Stringz3 User Guide

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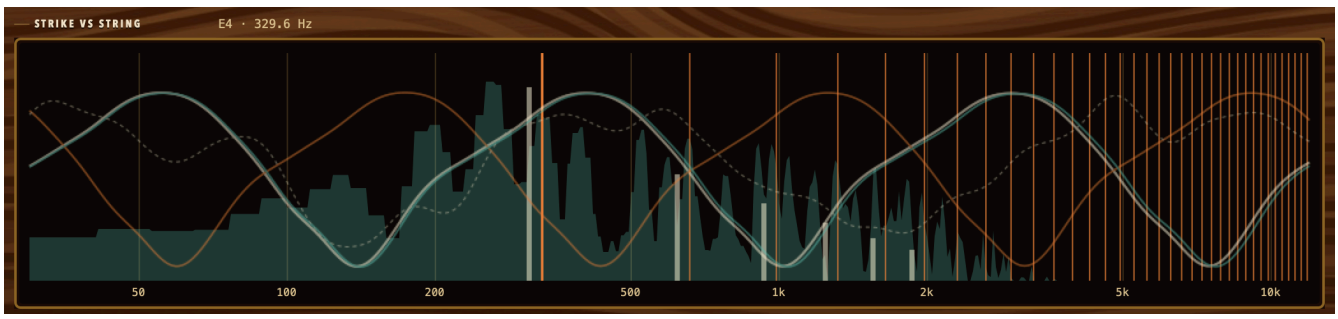


What Stringz3 is

Stringz3 is a string instrument you won't find in the real world. A short spectral strike, or a steady bow, sets ringing a string made from a tuned delay loop. Three more read points slide along that string as it rings, up to three slightly detuned copies of the string beat and trade energy with each other, and an **Edge** control lets the string feed itself until it growls. Everything then passes through a rich chorus and a reverb whose tails slowly drift in pitch.

It carries the spirit of Krakli's StringZ II from the SynthEdit days (the moving multi-tap string, the drawn strike), rebuilt from scratch with more movement, a playable panel and a randomiser. It's a VST3, Audio Unit (Mac) and standalone app, for macOS 12 or later on Apple silicon and Intel, and 64-bit Windows.

How it makes sound



1. The strike. Every note starts with a short burst: an additive oscillator of up to 32 partials plus pink noise (Breath). The partials can follow the key or sit at their own pitch (**Tuning**), lean bright or dark (**Bright**), spread into bell-like inharmonic series (**Metal**), or take one of eight named tones. **Bow** keeps the excitation going for as long as you hold the note, so the string is bowed rather than struck.

2. The string. The strike goes into a delay loop exactly one period of the note long, which rings at the note's pitch and its harmonics. **Sustain** is how long it rings, **Damping** mellows the upper harmonics as it rings, and **Edge** pushes the loop past the point where it would die away, through a saturator that holds it just short of running away. **Bite** makes that saturator lopsided for a rougher, reedier edge.

3. The taps. Three more read points (taps 2–4) listen to the same ringing string further along it, set by **Tunnel**. As they move (by the modulation envelope, two slow LFOs and drift), each copy bends in pitch a little, like a passing car, so the string shimmers and beats against itself.

4. The lines. Each note can play one, two or three copies of the whole string (**Lines**), detuned against each other by **Spread**, wandering in pitch by **Drift**, swapping energy by **Couple**, and re-excited by their own moving taps with **Swirl**. The lines are placed across the stereo field.

5. Shape and space. A low-pass filter and a volume envelope shape each note, then the chorus and reverb (**Chorus**, **Space**) and **Volume**, with a limiter at -1 dBFS on the output.

The long screen at the bottom shows this as it happens: the copper lines are the string's harmonics (where it can ring), the pale bars are the strike's partials (where it's pushed), the green fill is the live output spectrum, and the moving traces are the string lines' waveforms (ivory, copper, green) with the output dashed over them. Partials that land on a copper line ring strongly; partials between them mostly add colour to the attack.

Installing

Mac. Open `Stringz3-0.1.0-mac.pkg`. It's signed and notarised by Apple, so it installs without warnings. Choose **Customize** to pick the parts:

Part	Installed to
VST3 plug-in	`/Library/Audio/Plug-Ins/VST3/Stringz3.vst3`
Audio Unit plug-in	`/Library/Audio/Plug-Ins/Components/Stringz3.component`
Standalone app	`/Applications/Stringz3.app`

Your DAW finds it as **Stringz3** by **Krakli**, an instrument. If Logic doesn't list it straight away, restart Logic.

