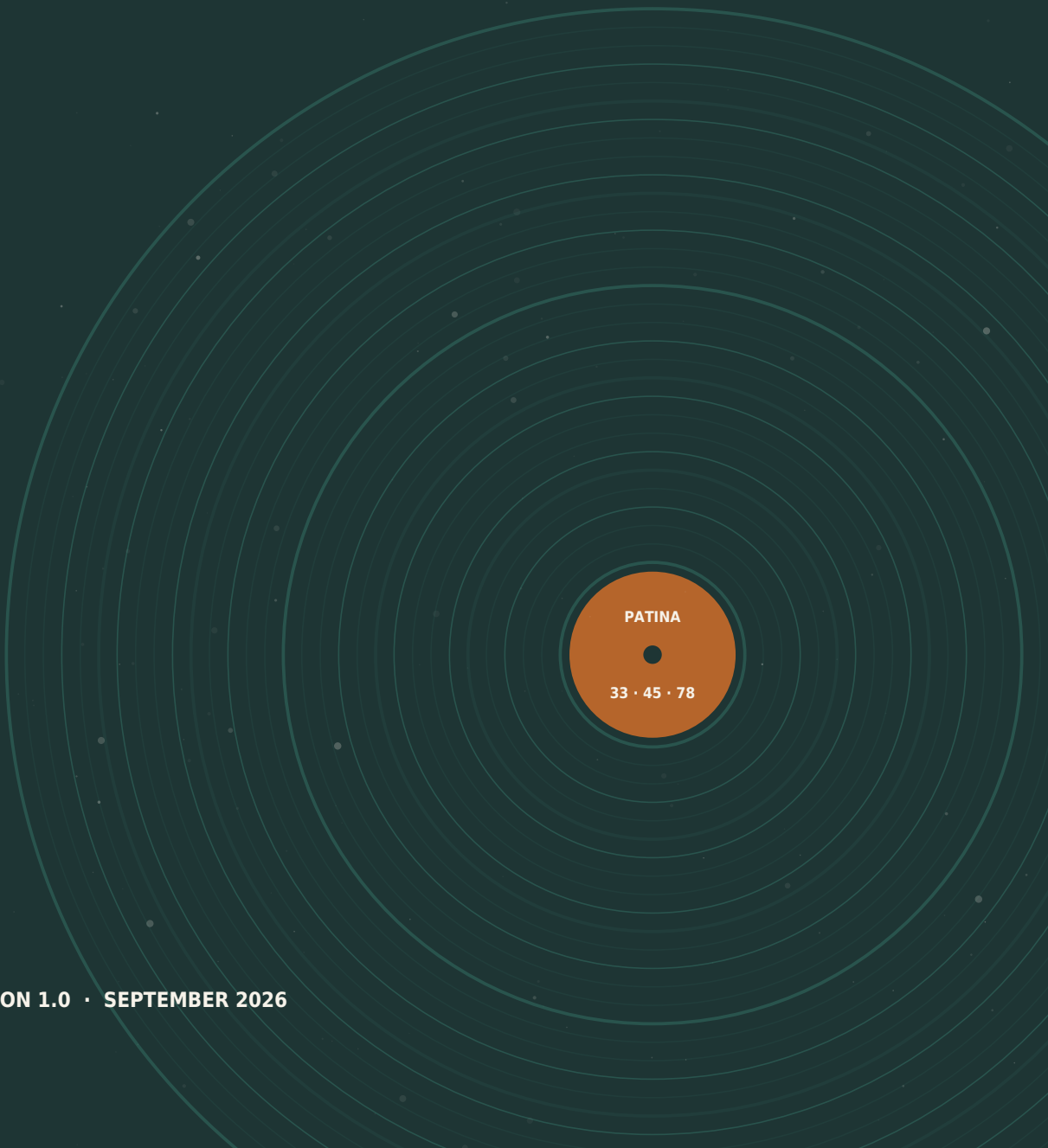
Patina

Lo-fi character for Ableton Live and Push 3

Six layers of age. One knob to set the year.



USER GUIDE · VERSION 1.0 · SEPTEMBER 2026

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CHAPTER 1 · HELLO

Welcome to Patina

Every great old record has a patina: the lazy wobble of a tired motor, the dust in the grooves, the grit of a speaker that has seen a few things. Patina puts all of that in one device and hands you the dial for how much time has passed.

Patina is a Max for Live audio effect for Ableton Live. It stacks six layers of lo-fi character, each one a self-contained module you can switch on, dial in and forget, followed by a finishing section that shapes, blends and protects the result. It runs on your computer, and it runs just as happily on **Push 3 in standalone mode**, with every one of its 66 controls laid out over ten encoder pages.

The six layers

Layer	What it does	Think of it as…
Pitch	Wow and flutter: slow and fast pitch wobble	A turntable with a tired motor
Distortion	Nine saturation models, level-matched	A hot amp, a tube, a transformer
Digital	Bit depth and sample-rate reduction, glitches	A vintage sampler on its last legs
Vinyl	Crackle, clicks, pops, rumble, hiss and hum	A well-loved record
Volume	Amplitude wobble and tape dropouts	Old tape that has been through a lot
Timbre	32 EQ voicings from phones to studio monitors	The speaker it is played through

What makes it nice to use

- **Depth and Vary everywhere.** Every layer has a Depth knob for how much, and a Vary knob that makes it drift and breathe on its own, so nothing sounds like a loop.
- **Intensity is a true wet/dry.** The dry signal is delayed to line up with the processed one, so blending never smears or combs.
- **Level-matched distortion.** Turning up the drive changes the character, not the volume, so your ears can judge honestly.
- **No clicks.** Switching layers, models and profiles glides instead of popping.
- **Built for Push.** The whole engine is native Max code, with no plug-ins, samples or scripts, which is exactly what Push 3 standalone needs.
- **Everything is automatable.** All 66 controls work with automation, clip envelopes, Live's modulators and Rack macros, and every one has help text in Live's Info View.

