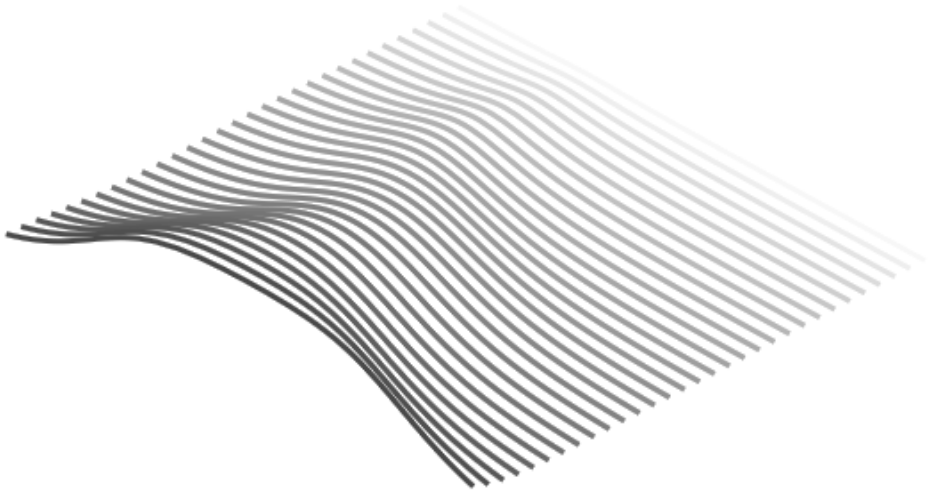
Ripple Delay Pro

Davisynth Audio



Product Manual
Version 1.0.0
May 2024

Introduction

Overview

Ripple Delay is a curve-based multi-tap delay plugin that adds variation to echos with waves of parameter modulation called “ripples”.

The plugin has powerful sound sculpting capabilities while at the same time wielding an extremely simple workflow. This balance between workflow simplicity and complex effect capabilities is designed such that Ripple Delay covers the vast majority of use cases in the quickest and most efficient way possible.

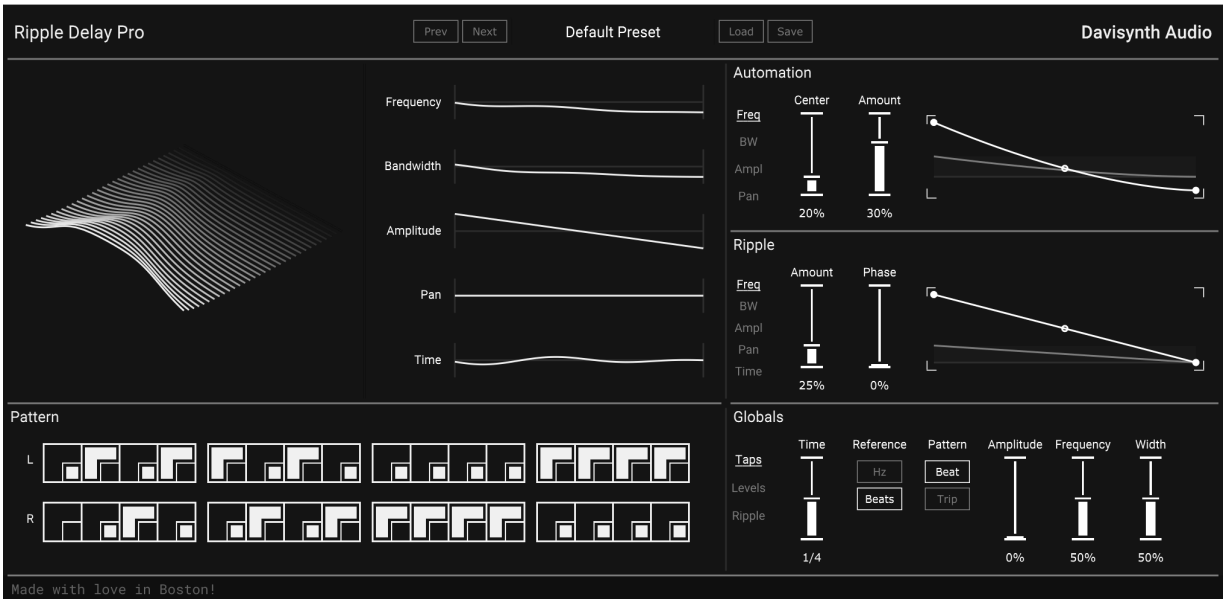


Figure: Ripple Delay Pro’s user interface.

User Interface

Overview

The user interface is divided into 6 main sections:

1. Display
2. Pattern
3. Automation
4. Ripple
5. Globals
6. Presets

Subsequent chapters in this document will cover each section in detail.

