Mono One

Monophonic Synthesizer
for Ableton Live

v1.1

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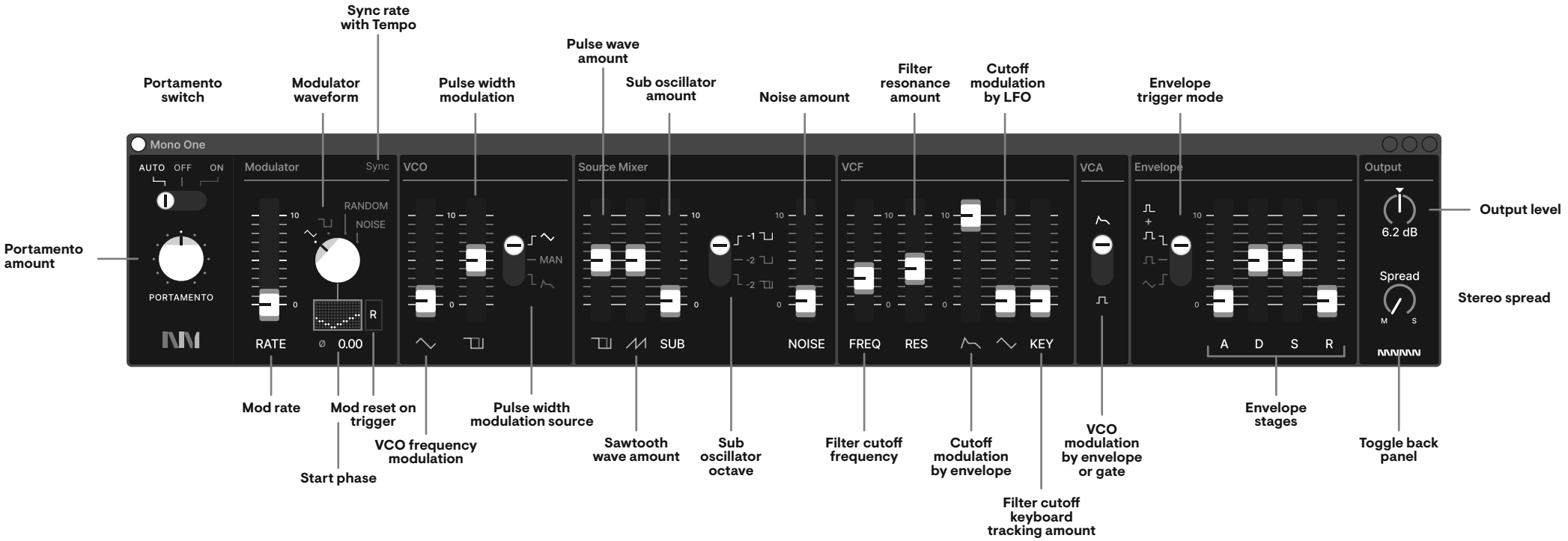
Quick Reference

The Mono One is a monophonic synthesizer that captures the spirit of early 1980s analog sound. With its pure, focused sound engine combining three classic waveforms, it excels at producing iconic bass lines, cutting leads, and distinctive sound effects.

At its heart lies a characterful four-pole resonant filter and saturating amplifier, both capable of delivering everything from subtle warmth to aggressive drive rich in harmonics. Despite its simplicity, Mono One packs an inspiring toolkit based on classic design that has helped define the sound of electronic music for generations.



Portamento

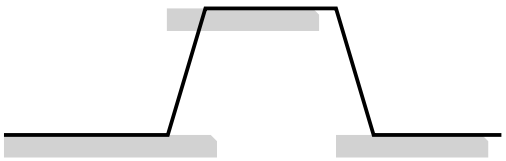
Portamento creates a smooth gliding effect between notes, causing the pitch to slide between played notes rather than jumping instantly from one to another. When enabled, this function produces a continuous transition through all the intermediate frequencies between two notes. This classic synthesizer effect adds expressiveness to leads and bass lines, allowing for fluid melodic transitions in your music.

OFF

Disables the portamento effect completely.

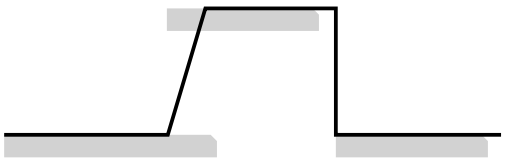
ON

Enables portamento continuously, creating a glide between all played notes.



AUTO

Activates portamento only when playing legato (pressing a new key while holding the previous one).

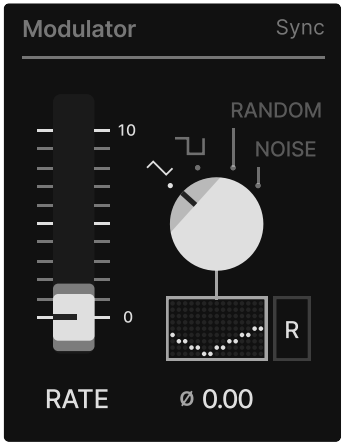


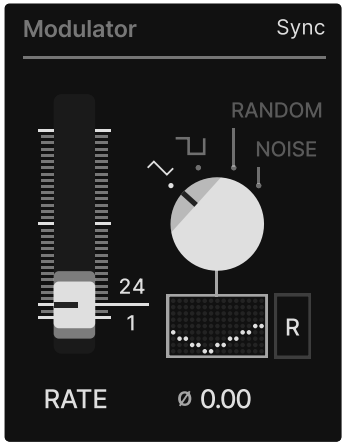
This allows you to control the glide effect through your playing style - connected notes will glide, while separated notes will play instantly.

