

# Gato Audio CDD-1/AMP-150

Striking design marks this compact combination of electronics from one of Denmark's most innovative specialist brands. Can the sound match those exciting visuals?

Review: **Steve Harris** Lab: **Paul Miller**

It's said, facetiously, that Scandinavians are so good at design because 'What else are they going to do through the long winters?' But one of the other things they can do is listen to music, so perhaps it's not surprising that we almost expect to find Nordic hi-fi sounding as good as it looks.

New to the UK although established in other markets, the CDD-1 and AMP-150 are Gato's flagship products, the visual design being the work of Kristen Dinesen. They are both so compact that you might even think that the 150W-plus per channel AMP-150 integrated must be a Class D amplifier.

It isn't, though. In fact, it builds on a concept pioneered in Denmark long ago with the first big GamuT power amp, designed by Ole Lund Christensen and originally marketed as Sirius. Like that amplifier, the AMP-150 integrated uses a single-MOSFET output stage (actually one pair for each channel) rather than the usual array of two or more devices in parallel.

## CONCEPT OF WHOLENESS

Gato's Frederik Johansen had worked at GamuT in the mid-2000s [see boxout, p49]. He explains: 'When I came into that company, basically, there was the D200, and that was a very good amplifier. The problem with it was that it was very expensive to make. We had to redesign a whole lot of things.'

Johansen left GamuT to form Gato in 2007, and continued with the single-MOSFET idea. 'That concept seems to work very well. So we stuck with that and we tried to improve on it and make it work better with less. If you took a D200, you couldn't fit it into a small box!

'There are some problems when you have a very powerful MOSFET: it's difficult to control it. On the other hand, you get a very close relation between your speaker and your power supply. Because the

only thing there is this MOSFET, and if you can control it in the right way, you can have something good.

'It's a question of optimising everything to fit as a whole. I cannot take the honour of figuring out how to do all this, because obviously GamuT, over 30 years, optimised these things. We were inspired by that and worked on it.'

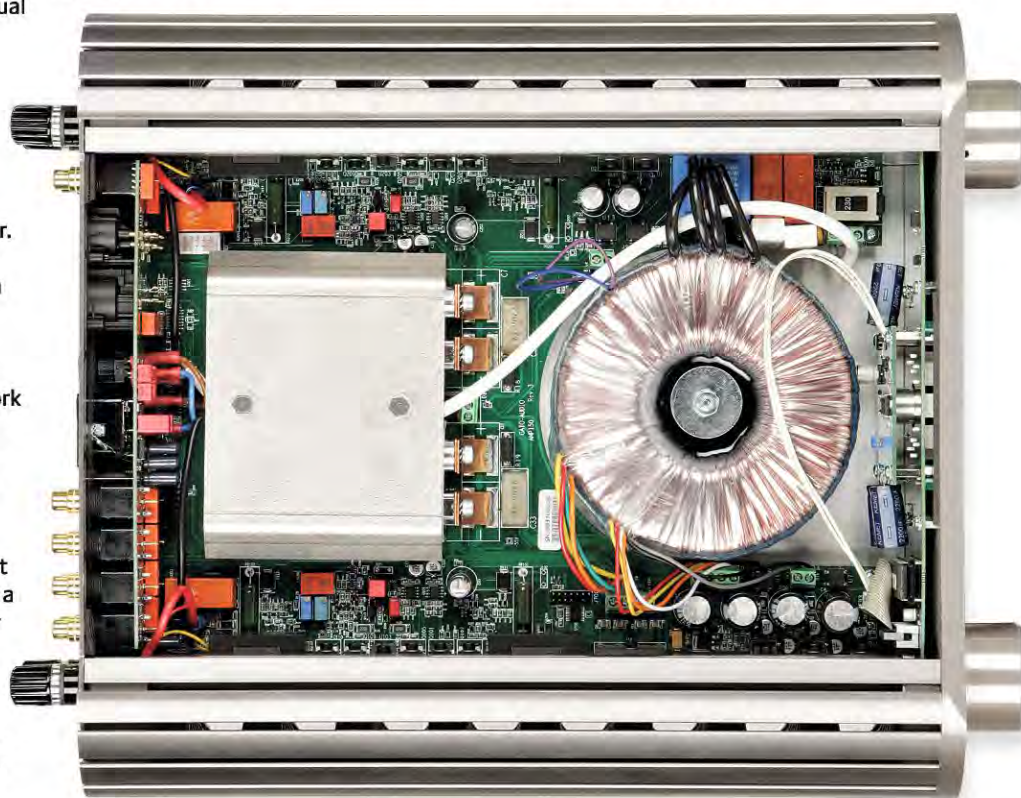
Gato has approached CD player design with the same idea of 'wholeness.' The CDD-1 uses a Philips CD-Pro 2 mechanism and balanced dual-differential Burr-Brown D/A converters and, says Johansen, 'If we go with the upsampling as we do, we can have less harsh filters on the output stage, which gives us a more natural, relaxed, less grainy sound.'

