trigger makes all the filters active separately (S) or together (A). The more the velocity dial is turned up, the more the volume will have a chance to become quieter. E.g. setting the velocity to 10.00 will mean there is a probability of the volume being between 127 and 124 and 90.00 the volume will be between 127 and 13.
- 16n (Tempo menu) controls the speed of the sequencer.
- Presets (1-4). Clicking on these turn on the saved sequence bank on the bottom. Below them (with blue sliders) are the 4 bars you can designate which preset you'd like to playback. The blue sequence grid is the recalled pattern and the orange grid is your input for the presets.
- The 2 boxes to the left of the presets are the step and measure of the playback sequence.

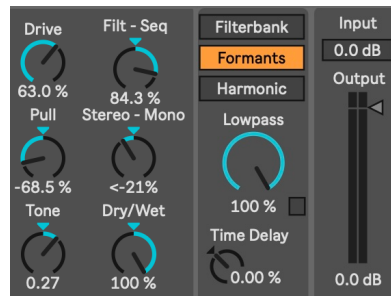
4.2 Sequencer Section - MIDI Clip / Keyboard Control



- Setting the sequencer to MIDI turns off the built-in sequencer and engages the MIDI function. If you would like to play BOTH at the same time, use the Both slider to blend between the two!
- First you will have to setup a midi track that will send midi information to the plugin. Make a midi track and configure the “MIDI To” to the track name with Philtor in it. All set!
- Simple Attack / Release controls are available for the midi data.
- The Root note is the note that the filter banks start. So if set to chromatic the 12 banks will go from C to B. The velocity of the keyboard control how loud the banks open.
- Chromatic and Whole change the midi mapping so you can use just the white keys (recommend when using a keyboard) and chromatic when using the midi clips function.
- Layers are 4 midi notes after the 12 mapped filter banks and can be used to assign groups of banks. This is a fast way to control multiple banks at once. If the root note is set to C-2 and Chromatic, the banks are between C-2 and B2, the Layers 1-4 are mapped to C-1, C#-1, D-1, D#-1. Below is an example of triggering the 12 banks AND the layers (which have groups of banks). Each Layer can be assigned any number of banks so one layer note can actually be triggering multiple banks at the same time. This makes creating complex pattern fast and manageable.



5.1 Utilities



- The Drive dial controls the amount saturation/compression/EQ that can effect the signal. The Drive is an important element to use when setting high Q values that reach pitched tones. This helps smooth out the filter bank creating a more uniform sound. The Drive algorithm is very flexible in creating full distortion, mild saturation with compression, fuller highs or lows, and clean compression. This works with the Pull, Tone and Input controls.
- Pull set to the left will auto match the gain to the saturator so you will get more compression and little distortion. Turning to the right will put the algorithm in the red.
- Tone can only work when the drive effect is being engaged. The EQ is part of the drive algorithm so you will be saturating more highs or lows based on this dial.
- Filt - Seq dial blends between the filter bank volume faders and the sequencers. The faders still function when using the sequence option.
- Stereo - Mono is a panning split function where every filter bank is alternately panned left and right, or right to left. The higher the percentage, the stronger the panning.
- Dry - Wet blends between the dry and effected signal.
- Time Delay delays the sequencer clock. Positive number delay the triggers and negative numbers speed up the triggers.
- Lowpass is a simple lowpass type filter that slowly closes the filter banks from highest to lowest. The box engages a shallower slope.
- Filterbank/Formants/Harmonic selects between the three different algorithms for generating filter frequencies for the filter bank.

