



dCS Bartók Network DAC with Headphone Amplifier Review

Rafe Arnott | Jan 6, 2020



Hungarian composer and pianist Béla Viktor János Bartók lived a life of 65 years straddling two centuries (1881 ~ 1945) that arguably saw more social, cultural and technological upheaval than almost any other span of time before or after.

In choosing him as namesake for their latest streaming digital renderer, preamplifier, headphone amplifier, and entry-level Debussy DAC replacement, Data Conversion Systems (dCS) seem to be acknowledging their latest creation straddles not only the 20th and 21st centuries with its technological prowess, but the gap between two-channel high fidelity and headphones as well.

Traditional hi-fi and the personal audio space have seen their fair share of technological and social disruption occurring in the past two decades in part due to the meteoric rise of the binary audiophile, and the realization by burgeoning headphone aficionados that you can curate serious high-fidelity rigs for the home. Both manifestations are currencies in recorded-playback's monetary system, and by striking them into a single, two-sided coin dCS is banking on audiophiles preferring a single box to numerous ones.

The Bartók can be used as the digital source of a two-channel separates system, slotting in as a high-end streaming UPnP DAC/preamplifier with both single-ended and balanced outputs for directly driving a power amp or monoblocs – just add an iOS or Android device to control it – or as the sole device required in a binary-based asynchronous renderer/home headphone rig of impeccable standards.

Or it can be *both* at once.



The dCS Bartók Network DAC and Headphone Amplifier.

As compelling and technologically-adroit a one-box concept for personal audio as I've come across in recent years – and while not of the under \$1k or budget variety (the Bartók comes in at \$13,500 USD + \$1,500 USD for the balanced/unbalanced headphone amplification section) – for the \$15k asking price one is getting an extraordinary amount of future-fi, and most importantly, after listening to the two back-to-back, an obvious sonic upgrade from the long-lived \$11,000 USD Debussy DAC brought to market in 2010 that the Bartók has replaced. This leads to a further point, and one I get asked a lot about; The price/performance of some of the gear that comes through for review. There's no world I know of where \$15k is not a substantial amount of coin, but there's price, and there's performance, and there's the context of the two in the equation of what high-fidelity is worth to you. Everyone's math is different and whatever personal variables you add, subtract or multiply to come to the figure that is your bottom line when it comes to purchasing a component, just keep in mind what it is that dCS is offering. I'm not letting the cat out of the bag by saying now that this is a top-shelf preamplifier, headphone amp, and network renderer/DAC with literally, years of upgrades via remote update available. If digital is your jam, there's not a lot out there with this level of tonal/timbral, dynamic or rhythmic sophistication that offers four boxes in one for this price. Sure, an analog input (or two) would make the Bartók a full-fledged preamplifier, but that's getting into a whole other ballgame from a circuit-architecture capability and pricing standpoint.

John Quick is General Manager of dCS Americas and I spoke with him previously on the Bartók design and what the company was hoping to achieve with the new model by offering so much more at the entry-level price point for dCS compared to what the Debussy did. Here's our back-and-forth when the Bartók was announced and a further addendum on not including analog inputs.

Rafe Arnott: *Why the focus on including the headphone amp as part of the package on the Bartók? Is it a nod to the increased interest across the board, demographics-wise, of a high-end headphone resurgence? Does this signal a shift in how dCS perceives the high-end headphone market and can we expect a standalone headamp?*



The much-lauded and long-lived Debussy which Bartók replaces.

John Quick: "There's no question the level of innovation and quality has elevated substantially in the high-end headphone space over the last 5-10 years. We've also become aware of a growing number of dCS customers using their DACs in high-end headphone-based setups, some using headphones as their sole, primary source of musical enjoyment. That said, I'd have to say the answer is yes: our decision to invest the required resources to include a dedicated headphone amp in Bartók is definitely an acknowledgement we felt it was time to develop something that would speak more directly to that customer. As a to whether we'll release a dedicated headamp – there are no plans presently, but I wouldn't count us out!"

