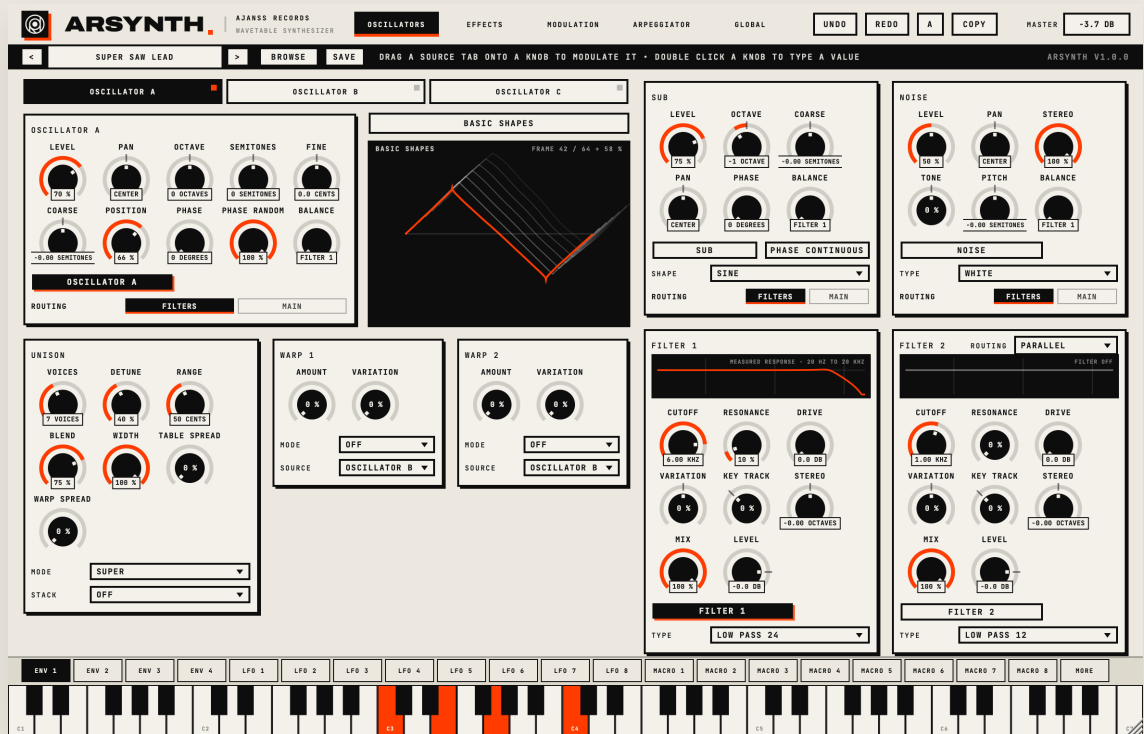


AJANSS RECORDS

ARSYNTH

WAVETABLE SYNTHESIZER



VERSION

1.0.0

FORMATS

AU • VST3

PLATFORMS

macOS • WINDOWS

DOCUMENT

USER GUIDE

01 WHAT IT DOES

ARSYNTH is a polyphonic wavetable synthesizer. Three **wavetable oscillators**, a sub oscillator and a noise source feed **two filters** with twenty-two types. Four envelopes, eight LFOs, eight macros and a sixty-four slot **modulation matrix** drive everything: every continuous control in the synth and in the effect rack is a modulation target – drag a source tab onto a knob and the depth shows as an arc around it. A rack of **twelve effects** in the order you drag them, an **arpeggiator** locked to the host clock, MPE, and one hundred factory presets in eight categories.

Each oscillator reads a table of up to 256 frames, 2048 samples per frame. Sixteen factory tables ship with the plugin; your own load from WAV and export back as 32-bit float, and the **wavetable editor** draws frames by hand, edits harmonics one by one, and fills a spectral morph between two frames. Two **WARP** slots per oscillator offer twenty-four modes: phase warps, read warps, shapers and cross modulation from another oscillator. Unison runs up to sixteen voices with five detune modes.

What it promises it measures: alias products **115 dB down**, pitch within **0.000011 cents**, the same output at **every buffer size**, **exact silence** after the last note, every warp **bit identical** to no warp at AMOUNT 0. The numbers are on pages 14 and 15.