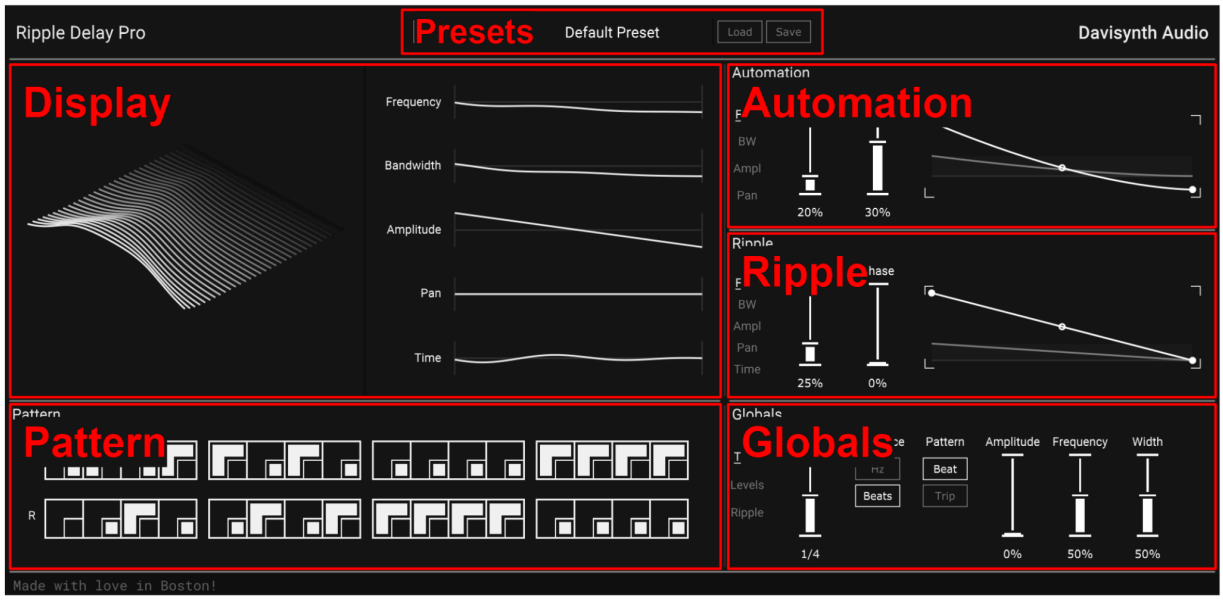


Figure: Main sections in Ripple Delay Pro's user interface.

Display

3D Visualizer

Ripple Delay's defining feature is its visualizer. The visualizer is a 3D representation of the delay's filter response and how it varies over time through each delay tap. Additionally, the display is responsive, showing the effect of ripples on the time varying tap properties in real time.

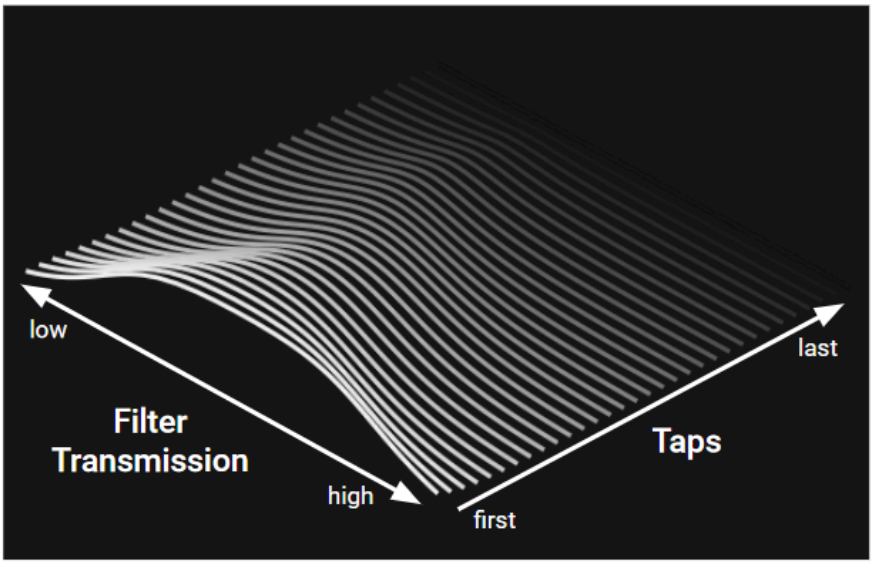


Figure: Ripple Delay's visualizer.

