



Two saws. One voice. All low end.

X-Or is a two-oscillator monophonic bass synthesizer. Dual sawtooth oscillators, resonant low-pass filter with a dedicated contour envelope, loudness envelope, glide. One voice at a time. Plays one octave below the MIDI you send for pedal-bass voicing out of the box.



MONOPHONIC

DUAL SAW OSCILLATORS

RESONANT LOW-PASS + CONTOUR

ADS LOUDNESS

GLIDE

VST3 / CLAP

FREE

THE UI IN 60 SECONDS

LIVE CHART

The chart at the top is the synth's **post-processing output**. Toggle **WAVEFORM** for the time-domain trace (± 6 dB) or **SPECTRUM** for log-frequency magnitude with a $+4.3$ dB/oct display tilt so harmonic content reads naturally. **L** and **R** RMS meters sit on the right.

THREE CONTROL CARDS

Under the chart: **OSCILLATORS** (orange) for pitch and mix, **FILTER** (green) for cutoff, resonance, and contour envelope, **LOUDNESS** (violet) for amplitude attack / sustain / decay.

SIDE PANELS

The right edge of the body holds **GLIDE TIME** with its on/off toggle and the **OUTPUT LEVEL** knob. Resize the editor by dragging any edge - the aspect ratio is locked.

Init preset is a good starting point. Dial CUTOFF down to taste, raise CONTOUR to add filter movement under each note, and you have a usable bass voice in 30 seconds.

01. FIRST MOVE

1 PICK A NOTE

Send X-Or a single sustained MIDI note in the C1-C3 range. Because the synth transposes down an octave, your "C3" comes out as a true low **C2**.

2 LOWER THE CUTOFF

Drop **CUTOFF** in the FILTER card until it sounds round and dark. Around **300-500 Hz** is the classic bass zone for an init patch.

3 OPEN THE CONTOUR

Raise **CONTOUR** to 50-70 % and shorten **FILTER DECAY** to 200-400 ms. The filter snaps shut after each note attack - that's the classic plucky bass character.

02. ANATOMY AT A GLANCE

OSCILLATORS

OSC MIX

OSC B CO...

OSC B FINE

MASTER T...

50 %

0 st

0.0 cents

0.0 cents

OSCILLATORS // OSC MIX, OSC B COARSE, OSC B FINE, MASTER TUNE

FILTER

CUTOFF

RESONAN...

CONTOUR

ATTACK

DECAY

23.9 Hz

18 %

45 %

3.4 ms

21.0 ms

FILTER // CUTOFF, RESONANCE, CONTOUR, ATTACK, DECAY

LOUDNESS

ATTACK

SUSTAIN

DECAY

2.0 ms

0 %

20.8 ms

LOUDNESS // ATTACK, SUSTAIN, DECAY

OSCILLATORS

Two saw oscillators. OSC MIX blends A↔B. OSC B COARSE / FINE detune B against A. MASTER TUNE shifts the whole voice.

FILTER

Resonant low-pass with a contour envelope. CONTOUR sets how much ATTACK/DECAY modulate CUTOFF under each note.

LOUDNESS

Amplitude envelope. ATTACK, SUSTAIN level, DECAY back to sustain. Single-stage envelope - no separate release time, the decay carries note-off.

GLIDE

Portamento between overlapping MIDI notes. TIME sets how long the slide takes. Toggle on per-patch.

OUTPUT LEVEL

Final gain into the host. Use the chart's L/R meters to keep the output level out of the top/red zone.

HEADER + FOOTER

Header: preset selector, A/B, undo/redo, menu. Footer: sample rate, latency, output mode, CPU.

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03. USEFUL STARTING POINTS

GOAL	MOVE	TIP
Pure sub fundamental	OSC MIX 0 %, CUTOFF 200 Hz, RESONANCE 0 %	Solo OSC A. Tight LOUDNESS DECAY (~600 ms) so notes don't pile up.
Rubber pluck	OSC MIX 50 %, OSC B FINE +7 c, CONTOUR 60 %	FILTER DECAY 250 ms snaps the cutoff shut after each note attack.
Fifth-up lead	OSC MIX 50 %, OSC B COARSE +7 st, RES 60 %	Add GLIDE TIME 60 ms for portamento between overlapping notes.
Detuned wobble	OSC MIX 50 %, OSC B FINE ±10-20 c	Free-running oscillators produce slow beating - useful for wide, animated bass without pushing the line obviously out of tune.
Sub-octave fatness	OSC MIX 30 %, OSC B COARSE -12 st	OSC B one octave below A. Adds weight without changing the apparent pitch.
Acid plucks	CUTOFF 800 Hz, RES 70 %, CONTOUR 80 %	Short FILTER DECAY (~150 ms). GLIDE on, TIME ~80 ms.