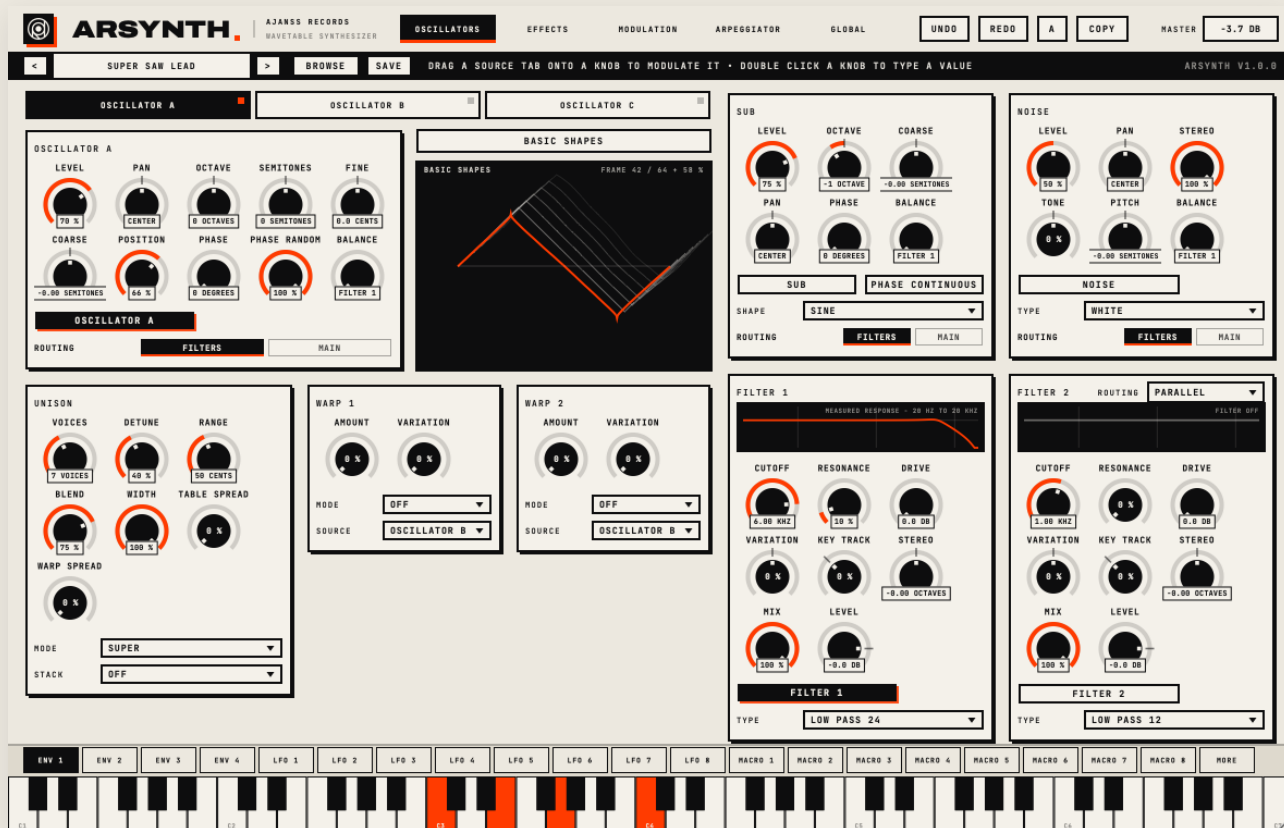
02 INSTALLING

macOS – run ARSYNTH Installer.pkg and follow the steps; choose the formats and whether to install for every user or only yourself. The package is signed and notarised by Apple, so it opens normally.

Windows – run ARSYNTH Installer.exe; the plugin goes to the shared VST3 folder. The installer is not codesigned yet, so SmartScreen may warn you: click More info, then Run anyway. Only needed once.

After installing – rescan the plugin list in your DAW; ARSYNTH appears under Ajanss Records > ARSYNTH in the instrument list. macOS 10.13 or newer, Intel or Apple Silicon (universal binary); Windows 10 or newer, 64-bit. Audio Unit and VST3 on macOS, VST3 on Windows.

03 THE WINDOW



The **top bar** holds the five pages – OSCILLATORS, EFFECTS, MODULATION, ARPEGGIATOR, GLOBAL – then UNDO, REDO, A (switch between the A and B states), COPY (copy the current state to the other slot) and MASTER, a level field you drag or double-click to type. The black strip below it is the **preset bar**: previous, the preset name, next, BROWSE and SAVE, and to the right of them a **hint** for whatever the mouse is over.

The **source strip** above the keyboard is on every page: ENV 1-4, LFO 1-8, MACRO 1-8 and MORE (velocity, aftertouch, the wheels, key, MPE). Drag a tab onto a knob to modulate it; click one to open its editor on the MODULATION page. The **keyboard** plays the synth – click or drag – and lights the notes the engine is holding.

Knobs: drag to change, double-click to type a value, ALT-drag to change the depth of the last modulation on that knob. Modulated knobs show one arc per source around them; right-click for the list of slots. Values that do not fit under the knob are written on a small tag inside the arc. Selection rows and drop-down lists never abbreviate.

Window size: drag the corner; the window scales from 75 to 150 percent and keeps its proportions.

04 OSCILLATORS

The OSCILLATORS page shows one oscillator at a time (the A / B / C tabs) with UNISON and the two WARP slots under it, and SUB, NOISE, FILTER 1 and FILTER 2 on the right. The dark panel draws the **table**: the frame the oscillator is reading in orange, with the neighbouring frames stacked behind it.

Tables

The button above the wave view chooses a table: sixteen factory tables (BASIC SHAPES, PULSE WIDTH, HARMONIC BUILD, ODD HARMONICS, VOWELS, FM RATIO 1-3, HARD SYNC, PHASE DISTORTION, WAVEFOLDER, DIGITAL STEPS, ORGAN, RANDOM SPECTRA, METALLIC, SINE), IMPORT WAV FILE, EXPORT WAV FILE and EDIT TABLE. A WAV of any bit depth loads; if it carries a clm frame marker the frame length is read from it, otherwise the file is cut into 2048-sample frames (a single-cycle file becomes one frame). Frames are resampled to 2048 samples when needed. A user table can play with CROSSFADE (frames as drawn, a linear blend between neighbours) or SPECTRAL interpolation, which generates in-between frames when the table loads so that two opposite-phase frames no longer dip in level between them.

POSITION is where in the table the oscillator reads; modulate it for movement. OCTAVE, SEMITONES, FINE and COARSE tune it; PHASE sets the start phase and PHASE RANDOM how much of it is randomised per note. ROUTING sends the oscillator to the FILTERS or straight to MAIN, and the FILTER 1 / FILTER 2 balance knob splits it between the two filters.

