



**Reviewer: Srajan Ebaen**

Sources: Retina 5K 27" iMac (4GHz quad-core with Turbo boost, 32GB RAM, 3TB FusionDrive, OSX Yosemite. iTunes 14.4), PureMusic 3.02, Qobuz Hifi, Tidal Hifi, Fore Audio DAISy1, COS Engineering D1, Aqua Hifi Formula, AURALiC Vega

Preamplifier: Nagra Jazz, Wyred4Sound STP-SE Stage II, Vinnie Rossi LIO (AVT module)

Power & integrated amplifiers: Pass Labs XA30.8; FirstWatt SIT1 monos, F5, F6, F7; Crayon Audio CFA-1.2; Goldmund/Job 225; Linnenberg Allegro monos; Aura Note Premier; Wyred4Sound mINT; Nord Acoustics NC500 monos; LinnenberG Audio Allegro monos

Loudspeakers: Audio Physic Codex; Albedo Audio Aptica; EnigmAcoustics Mythology 1; Boenicke Audio W5se; Zu Audio Druid V & Submission; German Physiks HRS-120; Eversound Essence

Cables: Complete loom of Zu Event; KingRex uArt, Zu and LightHarmonic LightSpeed double-header USB cables; Tombo Trøn S/PDIF; van den Hul AES/EBU; AudioQuest Diamond glass-fibre Toslink; Black Cat Cable redlevel Lupo; Ocellia OCC Silver

Power delivery: Vibex Granada/Alhambra on all components, 5m cords to amp/s + sub

Equipment rack: Artesania Audio Exoteryc double-wide 3-tier with optional glass shelves, Exoteryc Krion and glass amp stands [on loan]

Sundry accessories: Acoustic System resonators

Room: 5.5 x 15 metre rectangular space with double-high vaulted ceiling and stone-over-concrete flooring



**"The XA25 has an RCA input and no balanced outputs.** It is a very simple amp of surprising performance. However, it is the intellectual property of Pass Lab. So it remains under wraps. But I will tell you this so that you can reverse engineer it: three stages; ~700 damping factor; high current; high slew; .00x% distortion; 40µV output noise; big Class A envelope; 25wpc into 8Ω, 100 into 2. And it sounds great." That was Nelson Pass; papa as he's affectionately known on the DIY Audio forum dedicated to all things Pass and present. Today's amp lacks a decimal point. So it belongs not to the point.8 range and it also lacks their power meter. Yet it's got more dissipation surface than the standardized FirstWatt enclosure. And unlike its occupants, it not only power doubles into 2Ω, it's stable down to—pop the cork!—0.5Ω. That's Scintilla turf as long as you

don't ask it to dispatch >10 amperes (200 watts peak into  $2\Omega$ ) at which point protection would clamp down on your excess.



Meanwhile unlike Pass Labs not FirstWatt amps, it gets by with just two output transistors per channel (one per half cycle), not an entire alley. That's the absolute minimum for a push/pull output stage. Here it involves 700w/40A devices of the llys HiPerFet type. Those parts clock high power density and efficiency. They don't require a beastly power supply. Cosmetically and conceptually then, the XA25 occupies ground somewhere between FirstWatt and Pass Labs. Of course it remains pure Pass as 55bs of 17x14.4x6" WxDxH hardware that runs  $\sim 25^\circ\text{C}$  at the radiators, consumes 240 watts at idle and presents your preamp with a  $47\text{k}\Omega$  input. Voltage gain is 20dB, bandwidth DC-100kHz, noise sub  $50\mu\text{V}$ , slew rate  $100\text{V}/\mu\text{s}$ . "The signal path from input to output was simplified to fewer components. Degeneration, 'the other form of feedback', was eliminated. This increased efficiency and class A operating current for greater class A operation into low-impedance and reactive loads. For those genuflecting to pope Mammon—who isn't?—the XA25 undercuts the previously most affordable XA30.8 Pass amp by a solid \$1'600. The new low for Pass-age on the good ship is \$4'900. Hello baby. A shocker then is the real-world oomph into sub  $2\Omega$  loads. Baby popped out of the oven with grown-up hairy cojones. But it's no degenerate\*. To return to FirstWatt and Pass Labs, Nelson's former kitchen-table venture has since joined the Auburn mothership. It frees our man from personal assembly and production. Pass Labs and FirstWatt are now closer than ever. As AmpMan—watch out, Marvel!—Nelson can focus on dreaming up new circuit permutations, then ironing out wrinkles with iterative auditions, circuit and parts alterations until the book on one design gets closed and another opens. And who knows just how many sketch books Nelsons pencils in at the same time, some never to find mention anywhere?





