

# Benchmark HPA4 headphone amplifier/line preamplifier

*Herb Reichert | Jan 20, 2021*

I am certain the quality of life I live is determined by two factors: who and what I give my attentions to, and my ability to observe all that I encounter with an open mind. This approach to living has served me well—especially during this review of the Benchmark Media Systems HPA4 headphone amplifier (\$2999).

## **Unboxing**

While removing the Benchmark HPA4 headphone amp from its simple-but-effective packaging, I noticed three things. First, I noticed that the amp had shipped from Syracuse, NY, where it was made. Second, one whole side of the box said "Benchmark. . . the measure of excellence!™" As I cut the clear tape with my boxcutter, I noticed the "THX Technology" logo printed on it and wondered why it was there.

After sliding it out of the box, I held the HPA4 in both hands and turned it around, examining all six sides. It was light, weighing only 8lb, and compared to most audiophile-level headphone amplifiers, it was small. According to the HPA4's spiral-bound instruction manual, it is a "half-rack wide" (8.65") and "2 RU" (rack units) high (3.47"), and only 9.33" deep including knobs and connectors. The HPA4 occupies the same stacking-friendly footprint as Benchmark's DAC3, although it's roughly twice as tall.

After admiring the black, 0.5"-thick, brushed-aluminum side panels, I looked at the HPA4's 0.25"-thick brushed aluminum front panel. The first thing I noticed was a 3.5" Color TFT touchscreen and thought, "I hope that screen has a dimmer." (It does.) The manual says the touchscreen is a "Status Display" that uses two bargraphs to indicate volume (separately or together) for headphone and line outputs (footnote 1).

On the left, just under the screen, I noticed a small (0.25") black button that I guessed was the power-on button, but there was no labeling to confirm that it wasn't a wayward faceplate screw. I was right—it was a power button. Next to the power button is the tiny infrared receiver sensor. To the sensor's right is the 0.25" headphone output jack. Next to that is an XLR output jack. Farthest to the right is the big, click-stepped volume control.



Looking at the chassis's back, it finally hit me. This thing is not *just* a headphone amp; it has four (!) line-level inputs: two unbalanced (RCA) and two balanced (XLR). Then I peeked again at the instruction manual. The HPA4 is not just a "Reference Stereo Headphone Amplifier"; it is also a "Reference Line Amplifier" with "Relay Gain and Input Control." I didn't know what that last thing was, so I checked Benchmark's website and consulted via email with John Siau, Benchmark's vice president and chief engineer.

### The attenuator

Siau explained, "The Benchmark attenuator is actually a fully balanced relay-controlled gain stage. It applies up to 15dB of gain or up to 127.5dB of attenuation for a total range of 142.5db. There are 286 volume control steps in precise 0.5dB increments. Of these, 256 are mapped to the user volume control. The remaining 30 steps are reserved for the balance control and for the input boost and cut functions that allow ... level matching of the four analog inputs. When this is set properly, the user can switch between sources without experiencing a change in volume level."

### The circuits

The THX-888 headphone amplifier board "is a unity gain (current) amplifier with feedforward error correction." Feedforward error correction is also used in the AHB2 power amplifier. According to Benchmark's website, the HPA4 can deliver up to 11.9V RMS into 300 ohms and 6W into 16 ohms: "The THX-888 headphone amplifier board in the HPA4 is manufactured by Benchmark under license from THX."

### Reference line preamplifier

After unpacking, I replaced the hybrid (transformer-tube-JFET) [Rogue Audio RP-7](#) line-level preamplifier (\$4999) with the Benchmark HPA4. My plan was to start by auditioning the Benchmark as a line stage in my floor system, which consisted of the [Dr. Feickert Blackbird](#) turntable with a [10.5" Schick](#) tonearm, and a [Koetsu Rosewood Signature Platinum](#) moving-coil cartridge feeding [Sunvalley's SV-EQ1616D](#) phono equalizer. Digital came from my reference [HoloAudio May \(Level 3\)](#) DAC feeding the balanced inputs of the HPA4 via Cardas Clear Cygnus interconnect. The Benchmark's 30 ohm output impedance fed the 33k ohm input impedance (via unbalanced Cardas Clear Cygnus) of a [Parasound A21+](#) stereo amplifier powering [Harbeth M30.2](#) monitors, via the extremely neutral Triode Wire American Series loudspeaker cable.