It's a sign of the times that Gato's website now headlines the CDD-1 as a 'High-end DAC with a drive', although the instruction manual still calls it a 'CD player/DAC', and its USB input accepts sample rates up to 192kHz. But this is a dashing-styled CD player anyway.

To load a disc, you must lift off the impressively-machined cover, but this is well designed and doesn't seem fiddly even on first acquaintance. With a CD in place, you can replace the cover without taking

too much special care to align it, because the magnetic clamp that's held loosely in its centre will find the transport hub and attach itself. A felt facing underneath allows the cover to sit down pleasantly on the small feet below.

*'It's headlined on Gato's website as a "High-end DAC with a drive"'*



**RIGHT:** All Gato's key semiconductors – the PSU regulation, preamp stage and single pair of MOSFET output devices (per channel) – are mounted onto single-piece L/R heatsinks



We're used to seeing analogue meters on the front of amplifiers, but not on CD players. If the AMP-150's big dial is like a conventional speedo, the matching one on the CDD-1 is a kind of wacky rev counter. As well as finding uses for the analogue pointer, Gato has crammed in all the other necessary display indications, including an LED digital readout, source icons for standard and USB digital inputs and the usual arrow symbols for the CD transport. Both CD player and amp have a small screw adjuster on the back panel to dim the meter backlight and indicator lights.

Once a CD starts, the CDD-1's pointer needle will move steadily to indicate

progress through the track, or you can have it creep round slowly to show progress through the whole disc, on an uncalibrated scale of 0 to 80 minutes. The Time button toggles between these two modes. This is all very neat, but not so useful if you want to know the length of a track or go to a certain point in the music. Track numbers are indicated conventionally by the two-digit red numeric display near the top of the dial.

When running as a DAC, the analogue meter has a different function, with scale markers for all the standard sample rates from 32kHz up to 192kHz, while the digital display shows the incoming signal's

**ABOVE:** Focal point for both of Gato's matching fascias is a large analogue meter. Both share the same stylishly slatted curved side-cheeks, those on the amplifier also providing ventilation

bit-depth. During his lab tests, though, PM noted that the needle didn't always flip round to the correct marker for 48kHz, 96kHz, or 176.4kHz, etc, as he repeatedly changed the input sample rate.

#### PRE-HEAT AMP FEATURE

It would do Gato an injustice to describe the AMP-150 as more conventional-looking than the player, but it has a classic simplicity. Its central 'power meter' again includes icons that light for input selection, but seems – dare I say it – less contrived than the display on the CDD-1.

Rotating endlessly as does the volume control, the AMP-150's input selector cycles through one balanced line input and four unbalanced line-level inputs, identified as CD, LP, Radio and Tape. But what you see on first switch-on is a flame-like icon to indicate that the amp is warming up.

Instead of 'standby,' the front-panel button that activates the amplifier is labelled Heat. This denotes a pre-heating feature, which gets the amplifier to its optimum working temperature in ten to 15 minutes, rather than a couple of hours. ➔

### DENMARK'S HIGH END

This year, the High End show in Munich hosted a total of 363 exhibitors from 35 countries. Along with the ever-growing German contingent, there were exhibitors from almost every European country, even one each from little Estonia and tiny Lichtenstein. There were a few from Sweden, a couple from Norway and Finland. But there were a dozen exhibitors from Denmark, plus many more brands represented only by their local distributor. And we shouldn't forget B&O, which wasn't at that show but must be easily Denmark's biggest audio exporter. All this wouldn't be so surprising if it weren't for the fact that Denmark's population is only around 5.6 million. Historically, it seems that Danish high-end draws on a strong heritage of furniture design and manufacture. Its strength seems to lie in a willingness to pursue design ideals even to the point of eccentricity while remaining deadly serious about sound quality.



**ABOVE:** This top-loader is easy to use, its lift-off cover retaining a magnetic puck. Unusually, its cutaway design lets you to touch the disc while spinning. Unusually, too, when run as a DAC, the CDD-1 uses its analogue meter needle to indicate incoming digital sample rates

There is also an active low-noise cooling system; however, I never became aware of its operation.

A special feature of the system-remote handset is the rotary volume control, which can be comfortably nudged round with the thumb. The remaining key controls operate normally, but some aspects may throw you at first if you haven't read the manual. To play a CD, you might go for the button with a small single-arrow icon, but this turns out to be the CD/DAC source selector. 'Play/Pause' is actually the button in the centre of the volume control, so it falls conveniently under thumb. Amplifier source selection is via the up/down arrow keys below. The remote [see p51] also adds the secondary functions that don't appear on the CDD-1's front panel, giving you direct track selection using its numeric keypad, along with track and whole-disc repeat.

