



dCS Lina Master Clock

Timing is Everything

Neil Gader

I reviewed the original dCS Bartók Network DAC in Issue 300. Its performance proved revelatory to my ears and my soul—so much so that when it came time for the return of my review sample, I took a deep breath and sprang for the purchase. But little did I know what was in store. True, I was already aware that dCS stands behind its creations like few companies out there, that it mandates long product cycles, and that through periodic over-the-air software updates wards off the endemic obsolescence that dogs digital hardware. But then, last year, dCS announced Apex—a collection of major firmware and hardware advancements (necessitating a return to the U.S. distributor) that first appeared in dCS flagship DAC, Rossini, and hyper-flagship Vivaldi. It's really no exaggeration to state that Apex stunned, to the point of almost completely reinventing Bartók (which I wrote about in Issue 344).

However, once an audiophile, always an audiophile. And so, when John Giolas, VP of dCS Sales, mentioned an external clock upgrade, my mind began ticking. I started wondering if there was something more. Which brings me to the Lina Master Clock, a companion to dCS' three-model entry-level Lina Series, which includes a network DAC and headphone amp. It joins the clock models dedicated to top-tier Rossini and Vivaldi DACs. Like all dCS master clocks, the Lina Master Clock is a standalone device with one purpose: to deliver a precise and reliable clocking reference signal. Put another way, during the transition between digital and analog, it is responsible for making sure the digital samples are converted at precisely the correct time. Lina is a twin-clock, temperature-controlled, dual-crystal design with clocking for all audio sample base rates (44.1kHz and 48kHz). According to dCS, “these two synchronizing signals are presented (via

independent BNC cables) to all of the elements in a digital audio system, and our DACs intelligently know the sample rate they're being asked to convert, which of the clocks to pay attention to, and are therefore [able] to keep everything synchronized correctly.”

Further, the Lina Master Clock uses the same core technologies as Rossini and Vivaldi. This includes dCS' unique phase-locked loop system, which synchronizes clock frequencies. It was designed to work in tandem with a DAC's internal clock to minimize jitter and reduce the risk of clocking inconsistencies or errors. For clarification, the use of a master clock does not, in and of itself, replace the internal clock inside the DAC, in my case the Bartók Apex. It's not a redundancy. The DAC's internal clock still dictates when samples are converted, and the DAC still benefits from having a high-quality clock close to the DAC circuitry. It simply adjusts its frequency over time to match that of the master clock, essentially acting as a stable reference for the DAC.

Are there other key advantages to the use of a dedicated master clock? Yes. Being outboard, it operates on its

own separate circuit board and is furnished with its own dedicated power attributes, which reduce the risk of crosstalk (electromagnetic interference), power interference, and disturbance due to physical movement or vibration. It also adds stability as it helps to ensure that clocking remains consistent throughout a system's lifespan. (Note that for readers interested in a deeper dive into clocks, check out Editor-in-Chief Robert Harley's discussion of clock technology found in the Esoteric G-Orb Rubidium Master Clock Generator [Issue 180] and the dCS Puccini CD/SACD player with U-Clock [Issue 200].)

Visually, its form factor mirrors the small footprint profile of the Lina DAC. My particular sample was in a machined black aluminum (silver is also available). A small pin-light operated by a hidden pushbutton at the lower edge of the front panel indicates power or standby mode. The back panel is simplicity itself with a pair of word-clock outputs (44.1kHz and 48kHz), plus an outlet for the supplied power cord and “Powerlink” for communication between Lina models.

I listened to Lina using two different digital sources—the Bartók Apex and my tried-and-true Puccini CD/SACD player. (As an aside, for reasons I can't explain, Lina's effects were more strongly felt when connected to the Puccini player.) Digital interconnect cabling, I soon discovered, made a significant difference—and special thanks to Shunyata for the loan of a pair of its Sigma V2 BNC clock cables. The quality and transparency of these


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Grade 1 Master Clock with oven-controlled crystal oscillators

Word clock outputs:

Two independently buffered TTL-compatible outputs on 75-ohm BNC connectors—output 1 fixed 44.1; output 2 fixed 48kHz

Dimensions: 8.7" x 4.8" x 13.3"

Weight: 15.4 lbs.

Price: \$7700

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wires assured me that I was taking the full measure of Lina's capabilities.

