WAHIDA AUDIO

Walkthrough Guide

Patch building, preset rebuilds, complex modulation, and trigger movement.

What this guide does

Build a sound in the same order you hear it: filters first, then modulators, matrix routes, triggers, performance controls, and gain staging. The walkthroughs show exact values where a factory recipe provides them, then explain how each layer changes the patch.

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START HERE

Build Order For Complex Patches

Listening rule

After every route, move only that source and listen for one behavior. If it changes too much at once, lower Amount or narrow Min/Max before adding the next row.

1 Choose the filter frame

Pick 2, 4, or 8 filters, then set routing and the morph curve before adding movement.

2 Set the static tone

Dial Cutoff, Resonance, Track, Transform, Character, Drive, Mix, and Output Trim.

3 Create motion sources

Use LFOs for repeated movement, ENVs for note-shaped motion, and Step Sequencer or Movement for phrases.

4 Route in Matrix

Assign source, destination, amount, mode, curve, range, and slew. Add VIA only when one source should scale another.

5 Add triggers

Make motion react to audio, MIDI, sidechain, macro movement, or an LFO crossing a threshold.

6 Assign macros

Put the performance controls on the sound-shaping moves you want under your hands.

7 Check gain and safety

Use Output Clip Off, SAFE, limiter/protection, and output trim before saving.

The Route Language

Every walkthrough uses the same route format: Source, optional VIA, curve and range shaping, then the destination being moved.

SOURCE

The signal doing the moving: LFO, ENV, Trigger, Macro, MIDI, Bus, Processor, Step Sequencer, Automation, or a parameter source.

VIA

Optional control that scales the source. Example: LFO1 via Macro1 keeps the LFO quiet until the macro is raised.

SHAPE

Amount, mode, curve, Min/Max, and slew decide direction, bend, limits, and smoothing.

DEST

The parameter being moved: cutoff, resonance, morph axes, drive, buses, macro targets, gain, stereo, and more.

Matrix row view

Mode choices

\+ adds upward motion. - pulls downward. +/- moves around the current value. Use +/- for morph positions, stereo width, and expressive wobble; use + for accents and extra drive.

Curve choices

Linear is even. S-Curve eases the middle. Clamp keeps results controlled. Quantize creates stepped movement. Exp and Log reshape how quickly motion rises.

Slew

Slew smooths the route after the curve. Short slew keeps percussive edges; longer slew turns motion into glide.

INTERFACE

Where The Walkthroughs Happen

The examples move through the main tabs in a practical order.

Filter / Morph and Modulators

Filter / Morph

Choose the filter count, bank layout, routing mode, morph curve, and core filter values.

Modulators

Open ENV, LFO, Follow / Trig, Step Sequencer, Automation, Macros, Buses, Processors,

Matrix

Build and inspect up to 24 modulation routes, or open Blueprint to see a route as modules.

Sonic Control

Use Overdrive, Side Chain, and Stereo for color, pumping, duck targets, and width.

Gain Stage

Finish with input/output, limiter protection, and monitor views.

Settings

Set visualizer, oversampling, latency behavior, version checks, license, and signal flow.

PRESET REBUILD

Ultra XY Acid Transit

A 4-filter serial acid preset with high resonance, fast morph response, and controlled output trim.

4-filter XY frame

Factory rebuild values

Filters	#2 LP Tight 2P, #3 LP Tight 4P, #8 BP Wide, #11 BP Focus
Filter count	4 Filters
Morph	X 0.74, Y 0.44, Z 0.50
Morph engine	EqualPower curve, Intensity 1.30, Time 105 ms
Routing	Serial
Core tone	Cutoff 860 Hz, Resonance 0.79, Track 0.66
Color	Transform 0.64, Character 0.50
Drive and level	Tanh drive 7.8 dB, Input +1.0 dB, Output -3.2 dB

Why it works

The tight LP pair gives the acid edge, BP filters focus the vowel-like center, and serial routing lets resonance and drive compound. Output trim is part of the recipe because the patch is intentionally hot.

PRESET REBUILD

Add Trigger Movement To Acid Transit

This trigger pass makes the patch react to Macro 1, Morph X, MIDI Mod Wheel, and the input release.

