# ONE8

## Filter Technology & Section Guide

A plain-language guide to filters, EQ, motion, modulation, and how each ONE8 section earns its place in a patch.


Main interface

### What this guide does

Explains the technology, the musical reasons to use each section, and when a simpler static filter or EQ may be the better choice.

GUIDE MAP

# What this document covers

**01 Filter fundamentals**

What filters do, common shapes, resonance, slope, and movement.

**02 Z Mode and motion**

Real-world filtering, Z-plane ideas, morph engines, and moving filter design.

**03 Modulation reference**

LFOs, envelopes, scenes, sidechain follower, triggers, processors, buses, MIDI, and macros.

**04 Stereo and ducking**

Stereo image tools, analyser views, sidechain setup, and multiband ducking choices.

**05 ONE8 sections**

Filter / Morph, Modulators, Matrix, Macros, Sonic Control, Gain Stage, and Settings.

**06 Decision pages**

EQ vs filters, static vs animated, use cases, when to avoid complexity, and reliable workflows.

## Reading approach

Start with the concept pages if filters are new. Jump to the section pages when deciding which part of ONE8 should solve a specific musical job. The final pages are quick decision references.

FUNDAMENTALS

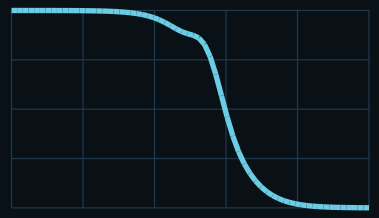
# What a filter is

A filter changes the balance of frequencies in a sound. It can remove, reduce, emphasize, or reshape parts of the spectrum. In music production, filtering is both practical and expressive: it can clean a mix, make space for another instrument, create a sweep, exaggerate attack, or turn a static tone into movement.

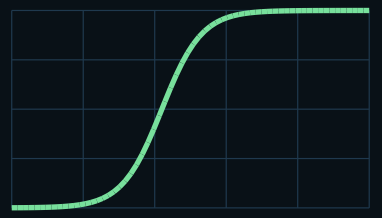
## Three important ideas

Cutoff is the main frequency boundary. Slope is how quickly the filter falls away. Resonance boosts energy around the cutoff and makes movement more vocal, sharp, or synth-like.

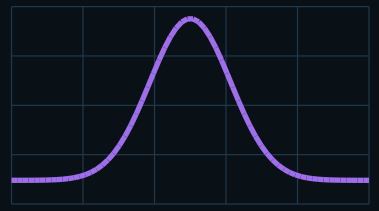
Low-pass



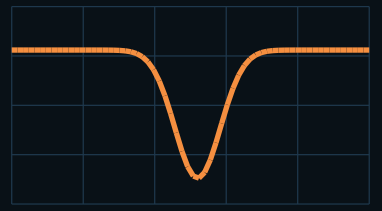
High-pass



Band-pass



Notch / reject



## Why filters feel musical

Filtering follows how ears recognize tone color. Moving a cutoff changes brightness over time; adding resonance makes that movement easier to hear as a gesture.

BACKGROUND

# A short history of filter technology

### Acoustic roots

Instruments, rooms, resonant bodies, and the human voice all filter sound naturally before any electronics are involved.

### Radio and telephony

Electrical filter networks were developed to pass wanted bands and reject unwanted ones in communication systems.

### Studio equalization

Recording and broadcast tools brought controlled boosts, cuts, shelves, and presence shaping into everyday audio work.

### Subtractive synthesis

Synthesizers made voltage-controlled filters famous: bright oscillators became basses, leads, sweeps, and resonant gestures.

### Digital signal processing

Digital filters moved the idea into coefficients, sample-rate behavior, modulation, automation, oversampling, and recall.

### Modern motion

Current tools can combine models, stereo processing, sidechain detection, performance macros, and modulation matrices.

### Why this history matters in ONE8

ONE8 treats filters as tone circuits, movement targets, and performance states. It is not only a curve on a graph; it is a playable system for changing spectral character over time.

LISTENING

# Filtering in real life

Filtering is not only a studio technique. It is part of everyday listening. A sound changes whenever air, distance, walls, bodies, doors, corners, glass, fabric, speakers, headphones, or movement change what reaches the ear.


Walking down a road past a speaker is a natural morph. As you approach, high detail becomes clearer. As you turn a corner, reflections change. A wall may reduce high frequencies while leaving low energy behind. If traffic passes between you and the source, the tone can narrow, soften, or move sideways. Nothing has changed inside the speaker; the path between source and listener has become the filter.

### Distance

High frequencies often fade faster than lows. This feels like a moving low-pass.

### Obstruction

Doors, walls, cars, and bodies remove or redirect parts of the spectrum.

### Reflection

Streets and rooms create peaks, notches, combs, and changing stereo cues.

### Position

Turning your head changes balance and stereo image before the source itself changes.

### Motion

Continuous movement rarely jumps between two tones; it travels through intermediate states.

### ONE8 link

Morphing and modulation recreate that sense of tone changing as a situation changes.

FILTER LANGUAGE

# Common filter shapes and why they matter

### Low-pass

Lets lows through and reduces highs. Use for darkening, synth sweeps, bass focus, or making a part sit behind another.

### High-pass

Lets highs through and reduces lows. Use for rumble control, lighter layers, vocal cleanup, or rhythmic thin-out effects.

### Band-pass

Keeps a focused frequency zone. Use for telephone tones, vocal-like sweeps, movement accents, and narrow sound-design lanes.

### Notch

Cuts a narrow region. Use for removing a whistle, hollowing a sound, or creating phaser-style movement when swept.

### Resonant peak

Boosts around the cutoff. Use for acid, wah, vowel motion, or making a sweep speak clearly.

### Custom response

A designed curve rather than a single classic shape. Use for signature tone, unusual motion, and designed filter banks.