Windows. Copy `Stringz3.vst3` (the whole folder) into `C:\Program Files\Common Files\VST3`, and keep `Stringz3.exe` anywhere you like to run it on its own. In the standalone app, choose your audio and MIDI devices from **Options** at the top left.

Quick start

1. Open Stringz3 and play: **Twin Lines** is loaded, three gently beating strings.
2. Step through the other sounds in the menu at the top: **Edge Bow**, **Swirl Pad**, **Glass Pluck**, **Growl Bass**, **Drift Choir**, **Wild Lead**, **Bell Ring**, **Init**.
3. Turn **Edge** (String) up and hold a note: the string starts to feed itself and growl.
4. Turn **Lines**, **Spread** and **Drift** (Motion) to make the sound move.
5. Pick a character under **Random** (Pad, say) and press **Randomise** a few times. **Vary** nudges a sound you like; **Undo** steps back.
6. **Save** what you find.

No MIDI keyboard? Click the keys at the bottom, or use the computer keys (see The keyboard).

The window

The window opens at 1060 × 740 and can be resized from 70% to 150% by dragging its bottom-right corner. Drag a knob up or down to turn it, hold **Shift** for fine steps, and double-click it to return it to its default. The value is shown under each knob.

Header



- **Sound menu.** The factory sounds, then **Your patches**: every patch saved in `Documents/Krakli/Stringz3 Patches`. It also shows the name of a random or varied sound.
- **Load / Save.** Open or save a `.stringz3` patch file (see Patches).
- **All off.** Stops every note at once.
- **Workbench.** Swaps the knob panels and the screen for the workbench, where every control is a fader. It reads **Player** while open; press it to go back.
- **Meter.** The output level; it turns red near full scale (the limiter keeps the output at -1 dBFS).
- **Random row.** The randomiser (see The randomiser).

Strike



Control	What it does
Tone	Eight named strike spectra: **Soft** (StringZ II's six partials), **Bowed** (all harmonics falling away), **Hollow** (odd harmonics), **Reed** (odd-leaning with a formant), **Vowel** (a formant around 550 Hz), **Bell** (stretched partials), **Glass** (high partials), **Primes** (only prime-numbered partials). It shows **Custom (drawn)** once you draw your own in the workbench.
Bright	Tilts the strike's partials brighter or darker, in dB per octave.
Metal	Stretches the partials away from exact harmonics: a little is piano-like, more is bell and glass. Stretched partials fight the string's harmonics, which gives metallic, chiming colours.
Breath	Pink noise in the strike: the scrape of a bow or the click of a pick.
Bow	Keeps exciting the string while the note is held, so it sounds bowed. At 0 the strike is a short burst and the string rings on its own.
Tuning	Where the strike's partials sit. **locked** follows the key exactly, so the strike lines up with the string's harmonics (clean, harmonic tones). **free** lets the strike sit at its own pitch (set in the workbench), as StringZ II did, so it lines up differently on every note (more colour, more character). The bowed part always locks to the key, so held notes stay in tune.

String



Control	What it does
Sustain	How long the string rings on its own, as the time to die away by 60 dB.
Damping	Mellows the upper harmonics as the string rings. The note keeps its length; only its brightness fades.
Vibrato	Depth of the delayed vibrato, in cents.
Edge	Lets the string feed itself. Low settings add a little bloom; high settings make it self-sustain and growl, held just short of running away.

Control	What it does
Bite	Makes Edge's saturation lopsided: rougher, reedier, with more even harmonics. Does little when Edge is low.
Vib delay	How long after the note starts the vibrato begins (it then fades in over about 0.3 s).

The mod wheel adds vibrato straight away (up to about 35 cents), on top of the delayed vibrato.

