



## EQUIPMENT REVIEW

# dCS Puccini U-Clock

by Steve Dickinson

**H**igh accuracy clocks for your CD player? Sold to mugs with more money than sense. Obviously. A bit like exotic cables, really.

A few moments' thought should tell you, though, why the addition of a highly accurate clock to a CD player is a Good Thing. The digital data is reassembled by a DAC into a musical signal in 'slices' which should be of equal thickness, each slice being one sample. The thickness is determined by the sample frequency, 44.1 kHz for CD, and controlled by the word-clock built in to the DAC. These are usually crystal oscillators, not dissimilar to those in a quartz watch, and any variation in the thickness of each slice, or unevenness in their spacing will distort the shape of the waveform created. Imagine making a Lego house out of irregularly-sized bricks. The distortions may be more subtle than those encountered further down the chain but no less musically important and, once introduced, no amount of fiddling with the rest of the system can repair the damage.

Actually, I expected great things from the addition of an external word clock to the dCS Puccini reviewed in issue 65. Quite what I had expected I didn't presume to anticipate, but there is plenty of written and anecdotal evidence to suggest that the addition of a highly-accurate clocking signal to a good CD player has the potential to significantly elevate the performance.

Interestingly, the results, while spectacular, have not been in the areas I might have envisaged. You see 'clock', you think 'timing', right?

Timing is indeed further improved but as the dCS player was already firmly in the front rank in that regard this is, at least to some extent, of lesser importance – rather like adding a spot of makeup to Audrey Hepburn, you notice the enhancement but you'd happily live with the original. Rather more interestingly, the U-Clock elevates the performance of the Puccini most significantly in the one area I found it possible to criticise in the earlier review: the sense of a natural, organic flow and liquid phrasing. I had speculated that the Puccini's analogue output stage might be the cause, (and I still wonder if it has more to give) but, in all honesty, the question is largely sidelined by the addition of the U-Clock.

Where the dCS Puccini reveals the bone structure, muscle and sinew

of a piece of music, the U-Clock adds more body and flesh tones. Even the most musically invertebrate pieces, such as Brian Eno's 'Ascent, (an ending)' from *Apollo* is revealed by the Puccini to have a firm underlying structure. The U-Clock applies a healthy glow, a layer of lusciousness, to that structure without compromising any of the vital essence revealed by the Puccini player. Taking a particularly revealing result from the Puccini review, 'Hard Fairy' played by Simon Haram and the Duke Quartet on the album *Frame*, the Puccini made sense of this piece, for the first time, by simply exquisite timing. With the U-Clock added into the mix, it was also possible to appreciate the full extent of Haram's superb phrasing and breathing control, a further dimension to the piece revealed to its significant benefit.

This is a neat trick and it is where the further enhanced timing brought about by the U-Clock matters. It would be easy to wrap the sound in a wash of loveliness, to the ▶

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- ▶ detriment of the musical message. Players tend to fall into two camps, the liquid, organic brigade or the structure and timing faction. Like Montagues and Capulets, they seldom come together with much success but if the Puccini is the east, then the U-Clock is the sun (we won’t dwell on the end of the play, this review is an altogether happier place).

It seems clear enough, then, that a significant amount of what we perceive as timbre, phrasing and the other ‘analogue’ attributes of music is contained in the infinitesimally fine detail of the signal, and it is all too easy to lose that detail by careless treatment at the early stages.

It is probably why some beautifully luscious-sounding players can make wonderful noises, but lack the essential musicality of a truly rewarding performance. Other improvements, to soundstaging, the sense of acoustic space, timbre, body and shape of instruments and all the other micro-cues which combine to produce a suitably real musical event, are also significantly elevated by the re-clocking of the digital signal.

And here’s a strange thing: cables, yet again, make a significant difference. Using the U-Clock with the freebie clock cable supplied, courtesy of dCS, the benefits of improved tonal colour, phrasing and flow were instantly clear, but the addition of a comparatively inexpensive (around £130) Wyrewizard Shaman digital cable brought exactly the sort of benefits I’d associate with a better interconnect: more tangibility, tactility, a freer



## THE COMPUTER CONNECTION PUCCINI U-CLOCK USB REPLAY

The Puccini U-Clock has an ace up its sleeve. Alongside timing controls, there’s a USB input. This allows a Puccini owner to add digital audio to the line-up. All you need is to take a USB output from a computer, and an S/PDIF link from the U-Clock back to the Puccini player ‘proper’.