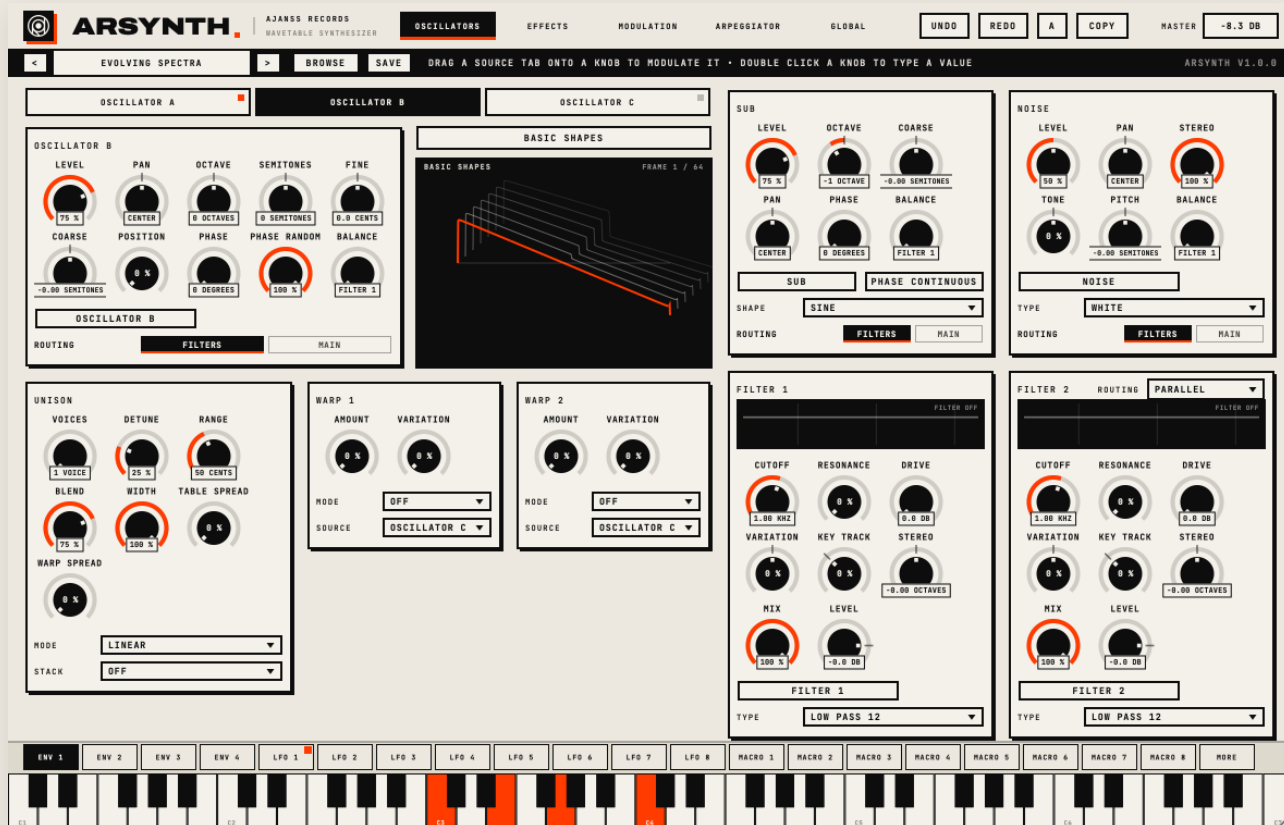
Unison

VOICES 1-16. DETUNE is the amount and RANGE the widest spread; MODE shapes the spread (LINEAR, SUPER, EXPONENTIAL, INVERSE, RANDOM); STACK adds octaves (OCTAVE, OCTAVE AND FIFTH, CENTER DOWN ONE OCTAVE, CENTER DOWN TWO OCTAVES). BLEND is the level of the outer voices against the centre, WIDTH their stereo spread, TABLE SPREAD spreads the voices across the table and WARP SPREAD gives each voice its own warp amount. The level is power-normalised: one to sixteen voices stay within 0.04 dB of each other.

Warp

Two slots, each with a MODE, AMOUNT and VARIATION. **Phase warps** read the table differently: BEND UP, BEND DOWN, SQUEEZE OUT, SQUEEZE IN, PULSE WIDTH, SYNC (VARIATION softens the window), MIRROR. **Read warps** change what is read: FLIP, LOW PASS, HIGH PASS, ODD, EVEN. **Shapers** bend the amplitude: SOFT CLIP, HARD CLIP, SINE FOLD, LINEAR FOLD, SINE SHAPER, RECTIFY, ASYMMETRIC, BIT CRUSH. **Cross modulation** uses another oscillator or the sub as the modulator (the SOURCE row): FREQUENCY MODULATION, PHASE MODULATION, AMPLITUDE MODULATION, RING MODULATION. When one slot is a cross mode the other slot is off. Every warp is band limited: at AMOUNT 0 it is bit identical to no warp, and the alias figures are on page 14.

05 FILTERS



Two filters, each with its own switch, TYPE, CUTOFF, RESONANCE, DRIVE, VARIATION, KEY TRACK, STEREO (an octave offset between the left and right cutoffs), MIX and LEVEL. The dark strip above the knobs is the filter's **measured response**: the engine's own filter is fed an impulse with the current settings and the result is drawn from 20 Hz to 20 kHz. ROUTING in the FILTER 2 title chooses SERIAL (FILTER 1 feeds FILTER 2) or PARALLEL (both from the sources, mixed by each source's balance knob).

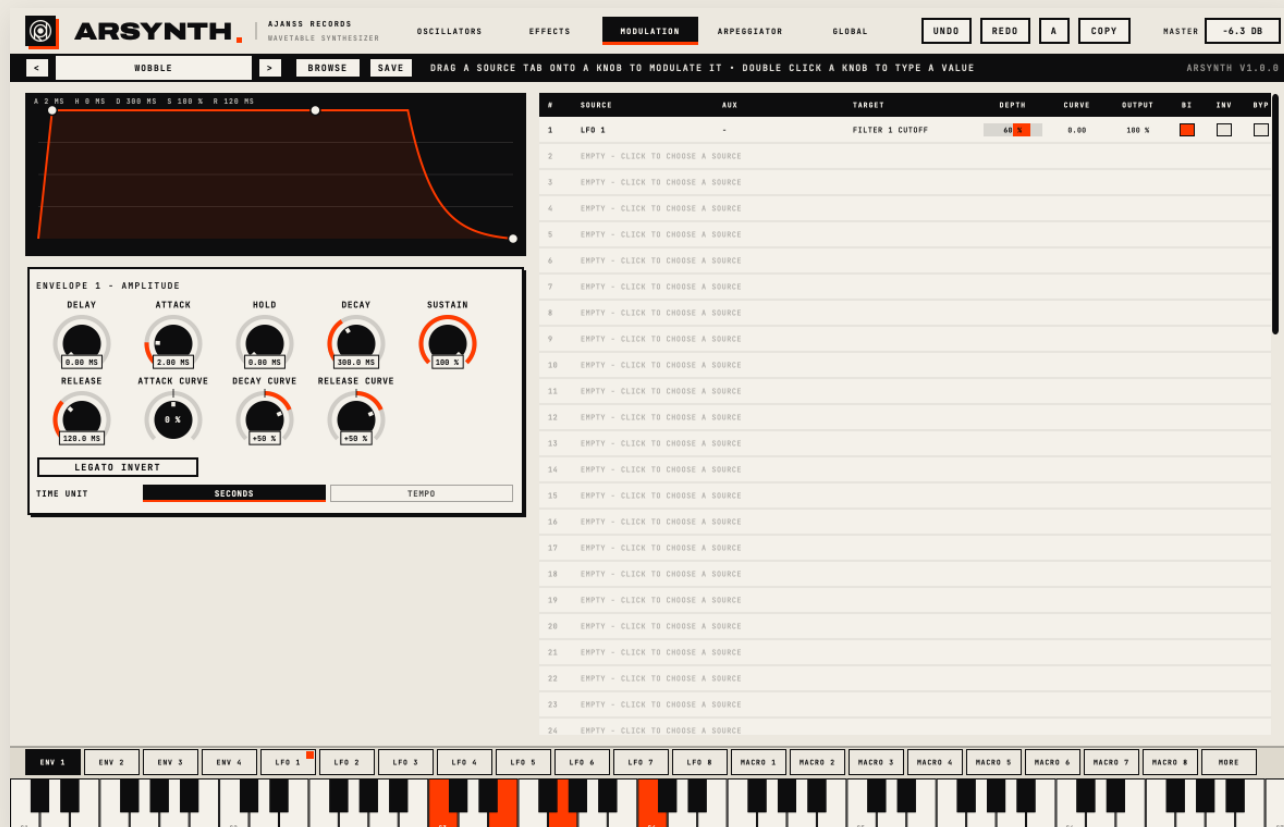
Types: LOW PASS 12 and 24, HIGH PASS 12 and 24, BAND PASS 12 and 24, NOTCH, PEAK, LADDER 24 and 12 (a four-pole ladder that self-oscillates at full RESONANCE, tuned within 0.03 cents), DIODE 18, MORPH (VARIATION sweeps low pass to band pass to high pass), DUAL BAND, COMB POSITIVE and COMB NEGATIVE (VARIATION is the damping), PHASER, FORMANT (VARIATION moves between the vowels), LOW SHELF, HIGH SHELF and BELL (RESONANCE sets the gain), RING MODULATOR and DOWNSAMPLE.

