

# CEC TL 2N and DA SL

IN THE WORLD OF MUSIC STREAMING AND MORE, IS THERE STILL ROOM FOR A DEDICATED DISC PLAYER, LET ALONE A CD-ONLY TWO-BOX SYSTEM? JAPANESE COMPANY CEC THINKS SO – HENCE THIS TRANSPORT AND DAC – AND, HAVING LISTENED, KEVIN FISKE AGREES. SORT OF...

**There are thought to be some 12 trillion CDs in circulation. Is it a statement of the obvious that owners might want to play them? And what if those people can be shown that the best Red Book CD replay is now subjectively very close to or better than hi-res?**

Japanese manufacturer CEC is one of a number of companies giving such questions serious consideration. Originally a manufacturer of record turntables, CEC is notable for launching the world's first belt-drive CD transport in 1992 and continues with the technology today while most other manufacturers use direct drive. Indeed, CEC currently offers three different transports, an integrated CD player and three DACs.

With that in mind, the company's UK distributor, Definitive Audio, was invited to provide the latest mid-price combination for evaluation by HIFICRITIC – and the £6,000 TL 2N transport and just-launched DA SL DAC, at £6,500, duly arrived.

Two key points need to be established right from the off. The first is that the transport and DAC are unapologetically a purist Red Book combination. No DSD. No higher resolution PCM either – although there is a qualification to this that I will mention shortly.

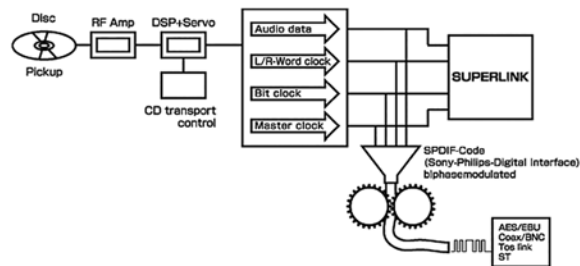
CEC's connection scheme uses four separate 75ohm BNC cables. It is marked as 16bit/44.1kHz only, and it physically separates the data types – master clock, bit clock, left/right channel clock, and music data. If you need to know, it is a right-justified digital connection, rather than left-justified, or I<sup>2</sup>S.

The DA SL DAC is built around a single ESS Sabre ASIC, like so many other contenders in the market are today. The type chosen by CEC is the ES9028PRO,

with a specified dynamic range of up to 135dB in mono mode, and a THD+N measurement of –120dB. The DAC's output stage is built around the ubiquitous OPA2604 op-amp.

The DA SL offers two formats of inputs, the four Superlink BNCs plus a D-SUB-9 socket, the latter to enable backwards compatibility with earlier CEC products. Coaxial S/PDIF transports can also be connected to the DA SL via the Superlink BNC bit clock input. Used thus, the DAC handles up to 24/192 PCM. AES/EBU, Toslink and coaxial outputs, along with a dedicated BNC socket that allows the DA SL to be slaved to a non-Superlink external clock, complete the rear panel picture.

Front on, the DAC looks almost the same as the transport with a similar size fluorescent display, but fewer buttons; just on/off, flat/pulse filter, and an input selector that switches between the rear panel inputs of BNC or D-SUB-9 I<sup>2</sup>S.



The TL 2N is a top-loading transport. CDs are lowered past a sliding shutter and secured on the spindle by a heavy brass puck with a felt covered underside. Front-panel buttons enable on/off, upsampling and basic playing operation, with the usual programmable functions available via the accompanying handset. The fluorescent display panel on the front shows track and time information.

The TL 2N outputs regular 44.1kHz data over Superlink and S/PDIF coax, with up-sampling to 24bit 88.2 or 176.4kHz (S/PDIF only). Upsampling is disabled if the player is connected to a DAC via Superlink. CEC is firm in its belief that plain vanilla 16/44.1 over Superlink is superior to an upsampled stream over alternative connection schemes.

### Sound Quality

The TL 2N transport arrived first, and brand-new out of the box, it took some 50 hours of operation before the sound was judged to have stabilised. It was initially run back-to-back with the household reference transport, an Audio Note CDT Five, into our Audio Note 4.1 Balanced Signature DAC, with results that proved to illustrate the relative sonic merits of the quite different technical approaches employed by the two transports.

The Audio Note transport uses a Philips CD Pro2LF direct drive, mounted on a heavy sprung sub-chassis. The case is thick aluminium, a vault-like construction to screen against EMI/RFI. Both the power supply and the digital output stage are tube-based. The CDT Five gives the impression of being built almost *regardless* of cost whereas the TL 2N appears manufactured *to a cost*.

Even so, the TL 2N shows evidence of serious design intent. It uses one motor and belt to drive the spindle and another motor and belt to position the read head, which is an arrangement similar to that employed in the company's flagship transport, the £30,000 TL0 3.0. The casework here is lightweight steel and the power supply, motor servo control and digital output are solid state.

The heavy puck gives flywheel inertia to the drive, damps vibration and encourages discs to spin evenly. The self-lubricating spindle bearing assembly is LP turntable-like, a substantial polished

steel shaft running in what looks to be a phosphor bronze housing.

The run-in TL 2N quickly impressed listeners, two overriding qualities in particular pushing their way to the fore. It sounds more analogue than many CD transports and it is also uncannily quiet electrically. The first of these judgements is not so much about the high level of transparency with which recordings are rendered by the TL 2N, but more about the unflagging, flowing nature of its delivery, in which respect it came close to our reference.

