

dCS Rossini APEX V3.0 digital player

Rafael Todes

dCS is not a here-today-gone-tomorrow company, in the immortal words of Robin Day! It is one of the UK's leading digital audio companies, which firmly believes in continuously updating its existing products, either through firmware updates or, in the case of Bartók and Rossini, via the recent Apex update, which revolutionised the analogue circuitry. V3.0, reviewed here, is a digital update, free to users and shortly to be publicly available, which brings some of the digital improvements alongside the improvements in the analogue development.

There are a number of exciting areas of change that have come under the spotlight.

A broad overview, starting with the most significant change in my opinion, is the addition of two new mappers, the process by which upsampled and filtered samples are converted into an analogue signal. It is, in the words of James Cook, "the key element of the dCS sound".

Coded improvements

The reason dCS can change and improve filters and mappers is that the code to do this is programmed into an FPGA chip, unlike most other manufacturers of high-end DACs, who use one of a handful of off-the-shelf chips that don't have this flexibility. Obviously, it is much more time-consuming and expensive to do this the dCS way, but it gives the enormous advantage of being able to develop >>





Beyond the three original Mappers, Mappers 4 and 5 are now included, for PCM sample rates of 48, 88.2 and 96kHz.

» new ways of doing things in the form of a flash update, that can preserve the original ways whilst adding new filters, DXD upscaling and new Mapping techniques. This and other upgrades help improve over the original models; the result is like eating the same meal from a cook who keeps honing their culinary skills. I must be hungry.

Following this update, there are now two additional mappers, listed as Mapper 4 and Mapper 5. The immediately previous Mapper 1 operates at 5.6MHz or 6.14MHz, depending on the sample rate. Mapper 2 is the original release Mapper, which runs at 2.822MHz or 3.07MHz. Mapper 3 is an alternative to Mapper 1, and now we have Mapper 4, running at 6MHz, the same speed as the previous mappers, but its processing has a different flavour.

There are differences in how the current sources are operated between the Mappers – which current sources stay on, which are turned off, and how current sources are cycled through. dCS didn't seem to be that enthusiastic about divulging the precise differences between the Mappers beyond this, as this is largely confidential material and the core DNA that differentiates dCS from the rest of the world!

The Mapper that matters

Beyond the three original Mappers, Mappers 4 and 5 are now included, for PCM sample rates of 48, 88.2 and 96kHz. Mapper 4 is an asymmetrical design that features almost no pre-ringing.

However, Mapper 5 is the wildcard, with the Ring DAC running at a slower rate than even the original Mapper from the first release, at 1.5MHz. There are trade-offs in DAC speed. The faster you run the DAC, the less quantisation error you have, but the more ultrasonic switching noise you get. In tests, the new Mappers have divided opinion, almost a 'Marmite' issue, i.e., you either love it or hate it! For example, Mapper 5, when the DAC runs slower, was described by some as

“forward” and “brash”, and by others as more precise and detailed. I look forward to testing this myself later in the review.

Mapper 5 is an alternative sharp filter with linear phase and pre-ringing. I enjoyed listening to the sound of the piano as played by Alfred Brendel with Mapper 4, which seemed to have the fastest, most realistic attack you hear on a Steinway piano. For me, the pre-ringing of Mapper 5 softened the impact of the hammer hitting the string. It made the piano sound more Bösendorfer than Steinway, an effect that also occurred with two different mappers.

Volume lock

There is now a volume lock on the Bartók and Rossini, which, in my experience, maximises sound quality. This is not available on models with a headphone output, as fixing the volume could inadvertently damage your hearing if the level is set too high. Thus, locking the volume will disable the headphone output.

Where there was previously the option to use DSDx2, we now have the more-of-more-of option of DSDx4. I personally liked the DSDx2 option, and in the past, I used this for my regular listening. I was fascinated to hear the new setting. At first, it felt like too much of a good thing, but I liked it more later.