Trigger detail

Trigger routes

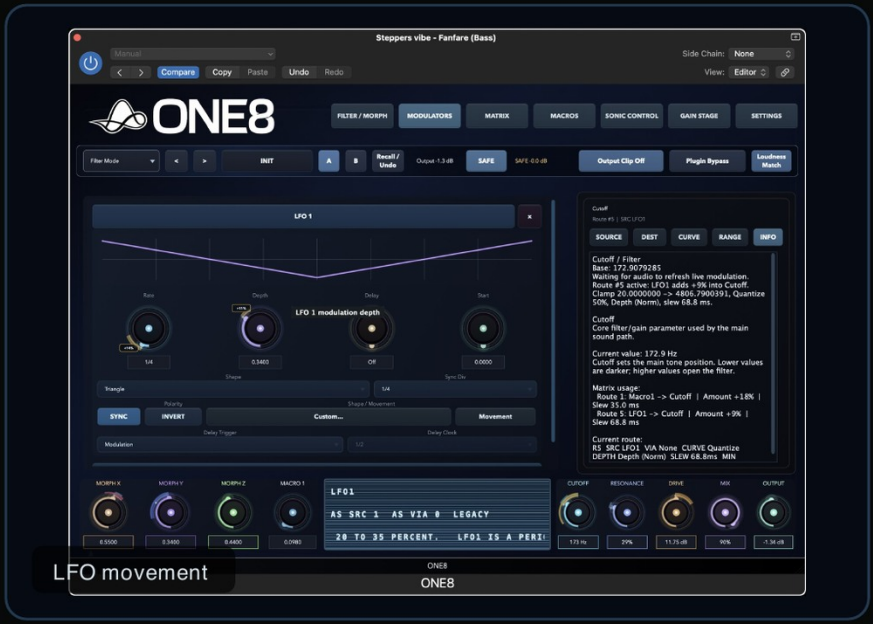
Row	Source	Destination	Amount	Mode	Curve	Slew
T1	Macro1 crosses up .50-.74	Character	+0.06	+	S-Curve	55 ms
T2	Morph X inside .28-.72	Morph X	+0.06	+/-	S-Curve	60 ms
T3	MIDI Mod Wheel crosses up .30-.70	Drive	+0.07	+	Clamp	45 ms
T4	Input Level crosses down .56-.78	Row Amount 1	+0.12	+	S-Curve	90 ms

- Trigger 1 turns Macro 1 into a small character accent when the macro passes the upper threshold.
- Trigger 2 watches the morph position and gives the XY plane a nudge only while the position sits inside the target range.
- Trigger 3 makes the mod wheel add drive for playable heat without changing the base drive setting.
- Trigger 4 fires on input release and pushes Row Amount 1, adding contrast as the signal falls away.

FACTORY RECIPE

Soft Acid Butter

A softer acid movement recipe from the Acid & Squelch family.



Rebuild values

Category	Acid & Squelch
Filters	#55 Diode Ladder, #58 MS-20 Bite
Frame	2 Filters, Serial, EqualPower morph
Morph	X 0.24, Y 0.51, Z 0.49
Tone	Cutoff 508.4 Hz, Resonance 0.40, Track 0.56
Color	Transform 0.56, Character 0.24
Drive	Tanh 3.4 dB, Mix 0.94, Output -0.8 dB
Motion	Special sync pattern, LFO1 Triangle, ENV1 short envelope

What changes the sound

ENV1 opens the cutoff quickly, then falls back for the chew. LFO1 moves Morph X for rounded wobble. Macro 4 adds a small resonance lift, clamped so the accent stays musical.

FACTORY RECIPE

Soft Acid Butter - Route Walkthrough

Build these rows after the base tone, then test each row with the route soloed by hand.

Macro and acid movement rows

Row	Source	Destination	Amount	Mode	Curve	Slew
1	Macro1	Cutoff	+/-0.68	+/-	S-Curve	0 ms
2	Macro2	Drive	+0.38	+	Linear	0 ms
3	Macro3	Transform	+/-0.52	+/-	Linear	0 ms
4	Macro4	Resonance	+/-0.42	+/-	S-Curve	0 ms
5	ENV1	Cutoff	+0.14	+	S-Curve	44 ms
6	LFO1	Morph X	+0.10	+/-	S-Curve	70 ms
7	Macro4	Resonance	+0.035	+	Clamp	85 ms

Play it

Move Macro 1 for the main sweep, Macro 2 for heat, Macro 3 for shape, and Macro 4 for controlled squelch. The envelope and LFO rows keep moving even when the macros are parked.

PRESET REBUILD

Ultra XYZ Drum Carve

An 8-filter split patch for percussive carving with stepped morph movement and trigger accents.

8-filter XYZ frame

Factory rebuild values

Filters	#0 LP Smooth 2P, #4 HP Clean 2P, #8 BP Wide, #12 Notch Wide, #16 Peak Soft, #20 Hybrid Tilt, #28 Phaser 4, #32 Formant 1
Filter count	8 Filters
Morph	X 0.29, Y 0.52, Z 0.35
Morph engine	Linear curve, Intensity 1.10, Time 145 ms
Routing	Split
Core tone	Cutoff 1020 Hz, Resonance 0.52, Track 0.58
Color	Transform 0.55, Character 0.25
Drive and level	Hard Clip 2.9 dB, Output -1.0 dB

Why it works

Split routing keeps low and high contour decisions separated. The filter set mixes LP, HP, BP, notch, comb, phaser, peak, and tilt models so drum hits can be reshaped without one filter doing all the work.