Responsive Curve Graphs

Ripple delay features a set of responsive graphs that displays all the tap parameters in a central accessible location. This is a complement to the 3D visualizer which displays frequency, bandwidth, and amplitude, but not panning and tap time.

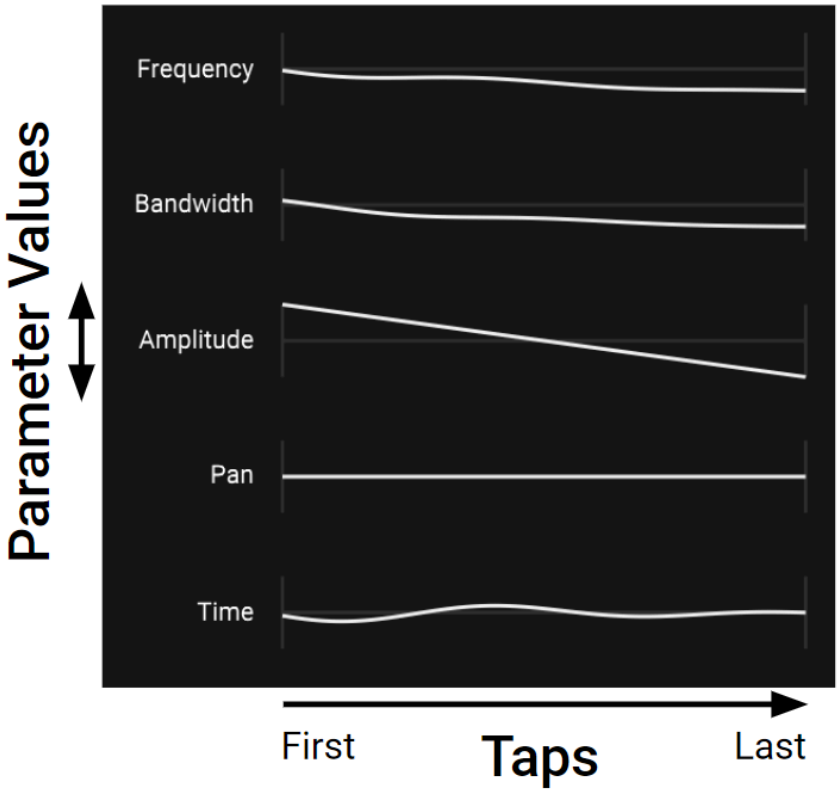


Figure: Ripple Delay's responsive curve graphs.

Pattern

Independent Left/Right Patterns

Ripple Delay's pattern editor is inspired by drum machine interfaces whose rhythm is controlled by togglable pads. The left and right channels each have their own programmable patterns, allowing for the painless creation of ping-pong style delays.

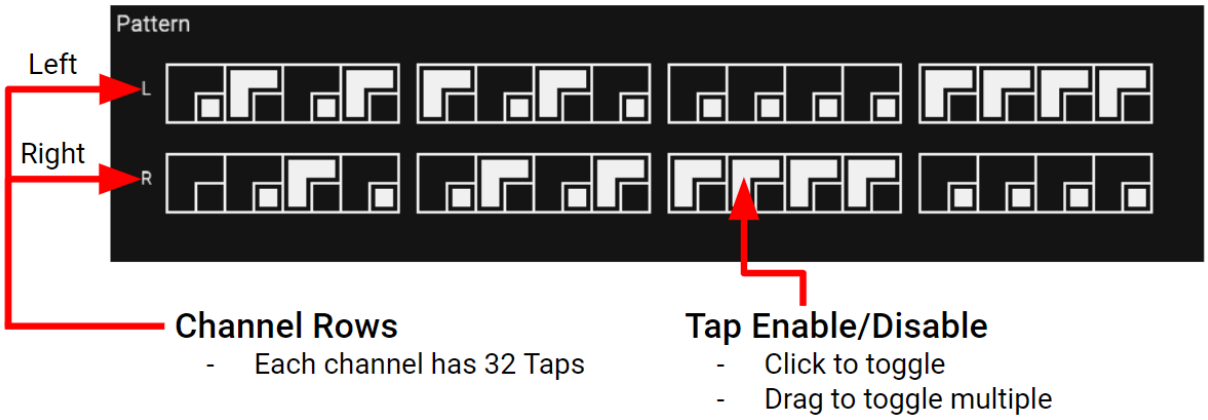


Figure: Ripple Delay's pattern editor.

Time Signatures

The pattern view has two grids: quarter-eighth, and quarter-triplet. These grid modes allow for complex rhythms with the triplet grid featuring the highly sought-after 2:3 polyrhythm.

