

ORRA AUDIO · PRODUCT MANUAL

Version 1.0.0

ORRA PUMP PRO

FOUR-LAYER MODULATION ENGINE

Draw four shapes. Lock them to the beat.

Four drawable modulators, stacked in series or played one at a time, each driving a filter, the volume, the pan or one of eight effects.

Orra Audio LLC · 2026

Welcome

Orra Pump Pro is a **drawable, tempo-synced modulation engine** with **four layers**. Each layer is a complete rhythmic modulator of its own: you place and bend control points on a large screen to draw exactly the curve you want, and that curve becomes a looping modulator with its own clock, trigger and target. The four layers run **in series**, so a filter chop can feed a volume duck that feeds a reverb throw, or **one at a time**, so four different grooves sit on four tabs and you switch between them from the tabs or from an automation lane.

The shape drives one **target** of your choice out of fourteen: a resonant filter (low-, high-, band-pass or notch), **volume** for tremolo and rhythmic gating, **pan** for auto-panning, or the wet amount of one of eight built-in effects, **Reverb, Delay, Saturation, Distortion, Width, Bitcrush, Chorus** and **Phaser**. The same pump shape that ducks a bass line becomes a reverb throw, a delay throw, a drive pulse, a width breath or a rhythmic crush, depending only on where you point it.

Each target carries its own settings, and they live in the TARGET card itself: select the target, press **EDIT** and the card turns into that target's controls, press **DONE** when you are finished. A **CHANNEL** selector aims the effect at the full stereo signal, the mid, or the side, so you can filter only the centre, or crush only the stereo edges. The Reverb and Delay carry a **LOW CUT** that keeps the low end out of a throw.

The Reverb carries six algorithms on an **ALGO** menu, **Classic, Room, Plate, Hall, Chamber** and **Spring**, and the Saturation six flavours on a **TYPE** menu, **Clean, Warm, Transistor, Console, VCA** and **Tape**. Both menus are level matched, so moving through them changes the character and not the loudness, and the reverb crossfades between algorithms so you can sweep the menu while the music plays.

The curve can run as a **free-running LFO**, lock tightly to the **host tempo** at any note division, or be **triggered from a sidechain**, playing once per hit (one-shot) or restarting a loop on every hit. A drawable **swing** grid lets you place points with groove, and live overlays on the screen show you exactly what the modulation is doing as it plays.

Presets come in two sizes. A **layer preset** is one layer's sound; a **scene** is all four layers with their mode, order and crossfade. The factory bank holds **105 layer presets** and **91 scenes** across 22 genres, every one drawn as a played phrase rather than a repeated cell. An **OUTPUT** card at the end of the chain adds a gain trim, an **AUTO** makeup gain that brings a pumped signal back to the level of the dry one, and a zero-latency safety **LIMIT**.

This manual runs front-to-back: start with the *Interface Tour*, read *How Drawn Modulation Works* and *The Four Layers* for the two ideas the rest follows from, then skim *The Controls* and *The Targets*. The later chapters cover the edit view, presets and scenes, the curve editor, triggering and tempo sync, and a workflow tips section.

System Requirements

Formats	VST3, Audio Unit (AU), and AAX (Pro Tools). Listed under Modulation.
macOS	10.13 or later (macOS 11 or later on Apple Silicon). Universal 2.
Channels	Mono or stereo (input and output matched), with an optional mono or stereo sidechain input bus. On a mono instance the Mid and Side channel modes fold down gracefully, see <i>The Controls</i> .

Latency	Zero. Orra Pump Pro adds no latency and reports none to the host, so it is safe to track and monitor through in real time. The Reverb and Delay targets do report a tail length, so an offline bounce keeps their decay.
Licence	One licence key activates the plugin on the machines your purchase allows. A 14-day demo can be started from the plugin without a key. Activating in one instance unlocks every open instance within about a second, and offline bounces always render.

Interface Tour

The window is organised top-down into five horizontal regions, sitting on a near-black brushed-metal faceplate. The header, the LAYERS row, the riser and the control cards are raised out of the plate; the curve screen is recessed into it like a pane of glass. The preset browser is the only thing that covers any of it, and only while it is open.

1. Header

Spans the top of the window. On the left, the **ORRA PUMP PRO** wordmark, which opens the licence and version panel. In the middle, the **preset group**: a **LAYER | SCENE** switch that decides whether the group works on one layer's preset or on a whole scene, a **<** and **>** pair that steps through the browser's current list, the preset **name** button that opens the browser, **SAVE**, and **RESET**, which blanks the layer being edited. On the right, the **UI scale** selector (75 to 200 %) and the circular **?** tips toggle, which turns hover tooltips on and off, and which you can right-click to pick the tooltip language. A small **ORRA AUDIO** maker's plate sits on its own raised pad to the right of the riser.

2. Layers Row

Below the header, four **tabs** numbered 1 to 4, each printed with its layer's target. Click a tab to edit that layer: the screen, the cards and the edit view all turn to it. Drag a tab sideways to reorder the chain. Each tab carries an LED, which is the layer's on/off switch in ALL mode and a playing light in SEQ mode. To the right: **GHOST** draws the other three layers' curves faintly behind the one you are editing; **ALL | SEQ** picks the mode; **FOLLOW** and **XFADE** belong to SEQ mode and dim in ALL; and, pinned to the right edge, **COPY**, **PASTE** and **CLEAR** move a whole layer between tabs or blank one. See *The Four Layers*.

3. Clock & Trigger Riser

A raised strip just below the header carries the timing, grid and trigger controls. **SNAP** makes drawn points snap to the grid; **SYNC** locks the modulation to the host tempo (versus a free Hz rate); the **division** selector sets the note length of one cycle when synced; the **SWING** box shifts the off-beat grid lines for groove and reads out its amount and ratio together. Then the grid itself: **GRID** sets how many lines the screen draws across one cycle, **SW GRID** sets which grid SWING displaces, and **SW TYPE** sets which way it displaces them. Last, the trigger **source** selector (Internal / External) chooses what fires the sidechain modes.