RA: *The new Bartók replaces the Debussy with added new features, is it safe to say that dCS wanted a revelation rather just a replacement for their entry-level offering?*

JQ: "Looking at everything Bartók is capable of, I guess you could say that. However there are a number of practical reasons why Bartók ended up being such a feature-packed offering. For one, the world of digital audio has changed quite a bit since we designed and launched Debussy in 2009-2010. There are

new codecs to process such as MQA, for example, but the way people are listening to/consuming music has also fundamentally changed, so Bartók needed to be designed with these trends in mind. Beyond that, we rarely bring new products to market and plan on long product lifecycles. That meant Bartók had to be based on a modern dCS processing platform that would provide owners access to much of what we've developed for Rossini and Vivaldi AND allow for upgrades and new features down the line. It's the way we've always approached product design."

RA: *At \$13,500 USD, dCS has positioned the Bartók to firmly compete with offerings from several upscale Streamer/DAC manufacturers: MSB, Naim and totaldac are three that come to mind who offer options at roughly the same price point. From my personal understanding of dCS, the Bartók feature set, pricing and lineup positioning must have come about through careful research & development. Can you talk about that?*



Built for competition.

JQ: "It's true we take the same care in planning for a new product as we do in our approach to everything else we do. One of the things any manufacturer should consider is what feature set customers are asking for, and part of that investigation does involve learning what's been successful for other manufacturers. The fact of the matter is we have a unique platform that allows us great flexibility to add features and improve performance as we make meaningful discoveries through ongoing research and development. Often these features and improvements can be, and are, applied across our entire product range. In designing Bartók we set out with the same objectives as we had for Debussy in our last generation of products: distill everything we've learned developing our flagship ranges into a much more affordable package, all while making as few compromises as possible. Our aim was to be in the general vicinity of Debussy's MSRP, and while we ended up with a price that's a bit more than 12 per cent higher, Bartók also does quite a bit more. We are getting better economies of scale using Rossini's processing platform as a base, and our design team worked diligently to produce a chassis that was

much less expensive to manufacture, both in parts cost and in assembly time required. So I guess what I'm saying is Bartók is starting off with the benefit of the six-plus years we've invested in continually improving our current platform, and we saw no reason to hold anything back."

RA: *Lastly, talk to me about the decision to not have analog inputs. As far as I know, none of the product lines offer an analog input. This is obviously a conscious decision on the part of dCS. Why is that? Does adding an analog circuit pathway to the existing board architecture just become too problematic from an engineering/component/power-supply/pricing standpoint?*

"Well, Rafe – that's a question we're asked with some regularity, actually. The reason we don't include analog inputs on our DACs is more of a philosophical approach to addressing a feature/need than anything else. Basically, the decision has come down continually to our evaluation of what's best for performance and weighing that against possible use cases.

"We are not a company that takes decisions to add features for the sake of convenience lightly; if we elect to do so, performance comes first, the solution is something we try to design from the ground up, and the resulting feature must aim to be best in class. The most recent examples of such efforts (to bring new features to our products) can be found in the Bartók's Class-A headphone amplifier, our proprietary solution for MQA file playback, and our new Mosaic Control suite. That said, in the domain of digital playback we strongly believe the synergy between our discrete RingDAC processing platform and its analog output stage is the best and least compromised solution available. Part of that solution includes a proprietary digital volume control (three, actually- PCM, DSD, and MQA each have their own), which is far more accurate and linear than any analog control can be. As an extension of that, the very first products we designed and brought to the professional market were actually ADCs (analogue-to-digital converters), so if you were to ask our team today how they would approach adding analog inputs to our DACs, well, suffice it to say it wouldn't be the answer every customer seeking this feature would want to hear... but we'll see what the future may hold..."