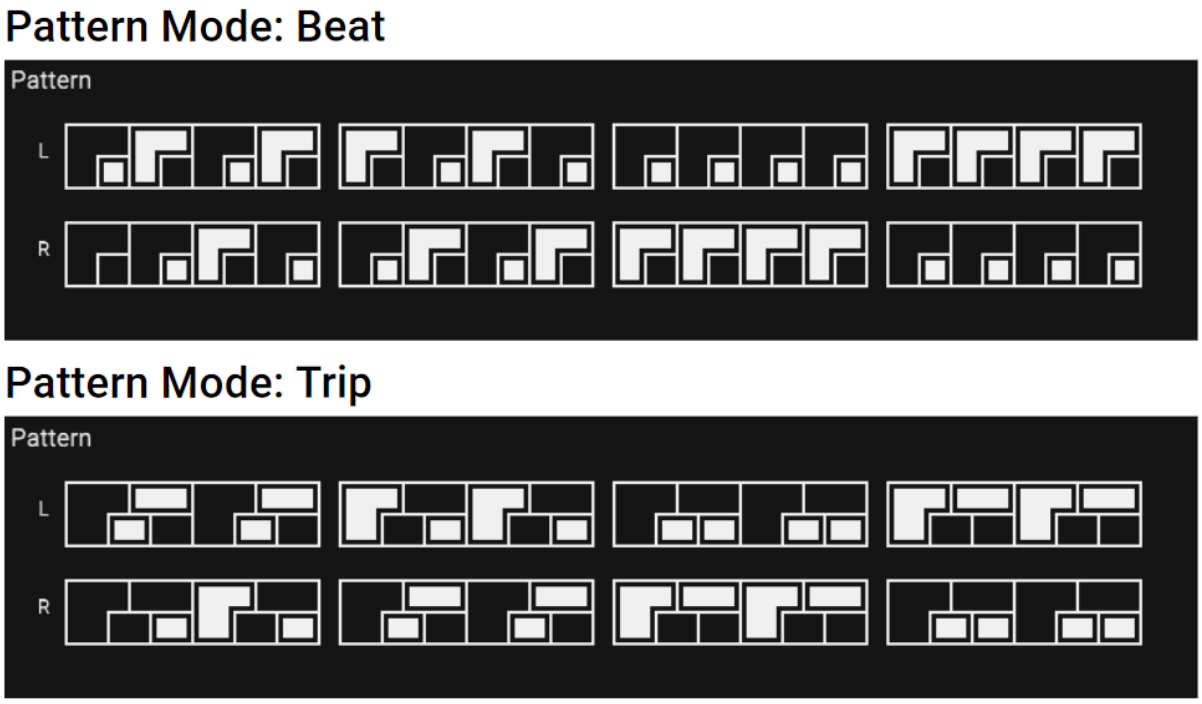


Figure: Ripple Delay's two time modes.

Automation

Introduction

As opposed to controlling each echo tap's parameters individually, parameters are determined based on a set of user controllable envelope functions.

This method avoids the tedious practice of setting each echo tap with the added advantage of having smooth, natural transitions between echos.

