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Aavik I-880

integrated amplifier

Jason Kennedy

When Aavik's head of engineering, Michael Børresen, set out to make the ultimate amplifier, the I-880, he didn't just consider the circuitry. He accepted that as "an engineer, everything that's square is good" may not be the best way to present such a product. So he drafted in industry veteran Flemming Rasmussen, the man behind the radical designs of Gryphon in their heyday.

This combination of engineer and artist/designer resulted in an Aavik like no other, take a look at the rest of the brand's amps and you will see that they are black boxes with dot matrix displays, attractive in their way thanks to gentle curves and non-metallic construction but ultimately rather protestant in contrast to the flamboyance of the I-880.

First In Line

This amplifier was the first in Aavik's 880 line of electronics and set the pattern for style and construction in the series, and quite a standard it is too. This is a large amplifier, too big for my rack and too heavy for me to lift onto it. The spec says 36kg, which is excessive, especially when combined

with the 51cm by 58cm size of the beast. Visitors assumed that the mass was due to huge transformers in what is a Class A design, but that is not the case. The weight is in the chassis, which is mostly made of copper, 5mm thick copper at that, with some titanium thrown in for good measure. The lads at Aavik love a bit of titanium, it's the grey part on top and what you touch on the huge volume control because they love the feel of it, and it's one of three slabs that form the base of the casework alongside copper, of course, and a laminate of unspecified materials.

Copper was not chosen just because Børresen and Rasmussen think that it looks fabulous (it does though) but also because it is the perfect material to mount output transistors on. Michael Børresen says, "When you put transistors on copper rather than aluminium, you get lower output impedance; inductance is no longer an issue." This material is rare in hi-fi casework because of its price, but there are other examples out there in the ultra-fi world. The most obvious being the D'Agostino Momentum and a personal favourite, the original Audio Note Japan Ongaku. Neither of those is exactly a "bargain basement" component and puts the price of the I-880 into a more appropriate context than the more obvious high-end competition. »





(The Aavik I-880) maintains the full signal with the highest signal-to-noise ratio, whether the volume is turned up or down.



» Class A without tears

The I-880 is different in more than just appearance, this is a 200 Watt Class A amplifier with non-switching resonant mode power supply. A linear supplied amplifier of this power would be a hot potato in more ways than one, it would be dangerously hot to the touch and would triple the electricity bill overnight. Resonant mode power supplies are similar to the common switched mode types but are actually more efficient and don't have the noise producing characteristics of SMPS designs, as they use a sine wave rather than a square wave to produce power.

To avoid switching, Class A amplifiers typically apply a high constant current to the output devices. Michael Børresen says that "this approach not only involves high power consumption but also adversely affects sound quality. The traditional Class A power supply consists of a large transformer and large capacitor banks. This large transformer has two downsides. First, the many windings create undue induction, which in turn means transient delay. Second, these many windings create stray capacitance, which causes high-frequency noise from the mains to enter the amplifier."

To combat this Børresen and his team of engineers designed a circuit that constantly keeps the bias spread 0.63 V above the required current, no matter where it is in the cycle. So, no matter how much current the power amp requires, it always stays in Class A up to 200 W into 8 ohms, while at the same time not consuming unnecessary power. Essentially, the output transistors idle at 20mA, which keeps them lukewarm, whereas conventional solid-state Class A designs use a lot more power, which increases both heat and energy usage.

Light touch

The I-880 has four 500W power supplies that allow the amp to deliver peak currents of over 80 Amps. These supplies are sited right next to the output transistors, with a capacitor bank next to the eight pairs of devices, the thinking being that the current has a shorter signal path which reduces noise, a constant goal within this and all the Aavik components I have seen. Another facet of this is the use of a light-dependent resistor (LDR) attenuator, which is a form of switchless volume control; this minimises the noise floor with the aim of making this amplifier as revealing as possible at low levels. The amplifier itself has an inverted topology which Aavik say "maintains the full signal with the highest signal-to-noise ratio, whether the volume is turned up or down".

An unusual feature is an onboard analogue crossover with low and high pass filters. These can, on the one hand, control a stereo system with a subwoofer and, on the other, be used as a sophisticated tone control to eliminate frequencies that cause a bass boom. You will need to add separate power amplifiers or active speakers, such as subwoofers, to take advantage of this filtering, as the outputs are on RCAs; the I-880 is a stereo amplifier with one pair of custom speaker terminals per channel. These have usefully large, metal-free screw caps on silver connectors; the single-ended only inputs are more conventional high-quality RCA sockets. I asked Michael Børresen why there are no balanced inputs on this amplifier, and he explained that the LDR volume control is a single-ended design and you would, therefore, have to convert incoming balanced connections, which always compromises sound quality. He is also of the opinion that »



The sound is totally devoid of the glare and grain found with many solid-state amps but has the ability to control real-world speakers in a way that tube amps rarely can.



» balanced connections are really only of use in situations where very long cables are required, pro audio being the most obvious example.

Combining qualities

Given that the I-880 represents such a radical overhauling of Class A traditions you might expect it to sound very different to existing examples of the art, which it does largely by virtue of having a presentation that combines the best qualities of both tube and transistor designs. It has the transparency and magical realism of the aforementioned Ongaku combined with the easy power of the best transistor examples; the sound is totally devoid of the glare and grain found with many solid-state amps but has the ability to control real-world speakers in a way that tube amps rarely can.

My listening started with the Aavik driving Dali Epikore 11 floorstanders, and after the first track, I managed to put the speaker cables into the correct terminals! Using black and white rather than black and red is clearly not idiot-proof. With Julian Lage's '76' on the streamer the result was unusually expressive and dynamic, with literally oodles of background detail made clear and coherent. It feels like the I-880 digs deeper into the signal, but in fact, it's just not obscuring the quieter details.