### The practical takeaway

A filter shape is a decision about what the listener notices. A static shape sets tone. A moving shape creates gesture. ONE8 is built around both.

COMPARISON

# Filters and EQ: related, not identical

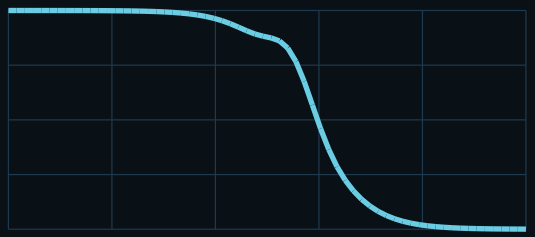
Technically, many EQ bands are filters. In practice, producers often use the words differently. EQ usually means controlled correction or tonal balancing. Filter usually suggests stronger selection, slope, resonance, character, and movement.

| Question | Typical EQ mindset | Typical filter mindset |
| --- | --- | --- |
| What is the goal? | Balance, repair, enhance, or match tone in a mix. | Select, sweep, remove, exaggerate, or animate a frequency region. |
| How precise? | Often uses several narrow or broad bands with gain values. | Often uses a strong type: low-pass, high-pass, band-pass, notch, resonance, or model. |
| How does it move? | Often static or gently automated. | Often played, modulated, triggered, morphed, or linked to sidechain and MIDI sources. |
| When is EQ better? | Surgical cleanup, mastering balance, room correction, and small tonal decisions. | A filter is usually better when the listener should hear a motion, character, or transform. |
| Where does ONE8 sit? | It can do static tonal shaping, but it is not trying to replace every surgical EQ task. | It specializes in modeled filter character, morphing, modulation, sidechain motion, and performance control. |

WORKFLOW

# Static filters vs ONE8 movement

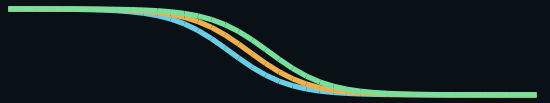
Static filter



## Static filtering

One shape stays in place unless you automate it. This is excellent for cleanup, simple tone decisions, or stable mix roles.

ONE8 MOVEMENT



Multiple shapes or states can move together through morph space, scenes, matrix routes, and macros.

## Use static filtering when

- The sound only needs one tonal position.
- The mix role should stay predictable.
- You are solving a small cleanup problem.

## Use ONE8 movement when

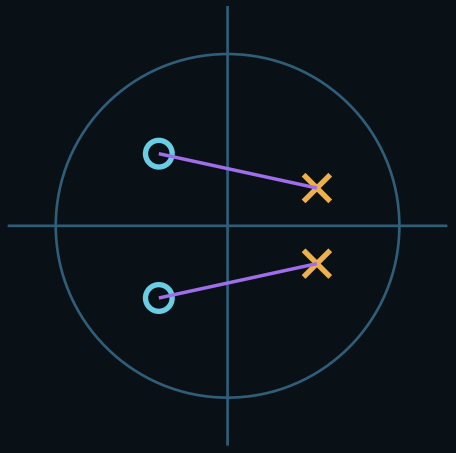
- The tone should perform over time.
- The filter should react to notes, MIDI, or sidechain.
- Several parameters should change together.

## Avoid movement when

- The part loses focus in the mix.
- Resonance creates harsh jumps.
- A simpler EQ cut would do the job faster.

# How Z Mode works

**Structure moves between filter states**



Circles and crosses represent simplified pole/zero positions.

## Plain-language version

Legacy morphing blends finished filter outputs. Z Mode moves the filter structure itself between two compatible states. That can make resonance and tone travel more continuously instead of feeling like one finished sound fading into another.

## What is a z-plane?

In digital filtering, poles and zeros describe the internal shape of a filter. Moving them changes the filter behavior.

## ONE8 Z Mode

Designed for two-filter morphing. It interpolates compatible low-pass, high-pass, band-pass, notch, and peak style models.

## Not Morph Z

Morph Z is the third axis in an eight-filter cube. Z Mode is a separate two-filter morph engine.

## Why use it?

Use it for smooth A/B movement, cleaner resonance travel, and fewer obvious blend artifacts.

## When not to use it?

Use Legacy when you want output blending, incompatible models, four-filter XY, or eight-filter XYZ motion.

## Status matters

If the selected model pair or filter count is not compatible, the status will explain why Z Mode is not active.

DESIGN APPROACHES

# Different ways products make filters move

Filter movement can be built in several ways. Different instruments and processors emphasize different approaches depending on whether they prioritize analog feel, precision, performance, CPU cost, or extreme sound design.

| | | |
|---|---|---|
| **Output blending** | Runs two or more filters and crossfades their outputs. | Simple and flexible, but resonance and phase may feel like layers fading rather than one shape transforming. |
| **Parameter interpolation** | Moves cutoff, resonance, slope, mix, or model controls over time. | Clear and efficient; best when the same filter structure is moving. |
| **Coefficient interpolation** | Interpolates filter coefficients directly. | Can be smooth, but needs care to avoid unstable or unnatural intermediate states. |
| **Pole/zero interpolation** | Moves the internal poles and zeros that define a digital filter. | Structure-aware motion; useful for smoother pairwise morphs such as ONE8 Z Mode. |
| **Filter-bank scanning** | Moves through stored shapes, models, or slots. | Great for complex timbre maps, especially with 4-filter XY or 8-filter XYZ style spaces. |
| **Reactive/dynamic filtering** | Audio, MIDI, triggers, or sidechain signals move filter behavior. | Turns filtering into a response to the performance, groove, or stereo field. |

