



# Clavinet.

## USER GUIDE



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# CHAPTER 1: INTRODUCTION

Thank you for choosing Waves! In order to get the most out of your Waves instrument, please take some time to read through this user guide. We also suggest that you become familiar with [www.waves.com/support](http://www.waves.com/support). There you will find an extensive answer base, the latest tech specs, detailed installation guides, new software updates, and current information on licensing and registration.

Sign up at the support site and you will receive personalized information about your registered products, reminders when updates are available, and information on your authorization status.

## **Acknowledgement**

The Clavinet samples library was recorded and produced by Yoad Nevo at NevoSound Studios in London.

To contact Yoad Nevo, visit: [www.yoadnevo.com](http://www.yoadnevo.com)

## 1.1 Product Overview

The Clavinet is a keyboard instrument that uses strings, keys, and electromagnetic pickups to produce a unique, funky sound. Many musical hits, such as “Higher Ground” and “Superstition” by Stevie Wonder and “Outta Space” by Billy Preston, fused the Clavinet sound with funky music. By the 1970s, it became a classic element when making funky disco bass lines and choppy stabs.

The Clavinet is essentially an electrified version of a clavichord – an instrument popular from the Renaissance through the Classical period. The clavichord was famously quiet, so it was not suited for performances with ensembles and orchestras. When the Clavinet was introduced in the 1960s, it addressed the issue of amplification and opened the way for numerous sounds and effects. It was manufactured in Germany until the ‘80s.

The Clavinet consists of sixty keys. It uses electromagnetic pickups to turn sound into electrical signals, ready to be amplified. The overall sound of the Clavinet is a staccato pluck, followed by a rather quick decay. It features a damper that shortens the decay (a mode we call “Mute”), or lets it die out naturally (“Unmute”). This produces a sound that is a bit more open and bright, especially in its decay.

The Waves Clavinet is a virtual instrument, sampled from an original Hohner Clavinet D6 in both its Mute and Unmute modes. We added some sound-shaping tools and effects, such as EQ and Compression. There is also an AutoWah effect and (as with other Waves classic keyboard instruments) there is a phaser, chorus, and reverb.

## 1.2 Concepts and Terminology

- In the case of the Clavinet, the term “Mute” does not describe a full mute of the sound. Instead, it refers to the action of a fader-like lever to the right of the Clavinet’s keys that mechanically chokes the sustain and introduces a faster decay and mellower tone.
- The tuning of the Clavinet is equal tempered. Equal temper means that an octave is divided to 12 equal  $\frac{1}{2}$  tone or semitone intervals of 100 cents each. This is contrary to the Justonic or other temperaments.

- The reference tuning for the actual sampled instrument was the normative middle A=440 Hz. The Clavinet's top toolbar features a global tune control that allows setting of the overall tuning one semitone up or down. For users looking to adhere to a 432 Hz reference, the tuning should be set to -31 cents.

Waves Clavinet is powered by the Waves Sampler Engine (WSE): a state-of-the-art multi-sample engine, designed to deliver solid, high-quality performance.