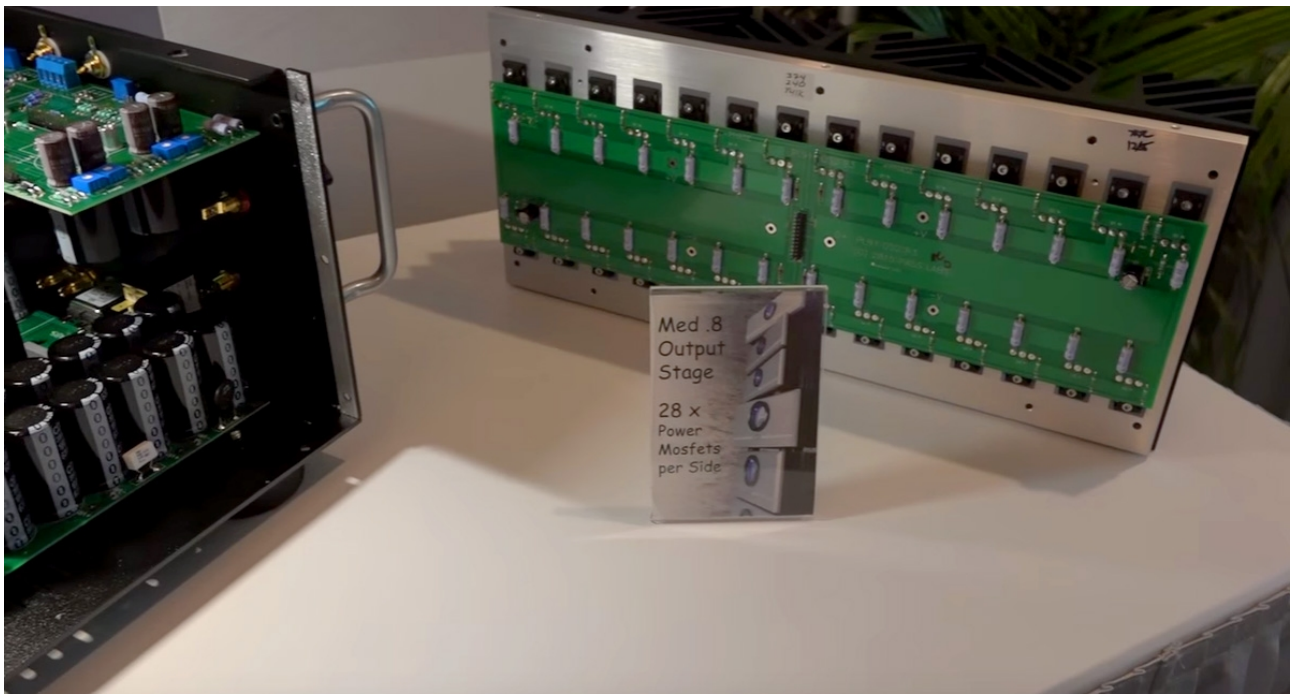
"I've been pondering when and how to release the SIT-3, probably the last commercial SemiSouth SIT amp. It still puts out 10 watts and so on but operates the device in common-drain mode as a follower. The SIT-1 and 2 used the SIT in common-source mode, which resulted in the interesting character of those two amplifiers and highlighted the triode nature of the device. Common-drain lacks voltage gain but offers much lower noise, distortion and output impedance. In the SIT-3 the voltage gain is developed through an input stepup autoformer which gives about 12dB. No feedback of course, same box as ever, lower price. The last piece of business there is a new front end. Other stuff as well. I developed the DEF amp (stands for Depletion/Enchantment mode Follower) which is an interesting self-biasing push-pull output stage without degeneration or a bias circuit. Very cool but requires exotic parts and the result is still a 'regular' sort of amplifier. Also a B1 variant "now with voltage gain!" and some new active crossover circuits, including crossovers for Linkwitz's LX-Minis as alternatives to the DSP units, DIY modular crossover circuits and Pure Audio Project's active crossover and the list goes on." When creativity strikes, catching the gifts is the dance.

*\*Degeneration refers to the use of a resistor in series with the emitter, source or cathode of the gain device. This reduces its transconductance hence voltage which now depend mostly on the ratio of resistance/impedance rather than the device's intrinsic characteristics. Degeneration improves distortion and stability at the expense of gain. Whilst those effects mirror negative feedback, they don't reduce output impedance or increase bandwidth as 'true' (or the other kind of) negative feedback does. This practice predates the invention of negative feedback. It's thus considered separate and usually goes unmentioned in the context of whether a circuit employs any negative feedback or not. So an amp can be advertised as having zero negative feedback yet still use degeneration. The secret sauce of the XA25 is how it controls bias and gain without it.*



