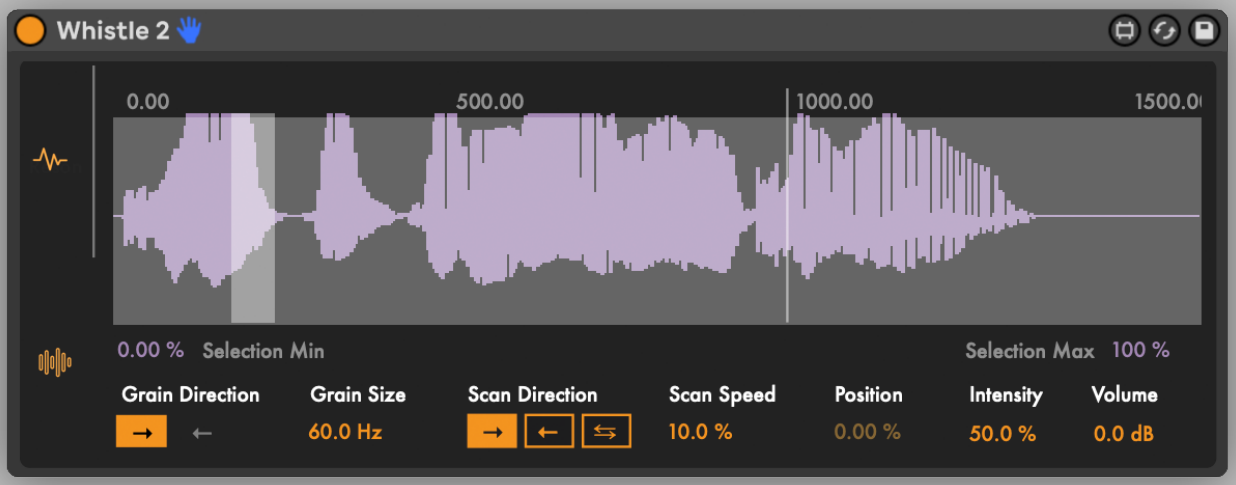
Whistle | Max for Live Device

Whistle is a physical modeling synthesizer with a banded waveguide as a resonator, disturbed with a granulated noise exciter source.

Banded waveguide synthesis is a physical modeling synthesis method that can be used to model elastic solids, like vibraphones or a marimbas. The synthesis method propagates exciter disturbances across tuned bandpass filters. In Whistle the amplitude and the partials of these frequency bands can be dialed in and automated.

The exciter of whistle uses a granular engine to process the noise source. This design creates a uniquely unpredictable bowing texture, with any tonal elements in the exciter source interacting with the resonator to create random harmonic content.



Exciter

In physical modeling synthesis, the exciter provides the energy source in the same way a bow of a cello or a hammer of a piano would. Drag and drop in an audio file to get started.

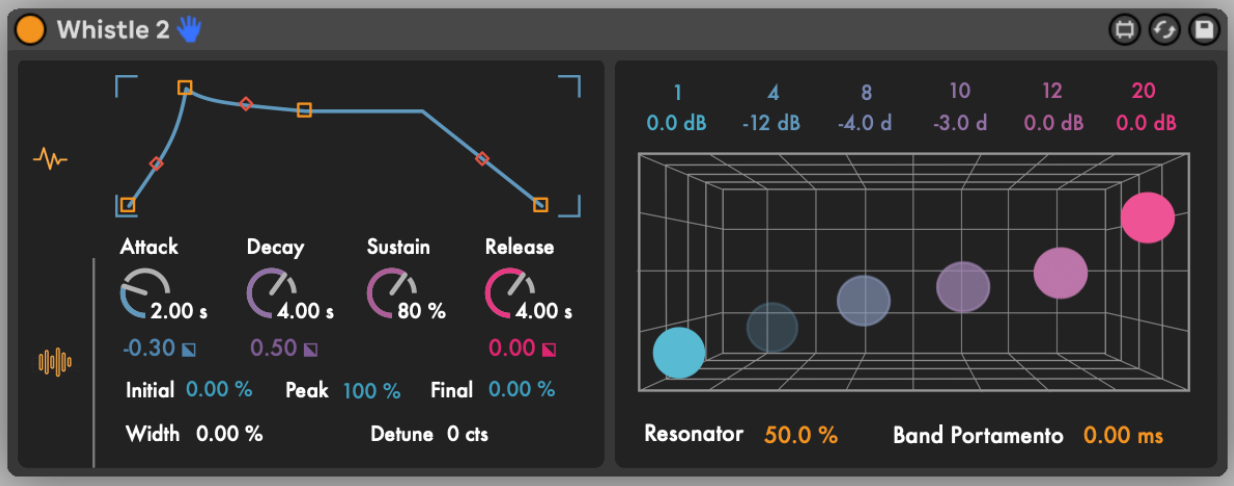
Whistle uses granulized noise to simulate “bowing”. This works best with noise-like sounds (field recordings, drum or percussion sounds... etc), but tonal sounds can also yield interesting results.

The range of exciter audio file duration can be controlled using the **Selection Min** and **Selection Max** parameter. The **Grain Direction** and **Grain Size** parameter controls the “roughness” of the exciter texture.

Scan Direction and **Scan Speed** parameter controls how the exciter scans through the audio file. At 0% Scan Speed, the **Position** parameter is made available and the playback position can be dialed in manually.

The **Intensity** parameter controls how hard the exciter is driven into the resonator. At high intensity values this can simulate an "overblowing" effect, with additional resonances added to the overall timbre.

The **Volume** parameter controls the overall volume of the device.



Resonator

The resonator propagates disturbances created by the exciter. We can think of the resonator like a body of a guitar or the tubing of a clarinet. Whistle uses a banded waveguide as its resonator – six parallel delay lines processed through harmonically tuned bandpass filters.

The right hand portion of the resonator page shows the harmonic ratio of the bandpass filter tuning, and its respective amplitude. The **Resonator** parameter controls the Q-value of the bandpass filter – or how well the resonator "rings". The **Band Portamento** parameter controls the glide time when the harmonic ratio values are changed during note playback.

The left hand portion of the resonator page controls the envelope parameter, with a basic ADSR control. Note that because Whistle uses a delay line to propagate disturbances, the ADSR parameters are inexact and are subject to change depending on the exciter source content.

The **Width** parameter spreads the individual bandpass filters across the stereo image, and the **Detune** parameter detunes all six bandpass filters in cents.