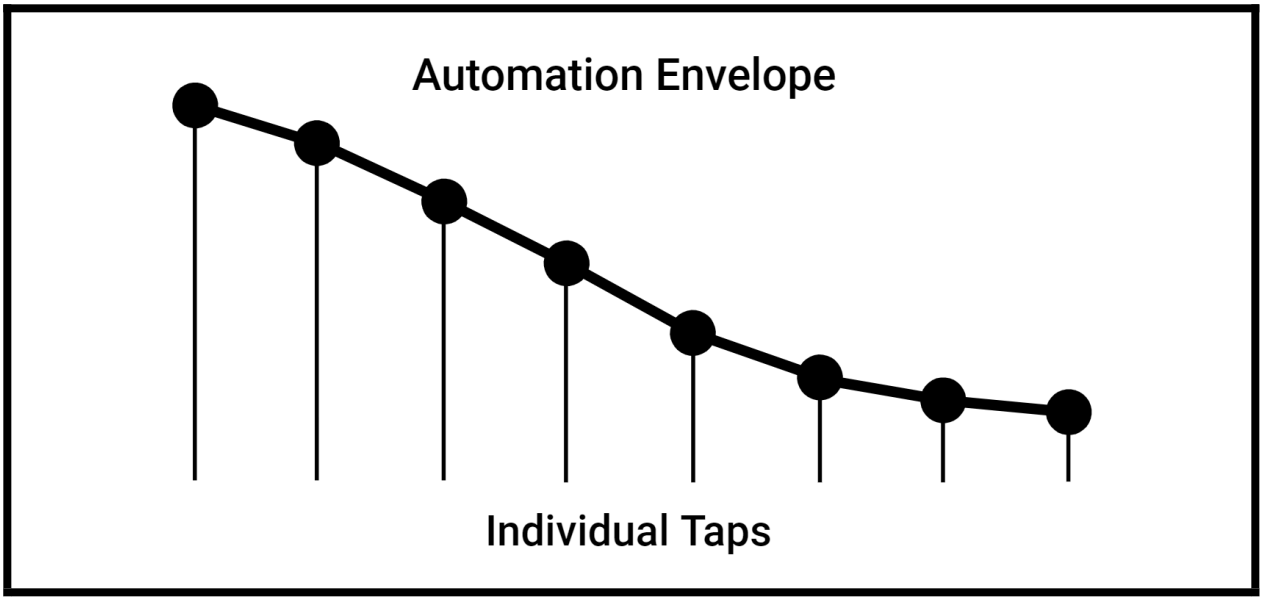


Figure: Tap parameters following an envelope function.

Interface

The automation interface lets users create custom envelope functions with a curve editor. Envelope vertical offset and strength can then be changed using the “Center” and “Amount” sliders. The parameter automation currently being edited is selected from the list on the left.

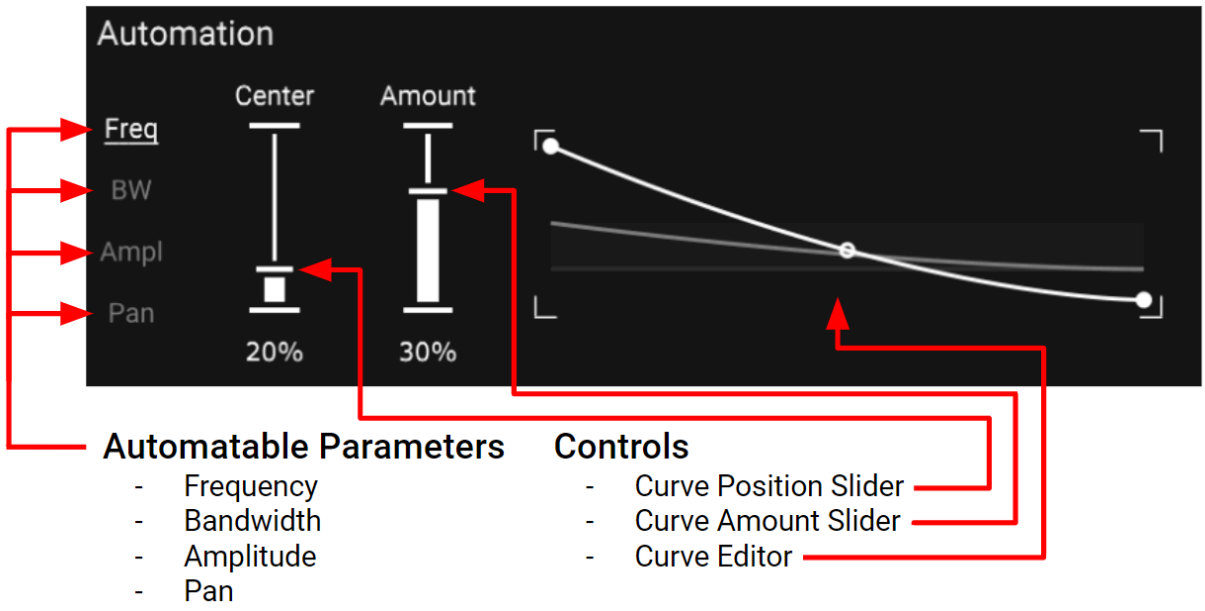


Figure: Ripple Delay’s automation settings interface.

Curve Editor

Ripple Delay's curve editors behave similarly to automation in many DAWs. A set of control points and stretch handles determines the envelope function. Points can be added/removed as needed.