### A TRANSPARENT WINDOW

I listened first to the Gato CDD-1 as a CD player, using my Classé CAP-2100 amplifier. It sounded cleanly articulate, with a clear-sounding mid and treble that was crisp without ever becoming wispy or edgy. In the Mozart oboe quartet that opens *The Art Of Janet Craxton* [BBC Records BBC CD 635], the Gato conveyed the beauty as well as the precision of Craxton's playing, and presented the four instrumental parts in a way that allowed you to focus effortlessly on any one of them.

Perhaps the Gato didn't give the impression of being unusually forceful or

driving, but it was certainly sprightly. On many recordings, I was impressed by its rhythmic agility. On *Art Pepper Meets The Rhythm Section* [Contemporary/Original Jazz Classics S7532], I found myself grooving along to the endless subtleties of Paul Chambers' bass lines, and smiling at the flights of Philly Joe. As before, the soundstaging was very good, in this case giving a clear picture of the rhythm trio on the right while the saxophonist soloed from the left, realistically sized and not just trapped in the speaker.

The player could be equally convincing on rousing pop and rock, without adding any edge of its own. When The Kooks got fast and furious on *Inside In/Inside Out* [Virgin 0094635072426], it conveyed the energy and talent of the Brighton youngsters, while on Luke Pritchard's

endearing opener, 'Seaside', you really felt the pleading urgency of his vocal.

Whatever music you threw at it, the Gato CD player could give an appealingly transparent window into what was going on. Playing Ry Cooder's *Bop Til You Drop* [Warner Bros 7599-27398-2], the complex mix of guitars and vocals in 'Little Sister' was well resolved, the instruments spread out in width and layered in depth too, the backing vocals well delineated and tuneful.

Listening to the CDD-1 as a DAC confirmed the virtues that I'd begun to appreciate when using its built-in drive. With other transports connected via S/PDIF, it still delivered a thoroughly believable soundstage, often strikingly three-dimensional. Listening to higher-res ⇨

'You could hear each piano string vibrate as the hammer struck it'

## FREDERIK JOHANSEN

Today Frederik Johansen is managing director of Gato, but he got his first job in audio, in the mid-1990s, at Holfi. It was there that he first worked with the designer Kresten Dinesen, who would later become a co-founder of Gato.

After a few years Johansen was headhunted by Thule. 'My official title at both places was production manager,' he says, 'But being in a small company, you were kind of involved in everything from development to sales.'

In 2004, when distributor Poul Rossing had bought the ailing GamuT company, he hired Johansen to take care of production and to manage R&D. But in 2007, when GamuT was sold again, Johansen left, teaming up with Dinesen to form Gato.

'We saw in other small companies that there was mainly one guy, the owner, who did everything,' says Johansen. 'But we have a good strong network of freelance developers, experts in their own fields. We can combine their specialities in the same product.'

'To me it is much like cars. You buy a Mercedes, you get comfort, you get a good engine, you get a package of qualities. You buy a BMW, it will be a different package.'

'And if you buy a Gato amp, CD or speaker, you get a package of qualities uniquely ours. I don't want to say that we are the only ones telling the truth. I just want to make some products that sound the way we think they should sound!'



## GATO AUDIO CDD-1/AMP-150

Both these components perform as slickly as they look. The CDD-1 offers a superb performance with CD while the (PC) USB drivers ensure there's no diminution in A-wtd S/N ratio (114.6dB re. 0dBFS), low-level resolution ( $\pm 0.1$ dB over a full 100dB dynamic range) or distortion (0.0003% at  $-30$ dBFS) compared with the traditional S/PDIF input. All CD, USB and S/PDIF inputs offer fantastically flat responses via the balanced XLR output, achieving  $\pm 0.01$ dB from 20Hz-20kHz with CD and 48kHz media,  $\pm 0.02$ dB up to 40kHz with 96kHz media and  $+0.08$ dB/88kHz with 192kHz media. Jitter is vanishingly low at 10-15psec (all digital inputs, all sample rates) but the CDD-1 is not free of 'analogue' artifact. Distortion increases gently over the top 25dB of its dynamic range [see Graph 1], peaking at 0.002% at its maximum 4.35V output.