# The sections at a glance

| | | |
|---|---|---|
| **Filter / Morph** | Model selection, morph count, routing, cutoff, resonance, drive, mix, morph axes. | Build the core tone and decide whether it stays static or moves. |
| **Modulators** | LFOs, envelopes, sidechain follower, scenes, buses, processors, triggers, step sequencer, automation. | Create motion sources before routing them. |
| **Matrix** | Source, optional VIA, curve, polarity/mode, amount, range, slew, destination. | Connect movement to sound and control the depth of routes. |
| **Macros** | Four playable controls with ranges, MIDI Learn, and multiple target assignments. | Make complex patches performable. |
| **Sonic Control** | Overdrive, sidechain pump, target ducking, stereo tools, low-end and width shaping. | Add tone weight, groove interaction, and stereo behavior. |
| **Gain Stage & Output** | Input/output trim, pan, mono, SAFE limiter, loudness match, monitor and scope. | Keep the patch levelled, protected, and readable. |
| **Settings** | Visuals, tooltips, oversampling, ultra-low latency, updates, license, signal-flow view. | Set behavior, quality, performance, and product status. |

# How the main surface is organized


Main interface

## Top navigation

The main tabs open the major working areas: Filter / Morph, Modulators, Matrix, Macros, Sonic Control, Gain Stage, and Settings.

## Global strip

A/B, Recall/Undo, SAFE, output clip, bypass, and loudness match keep comparison and safety near the top.

## Bottom performance row

Morph, macro, cutoff, resonance, drive, mix, and output controls remain close for fast performance decisions.

## Right inspector

The inspector explains the selected source, destination, route, or parameter and helps diagnose matrix behavior.

## Use or avoid

Use the main surface for building and performing. Avoid treating every visible control as mandatory: start with a stable tone, then add motion only where it improves the musical role.

SECTION

# Filter / Morph


Filter / Morph

## What it is

The tone engine. It holds the active filter models, the morph count, routing mode, morph axes, cutoff, resonance, drive, mix, character, and output trim.

## Use it when

- Build the main color of a sound.
- Move between 2, 4, or 8 filter states.
- Create sweeps, vowel motion, contrast, and expressive transitions.

## Use less when

- A simple EQ cut is enough.
- The part must stay perfectly stable.
- Moving resonance distracts from the groove or vocal.

## Core controls and options

Options include Filter Mode or Morph Mode, Morph Count 2 / 4 / 8, Routing Mode Parallel / Serial / Split / Mid/Side, Morph Engine Legacy or Z Mode, Morph Curve Linear / EqualPower / SCurve, and oversampling Off / 2x / 4x. Cutoff sets tone position, Resonance emphasizes the cutoff, Drive adds saturation, Mix blends dry and wet, and Morph Time smooths movement.

SECTION DETAIL

# Filter banks, routing, and morph engines


Filter bank and morph space

## 2 filters

Fast A/B movement and the clearest way to understand a patch. Best for focused performance or compatible Z Mode movement.

## 4 filters

Adds a second axis for XY movement. Useful when the sound needs a wider path than a simple A/B sweep.

## 8 filters

Adds depth with XYZ movement. Best for evolving textures, sound design, and complex performance patches.

## Routing

Parallel blends branches, Serial cascades for stronger shaping, Split separates paths, and Mid/Side separates center from sides.

## Why use models instead of a plain curve

Model choices give each morph corner a different response character. Related models make smooth motion. Contrasting models create obvious travel. Custom curves are useful when the sound needs a specific response rather than a conventional filter family.

SECTION

# Modulators


Modulators

## What it is

The movement workshop. It creates signals that can move parameters: LFOs, envelopes, sidechain follower, scenes, buses, processors, triggers, step sequencer, and automation.

## Use it when

- You want a tone to pulse, rise, fall, react, or evolve.
- You want different motion sources before routing.
- You want note, MIDI, audio, or clock based movement.

## Use less when

- The patch should remain static.
- You cannot explain what each motion source is doing.
- The movement makes the part lose its musical role.

## Core controls and options

LFO1-3 provide cyclic movement with sync, shape, depth, delay, start phase, invert, and key tracking. ENV1-3 provide ADSR-style triggered motion. Step Sequencer gives grid values. Automation gives drawn looped curves. Triggers turn watched movement into gates, pulses, toggles, envelopes, or sample-and-hold sources. Processors combine sources with operations such as Sum, Multiply, Min, Max, Quantizer, and Lag. Buses reuse processed movement.

# Movement types: periodic, triggered, drawn, and reactive


Movement editor


Step sequencer

## LFO

A repeating shape. Use for tempo motion, wobble, tremolo, slow drift, or phase-based groove.

## Envelope

A note or event shape. Use for plucks, swells, attack push, release tails, and transient emphasis.

## Sidechain follower

Audio level becomes control voltage. Use for pumping, responsive morphing, or audio-driven macros.

## Trigger

A watched value becomes a clean event. Use to fire modulation when a threshold, range, or crossing happens.

## Processor

Two sources become one new source. Use Multiply for depth gating, Sum for layering, Min/Max for bounds, and Lag for glue.

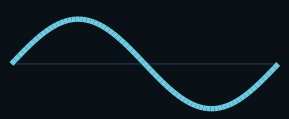
# LFOs: repeated movement


LFO module

## What an LFO is

An LFO is a repeating control signal. It does not make audio by itself; it moves a destination such as Cutoff, Morph X, Drive, Mix, route depth, or another modulator's rate/depth.

### Sine



### Triangle

### Gate/Pulse

### Rate

How fast the movement cycles. Free rate uses Hz; Sync locks it to musical divisions.

### Depth

How much of the LFO shape is present before Matrix amount and destination range.

### Shape

The curve over one cycle: smooth, stepped, random, gated, pumping, rising, falling, or custom.

### Start

Rotates the phase so the groove begins at a different point in the shape.