Modulator

The modulator section offers four distinct waveform sources for dynamic sound shaping. These modulation sources can be routed to multiple destinations: the VCO frequency for pitch effects, pulse width for timbral variation, and filter cutoff for spectral movement.

When synced to your Ableton Live session tempo, the modulation rate can be set in musical divisions, allowing for perfectly timed rhythmic modulation that stays locked to your project tempo. This makes it easy to create rhythmic effects that naturally fit within your composition.





RATE

Adjust the frequency of the modulation LFO or if Sync is on — LFO rate is set in measures. In free mode the rate goes from 0.3 Hz to around 30 Hz.

MODULATION SHAPE

Select the waveform from triangular, square wave, random, or noise.

Smooth, natural modulation

Sharp, rhythmic changes

Unpredictable variations

Noise sets random values at sample rate which is great for adding organic texture to the sound

SYNC

Sync toggle switches LFO rate synchronization with Live session tempo

RESET PHASE

When active resets the LFO phase to starting point on key press

PHASE START

Sets the starting phase point of the waveform. Only applies to triangle and square.

VCO

Voltage Controlled Oscillator

The VCO is the primary sound source of the Mono One, generating the raw waveforms that form the basis of your sound. It offers three classic waveform shapes: a punchy Square wave with adjustable Pulse Width, a harmonically rich Sawtooth wave, and a Sub Oscillator that adds depth below the main pitch.

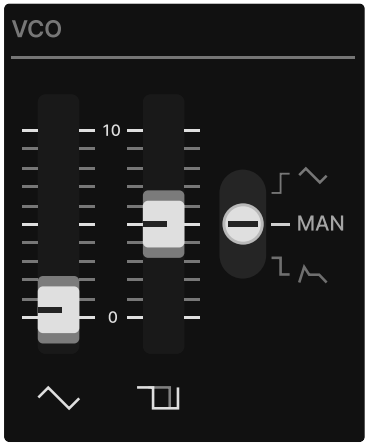
The pulse width can be controlled in three ways: manually for static timbres, via the Modulator for dynamic movement, or using the Envelope for evolving tonal changes. These waveforms can be mixed in the Source Mixer section together in any combination to create your desired tonal foundation.

VCO MOD

Sets the amount of oscillator pitch modulation by the modulator

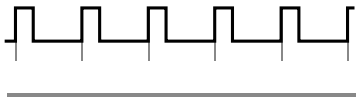
PWM

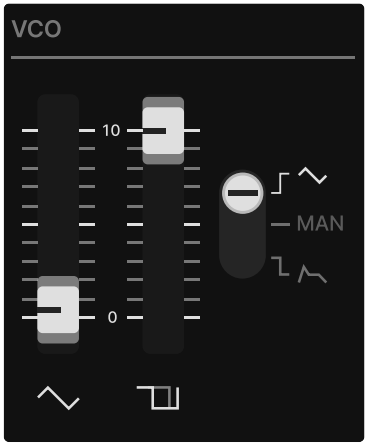
Adjusts the duty cycle of the square wave — pulse width modulation. At 0 duty cycle is set to about 0.5 which makes a clean square wave



MANUAL DUTY CYCLE

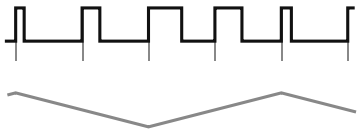
Manually set the duty cycle.

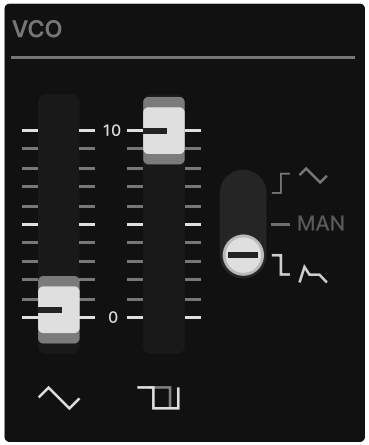




MOD

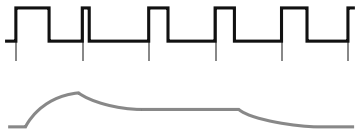
Duty cycle is modulated by mod section.





ENVELOPE

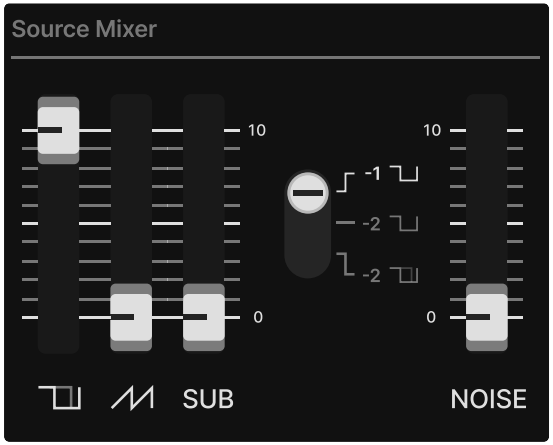
Duty cycle is modulated by the envelope.