At this point, I pressed the beautifully formed remote, and everything turned off, it turns out that the centre button is a second standby button. Still, it's a nice handset that's not



hewn from copper. Laura Marling's 'Soothing' proved to be effortless yet fully developed, as if the amplifier is unfolding all the notes to their full and presenting them in a totally coherent, dynamically precise fashion. And doing so without a shadow of grain on the leading edges, it's very good on voices, presumably because it's very transparent, and voices are often the point of focus in recordings. This hit home very clearly with a number of pieces not least Lizz Wright on 'Sparrow', the strong opener on her album *Shadow*.

Lush

Imaging is also very strong, everything as Thom Yorke puts it is in its right place, both laterally and back/front, drop a well-cut tune like 'Ai Du' by Ry Cooder and Ali Farka Toure (*Talking Timbuktu*) and the soundstage expands out into the room, seemingly everywhere except in the loudspeakers. The gorgeous tone is lush and rich yet also vivid; there is no rose tinting going on, which can often happen with solid state Class A, just an extremely even tonal balance backed by power that only makes its presence known by the absence of strain. There's none of the grip found with high power amps, which itself is a distortion, an etching onto the signal caused by noise in the circuitry, and the Aavik seems to have limitless headroom.

It presents Arab Strap's remarkably uncompressed 'New Birds' like a walk-in wardrobe; the acoustic character is so precise that you feel like you are in that space; holographic doesn't begin to describe it. Then you notice the layers »



The extremely low noise and distortion means that all sorts of facets of each recording are much clearer than usual.

» of texture in this relatively simple piece of music, the harmonics and reverb which combine to give it a gravitas and presence that is intoxicating.

Domestic forklift

It was around this point that I managed to coerce my son into helping to install the Darkz Z2 Signature resonator feet that come with this amplifier but are very difficult to use because the amp weighs so much and has cup-like feet that you have to place the Darkz under with titanium balls on top. It would be another of those if only I had small forklift-type jobs that high-end audio seems to require rather too often. These put a spring in the amp's step that allowed it to dig a little deeper into each mix, they also added another few percent to its timing skills, which are effortless like the power delivery, making everything sound right regardless of musical density or style.

It's worth noting that the I-880's menu functions allow input gain adjustment in five stages, preamp muting for use with a headphone amplifier, operating temperature display, home theatre bypass with level setting and both level and frequency for the aforementioned high and low pass outputs. The big volume knob is nice but inevitably the remote handset is what you actually use and by avoiding the machined from solid approach, much beloved in the high end, Aavik have created an ergonomic remote that's warm to the touch and weighs a lot less than a brick.

The extremely low noise and distortion means that all sorts of facets of each recording are much clearer than usual, Corinne Bailey Rae's voice on *River* (Herbie Hancock – *River: The Joni Letters*) has such a different and contrived acoustic to the band around her that it sounds a bit like a piece of CGI dropped into some live action footage, not quite right. The radiance and harmonic richness of the piano are far more realistic and three-dimensional. It's the price you pay for high fidelity, of course, and thankfully, it doesn't detract from the joy of the piece; if anything, it makes more clear that Hancock is why this interpretation of the song works so well.

Reach out

I lugged in the mighty Bowers & Wilkins 802 D3 for a bit of a contrast and put them on Townshend Seismic Podiums to help with the transition from the rather more costly Dalis. These are less forgiving speakers, but they worked supremely with the I-880; tweaking their position relative to the wall to get the balance right resulted in a degree of fluency and precision that was addictive. Everything I played reflected its origins and even when those origins were not

of an audiophile nature the results were engrossing, the envelope around the 'handclap' sound on 'How Much A Dollar Cost' (Kendrick Lamar), and the nature of the venue where Octave Records captured Sturtz (*Live at Roots*), this placed me at the back of the audience in a dark club with huge dynamic range and reach out and touch it realism.

You have to hand it to Michael Børresen and his team, the Aavik I-880 is that rare thing, a modern Class A amplifier, one that is not based on designs from back in the day but which has taken the non-switching ethos of the Class to a place that no one else has achieved to date. I tip my hat to Flemming Rasmussen as well. His design vision makes for an amplifier that is visually rich and a delight to use, just don't try to pick it up on your own. While the price is undoubtedly high, the extensive use of copper and titanium and the technological advances that Aavik have incorporated into the I-880 do not make this seem unreasonable. Could it be built for less outside of Denmark? Probably. Could it be done so well? I doubt it. +

Technical specifications

Type: Class A, solid-state, 2-channel integrated amplifier

Analogue inputs: Five line inputs (via RCA jacks)

Digital inputs: N/A

Analogue outputs: One pre-out (via RCA jacks), One pre-out high pass (via RCA jacks), One pre-out low pass (via RCA jacks)

Input impedance: 10kOhms

Output impedance (preamp): 50 Ohms

Headphone Loads: N/A

Power Output: 200Wpc @ 8 Ohms, 400Wpc @ 4 Ohms

Bandwidth: Not specified

Distortion: THD < 0.007% (10W, 1kHz, 8 Ohms)

Signal to Noise Ratio: Not specified

Accessories: Four Ansuz Darkz Z2 Signature resonators, remote handset

Dimensions (WxHxD) 155 x 510 x 580mm

Weight 36kg

Price £67,000/\$70,000

Manufacturer Aavik Acoustics

🌐 www.aavik-acoustics.com ☎ +45 40 51 14 31

UK distributor Auditorium HiFi

🌐 www.auditoriumhifi.co.uk ☎ +44 (0)796 042 3194