PRODUCT DATASHEET

Paganini Upsampler

Digital-to-Digital Converter

dCS
ONLY THE MUSIC

Elegant yet powerful, Paganini is the entry point to the magic of digital separates offering all the functionality needed for the unique experience that is synonymous with *dCS*.

The design philosophy behind the Paganini range was to expand the feature set of the one box Puccini and offer a system that would elevate the musical performance yet further.

Paganini Upsampler is designed to act as the hub of a digital audio system and will transform your listening experience, taking your music collection to levels you have not heard before. Accessing music from any digital source Paganini Upsampler converts the audio from its native sample rate to either DSD (1 bit data at 2.822 or 3.07MS/s) or standard high resolution PCM (24 bit data up to 192kS/s).

Possessing an array of independently selectable digital inputs, upsampling and filter options, Paganini Upsampler elevates the performance of Red Book CD from CD Players or high resolution audio from digital streamers and servers to a previously unsurpassed level.

dCS were pioneers in the use of external clocks in digital audio systems and the multi-stage Phase-Locked-Loop (PLL) system used in Paganini Upsampler is extremely accurate in the control of troublesome jitter from the incoming audio stream.

Paganini Upsampler also features an asynchronous USB input which allows direct connection of a PC, supporting high resolution audio. In this mode the Upsampler synchronises the audio by providing a feedback pipe to the PC/Mac. The computer then is effectively locked to the Upsampler, which then has a much more accurate clock and much lower jitter.

All of the Paganini products benefit from our ‘soft’ approach to programmable logic that allows new software to be loaded from a *dCS* update disc or USB to add new features or adapt to changes in digital formats.

Paganini Upsampler Digital-to-Digital Converter

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TECHNICAL SPECIFICATIONS

Type	Digital-to-Digital Converter.
Colour	Silver or Black.
Dimensions (WxDxH)	460mm/18.1" x 400mm/15.8" x 110mm/4.4". Allow extra depth for cable connectors.
Weight	10.6 kg/23.3lbs.
Digital Inputs	USB 2.0 interface on a B-type connector. Operates in asynchronous mode. Accepts up to 24 bit data at 32, 44.1, 48, 88.2 or 96kS/s. AES3 on a 3-pin female XLR connector. 2x SPDIF on 2x RCA Phono connectors. Each AES and SPDIF input will accept PCM data at up to 24 bits at 32, 44.1, 48, 88.2, 96, 176.4 or 192kS/s or DSD in DOP format.
Digital Outputs	IEEE 1394 interface on 2x 6-way connectors. In DSD mode, the interface outputs *dCS*-encrypted DSD (1 bit data at 2.822MS/s). 2x AES3 on 3-pin female XLR connectors. Each outputs 24 bit PCM data at 32, 44.1, 88,2, 96, 176.4 or 192kS/s or DSD in DOP format, OR as a Dual AES pair at 88.2, 96, 176.4, 192kS/s or DSD in DOP format. 2x SPDIF on RCA Phono connectors. Each outputs 24 bit PCM at 32, 44.1, 48, 88.2, 96, 176.4, 192kS/s or DOP.
Word Clock I/O	Word Clock input on 1x BNC connector. Accepts standard Word Clock at 32, 44.1, 48, 88.2, 96, 176.4 or 192kHz. Sensitive to TTL levels. Word Clock output on 1x BNC connector. Outputs standard Word Clock at a frequency equal to the (single wire) output data rate, or 44.1kHz when set to output DSD.
Upsampling Rates	Data from any input may be converted to 24 bit PCM at 32, 44.1, 48, 88.2, 96, 176.4 or 192kS/s or DSD (1 bit data at 2.822MS/s). The output sample rate must be equal to or greater than the input sample rate.
Spurious Responses	Better than -100dB0 @ 20Hz-20kHz.
Filters	A choice of anti-alias filter is available for 10 popular conversions.
Software Updates	Loaded from CD-R via PCM digital input or USB.
Local Control	*dCS* Premium Remote control supplied as standard with Paganini Transport or RS232.
Power Supply	Factory set for 100, 115, 220 or 230V AC, 49-62Hz.
Power Consumption	12.7 Watts typical/15 Watts maximum.

KEY FEATURES

- USB input forms the gateway to a *dCS* Ring DAC™, allowing listeners to obtain true high-end sound from their computer audio.
- USB is isochronous. This means that the host (Computer) and client (Paganini Upsampler) both know how much bandwidth is available at the outset, so the host can guarantee that bandwidth will be available all the time.
- All major *dCS* products use a sophisticated multi-mode Phase-Locked-Loop (PLL), which significantly reduces clock jitter.
- Faster, 100% accurate DSPs (within the bounds of their resolution) give improved filters revealing yet more fine detail.
- Higher capacity FPGAs (Field Programmable Gate Arrays) give more logic capacity and increase the scope for additional features.
- Improved power supplies give lower running temperature and increased tolerance to AC supply variations.
- Our 'soft' approach to programmable logic allows *dCS* products to adapt to changes in digital formats and add new features by loading new software from a CD.
- High grade aluminum chassis and laminated acoustic damping panels, reduce magnetic effects and vibration.
- The Paganini range features a low-power LCD display that makes the user interface easier to read, keeps the power requirements down and minimises electrical noise.

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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