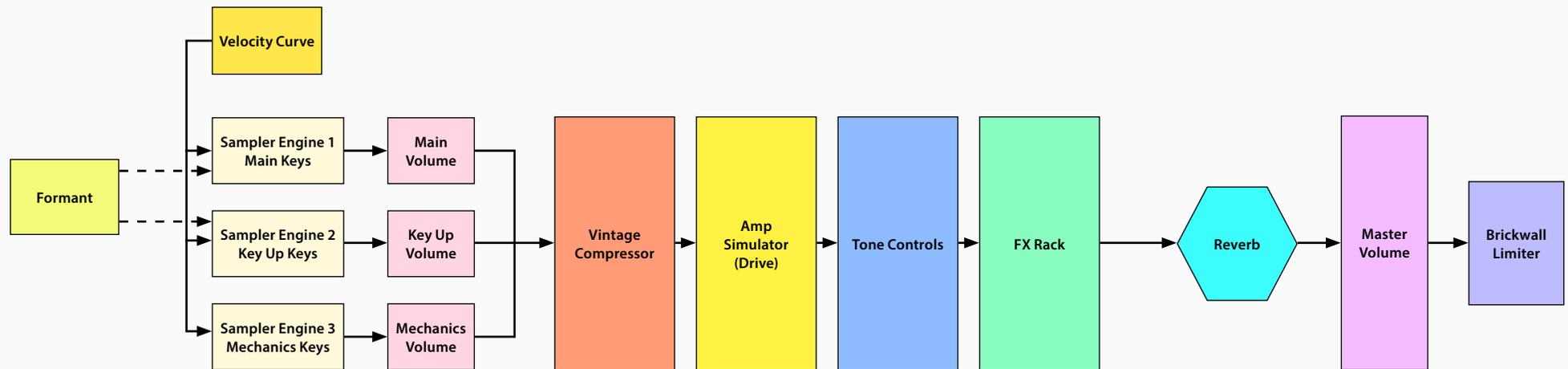
## 1.3 Components

The Waves Clavinet has one component: Clavinet Stereo.

Clavinet is a virtual instrument plugin and will appear under the related selection menus for virtual instruments in all supported DAW host applications.

Waves Clavinet also has a standalone application. It uses ASIO (Windows) or Core Audio (Mac) drivers to enable play through any audio device of choice. Clavinet receives MIDI data to trigger notes and control changes.

## 1.4 Functional Block/Flow Diagram



## 1.5 Starting Clavinet

Insert the Clavinet plugin on an instrument track in your DAW, or launch the standalone application. The plugin will load its default settings and will be ready to use.

Before getting started, use the Velocity Curve control to adjust your keyboard to get the feel you like. Once you're happy with the touch, you can uncheck the VEL (velocity) box in the top bar. This prevents the velocity setting from changing when a preset is loaded.

# CHAPTER 2: INTERFACE AND CONTROLS

## 2.1 Interface



## 2.2 Controls

### Keyboard Control



A virtual keyboard enables you to preview the sound of a note when a keyboard controller is not available. Use a mouse or similar input device to play a note. This control cannot be automated, although it will follow any MIDI input device.

## Keys Section



### Vel Curve

The Vel Curve control changes the curve of the velocity response from logarithmic to exponential. Use it to adjust the feel of your MIDI keyboard.

When the control is set to 0, the curve of the velocity response is linear.

Range: -50 to +50

Initial Value: 0

Reset Value: 0

Continuous control

### Formant

The Formant control changes the sound character, but not the pitch. Each step is equal to a half tone. This means that when this control is set to -12, the piano sound character will be lower by one octave, while the pitch will not change.

Range: -12 to +12

Initial Value: 0

Reset Value: 0

Discrete control, 25 steps

## Mix Section



### Main

Main controls the sampled sound of the Clavinets without the mechanics and the release keys sounds. It controls the Main samples level in the overall mix.

Range: 0% – 100%

Initial Value: 90%

Reset Value: 90%

Continuous control

### Key Up

Key Up controls the sound of the keys while releasing. It controls the Key Up samples level in the overall mix.

Range: 0% – 100%

Initial Value: 12%

Reset Value: 0%

Continuous control

## Mechanics

Mechanics controls the sampled sound of the Clavinet mechanics without the Main or Key Up sounds. It controls the Mechanics (thump) samples level in the overall mix.

Range: 0% – 100%

Initial Value: 12%

Reset Value: 0%

Continuous control

## Comp



The Comp control influences the mix of the internal compressor. Turning the knob clockwise increases the level.

Range: 0% – 100%

Initial Value: 25%

Reset Value: 0%

Continuous control

## Amp Setion



### Amp On/Off

The Amp button turns the Amp section On or Off. Range: Off or On

Initial Value: Off

Switch: Off or On

Reset Value: Off

### Drive

Controls the level of the amplifier overdrive.

Range: 0–100

Initial Value: 0

Reset Value: 0

Continuous control

## Type

There are two microphone options in front of the amplifier: Condenser and Dynamic.

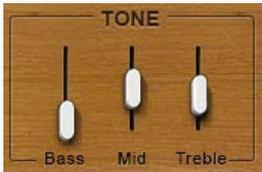
Range: Dyn or Cond

Initial Value: Cond

Reset Value: Cond

Two-state switch

## Tone Setion



### Bass

The Bass control is a bell filter at 100Hz, which can be increased or decreased by up to +/-18 dB.

Range: -50 – +50 (+50 = +18 dB)

Initial Value: 0

Reset Value: 0

Continuous control

### Mid

The Mid control is a bell filter at 380Hz, which can be increased or decreased by up to +/-18 dB.