CHAPTER 2 · QUICK START

Five Minutes to Dusty

The fastest way to understand Patina is to hear each layer arrive. Grab a drum loop or a piano part and follow along.

1. **Drop Patina on a track.** Out of the box, Pitch and Vinyl are already on at gentle settings, so you will hear a soft wobble and a bed of crackle straight away.
2. **Turn up Vinyl Depth.** The record gets louder and dustier. Nudge *Crackle* and *Clicks* to taste.
3. **Switch on Digital.** Set *Bits* to 12 and *S.Rate* to 26 kHz. That is instant sampler grit.
4. **Switch on Timbre** and choose *Transistor A* from the Profile menu. Now it is playing out of a pocket radio.
5. **Add a little Distortion.** Try *Tubes* at 30 % Depth for warmth that glues it all together.
6. **Ride Intensity.** This one knob fades the entire effect in and out. Automate it into a chorus and out of a verse, and you have an arrangement move.

TRY THIS
Set up something extreme, then use **Intensity** as your only performance control. Because the dry signal is latency-aligned, every position in between sounds clean and intentional.

GOOD TO KNOW
Defaults are deliberately polite: Pitch at 25 % Depth, Vinyl at 50 % with soft crackle, everything else off. Patina should improve a sound the moment you load it, not ambush it.

A mental model

Think of each layer as a stage in your sound's imaginary life story. It was recorded on a wobbly machine (**Pitch**), pushed through hot gear (**Distortion**), sampled on a budget (**Digital**), pressed onto a record that got dusty (**Vinyl**), dubbed to a tired tape (**Volume**) and finally played through some particular speaker (**Timbre**). The order is fixed on purpose, because that is how history happens.

CHAPTER 3 · SETUP

Installing Patina

On your computer

You need Ableton Live with Max for Live: Live Suite, or Live Standard with the Max for Live add-on.

1. Put **Patina.amxd** somewhere permanent. The best home is your Live User Library, so it shows up in the browser.
2. Drag it from Live's browser (or straight from your file manager) onto any audio or instrument track.
3. That is it. The panel opens at 1200 pixels wide with all seven sections visible.

On Push 3 in standalone mode

1. Connect Push to your computer. Push appears in the sidebar of Live's browser.
2. Drag **Patina.amxd** into Push's User Library.
3. On Push, open the browser, find Patina in your User Library and load it onto a track like any other audio effect.

> **UNDER THE HOOD**
> Push 3 standalone only runs Max for Live devices built from Max's own objects: no third-party plug-ins, no audio files loaded at runtime, no scripts. Patina's entire sound engine lives in a single **gen~** patch, and every noise it makes, even the vinyl crackle, is synthesized on the fly. That is why the same file works in both places.

If something is off on first load

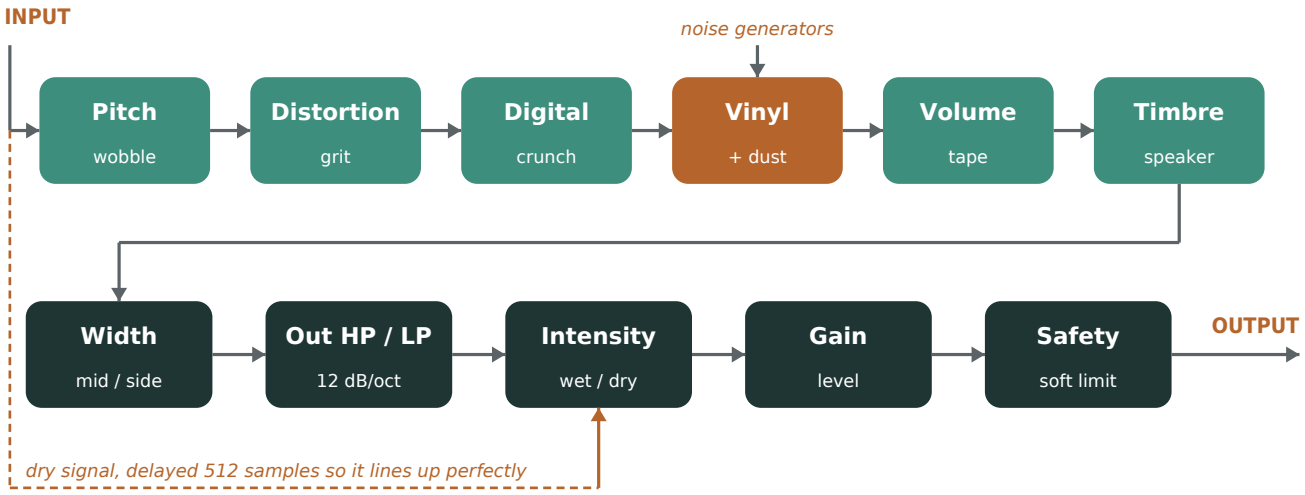
If Patina loads but stays silent, check that *Gain* is not fully left and *Intensity* is not at zero. If it is still silent, open the device in the Max editor and look at the Max Console for a message from gen~. That message is exactly what is needed to fix the problem.

CHAPTER 4 · THE BIG PICTURE

How Patina Works

The signal path

Audio flows through the six layers in a fixed order, then through the finishing section. The copper path is the dry signal that Intensity blends against.



Patina's signal path. Vinyl adds noise rather than processing it, so Volume and Timbre shape the music and the dust together, as if they were on the same tape.