4. Curve Screen

The large recessed screen is where you draw. The horizontal axis is one full cycle of the modulator; the vertical axis is the modulation value (low at the bottom, full at the top). Click to add control points, drag them to move, and drag a segment's mid-handle to bow the line between two points. A moving **playhead** shows the live position, and three overlays, an **effective-output ghost**, a second **stereo playhead**, and a **trigger meter**, show exactly what the bottom-row controls are doing. Everything on the screen belongs to the layer whose tab is selected. See *The Curve Editor*.

5. Control Cards

Four raised cards along the bottom group the controls by job. **SHAPE** holds the DEPTH, SMOOTH and MIX knobs; **TARGET** holds the TARGET and CHANNEL selectors, the **EDIT** button that turns the card into the target's own controls, and a live readout of the selected target's settings; **CLOCK** holds the TRIGGER-mode selector plus RATE, PHASE, STEREO and THRESH. These three belong to the selected layer. The fourth, **OUTPUT**, sits after

all four layers and belongs to the instance: a GAIN knob, and the AUTO and LIMIT switches. The most important knob on each of the two layer knob cards, DEPTH and RATE, is drawn larger as a hero knob. Controls that do not apply to the current mode grey out. Double-click a knob to return it to default; double-click its value to type an exact number.

6. The Edit View

Everything that belongs to one target rather than to the shape lives in the TARGET card. Press **EDIT** and the card turns into the selected target's own controls, a row of compact knobs above a row of selectors and switches: CUTOFF and RESO for the filters, SIZE, DAMP, WIDTH, PREDELAY, MODE and ALGO for the Reverb, and so on. Press **DONE** in the same place and the TARGET and CHANNEL selectors and the readout come back, with every control left where you set it. Nothing slides over the window and nothing is hidden behind a panel, so the shape, the screen and the clock stay live and usable the whole time. Change TARGET while you are in the edit view and the controls swap under you. **Volume** and **Pan** have no extra settings, so EDIT greys out for them. See *The Edit View*.

How Drawn Modulation Works

It is worth thirty seconds on the core idea, because the rest of the plugin follows from it.

The shape you draw is a curve from left to right across one cycle, with a value between 0 (bottom) and 1 (top) at every point. A **playhead** sweeps across that curve, and the value under the playhead is the modulation signal. How fast the playhead moves is set by the clock, a free **RATE** in Hz, a tempo-locked note **division**, or a sidechain **trigger**. What the modulation *does* is set by the **TARGET**.

DEPTH scales how strongly the curve pushes the target. For the filter targets, the **CUTOFF** knob in the edit view sets the floor, the most-closed point, and the curve opens the filter upward from there by DEPTH; at DEPTH 0 you get a static filter parked at CUTOFF, and at full DEPTH the curve sweeps it all the way open. For **Volume**, the curve scales level (tremolo and rhythmic gating); for **Pan**, it moves the signal across the stereo field. For the eight effect targets, the curve times DEPTH *is* the effect's wet amount, so the shape you drew is the shape of the effect fading in and out.

Two final stages shape where the effect lands. The **CHANNEL** selector decides which part of the stereo image is processed, the whole stereo signal, just the mid, or just the side, and **MIX** blends the processed signal back against the dry. Because the groove is drawn into the shape itself, a tempo-locked Orra Pump Pro stays perfectly in time with your project with no extra setup.

Send and Insert

The Reverb and Delay both have a **MODE** switch, because there are two useful ways for a curve to drive a tail. In **Send**, the curve gates what goes *into* the effect and the dry always passes, so the tail keeps ringing after the curve has closed, which is the classic throw: open the curve on the last eighth of the bar and that one word or snare hit gets thrown into the reverb while everything else stays dry. In **Insert**, the effect is fed all the time and the curve fades its output in and out instead, so the tail is shaped by the curve rather than fired by it.

Lane targets and field targets

The CHANNEL selector applies to any target that processes one channel at a time: the four filters, Volume, Saturation, Distortion and Bitcrush. Pick **Mid** or **Side** and the signal is encoded to mid and side, the chosen component is processed on its own, and the pair is decoded back to left and right. The targets that work on the stereo field as a whole, **Reverb**, **Delay**, **Width**, **Chorus** and **Phaser**, cannot be aimed at one component, so the CHANNEL selector greys out for them, exactly as it always has for **Pan**.

Signal flow

drawn curve (the shape) → playhead (RATE / division / trigger) → value × DEPTH → TARGET (filter cutoff / volume / pan / effect wet amount) → CHANNEL routing (Stereo / Mid / Side, lane targets only) → MIX → layer output. SMOOTH slews the value before the target; STEREO offsets the right-channel playhead so the two sides move apart. Then, once for the whole plugin: layer 1 → 2 → 3 → 4 in tab order (ALL) or the active layer (SEQ) → AUTO → GAIN → LIMIT → output.

The Four Layers

Everything in the previous chapter describes one layer, and Orra Pump Pro has four of them. Each layer has its own curve, its own SHAPE, TARGET and CLOCK settings, its own grid and swing, and its own target controls. The tabs in the LAYERS row choose which one you are looking at; the mode switch chooses how the four are combined.

ALL: four layers in series

In **ALL** mode every layer that is switched on is in circuit, in the order of the tabs from left to right: the audio goes through layer 1, then what comes out goes through layer 2, and so on. The order matters, and you can hear why: a low-pass chop feeding a reverb throw sends filtered audio into the reverb, while the reverb first and the filter second chops the tail as well. Drag a tab sideways to change the order. Each tab's LED is that layer's on/off switch, so a layer can be muted without losing it. Switching a layer on or off is a short fade, never a click.

SEQ: one layer at a time

In **SEQ** mode only one layer plays, and the four tabs become the **Active Layer** control: a gold bracket groups them and the playing tab wears a gold top rule. Click a tab to switch to it, and the switch is a real parameter move, so a host in touch or latch mode records it and "last touched parameter" picks it up for an automation lane.