During my first day of HPA4 listening, I noticed that every digital and analog recording was sounding curiously similar. They all sounded cleaner, better

sorted, and more macrodynamic than they had with the Rogue, but strangely, compared to the RP-7, hall resonances and piano note reverb tails seemed shorter to me.

I played Neil Young's soundtrack to Jim Jarmusch's 1996 film *Dead Man* (16/44.1 FLAC Vapor Records/Tidal), and as always, the illusion of a sound space was enormous, but the HPA4's "enormous" sound space was different: images of performers inside the illusion appeared more distinctly outlined and concrete than I routinely observe with the Rogue. This sense of image concreteness appeared to be caused by, or enhanced by, the fact that the "empty spaces" surrounding these instrument and performer images were now the most air-free, glare-free, *nonrefractive* environs I have encountered while listening to home audio. In comparison, the RP-7 delivered the same recordings with a subliminal sense of looking through a not-quite-perfectly-clean camera lens (of a certain focal length) onto an illusion with air dense enough to resist the motions of my Japanese paper fan.

This Jim Jarmusch–Neil Young collaboration is a provocative sound collage that relies for its effect on extended actor dialog and a wide range of diverse Foley sounds, including wind, idling cars, and crashing sea waves. Compared to the RP-7, the HPA4 lost some of the wind and ocean sounds, but in so doing, reduced the ambiguity of the other Foley sounds and increased the legibility of Johnny Depp and Gary Farmer's campfire dialogs. With the Benchmark, the total number of identifiable Foley sounds increased.



Working as a line-level preamp, the HPA4 seemed to reduce the levels of reverberant information I routinely enjoy with the Rogue RP-7, but fortunately these reductions were accompanied by a positive effect: They allowed the Benchmark to dramatically enhance something I always crave but rarely get from tube preamps; something which, for now, and for lack of a better a word, I will call aural *specificity*, which I define as the ability to point at and identify everything I hear. The HPA4's sharp-focus specificity is something I associate with recording studio sound but almost never encounter in home systems.

### **Driving HiFiMan Susvaras**

With most headphone amplifiers, the tires go flat trying to drive [HiFiMan's \\$6k Susvara](#) open-backed planar-magnetic circumaural headphones. The Susvara's low (83dB/mW) sensitivity and flat 60 ohm impedance need at least a few watts, probably a third of an amp, and maybe 7V, plus 15–20dB gain, to play effortlessly and sing with their clearest voice. (I normally drive them with the 25Wpc [Pass Labs XA25](#) power amp.) The HPA4's THX-888™ headphone amplifier is specified at 6W into 16 ohms, maximum output current of 1.5 amps, and a maximum output voltage of 11.5V RMS.

Listening with the HPA4 and Susvara—I used the HPA4's balanced outputs for all my Susvara listening—and playing the full hour of *Horowitz in Moscow* (16/44.1 FLAC, Deutsche Grammophone/Qobuz) was the first full-length unmitigated musical pleasure I achieved with the HPA4. Shortened reverb tails



were not a distraction. On this recording, with the HPA4, the notes from the master's piano were displayed with a weighty force and overtly pacey momentum that showed me more hammers and less pedal. The Benchmark-Susvara pairing moved the performances right along, emphasizing the *authority* of Horowitz's execution.



Astor Piazzolla's *Tango: Zero Hour* (16/44.1 FLAC Nonesuch/Qobuz) is an album I consult frequently during component comparisons. It features only five instruments (bandoneon, bass, guitar, violin, and piano) with some added crowd sounds; there is something about its mix that makes it a difficult recording for less-than-the-best audio gear to sort out and present clearly. After my HPA4-Horowitz experience, I had a feeling the Benchmark's absolute clarity coupled to the Susvara's legendary resolving powers would finally show me what the album's producers heard.

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Footnote 1: The HPA4 is in fact identical to the LA4 preamplifier, which KR reviewed in our [January 2020 issue](#), except for the addition of the headphone amplifier and outputs.