Controls every layer shares

Control	What it means everywhere
On	Switches the layer in and out with a 20 ms fade. A layer that is off costs no processing power.
Depth	How much of the layer you hear. It is the main knob, and each one also sits on Push's Main page.
Vary	Adds slow, smooth randomness. A hidden hand picks a new target roughly every second and glides to it, nudging that layer's key settings so the effect never repeats exactly.
Mix / Stereo	Where offered, Mix blends the layer against its own input, and Stereo spreads its behaviour differently across left and right.

Latency, and why it is a good thing

Pitch wobble works by reading audio from a tiny, constantly moving delay line. To wobble in both directions, Patina keeps every signal 512 samples behind real time, and it tells Live so, which means Live's delay compensation keeps your tracks perfectly in time on playback.

Sample rate	44.1 kHz	48 kHz	96 kHz
Patina latency	11.6 ms	10.7 ms	5.3 ms

> **HEADS UP**
> When you *play live* through Patina, for example finger drumming into it on Push, you will feel those few milliseconds. For live input, keep Patina on a return track, or accept a little extra looseness as part of the vibe.

The panel at a glance

The desktop panel runs left to right in signal order: Output first as your home base, then the six layers. Each layer's On switch sits beside its name.

A to-scale miniature of Patina's panel. Copper squares are On switches, rounded bars are menus.

CHAPTER 5 · LAYER 1 · THE WOBBLE

Pitch

Wow is the slow, seasick drift of a warped record. Flutter is the fast shimmer of a worn capstan. Pitch gives you both, blended however you like.

Control	Range	Default	What it does
On	Off / On	On	Switch the Pitch (wow and flutter) module on or off.
Depth	0 – 100 %	25 %	Depth of pitch modulation. Held constant in cents whatever the rate.
Vary	0 – 100 %	20 %	Random variation of the pitch depth and speed.
Rate	0 % fast … 100 % slow	70 %	Balance of fast and slow modulation. 0% = fast only, 50% = both at full, 100% = slow only.
Fast	0.5 Hz – 20 Hz	6 Hz	Rate of the fast (flutter) modulation.
Slow	0.1 Hz – 4 Hz	0.6 Hz	Rate of the slow (wow) modulation.
Drift	0 – 100 %	30 %	How much the modulation rates wander.
Stereo	0 – 100 %	30 %	Stereo spread of the pitch modulation.
X-Mod	Mult / Diff	Mult	Cross-modulate dry and wet: Mult multiplies them (ring-mod), Diff subtracts them (comb).
X-Amount	0 – 100 %	0 %	Amount of cross-modulation.
Mix	0 – 100 %	100 %	Wet/dry of the Pitch module. Below 100% gives chorus-like detune.

Rate: the fast/slow balance

Rate is a crossfader between the two wobbles. At 0 % you hear only the fast flutter, at 100 % only the slow wow, and in the middle **both run at full strength**. Each wobble is a sine wave with a little filtered randomness mixed in, because real machines never wobble perfectly.

Depth is measured in cents

Patina keeps the pitch swing constant whatever the speed, so turning up Fast or Slow changes the *feel* without secretly changing the *amount*.

Depth	25 %	50 %	100 %
Slow wow, peak	±11 cents	±23 cents	±45 cents
Fast flutter, peak	±5 cents	±9 cents	±18 cents

GOOD TO KNOW

Very slow wow needs a long delay line to reach its full depth, and Patina keeps its latency short. At 48 kHz the slow wobble is capped at about ±9 cents at 0.1 Hz, ±18 at 0.2 Hz and ±27 at 0.3 Hz, and reaches its full ±45 cents from about 0.5 Hz upward.

X-Mod: cross-modulation

X-Mod combines the wobbled signal with the dry one before Mix. **Mult** multiplies them for ring-mod sidebands that shimmer and clang; it is level-normalized so it behaves on quiet material too. **Diff** subtracts them, carving a moving comb filter that exaggerates the wobble into a phasey, underwater swirl. X-Amount sets how much of that result replaces the plain wobble.

TRY THIS

For chorus instead of tape wobble, set **Mix** to 50 %, Rate to 0 % and Fast to about 1.5 Hz. The dry and wobbled copies are perfectly time-aligned, so you get detune, not slapback.

CHAPTER 6 · LAYER 2 · THE GRIT

Distortion

Nine flavours of saturation, from a whisper of transformer warmth to a wavefolder that turns bass into a choir of overtones.

Control	Range	Default	What it does
On	Off / On	Off	Switch the Distortion module on or off.
Depth	0 – 100 %	30 %	Drive. Output level is compensated so Depth changes character more than loudness.
Vary	0 – 100 %	0 %	Random variation of drive and asymmetry.
Model	9 choices	Tubes	Distortion character. Switching briefly bypasses instead of clicking.
In HP	5 Hz (off) – 20 kHz	off	High-pass before the distortion. Fully left = off.
In LP	5 Hz – 20 kHz (off)	off	Low-pass before the distortion. Fully right = off.
Smooth	1 – 20 kHz (off)	off	Extra gentle low-pass smoothing into the distortion. Fully right = off.
Mix	0 – 100 %	100 %	Wet/dry of the Distortion module.

