



Cognate Polymath

Modulation & Pitch

Category	Modulation & Pitch
Channels	Mono in / mono out
Version	1.01 (03/06/2026)

Overview

Polymath is a four-voice, low-latency pitch shifter and octaver built for bass. Four voices run in parallel with your dry signal — a fat sub octave, crystal-clear +1 and +2 octave voices, and a freely transposable Shift voice that travels anywhere from an octave down to two octaves up. Everything is polyphonic, including the sub, so chords and double-stops track cleanly with none of the glitching you'd get from an analogue octaver. Add the unique Attack control — which sweeps from slow ambient swells to transients that punch harder than your dry note — and a single Tone tilt, and one block covers octaver, down-tuner, harmoniser and detuned-chorus duty.

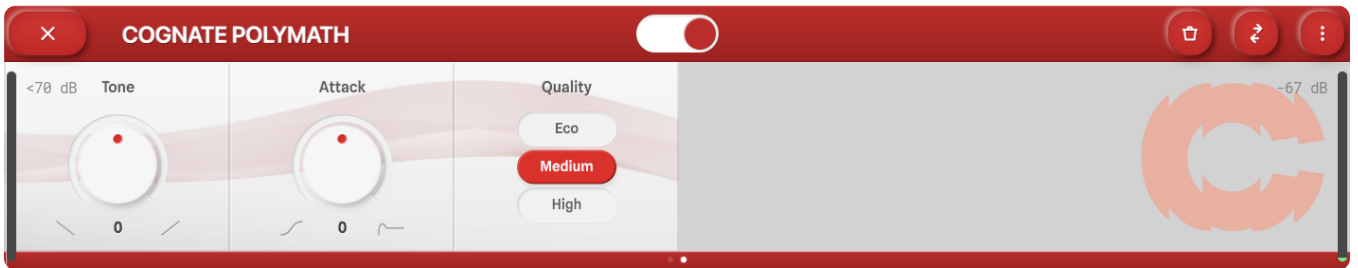
Use cases

- **Sub octaver** soloed or blended under your bass for a solid, synth-like low end — with none of the OC-2-style glitches.
- **Down-tuning on the fly** — drop a 4-string to low B, A or even sub E while staying punchy and fast.
- **Royal Blood-style power chords** — stack guitar voices an octave (or two) above your bass for huge guitar-and-bass tones from one instrument.
- **8-string bass / 12-string guitar emulation** using the octave voices plus a touch of detune on the Shift voice.
- **Harmonising** bass or guitar lines in 3rds, 10ths or other intervals with the Shift voice.
- **Lead and ambient sounds** — sculpt smooth guitar- or sax-like leads, or open the Attack control for lush, swelling washes of pitch-shifted chords.

Parameters



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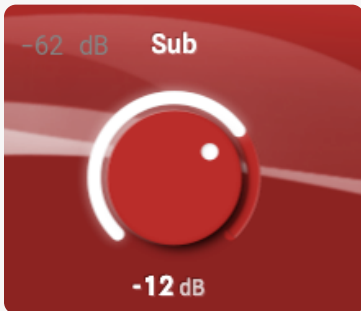
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Bypass

Type: Toggle in the centre of the top bar

Toggles the whole effect in and out. When bypassed, your dry signal passes through untouched.



Sub

Range: -40 to 0 dB **Default:** -12 dB **Special:** -40 = "Off"

Sets the level of the sub-octave voice — a smooth, solid octave-down that adds weight and support beneath your dry bass, or stands alone as a synth-like voice. Unlike an analogue octaver it never glitches and it's fully polyphonic, so chords and double-stops hold together.

Turn it fully left to "Off" to mute the voice entirely.



Oct

Range: -40 to 0 dB **Default:** -12 dB **Special:** -40 = "Off"

Sets the level of the octave-up voice — a bright, clean octave that turns your bass into a lead instrument or a guitar. Blend it in for bite and presence, or push it for a full register shift.

Turn it fully left to "Off" to mute the voice.



Oct 2

Range: -40 to 0 dB **Default:** -12 dB **Special:** -40 = "Off"

Sets the level of the two-octaves-up voice, for when you need to reach the very highest notes. On its own it's piercing; blended with the other voices it adds shimmer and air to the top of your sound.

Turn it fully left to "Off" to mute the voice.

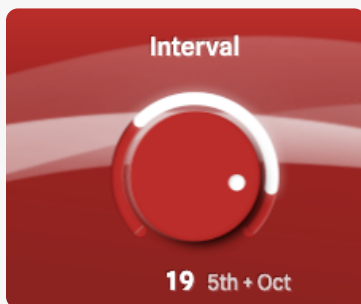


Shift

Range: -40 to 0 dB **Default:** -12 dB **Special:** -40 = "Off"

Sets the level of the freely-transposable Shift voice — the most versatile of the four. Its pitch is set by the **Interval** control, so this single voice can be a down-tuner, a detuned chorus, or a harmoniser depending on where you tune it.

Turn it fully left to "Off" to mute the voice.



Interval

Range: -12 to 24 **Default:** 19 **Special:** 0 = "Detune"

Special: 12 = "Detune" **Special:** 24 = "Detune"

Sets the pitch of the Shift voice in semitones, relative to the note you play — anywhere from an octave down to two octaves up. This is what gives the Shift voice its many personalities:

- **Below 0** — tuned down. A down-tuner that's distinct from the Sub voice; pair it with Mix at 100% for clean alternate tunings.
- **At 0, 12 or 24** (exact octaves) — the voice sits on the same pitch as another voice, where it becomes a subtle *detuned chorus*, widening and thickening the sound without muddying your low end.
- **Above 0** — tuned up to a transposed voice (Mix 100%) or a harmony (Mix around 50%). Try **16** (a major 10th) or **19** (an octave-and-a-fifth) for instant harmonies.



Mix

Range: 0 to 1 **Default:** 0.65

Blends all four pitch-shifted voices against your dry signal.

- Around the middle, you get a classic octaver-style combination — dry note plus shifted voices.
- Fully up (100%), only the pitch-shifted voices are heard, which is what you want for down-tuning or transposing your whole part to a new key.



Tone

Range: -1 to 1 **Default:** 0

A tilt EQ applied to the pitch-shifted voices, leaving your dry signal alone. Turn left for a darker, warmer voice; turn right for a brighter, crisper, glassier sound. Centre is flat.



Attack

Range: -1 to 1 **Default:** 0

Shapes the attack of the pitch-shifted voices — a control unique to Polymath. Centre leaves the natural attack intact.

- **Turn left** for slow, swelling fade-ins: soft, ambient, volume-swell textures that bloom in behind your playing.
- **Turn right** through soft pick-style attacks and sidechain-gated pulses all the way to tight, percussive transients that cut even harder than the dry signal.



Quality

Options: Eco, Medium, High

Balances CPU usage against clarity and smoothness. Pick the mode that fits what you're playing:

- **Eco** — lowest CPU, fastest attack, with a crunchier character. Best when you're feeding Polymath into a distortion or amp block, or want the most immediate, percussive response.
- **Medium** — the everyday sweet spot. Clean and smooth with low beating, good for most playing.
- **High** — highest CPU, the smoothest attack and the most clarity on chords and solos. Reach for it when you're playing chords or lead lines and want maximum refinement.