Technical



With playback abilities parsing everything from mp3, FLAC, WAV, AIFF, and MQA (full MQA hardware decoding only available via Ethernet and USB2) and up to 24-bit/384kS/s PCM and DSD128 (DFF/DSF) via Ethernet with built-in DXD upsampling available (along with DSD upsampling), the circuit architecture plays nice with every codec currently available, so technophiles rejoice; the Bartók has you covered (plus Apple Airplay and tons of room left on the FPGA board for updates). The Bartók features the company's latest generation Digital Processing Platform and Ring DAC technology that is used in the dCS flagship Vivaldi system (\$100k+ for the stack). There is also a fairly substantial DSP filter menu to fine-tune sonic flavor to taste (six PCM filters give "different trade-offs between the Nyquist image rejection and the phase response", four DSD filters "progressively reduce out-of-audio band noise level").

On the Bartók's ability to shake hands via digital and analog I/O, we see an 1/4-inch and balanced headphone outs on the front of the unit (1.4W rms into 33-Ohms, 0.15W into 300-Ohms, output levels can be set via app/menu to 0, -10, -20, -30dB) and at the rear of the chassis for digital there is Ethernet (RJ45) 2x (10/100/1000 and LOOP 10/100), USB 2.0 (Type A and B), AES/EBU 2x (also for accepting encrypted SACD data from dCS transports), SPDIF via RCA, BNC and optical and BNC 3x for external dCS Wordclock (44.1, 48, 88.2 96, 176.4 or 192kHz) connectivity. Analog outputs consist of electronically balanced/floating and unbalanced pairs, and can be set to either 0.2, 0.6, 2 or 6V rms (I went back and forth between 2 and 6V and ended up preferring 2V rms after extensive listening – YMMV). Output impedance of the balanced pair is three Ohms, with a max load of 600 Ohms and 10k ~100k Ohms recommended. The unbalanced output impedance is 52 Ohms, max load of 600 Ohms and 10k ~100k Ohms recommended. Multi-stage power supply regulation and twin mains transformers are employed as part of dCS' continuing isolation of the delicate DAC circuitry from not only the headphone amplifier, but any RF/AC contamination.

Build and construction



Like every other dCS piece of gear I've had to lift on to my equipment rack or stands, the Bartók is built like a most elegant tank and its weight reflects that. Tipping the scales at just shy of 40lbs, the Bartók feels more like a Rossini than a Debussy, which is no accident since the company designed the unit with the Rossini range in mind. Comprised of an aerospace-grade machined aluminum chassis, and featuring proprietary internal acoustic damping panels "to reduce sound-degrading mechanical vibration and magnetic effects," all I can say is that the Bartók looks and feels like the business. Every centimetre of the alloy plates that make up the outer bodywork are in perfect alignment at every angle.

The quality of the rear-panel digital and analog I/O connections and AC/Mains inlet and rocker switch is rock-solid with zero play on anything anywhere. It's like the whole chassis was milled out of one billet of alloy, but you can trace the seams with your hands and eyes and realize it's not, but there are no visible fasteners anywhere but the rear panel and the underside where the massive, metal/rubber isolation feet are also attached. While it may not have as much heavy metal as a Rossini or Vivaldi in its chassis, dCS has done a great job of giving buyers the look and feel of the higher model lines without the associated parts/build cost involved with using the higher-gauge alloy plates (and the Rossini/Vivaldi's multiple power supply architectures, separate boards, etc.).

The small-ish LED screen is bright, crisp, easy to read up close when manually utilizing the menu system via the fascia control buttons, but is not helpful from across the room (for my eyes, anyway). Overall, to my eyes, the Bartók looks expensive, serious and mysterious all at once.

System set-up



Running as DAC/Preamp driving monoblocs.

During my time with the Bartók, I ran it in various guises as DAC/renderer/preamp directly driving a pair of McIntosh MC601 monoblocs via XLR, and balanced/unbalanced outs into a McIntosh C2600 tubed