The nine models

Model	Character	Drive	Great on
Amp Classic	Warm, slightly lopsided crunch with a mid push and a speaker-like top.	0–30 dB	Keys, guitars, drum bus
Amp Heavy	Tight and aggressive: lows trimmed before the clip, bright mid bite.	6–42 dB	Riffs, bass grit, hats with teeth
Tubes	Round, even-harmonic warmth. The bias sags as you play harder.	0–26 dB	Vocals, bass, the mix bus
Transformer	Saturates the low end first, like an iron core; the top stays open.	0–22 dB	Kicks, bass, 808s
Vinyl	Gentle thickening with a softened top, like a hot lacquer cut.	0–18 dB	Full mixes and samples
Speaker	Small-cone breakup: no deep bass, honky upper mids.	0–24 dB	Loops, vocals, textures
Diodes	Pedal-style clipping with a sharp knee; buzzy when pushed.	0–36 dB	Synths and drums
Synth	A wavefolder: tones fold over into shimmering overtones.	0–24 dB	Basses, pads, sound design
Digital	Hard digital clipping. The last 10 % of Depth wraps around like an overflowing converter.	0–36 dB	Aggressive glitch work

> **GOOD TO KNOW**
> Output level is measured and compensated for every model at every Depth, so on typical material the level stays within about ±2 dB from 0 to 100 %. Very quiet sources still get louder as you push them, as they would through any real saturator.

Input HP, In LP and Smooth decide what reaches the distortion. Raise In HP to keep the bass clean while the mids crunch. Lower Smooth to tame fizz before it happens. **Mix** gives you parallel distortion without a Rack.

> **UNDER THE HOOD**
> Distortion creates harmonics above the audible range, and in digital audio those fold back down as harsh, unmusical tones. Patina uses antiderivative anti-aliasing on its analog-style models, which in testing cut that fold-back by about 25 dB compared with a plain waveshaper. Changing **Model** briefly bypasses the layer for about 25 ms instead of clicking.

CHAPTER 7 · LAYER 3 · THE CRUNCH

Digital

Everything a budget sampler did to your sound, on purpose: fewer bits, a lower sample rate, and the occasional nervous breakdown.

Control	Range	Default	What it does
On	Off / On	Off	Switch the Digital (sampler) module on or off.
Depth	0 – 100 %	100 %	Blend of the crushed signal.
Vary	0 – 100 %	0 %	Random variation of sample rate and bit depth.
Bits	2 – 16 bits	12 bits	Bit depth.
Rate	1 kHz – 50 kHz	off	Sample rate. Aliasing is left in on purpose, like vintage samplers.
In HP	10 Hz (off) – 10 kHz	off	High-pass before the crusher. Fully left = off.
In LP	100 Hz – 20 kHz (off)	off	Low-pass before the crusher. Fully right = off.
Smooth	1 – 20 kHz (off)	off	Extra low-pass smoothing before the crusher. Fully right = off.
Glitch	0 – 100 %	0 %	Amount of random glitches: stutters, buzzes, polarity flips and stalls.
Glitch Len	0 – 100 %	30 %	Length of glitch events.
Env	0 – 100 %	0 %	Envelope follower: at 100% the crushing only appears as the input gets loud.
Stereo	0 – 100 %	0 %	Offsets the left/right sample clocks; above 50% glitches become independent per side.

Bits and sample rate

Bits moves smoothly between 16 and 2, so you can sweep it without stepping. **S.Rate** holds each sample for longer as you lower it. Patina deliberately does not filter the aliasing this creates, because that metallic shimmer is the sound of old samplers. At or above your project's sample rate, no rate reduction happens at all. Use **In LP** and **Smooth** before the crusher if you want it tamer.

Setting	Bits	S.Rate	Sounds like
Classic drum machine grit	12	26 kHz	Punchy, crunchy, late-80s beats
Smooth vintage sampler	12	40 kHz	Warm keys with a grainy halo
Home computer	8	11 kHz	Fizzy, lo-res, charming
Answering machine	10	8 kHz	Muffled speech band with grit
Broken toy	4	4 kHz	Mostly noise and nostalgia

Glitch

Glitch fires random events, up to about six per second at 100 %. Each event picks one of four behaviours, fades in and out over 2 ms, and lasts between half and one-and-a-half times the **Glitch Len** setting (from about 10 ms to 500 ms).

Event	What happens
Stutter	Loops a 10–150 ms slice of what just played. Loop points are smoothed so repeats do not click.
Buzz	Loops a tiny 2–8 ms slice, which turns into a pitched, robotic buzz.
Flip	Flips the polarity and crushes the signal to two bits for a moment.
Stall	Freezes into 4 ms steps, like a converter that is stuck.

Env ties the crushing to your dynamics: at 100 %, quiet passages stay clean and the grit only appears as the input gets loud. **Stereo** offsets the left and right sample clocks for a wider, less centred crunch, and above 50 % the two sides also glitch independently.

CHAPTER 8 · LAYER 4 · THE DUST

Vinyl

A record player's worth of surface noise, generated fresh every time, so it never loops and never repeats.

Control	Range	Default	What it does
On	Off / On	On	Switch the Vinyl (surface noise) module on or off.
Depth	0 – 100 %	50 %	Overall level of the vinyl noise.
Vary	0 – 100 %	30 %	Random variation of noise density and level, like uneven wear.
Rate	0 – 100 %	40 %	Platter speed: sets crackle/click density and how often the scratch repeats.
Crackle	off (-70) – 0 dB	−18 dB	Level of crackle. Fully left = off.
Clicks	off (-70) – 0 dB	−24 dB	Level of clicks, including a scratch once per revolution.
Pops	off (-70) – 0 dB	−30 dB	Level of low thumps.
Rumble	off (-70) – 0 dB	−36 dB	Level of turntable rumble.
Noise	off (-70) – 0 dB	−30 dB	Level of surface hiss.
Hum	off (-70) – 0 dB	off	Level of mains hum. Fully left = off.
Hum Hz	50 Hz / 60 Hz	60 Hz	Mains hum frequency.
Tone	−100 % dark … +100 % bright	0 %	Tilt EQ on the noise: left = darker, right = brighter.
Stereo	0 – 100 %	50 %	Stereo width of the noise. Rumble and hum stay centred.
Env	−100 % duck … +100 % follow	0 %	Envelope follower. Negative: noise ducks under loud input. Positive: noise follows the input.
Release	10 ms – 10 s, then ∞ (hold)	300 ms	Release of the Env follower. Fully right = infinite (hold).