TRIGGER USE CASE

Drum Carve - Audio And Velocity Accents

Let the incoming hit and MIDI velocity create short accents without changing the steady-state tone.

Trigger graph

Trigger rows

Row	Source	Destination	Amount	Mode	Curve	Slew
T1	Input Level crosses up .34-.66	Drive	+0.09	+	Clamp	18 ms
T2	Morph X inside .28-.72	Morph X	+0.06	+/-	S-Curve	60 ms
T3	MIDI Velocity crosses up .34-.70	Resonance	+0.05	+	Clamp	45 ms
T4	Input Level crosses down .56-.78	Row Amount 1	+0.12	+	S-Curve	90 ms

- Use Trigger 1 for transient bite. It fires on the hit, adds drive, then releases quickly.
- Use Trigger 3 for played accents. Higher MIDI velocity raises resonance a little, with Clamp keeping it inside the safe range.
- Use Trigger 4 for release contrast. It reacts when the input falls, so movement appears after the transient instead of on top of it.

FACTORY RECIPE

Low Knock

A short low-end movement recipe with fast envelopes and controlled bass protection.

Protection page

Rebuild values

Category	Knock & Low End
Filters	#69 Presence Trim, #68 Punch Sweep Blend
Frame	2 Filters, Split routing
Morph	X 0.24, Y 0.51, Z 0.49
Tone	Cutoff 117.1 Hz, Resonance 0.26, Track 0.50
Drive	Soft Clip 2.6 dB, Mix 0.96, Output -0.8 dB
Low-end tools	Bass Boost 76 Hz +2.2 dB, Low End Tamer 95 Hz / 4.2 dB

What changes the sound

ENV1 is the main knock: it opens cutoff and drive for a brief hit. LFO1 lowers Mix slightly over time so the movement breathes instead of staying fully wet.

FACTORY RECIPE

Low Knock - Route Walkthrough

These rows make the patch hit, settle, and keep the sub range controlled.

Follower and trigger controls

Knock movement rows

Row	Source	Destination	Amount	Mode	Curve	Slew
1	Macro1	Cutoff	+/-0.68	+/-	S-Curve	0 ms
2	Macro2	Drive	+0.38	+	Linear	0 ms
3	Macro3	Transform	+/-0.52	+/-	Linear	0 ms
4	Macro4	Resonance	+/-0.42	+/-	S-Curve	0 ms
5	ENV1	Cutoff	+0.10	+	Clamp	18 ms
6	ENV1	Drive	+0.08	+	Clamp	20 ms
7	LFO1	Mix	-0.05	-	S-Curve	80 ms

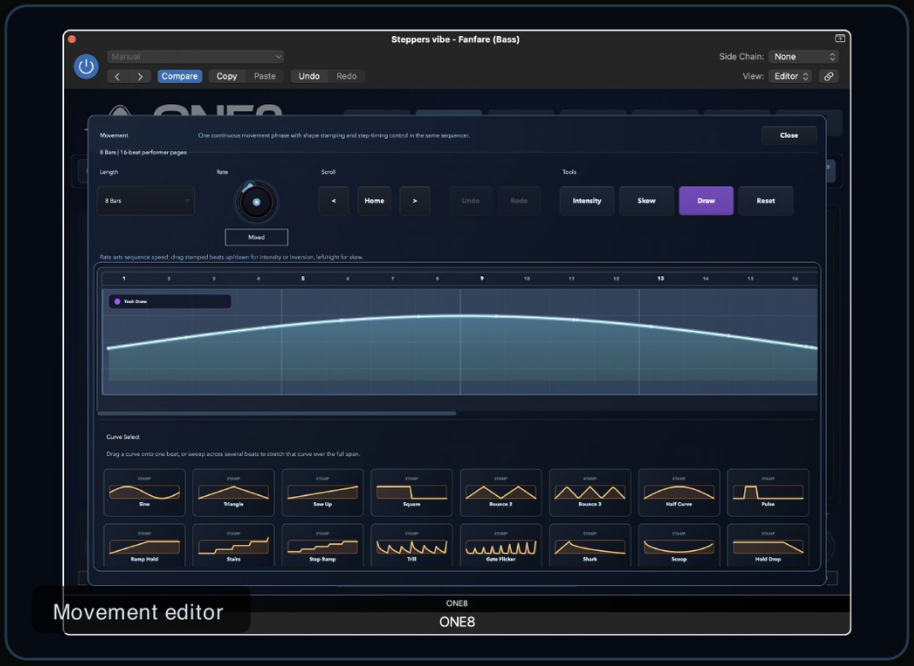
Why the limits matter

Clamp and tight Min/Max ranges keep the envelope from over-opening the low-end patch. The protection section is part of the sound, not an afterthought.