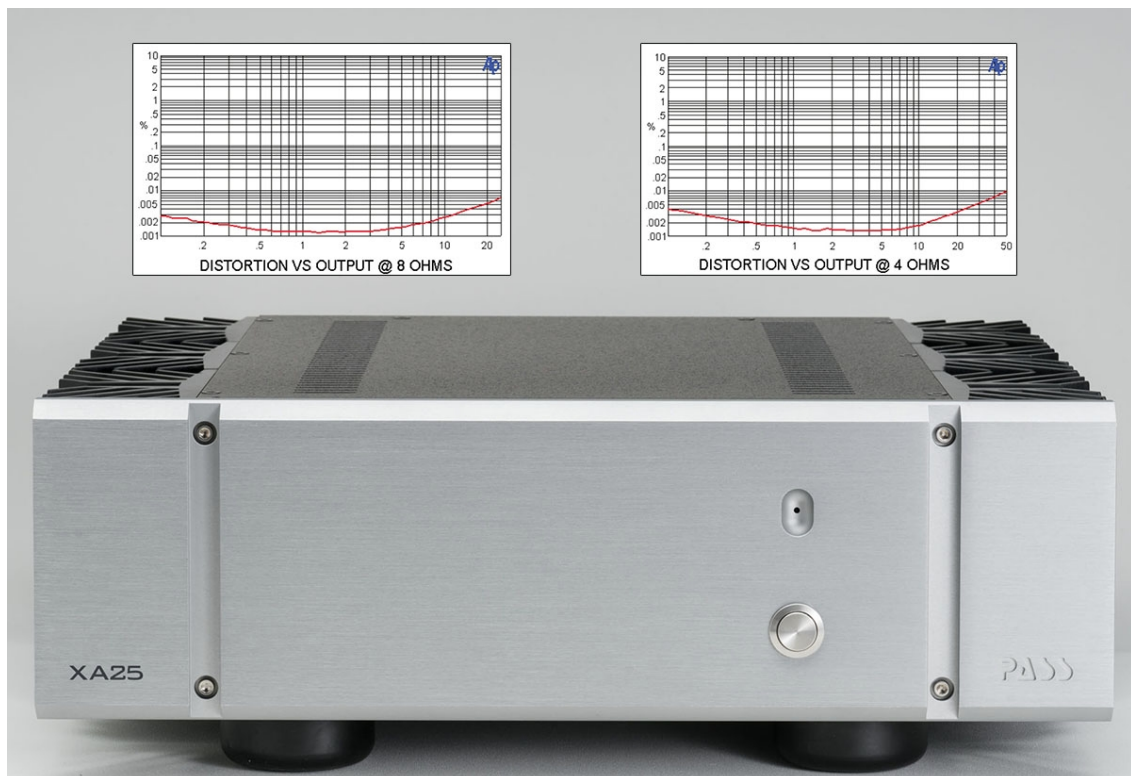
Because Nelson has always made himself exceptionally available not just to reviewers but to scores of DIYers, it seemed only fitting to feature a photo of him, his wife Jill and their dog Jack, taken at their Sea Ranch home on the Sonoma County coast.

**Whilst our designer's book** on the XA25 has long since closed, ours just opened. What would it say under 'listening impressions' for the smallest stereo amp from Pass Laboratories in their year 2017 catalogue? From the descriptions, it certainly seemed that being most affordable was far from synonymous with least sophisticated or interesting. For contrast, I had their XA30.8 and FirstWatt F7. And this, from HomeTheaterReview.com colleague Terry London: "Wanted to share that I just got through submitting my writeup on the Pass Labs XA25. I believe that this might be the best amplifier Nelson and his crew have yet created/built. I own a pair of XA-60.8, a FirstWatt SIT 2 and have had in my system an XA30.8. The XA25 does color, tonality, spatial qualities, bass control and overall macrodynamics different and better for my taste than these other wonderful amplifiers. I still cannot believe that I'm not listening to a great tube SET were it not for how quiet, quick and dynamic the XA25 presents the music."