### Invert

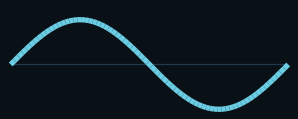
Flips the movement direction. Useful when two destinations should move opposite ways.

### Best first target

Cutoff or Morph X. They make it easy to hear whether the movement is musically useful.

# LFO shape families

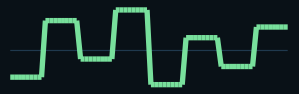
Smooth



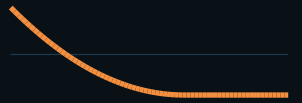
Ramp

Gate

Random/Step

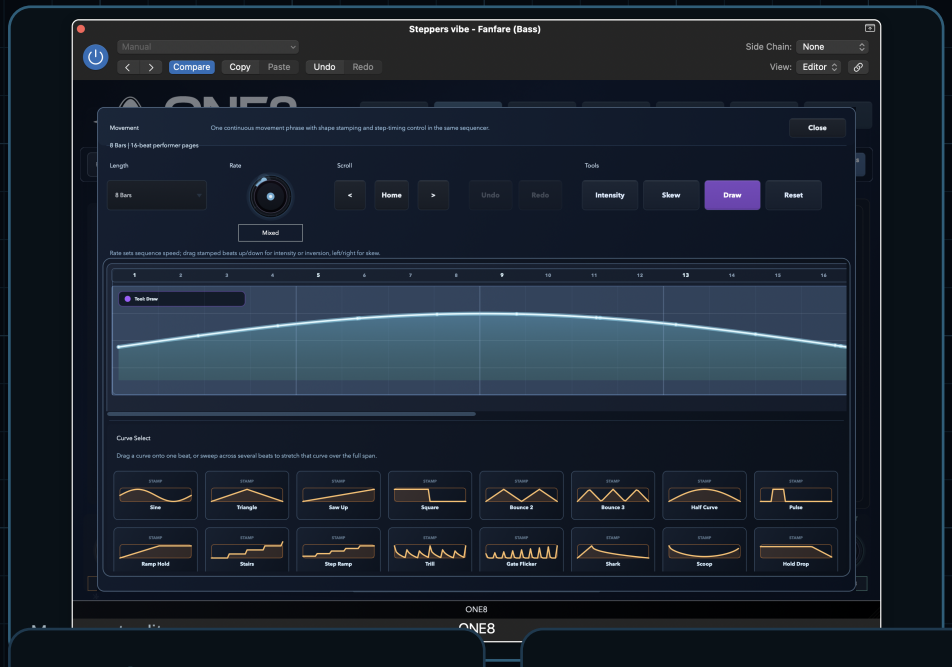


Phrase



| | | |
|---|---|---|
| **Classic waves** | Sine, Triangle, Saw Up, Saw Down, Square, Pulse 25%, Pulse 10%, Ramp. | Use for predictable cyclic motion, tremolo-style movement, and tempo-locked sweeps. |
| **Curved ramps** | Exp Up/Down, Log Up/Down, Half Sine, Rectified, Inverted Sine. | Use when the movement should spend more time near one side or feel more natural than a straight ramp. |
| **Stepped/random** | Sample Hold, Random Smooth, Step 4/8/16, Stair Up/Down, Jitter, Chaos. | Use for patterns, glitches, randomization, and controlled instability. |
| **Rhythmic gates** | Gate 8/16, Swing Step, Euclid 5/7, Downbeat Pulse, Offbeat Pulse. | Use for musical pulse patterns and groove-aware filter motion. |
| **Performance phrases** | Sidechain Pump, Pluck Decay, Reverse Pluck, Hold Drop, Riser, Fall, Heartbeat, Flutter. | Use for common movement gestures without drawing every point by hand. |
| **Custom** | Custom opens drawn movement behavior. | Use when a preset shape is close but not exact, or when the patch needs a signature contour. |

# LFO movement, delay, sync, and key tracking




## Movement editor

The movement editor is a phrase-style shape builder. Draw a curve, stamp shapes across beats, scroll through bars, and use intensity or skew tools to turn a simple LFO into a longer musical phrase.

## Length

Sets the phrase span, such as 1, 2, 4, or 8 bars.

## Rate

Sets how the phrase advances against time or tempo.

## Draw

Freehand movement for custom sweeps, rises, falls, and evolving contours.

## Shape stamps

Sine, Triangle, Saw, Square, Bounce, Pulse, Ramp Hold, Stairs, Step Ramp, Trill, Gate Flicker, and related stamps.

## LFO Delay

Fades or waits before LFO motion appears. Good for letting a note speak first, then adding motion.

## Delay Trigger

Global, Clock Sync, MIDI, Sidechain, Main, or Modulation decides what restarts or opens the delay behavior.

## Delay Clock

Bar, 1/1, 1/2, 1/4, 1/8, 1/16, 1/32, triplet, and dotted timing options.

## Key tracking

MIDI or Manual key tracking can change LFO speed from pitch, either quantized or smooth, with center key and clamp.

# ENV 1-3: note-shaped movement


Envelope dock in context


## What an envelope does

An envelope is a one-shot movement shape. It rises, decays, holds, then releases. Use it when the movement should follow notes, hits, sidechain events, clock pulses, main input, or modulation triggers.

## Attack

How long the envelope takes to rise. Short for plucks and punch; longer for swells.

## Decay

How long it takes to fall from peak to sustain. Sets snap, drop, and note-front character.

## Sustain

Held level while the trigger remains open. Higher for steady notes; lower for percussive dips.

## Release

Return time after the trigger ends. Short for tight gating; long for tails and smooth fades.

## Trigger Mode

Global, Clock Sync, MIDI, Sidechain, Main, or Modulation chooses what starts the envelope.

## Use as VIA

Scale another source in the Matrix; for example, let LFO movement appear only while ENV1 is high.