Motion



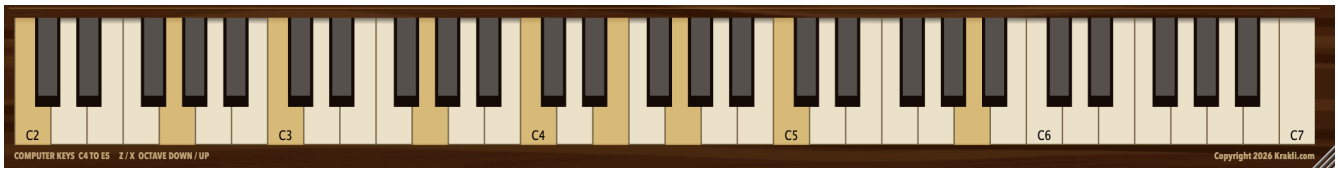
Control	What it does
Lines	One, two or three copies of the string per note, placed centre, left and right.
Spread	How far the lines are detuned against each other, in cents. Narrows gently above middle C so the beating stays calm at the top.
Couple	Lets the lines pass energy to each other, so the tone swells and recedes on its own.
Swirl	Feeds the moving taps' sound back into the string: restless, churning motion.
Drift	A slow random wander of each line's pitch and of the taps, so nothing repeats exactly.
Tunnel	How far along the string the taps can move, in milliseconds. Longer means wider, more audible movement.

Shape



Control	What it does
Attack	The volume fade-in. On struck sounds a slow attack reveals a sound that's already decaying; for a true swell, add some **Bow**.
Release	How long a note takes to fade after you let go.
Filter	The low-pass filter's cutoff.
Chorus	The amount of the three-voice stereo chorus.
Space	The reverb: more Space is both louder and longer, up to about 20 s of tail with a large room. The tails drift slowly in pitch.
Volume	The overall output level. Loading or randomising a sound never changes it.

The keyboard



Click the keys to play, or use the computer keys **A W S E D F T G Y H U J K O L P** (white and black keys from C). **Z** and **X** shift them down and up an octave; the label under the keyboard shows the range they play. In the standalone app the keyboard takes the computer keys as soon as the window opens; in a DAW, click the keyboard first, so it never takes your DAW's shortcuts.

The workbench



Workbench replaces the knob panels and the screen with every control as a fader, grouped Strike, Motion, String, Envelope, Filter and volume, and Effects. Drag a fader, hold Shift for fine steps, or double-click to reset it.

At the top is the **partial editor**: the strike's 32 partials as bars. Drag across them to draw a spectrum. There are two spectra, **A** and **B**; the strike can morph from one to the other (see *A to B morph* below). **1/n**, **Odd 1/n** and **Flat** fill the spectrum you're editing with a standard shape, and **Copy to other** copies it to the other spectrum. Drawing makes the Tone read **Custom (drawn)**.

The full list of controls is in the Control reference.

The randomiser

The **Random** row makes new sounds that suit a character:

- **Character. Any**, **Pluck**, **Bowed**, **Pad**, **Bell**, **Bass**, **Lead** or **Wild**. Each draws from ranges that make sense for it: a Pluck gets fast attacks and no bow, a Pad slow swells, bow and drift, Wild a lot of Edge, Couple and Swirl, Bass narrow lines and a low filter.
- **Part buttons. Strike**, **String**, **Motion**, **Shape**, **Effects**. Lit parts are changed; turn some off to keep them and re-roll only the rest (for example, keep your strike and string and try new Motion).
- **Randomise.** A new sound of that character.
- **Vary.** Nudges the current sound by about 12% of each control's range, leaving the switches (number of lines, partial set) alone.
- **Undo.** Steps back, up to 40 times.

Every result is played offline before you hear it, through the same sound engine and effects as the plugin, and thrown away if it's unstable, too quiet, harsher than its character allows, or still sounding after release. The one

kept is set to the same loudness as the factory sounds, so switching never jumps in level. Each gets a name, shown in the sound menu.

Patches

Save writes the current sound to a `.stringz3` file; **Load** opens one. They're kept in `Documents/Krakli/Stringz3 Patches` unless you choose elsewhere, and the same files work on Mac and Windows.

Every patch in that folder also appears in the sound menu under **Your patches**, in name order, so you can step through them like factory sounds. The menu reads the folder each time you open it, so a patch you've just saved, or copied in from elsewhere, is there straight away. Patches saved in other folders open with **Load**. Your DAW's own program list holds only the factory sounds, because DAWs expect that list to stay the same; your DAW still saves whatever sound you're playing with the song.

A patch holds every sound setting, the drawn spectra and the name. It doesn't hold your **Volume**. Files from older versions of Stringz3 load, with any newer settings at their defaults.

Your DAW also saves the whole state with your project, as with any plugin.