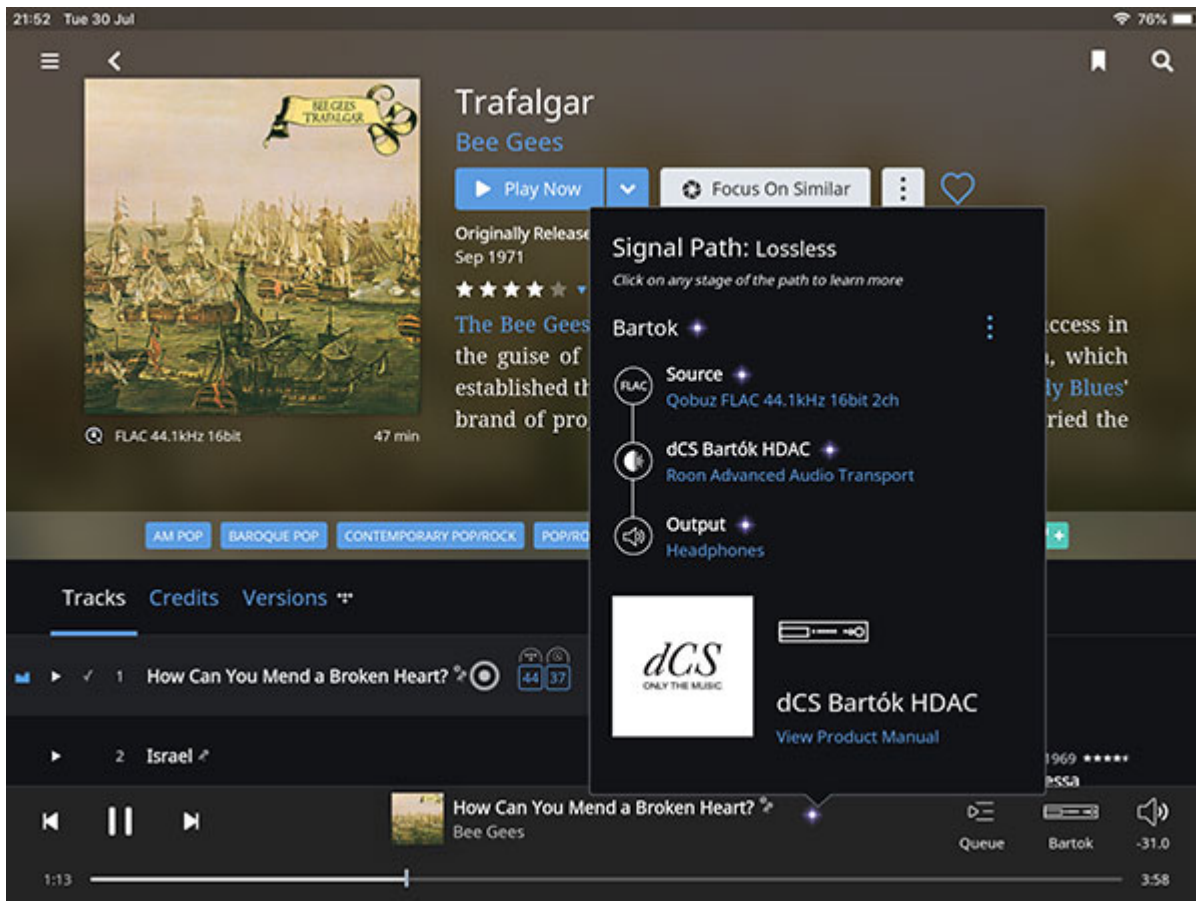
preamplifier (preferred XLR, both signal paths pushing a pair of Harbeth M40.1s or DeVore Fidelity Gibbon Xs) and as a stand-alone headphone amp/DAC driving numerous cans. I ran it using Roon via Ethernet from both a MacBook Air/network switch (dCS' own Mosaic application is also easy and great to use, with a well-designed UI and snappy feel, but Roon is my go to and using it for reviews removes one more variable for me to deal with from a sonic standpoint) and a Roon Nucleus+/network switch (10/100/1000). I also used an Aurender W20 to feed the Bartók via USB 2.0, but for review listening settled on the Bartók running XLR into the C2600 and being fed by the Nucleus+/Ethernet connection. Why? Because there was a noticeable improvement in weight, scale, color and heft to the music through the tubed McIntosh preamp (as one would expect adding a separate preamp). I also chose this combo due to price/practicality and because the sound through the Bartók network connection and the Nucleus+, while ultimately not as deadly black as via the W20, was conspicuously good and struck a chord much closer to the dCS Rossini (\$23,999 USD) I had on hand than merely bettering the dCS Debussy/Network Bridge which was also in-house for comparison. Digital and analog cabling was a mix of TelluriumQ Black, Ultra Black, Silver and Black Diamond. AC/Mains cabling was PS Audio as was the P20 Power Regenerator.