04. FILTER CONTOUR IN 30 SECONDS

CONTOUR is how much the filter envelope modulates the cutoff. At 0 % the filter sits at whatever CUTOFF says, all the time. At 100 % the cutoff opens fully on each note-on and decays back to the CUTOFF setting.

FILTER ATTACK and **FILTER DECAY** shape that movement. Fast attack + short decay = the classic plucky snap. Slow attack = filter sweeps into the note. Long decay = the cutoff opens for the whole note.

The filter has no separate sustain or release. The contour envelope decays from its peak back to the CUTOFF resting position - that's it.

05. GLIDE

Turn **GLIDE** on, then dial **GLIDE TIME** from 0 to 2000 ms. Notes that overlap in the MIDI roll - or notes played legato on a keyboard - glide between pitches over that time. Non-overlapping notes retrigger normally.

Habits: 40-80 ms for natural-feeling legato, 100-300 ms for obvious portamento phrases, longer for sound-design movement.



06. THE CHART

WAVEFORM

Time-domain trace of the post-processing output. Axis is ± 6 dB; large signals clip the visible area, which is fine - the audio is unaffected. Use this to read attack shape, decay curve, and detune beating between OSC A and OSC B.

SPECTRUM

Log-frequency magnitude (20 Hz - 20 kHz). The display applies a **+4.3 dB/oct tilt** so harmonic content of a low note doesn't ride a steep low-frequency hill - sub fundamentals and upper harmonics read at similar visual heights. Silent bins stay flat at the floor.

07. COMPARE HONESTLY

A / B

The header has an **A / B** toggle. A and B start as the same snapshot. Shape A, switch to B, then make a different move; flip between them to compare. Each slot keeps its own full parameter state.

INIT

The **INIT** button in the preset selector resets every parameter to its default. Double-click any single knob to reset just that one.

08. RECIPES

Sub-bass foundation: OSC MIX 0 % · CUTOFF 200 Hz · RES 0 % · CONTOUR 0 % · LOUDNESS DECAY 850 ms.

Rubber pluck: OSC MIX 50 % · OSC B FINE +7 c · CUTOFF 350 Hz · RES 35 % · CONTOUR 60 % · FILTER DECAY 250 ms.

Acid line: CUTOFF 800 Hz · RES 70 % · CONTOUR 80 % · FILTER DECAY 150 ms · GLIDE 80 ms.

Detuned bass: OSC MIX 50 % · OSC B FINE +12 c · CUTOFF 400 Hz · CONTOUR 55 %.

Fifth-up stab: OSC MIX 50 % · OSC B COARSE +7 st · CUTOFF 1.2 kHz · RES 50 % · LOUDNESS DECAY 300 ms.

09. FIXES

IT SOUNDS...	DO THIS
Muddy or boomy	Lower CUTOFF. Shorten LOUDNESS DECAY so notes don't pile up.
Thin or weak	Raise CUTOFF, push RES 40-60 %, increase CONTOUR.
Clicky on note start	LOUDNESS ATTACK 5-10 ms. FILTER ATTACK 2-5 ms.
No detune movement	OSC MIX away from 0 % or 100 %. OSC B FINE ± 5 -20 c.

10. INSTALL

FORMAT	FILE	DEFAULT LOCATION
VST3	X-Or.vst3	Linux ~/.vst3/ · Windows C:\Program Files\Common Files\VST3\
CLAP	X-Or.clap	Linux ~/.clap/ · Windows C:\Program Files\Common Files\CLAP\

11. PRESETS

Save with **SAVE** in the preset selector. Files use the **.xorpreset** extension and live by default in:

~/Documents/MousePlugins/X-Or/Presets/

User presets appear in the preset list after the factory entries. Use **IMPORT** to load a preset from anywhere on disk.

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PRODUCT PAGE

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