



# Electrocompaniet ECD 2

Instantly recognisable as an Electrocompaniet product, the ECD 2 is the only full-sized DAC in this month's test. The company's signature black front panel has a blue LCD display on the left which gives information about selected source, sample-rate and volume level. In the centre is the power button and, to the right, four further gold buttons make up Electrocompaniet's navigator control. Up and down buttons regulate volume, while the left and right select input source.

At the rear can be found a pair of optical inputs, a pair of digital coaxial inputs and a single USB socket while the audio output is available via a choice of balanced XLRs and unbalanced RCA phono sockets. An RS232 D-Type socket permits control of the ECD 2 in the context of a home installation setup, with a pair of 12V trigger sockets for remote activation.

Internally, the ECD 2 is based around the popular XMOS USB solution with asynchronous upsampling courtesy of the equally popular Burr-Brown SRC4392 chip. As you might expect, the coaxial and USB 2.0 inputs support input rates up to 24-bit/192kHz while the pair of Toslink optical inputs run up to 24-bit/96kHz only. As befits the marque, its internal layout is methodical and the ECD 2 feels sturdy and well built.

## BALANCE AND ORDER

With Electrocompaniet's drivers installed on my PC, connection to the USB input was swift and seamless. I was very impressed by the overall demeanour of the ECD 2; it really came alive and the result was a superbly tight, punchy and crisp performance. Top end clarity



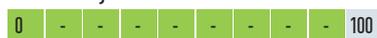
was impeccable, although the overall balance of the ECD 2 seems to have been expertly judged to avoid drawing attention to any one area of the frequency range.

In terms of atmosphere, the ECD 2 is right up with the best in the way in it sets out a capacious and beautifully ordered soundstage. It won't quite stretch images off into the very corners of your room but it still gives performers plenty of space, making every listening experience highly pleasing, effortlessly musical.

The interplay of instruments on the track 'Helios' from the Gaudete Brass Quintet's album was a masterclass in pinpointing the action as it happened between the players, and the ECD 2 imbued each with a delicious rasp, bringing them alive.

Swapping to the coaxial input via the V-Link<sub>192</sub>, I was pleased to hear that very little changed. There was, I felt, a fraction more drive at the very low end, but the effects were very subtle, suggesting that the ECD 2 is a very consistent performer across its inputs. Swapping the source to CD showed that the unit can also make the best of this mere 16-bit format. Steely Dan lacked the superb clarity of the high-res version, but the ECD 2 offered a frisson of extra warmth across the midband which worked very nicely in conjunction with Donald Fagen's vocals.

Sound Quality: 85%

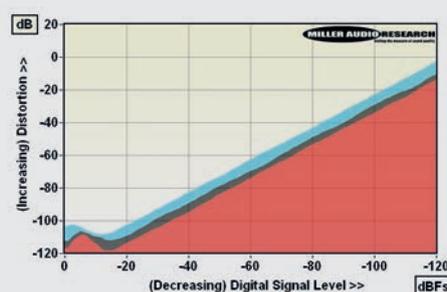


ABOVE: Instantly recognisable as an Electrocompaniet unit, the ECD 2 features the company's signature gold 'Navigator' controls and a large blue display

## HI-FI NEWS LAB REPORT

Electro's very new ECD 2 offers a fine technical performance thanks to its pair of CS4398 DACs. Distortion is very low through midrange frequencies from 0.0002% at its 4.4V maximum output down to 0.00013% from -10dBfs to -30dBfs [see red trace, Graph below]. There's a slight increase in THD at the frequency extremes - a function of Electro's analogue stage - but at just 0.0006% (20kHz and 20kHz) this is still very low indeed. Jitter, too, has a complex pattern but the cumulative total is still low at ~40psec for all 44.1-192kHz sample rates via S/PDIF and USB.

