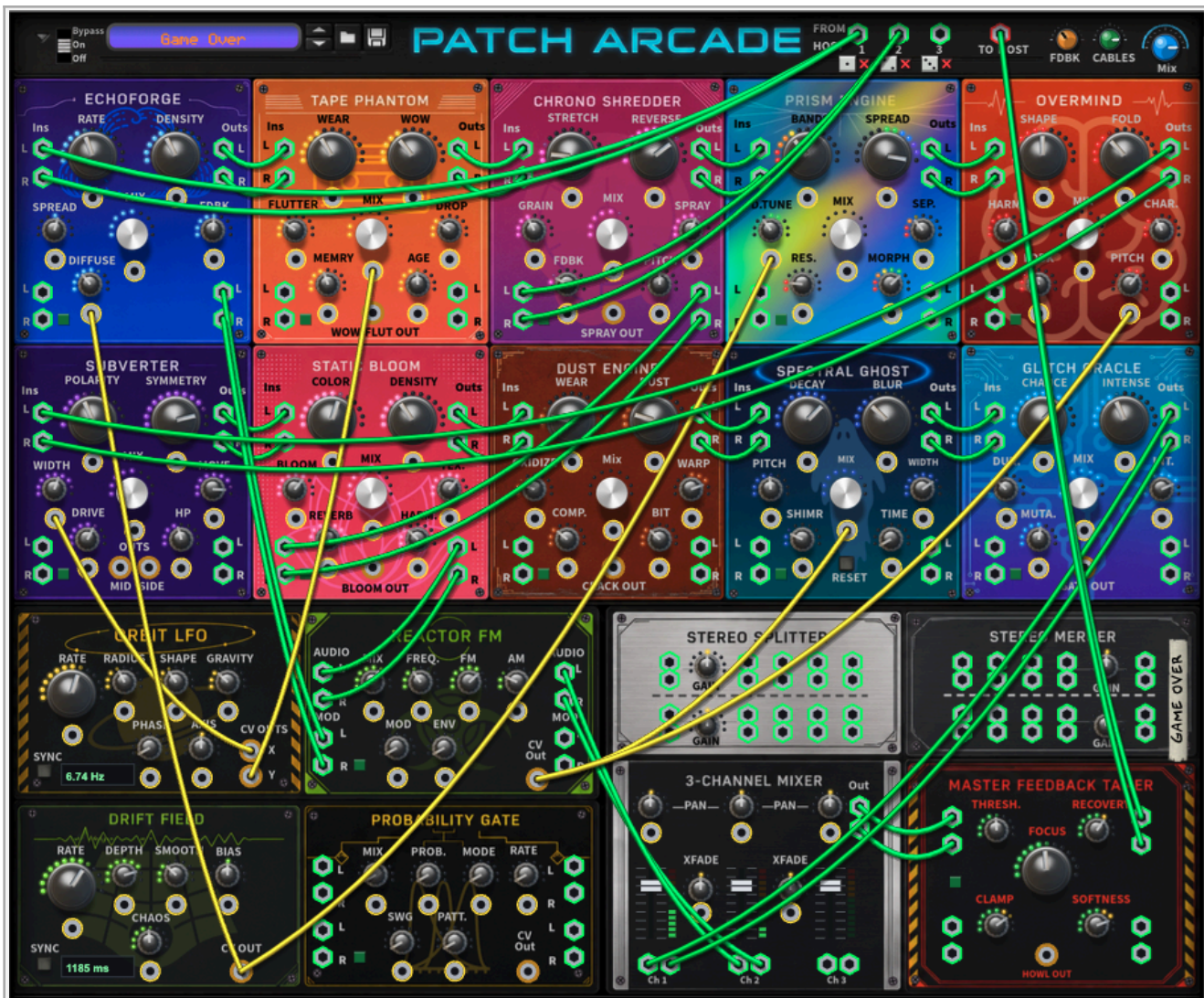


Patch Arcade

A modular effects patchbay for Reason.

Eighteen modules, wired together with virtual cables on the front panel.

Shane TV



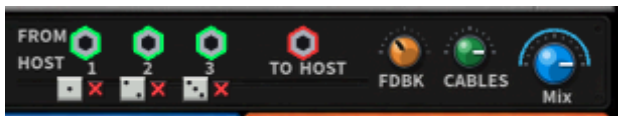
What it is

Patch Arcade is a rack of eighteen small effect, modulation and utility modules that live behind one front panel. You connect them with cables you drag yourself. Signal enters from one of three **From Host** inputs, travels wherever you route it, and leaves through **To Host**.

