MONOMONO

Curves EQ

Program Equalizer for
Ableton Live

v2.0

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Foreword

In my experience as an engineer, I've worked with a variety of passive equalizers—including numerous Pultec clones and Pultec-inspired designs—and they've been my go-to tools for both mixing and mastering. My latest workhorse, the Gainlab Audio Empress Stereo Passive EQ has long been my weapon of choice. It offered the extended toolset I needed for flexible, reliable tone shaping. There it is in the photo—sitting in the trolley.

As much as I loved the sound and workflow of my hardware stack, I eventually found myself wanting to move beyond the limitations of analog workflow. But I didn't want to lose the signature tone or the toolset that made those tools so inspiring, and there were still some aspects of hardware which I would love to see improved. That's why Curves was born: not just as a personal project to bring the sound and simplicity of my favorite hardware into a flexible digital form, but also as a love letter and tribute to passive designs.

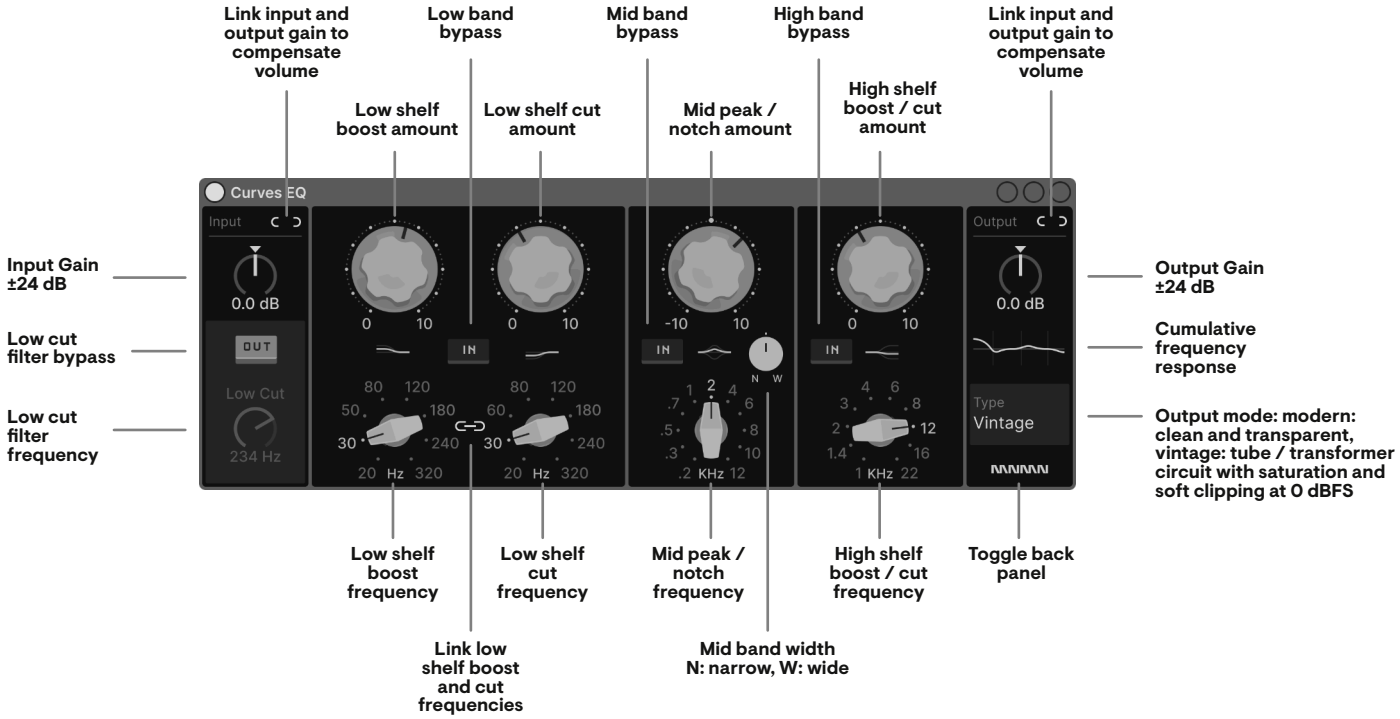
Over two years since its initial conception, I've revisited nearly every aspect of Curves' design—tuning, refining, and expanding the feature set to bring it closer to the ideal passive EQ I had in mind. This second iteration represents a major evolution: a reworked tone stack, expanded frequency range, and countless under-the-hood improvements that make Curves more versatile, more musical, and more capable than ever.

Thanks for checking it out—I hope Curves becomes as trusted and enjoyable a tool for you as it's been for me.

