

Centripidity

Little Plucker



Introduction

The *Little Plucker* module is an oscillator/sound generator designed to mimic the sound of a plucked string. Unlike most oscillators however, it does not produce a constant waveform but effectively produces its own amplitude envelope with a fixed, fast attack and variable slow decay. A new attack is triggered whenever any of the following events occur:

- The Trigger button on the interface is pressed,
- The Gate input receives a rising edge that reaches 2.5V,
- The voltage on the Pitch CV input changes and the module is not in *Gated* mode.:
- The Gate input is connected and receives a positive going edge that passes at least 2.5V.

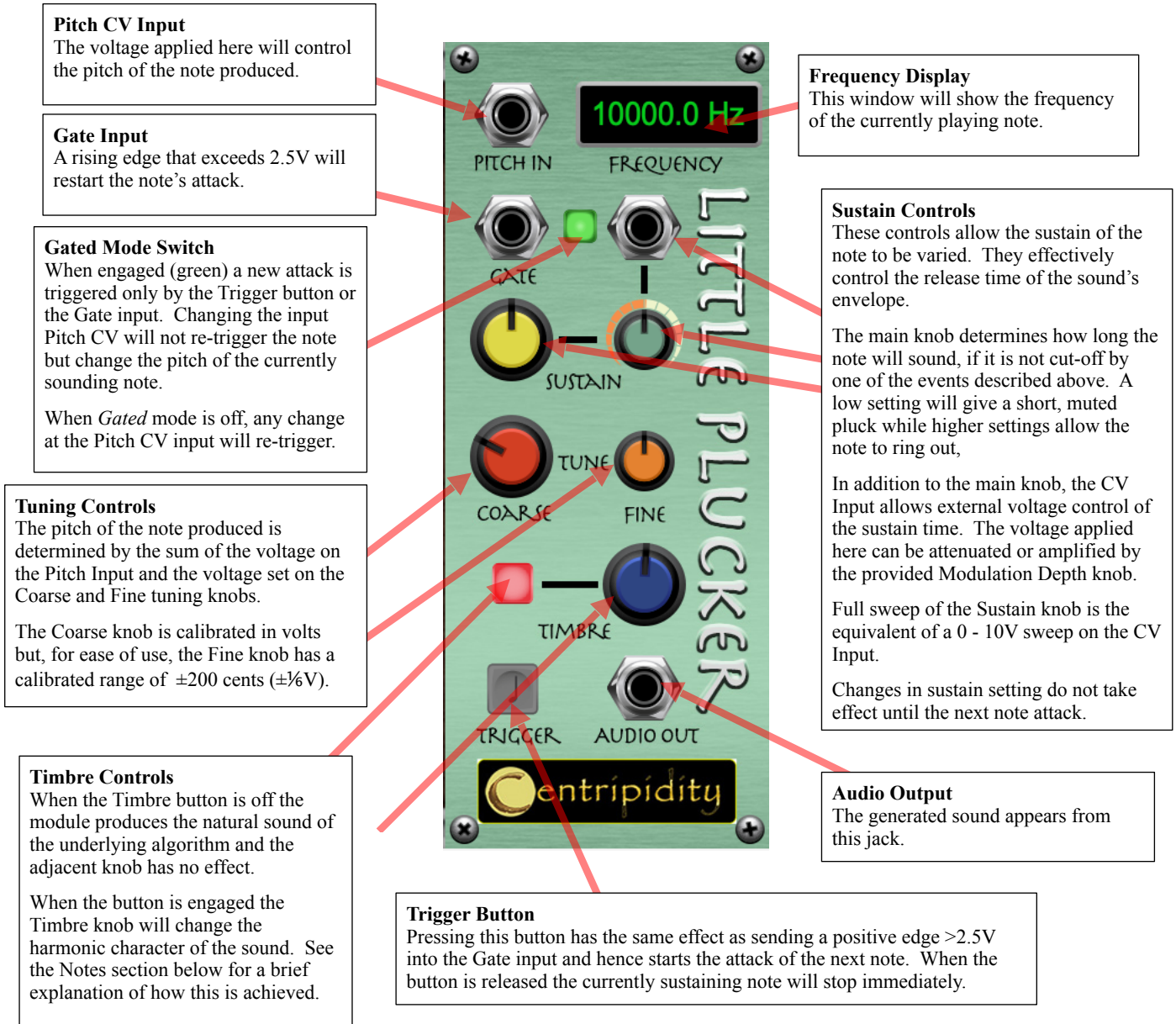
Once a note has begun it will continue to sound/decay until any of these events occur:

- A new note is sounded as explained above,
- The Trigger button is released,
- The Gate input voltage drops below 2.5V,

Controls are also provided to tune the oscillator and vary the sustain/decay rate. Sustain can also be controlled via an external control voltage.

In addition, a Timbre control can be switched in and out and adjusted to give some variability to the character of the string.

The Interface



Notes

Pitch

The pitch produced is determined by the sum of the pitch voltages applied via the external input and the two Tune controls. The pitch generated is governed the 1V/octave convention where middle-C is represented by +2.0V.

Timbre

A plucked string is essentially a white noise generator but, once the string begins to vibrate all of the non-resonant frequencies decay almost immediately and so we perceive a pitched sound. So, the starting point of the algorithm which produces this module's sound (the Karplus-Strong algorithm) is, when the Timbre button is disengaged, a burst of white noise.

When the Timbre knob is enabled the change in character is not achieved by filtering the sound produced but by altering the harmonic content of the noise burst which starts the sound.