Centripidity

Poly
Flangulator

Introduction

The *Flangulator* is, in some ways, a variation on the traditional flanger effect but with some major differences. Normally a flanger effect is created by combining the input signal with a slightly delayed version of itself which produces a comb filter effect. If the length of that delay is modulated, with a sine wave for example, then the comb filter sweeps back and forth producing the familiar flanger effect. The intensity of the effect can be varied by controlling how much of the delayed signal is fed back into the original.

The *Flangulator* differs from a traditional flanger in two ways:

1. It is not the length of the delay that is modulated but the feedback strength.

2. The modulation is non-linear. It involves sweeping through an angle from $0 - 2\pi$ in the Complex Plane.

3. Rather than being modulated by an internal LFO, the Flangulator has no internal modulation generator but an external CV input. In this way any voltage source can be used to sweep the filter, an LFO or perhaps an Envelope Follower.

Unlike the original Centripidity Flangulator, this version processes polyphonic audio signals.

New in Version 1.2

Version 1.2 introduces a new, polyphonic CV input so that each of the poly voices in the audio feed can be modulated differently via their own envelope shapers, LFOs or Envelope Followers.

The existing mono CV input remains but it is overridden if a cable is plugged into the poly-CV socket.

The Interface

Modulation Depth Control
Can be used to either attenuate or amplify the control voltage. Because of the non-linear nature of the modulation, changing this value can have a significant impact on the sound. At lower levels, adding an external offset voltage can alter the sound by shifting the modulation centre.

CV Inputs: Mono and Poly
The signals entering here will modulate the feedback to produce the sweeping effect. If only the mono input is connected then the cv signal applied will modulate all of the polyphonic voices processed by this module. However, if a cable is connected to the poly-cv input then each voice will be separately modulated by the corresponding cv signal.

The Flangulator feedback will sweep through its full range as the voltage it receives sweep from 0 – 5V.

Polyphonic Audio Input
The audio signal to be Flangulated is passed into this input.

Delay Control
Controls by how much the feedback signal is delayed before it is recombined with the input signal.

Feedback Control
Controls the overall width of the feedback, that is, how much of the delayed signal is combined with the input signal.

Gain
This effect can substantially change the output level of an audio signal and so the Gain control allows up to 24dB of cut or boost to be applied to the output to compensate.

Sweep Meter
This meter shows the level of the feedback sweep in each channel.

Bypass Switch
Switches the effect on and off.

Polyphonic Audio Output
The Flangulated audio signal is passed back out from this output.