— Nikita

Quick Reference

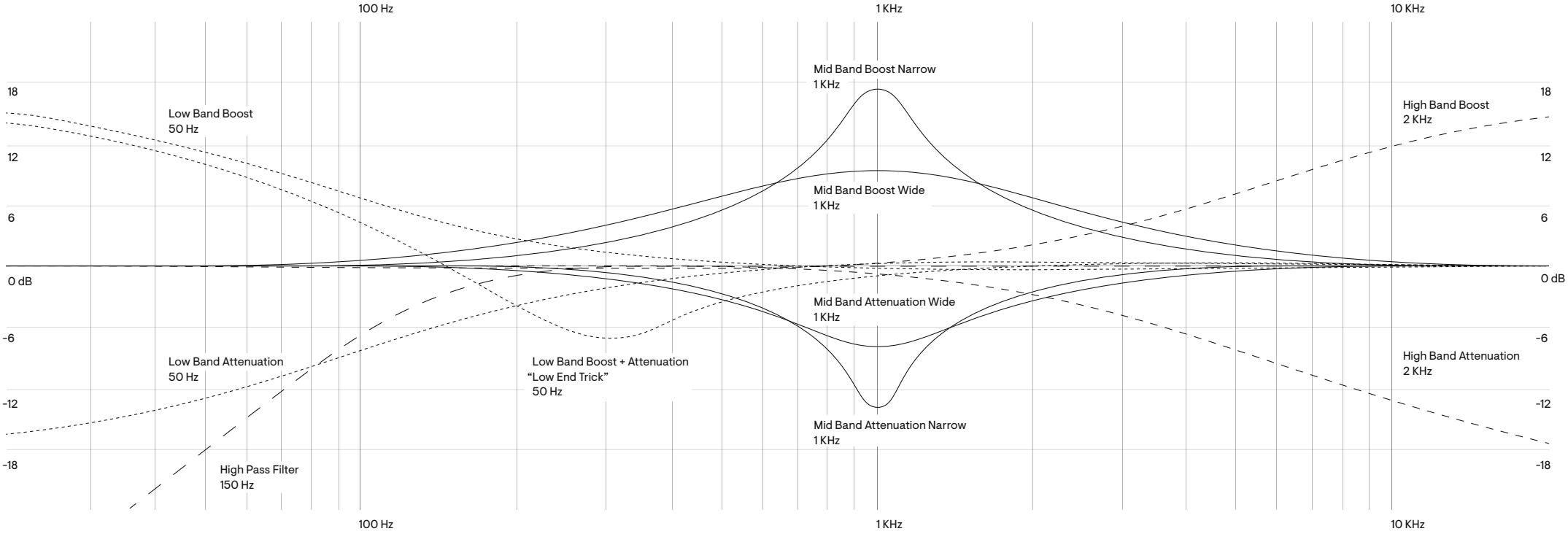
Curves EQ encapsulates the spirit of iconic passive filter EQ design, complemented with tools for modern production demands. Following the architecture of the hardware, Curves EQ captures the sound and utility of working with passive hardware EQ (like Pultec EQP-1A3) with a handful of useful additions.



Tone Stack Overview

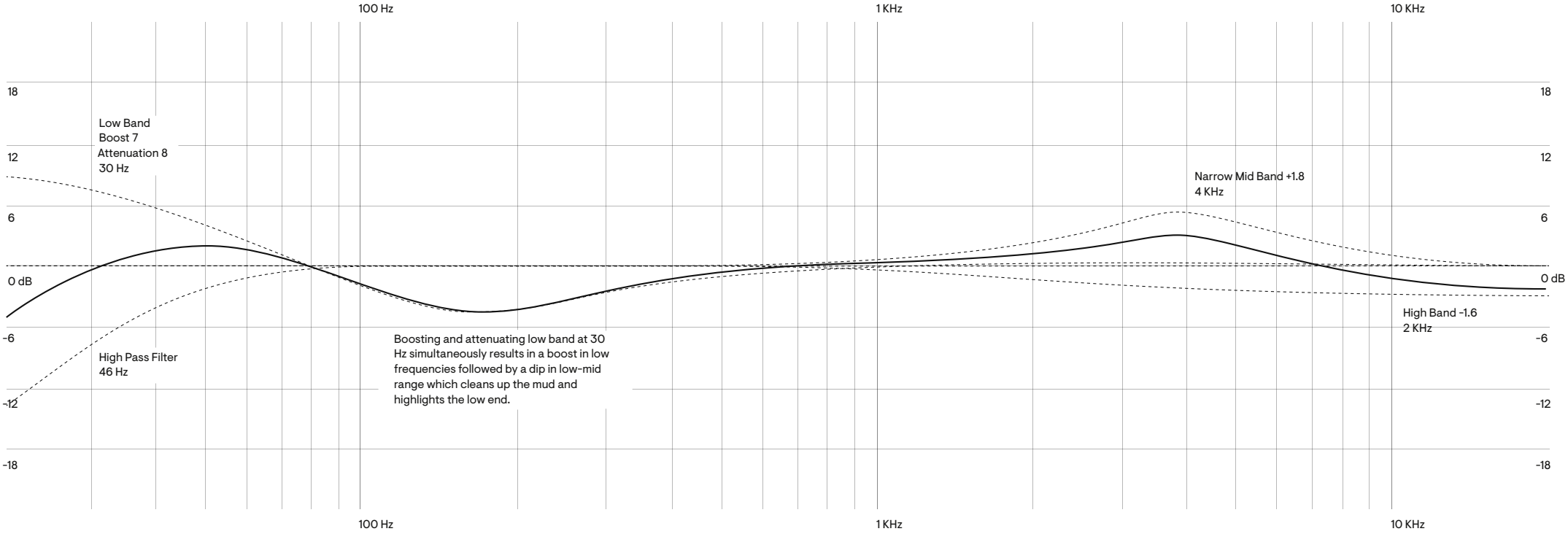
While having only three bands and selection of frequencies may seem limiting, the carefully chosen fixed frequencies and band selection in this equalizer serve a distinct purpose beyond mere homage to vintage hardware. With just a handful of carefully chosen frequencies and the ability to boost and cut simultaneously, it encourages musical decisions over surgical tweaking. Curves embraces this philosophy by offering only three bands — each with a focused range in mind, with extended selection of frequencies — striking a perfect balance between simplicity and flexibility. This minimalism helps you move faster, trust your ears, and stay creative, whether you're shaping the tone of a single track or sweetening an entire mix in mastering.

