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Aavik I-188

From the same stable as Børresen loudspeakers, the Danish-born I-188 is the 'starter' model in a range of three related, and deeply intriguing, integrated amplifiers...

Review: **Ken Kessler** Lab: **Paul Miller**

Two disparate thoughts crossed my mind after a mere two minutes with Aavik's I-188 integrated amplifier. The first was a whiff of familiarity when I saw that Flemming E. Rasmussen, the semi-retired founder of Gryphon Audio, was involved in Aavik. The other was seeing reports from the AXPONA show in Chicago [see p26] suggesting there was a discernible boom in high-end integrated amps, especially among older audiophiles who are downsizing, rather than post-Gen-Xers who shun clutter.

ONE OF THE FAMILY

Aavik's I-188 is the least expensive of a trio, at £15,000. The I-288 (£20,000) and I-588 (£25,000) increase the number of 'Tesla coils' – Aavik's proprietary noise-reduction scheme [see PM's boxout, p63] – while the I-588 adds an extra, larger power supply for the line stage. The latter's volume control/output driver is based on Aavik's own discrete op-amps while the I-188 and I-288 use IC op-amps for that section. Otherwise, all look identical and offer the same number of connections and features.

As for the 'Danishness' of the I-188, hi-fi veteran Lars Kristensen founded Aavik after 20 years with Nordost and time with Raidho, along with engineer Michael Børresen. They established four brands to develop the entire panoply of hi-fi: Ansuz (cables), Aavik (amps, streamers, phono stages and DACs), Børresen (speakers), and Axxess (pretty much everything). Audio Group Denmark is the umbrella company.

Part of what I learned about the Aavik I-188 confused me into thinking I was writing about watches: you don't often hear the word 'titanium' in conjunction with amplifiers. For some years a popular material for wristwatch cases, titanium is prized by watchmakers for a number of virtues, among them strength, light

weight, freedom from corrosion and especially resistance to magnetism, the last of which is death to a timepiece.

QUIET PLEASE

These qualities have their roles in the chassis of the I-188, the titanium and thick copper sheets with a laminated fibreboard 'filling' forming a 'sandwich' for the top plate. The rest of the case features anodised alloy heatsinks and front panel – the impressive-looking heatsinks, however, are largely decorative as the I-188's cool-running Pascal Class D amplifier module sits on the bottom plate [see pic, below].

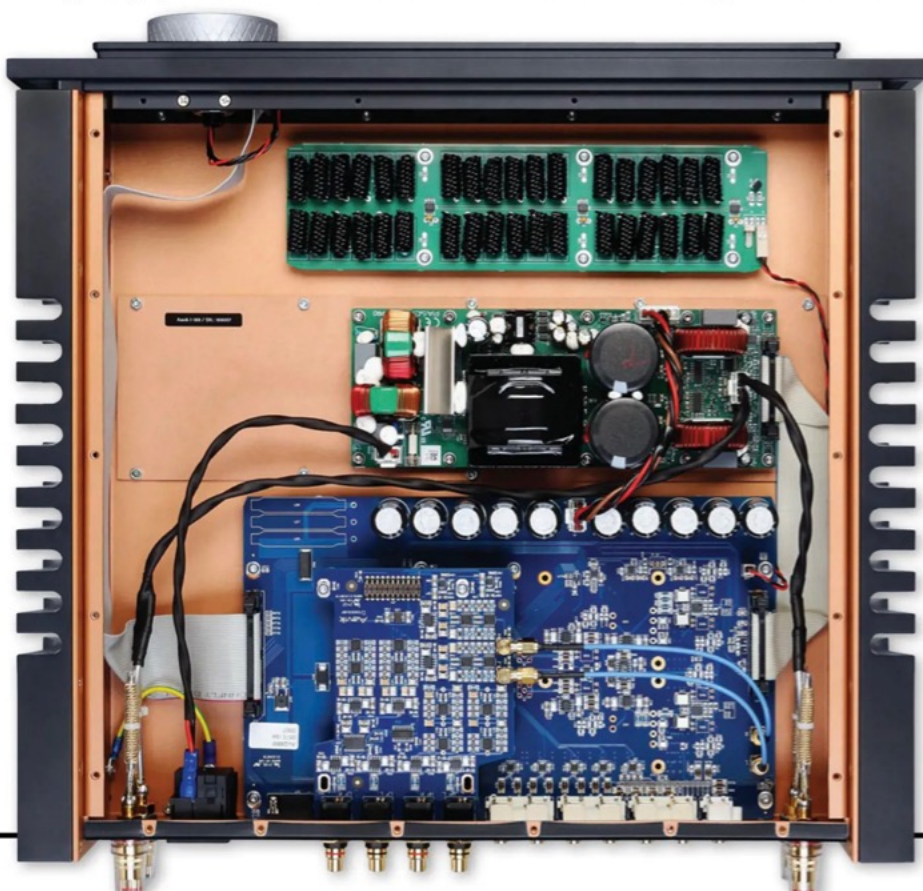
Aavik has designed the entire structure to deliver maximum EMI/RF screening. The unit's ghostly quietness and resistance to

