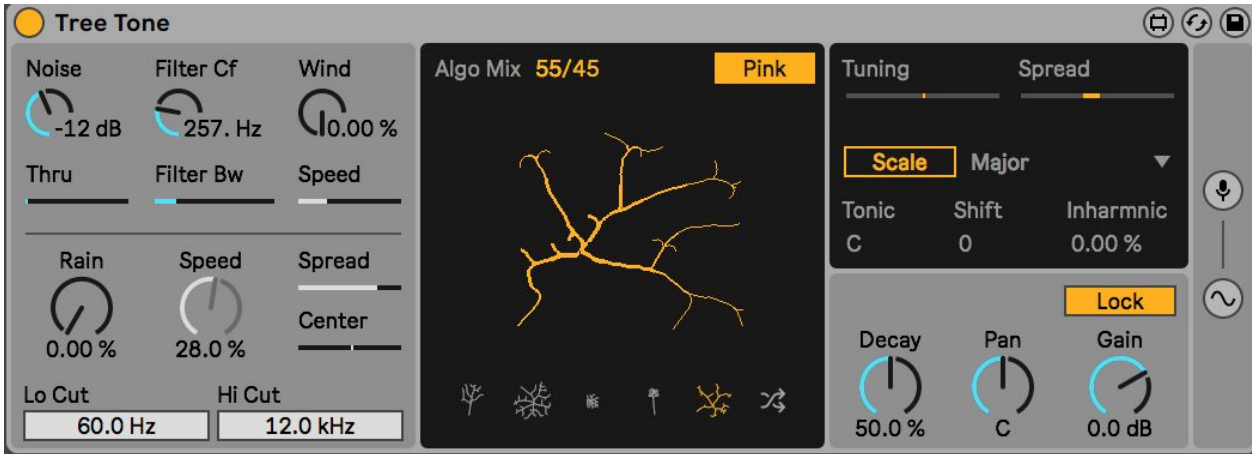
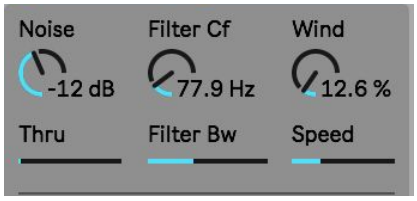
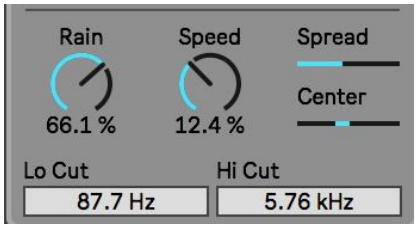
Tree Tone User Manual



Tee Tone is a Max for Live instrument that features an exciter and resonator bank. The center of the device shows the results of a tree growth simulation algorithm called Space Colonization. There are options for growing various trees or plants with different numbers and sizes of branches. Each branch in a tree corresponds to an individual resonator in the resonator bank, therefore the number of branches in a tree is the number of resonators in the bank. The length and thickness of each branch controls the relative tuning of the resonator in respect to the other resonators in the bank. The longer and thicker branches are louder, a lower tuning, and have a longer decay time. The short thin branches are the opposite. The tuning of the overall resonator bank can be affected by tuning parameters (more about that later). Additionally, the horizontal position of each branch sets its panning (branches more to the left pan their resonators more to the left and vice versa).

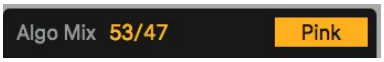


The left side of the device deals with the exciters of the resonator bank. On the top are parameters for a filtered white noise oscillator. **Noise** sets the amount of the filtered noise sent to the resonator bank, while **Thru** sets the amount sent straight out of the device without going through the filters. **Filter Cf** sets the center frequency of the filer while **Filter Bw** sets its width. **Wind** applies perlin noise modulation to the gain and filtering of the noise. **Speed** sets the rate of the perlin noise modulation.



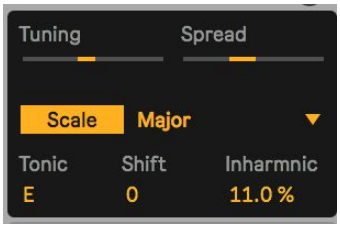
While the filtered noise is sent to the entire resonator bank, **Rain** applies a mallet exciter that is sent to individual resonators in the bank to create a mallet-like sound. The interval of the **Rain** is random to reflect a dynamic similar to rain drops. **Speed** scales the random intervals to be longer or shorter. **Spread** and **Center** determine which individual resonators are excited by the rain. **Spread** sets the range of the resonators that will be excited, at the highest value all resonators of the bank may be

excited. **Center** offsets the range, to the left will more likely be the longer and lower branches/resonators, while to the right is the opposite. **Lo Cut** and **Hi Cut** apply filters to the mallet before it excites the resonators.