Source Mixer

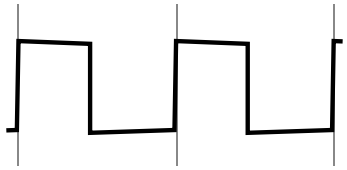
The Source Mixer allows you to blend the VCO's three waveforms and noise to create your desired sound. Each waveform—Square, Sawtooth, Sub Oscillator and Noise — has its own dedicated level control.

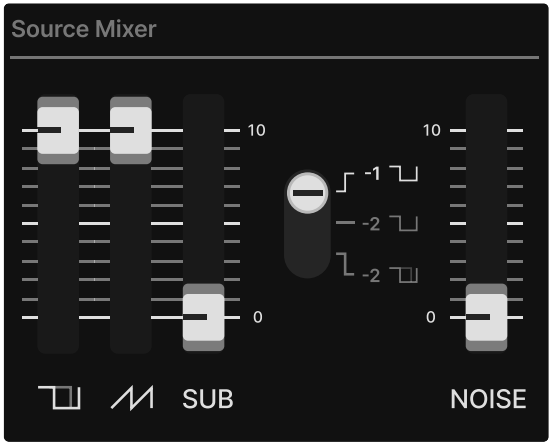
By adjusting the balance between these sources, you can craft a wide range of tones from thin and piercing to thick and massive.



SQUARE

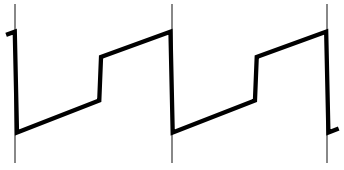
Hollow to buzzy tones depending on its Pulse Width setting





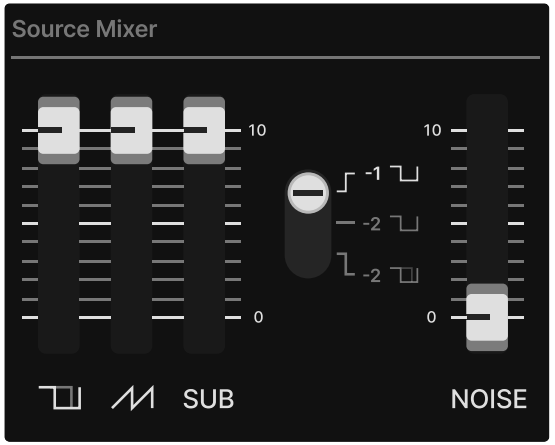
SQUARE + SAWTOOTH

Brighter, sharper resulting wave shape rich in harmonics



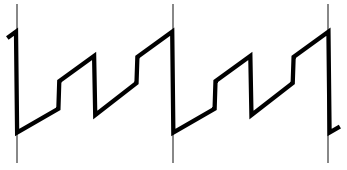
NOTE

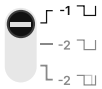
Output level will vary depending on the mixer settings. Single wave will sound quieter, than combination of waves.



SQUARE + SAWTOOTH + SUB

Sub oscillator is a pulse wave, which adds a deep foundation below the main pitch for a thick buzzy tone





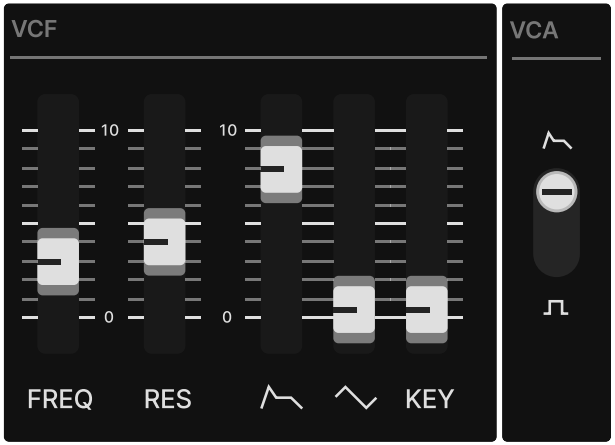
SUB OCTAVE SWITCH

Switch sub oscillator tone from one or two octaves below the main oscillator. Lowest position also sends modulation to the duty cycle to the sub.

VCF & VCA

Resonant Low Pass Filter & Voltage Controlled Amplifier

The VCF is a resonant low-pass filter that shapes the timbre of your sound by controlling which frequencies pass through. The FREQ fader sets the frequency point above which harmonics are attenuated, while RES emphasizes frequencies around the cutoff point.



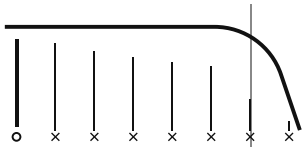
Voltage controlled amplifier is responsible for the output signal volume. It can be switched to be driven either by envelope or gate (key press).