The device is built around one idea: feedback loops are musical. Route a module's output back into something earlier in the chain and every module in that loop begins to change on its own, evolving over roughly twenty seconds. That behaviour is described per-module below and summarised in *Feedback*.

The panel is divided into three zones, plus a small strip of global controls.

Global Controls



Below the tape strip sit three small knobs.

- **Cable visibility** (*green*) — fades every patch cable from fully opaque to invisible, for reading a dense panel. The knob itself dims as it turns but never disappears.
- **Feedback chance** (*amber*) — how often a die roll builds a feedback loop, from 0% (never) to 100% (always). Defaults to 30%.
- **Global wet/dry** (*blue*) — blends the fully processed signal against the dry input, after everything else, including the Feedback Tamer, has already run. Defaults to 100%, fully wet.

The dice



Under each From Host input is a die: 1, 2 and 3. Tap one to build a random chain for that input only:

- 2 to 4 effects daisy-chained into that mixer channel
- 1 to 2 modulators patched into those effects
- a chance of a stereo feedback loop, set by the Feedback Chance knob (see *Global controls*)
- knob values rolled on a bell curve, so settings cluster musically but can still reach extremes

A roll never disturbs cables you patched by hand. It also never touches another route's audio: die 2 cannot take over a module die 1 is using, so rolling one route never breaks another. Beside each die is a red X; tap it to clear that route entirely and free its modules for any die to use.

CV is shared freely between the three routes on purpose. A modulator already in use by another route is still a good source, and effects will sometimes cross-modulate a different route's module. That cross-talk is where a lot of the character comes from.

The mixer to tamer to To Host trunk is shared and survives every roll.

Effects



Every effect has a Mix knob — the large one at the bottom centre — which blends dry against processed using an equal-power crossfade. At 0 the module passes audio untouched.

Echoforge



A tempo-synced delay that can smear into reverb.

- **Mix** — dry/wet
- **Rate** — delay time as a note division, $\frac{n}{32}$ of a bar
- **Density** — a diffusion network. Low gives distinct repeats; high melts them into a continuous wash
- **Spread** — bipolar. Stretches the left and right delay times apart for width
- **Feedback** — regeneration. Reaches near-unity, so tails can sustain almost indefinitely
- **Diffuse** — low-passes and chorus-modulates the tail, widening repeats rather than only darkening them
- **Freeze *(button)*** — holds the current contents of the delay forever

In feedback: repeats progressively shorten, tightening the echo into a shimmer.

Tape Phantom



Magnetic tape emulation.

- **Mix** — dry/wet
- **Wear** — tape saturation, with gain compensation
- **Wow** — slow pitch drift (~1.2 Hz)
- **Flutter** — fast pitch drift (~7 Hz)
- **Dropout** — physical tape sag: level dips, highs collapse and pitch warps together
- **Memory** — feedback. The path is low-passed, so repeats recede into a dark wash
- **Age Rate** — how quickly the wow/flutter character wanders over time
- **CV Out** — the combined wow + flutter motion

In feedback: saturation builds with every pass.

Chrono Shredder



A granular buffer scrambler. Its two large knobs are Stretch and Reverse, the controls that actually create the sound.

- **Mix** — dry/wet
- **Grain** — grain length, snapped to note values so grains land on the beat
- **Spray** — scatters grains in time, and pans them across the stereo field as they scatter
- **Stretch** — playback speed, with a randomised flutter that emulates a stalling tape motor
- **Reverse** — probability that a grain plays backwards
- **Feedback** — recirculates grains
- **Pitch Shift** — bipolar, plus/minus 12 semitones

- **CV Out** — the frozen per-grain random value: a clock-synced sample & hold

In feedback: more and more grains play backwards.

Prism Engine



A dual resonant multimode filter.

- **Mix** — dry/wet
- **Bands** — centre frequency, 100 Hz to 8 kHz
- **Spread** — bipolar left/right frequency offset
- **Detune** — glides between musical intervals (unison, minor 3rd, major 3rd, 4th, 5th, octave), so sweeping sounds like a robotic choir
- **Separation** — how independently the two bands behave. At 0 they move as one; higher lets each drift on its own
- **Resonance** — Q. Above ~80% the band self-oscillates
- **Morph** — blends low-pass, band-pass and high-pass

In feedback: the bands drift steadily further apart.

Overmind



A wavefolder and distortion tour.