FACTORY RECIPE

Silk Sweep

A slow pad recipe with wide stereo movement and long envelope shaping.



Movement editor

Rebuild values

Category	Smooth & Pads
Filters	#38 LP Smooth, #52 Tilt EQ
Frame	2 Filters, Parallel routing
Morph	X 0.24, Y 0.58, Z 0.49
Tone	Cutoff 740.5 Hz, Resonance 0.32, Track 0.54
Color	Transform 0.61, Character 0.20
Drive	Soft Clip 1.4 dB, Mix 0.92, Output -0.8 dB
Stereo	Width enabled, Low 0.98, High 1.14, Max 1.22

What changes the sound

The slow LFOs do not just wobble cutoff. LFO1 moves Morph Y, LFO2 nudges cutoff, and Macro 4 lifts high-band stereo width. Long ENV stages make changes arrive as a bloom.

FACTORY RECIPE

Silk Sweep - Route Walkthrough

Use this when you want evolving motion that stays smooth and mix-friendly.

Sonic Control detail

Pad movement rows

Row	Source	Destination	Amount	Mode	Curve	Slew
1	Macro1	Cutoff	+/-0.68	+/-	S-Curve	0 ms
2	Macro2	Drive	+0.38	+	Linear	0 ms
3	Macro3	Transform	+/-0.52	+/-	Linear	0 ms
4	Macro4	Resonance	+/-0.42	+/-	S-Curve	0 ms
5	LFO1	Morph Y	+0.10	+/-	S-Curve	180 ms
6	LFO2	Cutoff	+0.07	+/-	S-Curve	220 ms
7	Macro4	Stereo Width High	+0.08	+	S-Curve	0 ms

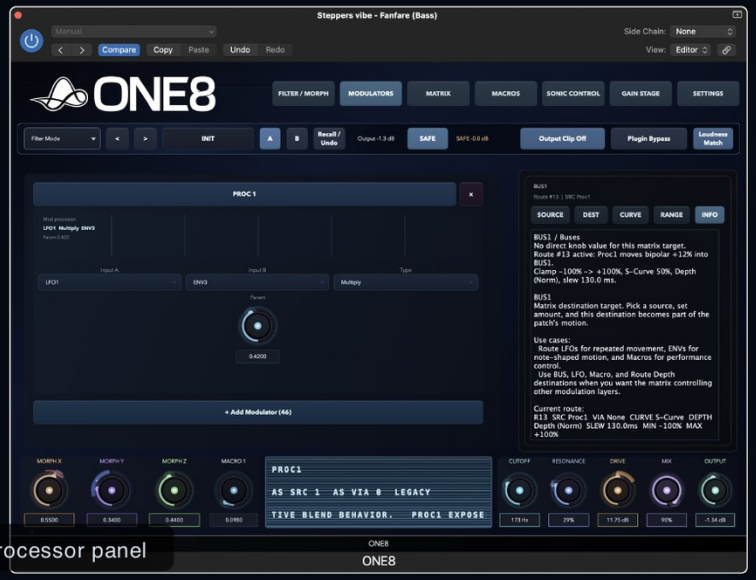
Refine it

If the pad feels too obvious, reduce LFO1 Depth before reducing route Amount. That keeps the macro behavior intact while calming the background motion.

FACTORY RECIPE

Round Growl

A vowel-like motion recipe using morph, character, and envelope-controlled cutoff.



Processor panel

Rebuild values

Category	Growl & Motion
Filters	#63 LP-BP Motion Blend, #64 Twin-peak Dual Peak
Frame	2 Filters, Serial routing
Morph	X 0.24, Y 0.51, Z 0.46
Tone	Cutoff 347.0 Hz, Resonance 0.38, Track 0.56
Color	Transform 0.64, Character 0.32
Drive	Tanh 3.8 dB, Mix 0.90, Output -0.9 dB

What changes the sound

LFO1 and LFO2 push different morph axes, so the vowel movement has width instead of one repeated sweep. Macro 3 adds Character, and ENV1 adds a short cutoff bite.

FACTORY RECIPE

Round Growl - Route Walkthrough

Build a moving low or lead voice without relying on extreme resonance.

