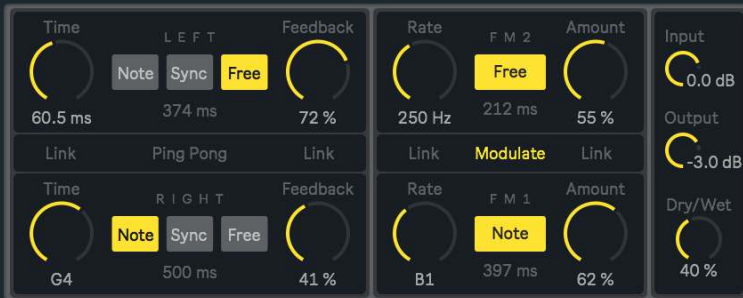# FM Delay v2.0 by NOISS COKO

DESCRIPTION

FM Delay is a stereo delay effect that offers individual time control for each channel, also including two oscillators as modulation source for both left and right values. Time and rate are expressed using different unit styles, such as musical notes, note durations (sync) or milliseconds/Hz.

This device covers a wide range of creative needs, besides being a classic delay effect, working as a completely versatile tool that could be applied to all kind of instruments and sounds. Using low modulation frequencies, it's easy to produce clear tones that result in deeper and intense bass sounds. Higher values will add harmonic richness and overtones to the signal, similar to an overdrive or even a bitcrusher effect.

FEATURES AND FUNCTIONS

Delay Section

Time
Defines the space or time between repetitions, using any of the three available unit styles: **Notes**, **Beat Divisions** or **Milliseconds**.

Time Mode
This tab determines the unit style that will be used to express time values.

- **Note**: values will be represented by musical notes, defined by the duration of one cycle, according to the frequency of that note. Depending on the feedback amount, this will produce a more or less clear tone over the signal.

- **Sync**: values are displayed as beat divisions, representing a specific fraction of Live's global tempo.

- **Free**: values will be set within a range that goes from 1 to 700 milliseconds.

Feedback
Sets the amount of output signal that is fed back to the effect input. It reflects the number of repetitions that are articulated after the original source.

Ping Pong
Instead of processing each channel individually, this option offers an alternative algorithm that recreates the classic Ping Pong effect. Unlike default mode, where left and right channels work independently, this variation generates a more dynamic result by moving the sound from one side to the other.

Lag
Every time a new time or rate value is defined, Lag produces a smooth transition between this value and the previous one. How long the transition takes is determined by this parameter.

Link
Time, Feedback, Rate and Amount parameters can be linked independently. When Link is active, each pair of parameters share the same values. If Time and Feedback are linked, the output signal will be mono.
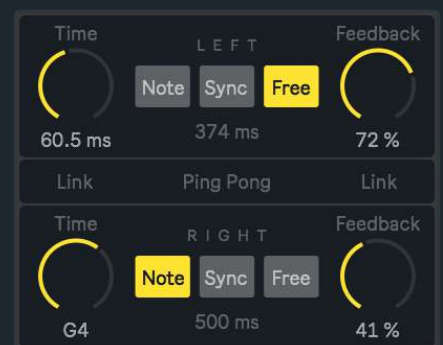
FM Synthesis is based on a carrier or main signal, which frequency is affected and modified by another source, also called the modulator. This device offers two individual sine wave oscillators (FM 1 and FM 2) that can be used to modulate both left and right time values simultaneously. This is a parallel process, resulting in two different signals that have no effect over each other. However, if the **Modulate** button is active, only FM 1 will modulate the time from both channels, while FM 2 will now affect the rate (frequency) from FM 1. In this case, FM 1 works as a carrier and FM 2 as its modulator.
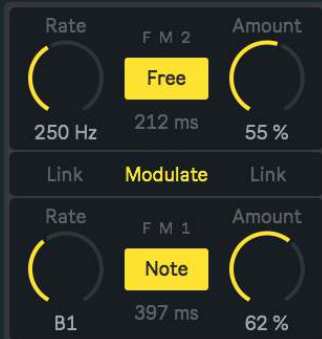
Rate
Independently determines the frequency for each one of the two sine wave oscillators that modulate both time parameters, or the carrier oscillator frequency, in the case that the Modulate toggle is active. This parameter establishes the frequency of the sidebands that are generated by this process and added to the spectrum.

Rate Mode
As in Time Mode, this toggle also determines the unit style that will be used to express, in this case, rate values.

- **Note**: values will be represented by musical notes.

- **Free**: values will be set within a range that goes from 0.01 Hz to 10 KHz.

Amount
Sets the intensity of the signal that modulates the delay time. This parameter determines the gain of the oscillator that works as a modulation source. A value of 0% will generate no time modulation, having no effect over the processed signal. Higher values will proportionally increment the way in which the time parameter is affected by the oscillator. This parameter establishes the amplitude of the sidebands that are generated by this process and added to the spectrum.

Input
Controls the incoming signal gain. Allows to attenuate or amplify the dry signal, before being processed.

Output
Controls the resulting signal gain, after being processed. Since this is the last step of the chain, it will respect the proportion determined by the Dry/Wet parameter.

Dry-Wet
This percentage represents the mix between the original (dry) and processed (wet) signals. A range from 0% to 100% determines the amount of wet signal that is being preserved, while exactly the opposite is defined for the dry signal.

CREDITS

ABOUT

DEVICES

FM Delay v2.0

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