

Pass Labs X250.5 Stereo Amplifier Reviewed

Andrew Robinson, June 11, 2012



Since 1991, Nelson Pass and his company Pass Labs have been making some of the finest Class A and Class A/B amplifiers the world over. Unlike that of many other amplifier manufacturers, Pass Labs' signature sound has been forged out of a desire for simplicity - a simplicity that has resulted in numerous awards and more than a few patents for their amplifier designs. Based upon Nelson Pass' now infamous Supersymmetry circuit topology, the X Series amplifiers have been Pass Labs' gateway drug, if you will, in terms of getting consumers into the Pass Labs family. The X Series has a little something for everyone, with amplifiers ranging from 150 to 1,000 watts. For me, the entry point was the X150, Pass Labs' most affordable X Series amplifier at 150 watts per channel. While my first experience with Pass Labs was via their "baby" amp, for many, it was the X250. Many view the X250 as the workhorse of the X Series, for it strikes a near-perfect balance between price and absolute performance. As good as the original X Series was, in 2003, the X250 (as well as the rest of the X line) went under the knife for an overhaul. The result was an all-new, though still familiar, X.5 line of amplifiers.



The improvements made to the entire X-line include replacing the input differential MOSFETs with Cascode JFETs, which are the same JFETs that Pass Labs uses in its phono stages. This change is said to lower noise and raise input impedance while improving linearity. The X.5 refresh also added more output devices, which improved current and power handling, as well as linearity. There is an all-new bias circuit, which allows for a 20 percent increase in power output at any given voltage. Speaking of

bias, the X.5 models are also biased heavy for Class A operation at low wattage, which any audiophile will tell you is where the magic happens.

Focusing my attention on the X250.5 reveals that the X.5 update brought about several physical changes as well, specifically a new, more robust front fascia. The first-generation X250 sported Pass Labs' trademark blue voltage meter, though the thick aluminum surrounds sloped back as you approached the sides of the amp and its massive heat sinks. With the .5 update, the sides no longer slope; instead, they remain flush until close to the very edge, where they recess back at about a 45-degree angle. The X series now more closely resembles Pass Labs' XA Series of all Class-A amplifiers in terms of their outward appearance, which is a good thing. The X250.5 measures 19 inches wide by nine inches tall and 21.5 inches deep. Accompanying its larger footprint is the X250.5's weight, which rests at 110 pounds.

The X250.5's massive all-business demeanor doesn't fade when focusing your attention on its back panel. The first thing you notice is the X250.5's rear-mounted rack handles, which sit at the outer edges of the amp's wing-nut style binding posts. The X250.5's binding posts are nicely spaced and can accept all types of speaker cable, with the exception of those terminated with banana adaptors. Below the binding posts and centered along the bottom of the amp itself rest its detachable power cord and master on/off switch. Above the binding posts and centered along the top of the back panel are the X250.5's unbalanced and balanced audio inputs. There is a secondary pair of five-way binding posts that are present to facilitate remote start-up or turn-on.

Under the hood or behind the scenes, the X250.5 boasts a power output of 250 watts per channel into eight ohms and 500 watts into four. The X250.5's reported frequency response is 1.5Hz - 100kHz, with distortion (at 1kHz) rated at one percent. Input impedance (Kohms) is 30/20 and its damping factor is 150. Maximum output (volts) is rated at 64. While much of the world's products may be focused on efficiency, the X250.5 isn't among them, for its power consumption sits at 600 watts, which isn't insane, but it is constant, which is why the X250.5's heat sinks run more than a little warm to the touch.



The original X250 amplifier retailed for \$6,000, which made it a true high-end value, for it not only competed with some of the best amplifiers in the business, it did so at a far more advantageous price. While the X250.5 retails for more at \$8,250, it still competes with those costing much, much more. And of course, there's the fact that all Pass Labs' products are designed, manufactured and assembled by hand, right here in the USA.

The Hookup

Installing a solid-state amplifier is a simple and straightforward proposition, though with regard to

the X250.5, I'd suggest getting a friend to help, for it's an absolute beast. I can speak to the X250.5's build quality and heft firsthand, for I didn't have a friend (or wife) to help me maneuver it into my rack. Thankfully, the X250.5 is easy to grip, for its heat sinks are so robust that they can double as rack handles, as can the X250.5's solid faceplate. Once in position on the bottom shelf of my Omni+ equipment cabinet, making the requisite connections was a breeze.

I began by connecting the X250.5 to my Integra DHC-80.2 AV preamp, which I used for home theater, as well as for some two-channel listening. For more critical two-channel sessions, I used the Wyred 4 Sound DAC-2's preamp functionality, since I've found it does little to alter or enhance the sound of amplifiers connected to it. Both preamps were connected to the X250.5 via unbalanced interconnects from Crystal Cable. The X250.5 was charged with powering my reference Bowers & Wilkins 800 Series Diamond loudspeakers, though I did substitute Focal's Electra 1038Be loudspeakers later in my evaluation period. Both pairs of speakers were connected via three-meter runs of Crystal Cable speaker cable. Source components included Cambridge Audio's Azur 751BD universal Blu-ray player, Wyred 4 Sound's DAC-2 digital to analog converter/preamp and my trusty AppleTV.