Instead of endless options, you get choices that matter — making it easier to dial in rich, natural-sounding results every single time.



What makes Curves more than just a vintage passive emulation is the way it extends its bands with both boosting and attenuating at extended selection of frequencies — blending serial and parallel processing of filters to shape sound in deeper, more nuanced ways. Each band interacts organically with the others, allowing you to layer broad tonal shifts with precise sculpting in a single move.

Curves shines when it comes to musical tone shaping, mix enhancement, and adding character with minimal effort. It's perfect for sweetening vocals, tightening up drums, adding weight to bass, or bringing clarity and polish to the mix bus. Whether you're after subtle warmth or bold, expressive curves, Curves delivers with smooth, analog-style responses and intuitive controls. It's especially powerful in mastering and stem processing, where its carefully tuned bands and natural-sounding filters help tracks feel more cohesive, balanced, and alive — without ever sounding over-EQ'd.



What Curves is Great at

Apply gentle mastering polish or bold character EQ moves with confidence

Quickly dial in musical results without overthinking settings

Quickly find sweet spots with thoughtfully chosen frequency ranges

Glue tracks together on the mix bus with wide, natural curves

Add weight and clarity to low end using the classic “low-end trick”

Bring out midrange presence in vocals, guitars, or snares with a broad or focused touch

Enhance high-end shimmer and air without harshness

Apply subtle harmonic enhancement via the output stage, inspired by classic tube-transformer designs

Warm up sterile digital recordings with analog-style coloration

Create a wider stereo image without artificial widening — just the natural variation you'd get from real analog hardware

What Curves Is Not Made For

Surgical frequency control for removing harshness, ringing, or feedback

Precise notch filtering to isolate or eliminate narrow problem areas

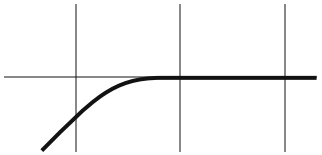
Linear phase response, which is sometimes necessary for phase-sensitive material

Forensic or corrective audio repair, such as de-noising, de-essing, or room correction

There are much better tools built to help achieve these goals. Curves is built for musicality, not micro-surgery. It shines in situations where feel, tone, and vibe matter more than analytical precision. For best results, pair it with a surgical EQ of your choice (for example brilliant and reliable EQ Eight) when the job calls for both character and control.

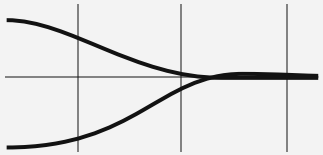
Band Description

To get the most out of Curves, it helps to understand how each band shapes your sound. While inspired by classic passive EQ designs, Curves expands the functionality with extended frequency options, refined filter behavior, and thoughtful interaction between bands. Let's break down what each part of the EQ does and how it contributes to the musical, mix-ready tone.



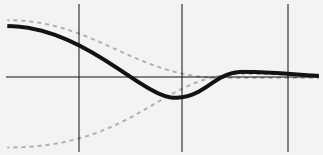
LOW CUT FILTER

The signal path begins with a sweepable 12 dB/oct low-cut filter ranging from 16 Hz to 500 Hz. While not present on classic EQP-1A, it makes Curves particularly helpful on individual tracks and busses where additional low end control is essential.



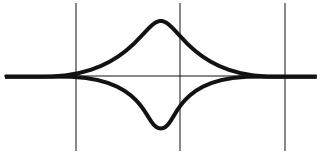
LOW BAND SHELVES

The low frequency section features two filters operating like shelves between 20 Hz and 320 Hz. Providing boost up to 16 dB and attenuation up to -18 dB, with capability to use both to create the famous "low-end trick".