The frequency response(s) are also very flat and extended out to -0.17dB/20kHz (44.1/48kHz files), -1.8dB/45kHz (96kHz) and -6.2dB/90kHz (192kHz) while stereo separation is good to 120dB through bass and midrange. The 115.3dB A-wtd S/N ratio is the widest in this month's test but the 300ohm source impedance, while bang-on specification, is not especially low. The Thesycon-sourced USB 2.0 drivers install and operate without a hitch and, as such, the ECD 2's USB performance is all but indistinguishable from that via S/PDIF. PM



ABOVE: Distortion versus digital signal level at 1kHz (red/SPDIF, black/USB) and 20kHz (blue/USB) over a 120dB range



ABOVE: Both single-ended (RCA) and balanced (XLR) outputs are provided and the ECD 2 has additional trigger/RS232 connectivity for use in a fully integrated set-up

Maximum output level/Impedance	4.4Vrms / 300ohm
A-wtd S/N ratio (S/PDIF / USB)	115.3dB / 115.1dB
Distortion (20Hz-20kHz/0dBfs)	0.00023-0.00063% (S/PDIF)
Distortion (20Hz-20kHz/0dBfs)	0.00025-0.00065% (USB)
Frequency response (20Hz-20kHz)	+0.00dB to -0.17dB
Digital jitter (S/PDIF / USB)	40psec / 40psec
Resolution @ -100dB (S/PDIF / USB)	±0.2dB / ±0.2dB
Power consumption	14W
Dimensions (WHD)	465x80x320mm

# GROUP TEST VERDICT

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The five DACs under consideration here will all undoubtedly find themselves in demand as more and more people move towards a virtual music collection. Each unit has a distinctive appearance, different sonic character and different behaviour between inputs, so which is the one to go for?

PS Audio's NuWave is an elegant and simple to use affair, a world away from some of the other units here. In sound quality terms it is punchy and exciting with a surprisingly fluid midrange but the top end is a little too gritty for my liking. It has an undeniable 'showroom appeal' – and won't take up shelf space – but I fear that, unless the rest of your partnering system is commendably smooth and, particularly if the USB connection is to be your main source, it could lose some of its initial appeal.

## SLOW SETUP

The next contender, the Lavry DA11, will take up your valuable time, but unfortunately this is likely to be as a result of trying to navigate your way through its front panel setup malarkey, with multi-purpose LEDs and fiddly switches causing more trouble than they're worth.

Fortunately, if you do make it through the setup process unscathed, then the Lavry can reward handsomely, turning in a very fine performance. Dynamics are the order of the day here, but without any associated sense of hardness as the DA11 is more than happy to play the smoothie when required. Best results were to be had through the USB input so it is an obvious choice for computer-oriented users. The 'Playback Image Control' feature I thought merely a distraction.

The Simaudio Moon 300D also left a nagging doubt about longterm

satisfaction, with reservations over its occasionally indistinct and grainy quality linked solely to the legacy USB 1.0 input. Unsurprisingly, things improve markedly through the coaxial connection whereby the full range of a 96kHz/192kHz source can be realised. Here the Moon is a more enjoyable listen, its fine sense of depth perspective and lovely fruity bass a particular delight. It's unfortunate that on the cusp of our review, Canada-based Simaudio announced its USB 2.0 upgrade for the 300D, so our formal recommendation will have to wait for confirmation.

Less thought has to be given to the North Star Design Fluxio. It's stylish, well made and offers a good array of menu options to play with, through an interface that is both slick and intuitive. In sound quality terms, this is the perfect antidote for the audiophile who is still labouring under the misapprehension that digital is all 'hard and nasty'.

The Fluxio is smooth, inviting and laid-back but in the best possible

way, as it seductively invites you to keep listening – pick the right source material and you could lose whole days at a time! Again, it performs better through its S/PDIF inputs but differences are not vast.

## EFFORTLESS REWARDS

The Electrocompaniet ECD 2 is a unit that is incredibly uniform in its performance across both USB and coaxial inputs. It really took me a lot of switching back and forth, and a great deal of experimentation with different music genres, to determine any changes. They were just about

there, but so small as to not be worth worrying about.

This means that, whichever input you choose, the ECD 2 rewards effortlessly. It somehow manages to be dynamic, spacious, smooth, crisp and mellow all at the same time, and is utterly captivating. I loved every moment I spent listening to it – and it shows just how far computer-sourced audio technology has progressed in recent years. ☺

'Whichever input you choose, the ECD 2 rewards effortlessly'



**ABOVE:** The stylish £1650 North Star Fluxio is 'laid-back but very inviting' but Electrocompaniet's £1950 ECD 2 surpasses the lot with its all-round performance

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