- **Mix** — dry/wet
- **Shape** — three zones crossfaded: overdrive (soft clip) to wavefold to digital wrap. An envelope follower pushes it forward on transients, so it bites with your playing
- **Fold** — fold depth
- **Harmonics** — cascaded sine folding

- **Character** — split knob: low-pass below 50%, sample-rate decimation above
- **Drive** — input gain, level compensated
- **Bias** — bipolar. Sets asymmetric clipping thresholds for the positive and negative halves, for warm, tube-like even harmonics

In feedback: the transfer curve mutates, so no two passes are shaped alike.

Subverter



A stereo field manipulator and mastering tool.

- **Mix** — dry/wet
- **Polarity** — sweeps the right channel's phase toward inversion
- **Symmetry** — asymmetric waveshaping
- **Width** — mid/side width. Loud centre transients momentarily collapse the image to protect punch, then it blooms back
- **Movement** — auto-pan of the side signal
- **Drive** — saturation
- **High Pass** — a 2-pole filter on the side signal only: a surgical mono-maker that locks bass to the centre while highs stay wide
- **CV Out 1 / 2** — mid and side energy, a stereo-width analyser for the rack

Static Bloom



A harmonic saturation and smearing engine.

- **Mix** — dry/wet
- **Color** — tuning of the partials
- **Density** — how strongly transients excite the bloom

- **Bloom** — decay time of the ring
- **Texture** — sweeps the harmonic balance from warm fundamental to bright upper partials
- **Reverb** — the smearing tail
- **Harmonics** — amount of harmonic generation and saturation. Higher settings also stretch the upper partials slightly sharp, which is what makes struck metal sound like a bell rather than a chord
- **CV Out** — a lazy envelope that peaks after the note hits

In feedback: the bloom thickens with every pass.

Dust Engine



Vinyl and tape noise.

- **Mix** — dry/wet
- **Wear** — surface noise, warm and woody at the bottom of the knob and opening toward hiss as it climbs. It ducks under the music, so the noise floor is most apparent in quiet passages, the way a real record behaves
- **Dust** — sparse vinyl pops. Most are bright ticks, with a smaller share of deeper woody thumps mixed in, so it crackles like a fire rather than a stream of identical clicks
- **Oxidize** — sample-rate reduction
- **Warp** — bipolar pitch transform, running 90 degrees apart per channel for a rotary, three-dimensional vibrato
- **Compression** — OTT-style: squashes peaks and hauls quiet passages up, so crackle rushes in between hits
- **Bit Depth** — quantisation
- **CV Out** — a one-sample trigger spike every time a pop fires

In feedback: fidelity degrades cumulatively; each trip costs bit depth.

Spectral Ghost



A ghostly delay with a shimmer reverb tank.

- **Mix** — dry/wet
- **Decay** — feedback amount
- **Blur** — cascaded smearing
- **Pitch Drift** — slow detuning of the tail
- **Width** — stereo offset
- **Shimmer** — blends in an octave-up cathedral reverb. The tail is pitched up and fed back into its own tank, so octaves stack as it recirculates
- **Time** — delay length, 20 to 900 ms, glided so turning it bends pitch like tape
- **Freeze** ***(button)*** — infinite hold
- **Recover** ***(button)*** — momentary. Wipes the buffer and the shimmer tank so the module restarts clean

In feedback: the ghost detunes further the longer it loops.

Glitch Oracle



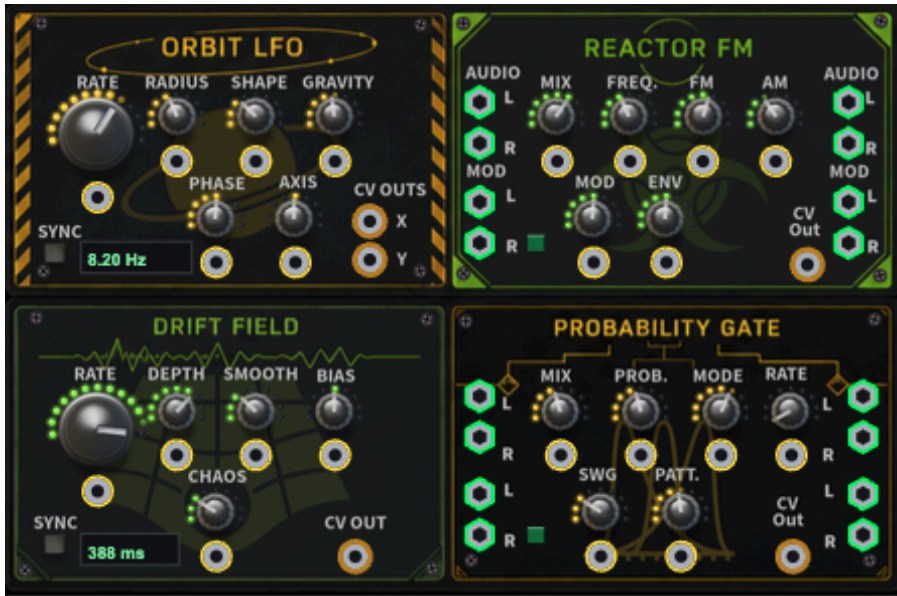
A Euclidean rhythmic glitch sequencer.