FILTER CUTOFF POINT MODULATION

The filter can be dynamically controlled by both the dedicated ADSR envelope and the Modulator section, with separate amount controls for each. This combination of static and dynamic filter control allows you to create everything from gentle tonal shaping to dramatic filter sweeps and squelchy resonant effects.

FREQ

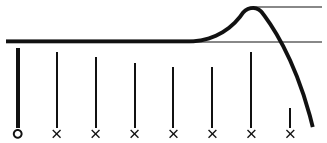
Determines the cutoff point of the VCF. In its highest position, the sound will pass unchanged. As you lower the knob, the frequencies in the higher pitch range will be cut, thereby the sound fades out in its lowest position.



Frequency (Hz)

RESONANCE

Emphasize the frequency at the cutoff point. As you raise the knob, certain harmonics are boosted. With resonance at about 6, self-oscillation will begin at the cutoff point producing a clean sine tone.



Frequency (Hz)

ENVELOPE MODULATION

Fader adjusts the depth of the cutoff point modulation by the output signal from the envelope generator.

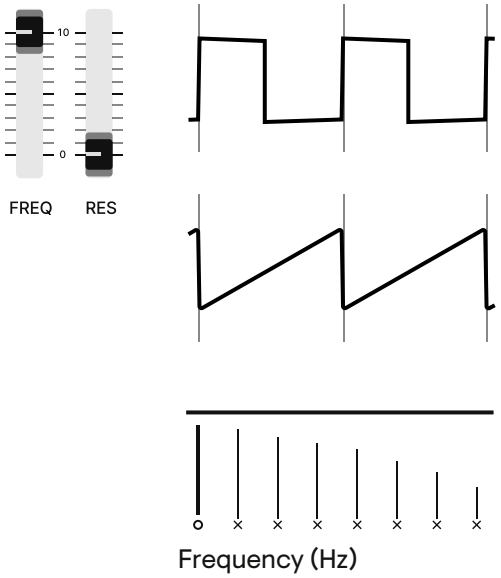
LFO MODULATION

Fader adjusts the depth of the cutoff point modulation by the output signal from the modulator.

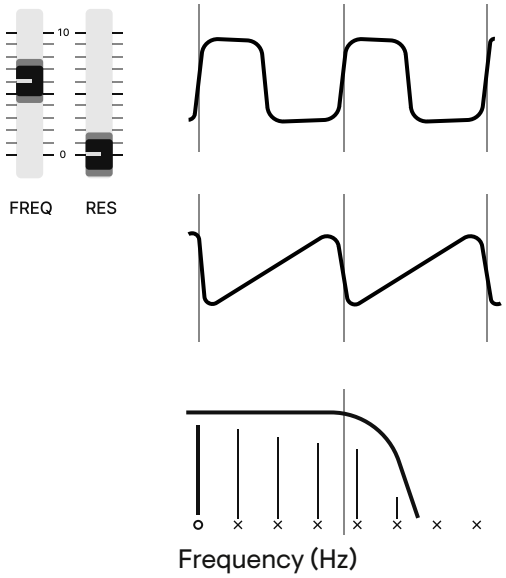
KEY

Adjust the amount of key tracking sent to the filter. At 10 filter cutoff frequency will directly correspond to the note played. It prevents any inconsistency in the harmonic content caused by pitch alteration.