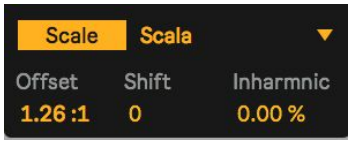


Algo Mix determines the mix between the two algorithms of the resonators. Lower values correspond to a complex one pole resonator which yields a warmer tone. Higher values correspond to a simple two-pole resonator that yields a brighter tone. **Pink** allows for selecting to use a pink noise oscillator instead of a white noise oscillator. The high frequencies in pink noise have less energy than white, therefore the pink oscillator has a warmer tone to it.

You can grow different tree shapes and sizes. As mentioned, different tree shapes will produce resonator banks with different tuning relationships and number of resonators. Each time a tree shape is grown it will come out slightly different which allows for a lot of variety in the results. The shape furthest to the right in this menu is a random tree shape.

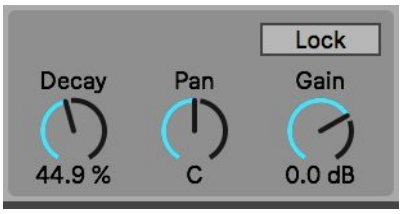


The tuning of the tree can be further affected in this menu. **Tuning** offsets the overall tuning of resonators, while **Spread** increases the distance between relative tunings (the lower pitches get lower and higher pitches get higher). Additionally, the tunings can be quantized to a **Scale** and **Tonic**. **Shift** moves the tunings to the next order of the assigned scale. For example, if **Shift** is moved up, then a resonator tuned at a IV interval may become a V. **Inharmnic** adds inharmonics to the tunings by moving the quantized tuning more to the resonantor's unquantized tuning.

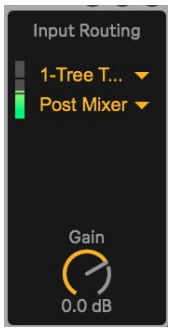


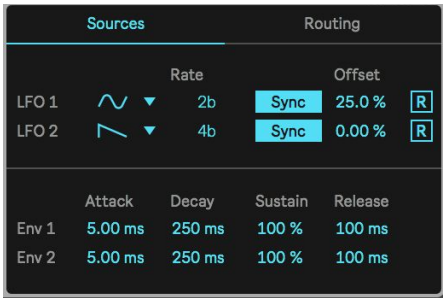
Additionally, **Scala** files (.scl) can be dropped onto the menu object for selecting scales. This will allow the device to use the tunings from the scala file for the scale, such as microtonal tunings, etc. When using a Scala tuning **Tonic** becomes the **Offset** parameter, which shifts the root of the tuning in ratios instead of half-tones. When at 1.00:1, the root is not offset, while 2.00:1 is one octave higher.

Decay scales the overall decay of all of the resonators in the bank. When **Lock** is enabled, the sound of the resonators is muted until the Live transport is active. **Pan** and **Gain** apply to the entire instrument.

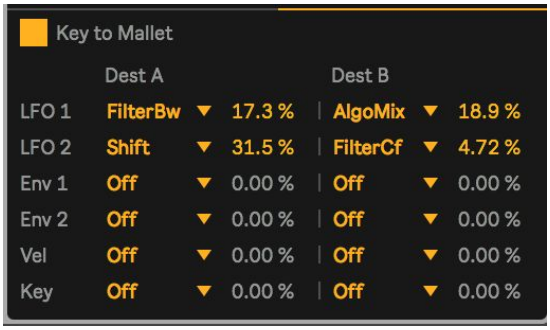


To the far right of the device are two menus. The top menu is for audio input routing and the bottom is for modulation. You can route audio from any channel in Live, and send that through the same filter that the filtered white noise exciter goes through. This audio is then sent into the resonator bank, which functions similar to a Corpus audio effect in Live. One great use of this is to feedback the signal of Tree Tone, either directly or with other sounds on a Return Track.





The modulation menu has two tabs for the modulation **Sources** and their **Routing** to audio parameters. In **Sources**, there are two LFOs with a retrigger option (**R**) for when MIDI notes are received. Additionally there are two ADSR envelopes that correspond to MIDI notes.



At the top of the **Routing** section is an option for **Key to Mallet**. If enabled, then received MIDI Notes excite individual resonators with a mallet exactly like the **Rain** parameter. Below that are dropdown menus to map modulation sources and MIDI note values to different audio parameters. Each source has two possible destinations it can go to as well as an attenuator for each destination.