external interference might also be due to the unusual componentry. Inside the I-188 and its integrated siblings are various quantities of those aforementioned Tesla coils, the I-188 containing 36 'active' coils and 96 active square coils. These increase, respectively, to 72/168 for the I-288 and 108/240 in the I-588.

While the I-188 boasts a glass front panel with touch operation for power-on from standby, mute and input/menu selection, and a rotary control far right, it is surprisingly minimalist –

so no onboard DAC, phono stage, streamer, etc, and no balanced inputs. Instead, you get a rear panel that could have come from 1977 – seen from the back [p65], each end contains multi-way binding posts, and between them are five pairs of line-level

'They established four brands to develop the entire panoply of hi-fi'



RIGHT: A Pascal Class D amplifier module [centre] includes a switchmode PSU that also feeds Aavik's own line input [bottom right] and versatile high-/low-pass filter circuit [bottom]. 'Tesla coils' [boxout, p63] are on the green PCB



'The heavyweight case is meticulously shielded by its titanium top-plate and copper inner enclosure'



RCA inputs and pairs for pre-in or main-out operation. There are also 12V DC triggers and RS-232 sockets for system integration.

Above these are two pairs of RCA outputs marked 'Low Pass' and 'High Pass', but as there is no fully variable internal crossover we asked Aavik for further detail. Mikkel C. Simonsen, from Aavik's R&D department, explained that their 'main use is for connecting a subwoofer. The internal power amp can then be used for either the high-pass or low-pass drive. In some use cases you can get better results by using the 1st-order high-pass in the line stage with the options of 25Hz, 40Hz and 70Hz to drive the main speakers, and then use the low pass outputs for driving an active subwoofer, or subwoofer plus an external amplifier'.

I used the I-188 'straight', so setup took minutes, everything self-explanatory, while the supplied remote [p65] handles all operations. The menu provides access to altering the preamp gain – I used the +9dB setting set by PM in his Lab Report [see also p65] – plus balance, pre-out mute,

display brightness/dimming, display of the operating temperature, home theatre settings, crossover for the high-pass and low-pass outputs, and other functions. If you mess up, there's a factory reset button.

GREAT DANE

Using Super Audio CD and CD, open-reel tape, and vinyl, I wasn't bothered by – no, make that I was *relieved* by – the I-188's absence of any internally fitted source

intrusions. I revelled in the fact that this was purely a line-level affair, its quietness allowing me to flip from source to source to isolate its own sound, of which there is little to discern. Careful level matching of all the

sources, with copies of albums on two or more formats, made assessing the Aavik I-188 a breeze to accomplish.