KEY TRACK moves the cutoff with the note: at 100 percent the filter follows the keyboard exactly (measured at -3.010 dB on the note from C2 to C7). **DRIVE** pushes the input into the filter's non-linearity; at 0 dB the filter is exactly linear.

Sub and noise

SUB: SINE, ROUNDED, TRIANGLE, SAW, SQUARE or PULSE, OCTAVE, COARSE, PHASE, PAN, LEVEL; PHASE CONTINUOUS keeps its phase running between notes. **NOISE:** WHITE, PINK, BROWN, BLUE, STEPPED (a pitched sample-and-hold) or CRACKLE (random impulses), with TONE, PITCH, STEREO, PAN and LEVEL. Both route to the filters or to MAIN like an oscillator.

06 MODULATION



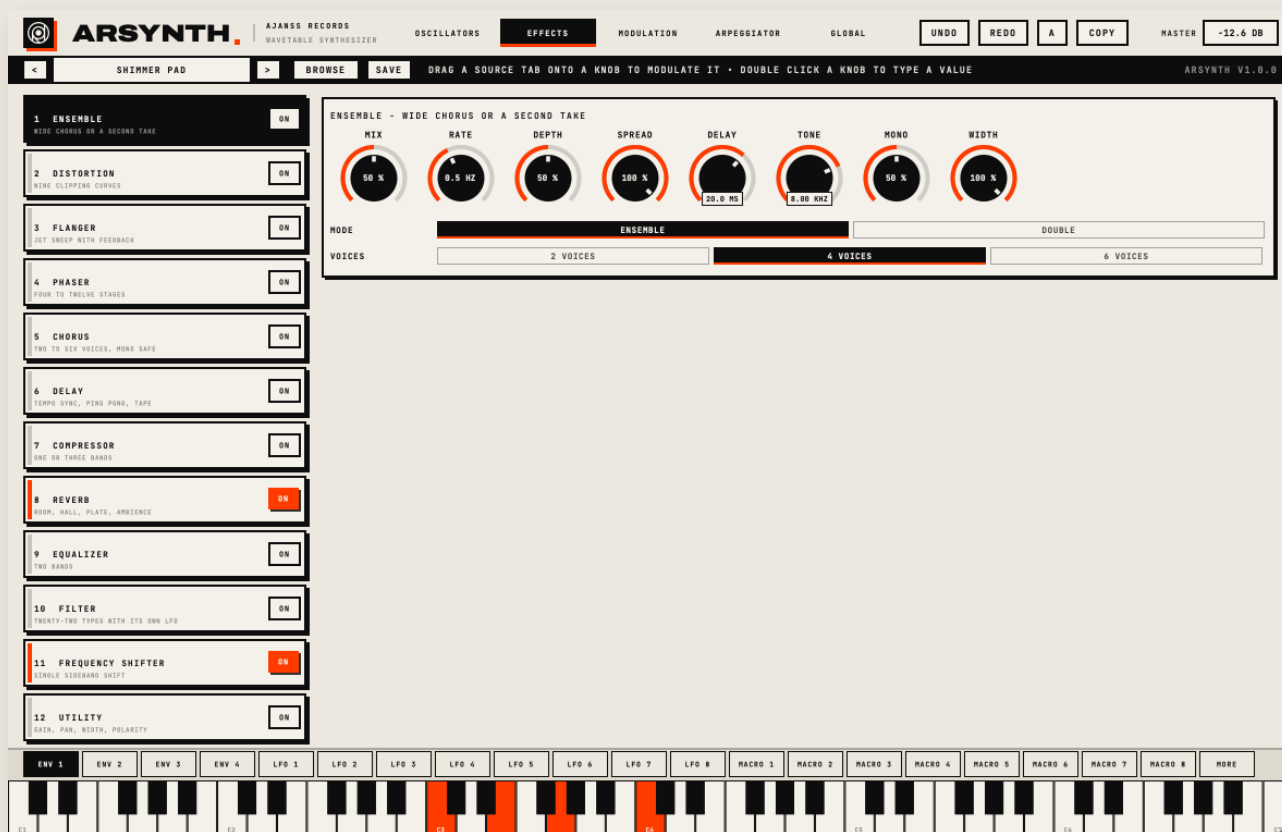
Drag and drop: take a tab from the source strip and drop it on a knob. A slot is created at a starting depth and the knob draws an arc for it. ALT-drag the knob to change that depth; right-click the knob to bypass, remove or flip a slot. The MODULATION page shows the selected source's editor on the left and the whole **matrix** on the right: sixty-four rows with SOURCE, AUX (a second source that scales the first), TARGET, DEPTH, CURVE, OUTPUT, BI (bipolar), INV (invert the auxiliary) and BYP. Every continuous control of the synth and of the effect rack is a target – 258 of them.

Envelopes ENV 1–4 (ENV 1 is the amplitude): DELAY, ATTACK, HOLD, DECAY, SUSTAIN, RELEASE, a curve for the attack, decay and release, and TIME UNIT in SECONDS or in TEMPO divisions. Drag the handles on the graph – the end of the attack, the end of the decay (its height is SUSTAIN) and the end of the release. LEGATO INVERT restarts the envelope from the top on a legato note.

LF0s LFO 1–8: TYPE is SHAPE (drawn), RANDOM HOLD, RANDOM SMOOTH or CHAOS (a Lorenz attractor); MODE is FREE, RETRIGGER or ONE SHOT; POLYPHONIC gives every voice its own LFO. RATE in hertz or, with TEMPO SYNC, in divisions locked to the host's position. DELAY and RISE fade the LFO in, SMOOTH rounds the shape, PHASE sets where it starts. In the shape editor drag a point, double-click to add or remove one, and drag between two points to bend the segment.

Macros MACRO 1–8 are knobs with no sound of their own; assign them to anything and automate them from the host.