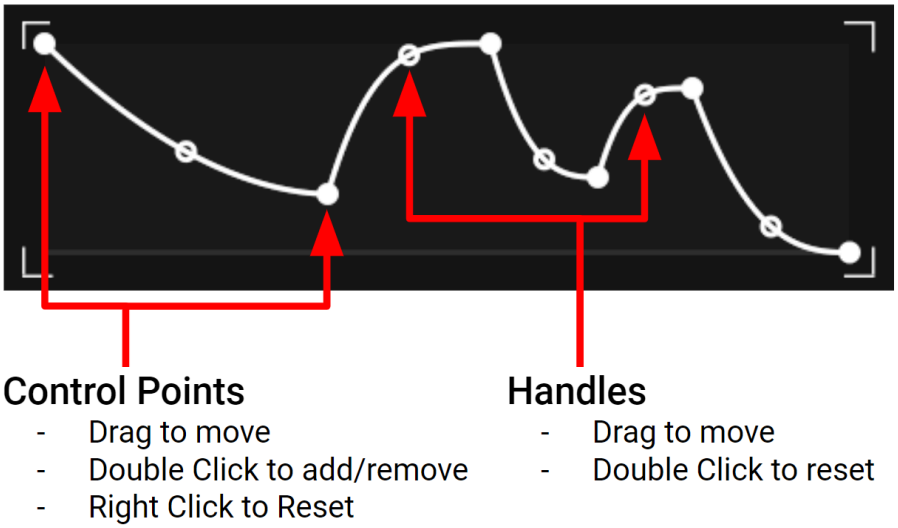


Figure: Ripple Delay's curve editor and its controls.

Ripple

Introduction

Without significant variation, delay effects quickly feel stagnant.

Ripple Delay overcomes this with local modulation of each tap's parameters. Modulation strength is controllable for each tap in the same way as any other parameter - with an automation envelope function.

Ripple modulation moves spatially, with a user controllable wavelength and velocity. This spatial motion is what ultimately gives Ripple Delay its powerful ability to make each echo feel and sound unique.

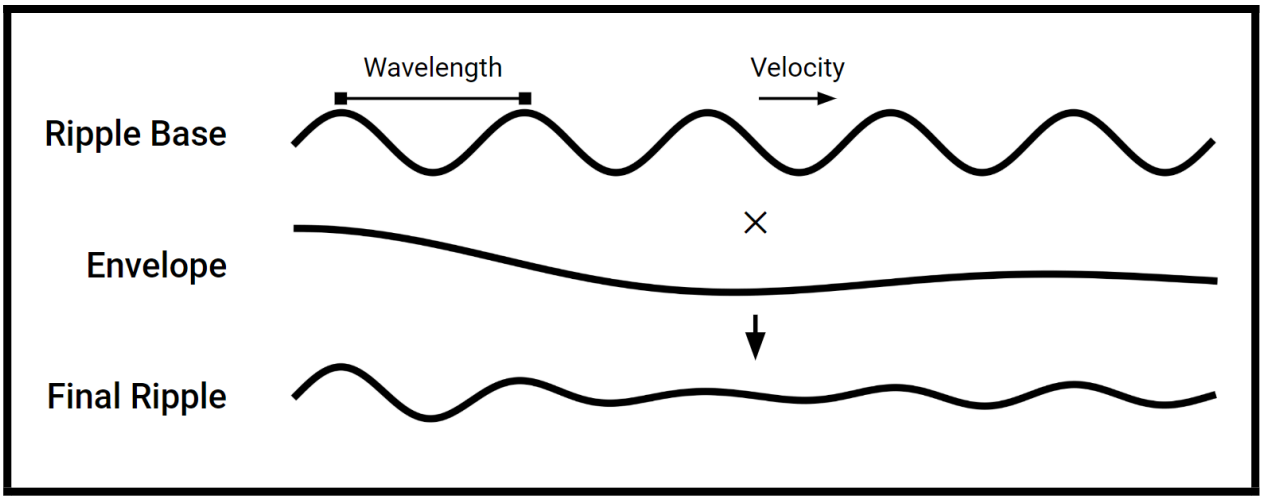


Figure: A moving ripple modulated by its envelope function.

Interface

The ripple settings interface controls the phase and amount with which the ripple affects each parameter. The curve editor controls the envelope function, with the ripple amount slider behaving as a 0-100% scaling function for the curve. The phase slider applies a constant phase shift to the time varying ripple function.

