



# The Chord Blu CD Transport

by Jimmy Hughes

I know it sounds like hype, but Chord's DAC-64 digital-to-analogue converter literally changed my life. Encountering it back in 2001, I finally felt CD had come of age. And about time too! It had only taken 18 years for CD to deliver the Pure Perfect Sound the makers originally promised. The DAC-64 recreated subtlety, dynamics, and timing I'd never experienced from CD before. At a stroke it transformed my entire CD collection, making every disc sound more accurate and believable.

The DAC-64's secret weapon was something called the Watts Time Aligned (WTA) filter. A clever use of technology that greatly reduced the transient timing errors that had previously afflicted CD. Yet this was only part of the story. The massive benefits of the WTA would've been lost without Chord's other secret weapon - the foursecond RAM buffer and sophisticated re-clocking system. In effect, re-clocking made the DAC-64 virtually independent of the CD transport being used.

As a result, inherent jitter levels in the CD transport became relatively unimportant. By re-clocking via a RAM buffer, the DAC-64 effectively cleansed its digital source of impurities. There were two levels of re-clocking, plus 'off', making it possible to compare different options. For listeners this was all very positive; for Chord it represented a double-edged sword. Having made the absolute quality of the CD transport seemingly unimportant, how could they offer a sonically viable transport of their own?

Perhaps it didn't matter. Maybe existing Chord owners only required a good transport that matched the unusual styling and rugged build quality of their other Chord Choral components.

Thankfully, Chord were having none of that. They weren't happy at the thought of users paying a premium for something that in reality sounded no better than transports costing considerably less. So began a long and exhaustive process as Chord tried to extend the state of the art.

The problem was a very real one. Speaking personally, having tried the DAC-64 with various CD transports, I wasn't convinced there was any point in aiming high. When making transport comparisons via the DAC-64, it proved very hard to decide if one was distinctly better than another. Sure, some differences could be heard, but they were always slight. So Chord faced a stiff challenge; bringing out an expensive matching CD transport for the CD-64 that truly sounded better

Could they do it? The eventual answer was - yes. But it involved more than simply making a 'perfect' transport.

They were up against a truly formidable, seemingly invincible opponent; the very limitations of CD's 16bit 44.1kHz specification. Re-thinking the relationship between DAC and transport was just the start. Instead of relying on the DAC-64's RAM buffer to re-clock the signal, Chord modified the DAC-64 so it could accept further up-sampling via a second digital input.

All Chord needed now was an inherently clean jitter-free transport -

easier said than done! Having decided not to rely on the DAC-64's re-clocking buffer to take care of jitter errors, Chord started work on a new transport designed to be virtually jitter-free from the outset.

They nursed it; Rehearsed it; and Gave Out the News; Chord called it the Birth of the Blu(es).

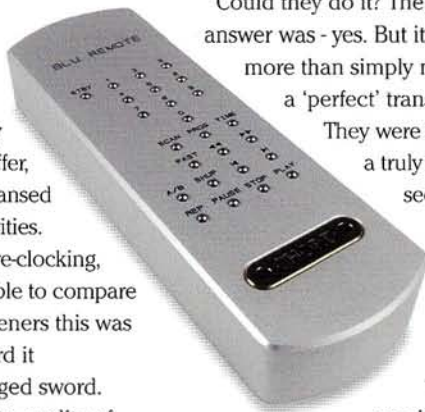
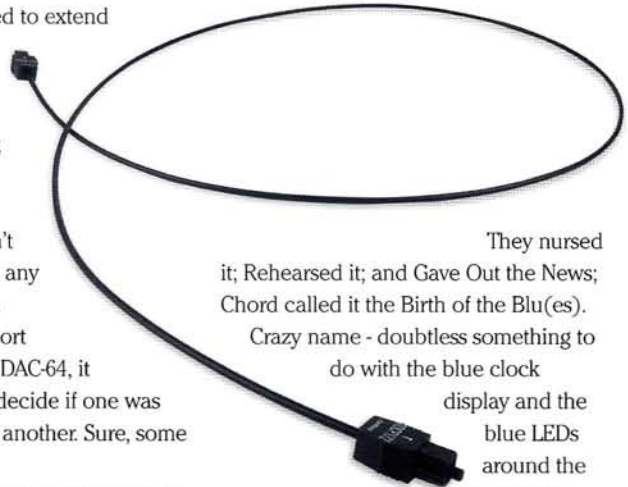
Crazy name - doubtless something to do with the blue clock