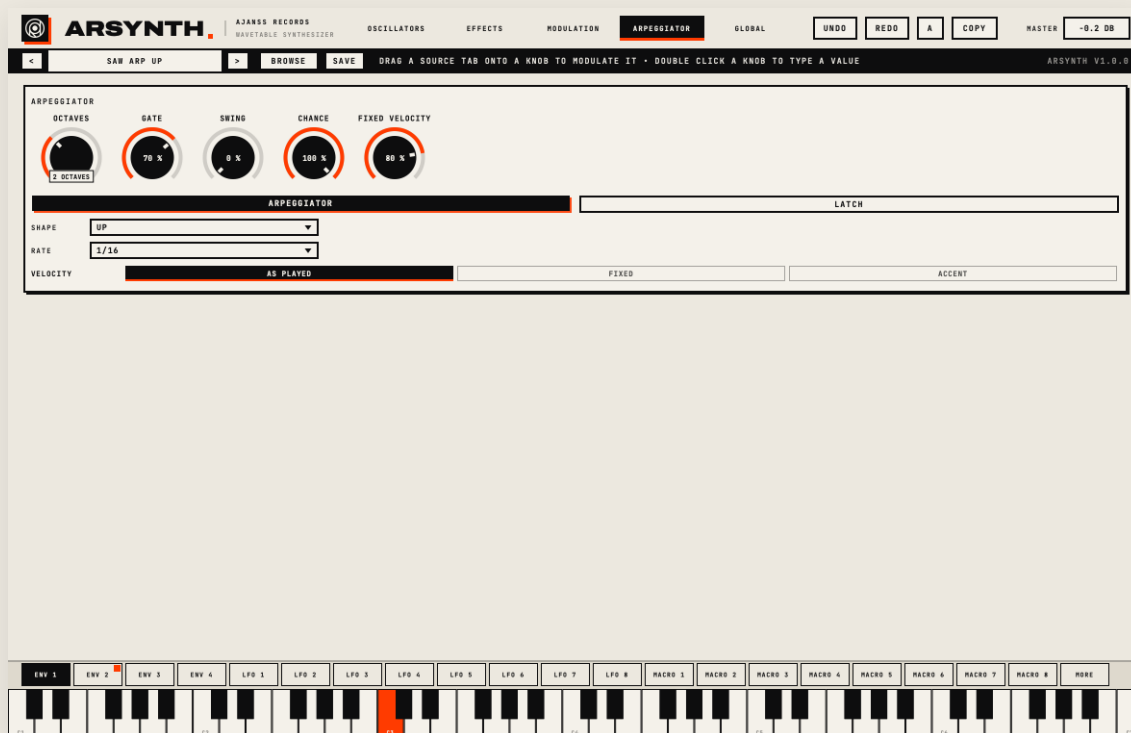
07 EFFECTS



Twelve modules on the left, in the order the signal runs; drag a tile to reorder, press ON to switch it on. Click a tile to open its controls on the right. A module that is off costs nothing and passes the signal through bit for bit; switching one on or off crossfades over 5 ms. Every knob in the rack is a modulation target. MASTER is applied after the rack.

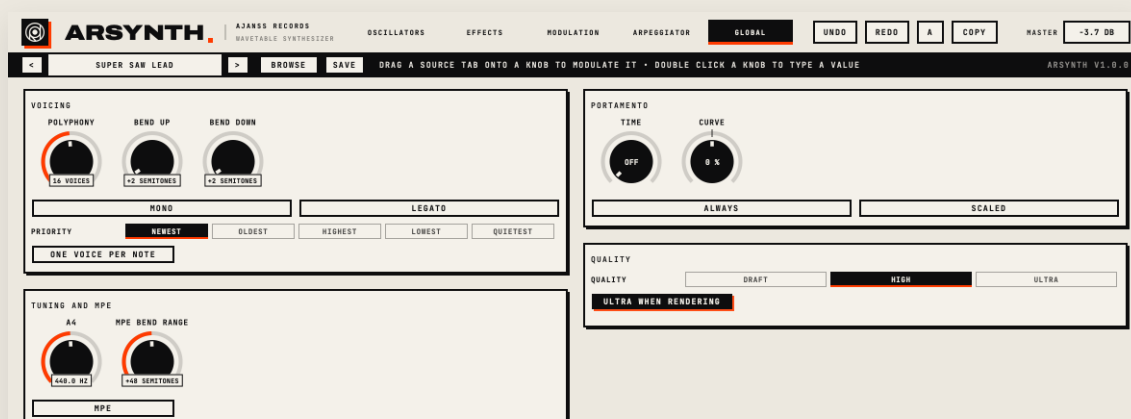
ENSEMBLE a wide chorus or a doubled take (ENSEMBLE or DOUBLE mode, two to six voices). **DISTORTION** nine clipping curves from SOFT CLIP to SQUARE FUZZ, with TONE, a HIGH PASS in front and OUTPUT. **FLANGER** a short modulated delay with FEEDBACK. **PHASER** four to twelve stages around a CENTER frequency. **CHORUS** two to six voices, mono safe. **DELAY** tempo synced or free, STEREO, PING PONG or MID SIDE, with a CLEAN, TAPE, BUCKET BRIGADE or LOW FIDELITY character and low and high cuts on the repeats. **COMPRESSOR** one or three bands, CLEAN, PUNCH, GLUE or VINTAGE character, KNEE, AUTO GAIN, per-band gain and a LOOKAHEAD that is reported to the host as latency. **REVERB** ROOM, HALL, PLATE or AMBIENCE with SIZE, DECAY, PREDELAY, DAMPING, EARLY REFLECTIONS and WIDTH. **EQUALIZER** two bands, each LOW SHELF, BELL or HIGH SHELF. **FILTER** the same twenty-two types as the voice filters, with its own LFO. **FREQUENCY SHIFTER** a single-sideband shift of ± 2000 Hz with FEEDBACK. **UTILITY** GAIN, PAN, WIDTH, MONO BELOW, LOW PASS, HIGH PASS, POLARITY FLIP and a DC FILTER.

08 ARPEGGIATOR



Switch it on and hold a chord. **SHAPE**: UP, DOWN, UP-DOWN, DOWN-UP, CONVERGE, DIVERGE, AS PLAYED, RANDOM or CHORD (the whole chord repeated). **RATE** from 8/1 to 1/64 with dotted and triplet values, locked to the host's position – the steps land on the grid even after a rewind, and when the transport is stopped the arpeggiator runs on its own clock at the host's tempo. **OCTAVES** repeats the pattern one to four octaves up. **GATE** is the note length, **SWING** delays every second step, **CHANCE** skips steps at random (the same pattern every time the song plays), **LATCH** keeps the chord running after you let go. **VELOCITY**: AS PLAYED, FIXED (the FIXED VELOCITY knob) or ACCENT (the first step of each cycle louder). The sustain pedal holds the chord.

09 GLOBAL



10 WAVETABLE EDITOR



Choose EDIT TABLE from the table button. The editor opens over the page with a copy of the current table – a factory table too, so any of the sixteen is a starting point. Nothing reaches the oscillator until you press APPLY; CANCEL or ESC closes without a change. APPLY is one undo step.