Alt-click a tab to edit a layer without switching to it, for instance to redraw the drop while the build is still playing. The switch itself is shaped by **XFADE**, a crossfade of 0 to 2000 ms between the outgoing and the incoming layer. A Reverb or Delay layer that is switched away from keeps ringing until its tail has died away; it is not cut. The layer that is switched off keeps its clock running, so when it comes back it is still on the bar.

FOLLOW keeps the edited layer on the playing one: with it on, an automation lane that walks the active layer walks the screen with it. Alt-clicking a tab turns FOLLOW off, because you have just asked to look at a layer that is not playing.

Ghost, copy, paste, clear

GHOST draws the other three layers' curves faintly behind the one you are editing, in either mode, which is how you line a filter flick up against the volume chop it is meant to answer. **COPY** takes the whole of the selected layer, **PASTE** puts it onto another tab, and **CLEAR** blanks the selected layer, which is the same thing RESET in the header does. PASTE lights only when the copied layer is not the one you are looking at.

The OUTPUT card

After all four layers the signal passes through the OUTPUT card, which belongs to the instance rather than to any layer and is never changed by a preset or a scene. **GAIN** is a plain trim. **AUTO** measures how much level the pumping has taken away and adds it back as one held makeup gain, in the manner of a level match rather than a compressor: it measures over whole cycles of the slowest layer, holds the value, and only measures again when you switch it on or load a preset or scene, so it never rides the pump it is meant to compensate. The card's header shows MEASURING and then the value it settled on. **LIMIT** is a zero-latency safety limiter with a fixed ceiling of -0.1 dBFS; it is completely out of the signal path while it is off and while nothing is over the ceiling.

The Controls

The LAYERS row, four cards and the riser's timing controls. Every knob and selector here and in the edit view is automatable; knobs double-click to default and double-click-to-type. SHAPE, TARGET, CLOCK and the riser are per layer, and the host sees each of their parameters four times, named *L1 Depth*, *L2 Depth* and so on.

LAYERS

Which layer you are editing, how the four are combined, and the tools that move a layer from one tab to another.

Control	Range	Purpose
Tabs 1 to 4	Click / Alt-click / drag	Click to edit that layer. In SEQ mode a click also makes it the playing layer (<i>Active Layer</i> , automatable); Alt-click edits without switching. Drag sideways to reorder the chain. The LED is the layer's on/off switch in ALL mode and a playing light in SEQ.
Ghost	On / Off	Draws the other layers' curves faintly behind the one being edited.
All Seq	All / Sequential	All runs every switched-on layer in series, in tab order. Seq plays one layer at a time, chosen from the tabs. Automatable.
Follow	On / Off	SEQ only. Keeps the edited layer on the playing one, so an automated layer switch moves the screen with it.
Xfade	0 to 2000 ms (default 20 ms)	SEQ only. Crossfade between the outgoing and the incoming layer on a switch. Reverb and Delay tails ring out on their own regardless.
Copy / Paste / Clear	Buttons	COPY takes the whole selected layer, PASTE puts it on the selected tab, CLEAR blanks the selected layer (the same as RESET in the header).

SHAPE

How strongly the curve moves the target, how sharply, and how much of the result you hear.

Control	Range	Purpose
Depth	0 to 100 %	How far the curve moves the target, from no movement at all up to its full range. On the effect targets this is the effect's wet amount at the top of the curve. <i>Hero knob</i> .
Smooth	0 to 100 %	Slews the modulation (up to about 150 ms) so steep steps round off instead of clicking, at the cost of a little lag. Especially useful for Volume and Pan, or steep filter sweeps.
Mix	0 to 100 %	Dry and wet blend of the whole processed signal against the input. 100 % is fully processed.

TARGET

What the curve drives, where it lands in the stereo field, and the way into that target's own settings. The two lines under the hairline are a live readout of the selected target, so you can see what its settings are without going into the edit view.

Control	Range	Purpose
Target	14 destinations (see <i>The Targets</i>)	What the drawn curve drives: one of four filters, the volume, the pan, or the wet amount of one of eight effects. Changing target clears the previous one's tail and filter state, so nothing rings over from the last selection.
Channel	Stereo / Mid / Side	Which part of the stereo field is processed. Stereo affects both channels; Mid the centre (sum); Side the stereo difference (great for filtering or crushing only the width). Greyed for Pan and for the five field targets, which always work on the whole stereo image.
Edit	Turns the card into the controls	Shows the selected target's own controls here in the card, in place of the two selectors and the readout. Greyed out for Volume and Pan, which have none.
Done	Turns the card back	Puts the TARGET and CHANNEL selectors and the live readout back, leaving every control where you set it. It sits in the same place EDIT does, at the top right of the card. RESET and loading a preset also return the card to this view.
Readout	Live, two lines	The selected target's current settings, for example <i>SIZE 55 % DAMP 45 % MODE Send</i> , updated as you move one of the target's knobs or as automation moves it.

CLOCK

How the playhead is driven, where it starts, and how the sidechain fires it.

Control	Range	Purpose
Trigger Mode	Loop / One-Shot / Loop (Trig)	Loop runs continuously (tempo-locked when SYNC is on). One-Shot plays the curve once on each sidechain hit, then holds its end value. Loop (Trig) restarts the loop on every hit. See <i>Triggering & Sync</i> .
Rate	0.01 to 40 Hz, or 4 Bars to 1/32	Speed of one pass of the curve. With SYNC off it is a free-running rate in Hz. With SYNC on the knob steps through the note divisions instead and shows the division name, so the synced rate can be automated from the host. <i>Hero knob</i> .
Phase	0 to 360°	Start-phase offset. Slides the whole curve along its cycle, moving the playhead's read position without redrawing the shape.
Stereo	0 to 180°	Offsets the right channel's playhead from the left, so the two sides modulate out of phase. A little adds stereo movement; larger values give ping-pong sweeps and panning. (Applies in the Stereo channel mode.)
Thresh	−60 to 0 dB	The sidechain level that fires the trigger, in the One-Shot and Loop (Trig) modes. Lower is more sensitive. The screen's trigger meter shows the live level against this mark.

OUTPUT

The last stage, after all four layers. It belongs to the instance, not to a layer, and loading a preset or a scene never touches it.

