AUDIO FILE

hi-finews OUTSTANDING PRODUCT

dCS Rossini Transport/DAC v2

The high-tech Cambridgeshire company has added a dedicated CD/SACD transport to its Rossini range – and it, and the updated DAC, are remarkably flexible devices
Review: **Andrew Everard** & **Paul Miller** Lab: **Paul Miller**

A dCS Rossini CD player? Doesn't the company already have one of those, usable as either a standalone device or as a transport for its range of digital-to-analogue converters? Well yes, and the Rossini Player continues in the range as a pure Red Book device because, at the time it was developed, dCS was unable to source a suitable SACD/CD combination transport.

Now, however, all that's changed, and the new dCS Rossini Transport's dual laser mechanism will handle both kinds of silver disc, but – as the name suggests – this is a purely digital device. It has no onboard DACs, but does feature built-in upsampling for CDs all the way to DSD/DXD output. It will set you back £16,500, while the partnering Rossini DAC, now running updated firmware and also able to upsample 44.1kHz/16-bit to DSD/DXD, is £17,089. So you have a choice: a one-box CD-only Rossini at £19,999 or this two-box CD/SACD-playing package knocking on the door of £34,000.

PUNCHING THE CLOCK
If you decide to add to the stack the Rossini Clock, which takes over master clock duties from the transport/DAC's internal provision, you can up the ante to just under £40,000. But before you gasp 'For a disc player?' (too late?), that's not quite the whole story, as the DAC also doubles as a network audio machine, with the ability to play not just from local storage but also online streaming services, utilising the dCS Mosaic streaming interface launched at this year's Munich High End Show [see boxout, p37]. What's more, the DAC can also be used as preamplifier connected directly to a power amp or a pair of active loudspeakers.

That makes the DAC a perfectly viable one-box solution for those who have moved on from playing discs and into

music from files or even streaming – it's capable of handling content at up to 384kHz/24-bit and DSD128, and can upsample content in lower formats up to those maxima. It's compatible with Spotify Connect, Deezer and Tidal, has MQA decoding built-in (as of the current v2.0 firmware), and is also Roon-ready, the last of these also opening it up to playing hi-res music streams available via the Qobuz Studio and Sublime+ services, as does dCS's own Mosaic platform.

The latest Rossini DAC can also play from USB media via USB-A as well as network sources, has a USB-B asynchronous port for direct connection from a computer or similar device, and legacy S/PDIF digital inputs – two coax and one optical. Apple AirPlay is also supported via the network connection, which is on Ethernet with a second loop-through connection to share the connection with other devices.

RIGHT: The dual laser CD/SACD mechanism [lower centre] features a 2mm steel frame, cast aluminium disc tray and is flanked by two screened PSU transformers [blue] feeding the transport and digital electronics

The preferred dual-AES/EBU input, on a pair of XLRs, will accept PCM at up to 384kHz and DSD64/128 in DoP format or dCS-encrypted native DSD. The last of these meets the SACD standard requirement that data must be transmitted, box to box, in a protected format, which is a slightly archaic anti-piracy measure given that it's now perfectly possible to rip SACD discs to DSD files with the right software and hardware, should one be so inclined.

CONVERSION CONUNDRUM
As an aside, it's worth noting that, when using the Rossini Transport with the DAC to play SACDs, the transmission is carried in an encrypted DSD format whichever settings you choose on the disc player. You can play CDs and elect to upconvert them in the Transport to DXD or even DSD, but they will default back to encrypted DSD when you switch to the SACD layer of a disc.

Once in the DAC, the signal – whatever its source – can be upsampled: the standard is multistage DXD conversion, with an option of PCM-to-DSD if required. There's also a selection of filter settings available, offering subtle tailoring of the sound, with up to six modes available for PCM-based content, one for MQA, and five for DSD [see PM's boxout, p39].