The six sounds of a record

Layer	Sounds like	Behaviour
Crackle	Fine, fizzy surface dust	Hundreds to thousands of tiny ticks per second; denser at higher Rate
Clicks	Sharp ticks and the scratch	A few per second, plus one scratch that repeats every revolution
Pops	Soft low thumps	Rare, weighty, under one per second
Rumble	Motor and platter rumble	Very low noise that stays centred

Layer	Sounds like	Behaviour
Noise	Surface hiss	Pink-ish hiss that swells slightly with each rotation
Hum	Mains hum and buzz	50 or 60 Hz with harmonics; off by default

Rate is the platter speed, from roughly 18 to 90 RPM. It sets how busy the crackle is and how often the scratch comes round, which is the single most convincing vinyl cue there is. **Tone** tilts the noise darker or brighter around 1.2 kHz, and **Stereo** spreads it while rumble and hum stay in the middle, like a real cartridge.

Env: noise that listens

Env follows the level of the audio coming into Patina. Turn it **negative** and the noise ducks under loud passages and blooms in the gaps, so the record is most obvious between hits. Turn it **positive** and the noise rides along with the music, disappearing when the track is silent. **Release** sets how fast it recovers; all the way right, it holds forever.

> **HEADS UP**
> Vinyl is a generator, so it makes sound even when the track is silent. If that is not what you want, set Env positive, lower Depth, or automate Vinyl On.

CHAPTER 9 · LAYER 5 · THE TAPE

Volume

Tape does not just wobble in pitch. Its level flutters, sags and sometimes vanishes for a moment. Volume brings all of that.

Control	Range	Default	What it does
On	Off / On	Off	Switch the Volume (tape amplitude) module on or off.
Depth	0 – 100 %	30 %	Depth of the amplitude wobble.
Vary	0 – 100 %	0 %	Random variation of the wobble depth.
Rate	0 % fast … 100 % slow	50 %	Balance of fast and slow wobble. 0% = fast only, 50% = both, 100% = slow only.
Fast	4 Hz – 30 Hz	8 Hz	Rate of the fast amplitude wobble.
Slow	0.1 Hz – 4 Hz	0.5 Hz	Rate of the slow amplitude wobble.
Fast Drift	0 – 100 %	20 %	How much the fast rate wanders.
Slow Drift	0 – 100 %	20 %	How much the slow rate wanders.
Dropouts	0 – 100 %	0 %	Random tape dropouts; treble drops first, like tape lifting off the head.
Stereo	0 – 100 %	0 %	Stereo offset of the wobble; above 50% dropouts become independent per side.

Rate works exactly like Pitch Rate, and at 100 % Depth any Rate position can reach full modulation, from gentle flutter to hard chopping. The two Drift knobs let each speed wander independently, up to an octave either way.

Dropouts

Dropouts happen at random, up to about 2.5 per second at 100 %, and grow longer as you turn the knob up. About 60 % of them go fully silent and the rest dip partially. During each dropout the treble falls away first, toward about 1.8 kHz, because that is what really happens when tape lifts off the head. Every edge is a smooth raised-cosine fade, so dropouts never click.

> **TRY THIS**
> Volume Depth 0 %, Dropouts 30 %, Stereo 100 %. Left and right now drop out independently, which sounds like a cassette that has been stored in a hot car.

CHAPTER 10 · LAYER 6 · THE SPEAKER

Timbre

Every sound is finally heard through something. Timbre is that something: 32 voicings from a telephone to a pair of studio mains.

Control	Range	Default	What it does
On	Off / On	Off	Switch the Timbre (lo-fi EQ) module on or off.
Depth	0 – 100 %	100 %	Morphs from flat to the full profile.
Vary	0 – 100 %	0 %	Random drift of the profile's resonances, like an unstable old speaker.
Profile	32 choices	Neutral	EQ voicing.

Each profile is a six-band EQ: a high-pass, a low shelf, two resonant bells, a high shelf and a low-pass. **Depth** does not crossfade, it morphs, shrinking every band toward flat, so 50 % is a genuinely gentler version of the same voicing. Profiles are level-matched, and switching between them glides.

#	Profile	Band	Character
1	Neutral	full range	Flat. The reference point, and a fine canvas for Vary.
2	Bass Amp A	40 Hz – 5 kHz	Round bass-cab warmth, scooped mids, soft top.
3	Bass Amp B	50 Hz – 3.5 kHz	Darker, boomier cab with a growly upper mid.
4	Guitar Amp A	90 Hz – 5.5 kHz	Open-back combo: mid bite, gentle top roll-off.
5	Guitar Amp B	110 Hz – 4.5 kHz	Closed-cab honk with a strong edge near 1.8 kHz.
6	Club Mix	30 Hz – 16 kHz	Big lows and a smiley top: the sound of a loud room.
7	Earbuds New	60 Hz – 16 kHz	Clear and slightly hyped, with a little sparkle.
8	Earbuds Old	180 Hz – 9 kHz	Thin, tinny and harsh, like a worn free pair.
9	Boom Box A	70 Hz – 11 kHz	Hyped bass and treble around a scooped middle.
10	Boom Box B	100 Hz – 8 kHz	Even more bass, a darker top, a little sizzle.
11	Gramophone A	250 Hz – 4 kHz	Narrow horn tone with resonant peaks.
12	Gramophone B	350 Hz – 3 kHz	Narrower, darker and more nasal.
13	Headphones A	20 Hz – 18 kHz	Studio cans: full, detailed, a touch bright.
14	Headphones B	40 Hz – 12 kHz	Consumer cans: bass-heavy and slightly veiled.
15	Faded	60 Hz – 6 kHz	Softened edges and a sleepy top end.
16	Soft Focus	40 Hz – 3.5 kHz	Warm, dark and blurred, like late-night radio.
17	Megaphone A	500 Hz – 3.5 kHz	Honky, pushed midrange, loud and narrow.
18	Megaphone B	700 Hz – 3 kHz	The extreme version: all horn, no body.
19	Landline	300 Hz – 3.4 kHz	The classic telephone band.
20	Cell Phone	350 Hz – 3.8 kHz	Narrow and presence-heavy with a crispy edge.