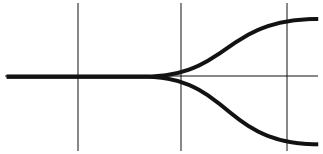
"LOW END TRICK"

The famous "low-end trick" involves simultaneously boosting and attenuating adjacent low frequencies, creating a uniquely tight and punchy bottom end that has become legendary among audio engineers. It helps effectively reshape the low-frequency response curve to achieve enhanced definition without excessive mud.



MID BAND — PEAK / NOTCH

The mid-range section, centered between 200 Hz and 12 kHz, offers both boost and cut functionality — an enhancement over traditional passive designs limited by the circuitry — making it particularly versatile for shaping crucial mid-frequency elements with expanded frequency selection.



HIGH BAND SHELF

The high frequency section operates from 1 kHz to 22 kHz, providing broad, musical control over the upper spectrum. The boost shelf has gentle slope which in analog manner adjusts as the amount increases, making even extreme adjustments sound quite natural.

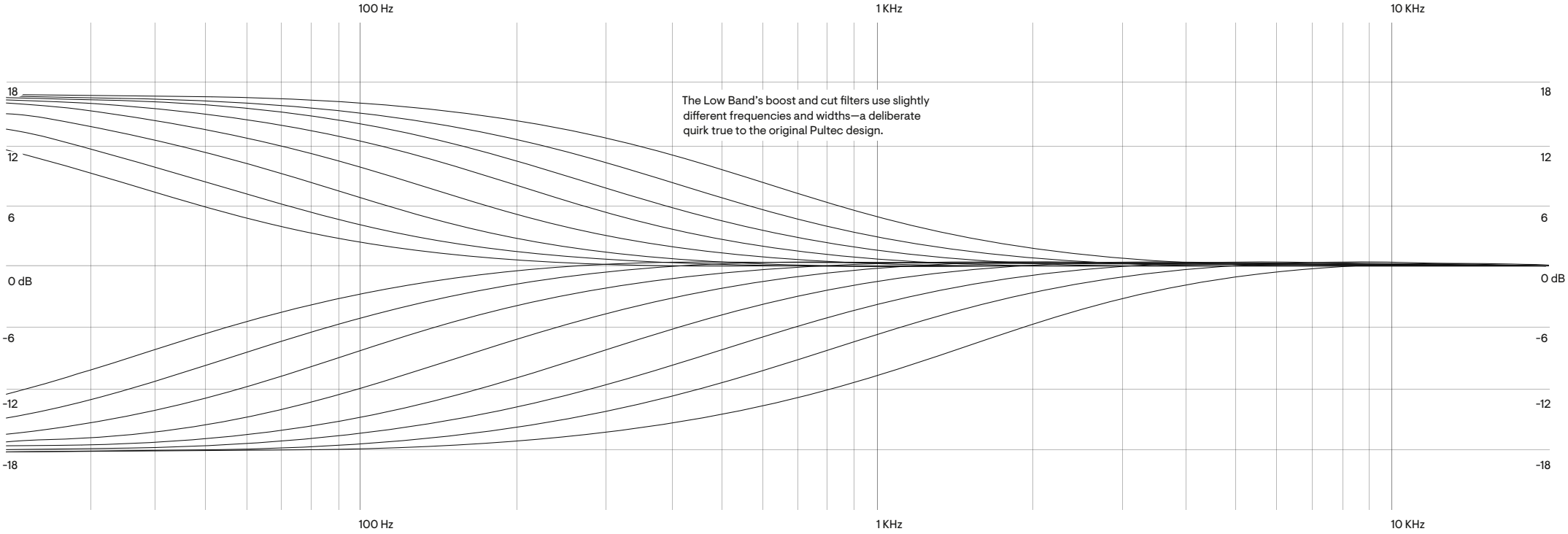
Predetermined frequencies in the bands have been meticulously selected based on years of professional audio experience, representing sweet spots that consistently enhance common audio sources like vocals, drums, and guitars. This deliberate limitation encourages users to trust their ears rather than their eyes, focusing on how the sound changes rather than precise numeric values.

Additionally, the interaction between bands creates harmonically pleasing results that can be more challenging to achieve with unlimited parametric options, where phase relationships between arbitrarily chosen frequencies may lead to unintended, yet musical consequences.

Low Band

The Low Band in Curves is all about sculpting energy in the low end to mid region. With a generous range of +16 dB boost to -18 dB cut—matching the capabilities of the original passive hardware—it offers the same powerful tone-shaping potential that made the classic design legendary. While Curves expands on the original with a broader selection of frequencies, it still faithfully replicates the iconic behavior and response of the vintage unit.