# Sidechain follower: audio becomes motion


Sidechain and target bands

## What it listens to

The follower converts main input or sidechain energy into a control signal. Attack sets how fast it reacts; Release sets how fast it recovers; HP/LP and Peak mode decide which energy matters.

## Pump the filter

Route Sidechain Follower to Mix or Cutoff so the filter moves with the groove.

## Drive on hits

Route follower to Drive for transient bite or subtract it for cleaner loud sections.

## Morph with audio

Use it as SRC or VIA so morph travel appears only when audio energy rises.

## Target-band work

Use sidechain target bands when only a frequency region should drive the reaction.

## Peak mode

Catches fast transients more strongly than a smoother average detector.

## Use less when

The input is noisy or dense enough that the follower never gets a clean recovery.

# Trigger conditions: when the event fires


Trigger editor

## How triggers work

A trigger watches one signal, checks a rule, then outputs a clean Matrix source. Stability adds hysteresis so a value near the threshold does not chatter. Hold, Attack, Release, and Invert shape the output.

### Above

Opens while the watched value is above threshold. Example: when LFO1 is above 80%, add resonance.

### Below

Opens while the value is below threshold. Example: when Morph X drops below 20%, darken the mix.

### Crosses Up

Fires as the value moves upward through threshold. Example: send a pulse to Drive at an LFO peak.

### Crosses Down

Fires as the value moves downward through threshold. Example: toggle a route depth on the fall.

### Inside Range

Opens between Start and End. Example: move Character only inside a chosen Stereo Width zone.

### Outside Range

Opens outside Start-End. Example: if stereo leaves the safe zone, reduce Drive or narrow Width.

# Trigger output types and examples

| | | |
|---|---|---|
| **Gate** | Stays high while the trigger rule is true. | Use for sustained behavior: open Mix while sidechain energy remains above threshold. |
| **Pulse** | Short event with a hold time. | Use for one-hit actions: add a quick Drive bump each time LFO1 crosses upward. |
| **Envelope** | Triggered envelope with Attack and Release. | Use for shaped events: fade resonance in after a stereo-width outside-range event, then release smoothly. |
| **Toggle** | Alternates state each time the trigger fires. | Use for flip behavior: every fourth LFO peak alternates between two morph routes. |
| **Sample & Hold** | Captures and holds a value at trigger time. | Use for stepped motion: sample a macro or random source whenever Sidechain Trigger fires. |

## Patch example

Set Trigger 1 to watch LFO1, condition Crosses Up, threshold 90%, output Pulse, hold 80 ms. In Matrix, route Trigger 1 to Drive with a small positive amount. The drive now accents only the LFO peak instead of rising for the entire cycle.

# Useful things a trigger can watch

### LFO peak

Watch LFO1, Crosses Up at 90%, Pulse output. Route Trigger 1 to Drive, Resonance, or Route Depth.

### Envelope end

Watch ENV1, Crosses Down at 15%, Pulse output. Use it to start a delayed filter release move.

### Sidechain hit

Watch Sidechain Trigger or Sidechain Follower, Above threshold. Use Gate or Envelope to duck Mix or push Cutoff.

### Stereo zone

Watch Stereo Width, Outside Range. Route the trigger to reduce Drive, narrow width, or lower side energy.

### MIDI performance

Watch MIDI Velocity, Above threshold. Use Envelope output to add Character or Resonance only on harder notes.

### Macro region

Watch Macro 4, Inside Range. Use it as a performance safety zone that activates a special route only near the middle of a macro sweep.

### Input level

Watch Input Level, Below threshold. Toggle a cleaner state when the source gets quiet.

### Morph position

Watch Morph X/Y/Z, Crosses Up or Down. Trigger extra movement only when the sound reaches a specific morph corner.

### Important

A trigger does not have to move the same thing it watches. It can watch Stereo Width and move Drive, watch LFO1 and move Cutoff, or watch Sidechain energy and move a route depth.

# Processors and buses

| | | |
|---|---|---|
| **BUS 1-4** | Reusable modulation lanes with lag. | Send one source to a bus, smooth it once, then route that bus to several destinations. |
| **Switch** | Chooses between Input A and B. | Use for scene-like modulation changes. |
| **Sum** | Adds A and B together. | Layer an LFO with an envelope for movement plus transient emphasis. |
| **Multiply** | Scales A by B. | Make LFO movement appear only during ENV attack or sidechain hits. |
| **Min / Max** | Outputs the lower or higher of A and B. | Clamp motion or guarantee a minimum movement floor. |
| **Abs / Diode** | Turns bipolar movement into one-direction magnitude or half-rectified motion. | Use when only positive swells should survive. |
| **FlipFlop** | Alternates state over time or trigger events. | Use for rhythmic left/right or bright/dark alternation. |
| **Gain / Quantizer / Lag** | Trim, step, or smooth the processor output. | Make movement safer, more rhythmic, or less abrupt. |

# Step Sequencer and Automation


Step Sequencer


Automation-style movement

## Step Sequencer

Sixteen step values over 1, 2, 4, or 8 bars. Smoothing softens edges between steps.

## Use cases

Classic gated cutoff, stepped morph travel, repeating drive accents, route depth patterns.

## Automation

Drawn point curve over 1, 2, 4, or 8 bars, with snap and smoothing.

## Use cases

Long rises, phrase-length filter opens, custom pumps, evolving macro-style gestures.

## Difference

Step Sequencer is per-step and grid-like. Automation is a drawn curve for longer continuous gestures.

## Matrix role

Both appear as sources. Route them directly, or use them as VIA signals to control other motion.

# Scenes and scene locks


Scene controls

## What scenes do

Scene A, B, and C store target positions for morph axes, Cutoff, Resonance, Drive, Mix, Track, Transform, and Character. Scene Morph blends between A, B, and C.