The USB input is asynchronous, dCS being one of the first companies to develop the technology from a blank sheet. Its USB input is smart enough to be automatically recognised by PCs and Macs alike, so no need to download special drivers to use it properly. And I have no need to describe asynchronous USB’s action any further, because Kevin Halverson of Muse Electronics described it so extensively on page 10 of this issue. In addition, dCS has amassed a wealth of information about how to give good computer audio and I’m hoping to either publish this or link to it in a later issue.

Perhaps the big question now is ‘why’? You’ve already got one of the very best CD and SACD playing products in the Puccini and the U-Clock makes it considerably better, so what’s the point of adding computer audio? Put simply, streaming and music that’s becoming hard to find on other sources. Good internet radio and streaming offer a ‘music discovery’ service that no conventional broadcaster could match – you have access to more or less the entire musical canon without too much surfing. In addition, there are some albums that are only available online now (Mose Allison’s excellent *Back Country Suite*, for example, is no longer on any physical format) and this can only become more of an issue in the future.

Fortunately, as an avenue into computer audio, the U-Clock is one of the best. The sound is taut and direct and makes many USB solutions sound almost ‘soggy’ and ill-controlled by comparison. Meanwhile, dCS’s excellent digital conversion is precise, detailed and temporally accurate. An interesting test is to compare the sound of a ripped CD disc to the same played on the Puccini itself; it’s very hard to tell them apart, which shows both how good that CD player is (some prefer the sound of files stored on a computer drive than spinning live from a CD; I think done properly they are functionally identical) and how good the U-Clock is at extracting music from a computer.

I compared a few CDs playing through the Puccini to ripped versions of the same (stored as ALAC and AIFF files in iTunes) through the USB input of the U-Clock. Detail levels were virtually identical throughout, but in terms of musical precision and enjoyment, the computer files through the U-Clock sounded better than the CD replay through the Puccini on its own. The sound of the CD through the combination of Puccini and U-Clock was best, but the fact the computer side scored an ace against the basic Puccini shows just how good the U-Clock is. Whether as an upgrade to the basic player, or to take advantage of the changes in the music business, the U-Clock is a must-have for Puccini owners. It strikes me as something of a win-win situation.

**Alan Sircom**

► sense of flow and dynamic range. Given that this is ‘merely’ a clocking signal, I hadn’t expected to gain as much as I did. Moving still further upmarket to a Nordost Valhalla clock cable was salutary. If I was impressed by the benefits of the Wyrewizard cable, the Valhalla did its usual trick of imposing a hitherto unsuspected level of authority on proceedings. Once installed, it is hard to go back.

Fret not, cable sceptics, this isn’t going to morph into a cable review, but even I, a convert to the cable cause, was surprised that upgrading something which carries, essentially, a control signal, not a musical one could produce such results. I’d expected subtle improvements. They weren’t.

dCS also provides a dither function for the U-Clock. This provides a

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minute amount of, controlled, variation in the timing signal, which keeps the phase locked loop busy doing what it does and thereby helps control jitter. I tried the Puccini/U-Clock combination with, and without the dither selected. The dCS manual is a little coy about the effect. I suspect they know they don’t have to spell it out, users will quickly get the point but, frankly, if you buy a U-Clock and don’t use dither, you’re only using half its capabilities. In fact, I’m not sure why dCS bother with a defeat switch for the dither, at all.

I only dabbled in the computer audio capabilities of the U-Clock. Knowing that AS was looking into this in more depth, I simply hooked up a friend’s laptop via the USB connection and experimented. The results were interesting, if inconclusive. Suffice to say, I’m not yet a convert, but aware of the possibilities. One thing, however was abundantly clear. Cables, again. I know, yadda yadda, blah, blah. But, moving from the freebie USB cable courtesy of dCS, to friend’s own decent-quality-for-sane-money USB, to a £1,500 Crystal Dreamline USB interconnect, the improvements at every stage were obvious, and musically vital. Suffice to say, if you are serious about using USB connections for computer audio, you need to think very carefully about the quality of the USB cable you choose. But you knew I’d say that, didn’t you? +

## TECHNICAL SPECIFICATIONS

### dCS Puccini U-Clock

**Type:** Word clock with USB input

**Accuracy:** Better than  $\pm 1$ ppm.

**Inputs:** 1 USB (B-type), will accept up to 24-bit PCM at 32, 44.1, 49 or 96 kHz, asynchronous mode.

**Outputs:** 4 word clock outputs on 75 Ohm BNC connectors

2 S/PDIF on RCA Phono connectors

**Output frequency:** 44.1 or 48 kHz

**Dimensions (WxHxD):** 460 x 58 x 408 mm

**Weight:** 7.6 Kg

**Available finishes:** Silver or black

**Price:** £3,000

### Manufacturer:

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