- **Mix** — dry/wet
- **Chance** — how many of the 32 steps fire
- **Intensity** — how far the glitch palette opens. Low settings draw only reverse and stutter; turning up adds octave-up, tape-stop, bitcrush and half-speed, so the same pattern shreds progressively harder
- **Duration** — glitch length, snapped to note values
- **Intelligence** — pattern seed and rotation
- **Mutation** — random flips. A mutated step also throws its glitch up a fifth or down an octave

- **Tune *(button)*** — harmonisation
- **CV Out** — the raw Euclidean gate as a sharp trigger, for sequencing external devices

In feedback: glitches become more likely, so a held loop shreds itself.

Modulation



Orbit LFO



A two-axis LFO tracing shapes rather than a single wave.

- **Rate** — speed. With Sync on it snaps to note lengths from 4 bars to 1/32
- **Radius** — depth
- **Shape** — sine to triangle to square, with the top third crushing into a stepped sample & hold
- **Gravity** — warps the orbit so it accelerates through part of the cycle. The gravity well itself slowly revolves, so the pattern never exactly repeats
- **Phase** — offset between the X and Y axes. At 0 a circle; at 90 degrees a figure-eight
- **Axis Offset** — bipolar DC offset
- **Sync *(button)*** — tempo lock
- **CV Out X / Y** — two different signals in quadrature, not copies

Reactor FM



A phase modulator with its own oscillator.

- **Mix** — dry/wet
- **Freq** — internal oscillator, 20 Hz to 4 kHz. Patch anything into IN 2 and that audio replaces the oscillator as the modulator
- **FM Depth** — phase modulation, producing real sidebands
- **AM Depth** — ring modulation on top
- **Mod Drive** — shapes the modulator harder for richer harmonics
- **Env Follow** — bipolar. Below 50% it ducks FM on transients so grit swells in on the decay; above 50% it pushes forward so transients bite
- **CV Out** — envelope follower

Drift Field



A random walk generator.

- **Rate** — how often a new target is chosen. Sync snaps it to note divisions
- **Depth** — amplitude
- **Smooth** — slew, from stepped to glassy
- **Bias** — bipolar offset
- **Chaos** — irregular timing, occasional oversized jumps, and ratcheting bursts of 4 to 7 micro-steps
- **Sync *(button)*** — tempo lock
- **CV Out** — the walk

Probability Gate



A clocked routing gate — a traffic controller, not a distortion box.

- **Mix** — dry/wet
- **Probability** — how much of the pattern survives. At 0, nothing is ever touched
- **Mode** — Skip (rest), Swap (out the other output), Repeat (stutter at double speed, an octave up), Mirror (reverse with a decelerating vinyl brake), Invert (right-channel polarity), Random
- **Rate** — clock, synced: 1/4, 1/8, 1/16, 1/8T, 1/32
- **Swing** — shuffle, with micro-jitter so the groove feels human
- **Pattern** — one of 100 EDM rhythms
- **CV Out** — the gate signal

A second stereo output carries whatever the pattern removes from the main path — the audio a Skip drops, the material a Swap redirects, or whatever any other mode replaces — in every mode, not only Swap. Leave it unpatched, or route it to process the material the pattern rejects.

The clock runs from project tempo, so patterns keep time even with the transport stopped, and lock to the bar when it is running.

Utility



Stereo Splitter



Two independent circuits. Each takes one stereo input and multiplies it to four stereo outputs.

- **Gain 1 / Gain 2** — bipolar, plus/minus 12 dB, applied after the input and before the split

Stereo Merger



The mirror image. Two circuits, each summing four stereo inputs into one output with a gentle soft-clip.