### Enable

Turns scene morphing on.

### Scene Morph

0% is A, 50% is B, 100% is C.

### Smoothing

Prevents hard jumps between scene targets.

### Curve

Linear, EqualPower, or S-Curve travel between scenes.

### Scene Locks

Exclude individual fields from Scene Morph override.

### Best use

Build verse, lift, and drop states, then control Scene Morph from a macro, wheel, or automation.

# MIDI and parameter-tap sources

| | | |
|---|---|---|
| **MIDI Gate** | On/off state from incoming notes. | Open a filter route only while notes are held. |
| **MIDI Velocity** | Hit strength. | Add resonance, drive, or character to harder notes. |
| **MIDI Key** | Note number. | Make cutoff or morph position follow pitch range. |
| **MIDI Pitch Bend** | Wheel-style bend data. | Make performance bends also move tone or morph axes. |
| **MIDI Mod Wheel / Aftertouch / Sustain** | Continuous or switch-like performance controls. | Use as expressive matrix sources without needing extra automation lanes. |
| **Cutoff/Resonance Pre and Post** | Parameter taps before or after modulation. | Use a current parameter value as a VIA signal, trigger watch source, or processor input. |

SECTION

# Matrix


Matrix

## What it is

The routing system. It connects a source to a destination, optionally conditions that source through another source, shapes it with curve/range/slew, and decides how it adds to the target.

## Use it when

- You need one modulator to move a parameter.
- You want macro-scaled or envelope-gated motion.
- You need route depth modulation or complex patch behavior.

## Use less when

- A direct knob turn solves the problem.
- Several routes fight each other.
- You have not named the musical purpose of a route.

## Core controls and options

A route is Source -> optional VIA -> Curve -> Mode -> Amount -> Range -> Slew -> Destination. Sources include LFOs, envelopes, sidechain follower, macros, buses, processors, MIDI sources, triggers, step sequencer, and automation. Destinations include Morph X/Y/Z, Cutoff, Resonance, Drive, Mix, Track, Transform, route depths, macros, LFO rates/depths/starts/delays, envelope stages, sonic controls, stereo controls, sidechain controls, Character, Output Trim, Morph Intensity, and Morph Time.

SECTION DETAIL

# Blueprint view: reading a route as a signal path


Blueprint view

### Source

The control signal: LFO, ENV, Macro, BUS, Processor, Trigger, MIDI, Sidechain Follower, Step Sequencer, or Automation.

### VIA

Optional conditioner. It lets one source scale, gate, or shape another source before it reaches the destination.

### Curve and Mode

Curve changes the movement law. Mode decides whether motion adds, subtracts, or moves bipolar around a center.

### Amount and Range

Amount sets strength. Min/Max keep the result inside a musical range.

### Slew

Smooths sudden changes so modulation glides instead of jumping.

### Destination

The parameter or route depth that will be moved.

### Why use Blueprint

Use it when the Matrix table feels abstract. It turns a row into a left-to-right story, which makes complex modulation easier to debug and explain.

SECTION

# Macros


Macros

## What it is

The performance layer. Four macros can each control multiple targets with defined ranges, amounts, modes, and slews.

## Use it when

- You want a playable patch rather than many small knobs.
- You need one control to brighten, widen, drive, and morph together.
- You want MIDI Learn to bind performance controls to hardware.

## Use less when

- You are still designing the raw tone.
- One destination needs precise editing.
- The macro range is not limited enough for safe performance.

## Core controls and options

Macro 1-4 can act as Matrix sources and destinations. Use Min/Max ranges to keep motion musical. Use slew to smooth performance gestures. MIDI Learn maps hardware CCs to macros so a controller can drive several deep parameters through one reliable knob.

SECTION

# Sonic Control

Overdrive

Stereo

Sidechain duck

## Overdrive

Saturation type plus low and mid/high emphasis. Use for weight, edge, harmonic density, and bass enhancement.

## Side Chain

Detector and target-band tools. Use when another signal or frequency range should cause pumping or clearing.

## Stereo

Width, rotation, asymmetry, split-band width, auto-narrow, vector and correlation checks.

## Use less when

The source needs clean corrective EQ, the stereo field is already fragile, or sidechain motion is distracting.

# Stereo image controls


Stereo image

## What stereo processing is for

Stereo controls change the apparent width, balance, and shape of the sound field. Use them after the filter tone is working, then check the analyser so width does not turn into phase trouble.

## Width

Expands or narrows the stereo image. Keep low frequencies controlled when widening.

## Rotation

Turns the field left or right without simply panning the whole output.

## Asymmetry

Makes one side respond differently from the other for movement and texture.

## Band Split

Separates low and high width behavior so the low end can stay focused while the top opens.

## Low / High Width

Sets width below and above the split frequency.

## Auto limit

Keeps width inside a maximum range when the image starts to become risky.

## A reliable starting point

Leave the bottom centered, widen the upper band gently, then compare Input Field and Output Field in the analyser.

# Using the stereo analyser


Monitor and scope

## Scope source

Input Field shows what arrives at ONE8. Output Field shows the processed result. Delta Field shows the change created by the plug-in, which is useful when checking width, drive, ducking, or filtering decisions.

## Vector

A field display for spread and balance. Use it to see whether the sound is centered, wide, leaning, or collapsing.

## Lissajous

A phase relationship display. Compact diagonal shapes are usually mono-friendly; horizontal shapes can warn of phase risk.

## Bars

Meter-style width and correlation readout for quick checks while changing width, rotation, asymmetry, or Mid/Side routing.

## Correlation

A positive value is generally safer for mono playback. If it drops too far, reduce width or narrow the lows.

## Width reading

Shows how broad the field is. Compare before and after widening so the change is intentional.

## Best workflow

Check tone first, then stereo, then level. Loudness match keeps width decisions honest.