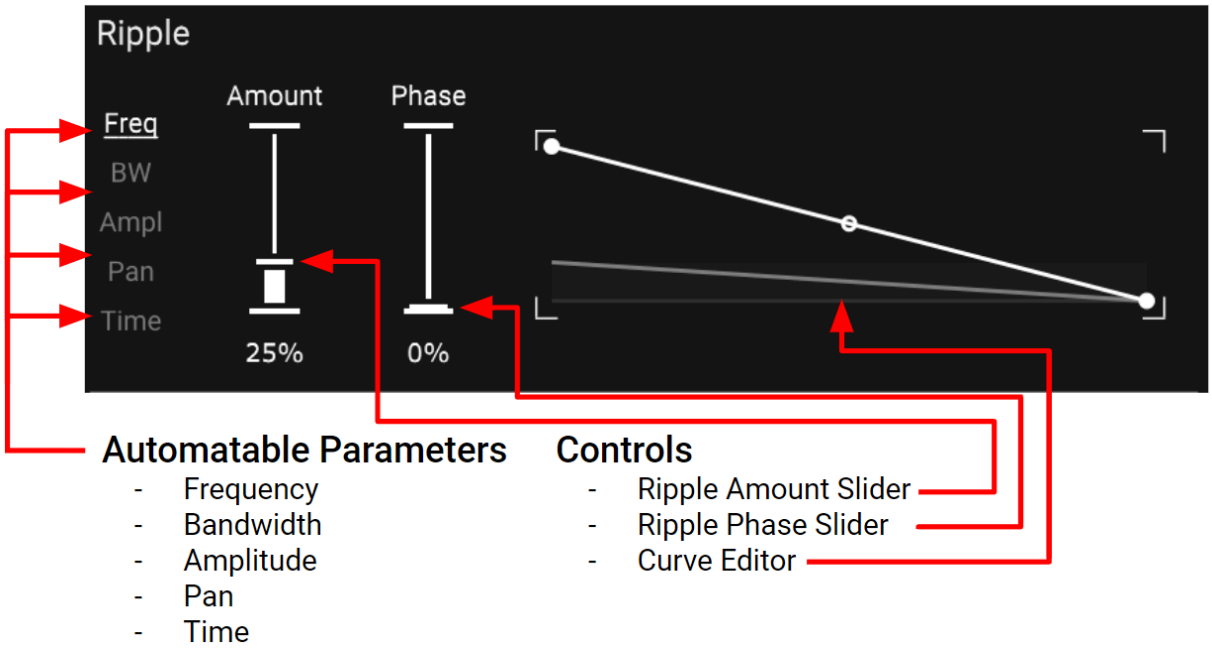


Figure: Ripple Delay's ripple settings interface.

Special Case: Time Ripple

Ripple Delay allows ripples to modulate tap delay times.

In doing so, the pitch of the echo taps moves up and down with the time derivative of the ripple's modulation. Additionally, ripples modulate the echo taps independently of each other, so each tap is pitch shifted a different amount. This results in a rich sound similar to unison in a synthesizer and is an easy way to add perceived width to the output sound.

Globals

Introduction

The globals section controls parameters that affect overall delay behavior. It is subdivided into three sub-sections described below:

1. Taps
2. Levels
3. Ripple

Taps

The taps tab contains settings for the delay's taps as well as global feedback from the last tap time back to the first tap. This global feedback gives the delay an infinite impulse response and is useful for long decays.

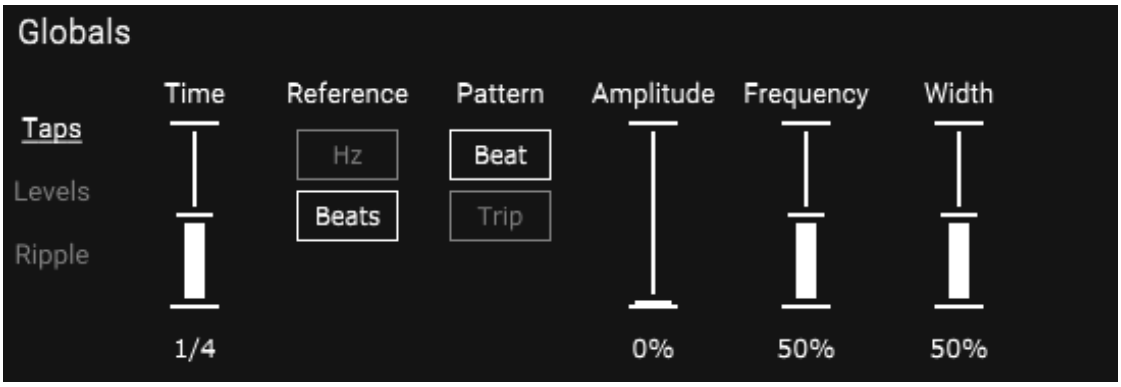


Figure: Global taps settings.

Parameter	Description
Time	Reference time for tap delays
Reference	Switches between DAW tempo and Hz for the time mode
Pattern	Switches between quarter-eighth and quarter-triplet grid
Amplitude	Amplitude applied to the global feedback
Frequency	Filter center frequency applied to the global feedback
Width	Filter width applied to the global feedback

Levels

The levels tab contains settings related to dynamics and controls for the plugin’s output compressor. Compression is necessary for overlapping echos not to clip.