PCM encodes digital audio within a defined range (e.g. -32,768 to +32,767 for 16-bit). Under certain circumstances, the reconstructed analogue waveform can exceed these limits. Points where the waveform exceeds the limits are called 'Intersample Overs'. PCM Peak Control lets the listener decide whether these Intersample Overs can exceed the maximum and minimum digital limits, or whether they are clipped to prevent them from exceeding the limits. Clipping will change the harmonic structure of the sound on these Intersample Overs. This may be an intended effect for a given piece of music, created in the mix at the time of recording.



EQUIPMENT REVIEW

dCS Rossini APEX V3.0



» Struggling

I listened to a few well-recorded pieces of music and struggled to tell the difference on this one. I think it is probably a case of finding the right track that has been dangerously 'hotly' recorded and examining it, as the effect may be more pronounced with louder audio. When set to Option 1, clipping will occur on Intersample Overs at any volume control setting on the DAC. This setting will not affect DSD content but will affect PCM content upsampled to DSD.

This is a bit of a philosophical problem. Do you want to hear the music as the recording engineer intended it (the current state pre-V3.0), clipping and all, or remove this clipping and have it sound better?

Or, putting it another way: To clip or not to clip, that is the question: whether 'tis nobler in the ear to suffer the slings and arrows of outrageous recording, or to take arms against a sea of overload, and by opposing remove it.

I should say the new features in this update are additive, as in, they are in addition to what's already present. If you don't like the new features, you don't have to roll back the firmware as you would with Apple's beta-test operating systems; you can just stick with your old choices.

The distributor supplied the new firmware to me in the form of a dCS Rossini APEX Player with an accompanying clock, and I used the D'Agostino Momentum Z Monobloc Power amps and D'Agostino C2Z preamplifier, which I reviewed in the previous edition. I used a PS Audio PS10 Power Regenerator, Townshend F1 speaker cables, and Inakustik interconnects. The loudspeakers were Bowers & Wilkins 802 D4.

Admission age

First, an admission. Whilst I'm one of the younger Hi-Fi reviewers on the scribbling circuit, by the time this is published I shall have reached the tender age of 60. Differences in Mappers that affect the sound, principally

in the 20kHz region (there are artefacts lower down the frequency spectrum), at a 44.1kHz resolution won't make the sort of difference a 25-year-old will hear.

After speaking with the editor, Alan Sircom, who confirmed that my age was bang on for the readership, I guess my findings will be more relevant to that readership than a younger person's. However, I thought a bit of parallel listening with a great friend and recording-engineer colleague, Harry Fetherstonhaugh, who is 25 and records and produces for the most celebrated pop groups 12 hours a day, would provide an interesting insight into how two listeners 35 years apart hear things.

Starting with the most significant development according to dCS, and with which I would concur: the Mapping setting 4 or 5. Mapper 4's faster processing speed (6MHz) versus Mapper 5's slower 1.5MHz caused the greatest disagreement between Harry and me.

Harry loved Mapper 4, the faster one. Listening to 'Smokin out the window' by Bruno Mars, Harry thought Mapper 4 outshone every other Mapper, with control and tightness in the low end, and a smoothness in the midrange which made for the most satisfying listening.

Piano sound

We listened to Alfred Brendel playing Beethoven sonatas on Philips, streamed. I found the piano sound very different on the two mappers in question. On Mapper 5, I loved the brighter sound of the Steinway Brendel was playing. For me, Mapper 4 sounded a bit too rich and congested, more like the sound of a Bösendorfer, which is a more old-fashioned sound. Slightly bloated and richer, as against the more brilliant, slightly tinkly modern Steinway sound.

However, Harry still preferred the sound of Mapper 4. He thought it sounded the most real and clear. Mapper 5 was more resonant in the upper mids, which Harry felt was too bright. The 'Marmite' comment that dCS mentioned in my preliminary chat was present here. I think the choice of





In the past, I have chosen DSD over DXD as it 'lushifies' and expands the performance. After extensive listening with these new Mappers, I'm not so sure.