Frames on the left: click to select, up and down arrows to step. ADD FRAME inserts an empty frame after the selected one, DUPLICATE a copy, REMOVE deletes it. MORPH FROM marks the selected frame; select another and press MORPH TO, and every frame between them is rewritten as a spectral morph from one to the other.

Waveform: PEN draws freehand, LINE draws a straight line between two points, SINE draws one cycle over the range you drag, its amplitude set by how far down or up you drag. **Harmonics** below it: sixty-four bars of amplitude, a strip of phase under them; drag across either to write. On the right, NORMALIZE scales the frame (or all frames) to a peak of 1.0, REMOVE DC removes the offset, EDGE CROSSFADE spreads the wrap-around step of the frame over its first and last sixty-four samples so the table plays without a click. INTERPOLATION chooses CROSSFADE or SPECTRAL playback, and TABLE NAME is what the table button will show.

11 PRESETS

One hundred factory presets in BASS, LEAD, PAD, PLUCK, KEYS, CHORD, ARP and FX, twelve in each, plus four INIT patches (INIT, INIT SINE, INIT SAW, INIT SQUARE). Every factory preset was played through the plugin, its peak measured, and its MASTER set so the peak is -6 dBFS – switching presets does not change the level.

The preset bar: the arrows step through the list that is currently visible in the browser (all presets, or one category, or the result of a search), so they can walk through the basses alone. BROWSE opens the browser: categories on the left, a search box, the list; click a preset to load it, use the up and down keys to move. SAVE stores the current sound as a user preset with the name you type; RENAME and DELETE work on user presets. User presets are files in **Documents / ARSYNTH**

Presets, one .arsynth per preset – copy them to another computer and they appear under USER.

A preset is the complete state: every parameter, the tables (a user table is embedded once, by content), the matrix, the LFO shapes and the effect order. The DAW session stores the same state.

CATEGORY	PRESETS
BASS	SUB HEAVY, REESE, ACID LADDER, FM BASS, WOBBLE, GROWL, DEEP PLUCK BASS, SQUARE BASS, DISTORTED BASS, EIGHT OH EIGHT, METALLIC BASS, SYNC BASS
LEAD	SUPER SAW LEAD, PWM LEAD, SYNC LEAD, PHASE DISTORTION LEAD, FM BELL LEAD, SCREAMING FOLD, VOWEL LEAD, ORGAN LEAD, DIGITAL STEPS LEAD, SOFT SINE LEAD, RING MOD LEAD, HARMONIC BUILD LEAD
PAD	WARM PAD, VOWEL PAD, GLASS PAD, DARK DRONE, STRINGS, EVOLVING SPECTRA, BREATH PAD, CHOIR, SHIMMER PAD, PULSE PAD, SLOW SYNC PAD, ORGAN PAD
PLUCK	BRIGHT PLUCK, GLASS PLUCK, PIZZICATO, FM PLUCK, SQUARE PLUCK, KALIMBA, SYNC PLUCK, VOWEL PLUCK, STEPPED PLUCK, SOFT PLUCK, RESONANT PLUCK, HARP
KEYS	ELECTRIC PIANO, TINE KEYS, PLUCKED KEYS, ORGAN KEYS, BELL KEYS, MARIMBA, REED PIANO, MUSIC BOX, HOUSE PIANO, VIBRAPHONE, CELESTA, DIGITAL KEYS
CHORD	STACK CHORD, MINOR SEVENTH, MAJOR STAB, SUS CHORD PAD, FIFTHS POWER, HOUSE STAB, OCTAVE ORGAN, DETUNED NINTH, PLUCKED TRIAD, SYNC CHORD, DARK MINOR, BELL CHORD
ARP	SAW ARP UP, PLUCK ARP, SQUARE SEQUENCE, BELL ARP, TRIPLET GATE, CONVERGE ARP, SWING ARP, CHORD ARP, OCTAVE RUNNER, VOWEL ARP, DOWN STAIRS, LATCHED PULSE

12 PARAMETERS

Oscillators B and C repeat the A rows; envelopes 2-4 repeat ENV 1; LFOs 2-8 repeat LFO 1. 421 parameters in all.

CONTROL	RANGE	DEFAULT	WHAT IT DOES
OSCILLATOR A	on / off	on (B, C off)	The oscillator plays.
OCTAVE / SEMITONES / FINE	±4 / ±12 / ±100 cents	0	Tuning steps.
COARSE	±48 semitones	0	Continuous pitch, the modulation target for pitch.
POSITION	0 ... 100 %	0 %	Where in the table the oscillator reads.
LEVEL / PAN	0 ... 100 % / L ... R	75 % / CENTER	Level and position.
PHASE / PHASE RANDOM	0 ... 360° / 0 ... 100 %	0° / 100 %	Start phase and how much of it is randomised per note.
ROUTING / BALANCE	FILTERS, MAIN / F1 ... F2	FILTERS / F1	Into the filters or straight out; split between the filters.
UNISON VOICES	1 ... 16	1	Voices per note.
DETUNE / RANGE	0 ... 100 % / 0 ... 1200 cents	25 % / 50 cents	Spread amount and its widest reach.
BLEND / WIDTH	0 ... 100 %	75 % / 100 %	Outer voices against the centre; stereo spread.
TABLE SPREAD / WARP SPREAD	0 ... 100 %	0 %	Each voice at its own table position; its own warp amount.
MODE / STACK	5 modes / 5 stacks	LINEAR / OFF	Shape of the detune spread; octave stacking.
WARP 1, 2 MODE	OFF + 24 modes	OFF	See page 4.
AMOUNT / VARIATION	0 ... 100 %	0 %	Depth; the mode's second control.
SOURCE	A, B, C, SUB	the next oscillator	Modulator for the cross modulation modes.
SUB	6 shapes, ±4 oct, ±12 st	SINE, -1 octave	SHAPE, OCTAVE, COARSE, PHASE, PHASE CONTINUOUS, PAN, LEVEL 75 %.
NOISE	6 types	WHITE, 50 %	TYPE, LEVEL, PAN, STEREO, TONE ±100 %, PITCH ±24 semitones.
FILTER 1, 2	on / off, 22 types	off, LOW PASS 12	See page 5.
CUTOFF / RESONANCE	20 Hz ... 20 kHz / 0 ... 100 %	1 kHz / 0 %	Frequency and peak.
DRIVE / VARIATION	0 ... +24 dB / ±100 %	0 dB / 0 %	Input drive; the type's second control.