- **Gain 1 / Gain 2** — bipolar, plus/minus 12 dB, applied before the merge

These gain knobs are the loop throttle. They are the main place to dial in how hard a feedback patch pushes. Each circuit can be set to its own intensity.

3-Channel Mixer



- **Fader 1 to 3** — channel level, with meters showing true dBFS (green below -25, amber to -10, red above)
- **Pan 1 to 3** — bipolar, equal-power
- Cross Fade 1-2 / 2-3 — equal-power blends between adjacent channels

Stereo inputs sit under each fader; one merged stereo output is at the top right.

Feedback Tamer



Tames whatever is patched through it, so it can sit inside a single loop rather than only on the master bus.

- **Threshold** — where limiting begins
- **Recovery** — release, snapped to note divisions so clamped feedback pumps in time
- **Clamp** — how hard the squash is, from gentle compression up to a hard ceiling
- **Focus *(large, centre)*** — a dynamic notch. Six bands track their own energy and whichever becomes genuinely dominant is subtracted, so a runaway resonance is carved out while the music passes. The notched energy is smeared through an all-pass chain, dissolving a scream into a pad rather than deleting it
- **Softness** — knee shape
- **CV Out (Howl)** — inverse of the internal runaway detector. Silent when the patch behaves, swelling as a loop takes off

Cable patching

Drag from any jack to any other jack.

The rules

1. Output to input only. You cannot connect two outputs or two inputs.
2. Audio to audio, CV to CV. The two never mix.
3. One source per audio input. Patching a new cable into an occupied audio input replaces what was there. **To Host** is the exception — it sums, so many modules can feed it at once.
4. CV inputs are additive. Front-panel CV, back-panel CV and the knob itself all sum together.
5. Stereo auto-follow. Patching a left output into a left input automatically wires the right pair. Patching right-first does not, and either cable can be removed on its own.

How the audio jacks work

Every audio module has two input pairs and two output pairs: In 1 L/R, In 2 L/R, Out 1 L/R, Out 2 L/R. They are not two separate effects. They are two doors into one room, and two copies of what comes out.

Both inputs feed the same effect. In 1 and In 2 are summed before processing, so patching two sources into one module mixes them through a single instance rather than creating a second voice. Both outputs carry the same signal, so Out 2 is a free mult of Out 1.

Since an audio input only accepts one source, a cable arriving at In 1 replaces whatever was feeding it, but a cable to In 2 adds to what's already there, leaving the chain intact. That is what makes In 2 the right target for feedback.

The Stereo Splitter, Stereo Merger and 3-Channel Mixer are different: their jacks are genuinely separate circuits, not summed copies. The rule above applies to effects and modulators.

Making feedback

A cable that returns to somewhere it has already been creates a loop, and every module inside it starts evolving (see *Feedback*). Four ways to build one, from most musical to most extreme:

Through several modules. Echoforge Out to Overmind In 2, Overmind Out to Echoforge In 2. The delay around the loop is the modules' own processing, so what recirculates is the effects' character. This is the one to reach for first.

Back down an existing chain. Take a later module's output to an earlier module's In 2. Aim at In 2, not In 1 — In 1 would delete the cable feeding that module and break the chain. This is what the dice do.

Through the splitter or merger with Gain past centre. This is the only real throttle. A loop made only of dry/wet crossfades can never build, because a crossfade cannot exceed unity; the utility gains are what let a loop bloom instead of decaying.

A module into itself. Out 1 to In 2 on the same module, then Out 2 onward to the next effect. This works, but a module's output holds the previous batch, so a self-loop is delayed by about 1.3 ms, a resonator at roughly 750 Hz and its multiples: a metallic ring rather than an echo. Excellent for drones and screaming resonance, and exactly what the Feedback Tamer's Focus knob is there to tame.

Jack shapes

- **Green hexagons** — audio
- **Yellow circles** — CV in
- **Darker amber circles with a thicker ring** — CV out
- **Red hexagon** — To Host

Cables are tinted by which From Host input they descend from, so you can see at a glance which of the three routes a cable belongs to.

Solo a module's cables



Every effect and modulator has a small square button beside its input jacks. Tap it to show only the cables touching that module, the fastest way to read a single thread out of a dense patch. Tap it again, or tap another module's button, to see everything again.

Feedback

Any cable path that returns to where it started is a feedback loop: a module's output reaching its own input again, directly or through others. CV loops count too.