It was a reel-to-reel tape of sibilance-free strings which also revealed only one small area to criticise. When hammered (and I do mean hammered), the amplifier exhibited a slight rawness or

'This song, played to death in my system, was as vivid as I'd heard'

ABOVE: Dominated by a huge, dot-matrix style display, and flanked by a titanium rotary encoder [right] and touch-sensitive options [left], the I-188's chassis is slim but deceptively heavy

roughness in the mid-to-upper reaches. But let's get real. I'm referring to levels so far above anything approaching normal or healthy listening that it's academic. It wasn't quite the same as clipping, merely a reduction in the sweetness of and rasp added to the Melachrino Strings and Orchestra's *The Music Of Jerome Kern* [RCA Living Stereo FTP-1053]. But I repeat: the levels were so excruciatingly high that I worried for my loudspeakers.

FROM GRIT TO GRACE

Now that's out of the way, I had to marvel at the way Class D amplifiers have evolved from the harsher-sounding products that were foisted on us a few decades ago. While nobody would mistake this for a quartet of KT-88s per channel, the I-188 exhibited air, sufficient warmth, enormous

scale and – aside from when emulating Motörhead concerts – fatigue-free treble. The massed strings on the Melachrino tape formed a wide, lush wall of sound, with superb front-to-back depth.

While I realise aural memory lags way behind sight and smell, I was taken by a flash of recall. It's been 40 years since I first heard Gryphon electronics, but a near-perfect balance between tubes and transistors was a characteristic of the I-188's indirect ancestor. This was made even clearer when comparing Joni Mitchell's 1976 album *Hejira* on Mobile Fidelity's SACD [UDSACD 2275] and One-Step vinyl [UD1S 2-053] releases.

Okay, there were other variables, in that one of my phono stages was all-valve, so I changed to a solid-state alternative, while the SACD player was clearly not tubed. Rather, I was listening for the

IN THE AIR TONIGHT

The I-PRO2S module from Denmark's Pascal A/S combines the brand's UREC (Universal Rectifier Controller) switchmode PSU with PFC (Power Factor Correction) and a UMAC (Ultra-Modulated Analogue Control) Class D switching amplifier. A variant of this next-gen platform is also employed by AVM [HFN Dec '22] but the technology is quite distinct from the more compact Ncore/Eigentakt Class D modules used by the likes of NAD [HFN Aug '20] and Mola-Mola [HFN Oct '21]. For all their high efficiency – the I-188 offers 86% at its rated 300W output – switchmode PSU/Class D amp combos can generate more HF/VHF noise than would a more traditional linear PSU/Class AB design. And ridding the audio environment of such noise is core to the 'thinking' behind Aavik's amps.

You'll see mention of 'active Tesla coils' on the Aavik website and these, in part, are realised in the 36 black coils visible on the green PCB seen adjacent to the Pascal amp [see pic, p60 and right]. Connected at one end only, these act as helical antennas, each bank of 12 associated with an STC15W104 single-chip microcontroller. Quite what is being 'broadcast' into the chassis space is unclear, but additional square coils take the form of PCB tracks underneath these black antennas, with a further 72 printed on the underside of the board itself. In practice, the I-188's 86.2dB A-wtd S/N ratio (re. 0dBW) is not exceptional, but it is still superior to any comparable Class D amplifier that we've measured. PM