» Marmite could be largely down to age. For me, Mapper 5 emphasised the frequencies I hear less of and seemed to be compensating for something lacking. It seemed to have a fraction more definition, whilst at the same time feeling a little nasal.

A tale of two DSDs... and DXD

The other addition to be discussed is the inclusion of DSDx4 over the previous DSDx2. When listening to Alfred Brendel playing Beethoven sonatas, it seems to have a touch more space, a bit more air. My daughter (23), a violinist, preferred it to DSDx2 and DXD. I personally liked the DXD version's tautness and precision. In the past, however, I have chosen DSD over DXD as it 'lushifies' and expands the performance. After extensive testing with these new Mappers, I'm not so sure. I think it depends a great deal on the music in question.

Interestingly, when I performed the Qobuz versus CD identical-track test, listening to Sinopoli conducting Verdi's *Macbeth* on the Philips label, the CD version sounded really superb, one of those "hey, that sounds really amazing!" moments, like the Rossini. By contrast, the streaming option lost the sense of space in the hall and sounded a poor second. It's hard to know whether the streaming version has been remastered in any way, but if the two tracks were bit-identical, then the supremacy of CD over streaming at the highest end was as clear as daylight.

Programmable supremacy

Once again, dCS has shown the supremacy of the programmable chip approach to DACery. This V3 update shows how improvements can be convincingly eked out of existing hardware while offering users a wide range of choices. After all, listeners hear different things and have different tastes in what they want to hear, and ultimately the ability to let the listener choose should add to their pleasure of the listening experience or alternatively increase the prevalence of *audiophila nervosa*!

I think the discerning user will likely select different options for DSD/DXD, filter, and Mapping based on the nature of the recording, and may need some experimentation to tune to taste. They are a sophisticated set of tone/space/attack controls. I am struck by the irony that punters who can afford this class-leading equipment are probably too old to hear exactly what it's doing!

This is a major and significant update and should go down extremely well with the dCS brethren. +

dCS V3.0 available shortly as a free download, suitable for the Rossini and Bartók with or without APEX modification.

Technical specifications

dCS Rossini APEX Player

Type: Streaming CD player

Disc Playback: Integral high-quality CD transport for standard Red Book CDs

Conversion Technology: Proprietary dCS Ring DAC APEX hardware

Digital Inputs: Network Streaming: Ethernet RJ45 (supports up to PCM 24/384 and DSD128), USB: USB-B 2.0 and USB-A ports (supports up to PCM 24/384 and DSD128), AES/EBU: 2 x single AES inputs and 1 x Dual AES pair, S/PDIF: 1 x RCA coax, 1 x BNC coax, and 1 x Toslink optical

Analogue Outputs: 1 pair balanced XLR, 1 pair single-ended RCA.

Streaming & Network Support: Roon Ready, Spotify Connect, Tidal, Qobuz, Deezer, Internet Radio, AirPlay, and UPnP compatibility.

MQA Decoding: Full MQA decoding and rendering up to over 16x via network and USB inputs.

Finish: Silver or black anodized aluminium

Dimensions (WxDxH): 44.4 x 43.5 x 15.1cm

Weight: 17.4kg

Price: £32,300 (Rossini APEX DAC, £29,500)

Rossini Master Clock

Type: Class 1 Master Clock

Base Frequencies: 44.1kHz and 48kHz

Outputs: Three independently buffered 75Ω BNC word clock outputs (Output 1 fixed at 44.1kHz, Output 2 fixed at 48kHz, and Output 3 supporting 44.1kHz with RS232 control).

Clock accuracy: better than ±1ppm initially, typically ±0.1ppm stabilised

Startup time to rated accuracy: Approximately 1min

Finish: Silver or black anodized aluminium

Dimensions (WxHxD): 44.4 x 43.5 x 6.4cm

Weight: 8.3kg

Price: £10,200

Manufacturer dCS Ltd

🌐 dcsaudio.com

UK distributor Absolute Sounds

🌐 absolutesounds.com ☎ +44(0)208 971 3909