As ever, the choice of these filters will be a matter of personal taste, and I found the differences between the 'PCM' filters to be so small as to be inconsistent depending on the content being played. The DSD filters, which affect the suppression of out of band noise, did have a more obvious effect of gradually softening the sound. As

'DSD has the edge in snap, space, detail and drive'

I said, this is one section of the DAC with which to experiment, but a neat feature, should you find a setting that works for you, is that this choice will be memorised for the content sampling rate in use.

The analogue outputs on the Rossini DAC extend to both RCAs and balanced XLRs, with the maximum level adjustable in the menu system depending on its role in your system – full level can be set to 0.2, 0.6, 2 or 6V. By contrast with all the flexibility on offer in the DAC, the Transport is relatively simple – well, apart from those upsampling options for CD playback, which duplicate those found

on the DAC. These allow for CDs to be replayed via encrypted DSD64, DXD, or DSD128 via DoP, using the twin AES/EBU outputs, while a single AES/EBU or S/PDIF sees CD and SACD output by default as 44.1kHz/16-bit PCM.

DRIVING LESSONS
On both units a minimal array of buttons accesses the menu and allows adjustments to be made. The various pictograms take some familiarisation, but the complexity reflects the wide range of facilities on offer here, which even extend to phase, channel swap and balance on the analogue outputs. You can even log into the DAC using a computer on the same network, or use the Mosaic app, and change the name of the inputs and even the DAC itself – should you find yourself with a network and a number of attached Rossini devices.

It's all very impressive, and remarkably flexible, if maybe not for the faint-hearted. I'll admit to having a few 'now why's it doing that?' moments along the way during the course of this review!
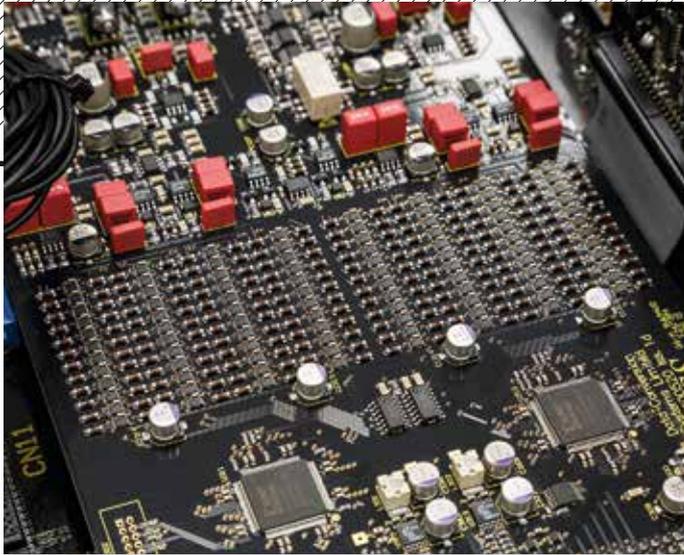
That apart, both units are of massive build, if perhaps overly so for many a hi-fi equipment rack given that the Transport stands some 18cm tall, on top of which space will be required for airflow. But these products are clearly beautifully designed, assembled and finished, right down to the sleek and substantial remote control handset controlling both [see p41]. My only slight quibble would be that the space for discs in the Transport's loader was not ⮕

MOSAIC FOR MUSIC
Just about every company involved in network streamed audio seems to be working on improving the all-important user experience – the way we interact with our music collections and streaming services, from searching for a favourite piece to exploring the darker corners of what's available. The dCS approach is called Mosaic, a combination of hardware and software technology that's governed by a Mosaic Control app running on Android or Apple iOS smartphones and tablets. It comprises a Mosaic Processor running on the network hardware of dCS products, and thus can be enabled on all current models via a firmware update. It brings together the user's own network music collection plus Deezer, Qobuz, Roon, Spotify, Tidal, AirPlay, Internet radio, podcasts, and music stored on local USB devices. It presents them all in a unified interface, making browsing simple, and allowing listeners to move more or less seamlessly between the various 'sources' and services. Mosaic is supported with online guides and forums on the dCS community pages where there are QR codes to download the Mosaic Control app.

