

# Benchmark DAC2 HGC

CHRIS BRYANT TRIES OUT A COMPACT YET UNUSUALLY VERSATILE DAC/PRE-AMP/ HEADPHONE AMPLIFIER



Benchmark has become firmly established in the professional audio world as the producer of technically able, high performance DACs at a reasonable price. The *DAC1*, which we reviewed back in 2009 (*HIFICRITIC Vol3 No2*), has found some favour among the hi-fi fraternity, so now that the *DAC2* has appeared, it seems only right to find out how much progress has been made over subsequent years. The *DAC2* actually comes in three variations, suffixed *L* and *DX* as well as the full feature *HGC* (hybrid gain control) reviewed here. Besides the *DAC2*'s usual digital facilities the *HGC* model reviewed here comes complete with a comprehensive remote control, has a pre-amp section with line level analogue inputs, and also includes a powerful double headphone facility.

This really is a complete redesign which Benchmark claims is capable of producing a state-of-the-art measured performance. The information provided is comprehensive, much of it is obviously aimed squarely at the professional market as it includes 16 graphs covering a wide range of parameters and many graphs that show just how well it measures. These reveal stunningly low distortion, a remarkably deep low noise floor, and show a fabulous mastery of the technicalities of digital audio design.

The case is made from two 'U' sections of sheet aluminium with a black, slightly textured finish. The front panel is anodised machined aluminium (available in black or silver), held on by four Allen bolts. It may be only 44mm high and 205mm wide but the fascia is quite densely populated with a knurled aluminium volume control knob next to a pair of 6.3mm headphone jack sockets. Rows of lights advise the operational status, such as inputs in

use, bit rate, and sampling frequency. Two buttons cycle up or down through the numerous digital and analogue inputs. The far left has a power button, next to a dim/mute button and a polarity switch.

Build quality and finish is very good but the unit does have a certain semi-professional look to it. The remote control is neat, simple and very effective. Certain functions can be selected by holding buttons down for a few seconds until lights change on the front panel to inform the mode selected. The DAC then remembers these settings.

Digital inputs include two coaxials on gold plated phono sockets, one USB type B, and two Toslink opticals. The wired inputs (including the USB) are configured to work both PCM (up to 24-bit 192kHz) and DSD, while the opticals are restricted to 24bit/96kHz operation. Two pairs of phono sockets provide analogue line level inputs, and a further two pairs of phonos supply line-out, alongside a pair of balanced XLR sockets. The power supply is a universal switched-mode design which works with mains input voltages ranging from 88V to 264V. The mains input socket is a standard fused IEC type, and as the unit is small, its back panel is quite crowded.

The internal technology is carefully crafted to produce an outstanding set of measured results. Four balanced 32-bit ESS DACs work with Benchmark's own low impedance current-to-voltage converters, a technique that minimises noise. This arrangement also allows the four balanced one-bit converters to be summed so that a DSD data stream can be optimised. The converters provide separate conversion for the more widespread PCM-encoded data, so no data format conversion is necessary.