Blueprint route view

Growl movement rows

Row	Source	Destination	Amount	Mode	Curve	Slew
1	Macro1	Cutoff	+/-0.68	+/-	S-Curve	0 ms
2	Macro2	Drive	+0.38	+	Linear	0 ms
3	Macro3	Transform	+/-0.52	+/-	Linear	0 ms
4	Macro4	Resonance	+/-0.42	+/-	S-Curve	0 ms
5	LFO1	Morph X	+0.13	+/-	S-Curve	95 ms
6	LFO2	Morph Y	+0.10	+/-	S-Curve	120 ms
7	Macro3	Character	+0.08	+	S-Curve	80 ms
8	ENV1	Cutoff	+0.08	+	S-Curve	55 ms

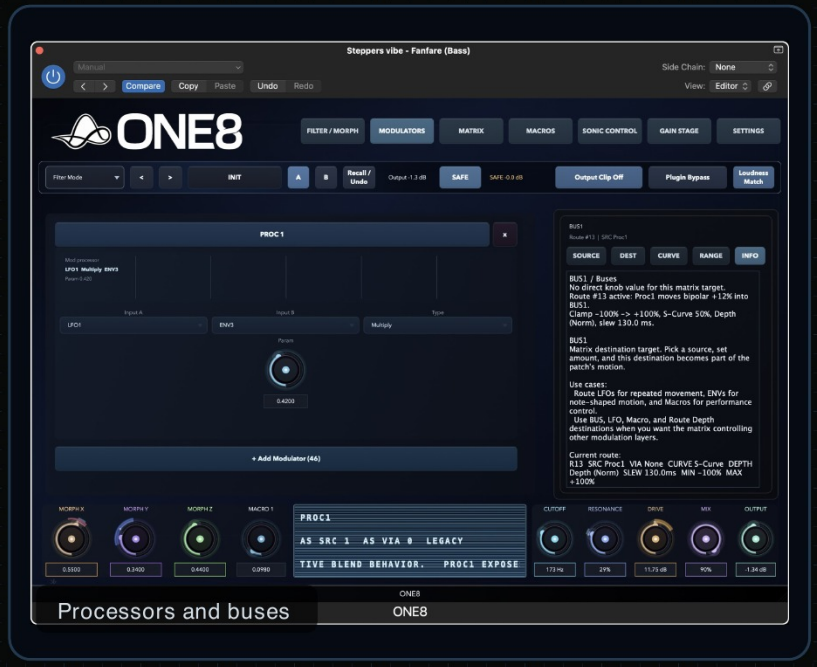
Play it

Use Macro 2 for drive level, Macro 3 for personality, and the LFO rate macros to move from a slow growl to a tighter rhythm.

ADVANCED RECIPE

Deep Performance Modulation Pack

This is the larger factory pattern used for bass, pad, drum, lead, and vocal-style patches.



Processors and buses

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Core deep-pack rows

Row	Source	Destination	Amount	Mode	Curve	Slew
1	**Macro1**	Cutoff	0.12-0.16	+/-	S-Curve	60 ms
2	**Macro2**	Drive	0.12-0.16	+	S-Curve	55 ms
3	**Macro3**	Transform or Morph Y	0.14-0.18	+/-	S-Curve	60-150 ms
4	**Macro4**	Morph Z or Mix	0.16 or -0.10	+/- or -	S-Curve	70-180 ms
5	**LFO1**	Cutoff or Morph X	0.11-0.18	+ or +/-	Quantize/ S-Curve	80 ms
8	**ENV1**	Drive, Resonance, or Character	0.06-0.08	+	Clamp	45 ms
12	**Sidechain Follower**	Output Trim or Bus1	-0.08/+0.10	- or +	S-Curve	35-120 ms
13	**Proc1**	Bus1	0.12	+/-	S-Curve	130 ms
15	**Proc2**	Bus2 or Mix	0.10/-0.06	+/- or -	S-Curve	90 ms

Processor setup

Proc1 multiplies LFO1 by Macro1, Proc2 sums ENV1 and LFO2, and Proc3 takes the stronger of Macro3 and MIDI Mod Wheel. Buses add lag so shared motion arrives smoothly.

ADVANCED RECIPE

Processor And Bus Lab

Use processors when one modulator should condition another before it reaches the matrix.