#	Profile	Band	Character
21	Transistor A	150 Hz – 5 kHz	Pocket radio: small speaker, warm mid bump.
22	Transistor B	250 Hz – 3.8 kHz	Smaller and darker, lower fidelity.
23	Tube Radio A	80 Hz – 5 kHz	Tabletop valve radio: warm, round, dark.
24	Tube Radio B	120 Hz – 4.2 kHz	Boxier cabinet with a lower-mid glow.
25	Old Speaker A	120 Hz – 7 kHz	Aged full-range cone, a little peaky.
26	Old Speaker B	180 Hz – 5 kHz	Tired driver with a strong upper-mid ring.
27	Old Speaker C	250 Hz – 4 kHz	Small, boxy and resonant.
28	Studio Large	25 Hz – 20 kHz	Big main monitors: wide and flattering.
29	Studio Medium	45 Hz – 18 kHz	Mid-field monitors: honest, with a low-mid push.
30	Studio Vintage	50 Hz – 12 kHz	Classic-era monitor: warm, softened treble.
31	Studio Small	90 Hz – 15 kHz	Near-field: lean lows, forward mids.
32	Studio Tiny	160 Hz – 10 kHz	Single-cube mix-check speaker: mids and not much else.

TRY THIS

Put **Timbre Vary** on 60 % with an Old Speaker profile. The resonances drift slowly, like a cone that is warming up and not quite sure of itself.

CHAPTER 11 · OUTPUT

The Finishing Section

Everything the six layers produce passes through these last controls, in this order.

Control	Range	Default	What it does
Width	0 – 200 %	100 %	Stereo width of the effect output. 0% = mono, 100% = unchanged, 200% = extra wide.
Output HP	20 Hz (off) – 6 kHz	off	High-pass on the effect output. Fully left (20 Hz) = off.
Output LP	200 Hz – 20 kHz (off)	off	Low-pass on the effect output. Fully right (20 kHz) = off.
Intensity	0 – 100 %	100 %	Wet/dry amount of the whole effect. The dry signal is latency-aligned, so blending never combs.
Output Gain	silent – +6 dB	0 dB	Output level. Fully left = silence.
Safety	Off / On	On	Soft limiter on the output. Transparent below about -2 dBFS; stops harsh settings from clipping.

- **Width** works on the processed signal only: 0 % for mono gramophone realism, 200 % for an extra-wide wash.
- **Output HP and LP** are 12 dB-per-octave filters for quick band-limiting. Parked at their ends, they are completely out of the circuit.
- **Intensity** blends the finished sound against the latency-aligned dry signal. At 0 % the output is identical to the input.
- **Safety** is a soft limiter that stays transparent below about −2 dBFS and never lets the output pass 0 dBFS. Leave it on unless you are deliberately feeding a clipper.

CHAPTER 12 · HANDS ON

Playing Patina on Push

On Push, Patina spreads its controls over ten pages of eight encoders. The first page is a performance page; the rest are organised by layer, with the less-used controls on three "plus" pages at the end.

Push page	1	2	3	4	5	6	7	8
Main	Intensity	Pitch Depth	Dist Depth	Digi Depth	Vinyl Depth	Vol Depth	Timbre Depth	Gain
Pitch	On	Pitch Depth	Vary	Rate	Fast	Slow	Drift	Mix
Dist	On	Dist Depth	Vary	Model	In HP	In LP	Smooth	Mix
Digital	On	Digi Depth	Vary	Bits	S.Rate	Glitch	Glt Len	Env
Vinyl	On	Vinyl Depth	Vary	Rate	Crackle	Clicks	Pops	Noise
Volume	On	Vol Depth	Vary	Rate	Fast	Slow	Dropouts	Stereo
Tone/Out	Timbre On	Timbre Depth	Vary	Profile	Out HP	Out LP	Width	Gain
Vinyl+	Rumble	Hum	Hum Hz	Tone	Stereo	Env	Release	–
Motion+	P Stereo	X-Mod	X-Amount	Fast Drift	Slow Drift	–	–	–
Digi+	In HP	In LP	Smooth	Stereo	–	–	–	Safety

- **Main** is the page to live on: Intensity, every layer's Depth and Gain. Eight knobs, the whole character of the device.
- **On switches** sit on the first encoder of each layer's page. Turn the encoder to flip them.
- **Menus** such as Model, X-Mod and Profile show their choices by name. Turn to scroll through them.
- **Save your sounds** as Live device presets. They appear in Push's browser alongside Patina.

> **GOOD TO KNOW**
> A layer that is switched off is skipped entirely, so the quickest way to save processing power on Push is simply to turn off the layers you are not using.