display and the blue LEDs around the CD lid. Or

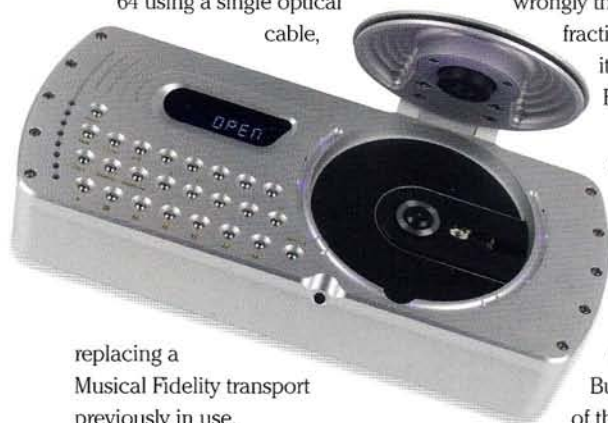
perhaps it's a reference to listeners getting the Blues when they hear it and realise it's financially out of reach. Could be. Because the Blu makes one helluva difference. Dare I say it? - life-changing. You can of course still use the DAC-64's RAM buffer to re-clock Blu, but doing so makes the sound worse! Or, more accurately, it reduces Blu to the sort of performance levels achieved with more ordinary transports.

Before Blu arrived, I naturally wondered how a better transport might affect sound quality - what sort of areas the improvements might show themselves in. The DAC-64's re-clocking system does such a good job (or seems to), was there really any possibility of improving on it? If so, would the difference be worth the added cost? Isn't CD's 16bit 44.1kHz spec the real limiting factor? Blu is a very expensive item and clearly needs to be outstandingly good to justify its price on sonic grounds.

Although not believing the



▶ DAC-64 to be absolutely perfect and beyond improvement, I nevertheless wondered if adding a dedicated transport - even one as advanced as Blu - might not turn out to be a disappointment. Would it simply make the sound a little bit sharper and more detailed? Or could the differences be bigger and more fundamental? I began by listening to Blu with my regular DAC



64 using a single optical cable,

replacing a Musical Fidelity transport previously in use.

There was a difference, but it was very slight. Blu sounded a fraction sharper and more precisely focussed - perhaps a wee bit cleaner at the top - but that's about it. Just what I feared - a slight difference; nothing earth shattering. But remember - I was still using a single cable via the Blu's standard 44.1kHz output, relying on the DAC-64's RAM buffer to re-clock the signal. That isn't the best way to hook up a Blu and original first-generation DAC-64.

The proper way is to switch Blu's output to 88.2kHz, thereby taking advantage of its up-sampling technology. This isn't quite as good as using 176.4kHz up-sampling - possible when you connect Blu to a second-generation DAC-64. But it's not too far off, and better than 44.1kHz. The sound grows sharper, more open and slightly more dynamic. That slightly 'closed-in' tonally hard effect one usually gets with CD is considerably reduced, there being increased air and space at the extreme top end.

The next step was to hook up a new second generation DAC-64 to audition

Blu with 176.4 up-sampling, requiring a pair of BNC terminated digital cables (I was lucky enough to lay my hands on a matched pair of Nordost Valhallas). Immediately there was a more fundamental change - and a very interesting one. Playing a CD of female soprano with orchestral accompaniment, the voice became noticeably more 'separate' and detached. For some reason I wrongly thought the volume level was fractionally lower - and increased it slightly to compensate.

But this was a mistake.

When the voice really sang out it was distinctly louder than before, so I hastily returned to my previous volume setting. Clearly, dynamic swings between loud and soft were now much greater.

But it wasn't simply a case of the voice being louder and more forward. Rather, there seemed to be a greater sense of swell as dynamic levels increased - as though the voice had more power and greater projection. It wasn't just louder - it was bigger and firmer.

There was much greater separation between voice and orchestra, and at the same time a more tangible sense of the acoustic in which the recording had taken place. The whole sound was cleaner and truer, as though various impurities had been stripped away. Allied to this was what I can only describe as a 'commanding' quality. With the Blu/DAC-64, the singer had a distinctly tangible presence - making you listen with the attention and respect you'd show to someone performing live in front of you.

There was a palpable sense of electricity in the pauses between sections - as though anything could happen - making you concentrate and pay attention. Playing other recordings, it became apparent that the lower

frequencies were better focussed and more solidly portrayed. Subjectively, bass sounded deeper and more powerful; there was a greater sense of firmness and precision when (say) a bass drum was struck - more of a definite thwack, rather than a soggy thump.