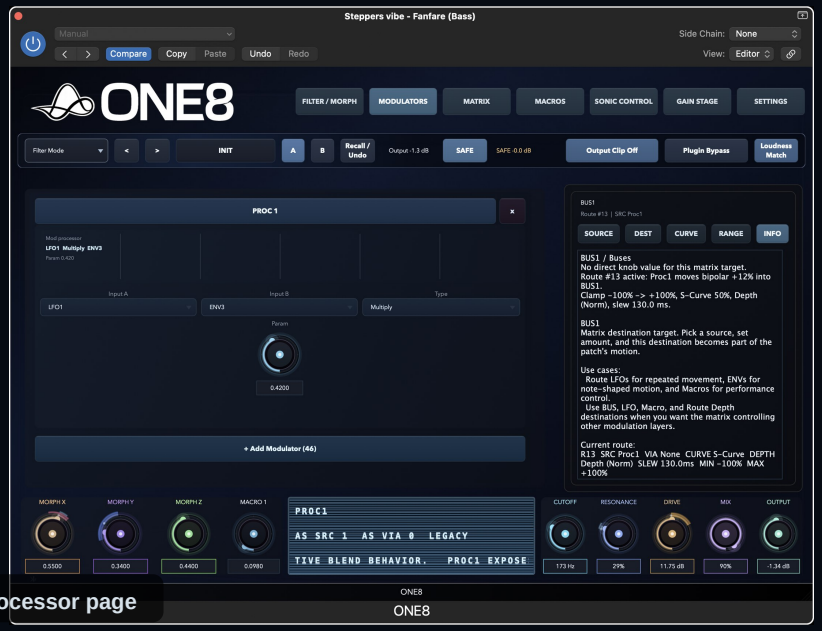
LFO1
Repeated movement

Macro1
Performance depth

PROC1 Multiply
LFO amount follows Macro1

BUS1 Lag
Shared smooth movement

Destination
Cutoff, Transform, Morph, or Tamer



Processor page

Why Multiply

Multiplying LFO1 by Macro1 creates a live depth control. With Macro1 low, the LFO is present but restrained; with Macro1 high, the same LFO becomes the main movement.

Why Sum

Summing ENV1 and LFO2 lets an envelope accent ride on top of a repeating movement. It is good for phrases that need attack and wobble at the same time.

Why Bus Lag

Bus lag makes many destinations share a rounded response. It keeps complex movement from sounding like separate controls fighting each other.

USE CASE

Sidechain Pump And Targeted Ducking

Use the Side Chain page when the groove should move gain, mix, or selected frequency bands.

Walkthrough

1. Engage	Turn on Side Chain Pump and choose the Sidechain input.
2. Listen	Use Listen to drag the detector range and decide which sidechain frequencies trigger the duck.
3. Duck	Use Duck to choose target bands. Band 1 can reduce a low band while bands 2-3 handle mids or top.
4. Detail	Set Threshold, Ratio, Knee, and Mix for the pump curve.

Detector listen

Duck targets

TRIGGER USE CASE

Pump Trigger Routing

The pump trigger follows the sidechain trigger and creates both level ducking and contrast movement.

Response curve

Pump trigger rows

Row	Source	Destination	Amount	Mode	Curve	Slew
T1	Sidechain Trigger crosses up .42-.70	Output Trim	-0.10	-	S-Curve	35 ms
T2	Morph X inside .28-.72	Morph X	+0.06	+/-	S-Curve	60 ms
T3	MIDI Mod Wheel crosses up .30-.70	Drive	+0.07	+	Clamp	45 ms
T4	Sidechain Trigger crosses up .38-.72,	Mix	-0.05	-	S-Curve	90 ms

- Trigger 1 is the audible duck. It subtracts output trim quickly when the sidechain hits.
- Trigger 4 is inverted, so it creates a complementary release movement instead of copying Trigger 1.
- Use Release and Mix on the Side Chain detail page to decide whether the pump is tight, smooth, or obvious.

USE CASE

Step Sequencer To Morph Movement

Use the step sequencer for repeatable rhythmic motion before adding triggers.

Step Sequencer

Suggested rhythmic rows

Row	Source	Destination	Amount	Mode	Curve	Slew
1	Step Sequencer	Morph X	+0.18	+/-	S-Curve	20-80 ms
2	Macro2	Step Smooth	+0.30	+	S-Curve	60 ms
3	Trigger2	Transform	+0.06	+/-	S-Curve	60 ms

Settings

The sequencer uses 16 steps per bar and can run up to 8 bars. Smooth can soften the edge up to 500 ms.

What happens

The sequencer creates the repeatable pattern. Macro2 changes how sharply the steps arrive. Trigger2 can add a small extra movement when Morph X crosses or enters a chosen range.

USE CASE

Movement Editor For Longer Phrases

Use Movement when the modulation should feel like a performed phrase instead of a repeating LFO.

- Set Length first. Longer phrases give more room for shape stamping and slow sweeps.
- Draw or stamp a curve across beats, then use Intensity and Skew to reshape the phrase without rebuilding it.
- Route Movement through the matrix to Morph X, Morph Y, Cutoff, Transform, or a Bus.
- Use a Bus if several destinations should share the phrase with the same lag.

