

# Puccini U-Clock System Clock



Puccini is a revelation – a high end system in one box – combining the aesthetics of the Paganini with all of our upsampling, DAC and CD/SACD player technology in a single, easy to set up unit which delivers unbeatable performance.

The Puccini range now features the award winning Puccini U-Clock which is a separate grade 1 system clock to further reduce jitter and improve performance. Matched with the Puccini Player it improves on an already spectacular sound and takes it into an entirely new domain. With a clock added to a *dCS* system, images snap into sharper focus and the music displays a substantially greater sense of authority and power as well as, most importantly, offering noticeably higher resolution of detail.

Puccini U-Clock also features a USB to SPDIF converter, which enables Puccini owners to present sound files from a PC or Mac to the legendary *dCS* Ring DAC™ inside the Puccini.

*dCS* equipment is designed to generate and accept industry standard Word Clock on 75 ohm co-axial cable.

Our Clocks will drive other manufacturers' equipment designed to accept standard Word Clock. Non-standard clock formats must be assumed to be proprietary to that manufacturer.

### Asynchronous USB Mode

In USB there are numerous modes for synchronising the audio between the PC (the host), and an audio device. The most popular of these, 'adaptive', involves the audio device synchronising itself to the USB 'frame' provided by the PC. This tends to give poor jitter performance. Puccini U-Clock operates in 'asynchronous' mode (NOT to be confused with asynchronous rate conversion), where the audio device synchronises the audio by providing a feedback pipe to the PC. The PC is effectively locked to the audio device, which then has a much more accurate clock and much lower jitter.

### Using the Puccini U-Clock

USB is isochronous. This means that the host (PC) and client (Puccini U-Clock) both know how much bandwidth is available at the outset, so the host can guarantee that bandwidth will be available all the time.

Your music may be stored on an external Hard Disc Drive (HDD) or Network Attached Storage (NAS) in a different room, networked to a small, silent PC connected by USB cable to the Puccini U-Clock. When the user selects the audio for playback, the Mac/PC streams all of the selected data from the HDD or Network Assigned Storage (NAS) device, then outputs the data on USB.

Note: The audio flowing between the PC and Puccini U-Clock is packetised PCM at 32, 44.1, 48, 88.2, 96, 176.4 or 192kS/s. It is the job of the codecs installed on the PC to decode the data and present it to Puccini U-Clock in a standard PCM format.

# Puccini U-Clock System Clock

## TECHNICAL SPECIFICATIONS

Type	System Clock.
Clock Frequencies	44.1kHz or 48kHz.
Colour	Silver or Black.
Dimensions (WxDxH)	400mm/15.8" x 410mm/16.2" x 58mm/2.3". Allow extra depth for cable connectors.
Weight	7.6kg/16.7lbs.
Clock Accuracy	Better than +/-1ppm when shipped over an ambient temperature range of 10°C to 30°C (guaranteed for 12 months from shipping). Typically +/-0.1ppm when shipped and stabilised.
Word Clock outputs	4 independently buffered outputs on 75Ω BNC connectors, all carry the same clock frequency. With the USB interface active at 32, 48, 96 or 192kS/s, the Word Clock outputs are set to 48kHz. With the USB interface active at 44.1, 88.2 or 176.4kS/s, the Word Clock outputs are set to 44.1kHz. USB Auto Frequency mode can be disabled from the front panel.
Digital Inputs	USB 2.0 interface on type B connector accepts uncompressed audio data at 32, 44.1, 48, 88.2, 96, 176.4 & 192kS/s.
Digital Outputs	Puccini U-Clock will present data received via the USB interface, unprocessed, in SPDIF format via 2 x RCA Phono connectors. DSD in DOP format will be passed through unchanged.
Operating Systems	Tested on Windows XP/Vista/7 and Mac OSX. Operates in 'Audio Class' mode. Class 1 mode (limited to 96kS/s) is available and does not require special drivers to be installed. Class 2 mode requires the <i>dCS</i> drivers (supplied) to be installed on Windows PCs. Not required for OSX 10.6.3 or later.
File Formats	Packetised PCM at 32, 44.1, 48, 88.2, 176.4, 192kS/s.
Start Up Time	Typically 1 minute to rated accuracy.
Power Supply	Factory set for 100-120 or 200-240V AC, 49-62Hz.
Power Consumption	3 Watts typical/6 Watts maximum.

## KEY FEATURES

- Features four Word Clock outputs that further reduce jitter and improve performance.
- Asynchronous USB input also allows direct connection of a PC and supports high resolution audio up to and including 192kS/s and DSD in DOP format.
- Asynchronous USB mode prevents the source injecting jitter into DAC.
- High grade aluminium chassis and laminated acoustic damping panels to reduce 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.

## CONTACT *dCS*

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