CHAPTER 13 · COOKBOOK

Recipes

Each recipe starts from Patina's default state and lists only what changes. Load a fresh copy, dial these in, then save the ones you love as presets.

Dusty Drum Sampler

Crunchy, punchy, late-80s beats

- Digital: On, Bits 12, S.Rate 26 kHz, Smooth 11 kHz
- Timbre: On, Studio Vintage, Depth 40 %

Warm Vintage Sampler

Keys and loops with a grainy halo

- Digital: On, Bits 12, S.Rate 40 kHz
- Distortion: On, Transformer, Depth 20 %

Crunchy 8-Bit

Fizzy home-computer charm

- Digital: On, Bits 8, S.Rate 11 kHz, Env 50 %
- Distortion: On, Diodes, Depth 40 %, Mix 30 %

Worn Cassette

A mixtape from a glovebox

- Pitch: Depth 35 %, Rate 80 %, Drift 40 %
- Volume: On, Depth 15 %, Dropouts 20 %
- Vinyl: Crackle, Clicks, Pops, Rumble off; Noise −24 dB
- Timbre: On, Boom Box A, Depth 60 %

Seasick

Warped and woozy, on purpose

- Pitch: Depth 90 %, Rate 50 %, X-Mod Diff, X-Amount 30 %

Dusty 45

A single found at a yard sale

- Vinyl: Depth 70 %, Crackle −12 dB, Clicks −18 dB, Rumble −30 dB, Env −60 %

Gramophone

Your track, circa 1920

- Vinyl: Depth 80 %, Noise −18 dB, Hum −30 dB
- Timbre: On, Gramophone A
- Output: Width 0 %

Transistor Night

A radio on the windowsill

- Timbre: On, Transistor A
- Distortion: On, Speaker, Depth 20 %
- Volume: On, Depth 15 %, Rate 90 %

Voice Memo

Recorded on a phone, in a pocket

- Timbre: On, Cell Phone
- Digital: On, Bits 10, S.Rate 8 kHz
- Distortion: On, Digital, Depth 15 %

Glitch Box

Controlled chaos

- Digital: On, Bits 16, S.Rate 50 kHz, Glitch 70 %, Glitch Len 40 %, Stereo 60 %
- Volume: On, Depth 0 %, Dropouts 50 %

Tape Bus Glue

Subtle warmth for a whole mix

- Pitch: Depth 10 %
- Vinyl: Off
- Distortion: On, Transformer, Depth 25 %
- Output: Intensity 70 %

Lo-fi Pad Wash

Slow, wide and dreamy

- Pitch: Depth 50 %, Rate 100 %, Slow 0.3 Hz
- Output: LP 5 kHz, Width 150 %

Broken Toy

Found in the bottom of a box

- Digital: On, Bits 4, S.Rate 4 kHz
- Timbre: On, Old Speaker C
- Pitch: Depth 60 %

Just Age It

The one-size-fits-all patina

- Every layer On at 10–20 % Depth
- Every Vary at 50 %

CHAPTER 14 · GOING FURTHER

Tips and Tricks

Performance moves

- **The time machine.** Map Intensity to a Rack macro and ride it across a breakdown: the track slowly ages, then snaps back to now.
- **Stop the record.** Automate Pitch Depth to 100 % and Slow down toward 0.3 Hz over a bar for a warped slowdown feel.
- **Radio tuning.** Automate Timbre Depth from 100 % to 0 % as a filtered intro opens into the full mix.
- **Glitch fills.** Keep Digital at Bits 16 and 50 kHz so it is transparent, then push Glitch only on the last beat of a phrase.

Mixing with Patina

- Put Patina on a **return track** with Intensity at 100 % and blend with the send. Several tracks share one record, which glues them together and saves processing power.
- Use **Dist Mix** and **Pitch Mix** for parallel processing inside the device, no Rack required.
- **Vary** is what makes long sections feel alive. Even 20–30 % stops a loop from sounding like a loop.
- Raise **Dist In HP** on bass-heavy sources so the low end stays tight while the mids get dirty.

Modulation

All 66 controls are ordinary Live parameters, so Live's LFO, Shaper and Envelope Follower devices can drive any of them. On Push standalone, set those mappings up on your computer first; the mappings then travel with the Set.

CHAPTER 15 · WHEN THINGS GET WEIRD

Troubleshooting

I hear crackle even when nothing is playing.

That is the Vinyl layer doing its job, because it generates noise. Set Vinyl Env positive so the noise follows the music, lower Vinyl Depth, or switch Vinyl off.

Patina is silent.

Check that Gain is not fully left (that is silence) and that Intensity is above 0 %. If it is still silent, open the device in the Max editor and read the Max Console for a gen~ message.

Playing live through it feels slightly late.

Patina runs 512 samples behind (about 11 ms at 48 kHz). Live compensates on playback, but live input still feels it. Use a return track, or play into a dry track and add Patina afterwards.

The slow wobble will not get deep at very slow rates.

Expected. Below about 0.5 Hz the wow depth is capped to keep latency short. Raise Slow a little, or combine it with more Drift.

Switching Model leaves a tiny gap.

Intentional. Patina bypasses Distortion for about 25 ms while it swaps models, instead of clicking.

Distortion gets louder on quiet material.

Level compensation is tuned for typical program levels. Quiet sources get lifted as they saturate, just as with hardware. Trim with Gain, and Safety catches any peaks.

The hum sounds wrong for my country.

Set Hum Hz to 50 Hz (most of Europe, Asia, Africa, Australia) or 60 Hz (most of the Americas).

Push is running out of processing power.

Switch off layers you are not using, since they are skipped entirely, and share one Patina on a return track instead of many inserts.