Control	Range	Purpose
Gain	−24 to +12 dB	Output trim, applied after AUTO so it is a deliberate offset on top of the match.
Auto	On / Off	Measures the level the pumping takes away and holds one makeup gain (up to ±12 dB) to bring it back. Re-measures when switched on and when a preset or scene loads. The header of the card reads MEASURING, then the held value. The value is saved with the session so a reopened project bounces at the same level.
Limit	On / Off	A zero-latency safety limiter at −0.1 dBFS with a fast release. Out of circuit while off. It reads sample peaks, so treat it as a safety net rather than a mastering limiter.

The riser (clock & trigger)

The strip above the screen carries the timing, grid and trigger settings.

Control	Range	Purpose
Snap	On / Off	Pins points you add or drag to the nearest line of <i>either</i> grid, the main GRID and the swung off-beats of the SW GRID. Points already on the screen are left where they are, so turning SNAP on does not rearrange a finished shape.
Sync	On / Off	Locks one pass of the curve to the host tempo at the note division. Off runs it free at the RATE knob's Hz.
Division	4 Bars to 1/32 (dotted, triplet)	The note length of one full cycle when SYNC is on, from four bars down to a thirty-second. Straight, dotted (D) and triplet (T) values are provided. The RATE knob selects the same list while SYNC is on.
Swing	0 to 100 %	Slides the off-beat lines of the SW GRID off the beat (shown dotted) and snapping follows them, so points you place pick up the groove. The box reads the amount and the ratio together, so 67% 2:1 is the triplet feel and 100% 3:1 the hard shuffle. It is a drawing and snapping guide only: it never warps playback, and it never moves a point you have already placed.
Grid	4, 6, 8, 12, 16, 24, 32, 48, 64	How many lines the main grid draws across one pass of the curve, which is what SNAP pins your points to. The powers of two give straight feels and the 6, 12, 24 and 48 entries give triplet grids without changing the division. While SYNC is on, each entry also shows what one cell is worth as a note, so a 1 Bar cycle lists 16 1/16 .
SW Grid	4, 6, 8, 12, 16, 24, 32, 48, 64	The grid that SWING displaces, chosen separately from GRID. That is what lets you draw on straight eighths and still snap to swung sixteenths: set GRID to 8 and SW GRID to 16. The lines it moves are drawn dotted, dimmer than the main grid when they fall between main lines, and they are snap targets as well.
SW Type	Late / Early / Gallop	Which way SWING moves the off-beat lines. Late is the classic shuffle, the off-beat delayed. Early moves it the same distance the other way for a pushed feel, and the SWING box prints its ratio inverted (1:2) because the short note comes first. Gallop works in groups of four, sending the first off-beat late and the second early, so each group reads long-short short-long. Gallop needs groups of four, so on a swing grid that is not a multiple of four it behaves as Late.
Source	Internal / External (DAW)	Trigger detector source for the sidechain modes. Internal follows the main input's transients; External uses the host's sidechain bus.

The Targets

Fourteen destinations, in the order they appear in the TARGET menu. The first six are the 1.0.0 set and behave exactly as they always did; the eight effects are new in 1.1.0, and for all of them the curve times DEPTH is the effect's wet amount. **Lane** targets honour the CHANNEL selector; **field** targets work on the whole stereo image and grey it out.

Filters

Target	Kind	What the curve does
Low Pass	Lane	A resonant low-pass. CUTOFF sets the floor and the curve sweeps it upward by DEPTH, the classic drawn filter sweep.
High Pass	Lane	A resonant high-pass, swept the same way. Good for risers and for thinning a part on the off-beats.
Band Pass	Lane	A resonant band-pass, for wah and telephone sweeps.
Notch	Lane	A notch that travels across the spectrum, phaser-like at low resonance.

Volume and pan

Target	Kind	What the curve does
Volume	Lane	The curve scales level: tremolo, sidechain-style pumping and hard rhythmic gating. No controls of its own, so EDIT greys out.
Pan	Field	The curve moves the signal across the stereo field for auto-panning. No controls of its own, and CHANNEL greys out because a pan always repositions the whole image.

Effects

Target	Kind	What the curve does
Reverb	Field	The curve drives the reverb's wet amount, through one of six algorithms. In Send mode the tail rings out after the curve closes, which is a throw.
Delay	Field	A tempo-synced or free delay with feedback, tone and ping-pong. In Send mode the curve gates what is fed to it, so the repeats ring out after it closes.
Saturation	Lane	Six flavours of soft clipping, all level matched across the DRIVE range so turning DRIVE up changes the tone before it changes the volume. The curve pulses it in.
Distortion	Lane	Hard clip or foldback, also level matched, with a post low-pass to tame the fizz.
Width	Field	The curve opens the stereo field out to the WIDTH setting and back, a rhythmic width breath.
Bitcrush	Lane	Bit depth reduction plus sample and hold. Aim it at the Side channel for a crushed edge around a clean centre.
Chorus	Field	The curve swells the chorus in and out, from a gentle drift to an obvious detune.
Phaser	Field	The curve sweeps the phaser in and out, on top of the phaser's own sweep.

The Edit View

Press **EDIT** on the TARGET card and the card itself turns into the selected target's own controls: a row of compact knobs above a row of selectors and switches. Press **DONE**, in the same corner EDIT was in, and the TARGET and CHANNEL selectors and the live readout come back, with every control left exactly where you set it. Nothing slides over the window and nothing is dimmed out, so the shape, the curve screen and the clock stay live and reachable while you work. Switching TARGET swaps the controls without leaving the edit view, and picking Volume or Pan, which have no controls of their own, returns the card to the selectors. RESET and loading a preset do the same.

Everything below is a normal parameter: automatable, saved with the session, and stored in presets.

Low Pass, High Pass, Band Pass, Notch

The base filter the curve sweeps. The same two controls for all four filter targets.

Control	Range	Purpose
Cutoff	20 Hz to 20 kHz (default 42 Hz)	Base cutoff the filter sits at, which the curve sweeps up from by DEPTH. Set it low for a full-range sweep, higher to keep the filter bright.
Reso	0 to 100 % (default 15 %)	Emphasis right at the cutoff, from a plain slope up to a whistling peak.

