

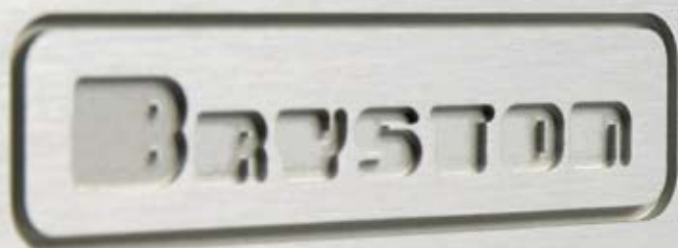
australian

hi  fi

1969-2009  
40 YEARS

and home theatre technology

## Bryston: Digital to die for...



BDA-1 D/A CONVERTER

Sample Rate  
32K0 ● 96K0  
44K1 ● 176K4  
48K0 ● 192K0  
88K2 ● LOCK

## Reviews

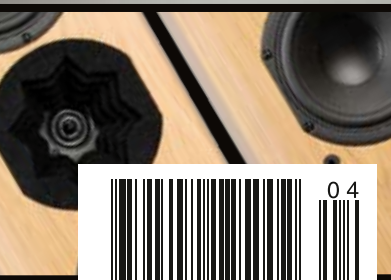
Bryston BDA-1 DAC

Yamaha YST-SW515 Subwoofer

Paradigm Studio 10v5 Speakers

Musical Fidelity 750k Supercharger

Sonique Diamond 750SE Loudspeakers





# Bryston BDA-1

## Digital To Analogue Converter

**Bryston is a Canadian audio specialist** company that has been around since the early 1960s and built a well-earned reputation on the merits of its solidly-engineered products—products so well-engineered that the company offers an unprecedented 20-year warranty on its solid-state products. No surprise then, that Bryston's amplifiers are preferred by a long and prestigious list of professional users. Bryston still caters for the pro audio market but has been expanding its consumer range for several product generations.

The latest Bryston releases see the company entering into the digital realm for the first time. Last year saw the release of the first Bryston CD player and now the company is offering its first stand-alone digital to analogue converter (DAC).

### The Equipment

The BDA-1 DAC is a single unit standard-width component in Bryston's current silver guise—though a version in black is also available. Bryston has fitted the BDA-1 with a comprehensive list of features and connection options that more or less encompass the full gamut of possibilities for an audio DAC. Catering for things to come, the BDA-1 even has a USB input.

The unit's fascia is a fine example of how to provide useful information whilst still maintaining clean visual lines. A row of small and accurately-countersunk buttons and their corresponding LEDs serve as individual switches for the plethora of connection options. There are buttons respectively for 'Upsample', Optical inputs 1 and 2, no fewer than four SPDIF inputs, one AES/EBU input, and the aforementioned USB input. To the left of this horizontal row of buttons is a dual vertical array of LEDs that inform you of the sample rate in use—from 32kHz to 192kHz—and whether the incoming digital signal has been 'locked'.

The rear panel is a far busier piece of real estate. From right to left (starting at the IEC AC socket) we have an RS-232 D-plug to cater for future upgrades and a 12-volt trigger. The bank of input signal connections starts with the two optical inputs and continues with two SPDIF RCA sockets and two BNC sockets, then an XLR AES/EBU three-pin input and finally the USB input. An RCA coaxial SPDIF output is provided for bypass looping to a surround processor or digital recording device. Analog outputs are via fully differential balanced XLR sockets and single-ended RCA terminals. It's clear that Bryston has covered all the bases when it comes to external connections!

The BDA-1 continues Bryston's tradition of solid engineering. That bugbear of digital reproduction, jitter, has been given considerable attention in the BDA-1 by Bryston's engineers. As a result, the Bryston BDA1 re-samples and re-clocks the digital input and has particularly high-quality the input receivers and converters. Further attention has been dedicated to the termination interfaces with the use of impedance-matching transformers to deal with signal-degrading impedance variations inherent in the various connection options. This is claimed to further reduce jitter.

The Bryston DAC uses two independent DAC 'chips', namely the multi-bit Delta-Sigma Cirrus Logic CS-4398 and the Burr-Brown PCM2707. A synchronous up-sampling circuit up-samples incoming signals to 192kHz at 24-bits. A front panel switch allows for push-of-a-button up-sample/non-up-sample comparisons. The power supply features independent transformers for the analogue and digital stages and, in further attention to small details, each stage within the digital chain and analogue path is individually supplied and regulated.

Bryston quotes a frequency response of 20 Hz to 20 kHz  $-0.1\text{dB}$ . The signal-to-noise ratio as measured via an Audio Precision AP2700 analyser is quoted by Bryston as being 140dB unweighted via FFT measurement. That all-important jitter figure is said to be below the measurement capability of the Audio Precision analyser.