Gato Audio's partnering amp is arguably more characterful for while it beats its 150W/250W spec. at 2x170W/280W into 8/4ohm – with 210W, 400W and 740W into 8, 4 and 2ohm under dynamic conditions [see Graph 2] – there's a marked increase in distortion through mid and treble frequencies. Versus power, the AMP-150 manages a very consistent 0.02% distortion (1-150W) but versus frequency it increases from 0.007%/20Hz to 0.025%/1kHz to 0.35%/20kHz. The A-wtd S/N is also influenced by a gentle infusion of white noise at 83.5dB (re. 0dBW) – often a positive factor in listening tests – while the response shows a gentle subsonic bass roll-off ( $-0.4$ dB/20kHz). Readers may view comprehensive QC Suite test reports for the Gato Audio CDD-1 and AMP-150 by navigating to [www.hifinews.co.uk](http://www.hifinews.co.uk) and clicking on the red 'download' button. PM



**ABOVE:** There are balanced inputs to be found on the rear of the AMP-150 to match the balanced outputs on the CDD-1, which also provides high-resolution DAC-only operation with S/PDIF and USB digital inputs

material via USB, the sound could take on another degree of palpable solidity, just as if there was now a removal of some below-threshold veiling effect that had been there before, but not consciously noticed. It seemed extremely transparent.

### WIDE OPEN SPACES

Next I tried the Gato AMP-150 with my existing sources. On first switching over from my Classé CAP-2100, there was a momentary (and actually misleading) impression that it was slightly recessed or dulled by comparison. In reality, I think it would be true to say that the Gato amplifier was tidier. Returning to Ry Cooder's 'Little Sister', it seemed that every instrument had its stable location, and space around it. The Gato clearly revealed the dry, padded studio sound of Jim Keltner's drums, with Tim Drummond's rock-solid bass line tightly locked in.

With more intimate acoustic material, the Gato amplifier could give singers and instruments a presence that was sometimes stunningly life-like, without being artificially larger-than-life. With *Get On Board* [Telarc CD-83675], and 'Pockets', Eric Bibb appeared between the speakers with tangible, almost fleshy weight, complete in every breathy detail. The Gato amp also impressed with its clean and unexaggerated handling of the mega bass-drum on 'God's Kingdom' and the subterranean 'Step By Step'.

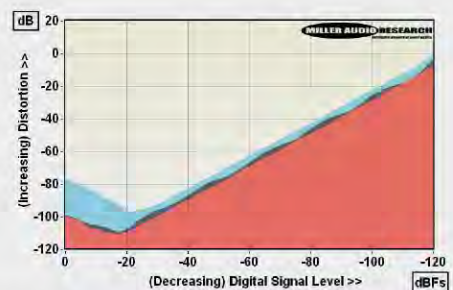
Connecting the CDD-1 and AMP-150 as a system, I found that in terms of timbral naturalness and stereo imaging, the two products worked together in a way that really did make the whole seem greater than the sum of the parts, perhaps reflecting that 'wholeness' which Gato seeks in voicing its products.

On Dylan's *Blood On The Tracks* [Columbia 512350 6], the stereo stage became a vast panorama seeming to stretch well beyond the speakers. But it wasn't just about wide-open spaces. On *Jasmine* [ECM 273 3485] the combination put you right up close to Keith Jarrett's piano, hearing every string vibrate as the hammer struck it. Similarly, you felt the big, chesty resonance of Charlie Haden's bass. Above all, you could appreciate the rapport between the two of them, and the two lifetimes of music that had gone into this poignant reunion. ☺

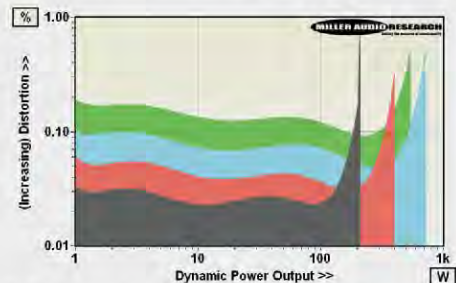
### HI-FI NEWS VERDICT

Although the attention-grabbing design is a big part of the package, these luxurious products offer a harmonious listening experience too, especially together. They sound relaxed, presenting instruments and voices with realistic textures, rather than edging them with 'hi-fi' super-detailing. The user interface may not suit everyone but the sound quality is excellent and is highly commended.

Sound Quality: 85%



**ABOVE:** THD vs. decreasing 24-bit digital level via S/PDIF (1kHz, red) and USB (1kHz, black; 20kHz, blue)



**ABOVE:** Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) loudspeaker loads

### HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	170W   280W
Dynamic power (<1% THD, 8/4/2/1ohm)	210W   400W   740W   550W
Output imp. (20Hz-20kHz, DAC/Amp)	97ohm   0.010-0.028ohm
Freq. resp. (20Hz-20kHz, DAC/Amp)	+0.0 to -0.01dB/-0.40 to -0.04dB
A-wtd S/N ratio (DAC/Amp)	114.6dB (0dBFS)   83.5dB (0dBW)
Distortion (20Hz-20kHz, DAC/Amp)	0.0020-0.009%   0.0065-0.35%
Digital jitter (CD/USB/S/PDIF)	118psec   15psec   10psec
Power consumption (DAC/Amp)	29W/455W (54W idle)
Dimensions (WHD, DAC/Amp)	325x110x375mm/325x110x430mm