APPENDIX A

Parameter Reference

All 66 controls, in panel order, with the name Push displays and the pages each one lives on.

Parameter	On Push	Range	Default	Push page
Intensity	Intensity	0 – 100 %	100 %	1
Output HP	Out HP	20 Hz (off) – 6 kHz	off	7
Output LP	Out LP	200 Hz – 20 kHz (off)	off	7
Width	Width	0 – 200 %	100 %	7
Output Gain	Gain	silent – +6 dB	0 dB	1, 7
Safety	Safety	Off / On	On	10
Pitch On	On	Off / On	On	2
Pitch Depth	Pitch Depth	0 – 100 %	25 %	1, 2
Pitch Vary	Vary	0 – 100 %	20 %	2
Pitch Rate	Rate	0 % fast … 100 % slow	70 %	2
Pitch Fast	Fast	0.5 Hz – 20 Hz	6 Hz	2
Pitch Slow	Slow	0.1 Hz – 4 Hz	0.6 Hz	2
Pitch Drift	Drift	0 – 100 %	30 %	2
Pitch Stereo	P Stereo	0 – 100 %	30 %	9
Pitch X-Mod	X-Mod	Mult / Diff	Mult	9
Pitch X-Amount	X-Amount	0 – 100 %	0 %	9
Pitch Mix	Mix	0 – 100 %	100 %	2
Dist On	On	Off / On	Off	3
Dist Depth	Dist Depth	0 – 100 %	30 %	1, 3
Dist Vary	Vary	0 – 100 %	0 %	3
Dist Model	Model	9 choices	Tubes	3
Dist In HP	In HP	5 Hz (off) – 20 kHz	off	3
Dist In LP	In LP	5 Hz – 20 kHz (off)	off	3
Dist Smooth	Smooth	1 – 20 kHz (off)	off	3
Dist Mix	Mix	0 – 100 %	100 %	3
Digital On	On	Off / On	Off	4
Digital Depth	Digi Depth	0 – 100 %	100 %	1, 4
Digital Vary	Vary	0 – 100 %	0 %	4
Digital Bits	Bits	2 – 16 bits	12 bits	4
Digital Rate	S.Rate	1 kHz – 50 kHz	off	4
Digital In HP	In HP	10 Hz (off) – 10 kHz	off	10
Digital In LP	In LP	100 Hz – 20 kHz (off)	off	10
Digital Smooth	Smooth	1 – 20 kHz (off)	off	10
Digital Glitch	Glitch	0 – 100 %	0 %	4
Digital Glitch Len	Glt Len	0 – 100 %	30 %	4
Digital Env	Env	0 – 100 %	0 %	4
Digital Stereo	Stereo	0 – 100 %	0 %	10
Vinyl On	On	Off / On	On	5

Parameter	On Push	Range	Default	Push page
Vinyl Depth	Vinyl Depth	0 – 100 %	50 %	1, 5
Vinyl Vary	Vary	0 – 100 %	30 %	5
Vinyl Rate	Rate	0 – 100 %	40 %	5
Vinyl Crackle	Crackle	off (-70) – 0 dB	−18 dB	5
Vinyl Clicks	Clicks	off (-70) – 0 dB	−24 dB	5
Vinyl Pops	Pops	off (-70) – 0 dB	−30 dB	5
Vinyl Rumble	Rumble	off (-70) – 0 dB	−36 dB	8
Vinyl Noise	Noise	off (-70) – 0 dB	−30 dB	5
Vinyl Hum	Hum	off (-70) – 0 dB	off	8
Vinyl Hum Hz	Hum Hz	50 Hz / 60 Hz	60 Hz	8
Vinyl Tone	Tone	−100 % dark … +100 % bright	0 %	8
Vinyl Stereo	Stereo	0 – 100 %	50 %	8
Vinyl Env	Env	−100 % duck … +100 % follow	0 %	8
Vinyl Release	Release	10 ms – 10 s, then ∞ (hold)	300 ms	8
Volume On	On	Off / On	Off	6
Volume Depth	Vol Depth	0 – 100 %	30 %	1, 6
Volume Vary	Vary	0 – 100 %	0 %	6
Volume Rate	Rate	0 % fast … 100 % slow	50 %	6
Volume Fast	Fast	4 Hz – 30 Hz	8 Hz	6
Volume Slow	Slow	0.1 Hz – 4 Hz	0.5 Hz	6
Volume Fast Drift	Fast Drift	0 – 100 %	20 %	9
Volume Slow Drift	Slow Drift	0 – 100 %	20 %	9
Volume Dropouts	Dropouts	0 – 100 %	0 %	6
Volume Stereo	Stereo	0 – 100 %	0 %	6
Timbre On	Timbre On	Off / On	Off	7
Timbre Depth	Timbre Depth	0 – 100 %	100 %	1, 7
Timbre Vary	Vary	0 – 100 %	0 %	7
Timbre Profile	Profile	32 choices	Neutral	7

APPENDIX B

Specifications

Item	Detail
Device type	Max for Live audio effect, stereo in and out
Engine	One gen~ patch, native Max objects only: no plug-ins, no samples, no scripts
Push 3 standalone	Supported
Controls	66, all automatable, each with Info View help text
Push pages	10 pages of 8 encoders
Latency	512 samples, reported to Live for delay compensation
Sample rates	Any; verified at 44.1, 48 and 96 kHz
Anti-aliasing	First-order antiderivative anti-aliasing on the analog-style distortion models
Filters	Trapezoidal state-variable filters, stable and click-free under fast changes
Output protection	Soft limiter, transparent below −1.9 dBFS, ceiling 0 dBFS
Panel	1200 × 169 pixels

Version history

1.0 · September 2026 · First release.