LEFT: While not as curvaceous as the Vivaldi, the sculpted panels of the Rossini Transport and DAC still retain the dCS aesthetic. Menus may be navigated via the rotary [DAC, top] and array of buttons [both] but dCS's huge IR remote [p41] and/or Mosaic App [below] are easier to use
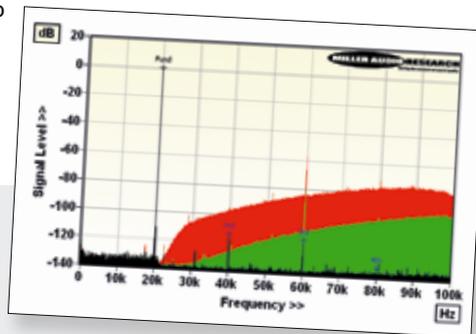
just a snug fit for SACDs and CDs, but a tight one, making loading and unloading slightly fiddly, while PM's lab work noted that switching the units into standby may turn off the displays, but it doesn't seem to reduce the power consumption.

🎵 COMING CLEAN

Time to come clean: I have to admit that these days I don't play discs, be they CD or SACD, too often. New arrivals are ripped either using a computer (for CDs) or an early Sony PS3 (SACDs), and after that it's just a matter of calling up files from the server. No wonder I find myself buying more storage with monotonous regularity. In reviewing the Rossini pairing, however, the discs came out of storage and nostalgia reigned, this also giving me the chance to play disc and file versions back-to-back.

The executive summary? Yes, it may be jaw-droppingly expensive, but if you want to play discs side-by-side with all that newfangled streaming stuff, you'll be hard-pressed to find a more revealing, dramatic and involving way of doing so. Eschewing the delicate classical or limpid jazz, I went straight in with the 2001 SACD release of Frankie Goes To Hollywood's 'Rage Hard' [ZTT ZTT177SACD], switching between upsampled CD to direct DSD64 on the epic title track from *Welcome To The Pleasuredome*. Here the Rossini pairing did an excellent job of bringing the CD layer up close to what SACD could deliver, but the DSD layer just had that edge in snap, space, detail and sheer pounding drive. The bass rumbled and bounced against the punchy percussion, and the massive scale of the track was delivered with drama and slamming dynamics. ↪

NUMBER CRUNCHING

While the Rossini DAC incorporates up to six digital filter settings [depending on sample rate – see Lab Report, p41], both the transport and DAC allow the upsampling of lower-rate LPCM sources to DXD (352.8kHz and 384kHz with 44.1kHz and 48kHz base sample rates) and either DSD64 or DSD128. The Scarlet Book specification disallows transcoding from SACD to high-rate LPCM. What you choose will inevitably exert some subjective impact, not least because the LPCM to DSD option releases more ultrasonic requantisation noise into your system. This is illustrated by the inset Graph which shows a 20kHz/16-bit signal from CD upsampled/transcoded into DXD [black], DSD64 [red] and DSD128 [green].

Again, whatever your choice, all data is processed through dCS's proprietary Ring DAC which aims for the pure monotonic conversion of a genuine 'single-bit' DAC via the operation of a PWM bitstream-style converter. Here DXD data is truncated (and DSD downsampled) to an average of 4.6 bits whose 24 possible values are are mapped to the 48 'identical' current sources that comprise the Ring DAC. (This resistor matrix is visible in the picture at the top of this page.) This approach differs from traditional PWM DACs that use these bits to control the length of *time* a single current source is held open or closed. Instead, dCS's 48 current sources can never be truly identical in size so the mapping of bits is randomised (three mapping options are offered in the menu), 'smearing' harmonic distortions into an inaudible increase in white noise. PM

DAVID STEVEN

SACD playback has been key to the dCS credo for the best part of two decades, beginning with the Sony-based Verdi transport in 2001 and most recently revisited in the single-chassis Vivaldi One [*HFN* Feb '18]. That is until the new Rossini CD/SACD transport was launched this year. We asked dCS CEO David Steven whether this lower cost solution was part of a new roadmap.