Movement phrase editor

PERFORMANCE

Macro Assignments That Stay Playable

The factory performance pack makes four macros cover tone, heat, shape, and expression.

Macro assignments

Performance pack

Row	Source	Destination	Amount	Mode	Curve	Slew
1	Macro1	Cutoff	+/-0.68	+/-	S-Curve	0 ms
2	Macro2	Drive	+0.38	+	Linear	0 ms
3	Macro3	Transform	+/-0.52	+/-	Linear	0 ms
4	Macro4	Morph Z or Resonance	+/-0.60 or	+/-	S-Curve	0 ms
9	Macro2	LFO1 Rate	+0.56	+	S-Curve	35 ms
10	Macro3	LFO2 Rate	+0.44	+	S-Curve	45 ms
11	Macro4	LFO3 Rate	+0.34	+	S-Curve	55 ms

Performance habit

Keep Macro 1 for tone and Macro 2 for energy. Put the weirdest movement on Macro 3 or Macro 4 so a preset remains easy to play even when the matrix is deep.

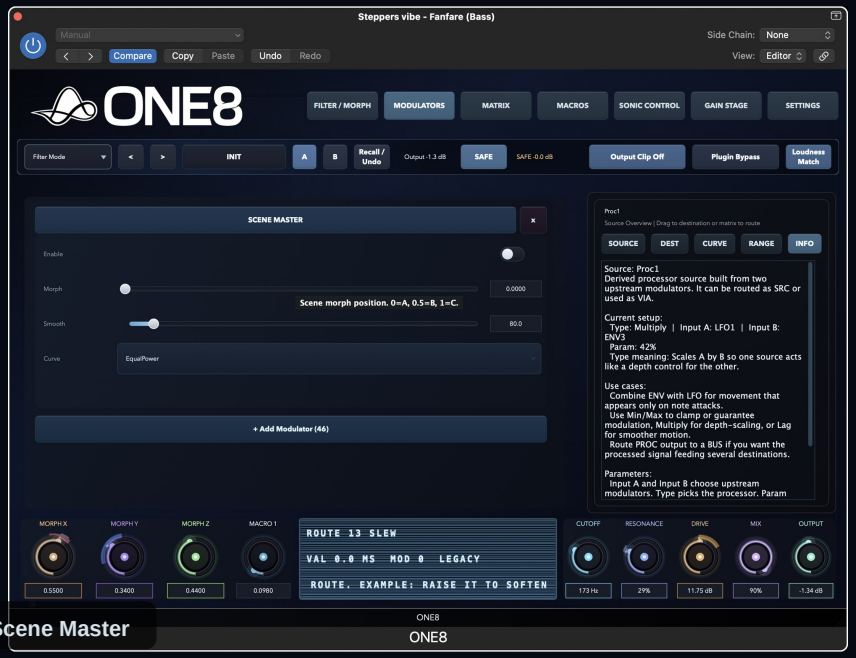
PERFORMANCE

Scenes For A, B, C Sound States

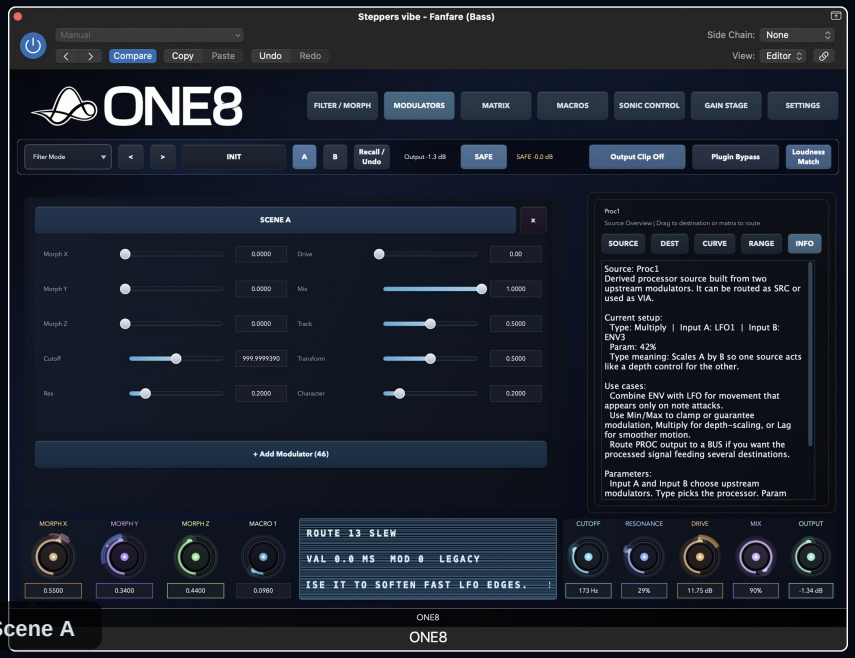
Scenes store performance states and let Scene Master morph between them.