Reverb

Six reverb algorithms, whose wet amount the curve drives.

Control	Range	Purpose
Size	0 to 100 % (default 55 %)	Size of the modelled space, which sets how long the tail rings on for. What counts as long depends on the algorithm, from under two seconds on Room to nearly thirty on a full-size Hall.
Damp	0 to 100 % (default 45 %)	How fast the high end dies away in the tail, so higher is darker and shorter.
Width	0 to 100 % (default 100 %)	Stereo spread of the reverb tail, from mono at zero to fully wide at 100 %.
Predelay	0 to 100 ms (default 10 ms)	Gap between the dry sound and the start of the tail.
Mode	Send / Insert (default Send)	Send feeds the reverb through the curve so tails ring out after it closes. Insert fades the whole reverb in and out instead.
Algo	Classic / Room / Plate / Hall / Chamber / Spring (default Classic)	Which reverb the tail is built from, listed below. The six are level matched to each other, so the menu changes the character and not the loudness, and a change crossfades over 50 ms, so you can move through it while the music plays.
Low Cut	Off (20 Hz) to 1 kHz (default Off)	A slot fader in the card's header. A 12 dB per octave high-pass on the reverb's wet signal only, so a throw on a bass-heavy part does not fill the low end with tail. At 20 Hz it is fully out of circuit; double-click returns it there.

The six algorithms are the engines from Orra Space. The tail lengths below are at SIZE 100 % with DAMP at its default, and Orra Pump Pro tells the host how long the selected algorithm rings for, up to thirty seconds, so an offline bounce keeps the whole decay.

Algorithm	Character
Classic	The original Orra Pump reverb, a compact, even tail that works on anything and gets noticeably bigger and louder as SIZE goes up. Rings for about 10 seconds wide open.
Room	Sixteen early reflections in front of a short tail. The most contained of the six, about 2 seconds wide open, and its level barely moves as SIZE changes, so it stays a room rather than growing into a hall.
Plate	A dense, bright metallic tail with no early reflections, the classic sound for vocals and snares. Long when you ask for it, about 16 seconds at full SIZE.
Hall	The biggest of the six and the widest range: almost nothing at SIZE 0, and a slow, wide, deep tail of nearly 30 seconds at SIZE 100 %. Use it for the long throws.
Chamber	Diffuse and band-limited, between a room and a hall in size, about 5 seconds wide open. Darker and smoother than Plate at the same settings, and it sits behind a mix rather than on top of it.
Spring	Three springs modelled with long dispersive chains, which is where the downward chirp and the boing come from. Best heard short, at SIZE 20 to 40 % on a snare or a guitar. The most expensive of the six to run, about five times Classic.

Delay

A stereo delay with its own tempo sync, independent of the curve's clock.

Control	Range	Purpose
Sync	On / Off (default On)	Locks the delay time to the host tempo at a note division. Off hands it to the TIME knob.
Division	1/2 to 1/32 (default 1/8)	Note length of one repeat while the delay's own SYNC is on, with dotted (D) and triplet (T) values. Shown in place of TIME.
Time	1 to 2000 ms (default 350 ms)	Length of one repeat while the delay's own SYNC is off. Shown in place of DIVISION.
Feedback	0 to 95 % (default 35 %)	How much of each repeat is fed back in, so higher gives more repeats before they fade.
Tone	200 Hz to 20 kHz (default 6 kHz)	Low-pass inside the feedback loop, so every repeat comes back darker than the one before it.
Ping-Pong	On / Off (default Off)	Bounces the repeats between left and right instead of leaving them where they started.
Mode	Send / Insert (default Send)	Send feeds the delay through the curve so repeats ring out after it closes. Insert fades the whole delay in and out instead.
Low Cut	Off (20 Hz) to 1 kHz (default Off)	A slot fader in the card's header. A high-pass inside the feedback loop, so every repeat loses a little more low end than the one before it, the way a tape echo thins out. At 20 Hz it is fully out of circuit.

Saturation

Six level-matched saturations: the drive changes the tone, not the volume.

Control	Range	Purpose
Drive	0 to 40 dB (default 12 dB)	How hard the signal is pushed into the shaper, level matched so only the tone changes.
Tone	–100 to +100 % (default 0 %)	Tilts the signal going into the shaper, negative for a darker drive and positive for a brighter one. It changes what gets distorted, not just what you hear.
Type	Clean / Warm / Transistor / Console / VCA / Tape (default Clean)	Which curve the drive is pushed through, listed below. All six are level matched across the whole DRIVE range, so cycling the menu is an A/B of character rather than of loudness.

Every type is transparent, or close to it, at DRIVE 0, and they separate as you push. The order from brightest to gentlest at a moderate drive is Tape, Transistor, Clean and Warm together, Console, then VCA.

Type	Character
Clean	A symmetric soft clip: odd harmonics only, the plainest of the six and the one to reach for when you want density without a colour.
Warm	Clean with a slight asymmetry, which is what adds the low even harmonic the others do not have. It is the only type that is anti-aliased by construction, so it stays clean on bright material with no added latency.
Transistor	Harder than Clean at the same drive, with more upper odd harmonics. Good for edge on a bass or a synth line.
Console	Splits the signal into a low and a high band and drives each on its own peaks, so neither rides the other down. The gentlest harmonics of the bright types, and it reads as glue on a full mix rather than as distortion.
VCA	A soft divide with a fixed knee, so quiet material stays essentially untouched and only the loudest peaks are rounded. The most polite of the six.
Tape	The most aggressive, with a head-loss filter in front of the curve, so TONE changes what is distorted as well as what comes out. Squashes transients the hardest.

Distortion

The harder relative of Saturation, also level matched across its drive range.

Control	Range	Purpose
Type	Hard Clip / Foldback (default Hard Clip)	Hard Clip squares the peaks off. Foldback folds them back for a rougher, more metallic sound.
Drive	0 to 40 dB (default 12 dB)	How hard the signal is pushed into the clipper, level matched so only the tone changes.
Tone	500 Hz to 20 kHz (default 8 kHz)	Low-pass after the clipper, which tames the fizz the distortion adds up top.