5.1 Filter Frequency Generation - Filterbank



- Filterbank is the stock suggested list of frequencies for the bank of filters. Clicking on Fixed will set it to Variable which now gives you the ability to pick range of the banks of filters using the High and Low dials.
- Curve bends the organised 'line' of frequencies into a curve pushing more of the bands into higher or lower frequencies.
- Shift simply increases the group of frequencies up or down.
- Expand either - or + will increase the scale to the highest frequency. But also curves the list so the majority of the frequencies are in the higher range or the lower range.
- Its always good to visually reference the scope on the left to see where the frequencies are to understand what the dials are doing.
- Off / Curve / Shift / Expand sets where the LFO is sent to.
- LFO shape: Sine, triangle, ramp up/down, and random
- Tempo of the LFO is locked to the DAW.
- LFO Delay offsets the signal from the clock.
- LFO Amount sets the amount the dial will change.
- LFO Offset moves where the LFO effects the dial area.
- Noise adds randomness to the frequency generation and pressing the button generates a different list of frequencies.

5.2 Filter Frequency Generation - Formant



This algorithm generates 16 different formant filter types based on speech. Typically formant generation uses just three filters so 3x is the three filter frequencies repeated twice more in a particular series.

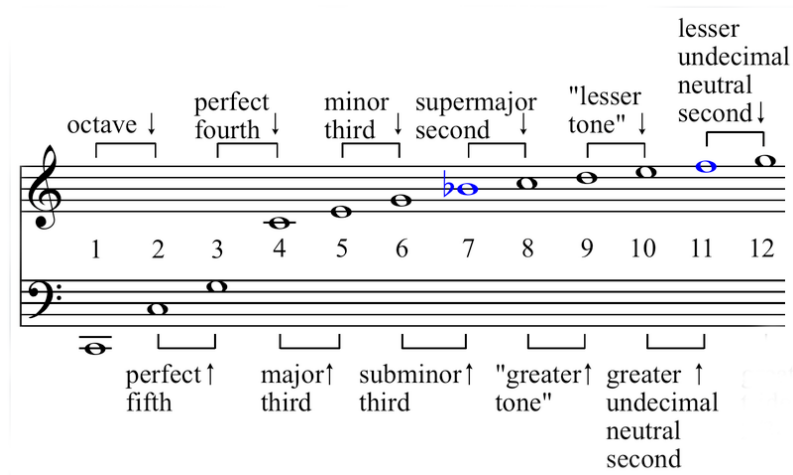
- Harmonic - Subharmonic - Interlaced are different ways the six added formant frequencies are generated. The first 3 frequencies are the formant and then the next 6 are added frequencies based on these algorithms (if 3x is used). Harmonic is the traditional harmonic series so: octave, then fifth. Subharmonic takes the harmonic series backwards to generate lower frequencies. Interlaced takes the octave up and the octave down.
- 3x controls the number of formant bands used: 3x - nine frequencies, 2x six frequencies, 1x three frequencies.
- Stretch if used in 3x or 2x will shift the octave/fifth frequencies even higher while maintaining the original 3 bands of formants.
- Off - On controls the use of the built in sequencer.
- Number box sets the amount of vowels moved through the sequence. Click above button to generate data.
- The button randomly generates a vowel order.
- The grid is used to trigger when the vowels will change.
- Slide adds drift to the transition from one vowel to the next. The F means free (ms) and S is locked to the DAW.

5.3 Filter Frequency Generation - Harmonic



This algorithm generates 12 frequencies in the harmonic series. This would be used if you would want to generate a pitch like sound with a high Q setting.

- Harmonic - Subharmonic - Interlaced are different ways the frequencies are generated. Harmonic is the traditional harmonic series (refer below). Subharmonic takes the harmonic series backwards to generate lower frequencies. Interlaced takes both and alternates starting with the harmonic or octave up and octave down, fifth up, fifth down, etc.
- Pitch generates the root note of the harmonic series.
- Skew curves the harmonic series closer to the higher or lower frequency.
- Rotate moves through where the start point, or lowest frequency, is in the harmonic series list.
- Octave shifts the harmonic series up or down an octave.
- Stretch shifts the harmonic series up or down.
- Off - On controls the use of the built in sequencer.
- Number box sets the amount of vowels moved through the sequence. Click above button to generate data.
- The button randomly generates a pitch order.
- The grid is used to trigger when the vowels will change.
- Slide adds drift to the transition from one vowel to the next. The F means free (ms) and S is locked to the DAW.



Harmonic Series with a root note of C