Listening

One of the hallmarks of the dCS sound, in my opinion, is balance: Timbral and tonal balance, treble, midrange and bass balance and the ability to balance digital resolution with just a touch of analog warmth, all coupled with an exceptionally linear rendering of dynamic range. Common Practice, by the Ethan Iverson Quartet with Tom Harrell (2018 Trumpeter of the Year), off the ECM catalogue (2019 Qobuz, FLAC 24-bit/96kHz) is an electrifying live jazz set recorded at the Village Vanguard. It requires translation from the digital to analog to be musical above all else because here, more than a studio recording, there is a visceral interplay happening between the quartet and the audience. It's a feedback loop of almost a call-and-response variety as the group moves through time on each cut holistically and

then swerves off into solo calculations of decidedly un-math-like framework. The Bartók allows the close mic'ing of Iverson's piano work to come through with lifelike scale and genuine weight to notes as he applies ample pedal to the lower registers. Likewise, is the realism to the 3-D sound stage/spatial perception of the players placement in the recorded event. The size of the double-bass cradled in Ben Street's arms comes across with a pressured resonance that lets you feel the pizzicato against your chest as he plucks and arcos his way through the album's 11 tracks. Eric McPherson's stick and brush work on the skins is imbued with leading-edge speed, and plausible texture allowing every fibre to bristle almost individually. Cymbal and high hat are allowed their air and space with hyper-realistic decay and a reassuring alloying tensility to every strike.



Roon + dCS = flawless performance.

Live jazz ensembles that are beautifully recorded sound good... this is the gravy recording. What reviewers include to make sure you get how good gear is supposed to sound. If this stuff didn't sound like it was across the rug from you why pay the price of admission? What about orchestral electronica? Blade Runner 2049 (Original Motion Picture Soundtrack, Hans Zimmer, Benjamin Wallfisch, TIDAL MQA 24-bit/44.1kHz) is a much-anticipated LP for me (huge fan of the original Blade Runner soundtrack by Vangelis). It proved how nimble the Bartók is when switching things up in a playlist. This recording digs deep into subterranean bass while simultaneously layering ultra-high registers of electronic instrumentation and synth/strings/keyboards, all of it over a staggering deep/wide sound stage that the Bartók throws well beyond the boundaries of not only the speaker cabinets, but of the front and side walls of the listening room. Here again the dCS house sound of linearity, resolution and subtle warmth pays dividends because despite its obvious electronic origins, the cut never drifts into artificiality or digital artefacting – even at excessive volume levels – the sonic whole remains intact. The frequency

response stays clean without breakup at either extreme allowing Zimmer's music to breathe and exhale without perceived lack of headroom. A nod to the dCS platform's ability to handle DSP processing overhead.



Sonic performance which is emotive and captivating.

Separating layered vocals is like peeling an onion and hoping not to cry; you think it's easy, but it isn't. I first heard Mental Health by Rae Spoon (2019 Qobuz, FLAC 16-bit/44.1kHz) on a local university radio station is where my FM dial lurks while I drive and I'm not listening to books on CD. I Shazam'd it for future reference and hooked up the full LP later for a night session with the Bartók which proved the Canadian singer/songwriter captivating as they explore a number of themes surrounding mental illness informed by personal perspectives. There's a lot of harmonizing with both male and female vocalists throughout the eight cuts on the album which at times can come across a bit monochromatic in its inflection, but the little dCS does an exemplary job of unwinding some of the tightness that certain tracks are fraught with, allowing them to emote with more success than when I listened to them initially via a DAP and a pair of wireless headphones. The success here for me during playback was that clear delineation between voices which through lesser DACs was more difficult to parse. While my reference totaldac d1-direct/Aurender W20 combo ultimately more clearly siloed each voice within the harmonies and allowed further insight into guitar and bass chord textures with more air and resolution coming through the recording, the Bartók had me snorting with appreciation at its efforts. Coming in with more than 80 per cent of the sound and more than \$20k in price difference to the former combo (but, to be clear, that is what we end up spending the bulk of money in a system on – reaching the last 15 per cent or less).