# Sidechain: why and how to use it


Sidechain ducking

## Why use sidechain

Sidechain processing lets one signal make space in another. Instead of cutting a track constantly, the reduction happens only when the detector hears the chosen source or frequency range.

## Input choice

Use Main when the sound should react to itself. Use Sidechain when another track should control the reaction.

## Listen

Audition the detector so the right part of the signal is causing the movement.

## Detector range

Choose the frequency area that should trigger ducking; narrow it when full-range detection feels messy.

## Threshold / Ratio

Threshold decides when ducking starts. Ratio decides how strongly it reacts after that point.

## Attack / Release

Attack sets how quickly space opens. Release sets how quickly the sound returns.

## Knee / Range / Mix

Knee softens onset, Range limits maximum reduction, and Mix blends processed with unprocessed sound.

# Multiband ducking


Target bands

ONE8

## Why multiband ducking exists

Full-band ducking moves the whole signal. Multiband ducking reduces only the frequency area that conflicts, so the track can make room without losing its entire body, brightness, or stereo life.

### Full

One detector and one broad reduction path. Use when obvious pumping is part of the sound.

### Split

Low and high areas can react differently around a crossover. Useful when bass needs tighter control.

### Target Bands 1-3

Independent windows with Low, High, Location, and Depth. Use when only one pocket needs clearing.

### Auto Duck

Sensitivity, Max Peaks, Depth, Q, and Hold locate peaks automatically when the conflict moves.

### Slope / Overlap

Crossover shape and overlap decide how bands meet. Steeper separates; overlap smooths.

### Follower vs Ducking

Follower becomes a Matrix source. Ducking applies reduction inside Sonic Control.

# Sidechain and multiband use cases

### Kick clearing bass

Set Sidechain input to the kick. Use a low detector range and a target band around the bass fundamentals. Fast attack opens space; medium release restores weight between hits.

### Vocal clearing pads

Use the vocal as the sidechain. Target the presence area rather than the full pad. Smooth response and moderate range keep the pad present without masking words.

### Snare opening texture

Detect the snare transient and route the follower to Cutoff or Mix, or use a mid target band to dip a dense texture only on the hit.

### Stereo protection

Watch stereo width or side energy with a trigger. When the image leaves the chosen zone, reduce Drive, narrow Width, or lower side-focused route depth.

### Groove pump without level drop

Use Sidechain Follower as a Matrix source to move Morph X, Character, or Mix instead of reducing output gain.

### When not to use it

If the part already has its own space, sidechain movement can make the mix feel nervous. Reduce depth or use a static filter/EQ decision instead.

### Practical listening check

Bypass the sidechain section, then re-enable it at matched loudness. The mix should feel clearer, not simply smaller.

# Drive types


Overdrive

## Soft Clip

Smooth warmth and gentle peak rounding. Good for subtle thickening and glue.

## Tanh

Smooth but denser saturation with progressive compression.

## Hard Clip

Abrupt peak limiting and bright high-order edge. Use carefully for aggressive texture.

## Tube

Warm, asymmetric harmonic body with rounded compression.

## Console

Punchier mid-forward drive with tighter transient edge.

## Hybrid

Combines smooth body with firmer modern contour.

## Tape

Rounded compression and forgiving top-end feel.

## Diode

Asymmetric clipping with a sharper positive knee and dirtier bite.

## Transformer

Thick low-mid weight and rounded core saturation.

## Choosing drive

Set filter tone first, then drive. Use smoother modes for weight and glue; sharper modes for attitude and audible edge. Keep SAFE on while exploring high resonance plus drive.

SECTION

# Gain Stage & Output


Input / Output


Protection

## Input control

Input trim, pan, and mono happen before processing, so they change what the filter, drive, and detectors receive.

## Output control

Output trim, pan, and mono happen after processing, so they fix level or placement without changing the filter reaction.

## Protection

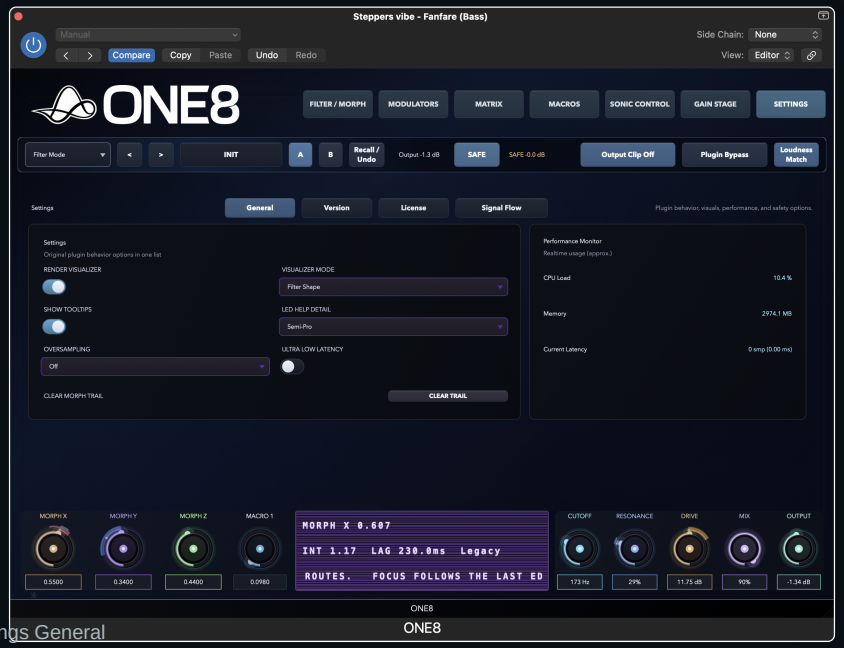
SAFE limiter, threshold, ceiling, release, ARC, clip state, and loudness match keep experiments controlled.