I ran both the 800 Series Diamonds and 1038Be full-range for a large portion of my evaluation, but also crossed them over at 80Hz so as to pair them with my dual JL Audio Fathom f110 subwoofers for home theater use. The subwoofers were EQ'd close to flat (in my room) using Room EQ Wizard and a Behringer Feedback Destroyer Pro. Minus some low bass EQ, the rest of my room was treated using a variety of room acoustic products from GIK Acoustics.

I typically don't believe in burn-in, at least not when it's followed by a figure in the hundreds of hours. That said, the X250.5 does sound best after being powered on for a good hour or so. Those of you who are fans of tubes will understand this phenomenon, for it takes time for everything to warm up to be at its peak operational temperature and performance. However, after maybe a few days of playback, I noticed no shift in the X250.5's sound after that initial 30-60 minutes of warm-up time.

Performance

I began my evaluation of the X250.5 with John Mayer's 1999 self-distributed debut album, *Inside Wants Out* (John Mayer LLC), and the track "Comfortable." The entire album has a near-live quality to it, as it was recorded in a single session, with all the musicians occupying the same space. The first thing that struck me about the X250.5's performance was the added inflection afforded to both instruments and vocals. Whereas many an amplifier will simply communicate the music, the X250.5 takes things a step further and conveys the subtlest of emotions behind every chord and/or lyric. Listening to the deeply personal "Comfortable," I got the sense that the X250.5 was in on the relationship that sparked the song, as if it had a deeper appreciation of the lyrics than other amps did. I know that sounds odd, for obviously an amplifier can't feel emotion, but if ever there was an amplifier that excelled at conveying it, it would be the X250.5.

Aside from the added inflection, Mayer's vocals were presented in a wholly organic manner that sounded both natural and live, possessing a presence that came eerily close to being in the room. Furthermore, because of the X250.5's ability to resolve detail, the separation between Mayer and the other musicians grew, which only aided in the center image's sense of focus. Speaking of the other musicians, they existed firmly in their own space, though they still maintained a round or natural

edge, one that was allowed to bleed when necessary due to the acoustics of the space rather than because of a lack of control from the X250.5

High frequencies were pristine and possessed a tube-like liquidity and warmth about them, which is clichéd as hell, except for the fact that it's utterly true when describing the X250.5's treble performance. While I've heard amps that seem to allow for sparkle and air at the extremes, it's never sounded wholly natural, whereas the X250.5's high-frequency performance never sounded anything but natural. Equally impressive was its bass performance, which was both deep and textural. While controlled and, again, natural-sounding, I will say that it didn't dig as deep as, say, some of the larger Krell amplifiers, such as the 402e. Then again, the X250.5 is down on power compared to the 402e. A fairer comparison could or should be made to Pass Labs' X350.5, which at \$11,500 is \$7,000 cheaper than the 402e. Still, to be able to make a comparison at all between an \$8,000 amp and one that nears \$20,000 is a testament to just how good the X250.5 is.

Wanting to give the X250.5 a little bit more to chew on, I went with Tori Amos' *From the Choirgirl Hotel* (Atlantic) and the opening track "Spark." Skipping ahead to the song's climax at around the three-minute mark, the X250.5's ability to grab hold of and convey all of the various musical elements, including the multiple vocal tracks, and present them in an intelligible and engaging fashion was stunning. No amplifier I've ever heard possessed such resolution during this complex passage as the X250.5 did. I must have listened to it a dozen times, each time reveling in the nuances that previously went unheard. It was if the X250.5 provided a spot of Windex to what I thought was a clean window only to discover there had previously been a layer of dust present the whole time. Equally impressive was the X250.5's dynamic prowess, which at times had me second-guessing its 250-watt makeup, for I've heard many a 250-watt amp and none have had the grip, composure and downright explosive envelope that the X250.5 seemed to possess. The X250.5 ability to resolve space was also something that was readily apparent, for the soundstage was wall to wall, easily breaking free of the confines of my 800 Series Diamonds, which have a solid four feet between them and my sidewalls. Soundstage depth was equally impressive, for it seemed to recess back several feet, never becoming vague or muddy the further back it went.

The best demonstration of the X250.5's complete mastery over the source material came not courtesy of some grand crescendo or over-sung lyric, but at the release of a piano's damper pedal. Having played the piano for most of my life, in various venues ranging from quaint living rooms to large concert halls, I love the sound a piano makes when its aural slate is wiped clean via the release of its damper pedal. At around the 55-second mark of "Northern Lad," Amos performs this release. With it comes a wave of reverberation and air that, in my room, via the X250.5 powering my 800 Series Diamonds, sounded so utterly live that it made me jump. Amos' piano throughout "Northern Lad" sounded so eerily close to the real thing that it beggared belief. As for Amos' vocals, those too had a palpable presence to them that created the sensation of being treated to a private performance.