'The Rossini CD/SACD Transport is not so much pointing the way ahead for dCS as an affirmation of our commitment to our customer base and the silver disc format,' says Steven. 'When we launched the original Rossini range there was no SACD mechanism that met our spec, so dCS customers who wanted to migrate from Paganini and Scarlatti to Rossini hit a dead end.

'We have always seen ourselves as a DAC company first and foremost but we see the physical disc format having a long [commercial] tail'. Hence dCS continued looking for an SACD mech that met its requirements for use in the Rossini platform. 'We came across the D&M mechanism, tested it extensively and then set about building the Rossini SACD Transport' said Steven.

'The Vivaldi One uses Esoteric's VRDS-Neo mechanism, so we had to go back to scratch with the Rossini Transport as everything was new.' The end result is not only this Rossini SACD transport but a mkII DAC that offers network streaming, USB for direct computer connection, CD and SACD playback... and all with dCS's proprietary Ring DAC technology at its core.

ABOVE: Transport [bottom] offers CD and downsampled SACD digital out on S/PDIF (coax and BNC) and AES (XLR). Upsampled DXD and native SACD is output on dual-AES connections. Clock in/outs are mirrored on DAC [top] with three S/PDIF ins, one USB-B, USB-A, dual-AES and LAN plus single-ended (RCA) and balanced (XLR) analogue outs

This super-crisp sound, with monumental weight when required, was also much in evidence with Pink Floyd's *Wish You Were Here* [Analogue Productions CAPP 33453 SA], the slow burn of 'Shine On You Crazy Diamond' having lovely tinkling detail and spaciousness before that signature guitar break and the rich, tight bass and drums it unleashes. The sound was solid, breathtaking and almost three-dimensional in the room – with this much information, there really is no need for surround effects, whether real or 're-imagined'.

DSD DELIVERS

Cooling things down a little with Dire Straits' first album [Vertigo UIGY-9032], again the native DSD signal path proved to have just that little more openness than the upsampled CD layer could muster. But, again, it was a close thing, with the gap narrowing as I experimented with the various DSD filter settings, the more extreme of which can soften down the sound to 'what's the fuss all about?' levels. Back off on the filters and let the sound breathe, and you have a presentation as fascinating as it's

LEFT: Multifunction remote includes input selection, volume, filter and upsampling modes, phase plus direct track selection, repeat and prog. play

musically rewarding, with 'Sultans Of Swing' coming up fresher than one could imagine.

STREAMING SUPERLATIVES

'Wide open' doesn't even cover it. This two-box player digs deep into a recording, providing as much spine-tingling insight as any listener could want. And it does it whatever you play, breathing new life into familiar CDs, or sparkling with well-engineered SACDs, and sounding magnificent when streaming music from local storage or online services.

The scintillating live recording of Mahler 3 by the Gürzenich-Orchester Köln under François-Xavier Roth [Harmonia Mundi HMM90531415; 48kHz/24-bit download] is treated to real drama and striking atmosphere through the Rossini pairing, the light and shade of the massive first movement capturing the attention, and the whole 90+ minutes of the work flying by, so firmly is the listener immersed in both the composition and the performance. ⏻
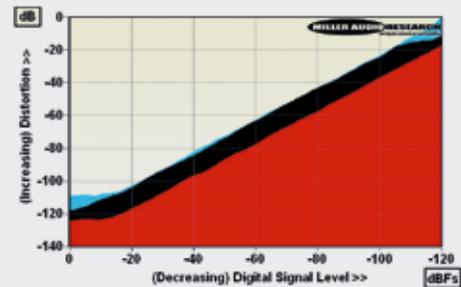
HI-FI NEWS VERDICT