12 PARAMETERS, CONTINUED

CONTROL	RANGE	DEFAULT	WHAT IT DOES
KEY TRACK / STEREO	-100 ... +200 % / ± 1 octave	0	Cutoff follows the note; left-right cutoff offset.
MIX / LEVEL	0 ... 100 % / -inf ... +12 dB	100 % / 0 dB	Dry to filtered; output level.
ROUTING	PARALLEL / SERIAL	PARALLEL	How the two filters connect.
ENV DELAY / HOLD	0 ... 10 s	0	Wait before the attack; hold at the top.
ATTACK / DECAY	0 ... 20 s	1 ms / 1 s	ENV 1 SUSTAIN 100 %; ENV 2-4 SUSTAIN 0 %.
RELEASE / CURVES	0 ... 30 s / ± 100 %	20 ms / 0, +50, +50	Release; attack, decay and release curve.
TIME UNIT / DIVISIONS	SECONDS, TEMPO	SECONDS	In TEMPO each stage picks a division (DELAY and HOLD may be OFF).
LFO TYPE / MODE	4 types / 3 modes	SHAPE / RETRIGGER	See page 6.
RATE / DIVISION	0.01 ... 100 Hz / 8/1 ... 1/64	2 Hz / 1/4	Speed, free or with TEMPO SYNC on.
DELAY / RISE / SMOOTH	0 ... 10 s / 10 s / 1 s	0	Fade-in wait, fade-in time, shape smoothing.
PHASE / VOICING	0 ... 100 % / POLY, MONO	0 % / POLYPHONIC	Start point; one LFO per voice or one for all.
MACRO 1 ... 8	0 ... 100 %	0 %	Assignable knobs.
MASTER	-inf ... +6 dB	0 dB	Output level, after the effect rack.
POLYPHONY	1 ... 32 voices	16	Voices before stealing starts.
MONO / LEGATO	on / off	off	One voice; no retrigger on overlapping notes.
PRIORITY / ONE VOICE PER NOTE	5 rules / on, off	NEWEST / off	Which voice is stolen; retrigger the same voice on a repeated note.
PORTAMENTO TIME CURVE	/OFF ... 10 s / ± 100 %	OFF / 0 %	Glide time and its shape; ALWAYS and SCALED switches.
BEND UP / DOWN	0 ... 48 semitones	2	Pitch wheel range.
A4	415 ... 466 Hz	440 Hz	Master tune.
MPE / MPE BEND RANGE	on, off / 1 ... 96 semitones	off / 48	Per-note expression from an MPE controller.
QUALITY / ULTRA WHEN RENDERING	DRAFT, HIGH, ULTRA	HIGH / on	Internal rate; switch up for offline bounces.
ARPEGGIATOR	on / off, 9 shapes, 30 rates	off, UP, 1/16	OCTAVES 1-4, GATE 0-100 % (80), SWING 0-100 % (0), CHANCE 0-100 % (100), LATCH, VELOCITY mode, FIXED VELOCITY 80 %.

12 PARAMETERS, EFFECTS

Each module has an ON switch and a MIX (the dry to wet balance; UTILITY has none).
Values in brackets are defaults.

CONTROL	RANGE	DEFAULT	WHAT IT DOES
ENSEMBLE	MIX 50 %		MODE ENSEMBLE / DOUBLE, RATE 0-10 Hz (0.5), DEPTH 50 %, VOICES 2 / 4 / 6, SPREAD 100 %, DELAY 1-45 ms (20), TONE 500 Hz-20 kHz (8 kHz), MONO 50 %, WIDTH 100 %.
DISTORTION	MIX 100 %		TYPE SOFT CLIP, DIODE, WARM, CRUNCH, SATURATE, HARD CLIP, FUZZ, HEAVY FUZZ, SQUARE FUZZ; DRIVE 30 %, TONE 50 %, HIGH PASS 20 Hz-1 kHz (80), OUTPUT ± 24 dB.
FLANGER	MIX 50 %		RATE 0-10 Hz (0.3), DEPTH 50 %, DELAY 0.5-20 ms (3), FEEDBACK 50 %, TONE 8 kHz, MONO 50 %, WIDTH 100 %.
PHASER	MIX 50 %		RATE 0-10 Hz (0.4), DEPTH 60 %, CENTER 100 Hz-10 kHz (1 kHz), FEEDBACK 40 %, STAGES 4 / 6 / 8 / 12.
CHORUS	MIX 50 %		RATE 0.5 Hz, DEPTH 50 %, VOICES 2 / 4 / 6, SPREAD 100 %, DELAY 1-45 ms (12), TONE 8 kHz, MONO 0 %, WIDTH 100 %.
DELAY	MIX 30 %		SYNC on, DIVISION 1/8, TIME 1 ms-4 s (250), FEEDBACK 35 %, STEREO / PING PONG / MID SIDE, CHARACTER CLEAN / TAPE / BUCKET BRIGADE / LOW FIDELITY, LOW CUT 100 Hz, HIGH CUT 8 kHz, WIDTH 100 %.
COMPRESSOR	MIX 100 %		ONE / THREE BANDS, crossovers 200 Hz and 3 kHz, THRESHOLD -18 dB, RATIO 1:3 (to LIMIT), ATTACK 10 ms, RELEASE 120 ms, KNEE 6 dB, GAIN, AUTO GAIN, CHARACTER CLEAN / PUNCH / GLUE / VINTAGE, LOOKAHEAD 0-5 ms, band gains ± 12 dB.
REVERB	MIX 25 %		SPACE ROOM / HALL / PLATE / AMBIENCE (HALL), SIZE 50-150 %, DECAY 0.1-30 s (2), PREDELAY 0-200 ms (10), DAMPING 6 kHz, LOW CUT 120 Hz, HIGH CUT 12 kHz, WIDTH 0-120 %, EARLY REFLECTIONS 22 %.
EQUALIZER	MIX 100 %		Two bands: TYPE LOW SHELF / BELL / HIGH SHELF, FREQUENCY 20 Hz-20 kHz (200 Hz, 4 kHz), GAIN ± 24 dB, Q 0.5-10.
FILTER	MIX 100 %		The 22 voice filter types, CUTOFF 1 kHz, RESONANCE 20 %, DRIVE, VARIATION, LFO RATE 0-20 Hz (0.5), LFO DEPTH 0 %.
FREQUENCY SHIFTER	MIX 50 %		AMOUNT ± 2000 Hz (0), FEEDBACK 0-100 %.
UTILITY			GAIN ± 24 dB, PAN ± 100 %, WIDTH 0-200 %, MONO BELOW 0-500 Hz, LOW PASS 1-20 kHz, HIGH PASS 20 Hz-1 kHz, POLARITY FLIP, DC FILTER.

13 MEASURED

Every number below comes from the plugin's own test suite, run on the shipped build at 48 kHz and HIGH quality unless stated. They are not targets; they are what came out.