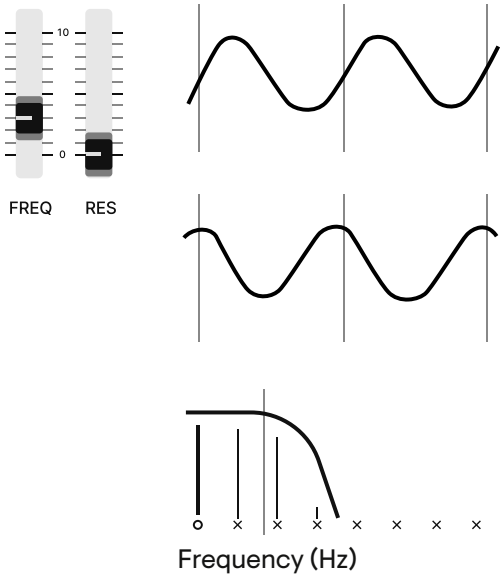
FREQ 10



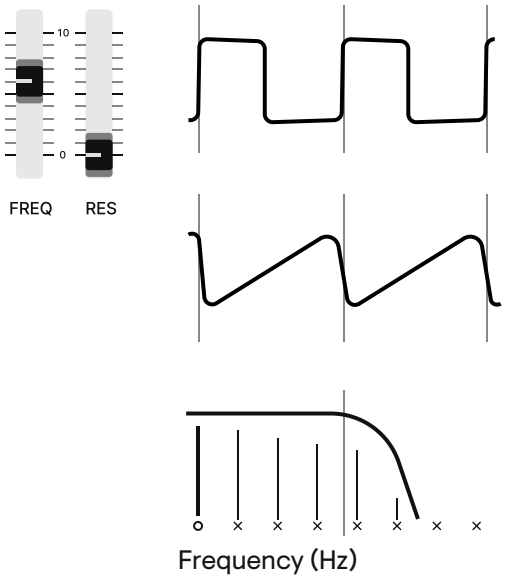
FREQ 6



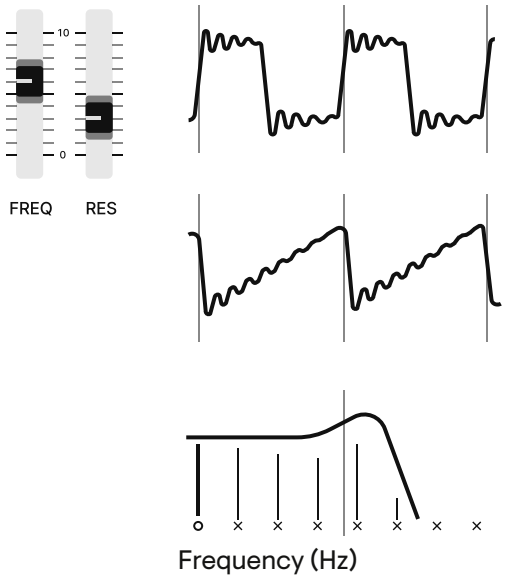
FREQ 3



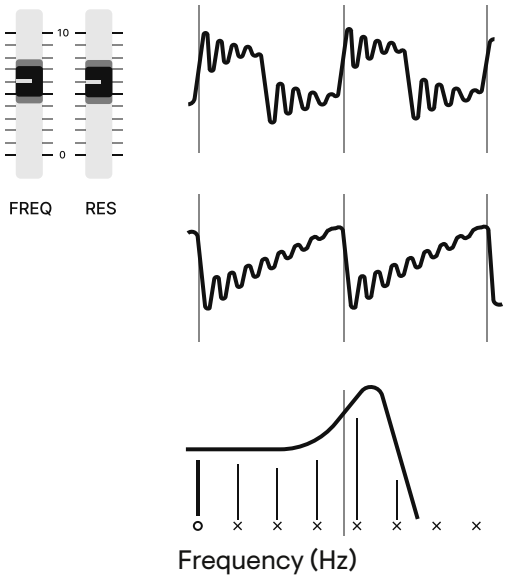
RES 0



RES 3



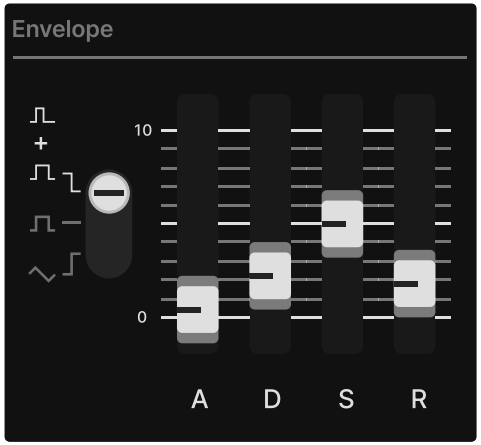
RES 6

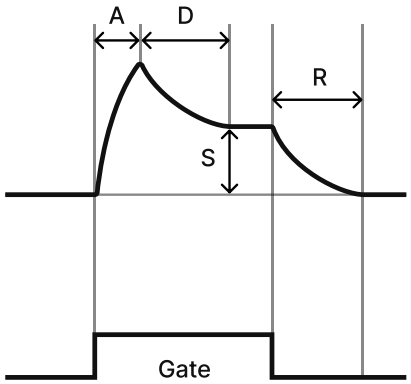


Envelope

The four stage envelope generator is a powerful sound sculpting tool, shaping how notes evolve from the moment you press a key until after you release it.

By adjusting stages, you can create sounds that explode with instant presence, slowly bloom into existence, or anything in between.





ENVELOPE TRIGGER MODES

Trigger mode switch defines how the envelope responds when you play overlapping notes or re-trigger the envelope with LFO phase start while you hold a single note. This explained further.

ATTACK

determines how quickly the sound begins after pressing a key. At zero, the sound starts instantly; as you increase the attack time, the sound will fade in more gradually — perfect for sweeping pads or soft string sounds.

DECAY

Sets how long it takes for the initial peak level to fall to the Sustain level. Short decay creates punchy, percussive sounds, while longer settings give a more gradual evolution.

SUSTAIN

Controls the volume level that holds steady while you keep the key pressed. Higher settings maintain the sound's presence, while lower values let it settle into the background.

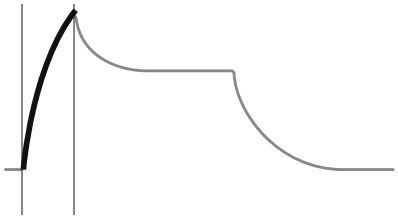
RELEASE

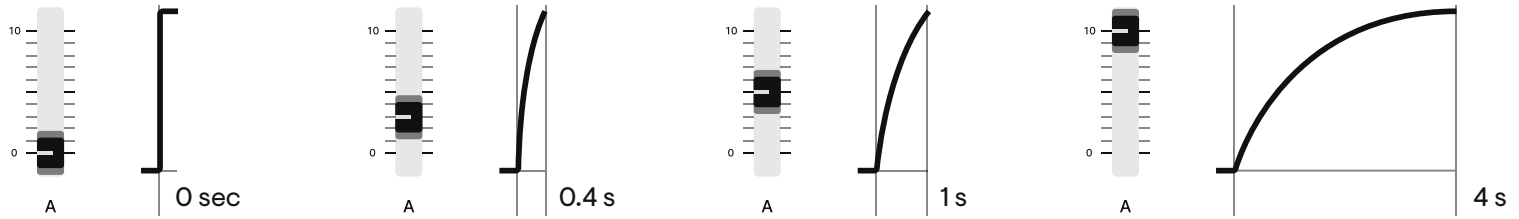
Sets how long the sound continues after you let go of the key. Short Release creates tight, defined endings, while longer times let notes trail off naturally into silence.

