Centripidity Heptatonic Harmoniser



Introduction

The He-Ha (Heptatonic Harmoniser) takes a monophonic input (Pitch CV) and outputs a chord of up to five notes through individual Mono CV outputs and a single polyphonic CV output.

Along the way:

- The incoming pitch is quantised to the chosen key and heptatonic scale, the same thirty-six distinct scales available on the Aleatoric Interval Sequencer.
- The chord is formed by stacking four intervals (anywhere between ± 20 th.
- The intervals used are individually under user control.
- The chosen intervals can also be individually modulated with external control voltages.
- The chord can change with every new note, after a certain number (fixed or random) of new notes have arrived or after a given number of externally sourced trigger pulses.

The Interface

The figure below highlights all of the main controls and displays available on the Pulse Train.



Chord Frequency

Rather than only providing harmony to every note played it is possible to have the harmony pitches remain constant for a number of entered notes thus allowing the original notes to serve as a melody with accompanying chords occurring less frequently.

Several controls contribute to this behaviour.

Chord Frequency Knob

This knob is used to set how many new events must arrive before the outputs change to harmonise with the then current note. Values of one to eight are available. There is also a ninth position marked as *Random* and in that position the number of events required for a new chord will change at random whenever a new chord is generated but will always be within the range one to eight.



The digital display shows the number of new events that must arrive before the output harmony changes. When this display reads 1 the next new event will trigger a new chord.

Chord Trigger Mode Switch

This switch essentially determines what, for the purposes of counting off to the next chord, constitutes an event arriving.

Upper Position

In the upper position it looks to the pitch cv coming in and the countdown decrements every time a new pitch arrives. That is, a pitch that represents a different note from the previous one. So, playing the same key, for example, will not decrement the counter but playing any new, different pitch will decrement the counter.

Centre Position

In the centre position the chord frequency controls are ignored and every time a new pitch arrives at the module the harmony outputs will immediately alter to the corresponding harmony for that pitch - once it is quantised into the key and scale.

Lower Position

In the lower position the chord counter decrements not when pitch changes but every time a positive (>3.5V) trigger arrives at the Chord Trigger In jack.

If this input is fed with the trigger signal from a keyboard then the counter will decrement every time a new key is pressed, even if it's the same key.

Of course, the triggers do not need to be tied to new notes. They could be generated by any source but each time the trigger countdown reaches zero the harmony at the outputs will change.