

A DAC Quartet

ANDREW HARRISON REVIEWS THE ADL STRATOS, CHORD QUTEST, PRISM SOUND CALLIA AND REGA DAC-R

Standalone digital convertors emerged as an eccentric curiosity for the enthusiast in the 1980s, and have evolved since into a popular way to patch all kinds of sound sources into a music system. In recent years the portable DAC has taken off, accelerated by the growth in mobile devices, so now even the smartphone generation is starting to understand the benefits of using a dedicated DAC to upgrade the sound heard through headphones.

What we may call regular DACs have had a renaissance among music lovers too, in part thanks to the emergence of computers as a viable sound source to play the high-resolution music files now sold through online music shops such as HDtracks and Qobuz. A reliable USB connection is the starting point here, helped enormously by the emergence of asynchronous-mode USB 2.0 to ensure that the final sound quality is not limited by the vagaries of PC processor clocks.

For this round-up we have selected four modern DACs priced from around £600 to £1800, each sporting USB audio inputs, and two (the ADL *Stratos* and Prism Sound *Callia*) with dedicated headphone stages. Volume control is available with the latter pair, not just for the headphones but also through the line-out connections, letting them serve as digital pre-amps for use with, for example, powered speakers. Other convenience features can include remote control, and it's the least-expensive ADL and Rega *DAC-R* that offer this facility (even if the Rega's included handset is limited to input switching).

Ultimately the choice of DAC may come down to 'best' sound quality and here we find a diverse selection of strategies to reach that goal. The Rega and Prism Sound employ older but still-faithful chipsets for the conversion stage, the argument being that implementation is far more important than simply dropping in the latest silicon.

It should be noted, however, that the Prism Sound unit uses only a small part of the 15-year old Cirrus Logic chip. Key stages of digital filter and interface clock are executed in a powerful programmable chip running unique custom code. Rega's approach is equally worthy, focusing on keeping RF noise – an acknowledged enemy of digital fidelity – to a minimum by specifying a linear power supply and multiple internal galvanic isolation devices.

The other two units, ADL and the Chord Electronics Qutest, do use later and more sophisticated converter technology – the former a commercial chipset from ESS that delivers exceptional measured performance, and respected subjective quality in many devices where it's been applied before. Chord Electronics continues to follow its own notable path, with a conversion architecture running entirely on FPGAs, leveraging its designer's insights into psychoacoustics to optimise performance.

Evaluation of the four units was through extended listening tests, using a new reference digital bridge reviewed this issue, the Auralic Aries G2 to play 16-, 24-bit and DSD music, which was found to bring the best out of each unit compared to my usual Apple *Mac Mini* front-end. Another key factor in realising their potential surprisingly came with another new benchmark product, the CAD USB cable also reviewed in these pages.

One hiccup that nearly became a showstopper for the Chord Electronics DAC was an unusual compatibility issue with analogue interconnects. My usual reference Nordost *Valhalla* (with locking WBT 'bullet-plug') failed to make a connection, as did another well regarded Audio Note *QSSC* cable.

All listening was carefully level-matched through a system comprising Music First *Passive* controller, Chord *SPM 1200C* power amp and B&W *802D* speakers, with the Mytek *Brooklyn* on hand as a comparably priced reference DAC.

Without pre-empting the subjective results, it was a revelation once again to hear the impact of digital filters on final sound. Some models feature switchable filters for the user to sample, and while this is a matter of personal taste, the division was clear for me between those DACs that use more traditional linear-phase types; and those that may be prioritising detail and revelation through the use of so-called minimum-phase filters (which have greatly reduced 'pre-echo' on impulsive transients at the expense of audible phase distortion across the audio band).

Depending on personal taste, all could find favour as high-quality first DACs, or as upgrades. For this listener, musicality always trumps all-out revelation, making a final choice much clearer.