Width

A mid/side width control the curve opens and closes.

Control	Range	Purpose
Width	0 to 200 % (default 150 %)	Stereo width the curve opens up to, where 100 % leaves the field alone and 200 % doubles the sides. Below 100 % the curve narrows the image instead.

Bitcrush

Bit depth reduction and sample-and-hold, switched in by the curve.

Control	Range	Purpose
Bits	2 to 16 bit (default 8 bit)	Word length the signal is quantised to, so fewer bits means coarser steps and more grit.
Rate	1 to 64 x (default 4 x)	Sample and hold factor, so 4 holds every fourth sample and drops the effective sample rate to a quarter.

Chorus

A stereo chorus with its own sweep, faded in and out by the curve.

Control	Range	Purpose
Rate	0.05 to 5 Hz (default 0.8 Hz)	Speed of the chorus sweep, slow for a gentle drift and fast for a wobble.
Depth	0 to 100 % (default 50 %)	How far the chorus sweeps its delay time, which sets how obvious the detune is.
Delay	5 to 50 ms (default 20 ms)	Centre delay the chorus sweeps around, short for a tight shimmer and long for a doubler.
Feedback	-95 to +95 % (default 0 %)	Feeds the chorus output back in, and a negative value flips the polarity for a hollower sound.

Phaser

A notch sweep with feedback, faded in and out by the curve.

Control	Range	Purpose
Rate	0.05 to 5 Hz (default 0.5 Hz)	Speed of the phaser sweep, slow for a long swoosh and fast for a warble.
Depth	0 to 100 % (default 70 %)	How far the notches travel across the spectrum on each sweep.
Centre	100 Hz to 10 kHz (default 1 kHz)	Frequency the notches sweep around, low for body and high for air.
Feedback	-95 to +95 % (default 30 %)	Feeds the phaser output back in, which sharpens the notches into a resonant whistle.

Presets and Scenes

Orra Pump Pro has two kinds of preset, and the **LAYER | SCENE** switch in the header decides which one the preset group, the browser and SAVE are working on.

Kind	What it holds
Layer preset	One layer's whole sound: its drawn curve and every knob, selector and switch, including the controls in its target's edit view. It loads into the layer whose tab is selected and leaves the other three alone.
Scene	All four layers, plus the mode, the tab order and the crossfade. Loading a scene replaces everything above the OUTPUT card. Which layer you are editing, GHOST and FOLLOW stay as they were.

Neither kind stores the OUTPUT card, the window size or the tooltip language. GAIN, AUTO and LIMIT are a mix decision for this track, so browsing scenes never changes your output level; the other two are settings about your copy of the plugin. All of them stay with the session instead.

The header group

The preset group sits in the middle of the header. **LAYER | SCENE** sets the scope. < and > step to the previous and next entry in the browser's current list, wrapping round at each end, so you can audition a whole genre without opening anything. The **name** button shows what is loaded and opens the browser. **SAVE** stores the current layer or scene as a user preset you can name, and **RESET** blanks the layer you are editing.

The browser

The browser opens over the whole window: categories down the left, the list in the middle, and details on the right. Click an entry to load and hear it, or walk the list with the up and down arrow keys, which audition as they go. Type in the search box to filter by name, category or description; all the words you type have to match. Escape or a click outside the plate closes it.

Categories	All, Favorites, Factory and User , then one category per genre or job: Pump, Gate, Stutter, Filter, Throw, Drive, Stereo and Follow for the classic layer shapes, and UK Garage, House, Techno, Drum And Bass, Hip Hop, Trance, Dubstep, Amapiano, Afro House, Tech House, Bassline, Trap, Future Bass, Latin, Disco, Synthwave, Dub, Dub Techno, Ambient, Cinematic, Build Ups and Club for the rest.
Favourites	Star any entry, factory or user, and it appears under Favorites. The list is kept next to your presets, so it survives an update.
Footer buttons	SAVE AS stores the current layer or scene under a new name. OVERWRITE , RENAME and DELETE act on the selected user entry and ask first; factory entries cannot be changed. REFRESH rescans the folder, and SHOW FOLDER reveals it.
Naming	SAVE AS and RENAME open a small window of their own for the name, so the space bar reaches the name box instead of starting the host's transport.

User preset folder	~/Library/Application Support/Orra Audio/Orra Pump Pro/Presets , with a Layers and a Scenes folder inside. A layer preset is one <i>.orrapumppreset</i> file and a scene one <i>.orrapumpscene</i> file, so you can back them up, copy them between machines or share them by hand. On Windows the folder is under AppData/Roaming.
---------------------------	--

The factory layer presets are also exposed to the host as programs, so a DAW's own preset menu and program-change automation walk the same list, loading into the selected layer.

Start from a scene, then take it apart

The fastest way into a new sound is to step through a genre's scenes on SCENE until something is close, then switch to LAYER and look at what each tab is doing. A scene already has the clock, the depth, the order and each target's controls set, which is the fiddly part. Change the target on one layer, redraw one shape, or swap a layer for a factory layer preset, and it is yours.

The factory bank

105 layer presets and 91 scenes, drawn as **played phrases**: neighbouring hits differ in level, a pluck sits next to a held note, off-beats are swung and single hits are pushed or laid back, and the kick's slot is usually left empty. Nothing in the bank is one cell repeated eight times. Every scene is built around one of those phrases on a Volume layer, with the other layers playing along: a side-channel chop on a different part of the bar, a slow level arc over four bars, a reverb or delay throw on the last hit, a filter flick into the bar line, drive on the accents only.