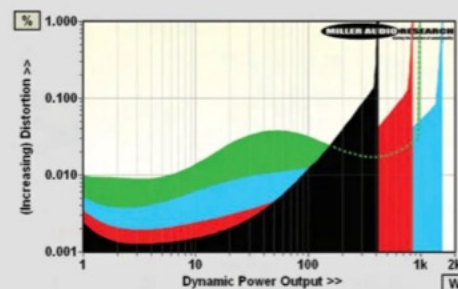


LAB REPORT

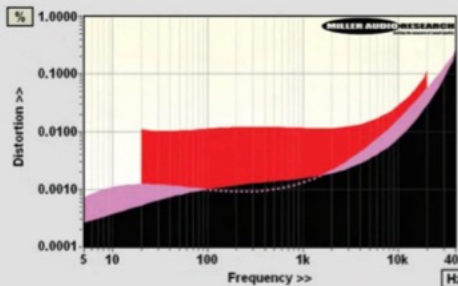
AAVIK I-188

At the heart of Aavik's I-188 amplifier is a Pascal L-PRO2S Class D module, rated at a maximum 800W/4ohm, and offering a total 28dB gain – with the I-188's configurable preamp set to 9dB the overall gain was, indeed, +37dB. Aavik sensibly rates its amplifier at a more conservative 2x300W/8ohm and 2x600W/4ohm, figures exceeded in practice at 390W and 770W, respectively, at 1kHz with a <1% THD limit. Pascal's UREC switchmode supply, and UMAC amplifier design, does offer headroom under dynamic conditions (not a given with all Class D amplifiers) amounting to 425W, 850W and 1.55kW into 8, 4 and 2ohm loads (re. 1kHz/10msec at <1% THD). Into very low 1ohm loads the module is protected at 980W [see Graph 1] although this 31A should be sufficient to grapple with the most difficult loudspeakers.

Viewed together, Graphs 1 and 2 illustrate that distortion increases with both level and frequency, the latter a function of the inductive filter network on the L-PRO2S PCB. At 1kHz/8ohm, distortion remains <0.001% up to 10W output, increasing thereafter to 0.0022%/20W, 0.006%/50W, 0.012%/100W, 0.02%/200W and 0.033% at the rated 300W. Versus frequency, THD spans 0.0005-0.026%/1W, 0.0009-0.06%/10W and 0.01-0.12%/100W (all re. 20Hz-20kHz). The frequency response of earlier Pascal modules [HFN Dec '21] was influenced by speaker load impedance, but the improved Class D architecture of the L-PRO2S ensures the I-188's response is relatively immune to your choice of speaker. In practice, thanks to its 'flat' 0.02-0.05ohm source impedance (re. 20Hz-10kHz), the I-188's -0.1dB/20kHz/8ohm roll-off holds to -0.25dB and -0.55dB into 4 and 2ohm loads, respectively. For matters of noise, see our boxout on p63. PM



ABOVE: Dynamic power output versus distortion into 8ohm (black), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads. Maximum current is 31.3A



ABOVE: Distortion versus frequency versus power output (1W/8ohm, black; 10W, pink; 100W, red)

HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	390W / 770W
Dynamic power (<1% THD, 8/4/2/1ohm)	425W / 850W / 1.55kW / 980W
Output imp. (20Hz-20kHz/100kHz)	0.015-0.12ohm / 1.45ohm
Freq. resp. (20Hz-20kHz/100kHz)	-0.1dB to -0.1dB/-5.6dB
Input sensitivity (for 0dBW/300W)	41mV / 706mV
A-wtd S/N ratio (re. 0dBW/300W)	86.2dB / 111.0dB
Distortion (20Hz-20kHz, 1W/10W)	0.0005-0.026%/0.0009-0.06%
Power consumption (Idle/Rated o/p)	13W / 700W
Dimensions (WHD) / Weight	440x118x394mm / 23kg



ABOVE: There are no phono or digital modules offered, so the five line inputs, one preamp out and one 'main' power amp in (all on RCAs) are joined by configurable, high-/low-pass line outs and sets of 4mm socket/binding posts for loudspeaker cable

way the Aavik I-188 would expose the resolution between the two formats. Again matching levels as precisely as I could, I heard the album's gorgeous, lush title track oozing 'liquidity' from both sources.

CRYSTAL CLEAR

Did one format slaughter the other? Absolutely not. The differences were so subjective that I could imagine fights breaking out at hi-fi shows among audiophiles with biases. In either case, it was the I-188 amplifier revealing all, with crystal clarity and utter transparency.

True, it showed the LP to have warmer bass, with the SACD marginally cleaner and deeper, but neither cancelling out the other as personal preferences come into play. And that voice? Clean, distortion-free and sounding, well, *real*. Similar battles between two formats produced the same results, attesting as much to the sheer brilliance of SACD and the supremacy of tape, as well as to the continuance of vinyl as the preferred format for a great swathe of audiophiles.