Scene workflow

Scene targets	Morph X, Morph Y, Morph Z, Cutoff, Resonance, Drive, Mix, Track, Transform, Character
Scene Master	Enable, Morph, Smooth, and Curve control the travel between A, B, and C.
Morph position	0 selects A, 0.5 selects B, 1 selects C.
Use case	Make A dry and focused, B more open, C wider and more driven. Then automate Scene Master Morph.



Scene Master



Scene A

SONIC CONTROL

Color, Pump, And Width

Use these pages after the filter and matrix are moving correctly.

Overdrive

Choose the drive type, set Main Drive, and shape low or mid/high drive bands. Use this when the patch needs harmonic push after the filters.

Side Chain

Use Listen to pick the detector band, Duck to choose target bands, and Detail for response curve and compression feel.

Stereo

Use image, band split, vector, lissajous, bars, and monitor views to widen without losing center focus.

Overdrive

Side Chain

Stereo monitor

GAIN STAGE

Finish The Patch

Complex modulation is easier to trust when gain behavior is visible and controlled.

Final pass

Input / Output	Check trim, pan, stereo mode, and meters before judging the tone.
Protection	Use Limiter, ARC, Loudness Match, Threshold, Ceiling, and Release to prevent surprises.
Monitor	Use meters, scope, vector, lissajous, and bars to inspect stereo behavior.
Workflow	Set output trim after drive and matrix motion. Then toggle bypass and loudness match to judge the actual change.

Input / Output

Protection

REFINEMENT

When A Complex Patch Gets Messy

Use these fixes in order, starting with the smallest change.

Best practice

Save before a large routing change. Then test new rows one at a time, with the matrix info panel open, so you can see the live route and current destination value.

1 Too much movement

Lower route Amount first. If the shape is right but the edges are too obvious, increase Slew.

2 Tone jumps too hard

Narrow Min/Max on that route. Clamp is useful for resonance, drive, and cutoff accents.

3 Triggers chatter

Raise hysteresis/stability or widen the threshold gap. Use Envelope output for smoother movement.

4 The groove feels late

Shorten trigger attack/release, reduce route slew, or move the detector band to a clearer transient.

5 Bass loses weight

Use Low End Tamer and Bass Boost together, then reduce wet Mix before changing filters.

6 Stereo gets unstable

Check Monitor, keep width lower in the bass range, and use output trim before increasing drive.

7 Macros feel confusing

Limit each macro to one musical job: tone, energy, shape, or width. Move secondary tricks to Macro 3 or 4.

8 A route does nothing

Check route On, source activity, VIA value, Min/Max, amount polarity, and whether the destination is available in the current page.

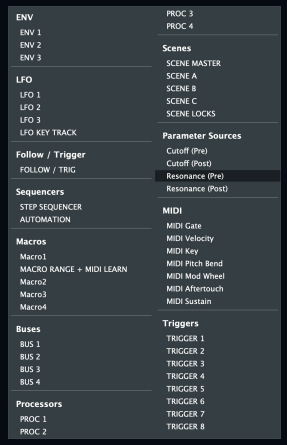
QUICK REFERENCE

Triggers, Curves, And Outputs

Keep this page nearby while building the walkthrough patches.

Source and trigger choices

Trigger conditions	Above, Below, Crosses Up, Crosses Down, Inside Range, Outside Range
Trigger outputs	Gate, Pulse, Envelope, Toggle, Sample & Hold
Trigger watch examples	LFO1, LFO2, ENV1-3, Sidechain Trigger, Input Level, MIDI Velocity, Macro1-4, Morph X/Y/Z, stereo sources
Useful source groups	LFOs, ENVs, Step Sequencer, Automation, Macros, Buses, Processors, MIDI, Triggers, Parameter Sources
Processor types	Switch, Sum, Multiply, Min, Max, Abs, Diode, FlipFlop, Gain, Quantizer, Lag



Source menu

Matrix choices

Curves	Linear, Exp, Log, S-Curve, Rectify, Quantize, Clamp, Invert
Modes	+, -, +/-
LFO shapes used here	Sine, Triangle, Sample Hold, Step 4, Step 8
Step sequencer	16 steps per bar, up to 8 bars, smooth up to 500 ms
Route capacity	24 matrix rows

A useful route pattern

Source: LFO1. VIA: Macro1. Destination: Cutoff or Morph X. Mode: +/-. Curve: S-Curve. Slew: 60-120 ms. This gives a repeatable movement that can be faded in live with Macro1.