We wondered whether it might be a zero-feedback design, but CEC's chairman Kenichi Ishiwata assured us not: he notes that one of the technical challenges of CD replay is the need to progressively slow disc rotation as the laser reads a disc from the centre to the outer edge. Variations in motor torque as the servo control imposes linear speed reduction can be significant, and this can greatly affect the quality of the sonic result. CEC's use of a high mass flywheel in the form of the disc-steadying puck, plus the free-running, turntable-like spindle bearing, plus the nominally flexible drive belt, are key design considerations.

Is Ishiwata-san suggesting that these features have the effect of putting some 'give' into the reactive relationship between the motor and its servo control so that the required linear speed reduction is not so coarse and rigid than it otherwise might be? In other words does CEC understand that a drive that behaves in a mildly stochastic manner might sound better than one that doesn't? The company declined to engage in a tell-all on this point, but our assumptions *might* explain one of the reasons why the TL 2N has less of an overtly digital sound than many other transports.

We can be wholly confident about the second reason for the TL 2N's sonic performance though; the optical read head is subject to less vibration and electrical corruption because each motor is located a belt length way from it. There can be no equivocation about the outcome. Despite the development effort poured into our reference direct drive transport, the TL 2N is, and by a considerable margin, electronically the quietest CD transport





CEC TL 2N

**Specifications**

**CEC TL 2n**

Type	CD transport
Price	£6000
Digital outputs	Optical, coaxial, AES/EBU, BNC, CEC Superlink
Other connections	Word clock input
Dimensions (WxHxD)	43.5xx11.1x33.5cm

**CEC DA-SL**

Type	DAC
Price	£6500
Digital inputs	CEC Superlink
Other connections	Word clock input
Analogue outputs	RCA, XLR
Dimensions (WxHxD)	43.5xx10.3x33.5cm
cec-international.com	
definitiveaudio.co.uk	

we have heard to date. This made the TL 2N, connected via S/PDIF, a temporary but interesting and musically satisfying partner with the tube-based, non-oversampled ASIC R2R Audio Note DAC. Listeners reported a soundstage that showed more solidity and detail, if less tonal density and dynamic expression, than with the reference transport which is five times the price of the TL 2N.

This diversionary interlude was brought to an end so that the CEC pair could be united and our evaluation begin. Over the course of the ensuing three weeks an eclectic programme of material was pulled from the household shelves; bright and compressed 70s and 80s pop, mediocre-to-high quality classical recordings, modern and fusion jazz from US and European labels. The choices were made not on the basis of musical quality but for their wide variation in recording quality, the aim being to thoroughly test CEC’s claim to have advanced red book playback.

The DA SL proved to have a very different sonic aesthetic to the Audio Note DAC. Although the CEC DAC’s power supply, input and output stages are by CEC’s own hand, the sonic characteristics of the SABRE chip remain dominant, and within seconds of the first track starting we were left in no doubt that we were in its presence.

**Sabre-rattlers?**

That observation is not intended to be read as pejorative; there is clearly a very substantial cohort of buyers that regard SABRE delta-sigma as the conversion technology to be preferred. The DA SL makes the most of the riches that can be mined from the ESS chip, and in combination with the TL 2N delivers a sonic result that should have fans of forensic detail purring with delight. The CEC pair carpet-bomb listeners with a sonic experience might be thought as hi-res, but without the res: via Superlink it is still ‘only’ 16/44.1, after all.

The result is a fresh insight into recordings, even the poorest of them, as previously unheard musical and spatial detail is revealed. Imaging was felt to be confident and accurate, if such an observation can be made about what is often an artifice constructed at the mixing and production desks. With regular acoustic musical material the apparent physical nature of the recording space was frequently heard;

intimate, low ceilinged jazz club, grand symphonic auditoria, studio recording booth. To check this judgement we used track 10 on the Stereophile Test CD3 which has John Atkinson walking around a concert hall stage striking a cow bell. It confirmed that that the CEC combination offers particularly finely delineated perspectives and image focus, right to the back and very corners of the sound stage.

Tonally, the transport and DAC were judged to be slightly on the cool side of neutral. Closely-miked vocals marginally lacked some of the warmth and a greater sense of organic intimacy heard with other transport/DAC combinations. This relative austerity was apparent too in the lower registers that were found to be deep and powerful, if somewhat dry and taut. In conclusion, I feel compelled to split the CEC combination.

Design engineers that a decade ago claimed the 16bit 44.1kHz format had much more to give have been proved correct. Some contemporary transport and DAC combinations, including CEC’s TL 2N and DA SL, achieve a standard of replay that would have been thought impossible, and which might now cause listeners who abandoned CD for hi-res files on a computer drive to feel more than a pang of regret.

CEC’s DA SL will have wide appeal. Buyers who desire state of the art detail retrieval will find it an excellent partner to the TL 2N transport. The two boxes combine to present a forensic level of detail to listeners. Some, though, will yearn for, whisper it, a more *natural* delivery. Even though CEC has cleverly mitigated to some degree the SABRE chip’s – shall we say? – exuberance, for my taste the DA SL is still too in-your-face, too delta sigma. We are into the domain of personal preference: I feel a more fluid presentation sounds more natural; many don’t.

The TL 2N transport triggers is a much less divisive prospect in my view. The RRP of £6,000 buys high-value audio engineering; the TL 2N a worthy mid-price successor to CEC’s fine line of belt-drive CD transports. It pulls a remarkable amount of detail off of discs and presents it with a satisfyingly relaxed, natural flow. Put it with a DA SL if you will, but I suspect that its most effective partnerings are to be found with quality R2R decoding, in which setting its fine musical and spatial abilities are able to take CD playback to a new and satisfying level.