Categories	Kind	What is in them
Pump, Gate, Stutter, Filter, Throw, Drive, Stereo, Follow	Layers	The classic single shapes: sidechain ducks, trance and stutter gates, filter sweeps and wahs, reverb and delay throws, drive pulses, width and pan moves, and sidechain-triggered follow envelopes.
UK Garage, House, Tech House, Afro House, Bassline, Disco	Layers and scenes	Shuffled two-step chops, chord stutters, four-to-the-floor ducks with a skipping off-beat, log-drum style bass pumps and filter house builds.
Techno, Dub Techno, Trance, Club	Layers and scenes	Rolling sixteenth ducks, dub delay throws, gated trance chords, Jersey, footwork, breaks and electro chops.
Drum And Bass, Dubstep, Trap, Hip Hop, Future Bass	Layers and scenes	Half-time bass wobbles, reese chops, 808 ducks, triplet hats on the side channel and supersaw swells.
Amapiano, Latin, Dub	Layers and scenes	Log-drum bounces, tresillo and dembow ducks, spring and tape-style throws.
Synthwave, Ambient, Cinematic, Build Ups	Layers and scenes	Slow gated pads, breathing widths, risers and accelerating rolls into a drop.

The reference scene is **Oh My** (UK Garage), a chord stutter drawn by hand. If you want to know what the rest of the bank is trying to sound like, load that one first.

The Curve Editor

The recessed screen is the heart of the plugin. It is both where you draw the modulation shape and where you watch it work. The shape is a series of control points joined by curved segments, looping seamlessly from right back to left.

Drawing the shape

Action	How
Add a point	Click anywhere on empty screen to drop a new control point.
Move a point	Drag it. The first and last points are pinned to the left and right edges and move vertically only; points in between stay ordered between their neighbours.
Bend a segment	Each segment has a small mid-handle. Drag it up or down to bow the line concave or convex: straight lines, smooth ramps, exponential curves, anything in between.
Delete a point	Double-click or right-click it. The two end points cannot be removed.

Grid, snap & swing

Faint grid lines divide the cycle into beats and subdivisions. **GRID** on the riser sets how many lines that is, from 4 to 64 across one pass of the curve. The powers of two give straight feels; the 6, 12, 24 and 48 entries give you a triplet grid without having to change the note division. While SYNC is on, each entry in the menu also shows what one cell is worth as a note, so you are picking a musical value rather than counting lines.

Turn on **SNAP** and points you add or drag lock to the nearest grid line, which makes it easy to place modulation exactly on the beat. SNAP only affects points as you place or move them: switching it on does not rearrange a shape you have already drawn.

The swing grid

SWING slides the off-beat lines off the beat, and they appear as dotted ghost lines that slide as you raise it. Snapping follows the dotted lines, so a shape you draw on the swung grid carries the groove with it.

Which lines move is set by **SW GRID**, and that is a separate choice from GRID. This is the useful part: set GRID to 8 and SW GRID to 16 and you draw on straight eighths while still being able to snap to swung sixteenths. When the swing grid is finer than the main grid, the extra off-beats it contributes are drawn dimmer than the main lines, so you can see the targets you are aiming at. Snapping always goes to the union of the two grids.

SW TYPE sets which way the lines move. **Late** is the classic shuffle with the off-beat delayed. **Early** moves it the same distance the other way, for a pushed feel. **Gallop** works in groups of four, sending the first off-beat late and the second early so each group reads long-short short-long; it needs groups of four to exist, so on a swing grid that is not a multiple of four it behaves as Late.

Whatever you set here, **swing never moves the audio**. It moves grid lines and snap targets, and the groove ends up baked into where your points sit, exactly as if you had placed them there by hand. It also never moves a point you have already placed: raise SWING on a finished shape and the lines move out from under your points, which is your cue to drag the off-beat ones back onto them.

SWING AMOUNTS

Pump's percentage is a straight 0 to 100 scale across the whole range. Most DAWs instead print where the off-beat sits inside its pair, which starts at 50 %. The ratio is the same number in every program, so it is the one to match by.

Pump SWING	The same swing in a DAW	Long : short
0 %	50 %	1:1 (straight)
32 %	58 %	1.4:1
48 %	62 %	1.6:1
67 %	66.7 %	2:1 (triplet feel)
80 %	70 %	2.3:1
100 %	75 %	3:1 (hard shuffle)

WHAT ONE GRID CELL EQUALS

One cell is the cycle divided by GRID, so the same grid count means different note values at different divisions. At GRID 16, with SYNC on:

DIVISION (one cycle)	One cell at GRID 16
4 Bars	1/4
2 Bars	1/8
1 Bar	1/16
1/2	1/32
1/4	1/64

This is worth reading the other way round when you are matching a DAW's groove. A DAW-style 1/16 swing therefore wants a **1 Bar** cycle with **SW GRID 16**, or a **2 Bars** cycle with **SW GRID 32**. Either way one swing cell is a sixteenth, and the dotted lines land where your DAW's swung sixteenths land.

The live overlays

Four overlays turn the screen into a live picture of what the bottom-row controls are doing, so you can see the effect of a knob before you even hear it:

- **The playheads.** A cyan line and dot track the live read position across your curve. Raise **STEREO** and a second, violet playhead splits off from it, the right channel reading the curve at an offset, which is the source of the stereo movement. **PHASE** slides both along together.
- **The smoothed trace.** A cyan line showing your shape after the **SMOOTH** slew rounds its corners and adds a little lag, the actual modulation that comes out. The cyan playhead dot rides this line, not the drawn curve.

Turn SMOOTH up and the trace visibly softens away from your gold shape; it appears only when smoothing is doing something at the current rate (faster rates round more).

- **The effective-output ghost.** A dashed gold line shows the value actually sent to the target once DEPTH (and, for filters, the CUTOFF floor) is applied. As you lower DEPTH it collapses toward the base; as you raise CUTOFF its floor lifts. It sits on your drawn shape when there is nothing to show and separates when there is.
- **The trigger meter.** In the sidechain trigger modes, a slim meter down the left edge shows the live detector level with a gold **THRESH** mark across it. It brightens the instant the level crosses the mark and fires the curve, so you can set the threshold by eye.

Triggering & Sync

Each layer's playhead can be driven three ways, chosen with the **TRIGGER** selector on the CLOCK card. The first runs continuously; the other two wait for a sidechain hit.

Loop

The default. The curve loops continuously. With **SYNC** on, the loop is locked to the host transport: one cycle spans the chosen note division and the curve stays aligned to the bar, so it always starts in the same place relative to your project. With SYNC off, the curve free-runs at the **RATE** knob's Hz. The loop also runs while the transport is stopped, so you can hear and tune it without playing.