ALIASING	A sawtooth swept from C0 to C8 in four-semitone steps: the strongest non-harmonic component is -115.2 dB below the loudest harmonic at HIGH, -121.2 dB at ULTRA, -109.4 dB at DRAFT (the same at 44.1 and 96 kHz).
PITCH	Every third MIDI note from 0 to 127: at most 0.000011 cents from the ideal. A4 at 432, 440 and 452 Hz lands within 0.0001 Hz; the pitch wheel at ± 2 and ± 12 semitones within 0.000 cents.
SAMPLE ACCURATE	A note moved by 1, 7, 16 or 333 samples gives the same output moved by the same amount: difference 0.
ANY BUFFER SIZE	1, 7, 64, 100 and 1024 samples and a buffer that changes size every block against 512: difference 0 – polyphonic, mono legato, filters in series, a modulated warp, a sixteen-slot matrix, and the effect rack.
LATENCY	41 samples at 48 kHz (0.85 ms), 60 at 44.1 kHz, 26 at 96 kHz, reported to the host and measured the same. The COMPRESSOR's LOOKAHEAD is added when it is on: 2 ms set, 96 samples reported, 96 measured.
UNISON	1, 3, 7 and 16 voices, with BLEND at 30 and 100 percent: level within 0.04 dB of a single voice.
WARP	At AMOUNT 0 all twenty-four modes in both slots are bit identical to no warp. Phase and read warps, C3 to C8, AMOUNT 0.5 and 1: alias products at or below -91.0 dB (44.1 kHz) and -101.1 dB (ULTRA). Shapers: -105 to -161 dB. Cross modulation, 52 cells: at or below -101.5 dB.
FILTERS	LOW PASS and HIGH PASS 12 and 24: -3.010 dB at the cutoff at 100 Hz, 1 kHz and 8 kHz; 24 dB types -24.1 dB one octave out. LADDER 24 self-oscillates within 0.03 cents of the cutoff. FORMANT A: peaks at 730 and 1090 Hz. BELL at +12 and -12 dB: +12.000 and -12.000. KEY TRACK 100 %: -3.010 dB on the note from C2 to C7.
ENVELOPES	A 100 ms linear attack reaches 90 percent at 90.000 ms; the decay passes its midpoint at 0.75000; retriggering during a release never dips.

13 MEASURED, CONTINUED

LF0	3 Hz over 10 s: 30.000000000 cycles. 1/4 at 120 BPM: 2.000000 Hz; 1/8 TRIPLET: 6.000000 Hz. SMOOTH 10 ms: the step settles at exactly e^{-1} after one time constant.
NOISE	Octave bands from 100 Hz to 12.8 kHz: WHITE +0.03 dB per octave, PINK -2.94, BROWN -5.93, BLUE +3.00 (ideal 0, -3.01, -6.02, +3.01).
ARPEGGIATOR	UP at 1/16 and 120 BPM fires every 6000 samples exactly; identical at buffer sizes 1, 7, 64, 13 and 1024; back on the grid after a rewind; GATE 50 % closes at +3000 samples; SWING 50 % gives 7500 / 4500.
EFFECTS	Every module off: the rack passes the synth through bit for bit. Each module at MIX 0: bit identical. Sixteen-sample against mixed buffers: difference 0 in all twelve. ENSEMBLE, FLANGER and CHORUS at MONO 0: mono residue -147 dB.
SILENCE	After the last note is released the output reaches exact zero 21 ms later and stays there. Two thousand notes in one buffer stay finite and are at exact zero 0.30 s after release.
HOSTILE HOSTS	A block of NaN on a parameter is caught and the next note plays; a stopped transport, a zero tempo, a NaN or jumping playhead change nothing; two instances do not disturb each other (difference 0); an unprepared call is safe; 44.1 to 96 kHz re-preparation works.
PRESETS	All 100 change the state, 100 distinct states, every peak set to -6.0 dBFS. All 2105 on-screen values read back exactly as written.
PROCESSOR	Eight notes of two oscillators at seven unison voices, sub and pink noise: 9.2 % of one core; with LADDER 24 into LOW PASS 12 in series: 11.6 %; with eight matrix slots: 9.6 %. The extreme case – 32 notes of three oscillators at 16 unison voices, sub and noise – 101 %, one full core (Apple Silicon, 48 kHz).

14 STARTING POINTS

Start from a preset

Press **BROWSE**, pick a category, walk the list with the arrow keys while you play. Every preset is at the same peak, so what you hear is the sound, not the level. Then change one thing: the filter **CUTOFF**, the wavetable **POSITION**, a warp **AMOUNT**.

A moving pad

Load **INIT**, choose the **VOWELS** or **EVOLVING SPECTRA** table, and drag **LFO 1** onto **POSITION**. Set **LFO 1** to 0.1 Hz. Set **ENV 1**'s **ATTACK** to 800 ms and **RELEASE** to 1.5 s, switch **UNISON** to 5 voices with **DETUNE** 30, and turn on **REVERB** in the rack. Add a second **LFO** on **FILTER 1 CUTOFF** with a small depth.

A bass that stays in tune

SUB on, **SINE**, one octave down, with **OSCILLATOR A** on **BASIC SHAPES** at the saw frame. **FILTER 1 LADDER 24** at 300 Hz with **ENV 2** on **CUTOFF** at 40 percent depth and a 250 ms **DECAY**. **MONO**, **LEGATO**, **PORTAMENTO** 60 ms. The **UNISON WIDTH** at 0 keeps it in the centre.

Cross modulation

On **OSCILLATOR A**, set **WARP 1** to **FREQUENCY MODULATION** with **SOURCE OSCILLATOR B**; turn **OSCILLATOR B** on with its **LEVEL** at 0 so only its modulation is heard, and tune **B** in whole ratios (**OCTAVE +1**, or **+7 semitones**). **AMOUNT** is the index; put **ENV 2** on it for a bell that softens as it decays. **PHASE MODULATION** does the same with a cleaner low end.

Your own table

EDIT TABLE, **ADD FRAME**, draw with **PEN** or **SINE**, **DUPLICATE** it, change the copy, then **MORPH FROM** the first and **MORPH TO** the last: the frames between fill themselves. **NORMALIZE ALL**, **EDGE CROSSFADE** if a frame clicks at the wrap, **APPLY**. **EXPORT WAV FILE** saves it with a **clm** marker so it loads back with the right frame count.

When it sounds wrong

A filter that seems to do nothing is usually off (the **FILTER 1** button) or the source is routed to **MAIN**. A thin sound in mono: check **UNISON WIDTH** and the **ENSEMBLE** or **CHORUS MONO** knob. If the DAW reports extra latency, the **COMPRESSOR**'s **LOOKAHEAD** is on. If the CPU climbs, lower **UNISON VOICES** or **QUALITY**.

15 SUPPORT

Instagram @ajanssrecords – Ajanss Records. Include your operating system, DAW and version, the plugin format and the version at the right of the preset bar. ARSYNTH 1.0.0 · © Ajanss Records