Range: -50 – +50

Initial Value: 0

Reset Value: 0

Continuous control

### Treble

The Treble control is a high-shelf filter at 7.5KHz, which can be increased or decreased by up to +/-18 dB.

Range: -50 – +50

Initial Value: 18

Reset Value: 0

Continuous control

### FX Section



### FX In/Out

The FX button turns the FX On or Off.

Range: Off or On

Initial Value: On

Switch: Off/On

Reset Value: On

**AutoWah On/Off**

The AutoWah button turns AutoWah On or Off.

Range: Off or On

Initial Value: Off

Toggle Switch

Reset Value: Off

**Sens**

Sens controls the sensitivity of the Wah effects envelope detector.

Range: 0 – 100

Initial Value: 80

Reset Value: 80

Continuous control

**Speed**

Speed controls the speed of Wah filter movement.

Range: 0 – 100

Initial Value: 60

Reset Value: 60

Continuous control

**Range**

Range controls the center frequency of the Wah filter.

Range: 0 – 100

Initial Value: 30

Reset Value: 35.1

Continuous control

**Direction**

The Direction switch flips the movement direction of the Wah filter.

Range: Up or Down

Initial Value: Up

Toggle Switch

Reset Value: Up

**Phaser**

### **Phaser On/Off**

The Phaser button turns the Phaser section On or Off.

Range: Off or On

Initial Value: On

Toggle Switch

Reset Value: Off

### **Phaser Mix**

Phaser Mix controls the level of the Phaser effect.

Range: 0% – 100%

Initial Value: 50%

Reset Value: 0%

Continuous control

### **Phaser Rate**

Phaser Rate provides control over Sync rates that relate to the host (such as  $\frac{1}{4}$ ), or Free rates (in Hz) that can be set independent of the host BPM, using the same knob. The middle position (i.e. 12 o'clock) is the slowest Free value. Turning the knob clockwise from this position increases the rate from 0.01 Hz to 22 Hz.

When the knob setting is less than 12 o'clock, values are defined with respect to the host. Turning the knob counterclockwise increases the Phaser Rate through music note duration values related to the host's BPM:  $\frac{1}{32T}$ ,  $\frac{1}{32}$ ,  $\frac{1}{32D}$ ,  $\frac{1}{16T}$ ,  $\frac{1}{16}$ ,  $\frac{1}{16D}$ ,  $\frac{1}{8T}$ ,  $\frac{1}{8}$ ,  $\frac{1}{8D}$ ,  $\frac{1}{4T}$ ,  $\frac{1}{4}$ ,  $\frac{1}{4D}$ ,  $\frac{1}{2}$ ,  $\frac{1}{2D}$ , 1, 2/1.

2/1 equals one cycle in two bars.

Scaling: Custom.

Range: Sync 1/32T – 2/1 / Free 0.01 Hz – 22 Hz

Initial Value: 1 Bar Sync rate

Reset Value: 0.18 Hz Free rate

Continuous control.

### **Phaser Depth**

Phaser Depth controls the Phaser feedback.

Range: 0 – 100

Initial Value: 15

Reset Value: 0

Continuous control

## **Chorus**



### **Chorus On/Off**

The Chorus button turns the Chorus section On or Off.

Range: Off or On

Toggle Switch

Reset Value: Off

## Depth

The Depth control influences the dry/wet mix of the signal into the chorus and determines how much the module oscillator will influence the delay. The chorus engine contains four delays and four oscillators.

Range: 0 – 100

Initial Value: 34

Reset Value: 0

Continuous control

## Reverb



### Reverb Mix

Reverb Mix controls the balance between the dry and wet signal. It also controls the amount of reverb added.

Range: 0% (dry) to 100% (wet)

Initial Value: 20%

Reset Value: 0% (dry)

Continuous control

**Reverb Predelay**

Reverb Predelay controls the amount of the delay between the dry and wet signals.

Range: 0 ms – 500 ms

Initial Value: 20 ms

Reset Value: 0 ms

Continuous control

**Reverb Time**

This controls the reverb time.

Range: 0.4sec – 6 sec

Initial Value: 1.3 sec.

Reset Value: 2 sec

Continuous control

**Reverb Damp**

The Reverb Damp control increases the level of the high frequencies during the decay.

Range: 0.4 – 2

Initial Value: 0.4

Reset Value: 0.1

Continuous control

## Keyboard Control



### **Volume**

Volume controls the output gain level after plugin processing.