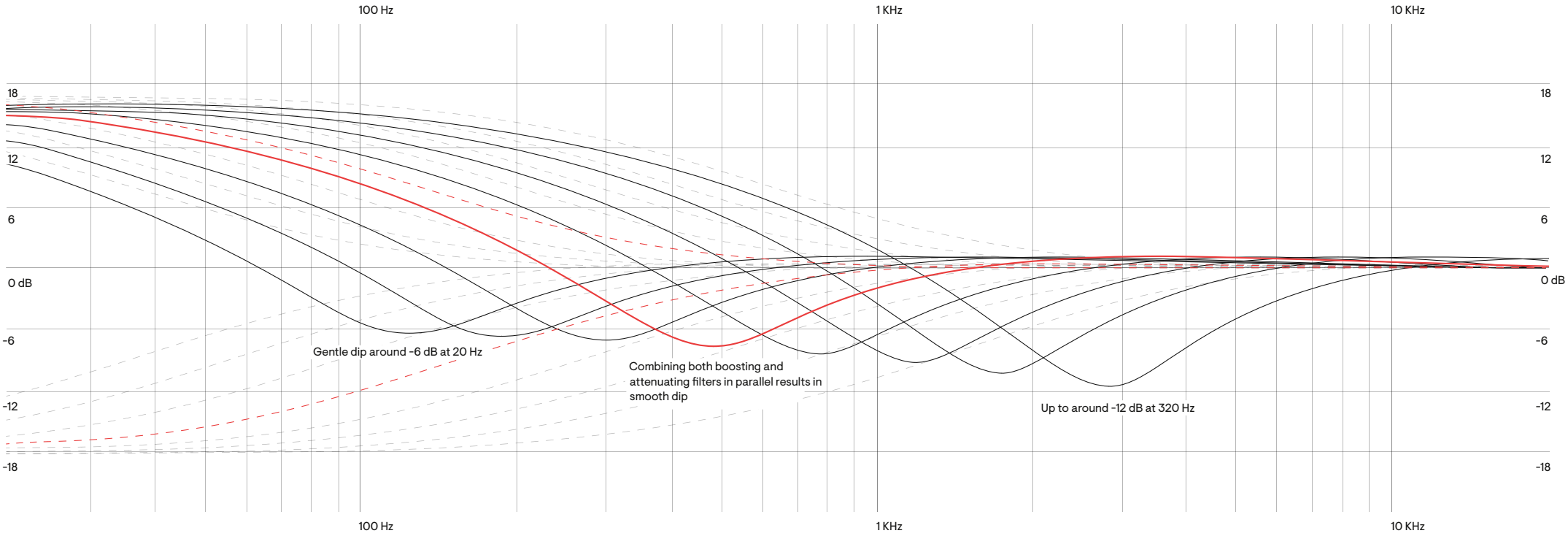
Even at extreme settings, the filters are beautifully broad and smooth, making them remarkably natural and musical. Ideal for creative, musical applications: add weight to a bass or a synth, give kick drums that chest-thumping presence, or gently clear space for vocals to breathe.



Low End “Trick”

One of the most famous techniques in classic passive EQ is the “low-end trick” — boosting and attenuating the same low frequency at once. At first glance it seems contradictory and original Pultec manual advised against it, but this approach creates a unique curve: a deep, warm lift in the sub-bass combined with a gentle dip just above, around the low-mids. The result is a powerful and focused low end that feels full without sounding muddy. In Curves, this technique is especially effective for giving kick drums more punch, adding roundness to bass instruments, or tightening up the bottom end of a full mix. The overlapping filters and slight differences in their shapes make this effect both musical and intuitive—an effortless way to add weight and clarity in a single move.

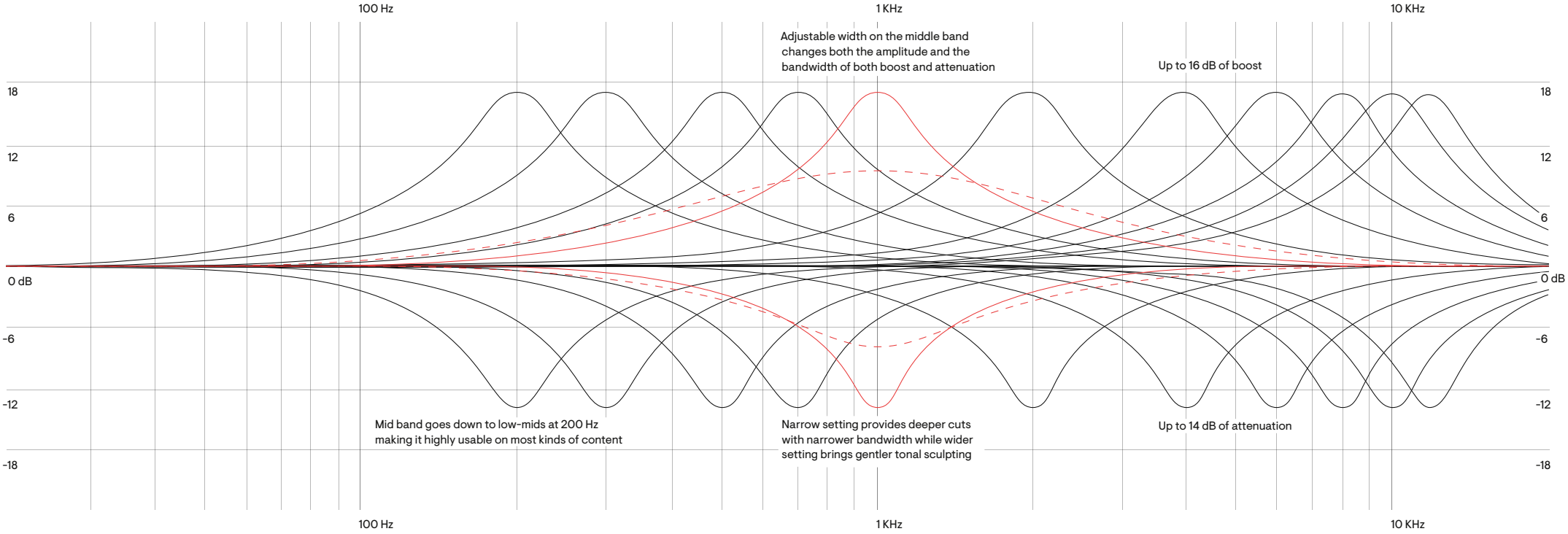
The unique addition to Curves is you can adjust the frequency separately for boosting and attenuating filter. This will shorten or widen the dip depending on the frequency overlap.