NOTE

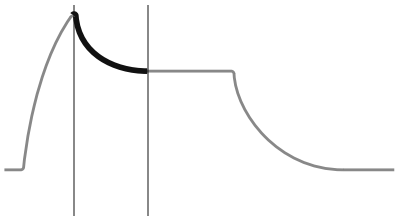
If the faders are at 0, only a pop will come out of the synth.

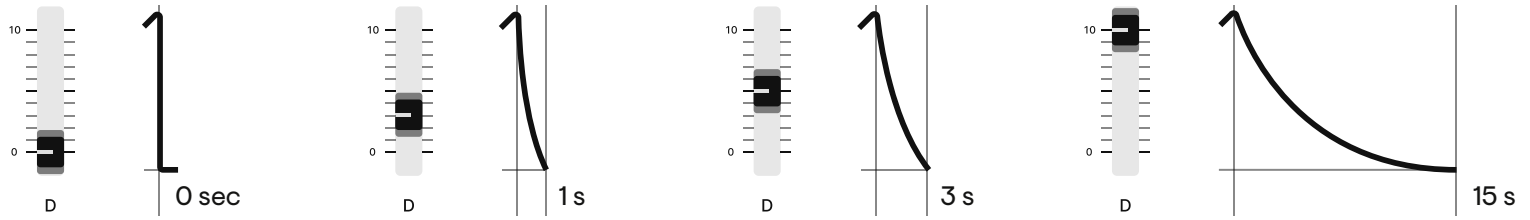
ATTACK



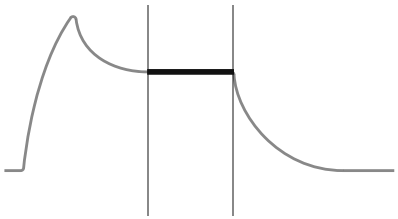


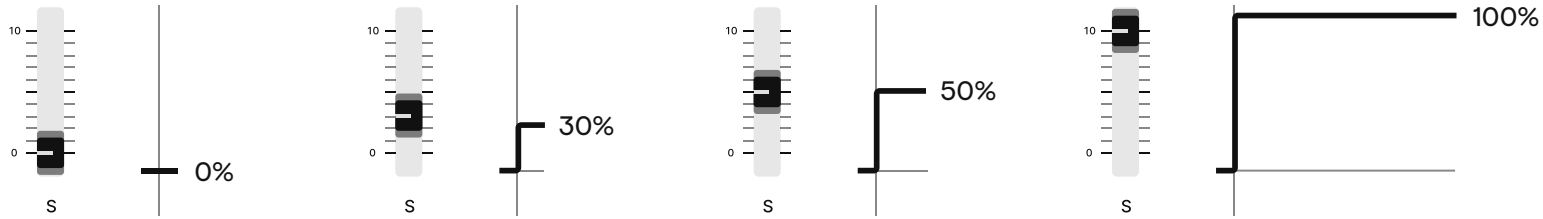
DECAY



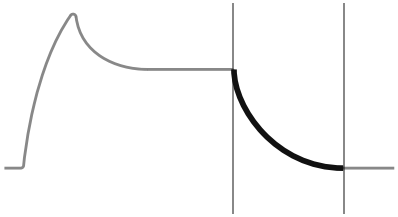


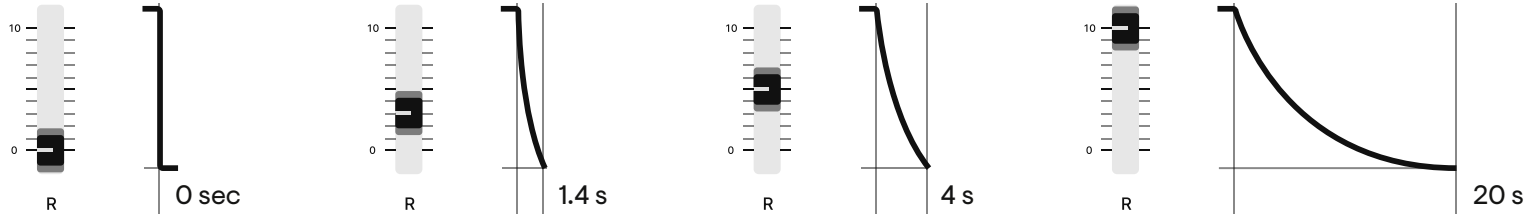
SUSTAIN





RELEASE





Envelope Trigger Modes

The Source Mixer allows you to blend the VCO's three waveforms and noise to create your desired sound. Each waveform—Square, Sawtooth, Sub Oscillator and Noise — has its own dedicated level control.