## Monitoring

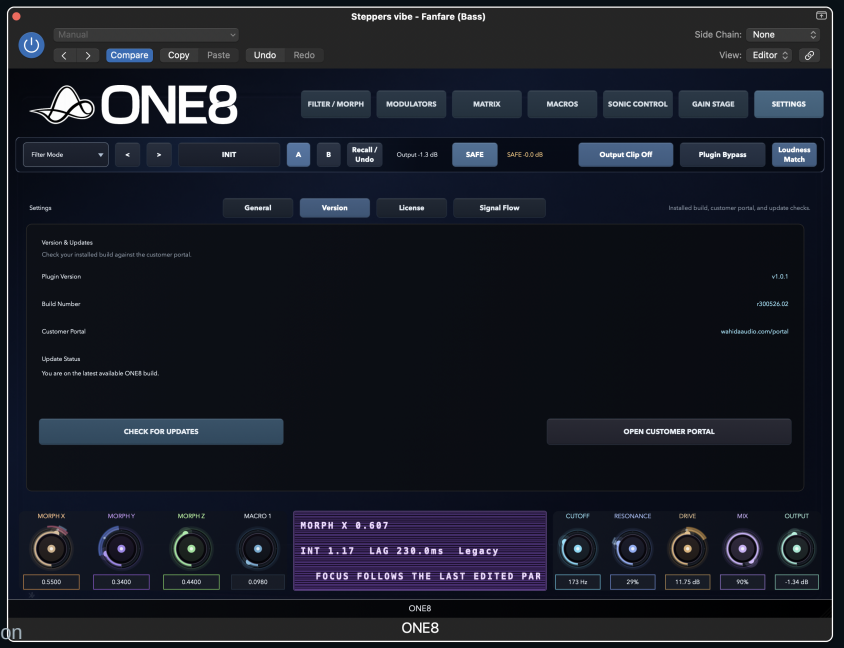
Meters, vectorscope, stereo meter, width, and correlation views help catch level, mono, and image problems.

SECTION

# Settings




Settings General




Version

## General

Render Visualizer, Show Tooltips, Oversampling, Visualizer Mode, LED Help Detail, Ultra Low Latency, and Clear Trail.

## Version

Installed plugin version, build number, customer portal link, update status, and update check.

## License

Serial activation, machine status, offline token status, activation, clear, and portal actions.

## Signal Flow

A readable overview of processing order and module flow.

DECISIONS

# Which section solves which musical job

| | | |
|---|---|---|
| **Make a sound darker or brighter** | Filter / Morph | Use Cutoff first. Add Resonance only if the movement should speak. |
| **Create repeated rhythmic movement** | Modulators -> Matrix | Use LFO, Step Sequencer, or Automation as the source. |
| **Make motion respond to a kick or vocal** | Sidechain Follower or Sonic Control | Use follower routes for modulation, or Sonic Control for targeted ducking. |
| **Control a complex patch live** | Macros | Map several destinations, constrain ranges, and smooth with slew. |
| **Add weight, grit, or presence** | Sonic Control / Drive | Choose a drive type, then use low or mid/high emphasis carefully. |
| **Keep output safe** | Gain Stage & Output | Use SAFE, loudness match, output trim, and monitoring. |
| **Reduce CPU or latency** | Settings | Use Ultra Low Latency, lower oversampling, and reduce visuals if needed. |

REFERENCE

# Why use it or not use it

| | | |
|---|---|---|
| **Filter / Morph** | Use for modelled color, morph travel, cutoff/resonance performance, and sound-design transitions. | Skip when a small static EQ decision is enough. |
| **Modulators** | Use for motion sources: LFOs, envelopes, step patterns, automation, triggers, processors, buses. | Skip when movement has no musical purpose. |
| **Matrix** | Use to connect motion to parameters and to control route depth, range, curve, and slew. | Skip when direct controls are clearer. |
| **Macros** | Use to make the patch playable and safe under one knob or MIDI control. | Skip until the destination ranges are known. |
| **Sonic Control** | Use for overdrive, sidechain interaction, width, ducking, and bass/stereo management. | Skip for transparent surgical correction. |
| **Gain Stage** | Use for headroom, metering, protection, A/B fairness, and final trim. | Do not use it as a substitute for tone decisions. |
| **Settings** | Use for quality, visuals, latency, updates, license, and signal-flow status. | Do not change quality modes mid-critical bounce without checking level and latency. |

WORKFLOW

# From static tone to complex motion

### 1 Start static

Pick Filter Mode or Morph Mode, choose models, set cutoff, resonance, drive, mix, and output.

### 2 Choose the reason for motion

Decide if the sound needs rhythm, note response, sidechain reaction, a transition, or performance control.

### 3 Add one source

Use one LFO, envelope, step pattern, automation curve, or macro before layering more.

### 4 Route with limits

In the Matrix, set Amount, Min/Max, Curve, and Slew so the destination stays musical.

### 5 Make it playable

Map important changes to Macro 1-4 and use MIDI Learn when hardware control helps.

### 6 Check output

Use loudness match, SAFE, meters, vectorscope, and output trim before saving or printing.

**The simple rule**

If a route, macro, or processor cannot be described in one sentence, simplify it until the musical job is obvious again.

CLOSING REFERENCE

# A practical mental model

## Filters

Shape frequency balance and character. They can be precise, dramatic, resonant, clean, or saturated.

## EQ

A common filter-based toolset for correction, balancing, and enhancement. Use it when small accurate decisions matter.

## ONE8

A filter system built for static tone, morphing, modulation, performance control, sidechain interaction, and safety.

ONE8

## Most reliable patch order

Tone first. Movement second. Performance third. Gain and monitoring last. This keeps the sound musical and makes complex modulation easier to understand.