Mid Band

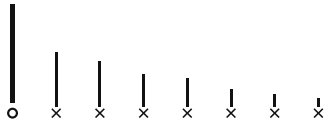
The mid band in Curves is modeled after the inductor-based circuitry found in classic passive EQs, it not only shapes the frequency spectrum but also imparts a subtle, musical saturation that adds presence and richness—especially noticeable on vocals, guitars, snares, and synths (more on this behavior on later).

The mid band provides precise control over a wide spectrum, extending from the low-mids at 200 Hz all the way up to 12 kHz. This extensive range makes it an exceptionally versatile tool for addressing nearly any frequency-related mixing challenge. It can enhance vocal presence, bring out the attack of percussion, highlight the brilliance of acoustic instruments, or it effectively can reduce harshness, resonances, or create space in dense arrangements. The bandwidth control allows you to tailor the precision of your adjustments—use narrower settings for surgical problem-solving or wider settings for more natural, musical shaping of the frequency spectrum.



As mentioned before, in the heart of mid band lies a detailed emulation of inductor-based EQ behavior, where smooth frequency response meets subtle harmonic enhancement. In analog inductor circuits, the interaction between the magnetic core and the signal introduces mild nonlinearity, especially at higher signal levels. This results in the generation of low-order harmonic overtones, primarily second and third harmonics (but not exclusively), which add warmth, richness, and density to the sound. These harmonics are soft and musically related to the content, reinforcing the fundamental frequencies without clouding the signal.

In Curves, this behavior has been carefully modeled to respond dynamically—the harder you push into the band, the more character emerges, allowing you to dial in subtle midrange presence or bold coloration.



ENGAGED MID BAND

When active, the Mid Band enriches the signal with subtle harmonic content, adding presence and depth.

BYPASSED MID BAND

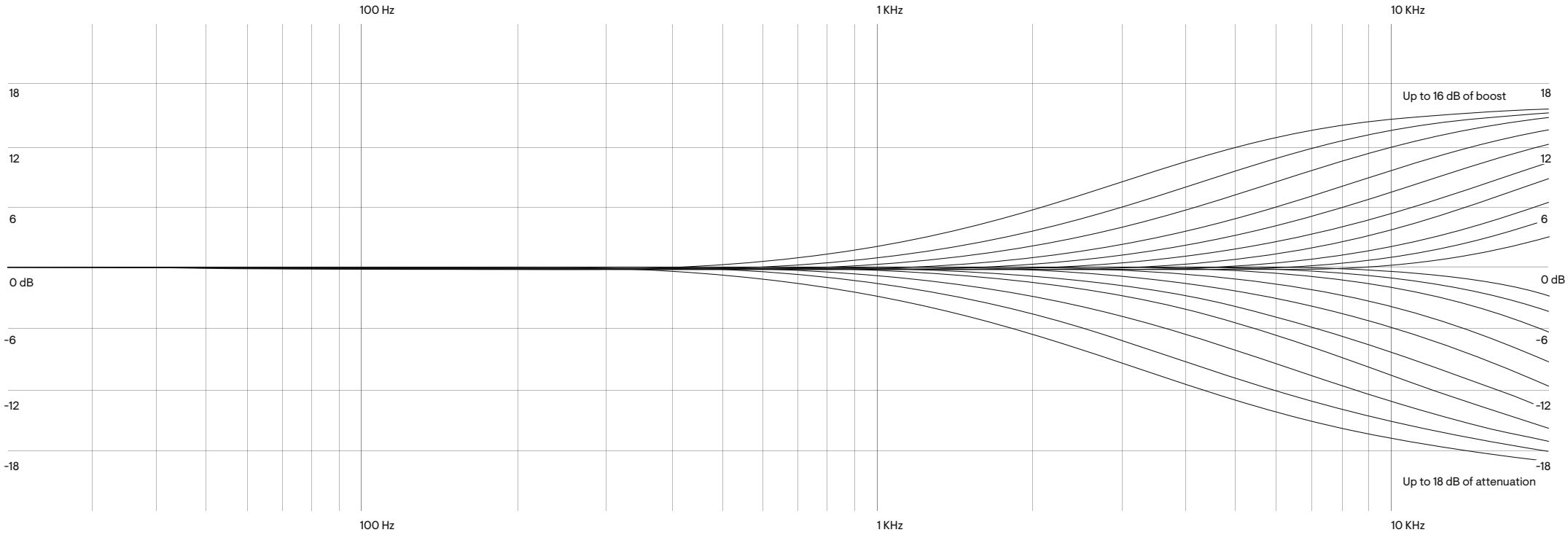
The signal passes through unaffected, with no harmonic enhancement.