Using a plain ol' 'Red Book' CD, and satisfying my need to hear mono as well as stereo, the title track from *The Door Is Still Open* by '50s R&B group The Cardinals [Collectibles COL-CD-9977] provides the listener with not one but two peerless performances. The first is the exceptional voice of Ernie Warren – a god among doo-wop singers –

LEFT: The Aavik remote – a glossy black curve with copper-coloured rear – serves the brand's amps, DAC and phono stage. To volume and input selection is added navigation of the setup menu



while the second is the absolutely remarkable saxophone solo from jazz legend Johnny Griffin. You know the drill: the sax seemed to leap from the speakers, while the detail was borderline clinical.

For a 70-year-old recording, the sound quality is almost embarrassing. Hearing it through a no-holds-barred amplifier of such pellucidity, even if from the CD rather than the rare, original 45rpm single, should be mandatory for those who deem anything non-digital (in origin) as prehistoric. Through the I-188, the playback was as vivid as I have heard it, and this song is played to death in my listening diet.

CASHING IN

Still, I needed a dose of another mono gem and it was the 'redneck' bass on Johnny Cash's *Hot And Blue Guitar* [Intervention IT-039] that captured my attention with its solid central image, and no 'mono' button to push. As for his voice, the textures were enough to make even a stereo-only enthusiast nod in admiration.

And the inevitable moment of revelation, the clincher? I don't have a drop of Irish blood, nor a penchant for folk music, but the harmonies, banjo, and harmonica on The Clancy Brothers and Tommy Makem's *Isn't It Grand Boys* [Columbia CQ813 open-reel tape] had me craving a Guinness. And a Danish pastry. ☺

HI-FI NEWS VERDICT

Though a beguiling example of an ultra-modern, high-end integrated, Aavik's I-188 defies convention not just in its left-field circuitry, but in eschewing an onboard DAC, balanced inputs, etc. Instead, it's a lean, mean machine with immense power, bank-vault construction and gorgeous looks where minimalism meets the future – a product poised in the vanguard of the 'integrated amplifier renaissance'.

Sound Quality: 86%





Ansuz



Aavik



Børresen



Axxess

Audio Group Denmark Roadshow

Audio Group Denmark (AGD) differentiates itself through a guiding philosophy, as refined and groundbreaking as the technologies they've pioneered. In just 12 years, this vision has driven the creation of four individual brands - each offering a superb range of products delivering exceptional quality and an uncompromising sound. When combined, AGD products form one of the most complete and high-performance audio systems available.

Whether you're taking your first step into the AGD ecosystem or looking to elevate your existing audio system, the flexibility is yours. You can build a system at any level and upgrade as your aspirations grow or selectively incorporate products from any of the four brands to bring a profound improvement to your current audio experience.

Handcrafting & innovation

We design and handcraft every component in-house, from loudspeaker drivers to cables and electronic devices. Only the cabinets for speakers and electronics, which we source from trusted specialists, are not made by us. To ensure exceptional quality and audio performance, all products undergo rigorous testing before reaching our customers.

Materials & unique technologies

At Audio Group Denmark, we're dedicated to achieving a pure, authentic sound by exploring advanced materials like zirconium, titanium, tungsten, and carbon fibre. Through research with local universities, we've tested these materials for conductivity, resonance control, and structural optimization. Our innovations, including topology-optimized zirconium, cryogenically treated metals, precision-coated membranes, and advanced coil designs, result in products that eliminate noise, control resonance, and deliver an unmatched musical experience.

Our Brands



Ansuz

Ansuz forms the essential foundation that enables any audio system to reach its full potential. From signal, power and speaker cables to power distributors, grounding solutions, streaming accessories and resonance control devices. Every product is engineered to unlock greater clarity, dynamics, musical flow by reducing noise, distortion and signal degradation to the lowest possible levels.



Aavik

Aavik high-performance audio electronics uses advance circuit design, material science and precise engineering. Every component is created to reduce noise, preserve signal integrity and expand the dynamic scale of music. By lowering the noise floor to an absolute minimum Aavik electronics reveal subtle nuances, projecting them on to a spacious, silent background with striking realism.