Bass lines seemed more strongly defined and deeper, with improved differentiation between pitched sounds (like bass guitar or double bass) and bass drums. Now a big improvement in bass quality and low-frequency depth/weight was one of the main things I noticed with the original DAC-64 - increased firmness, improved timing, greater precision - so it was interesting to find Blu taking things even further. Subjectively, it was almost as though I'd added a couple of big sub-woofers.

Imaging improved too; generally speaking Blu creates a more holographic three-dimensional soundstage, with greater sense of depth and width. But much depended on the specific recording being played. Used together as intended, the Blu/DAC-64 combination produced an unusually sharp open sort of sound;



very airy and crisply-defined. Using a colour analogy, if CD typically offers a dull greyish top-end, the Blu/DAC-64 is by comparison silvery-brilliant.

There's a very sharp extended treble; an openness that challenges good analogue. Listening to a wide range of material, there seemed to be noticeably more variation between different recordings - wider tonal/timbral changes, plus an increased aural impression of the acoustic signature of the place in which the recording had been made. In essence, it was more like being there ▶

► - being present at a live event - being closer to the people making music.

Put on something you think you know; prepare to be surprised. There's definitely more - instruments and voices that seemingly hadn't been there before suddenly become audible. Blu definitely gets you closer to what was on the original mastertape, revealing fine detail normally buried or obscured. Some may find this openness too truthful, too revealing. The Blu/DAC-64 really shows what's on your recordings - usually for better, sometimes for worse. It definitely doesn't offer rose-tinted views.

Listening to Chord's Blu/DAC-64 combination, I really felt it was telling the truth - telling me everything about the music and recording. The sound was extremely clear and clean; very focussed and defined; very open and uncolored. Yet not in a cold antiseptic sense. Timing was outstanding, and the music had excellent rhythmic drive: impressive flow and swing. Again and again I was reminded of a good moving coil cartridge on a top-quality turntable. It really was that good...

I particularly noticed these special qualities on simple things like solo violin; massed violins; solo soprano voice; solo piano. You can't cheat with such material - the slightest departure from true fidelity and you know immediately. Violins sound 'hard' tonally; soprano voices likewise; pianos lose their warm woody tone colour and rhythmic subtlety. The Blu/DAC-64 sounds very neutral; it's vivid, sharp, open and detailed. Tonally it sounds right. If it doesn't, suspect your recordings or speakers!

Even though the DAC-64 sounds excellent when it's partnered by a conventional transport and used with its RAM buffer, adding Chord's dedicated Blu transport elevates it to a whole new level, producing substantial gains in

performance. Agreed, the financial cost is high. But it's arguably worth it for that final 'nth degree. And it's still cheaper than a top-top-top top-end turntable. Basically, CD doesn't get any better!

Try it on messy compressed pop CDs that (via lesser players) sound flat, congested, and lacking in space/depth. The Blu/DAC-64 will almost certainly reveal a dynamic and spatial depth you never dreamt was there. Suddenly the recording will become dimensional in ways hardly hinted at before. In much the same way that mediocre LPs suddenly become exciting and magical on a good



turntable/arm/cartridge, 'poor' CDs are resurrected by the Blu/DAC-64.

But what is the Blu like operationally? Judged as a transport, in terms of speed and friendly user interface, I'd describe Blu as okay but nothing more. Indeed, using it took me back to the bad old days of 1980s Philips transports! Before being able to choose a track or select Play, you first have to let the Blu digest the disc's table of contents. Fast Search is frustratingly slow. It's very much a transport you use at its own measured pace, rather than yours.



It won't be rushed or hurried. Impatient souls, wanting a fast responsive

transport, won't be dancing with delight. The seemingly vast array of press buttons on the top is slightly confusing too. I also feel Chord could assist installation by labeling the various sockets and switches on the back panel. Colour-coding the BNC sockets would

be very useful, helping ensure you get the various cables correctly plugged in. It is possible to end up with the Blu/DAC-64 working, but connected incorrectly and not giving proper performance.

This is one product where you most definitely need the instruction manual. Chord need to make things easier for users, retailers, and - dare I say it? - reviewers. Alas, we're not all geniuses like you! However, none of

this matters once the units are properly installed and up and running. And if you're the sort of listener who simply puts on a disc and plays it from the top, you won't worry about the slowness of the transport, or those seemingly endless rows of press-buttons.