NOTE FROM NIKITA

In my experience, the saturation produced by Pultecs and other passive equalizers is often overstated in the wild. Driving these circuits hard enough to create audible distortion isn't easy and in most cases unnecessary—the resulting harmonic content is usually subtle, often barely noticeable and if you happen to actually hear it, it's not particularly pleasant. Still, I believe this behavior is an essential part of the signature tone of classic passive designs. That's why I chose to include it in Curves—not to create obvious coloration, but to preserve the understated warmth and musical depth that defines these legendary circuits.

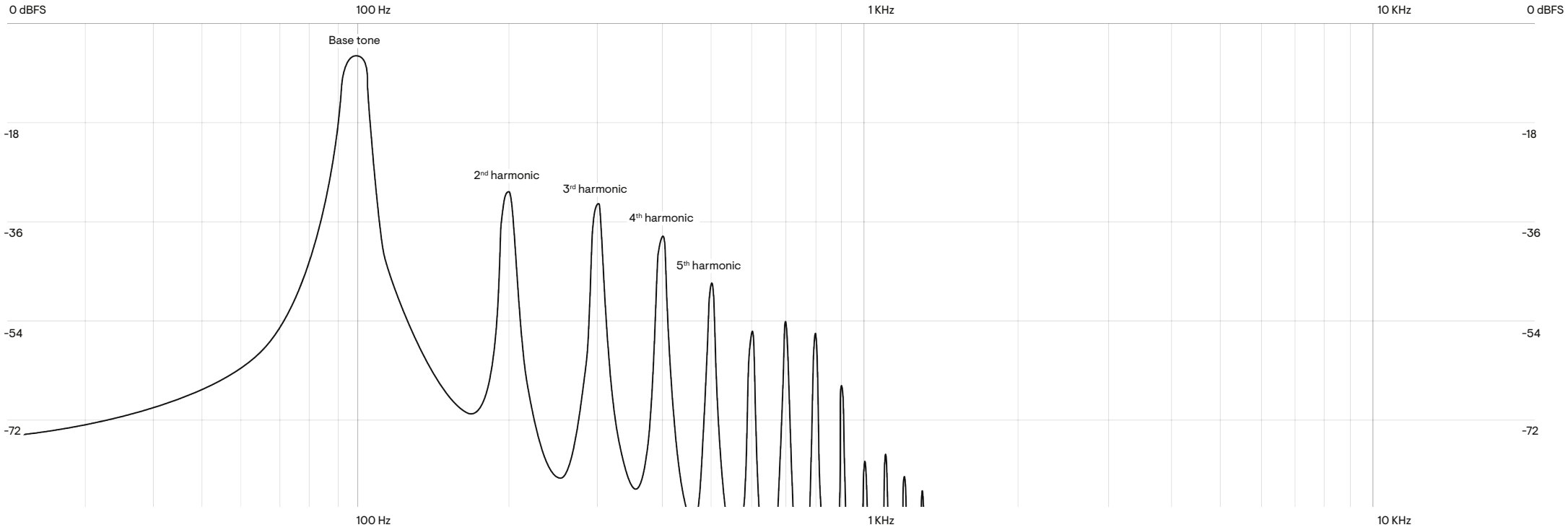
High Band

The high band serves as a practical tool for enhancing presence and clarity in your mixes. Boosting this band helps bring forward high-frequency details that might otherwise be understated—adding definition to hi-hats, accentuating the articulation in vocals, or highlighting the attack of acoustic instruments. This shelf is useful for restoring brightness to recordings that sound dull or muffled. When attenuated, it effectively reduces excessive brightness, smooths out digital harshness in modern recordings, or creates a warmer tonality by reducing high-frequency content. The band's wide, gradual curve makes it suitable for both subtle tonal adjustments during mastering and more deliberate sound shaping during mixing.