Range: 0 –10

Initial Value: 7

Reset Value: 7

Continuous control

### **Limit**

The Limit control confines the instrument's output with respect to full scale. When Limit is active, the clip LED pulses to reflect limiter gain adjustment activity. The limiter is especially useful when using the standalone application.

Range: On or Off

Initial Value: Off

Reset Value: Off

Discrete Off or On control

### Meter Scale

Peak meter: -48 dB to 0 dB (shown as -30 dB to +18 dB)

VU meter scale calibrated for 18 dB of headroom (0 dBVU = -18 dBFS).

### Split Meters

Separate left and right meter indicators.

Black = Left

Green = Right

## 2.3 WaveSystem Toolbar Controls

The WaveSystem Toolbar sits at the top of most Waves plugins. It's used to save and load presets and to compare settings. It's a very handy tool.



To learn more, please refer to the WaveSystem Toolbar user guide: [www.waves.com/downloads/manuals](http://www.waves.com/downloads/manuals)

In addition to the standard Toolbar elements, Clavinet has a few additional controls.

Samples: /.../Clavinet

Clavinet loads the default sample library when the plugin is instantiated or the application is launched. Click on the Samples button to navigate to another sample library folder. This library will become the default until you load another library. The folder must contain valid Waves sampled instrument files, otherwise the OK button will be grayed out. You can download Waves sample libraries from the Waves download page

<http://www.waves.com/downloads/sample-libraries>

## Keyboard Control

Tune 0

Allows global fine tuning of the instrument.

Range: -100 – 100 cents

Initial Value: 0

Reset Value: 0

Continuous control

**Velocity** (Load with preset)

When the Velocity button is checked, the Velocity setting changes to the value specified by the preset that is being loaded. When the box is unchecked, the velocity setting is not affected by the preset.

## CHAPTER 3: CLAVINET STANDALONE APPLICATION

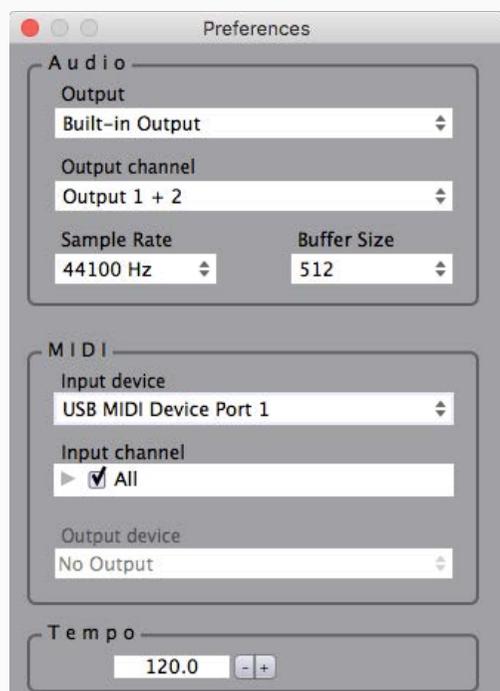
The Clavinet application can be used as a standalone instrument. It requires ASIO drivers for Windows or Core Audio for Mac OS X. Clavinet.exe (Win) or Clavinet.app (MAC) loads the Clavinet instrument and configuration preferences dialogs.

The standalone application's menu file contains three items:

- All Notes                      Off Sends an All-Notes-Off MIDI command to the Clavinet synthesizer. This is useful in cases of "stuck" sustaining notes.
- Preferences                    Displays the Preferences dialog for the Audio, MIDI, and User Choices configurations.
- Exit                                Quits the application.

## The Preferences Dialog

The preferences dialog allows configuration of Audio, MIDI, and User Choices.



**Audio** provides control over the following parameters:

**Device** displays the audio devices available on the system. **Output Channels** allows selection of audio outputs from the selected device.

**Sample Rate** is used to select sample rate.

**Control Panel (Windows)** launches the selected ASIO device's control panel for selection of buffer size and latency.

**Buffer Size (Mac)** is used to select buffer size, which determines latency.

**MIDI** provides control over the following parameters:

**MIDI Input device** displays a list of available MIDI input devices on the current system. Select the MIDI device for receiving MIDI data.

**Input Channel:** The Clavinet standalone is ready to receive MIDI in OMNI mode from all channels. The MIDI channel control allows the selected MIDI device to receive MIDI input only from certain channels, as selected in the checkboxes.

**Windows Users:** To apply sample rate and buffer size settings you must close the application.