When a module is inside a loop, a hidden loop age starts climbing, reaching full over about twenty seconds and falling back about four times faster when you break the loop. Every module's feedback behaviour scales with it, so a patch left running evolves:

Module	What happens in a loop
Echoforge	repeats shorten into a shimmer
Tape Phantom	saturation builds each pass
Chrono Shredder	more grains play backwards
Prism Engine	bands drift apart
Overmind	the fold curve mutates
Static Bloom	the bloom thickens
Dust Engine	bit depth crumbles cumulatively
Spectral Ghost	the ghost detunes further
Glitch Oracle	glitches grow more likely
Probability Gate	events fire more often

A cable that closes a loop throws sparks from both ends when you patch it. That is how you know you have made one.

Keeping it musical. Loop gain lives mainly in the splitter and merger gain knobs. Push them past centre and a loop blooms; pull them back and it decays. The Feedback Tamer is the safety net: it watches for energy climbing steadily over seconds and eases the gain back, turning a runaway into a controlled howl rather than a wall of noise.

The back panel

[Screenshot placeholder — back panel overview]

The front panel's cables are entirely internal. They only route signal between Patch Arcade's own modules and never leave the device. The back panel is how Patch Arcade talks to the rest of Reason.

Audio. Three stereo host inputs and one stereo host output feed the front panel's From Host and To Host jacks. Beyond those, every audio module also has its own stereo in and out, so you can route a Reason signal directly into a single module and take it straight back out — using Echoforge on its own as an insert, for instance, without touching the internal patchbay. Back-panel audio sums with whatever is patched internally, so you can blend both. A cable in only the Left or only the Right socket of any input plays from both channels, matching standard Reason convention for mono sources.

From Host 2 and 3 are not fed by anything until you patch them. Once you do, a second or third instrument runs through its own route while sharing the same Feedback Tamer, CV pool and global controls as route 1 — useful for processing more than one track through the same rack rather than running separate instances.

CV. Almost every front-panel knob has a matching CV input on the back, named for what it does: *Prism: Detune CV In*, *Tape: Wow/Flutter Out*. Back-panel CV is additive with front-panel CV and with the knob itself, and it moves the front-panel LED ring, so you can see rack modulation arriving. Every front-panel CV output has a back-panel twin, letting Patch Arcade modulate the rest of your rack: clock external drums from Glitch Oracle's Euclidean gate, or drive a filter from Subverter's stereo-width analyser.

In short: front cables build the instrument, back cables connect it.

Tips and tricks

Start with a die. Rolling is the fastest way to find a starting point. Re-roll until something catches your ear, then edit by hand; your hand-patched cables survive further rolls.

Feedback needs gain. A chain of dry/wet crossfades can never build, because a crossfade cannot exceed unity. If a loop sounds polite, route it through the splitter or merger and push that circuit's Gain past centre. That is the throttle.

Long chains: go fully wet, blend once. Each module that mixes dry back in adds another copy of the source, and four modules at half-wet means sixteen copies interfering, which is what "turns to mud" actually sounds like. Set Mix to 100 on everything in a series chain and do your blending once, at the mixer or with the global wet/dry knob. Save the per-module Mix for parallel paths through the splitter, where blending is exactly the right control.

Let it run. The feedback behaviours take about twenty seconds to arrive. Build a loop, leave it, and listen to it change. If you break the loop it recovers in about five seconds, so you can dip in and out.

Use the Tamer inside the loop, not just at the end. Patched into the loop itself, Focus carves out the one frequency that is screaming while the rest of the music passes. On the master bus it can only duck everything.

Modulate selectors for free rhythm. Stepped controls — Probability Gate's Mode and Pattern, Glitch Oracle's Duration, Echoforge's Rate — jump between discrete values under CV, which produces rhythmic change rather than smooth sweeps. Patch Drift Field with Sync on into one.

Reactor FM's second input. It is easy to miss: patch any audio into IN 2 and it replaces the internal oscillator as the modulator. Cross-modulating two effects makes sounds neither can produce alone.

Chrono Shredder is a sequencer. Its Spray CV output is a clock-synced sample & hold. Patch it to Prism Engine's Bands and the filter walks a new melody at your grain rate.

Sub-mix with the crossfaders. The mixer's crossfades are equal-power, so automating one is a clean transition between two entire chains: a live-set style switch between processing worlds.

Recover before you rebuild. When Spectral Ghost collapses into an unrecoverable wash, one tap on Recover clears the buffer and the shimmer tank so it starts clean without losing your patch.

Meters read true dBFS. They are not fader-position indicators. Green below -25, amber to -10, red above; trust them for gain staging into the Tamer.