Output Section

The output section provides control over the final stage of your signal path with a global level control with up to ±24dB of adjustment and a switchable vintage and modern output circuit. Vintage is an emulation of a revered tube/transformer circuit while modern setting let's the signal through intact. Vintage mode lets you impart additional analog color to your sound with harmonic enrichment and the gentle compression characteristics associated with vintage hardware. This added saturation becomes more pronounced at higher input levels, allowing you to dial in just the right amount of warmth from a barely perceptible sheen to more obvious analog texture. For completely transparent operation, simply bypass this stage to maintain the pure EQ response while retaining precise level control.

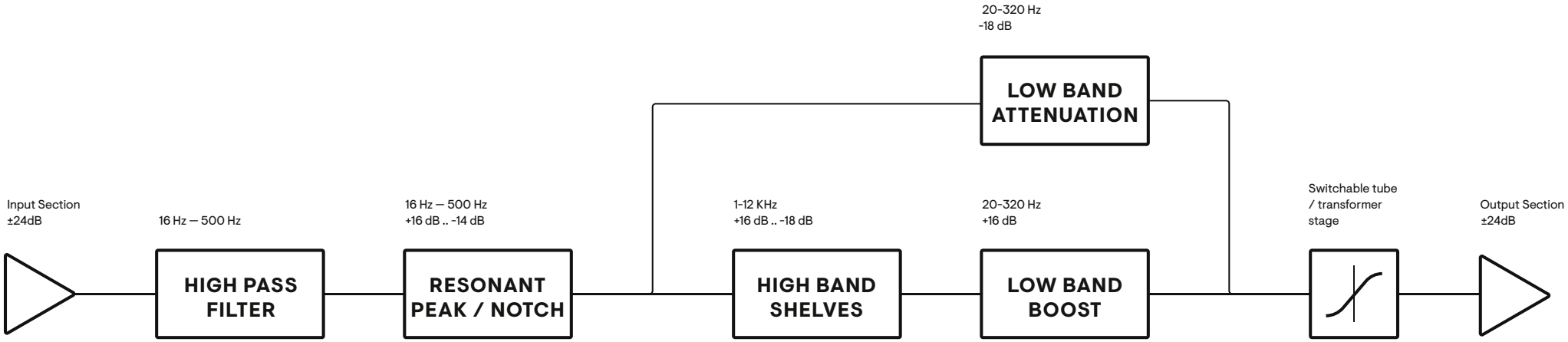


Vintage output stage soft clips the signal around 0 dBFS adding pleasant harmonics while Modern section will pass the signal unaffected

Signal Path

The signal path in Curves faithfully replicates the architecture of classic passive equalizers while incorporating modern enhancements. Under the hood, Curves employs a sophisticated network of filters connected in both series and parallel arrangements—a design choice that captures the unique character and band interaction that made vintage passive EQs legendary. This topology is fundamentally different from most digital equalizers, which typically use independent bands operating in isolation.

In Curves, each adjustment influences adjacent frequency bands in subtle but musical ways, creating a cohesive tonal shaping that feels organic and instrument-like. The low-cut filter feeds into the low, mid, and high sections, with the output stage providing final level control and optional tube/transformer coloration. This carefully engineered signal flow ensures that Curves responds much like its hardware inspiration—where the whole truly becomes greater than the sum of its parts.



Under the hood, Curves implements a more complex architecture than its interface suggests. The low and high bands function as low-pass and high-pass filters running parallel to the original signal, rather than shelf bands. The mid section emulates LC-circuit and operates similarly with bandpass filtering. This topology fundamentally differs from typical digital biquad-based Eqs.

Under The Hood

Three-band passive EQ inspired by vintage passive designs with modern enhancements

Extended frequency ranges for each band for enhanced flexibility and control

Low band shelving filters with offset boost and attenuation for classic “low-end trick”

Inductor-inspired mid band with subtle saturation

Tube-transformer-style output stage emulation with gentle harmonic enhancement

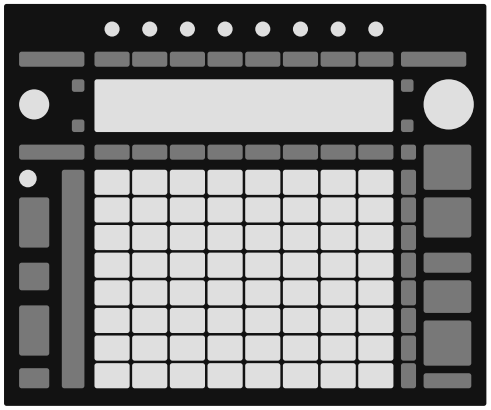
Independent left/right channel variation for enhanced stereo width

High-pass filter with adjustable cutoff starting at 16 Hz

Input and output gain controls to shape drive and balance

2x oversampled filters and output stage for pristine audio quality

Near-zero latency with only 6 samples of delay—perfect for live processing



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MONO ONE REQUIRES LIVE 11+ SUITE

Release Notes

1.0 — OCTOBER 20, 2023

Initial Release

2.0 — APRIL 19, 2025

Refactored and enhanced UI with new look and combined frequency response curve
Completely reworked signal path
Enhanced selection of frequencies
2x oversampling for the tone stack and saturation circuit