

Vivaldi DAC

Digital-to-Analogue Converter



The *dCS* Vivaldi range redefines state of the art in digital playback and represents the pinnacle of our 'no compromise' approach to product design and setting a new standard for the future of digital audio by delivering an unrivalled in-home musical experience.

Vivaldi DAC uses the latest groundbreaking technology from *dCS* including 'next generation' versions of the *dCS* Ring DAC™, Digital Processing Platform and Clocking System so that, as the hub of a digital audio system, an array of features guarantee amazing performance from any digital source.

The unique design of the legendary *dCS* Ring DAC™ combines exceptional linearity with very high speed operation enabling it to deliver true 24 bit performance even at low signal levels. The latest generation of our Ring DAC™ incorporates a number of important technical advances that have resulted in it offering enhanced dynamic range, reduced jitter, improved channel separation and greatly improved musical realism.

The powerful digital processing platform of Vivaldi DAC is based around Field Programmable Gate Array (FPGA) chips,

Digital Signal Processing (DSP) chips and a microcontroller system. All of these use code developed and maintained in the UK by *dCS*. Vivaldi DAC represents true state-of-the-art in digital audio by offering twice the logic capacity of previous generations, emphasised by its unmatched sonic and measured performance.

dCS were pioneers in the use of external clocks in digital audio systems and the redesigned multi-stage Phase-Locked-Loop (PLL) system used in Vivaldi DAC sets world-beating standards for accuracy and control of troublesome jitter from the incoming audio stream.

Vivaldi DAC features standard AES3, Dual AES, SDIF-2 and SPDIF inputs in addition to an asynchronous USB 2.0 interface. The enhanced digital volume control allows direct connection to a power amplifier so that in the majority of systems there is no need for

a separate preamplifier. Maximum output can be set at either two or six volts to suit different amplifier and speaker combinations.

Featuring a completely new interface designed to handle all high resolution musical formats up to DXD (24 bit data at 352.8 and 384kS/s) plus DSD, the optimised DSP filters available to Vivaldi DAC owners will ensure you can extract every last nuance of musical detail and emotion by tuning the system to suit your personal preference.

The *dCS* 'soft' approach to programmable logic makes it extremely easy for users to update Vivaldi DAC software, whether adding new features, installing performance upgrades or adapting to changes in digital formats.

Used as a standalone DAC or as part of a complete Vivaldi digital audio playback system Vivaldi DAC gives a performance of effortless realism each and every time.

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Digital-to-Analogue Converter

TECHNICAL SPECIFICATIONS

Type	Digital-to-Analogue Converter.
Colour	Silver or Black.
Dimensions (WxDxH)	444mm/17.5" x 435mm/17.2" x 151mm/6.0" high. Allow extra depth for cable connectors. Allow space for air flow around the unit.
Weight	16.2kg/35.65lbs.
Converter Type	<i>dCS</i> proprietary Ring DAC™ topology.
Analogue Outputs	Output Levels: 2V rms or 6V rms on all outputs for a full-scale input, set in the menu. Balanced Outputs: 1 stereo pair on 2x 3-pin male XLR connectors (pin 2 = hot, pin 3 = cold) These outputs are electronically balanced and floating, the signal balance ratio at 1kHz is better than 40dB Output impedance is 3Ω, maximum load is 600Ω (a 10kΩ-100kΩ load is recommended). Unbalanced Outputs: 1 stereo pair on 2x RCA Phono connectors. Output impedance is 52Ω, maximum load is 600Ω (a 10kΩ-100kΩ load is recommended).
Digital Inputs	USB 2.0 interface on a type B connector. Operates in asynchronous mode, will accept streamed PCM data up to 24 bits at 44.1, 48, 88.2, 96, 176.4 & 192kS/s and DOP (DSD over PCM). Can operate in USB Audio Class 1 or Class 2 mode. 4x AES/EBU on 3-pin female XLR connectors. Each will accept up to 24 bit PCM at 32, 44.1, 48, 88.2, 96, 176.4 & 192kS/s & DOP OR 2x Dual AES pairs at 88.2, 96, 176.4, 192, 352.8, 384kS/s & DOP. 3x SPDIF on 2x RCA Phono and 1x BNC connectors. Each will accept up to 24 bit PCM at 32, 44.1, 48, 88.2, 96, 176.4, 192kS/s & DOP. 1x SPDIF optical on a Toslink connector, will accept up to 24 bit PCM at 32, 44.1, 48, 88.2 & 96kS/s. 1x SDIF-2 interface on 2x BNC connectors, will accept up to 24 bit PCM at 32, 44.1, 48, 88.2 & 96kS/s or SDIF-2 DSD (auto-selected). If the unit is not in Master mode this interface requires a compatible Word Clock input, locked to the data rate.
Word Clock I/O	3x Word Clock inputs on 3x BNC connector, accept standard Word Clock at 32, 44.1, 48, 88.2, 96, 176.4 or 192kHz. The data rate can be the same as the clock rate or an exact multiple (0.125x, 0.25x, 0.5x, 1x, 2x, 4x, 8x) of the clock rate. Sensitive to TTL levels. Word Clock output on 1x BNC connector. In Master mode, a TTL-compatible 44.1kHz Word Clock is available.
Residual Noise	Better than -113dB0 @ 20Hz-20kHz unweighted (6V Setting).
L-R crosstalk	Better than -115dB0, 20-20kHz.
Spurious Responses	Better than -105dB0 @ 20-20kHz.
Filters	A choice of filter responses give different trade offs between Nyquist image rejection and the phase response.
Software Updates	Loaded from CD-R or via USB interface.
Local Control	<i>dCS</i> Premium Remote is supplied as standard. RS232 (controlled by a third party device). A <i>dCS</i> -programmed Nevo Q50 is available for the Vivaldi range as an optional extra.
Power Supply	Factory set for 100, 115, 220 or 230V AC, 49-62Hz.
Power Consumption	23 Watts typical/30 Watts maximum.

KEY FEATURES

- Utilising the latest generation *dCS* Digital Processing Platform which offers state-of-the-art measured performance and unrivalled musical experience.
- Designed for maximum flexibility by accepting audio data from a variety of digital sources.
- Flexible output configuration can be optimised in systems with and without pre-amplifiers.
- Comprehensive clocking architecture plus an auto-clocking mode used in Vivaldi range improves ease of use and minimises jitter.
- USB interface allows easy connection to a computer, accepting PCM data at up to 24/192 and DOP (DSD over PCM). The interface runs in Asynchronous USB mode, which makes the DAC immune to jitter from the typical computer's noisy clock.
- Improved power supplies give lower running temperature and improved tolerance to AC supply variations.
- Multi-stage regulation ensures sensitive analogue circuitry is not affected by digital interference.
- Features separate power circuits for the digital and analogue sections to further enhance the power supply cleanliness.
- Aerospace grade machined aluminum chassis fitted with tuned acoustic damping panels reduces magnetic effects and vibration.

ABOUT *dCS*

Since 1987 *dCS* has been at the forefront of digital audio – creating world beating, life-enhancing products that are a unique synthesis of exact science and creative imagination. Each of our award winning product ranges sets the standard within its class for technical excellence and musical performance. As a result our digital playback systems are unrivalled in their ability to make great music.

All *dCS* products are designed and manufactured in the UK using only materials and components that are of the highest quality. A carefully judged balance of our unique heritage and world class engineering ensures there is a rich history of groundbreaking innovation inside every *dCS* system.

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