The RATE knob under SYNC

With SYNC on, the RATE knob is not idle: it steps through the same note divisions as the riser's selector, showing the division name in its value box, and the two stay in step because they are the same setting. That means you can automate the synced rate from a knob, or ride it live to halve and double the speed of a gate mid-phrase. Turn SYNC off and the knob goes back to free Hz where it left off.

One-Shot

The curve becomes a one-shot envelope. Each time the trigger source crosses **THRESH**, the playhead jumps to the start, plays through the shape once at the set rate, and then holds the curve's end value until the next hit. Draw a shape that rises and falls and you have a per-hit filter, volume or effect envelope, a pluck, a swell, a gated stab, fired by a kick, a snare, or the track's own transients.

Loop (Trig)

A retriggered loop. The curve loops continuously as in Loop mode, but every sidechain hit restarts it from the beginning, so the modulation re-locks to the groove on each trigger rather than to the bar. Useful when you want a free rate that still snaps back into phase with the performance.

The trigger source

In the two sidechain modes, the **source** selector on the riser chooses what the detector listens to:

- **Internal**, the plugin's own input. The curve fires from the main signal's transients, so a drum loop can trigger its own filter envelope with no routing at all.
- **External (DAW)**, the host's sidechain bus. Route any track to Orra Pump Pro's sidechain input and its hits fire the curve, the classic way to key one track's rhythm onto another.

Set the threshold while watching the trigger meter on the left of the screen: lower **THRESH** until the meter crosses the mark and fires reliably on the hits you want, but not on the ones you do not.

Tooltips and Languages

The circular ? button at the far right of the header toggles hover tooltips. With tips on, hover any knob, selector, button or the screen itself and a short line tells you what it does. Every control in the plugin has one, including all of the target edit views and the preset browser.

Right-click the ? button and a menu lets you read those tooltips in one of seven languages: **English, Dutch, Japanese, Spanish, Brazilian Portuguese, German** and **French**. The choice is saved with the session, so each project reopens in the language you set it to. It is not part of a preset, so loading a preset never changes it. Only the tooltips translate; the control names on the faceplate stay in English, so a screenshot or a tutorial matches whatever language you are reading in.

Tips & Workflow

Cutoff is the floor, depth is the sweep

If the CUTOFF knob seems to do little, your DEPTH is probably high. At full depth the curve drives the filter and CUTOFF sets only the lowest point of the sweep. For a full-spectrum sweep, set CUTOFF low. To keep a bright filter that only dips a little, raise CUTOFF and lower DEPTH. Watch the dashed ghost line to see exactly where the sweep sits.

Draw the throw, do not draw the tail

For the Reverb and Delay targets in Send mode, what you are drawing is the window the sound goes *into* the effect through, not the shape of the tail. A short bump on the last eighth of the bar throws that one hit into the reverb and lets it ring over the bar line; drawing a long slow fall instead just feeds the effect for longer. If you want the tail itself to swell and duck, switch MODE to Insert.

Draw on the grid, then add swing

Turn on SNAP and draw your points on the beat first. It is far easier to get a tight, musical rhythm when points lock to the grid. Then dial up SWING and watch the off-beat lines slide; re-place the off-beat points on the dotted lines to give the shape a shuffle without redrawing it. If the shape is on eighths but you want a sixteenth shuffle, leave GRID at 8 and set SW GRID to 16: the dotted sixteenths appear between your existing lines and you can drag points onto them.

Bar-length divisions assume 4/4

The bar-length divisions are counted in quarter notes, not in host bars: **1 Bar** is always four quarter notes, **2 Bars** eight, **4 Bars** sixteen. In 4/4 that is the same thing. In 3/4 or 6/8 it is not, and a bar-length cycle will slowly rotate against your bars. Pick a division that divides your bar evenly instead. A 3/4 or 6/8 bar is three quarter notes, so **1/4** gives you three cycles to the bar and stays locked, while **1 Bar** is a quarter note too long and walks forward by one beat every bar.

Use Side for width, Mid for focus

The CHANNEL selector is the secret weapon on the lane targets. A low-pass on **Side** filters only the stereo edges, narrowing the image rhythmically; **Volume** on Side is a rhythmic width wobble; **Bitcrush** on Side leaves a clean centre with a crushed halo around it. **Mid** keeps the centre, vocal, kick or bass, steady while you move everything around it. On a mono track these fold down sensibly, so the same preset still works.

Tremolo and gating without a filter

Set TARGET to **Volume** and the curve becomes a tempo-locked tremolo. Draw smooth humps for a gentle pulse, or square steps with SNAP for a hard rhythmic gate. Add a little SMOOTH to round the edges and keep it click-free.

Stereo movement from one knob

Raise STEREO to split the left and right playheads. On a filter target this sweeps the two channels out of phase for a wide, swirling motion; on Volume it becomes a stereo tremolo; combined with a panning shape it ping-pongs. Watch the violet playhead to see how far the right channel is lagging.

Build it in ALL, perform it in SEQ

The two modes are not either/or. Stack a chop, a throw and a width move on three tabs in ALL to make one groove, then switch to SEQ, put a second groove's layers on the tabs you are not using, and automate the active layer to move between them at the section change. With FOLLOW on, the screen follows the automation, so you can watch what is playing during the pass.

Let AUTO set the level, then leave it

Switch AUTO on while the loop is playing and give it a few bars: it needs whole cycles of the slowest layer to measure. It then holds that one value, and the GAIN knob sits on top of it. If you change the shape a lot, switch AUTO off and on again to measure afresh. Loading a preset or a scene does that for you.

One-shot envelopes from the kick

In One-Shot mode with the Internal source, a drum bus triggers its own per-hit filter envelope. Draw a fast rise and slow fall for a classic pluck, or an instant drop and slow open for a reverse-swell feel. Tune the rate so the shape finishes just before the next hit.

Orra Pump Pro is a product of Orra Audio LLC.

For support, updates, and documentation: orra.audio