Factory sounds

Sound	Character
Twin Lines	Three gently detuned strings, the Stringz shimmer at its plainest.
Edge Bow	A bowed string with some Edge: it swells, sustains and growls a little.
Swirl Pad	A slow, hollow pad whose taps sweep and swirl.
Glass Pluck	A bright, glassy pluck with stretched partials.
Growl Bass	A reedy bass with plenty of Edge and Bite.
Drift Choir	A vowel-like bowed choir, three lines drifting apart.
Wild Lead	Everything on the edge: full Edge, Couple and Swirl, primes in the strike.
Bell Ring	A long, stretched, bell-like ring.
Init	A single plain string, for starting from scratch.

MIDI

- **Velocity** sets the level (Velocity to volume), the filter (Filter velocity), the strike's level and, if set, its pitch and A/B morph.
- **Pitch bend** bends the whole instrument, strike and strings together, by up to **Bend range** (±2 semitones unless you change it, up to ±12; in the Workbench's String group).
- **Mod wheel** (CC 1) adds vibrato straight away.
- **Sustain pedal** (CC 64) holds notes.
- **All notes off / All sound off** stop everything.
- **Factory sounds** also appear in your DAW's program list. (MIDI program-change messages aren't used.)
- Up to eight notes play at once; a ninth takes over the oldest.

Levels

Every factory sound, and every randomised sound, is set to the same loudness, so you can switch between them freely. **Volume** sets the overall level, and a limiter on the output keeps peaks at -1 dBFS, so Stringz3 never clips your DAW even with Edge at full. Very loud settings are held down by the limiter rather than distorting.

Tips

- **For movement:** two or three Lines, a little Spread (5–12 cents), some Drift. Add Couple for slow swelling, Swirl for churning.
- **For the edge:** turn up Edge on a held note until it starts to sustain itself, then add Bite for grit. Edge and Bow together make a string that seems to play itself.
- **For clean tones:** Tuning locked, Metal at 0, Edge low.
- **For character:** Tuning free, or some Metal, so the strike and the string disagree.
- **High notes** ring cleanly; if a sound gets too busy up top, reduce Spread or Drift.
- **Spread and Drift in mono:** the lines are spread across the stereo field. In mono they meet again and you'll hear the beating between them more strongly.

Control reference

Every control, as in the workbench. "Default" is the value a double-click returns it to.

Strike

Control	Range	Default	What it does
Partials	1 to 32	6	How many partials the strike uses.
Bright	-12 to 12 dB/oct	0 dB/oct	Tilts the partials brighter or darker.
Odd/even	-1 to 1	0	Leans the strike towards odd (hollow) or even partials.
Pluck point	0 to 0.5	0	Notches the partials as if plucked at that point along a real string.
Metal	-0.05 to 0.3	0	Stretches the partials away from exact harmonics (bell, glass).
Partial set	6 sets	All	Which partials sound: All, Odd only, Every third, Octaves + fifths, Primes, or a Random set.
Random seed	1 to 99	7	The pattern for the Random set.
Formant	150 to 6000 Hz	1200 Hz	Centre of a resonant peak in the strike.
Formant boost	0 to 24 dB	0 dB	How much the formant lifts the partials near it.
Formant width	0.2 to 2 oct	0.6 oct	How wide the formant is.
A to B morph	0 to 1	0	How far the strike moves from spectrum A to spectrum B.
Morph time	0 to 4000 ms	0 ms	Time to make that move after the note starts (0: no movement, just the blend).
Velocity to B	0 to 1	0	How much harder playing moves the strike towards B.

Control	Range	Default	What it does
Overtone pitch	110 to 1760 Hz	311 Hz	The strike's own pitch when Tuning is free.
Tuning	free to locked	free	Strike follows the key (locked) or its own pitch (free).
Detune from key	-1200 to 1200 ct	0 ct	Offsets the strike from the key, in cents (with Tuning locked).
Velocity to pitch	0 to 1.7 oct	0 oct	Harder playing raises the strike's own pitch.
Overtone level	0 to 1	0.8	Level of the partials in the strike.
Velocity to level	0 to 1	0.5	How much velocity changes the partials' level.
Breath	0 to 1	0.3	Pink noise in the strike.
Strike attack	1 to 400 ms	5 ms	How quickly the strike rises.
Strike decay	1 to 400 ms	4 ms	How quickly the strike falls away.
Bow	0 to 1	0	Keeps exciting the string while held.
Direct out	0 to 1	0	Lets the strike be heard directly, not only through the string.
De-thump	15 to 2000 Hz	60 Hz	Removes low thump from the strike.