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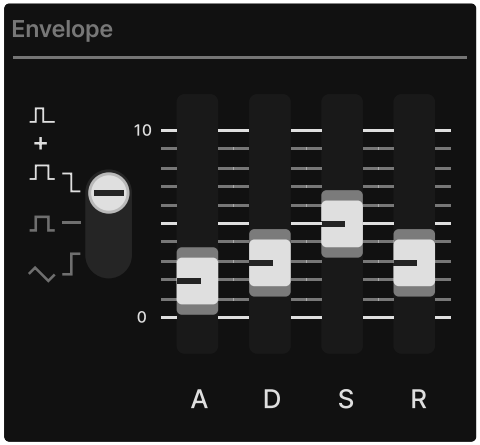
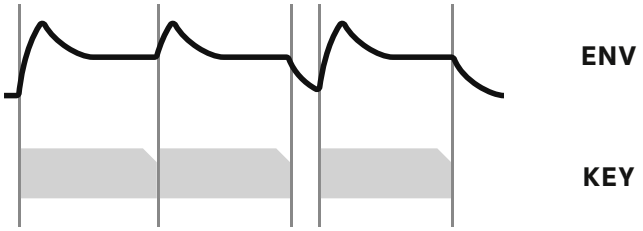
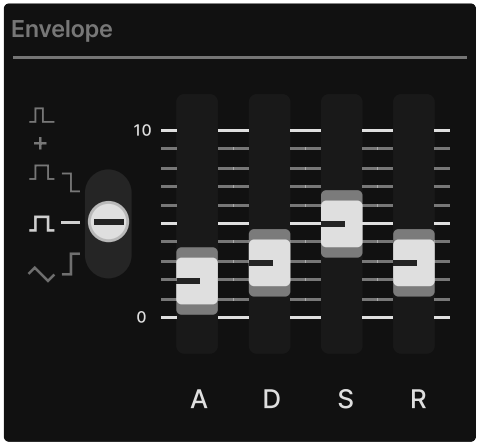


GATE + TRIG

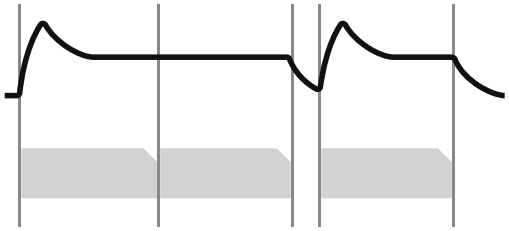
The envelope is triggered by any key press even on connected notes.

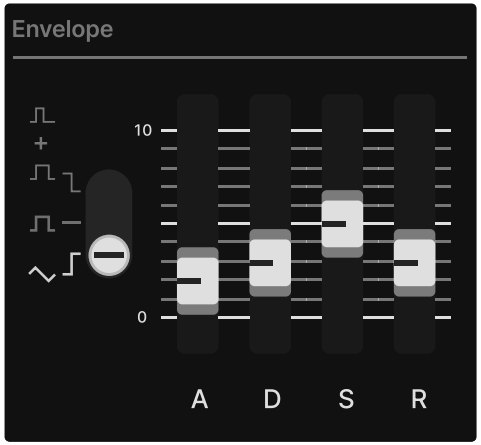




GATE

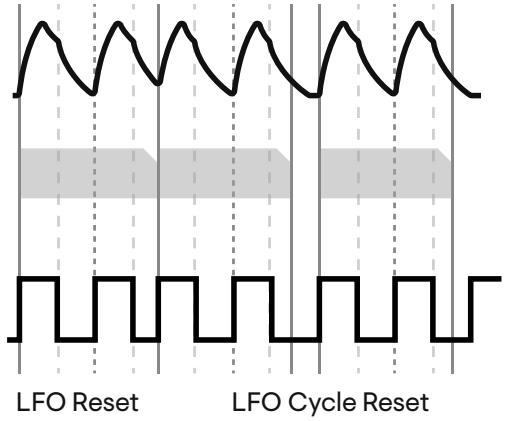
Envelope is triggered only on unconnected notes — legato mode.





LFO

Envelope is triggered by LFO cycle reset, which is triggered by key press.



Output, Spread & Back Panel

The Output section provides two essential controls for shaping your final sound. The Output level knob allows you to precisely adjust the overall volume of your synthesizer, helping you balance it perfectly in your mix.

OUTPUT

Allows to adjust the output signal of the synth to ±24 dB.

The Spread control transforms the pure, straight mono signal into a wider stereo image - turn it toward S for an expansive stereo field, or keep it at M for focused mono presence. Together, these controls give you the flexibility to place your sound exactly where you want it in both level and space.