Actually, you eventually get used to the plethora of buttons (25 in total). The main one - Play - is usefully positioned on the bottom left. So it's straightforward to find and access. As is the case with many CD transports, Blu is much easier to operate via its cordless remote handset. And what a handset! Like the ►

## Technical Configuration

For the Blu, Chord elected to use a professional standard CD mechanism with a rigid die cast metal chassis, mounting it on a fairly stiff, de-coupled suspension. The aim was to eliminate low frequency timing data reading errors at source - preventing the need to do it later via error correction. A solid heavy lid covers the CD compartment and has a rubber O ring that Chord claim seals the compartment, preventing light entering. However, light can enter via a finger slot milled in the case.

Those familiar with the DAC-64 may recall that its WTA digital filter had 1024 taps. The more taps, the greater the accuracy with which the signal is reconstituted - and the better the sound. Blu improves on this, with its 4096 tap WTA filter used to up-sample the digital data from 88.2kHz to 176.4kHz with 80 bit precision. This provides a four-fold improvement, allowing the DAC-64 to perform as never before possible. Demands on the DAC-64's own over-sampling are greatly reduced in the process. At the same time there's now no need to use the DAC-64's digital buffering.

Because both up-sampler and transport are run from the same master clock, absolute jitter-free precision is achieved. Two levels of dithering are provided; Normal dither (re-dithered from a word length of 80 bits to 24 bit) and High dither (dithered to 16 bit). Chord recommend High if Blu is partnered with older 16/18bit DACs. Otherwise Normal should be used.

► unit itself, it's a de-luxe piece of kit that oozes class. Milled from a solid billet of aluminum, it's so OTT it's almost decadent...

Blu's build quality is likewise lavish and extravagant; the hinged disc top cover is massively weighty, and those 16 blue leds surrounding the mechanism (8 of which remain lit when the cover opens) are super-cool! The whole transport is satisfyingly heavy and looks the proverbial million dollars. The spring-loaded cover clamps down on the disc closes with a delicious 'thunk', like the door of a massive safe snapping shut.

Mind you, it's tricky to remove a CD without fingermarking it. It takes a certain sleight of hand (finger?) to do so.

If you're a bit fussy about marking your CDs (as I am) this requires some getting used to. During operation the transport is virtually silent - there's no disc whirr, or any other strange noises to spoil one's listening pleasure.

Of course one question remains; where does all this leave existing owners of the original DAC-64 who want to buy a Blu transport? As mentioned earlier, to interface fully with the Blu, Chord had to modify the DAC-64, adding new BNC sockets for the various extra cables.

This entailed a new motherboard and new casework, making it uneconomic to convert existing DAC-64s. As I write this, the official word is that older DAC-64s cannot be upgraded.

However, apparently Chord are exploring an e-prom modification that would effectively allow original DAC-64s to interface at 176.4kHz with Blu. Hopefully it can be done... For while the DAC-64 is certainly capable of superb results with the 88.2kHz up-sampled output, it really demonstrates its full potential only when used on the 176.4kHz setting. Which is how it should be, I guess.

I said at the start that, for me personally, CD finally came of age with the Chord DAC-64, 18 years after its birth in 1983. Now, some 3 years later, we have a second coming-of-age at 21 with the Blu transport. Of course some may question the wisdom of Chord's commitment to CD in the light of 'better'

systems like DVD-A or SACD in the offing. Many would say that it's folly to invest so heavily in what is 'obsolete' '80s technology

But Chord's view is that the sheer quantity of CD titles in circulation, their comparatively low price, and massive availability, makes getting the absolute best from CD a very worthwhile priority. So rather than throw in their lot with new



technology that, however promising, might not last the course, Chord prefer to maximise the potential of an existing technology that hitherto has never quite fulfilled its potential.

Which begs further questions - is there still more to come before CD finally draws its old age pension aged 65? Is this as good as it's ever going to get? Or will life begin at 40 for CD... ➤

### TECHNICAL SPECIFICATIONS

Type:	CD transport
Outputs:	1 x coaxial SPDif 1 x twin BNC dual data 1 x optical Toslink 2 x XLR AES/EBU or dual data
Input:	1 x 44.1k word clock
Data Rates:	44.1k, 88.2k and 196.4k dual data
Dimensions (WxHxD):	335x105x170mm
Weight:	7Kg
Price:	£4195

Manufacturer:  
Chord Electronics Ltd.  
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