Beyond trade show demos, I'd never had hands-on experience with a master clock. It turned into one of the more challenging and quirky adventures in recent high-end memory. It revealed its charms very slowly over protracted listening and in unexpected ways. If I came into the review thinking Bartók Apex didn't have anything further to give, I was wrong.

While the overall effect was subtle, music often took on greater presence and spaciousness; yet, at the same time, it seemed paradoxically more relaxed. During "Let's Get Lost," trumpeter Terence Blanchard's duet with Diana Krall, there was a more finely wrought sense of continuousness across the stage, complete with more complex dimensional cues and atmospheric, a greater connectedness among musicians, and an increased sensitivity to the physical air and space in and around each player. There was also an utter lack of smearing at very low levels, specifically with soft percussion like the rattle and sudden pop off the skin of an upstage tambourine, or the gentle chime of a mark tree, or the shimmer of ride cymbals during Brubeck's "Take Five" from the classic *Time Out*. Lina seemed to reinforce everything that the Bartók Apex was about, delicately underlining and buttressing its signature sonics. These attributes might seem elusive at first, but once observed and keyed upon, your ear begins to rely on them being present—and misses them if they're removed.

Sonic gains didn't necessarily appear on every piece of music. In this, I was reminded of a Lina white paper where dCS Technical Director Andy McHarg said: "Measurements-wise, it's a pretty subtle effect...but we've been able to clearly demonstrate the audible effects of adding a clock for over 30 years." So, indeed, its impact varied—at times subliminal, sometimes elusive to describe, but palpable. As for the subliminal, that was exactly what occurred as I listened to Nirvana's "Something in the Way." With the Lina, Kurt Cobain's boxed-in studio vocal was heard with an added layer of weight—a sense of a slightly larger vol-

ume of air pushing forward and back-stopping the music. When the band kicks in during the chorus, there's a heaviness to the moment laden with greater presence and realism. The density of reverberant space was thicker and deeper, almost as if a bass mode in the studio had been triggered.

The clock was at its most incisive when given high-resolution material to work with, observations most keenly felt during complex orchestral recordings, acoustic jazz, or chamber. A prime example would be a wonderful version of Holst's *The Planets* with William Steinberg conducting the BSO. (Colleague Paul Seydor introduced me to this one. Truth be told, I'm still partial to the Andre Previn, London Symphony version from 1973 also available on Tidal.) That said, Paul's accolades were spot-on. When I cued up "Jupiter" (a recurring theme in the movie *The Right Stuff*), my system seemed to achieve an openness and bloom that were new to my ears, even after the many years I've heard this track. Section layering also seemed affected. Players were more precisely positioned across the stage; lateral and front-to-back cues more expressly defined.

Solo piano recordings remain my constant companions in nearly every evaluation that I've written. In this instance, during Glinka's "The Lark" (Evgeny Kissin at the concert grand), I found a livelier sense of air and space coming off each note—a thicker harmonic *aura* that seemed to wrap each note or chord. During Pat Metheny's duet cover of the Jimmy Webb tune "The

Moon is a Harsh Mistress," Charlie Haden's standup bass was reproduced with a steadier balance between pitch and dark soundboard resonance. It's a textural shift, both softer and more relaxed, and slightly more immersive.

As a Bartók owner, I was curious why dCS had not dedicated a master clock exclusively to that model. Evidently, there were thoughts along those lines, but dCS' brass concluded that Lina's Master Clock not only fills that void but also has all-purpose appeal outside the dCS ecosystem, matching up with virtually any quality DAC with the proper BNC clock inputs.

Note to owners of first generation, non-Apex Bartóks with the upgrade bug. Should you spring for Apex (upgrade cost, \$9000) or Lina? In my view, the Apex upgrade is at the top of the list. Let Apex settle into your system for a while and acclimate to its mind-bending performance bonus. Then, you might turn to considering the Lina Master Clock.

Frankly, I didn't think anything could improve Bartók after the Apex upgrade. Nonetheless, the Lina Master Clock turned out to be a component whose understated rewards are not to be taken lightly. Without question, the Bartók Apex remains a state-of-the-art device in its segment, with or without Lina. Still, the Lina's gentle virtues have a way of sneaking up on you. Ultimately, every audiophile must decide for himself whether he "clocks" a discernable and musical difference. Naturally, a lengthy audition remains the best path to turn a *maybe* into a *must*. Your own ears will take you the rest of the way. **TOP**