SPREAD

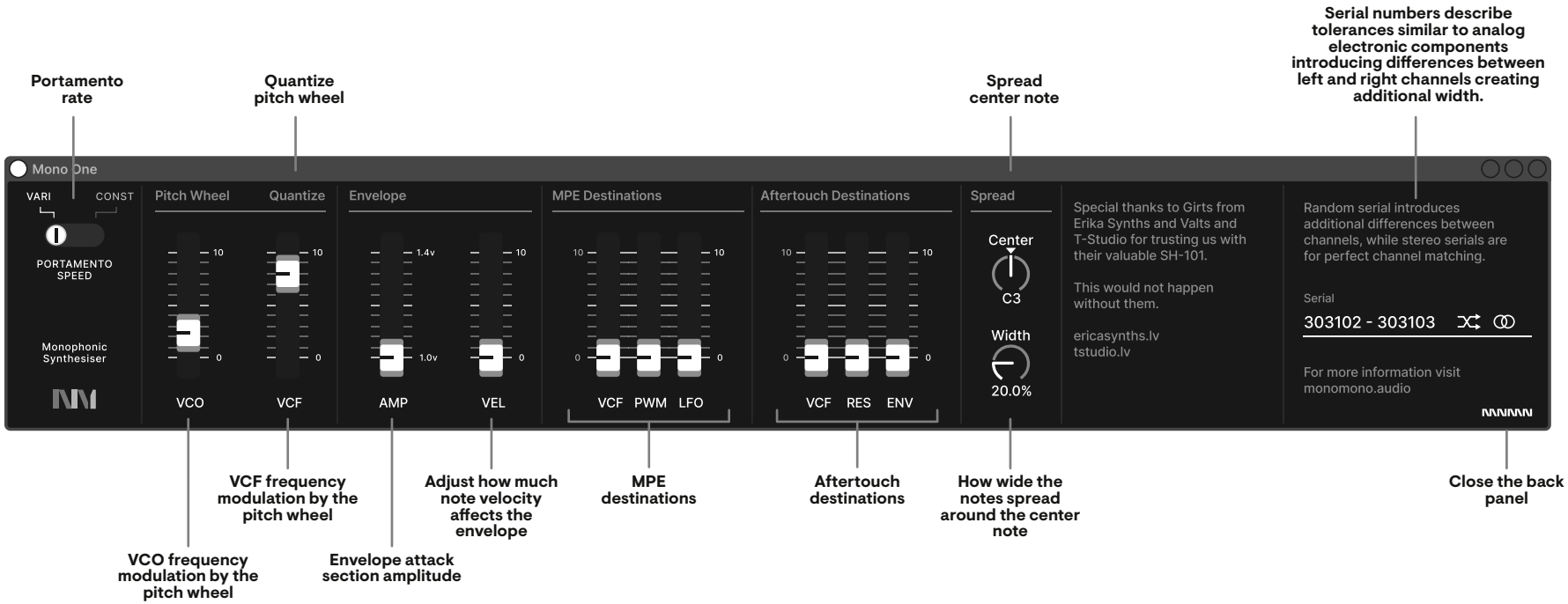
Spread implements a combination of techniques to widen the sound of the synth. You can dial in the amount of spread continuously for your desired level of effect.

The note spreading effect—where lower notes are balanced to the left while higher notes move to the right—can be additionally tuned in the back panel (see next page).

Back Panel

Additional Controls

Back panel with additional controls can be accessed by clicking the MNMN logo in the output section. It exposes controls built on top of the classic tool set to provide additional range for sound design and MPE playability.



Under The Hood

Monophonic digital synthesizer inspired by classic 1980s design

Three waveform sound engine (sawtooth, square with PWM, sub oscillator) and noise antialiased for maximum aliasing rejection

Multiple Pulse Width Modulation sources (Manual, Modulator, Envelope)

Four-pole resonant saturating low-pass filter.

Four versatile modulation sources (Triangle, Square, Random, Noise)

Tempo-synced modulation rates that lock to your Live session

Snappy ADSR envelope with retrigger modes

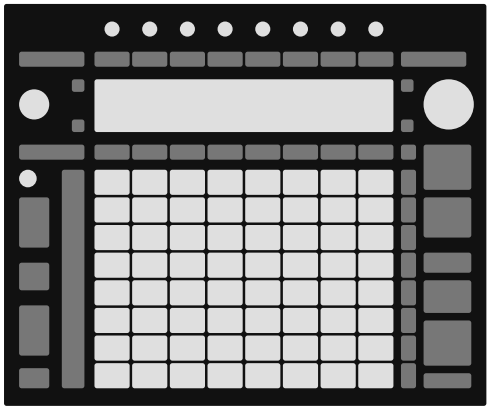
Saturating VCA for added warmth and character.

Portamento with Auto mode and variable and constant rates for expressive glides

Variable stereo spread with tunable note distribution

MPE and aftertouch support for expressive playing

4x oversampled filter and output stage for pristine audio quality



FULL SUPPORT FOR PUSH 3 STANDALONE AS WELL AS PUSH 2

MONO ONE REQUIRES LIVE 11+ SUITE

Release Notes

1.0 — DECEMBER 16, 2024

Initial Release

1.1 — JANUARY 24, 2025

Refactored and reworked sub generator to hardware specs.
Fixed LFO envelope retrigger mode to hardware specs.
Fixed the octave switch labels on Push.
A bunch of minor circuit adjustments for a bit more analog authenticity.