Going for broke, I fired up Audioslave's self-titled debut album (Epic) and the track "Show Me How to Live." With the volume on my DAC-2 set to the shady side of stupid, I braced myself and holy \$#!* did the X250.5 deliver. The opening kick drum was so powerful I thought for a second that perhaps my subwoofers were on. Of course, they weren't, which led me to want to rethink my earlier comments regarding the X250.5's bass prowess. The snare hits had such snap and force that every blow felt like

an attack on my senses, though at no time did they or the subsequent cymbal crashes sound anything but natural. Even at insane volumes (peaks nearing 110dB), the X250.5 never wavered; instead coming back as if to say, "Is that the best you got?" Dynamically, the X250.5 was an absolute juggernaut, making me wonder, if this is what Nelson Pass can do with 250 watts, what must his 1,000-watt beauties sound like? The X250.5 had all the headroom to drive my 800 Series Diamonds and then some. Feeding the more efficient Focal Electra 1038Bes, the X250.5 barely felt as if it was even trying. The guitars were raw, violent and crunchy, with more detail and texture throughout than I remember hearing through any other amp. Vocals were forward, vibrant and lifelike in their presentation.

Truthfully, I stopped taking notes, for after only a few tracks, there was little I could write in order to better describe the X250.5, except to say it's brilliant. I rarely listen to entire albums any more, but I found myself making appointments to do just that with the X250.5 in my system, for every time I did, it led to new musical discoveries, many of which I won't soon forget.

The Downside

Before you lay down your credit card and potentially welcoming the X250.5 into your system, you should take note of a few matters. For starters, the X250.5 runs warm to hot pretty much all the time, which means you're going to want to take special care and install it in a well-ventilated rack or cabinet. Those of you with Middle Atlantic-style rack systems might have to resort to using some form of low-voltage fan option in order to keep the X250.5 cool. Obviously, an open-air installation will suit the X250.5 best and show it off for all to see, which is really what that big blue meter is for, isn't it? Speaking of the X250.5's bright blue meter, there's no way to turn it off. This may not seem like a downside, but it can be when it comes time to watch a movie.

Those of you with banana-terminated speaker cables are going to have to seek out suitable adaptors or change out your speaker cables altogether, for the X250.5 cannot accept banana terminated wire. Also, because of its wingnut-style posts, some spade lug terminated cables won't work either. If your spade lug terminated speaker cables have any sort of upward or downward rake to them (say, about 45 degrees), they will hit the X250.5's plastic surrounds on its binding posts, preventing you from making a tight and secure fit.

Lastly, the X250.5 does require up to an hour of warm-up time in order to sound its best, which does rule out quick listening sessions, unless of course you leave it powered on all the time. While true dyed in the wool audiophiles will no doubt contemplate leaving the X250.5 on more often than not, your electric bill may cause you to change your mind. It's not that the X250.5 sounds bad upon a cold start-up; it just sounds better after some proper warm-up time.

Competition and Comparisons

At a little over \$8,000 retail, the X250.5 squares off against the likes of Classe's CA-2300 stereo amplifier, Mark Levinson's No. 532H amplifier and even Krell's 2250e. All of the above three amplifiers retail for around \$8,000, possess between 250 and 300 watts and sound good enough to justify them being the last amplifier any sane person would ever really need. That said, I don't feel the X250.5 is in the same league as the others, for it possesses a sound and a level of refinement that I feel exceeds that of the before-mentioned competition, one that puts it into the discussion alongside costlier gear, such as Krell's higher-end Evolution lineup of amplifiers, as well as Mark Levinson's No. 532 (non H version). While the X250.5 doesn't possess quite the same power as, say,

the 402e or the No. 532, you wouldn't necessarily know it. While I find many Mark Levinson designs to sound somewhat dark and seductive in an attempt to come off as analog or tube-like, the X250.5 actually manages to sound "tube-like," in that it has a liquidity to it that defies its solid state makeup.

While the Krell 402e has a bit more top-end finesse and low-end focus, the two are a lot more closely matched than even I was ready to accept at first. While I still consider the 402e to be a benchmark product, I have to say that I think I prefer the sound of the Pass Labs X250.5 just a little more, for the 402e can be brutal in its quest for perfection, whereas the X250.5 always sounded right, at least to my ears and in my system. I'd happily own both, but I have to say if the 402e at \$18,500 is a cost no object bargain, than the X250.5 is an absolute steal.



Conclusion

It's at this point that I get to throw myself upon the mercy of you, the reader, for I'm about to suggest that an amplifier such as the Pass Labs X250.5, at \$8,250 retail, is not only a bargain but quite possibly the greatest high-end deal that can be had today. While I'm not suggesting that \$8,250 is in any way inexpensive -it's not - compared to the competition, which I don't consider to be other \$8,000 amplifiers, but instead ones costing tens of thousands more, the X250.5 is a steal. Throw on top of it the X250.5's physical appearance, hand-made pedigree and good 'ol USA ingenuity, and it becomes all that more solid an investment. I love it and I'm willing to bet you will, too.

Recommended? You don't see five-star ratings on value on an \$8,000 amp very often. Take that as a strong hint as to just how good this amp is.