Motion

Control	Range	Default	What it does
Lines	1 to 3	2	Copies of the string per note.
Spread	0 to 30 ct	6 ct	Detuning between the lines.
Line width	0 to 1	0.7	How far apart the lines sit in the stereo field.
Couple	0 to 1	0	Energy passed between the lines.
Swirl	0 to 1	0	The moving taps fed back into the string.
Drift	0 to 1	0.2	Slow random wander of pitch and taps.
Drift rate	0.05 to 4 Hz	0.6 Hz	How quickly Drift wanders.

String

Control	Range	Default	What it does
Edge	0 to 1	0	The string feeding itself, through a saturator.
Bite	0 to 0.8	0	Lopsided saturation: rougher, reedier Edge.
Tunnel	0 to 50 ms	12 ms	How far along the string the taps can move.
Tap 2 tune	-5 to 5	0	Where tap 2 sits along the string.
Tap 3 tune	-5 to 5	0	Where tap 3 sits along the string.
Tap 4 tune	-5 to 5	0	Where tap 4 sits along the string.
Tap 2 env	0 to 2	0	How far the modulation envelope moves tap 2.
Tap 3 env	0 to 2	0	How far the modulation envelope moves tap 3.

Control	Range	Default	What it does
Tap 4 env	0 to 2	0	How far the modulation envelope moves tap 4.
Shape A rate	0.2 to 8 Hz	1 Hz	Speed of the slow LFO moving taps 2 and 3 (in opposite directions).
Shape A amount	0 to 0.6	0.08	How far Shape A moves the taps.
Shape B rate	0.2 to 8 Hz	1.6 Hz	Speed of the slow LFO moving tap 4.
Shape B amount	0 to 0.6	0	How far Shape B moves tap 4.
Sustain	0.3 to 60 s	30 s	How long the string rings, to -60 dB.
Damping	0 to 0.7	0.06	Mellows the upper harmonics as the string rings.
Vibrato	0 to 60 ct	12 ct	Delayed vibrato depth.
Vibrato rate	0.5 to 9 Hz	4.5 Hz	Vibrato speed.
Vibrato delay	0 to 1500 ms	300 ms	Time before the vibrato fades in.
Glide	-600 to 600 ct	0 ct	Each note starts this far off pitch and glides in.
Glide hold	0 to 400 ms	0 ms	How long it holds off pitch before gliding.
Glide time	5 to 1000 ms	60 ms	How long the glide takes.
Bend range	0 to ±12 semitones	±2 semitones	How far the pitch-bend wheel bends, up and down.

Envelope

Control	Range	Default	What it does
Env attack	1 to 10000 ms	30 ms	Attack of the modulation envelope (moves the taps and the filter).
Env decay	1 to 10000 ms	300 ms	Decay of the modulation envelope.
Env sustain	0 to 1	0.6	Sustain level of the modulation envelope.
Env release	1 to 10000 ms	600 ms	Release of the modulation envelope.

Filter and volume

Control	Range	Default	What it does
Filter	60 to 16000 Hz	3500 Hz	Low-pass filter cutoff.
Resonance	0 to 0.95	0.1	Filter resonance.
Key tracking	0 to 1	0.5	How far the cutoff follows the key.
Filter envelope	0 to 5 oct	1 oct	How far the modulation envelope opens the filter.
Filter velocity	0 to 4 oct	1 oct	How far harder playing opens the filter.
Attack	1 to 20000 ms	4 ms	Volume attack.
Decay	1 to 20000 ms	800 ms	Volume decay.

Control	Range	Default	What it does
Sustain level	0 to 1	0.8	Volume sustain level.
Release	1 to 20000 ms	900 ms	Volume release.
Velocity to volume	0 to 1	0.6	How much velocity changes the level.
Program level	0 to 4	0.7	The sound's own level (set by the randomiser and factory sounds to the house loudness).

Effects

Control	Range	Default	What it does
Chorus	0 to 1	0.45	Amount of chorus.
Chorus depth	0.2 to 8 ms	2.5 ms	How far the chorus voices sway.
Chorus rate	0.05 to 3 Hz	0.33 Hz	How quickly they sway.
Reverb size	0 to 1	0.6	Reverb room size.
Reverb damping	0 to 1	0.4	How quickly the reverb's highs fade.
Tail shift	0 to 30 ct	6 ct	How far the reverb tails drift in pitch on each pass.
Reverb width	0 to 1	0.8	Reverb stereo width.
Space	0 to 1	0.3	Reverb amount and length (Space).
Volume	0 to 2	0.8	Overall output level (Volume).