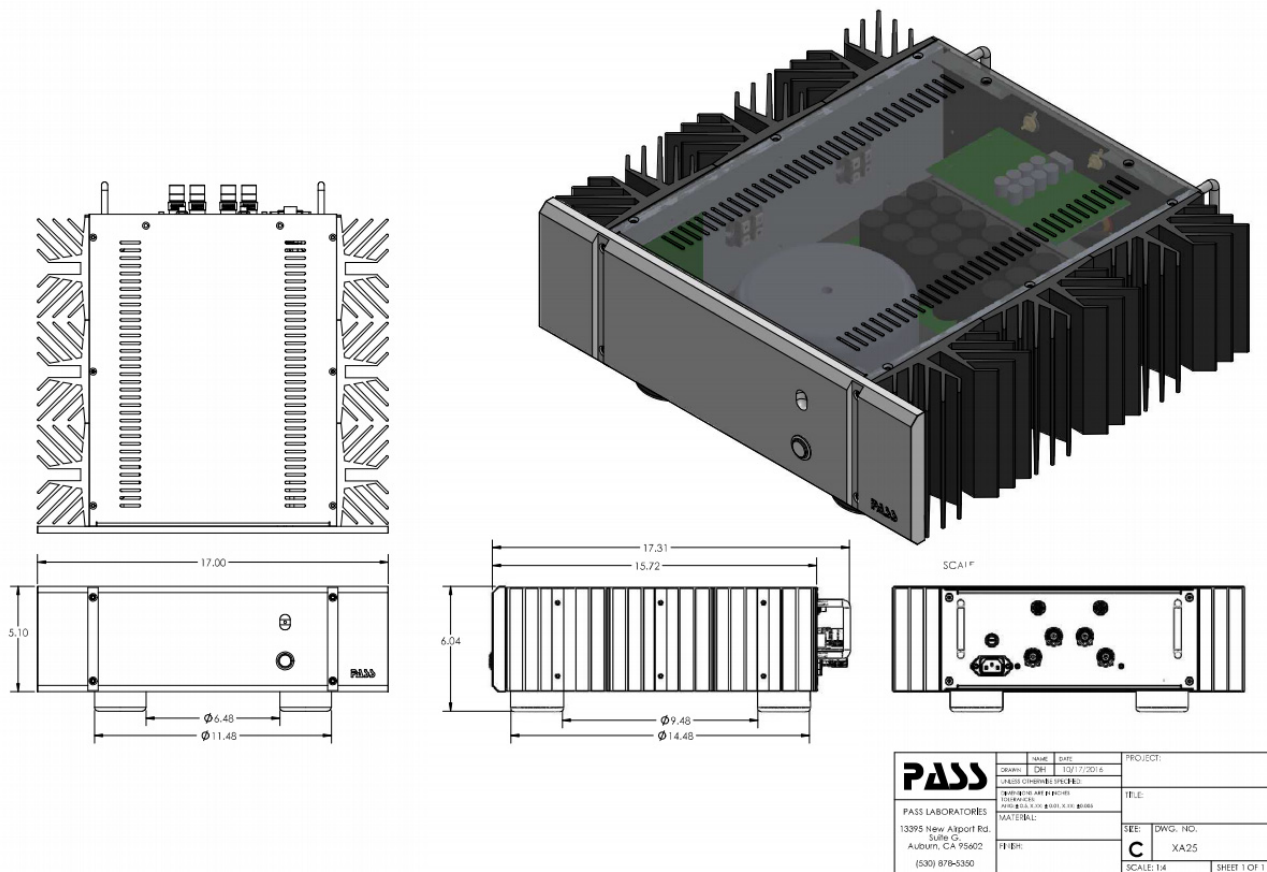
**One channel of a mid-power XA.8 amp output stage sporting 28 power Mosfets vs. the XA25's lone pair.**

**Strolling the hood.** The last and only other amplifier I reviewed which ran such high-power transistors as solitary pairs was the €20K Reimyo KAP-777. It outputs 200/400wpc into 8/4Ω to instead bias class A/B and not advertise <1Ω stability. Others championing single high-power transistor pairs would be Gato's 250-watt TwinFet PWR-222 at £11'180; Gamut's 220wpc D200i stereo amp at £9'300; and LinnenberG's 200-watt Liszt monos at €6'000. There's probably more; but just as likely not many. And once we specify class A operation with a sub \$5K tag, Slim Pickens isn't just the stage name of one Louis Burton Lindley Jr. Obviously FirstWatt has such options. From them we'd simply expect lesser current delivery with less low-impedance stability. For complex bass-heavy music into more reactive loads, far closer and heavier competition to the XA25 should come from the massively paralleled XA.8 models. The big question was how the different circuit approach and 700w/40A output devices would influence sonics. From the XA25's concept and price position, we'd not expect cluttered innards or herniating iron so let's take the obligatory peek...



... under the hood which...

...remains to be revealed once the loaner has touched down. For now we have this simplified render. And a tickle from reader Michele Surdi: "It has come to Pass. I've been meaning to ask you for some time but put it off until I saw your review coming. The Italian Pass importer has been asking me to review the XA25 for 6moons. I really don't feel like shouldering the responsibility but could do you a follow-on in due time. Comparison would be obviously with my storied FirstWatt F5 on the Tannoy, Harbeth and Klipsch trifecta though that might be a bit stale by now?" I didn't think so at all. Thus Michele's impressions will be annexed to my review in due time. As to the long view and what these big Mosfets might presage for Pass Labs, "the XA25 confirms our in-house view that removing degeneration delivers some nice effects. The primary rationale for the big 1xys parts however (as opposed to smaller parallel Fets) was that they are simpler to implement. Big Mosfets or not, more powerful product will have to take a different approach and that is under development as well as other refinements." No rest for the wicked; ever!



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