Whether you are clinging on to your CD collection, rediscovering music on SACD or bridging the divide between physical and file-based music, this remarkable dCS duo brings out the best of everything you throw at it, with the reassurance of firmware updates to keep it up to speed with wherever music goes. Unashamedly in the top flight of hi-fi, it rewards the investment with spectacular performance.
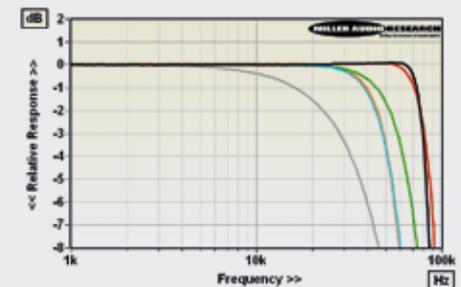
Sound Quality: 88%

0 —————————— 100

LAB REPORT

DCS ROSSINI TRANSPORT/DAC V2

Comparisons with the fully integrated Vivaldi One [*HFN* Feb '18] reveal this two-box, and slightly more affordable, solution to be very, very close indeed in performance. For example the 6V analogue output option still has a fabulously low, cable-agnostic 760mohm source impedance (560ohm for the One) and offers a variable output up to 5.88V. The A-wtd S/N ratio is some 4dB lower than the One's at 113dB, however, and low-level resolution good to ±0.1dB at –100dBFs (and ±1.2dB to –120dBFs). Distortion is fractionally higher, but still vanishingly low: down to 0.00002% at –10dBFs and no higher than 0.0002% over the top 30dB of its dynamic range through bass and midrange. At 20kHz distortion falls between 0.00015-0.0004% over the top 30dBFs [see Graph 1, below, and note the Y scale now extended down to –140dBFs from –120dBFs].

The Rossini combination does improve on the Vivaldi One with respect to digital jitter at <30psec vs. <50psec with DSD64 and at all LPCM sample rates. Uncorrelated, noise-like, jitter is also reduced in the latest Rossini DAC. The Rossini's underlying code may run on a single FPGA, rather than a pair, but it is essentially unchanged, so frequency responses still depend on your choice of digital filter. Filters 1-4 and 6 are linear phase types delivering a ruler-flat ±0.02dB response (20Hz-20kHz) with CD, albeit with variable stopband attenuation (125dB, 35dB, 12dB, 6.1dB and 120dB respectively). Filter 5 is a minimum phase type with a –0.5dB/20kHz response and 125dB stopband rejection. Filters 5 and 6 are not available to 48kHz/96kHz files but reappear with 192kHz data – the responses with Filters 1-6 reaching out to –3dB points of 78kHz, 80kHz, 48kHz, 58kHz, 28kHz and 48kHz, respectively [see Graph 2, below]. **PM**

ABOVE: Distortion vs. digital signal level over a 120dB range (1kHz/24-bit, red; 1kHz/CD, black; 20kHz, blue)

ABOVE: Frequency responses with 192kHz data (Filter 1, black; 2, red; 3, cyan; 4, green; 5, grey; Filter 6, orange)

HI-FI NEWS SPECIFICATIONS

Maximum output level / Impedance	5.88Vrms / 760mohm (XLR)
A-wtd S/N ratio (LPCM / DSD)	113.1dB / 112.9dB
Distortion (1kHz, 0dBFs/–30dBFs)	0.00007% / 0.00018%
Distortion & Noise (20kHz, 0dBFs/–30dBFs)	0.00028% / 0.00042%
Freq. resp. (20Hz-20kHz/45kHz/90kHz)	+0.0 to –0.0dB/–0.dB/–dB
Digital jitter (48kHz/96kHz / DSD)	15psec / 10psec / 30psec
Resolution @ –100dB/–120dB	±0.1dB / ±1.2dB
Power consumption (Transport/DAC)	15W/21W (14W/20W standby)
Dimensions (WHD) / **Weight** (Transport)	444x125x435mm / 15.6kg