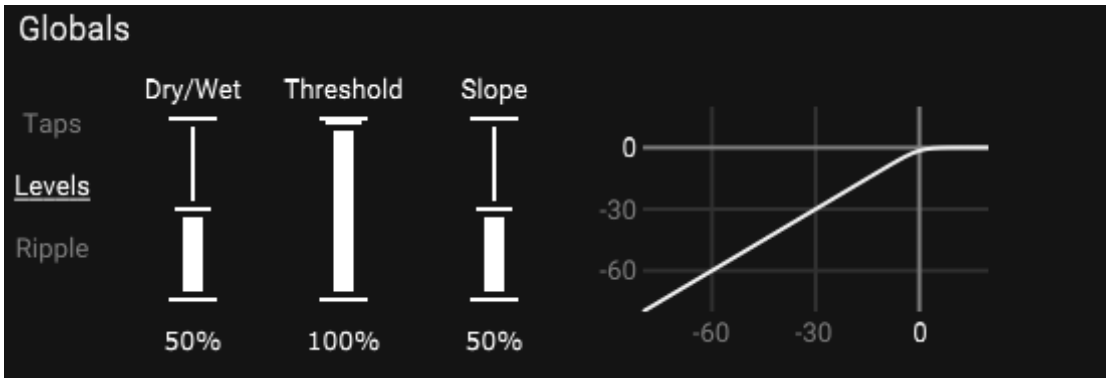


Figure: Global levels taps settings.

Parameter	Description
Dry/Wet	Mixes between dry (input) and wet (delay output)
Threshold	Compressor threshold. Levels above this get attenuated
Slope	Compressor attenuation slope (dB/dB behavior)

Ripple

The ripple tab controls ripple parameters affecting all parameters.

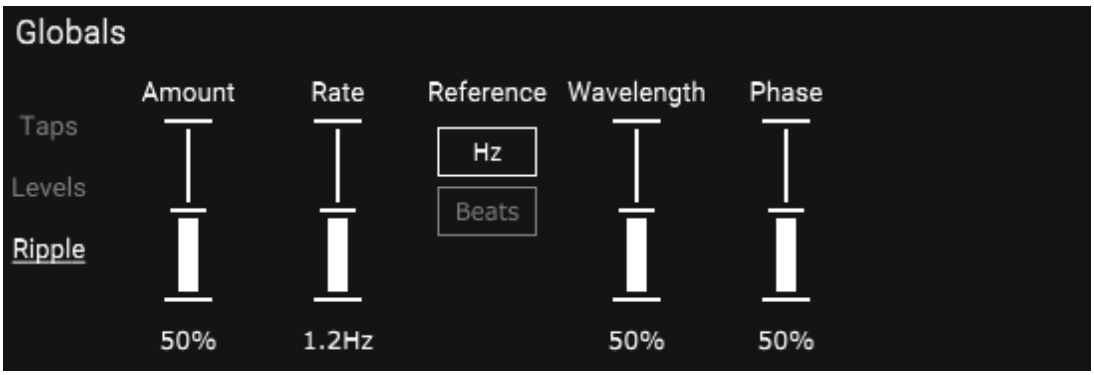


Figure: Global ripple settings.

Parameter	Description
Amount	Global ripple attenuation
Rate	Angular velocity of the sinusoidal ripple
Reference	Switches between DAW tempo and Hz for ripple rate mode
Wavelength	Controls spacing between ripple peaks and troughs
Phase	Global phase control for the ripple function

Presets

Presets allow the current plugin parameters to be saved to disk so they can be loaded easily in new projects. Ripple Delay has its own preset folder but presets can be saved/loaded from any valid location on the computer.

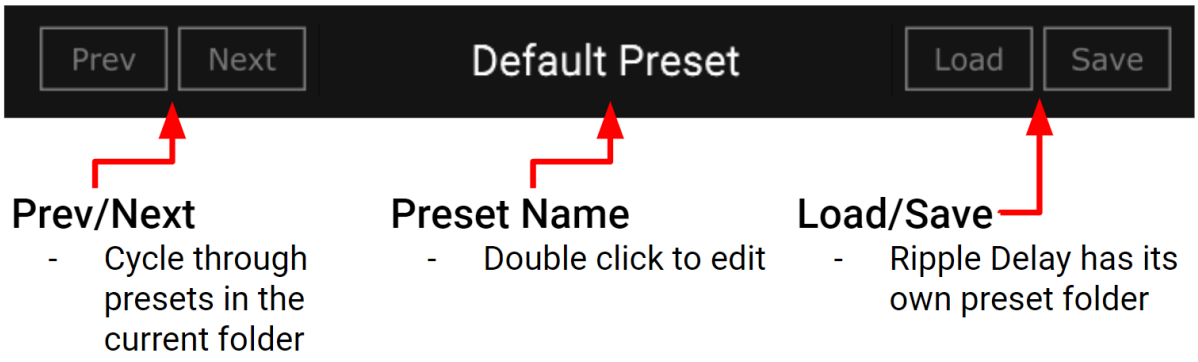


Figure: Ripple Delay Pro's preset settings.