Headphone Listening

How good is a \$1,500 headphone amplifier option? Good enough for probably 90 per cent of the people who'd be looking at buying this unit. From my standpoint, after listening to several headphones through

it varying in price from \$350 to \$3,500 USD, this is as much head-amp as most people – other than true headfreaks – would ever need. No, you can't tube roll it to flavor, no it's not the most powerful headamp, but if that's your game then you wouldn't be considering buying the Bartók anyway. You do have a plethora of PCM and DXD/DSD filters to play with to fine tune sound though, and there's always cables, so tinkerers rejoice, you can still dial-it in to a noticeable degree. That noted, what the headphone amp option does bring to the table is more of the same sound that the main DAC output serves up to your speakers: Linear, resolution-oriented, deep, clean bass, a heavy-swinging midrange and clear, tonally pleasing highs. Comes a Time, was the personal reflection LP that Neil Young fans had been waiting more than six years for since Harvest spoke to them (1978 TIDAL, FLAC 16-bit/44.1kHz). It's an album I've grown up with and heard through more sound systems than I can recollect, so I'm familiar in all its voicing singularities. From the first emotive strikes of Young's six-string acoustic guitar chords on "Goin' Back" to when Karl Himmel's drums and Joe Osborn's bass drop in the bottom end a few beats later I heard everything I needed to know about this headphone amplifier. It nailed the tone and timbre of the cut, brought out all the depth and scale to the recording, siloed Nicolette Larson's voice as she harmonized with Young and, most importantly, propelled the tracks forward with impeccable rhythm and timing.

Conclusion



For the serious music listener who appreciates long-term investments.

I used the Bartók like a tractor on a farm, I made it work every day at the job it was designed to do – play music and make me forget I was hearing a digital engine convert binary information into living, breathing artists forced to continually perform for my pleasure. No matter what sonic duties I asked it to perform, the Bartók delivered the goods in a matter consistent with some of the best Network DACs and stand alone headphone amplifiers I've spent time with. It was musical, refreshingly precise in its characterization of detail in recordings (without becoming analytical), had timbral and tonal color I'd

associate less with digital and more with analog, and from both a software and hardware perspective it just plain worked when I hooked it up to anything. I didn't have to reboot, restart, unplug, or wave chicken bones over it while performing digital voodoo to make it connect properly (which I've had to do with more expensive products in certain situations). At \$15k the Bartók sounds and performs beautifully – as it should at this price point – and in my estimation, performs closer to its more expensive brethren in the dCS stable than one would think the company would be comfortable with. No, it's not going to outperform a Rossini in a properly-curated and resolving enough system, it falls short of that, but dCS has given buyers a lot of the Rossini sauce (plus an outstanding headamp) for \$8k less.

Specifications

- Type: Upsampling Network DAC with Headphone Amplifier
- Colour: Silver or Black
- Dimensions: 444mm / 17.5" x 430mm / 17.0" x 115mm / 4.6". Allow extra depth for cable connectors.
- Weight: 16.7kg / 36.8lbs
- Converter Type: dCS proprietary Ring DAC topology
- MQA: Full decoding and rendering of MQA data from the Network and USB2 inputs. Final rendering of unfolded MQA data only from the other inputs.
- Residual Noise: 24-bit data: Better than -113dB0, 20Hz - 20kHz unweighted. (6V output setting)
- L R Crosstalk: Better than -115dB0, 20Hz – 20kHz
- Spurious Responses: Better than -105dB0, 20Hz – 20kHz
- Power Supply: Factory set to either 100, 115/120, 220 or 230/240V AC 50/60Hz.
- Power Consumption: 30 Watts typical / 50 Watts maximum.