

Professional Education

Martin Pipe discovers that the pro-audio heritage of Prism Sound's Callia DAC/headphone amplifier is manifested in its sound.

A while back Prism Sound discovered that audio-philosophers, notably in the Far East, were buying its professional DACs for home use. 'No-compromise' devices like Lyra and Orpheus might be expensive (they're not at the top of the Prism line, either) but money is no barrier to the dedicated! This unintended market gave Prism founder and marketing director Graham Boswell the idea of producing a DAC specifically for hi-fi enthusiasts.

The result is the British-designed and made Callia (in the Prism tradition, a Greek word – here

meaning 'beautiful voice'). Its pro-gear influence is evident; the visual resemblances to the company's existing Lyra models (which also boast pro-grade ADC facilities) and Callia are obvious. Another similarity between these two compact units goes beyond skin-deep – both are intended primarily for USB use. Just as the Lyras are pitched at the modern musician who uses a laptop as a production tool, the Callia is aimed at the modern hi-fi enthusiast who uses a laptop as a playback source. In both cases, the USB interface is UAC2-compliant asynchronous with

Prism's proprietary 'CleverClocx' PLL circuitry minimising jitter. In the Callia, the latter is also active on the conventional optical and coaxial S/PDIF inputs that are provided for CD transports, streamers and the like. They are selected automatically, with front-panel push-button override. The Callia's digital volume control is surrounded by a 'halo' of LEDs that indicates the current level; it can be defeated via a rear-panel DIP switch, so that the output – on unbalanced phono and balanced XLRs – is fixed to full level, and the Callia's full dynamic potential realised.

No remote handset is supplied.



However you do get an independent analogue volume control for the headphone amplifier, the sensitivity of which can be adjusted by two more DIP switches. The 6.3mm output (no provision for balanced 'cans' here) joins it on the front panel, alongside a row of LEDs that indicate the currently-selected source and the type of signal being converted. They are particularly useful when using the Callia with a computer via USB as you'll be able to troubleshoot software configuration issues and ensure that the unit is getting your music in the best possible way.

The optical and coaxial S/PDIF inputs can go as far as 24-bit/192kHz. Take the USB route, though, and you can go all the way to 32-bit/384kHz (the Callia internally 'decimates' this to 192kHz, though). Thanks to DSD-over-PCM (DoP), you can feed DSD128 (decimated too) and DSD64 material into the Callia – a feature that's not supported by Prism's existing pro-use products. Note that DSD64 and 64x48 DSD variants can be received via S/PDIF, courtesy of DoP. Furthermore, a final DIP switch enables some types of DSD stream to be accommodated without the risk of clipping. You cannot fail to be impressed by such attention to detail.

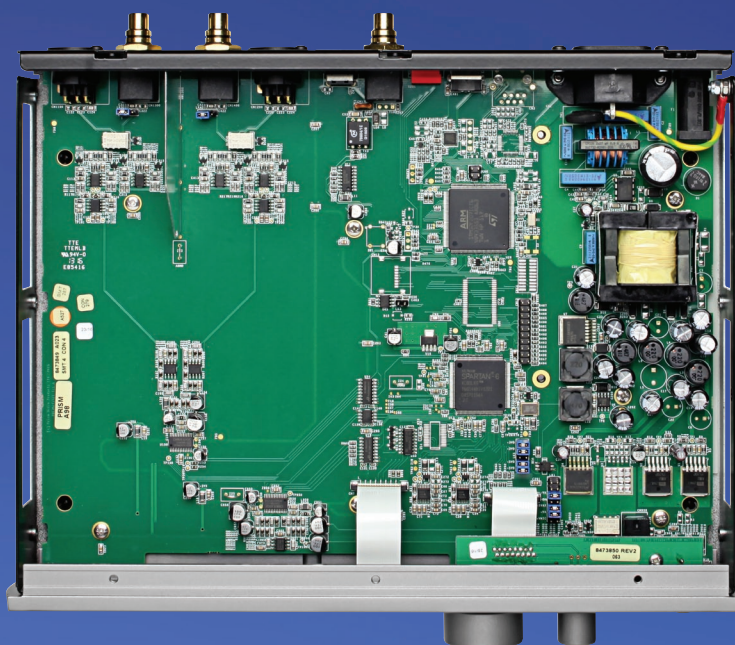
The converter circuitry is a complex and original combination of 'standard' Cirrus CS4398 DAC (only the last section of which is used) and proprietary processing implemented

in a Xilinx Spartan FPGA chip – shades of Chord here. Another chip, based around an ARM microcontroller, looks after the USB interface – not for Prism the usual 'bought-in' XMOS solution! Prism supplies the specially-written Windows drivers on a USB stick. Interestingly, DSD is converted into a form of PCM – a 'strange shape', says Ian Dennis – rather than being decoded directly.

The reasoning – claims of better performance – is explained in a very comprehensive 'operation manual'.

SOUND QUALITY

Most listening took place via an Arcam A49 integrated amplifier driving Quadral Aurum Wotan VIII floorstanders; for personal listening I turned to Oppo's PM3 headphones. Primary sources



The neat internal layout of the Callia. Prism's engineers have gone to much trouble to prevent the different sections from interfering with each other – as the spacing between them demonstrates.





A neat and practical layout of rear-panel connectors, given the limited real estate available. The four DIP switches set up DSD headroom, configure headphone sensitivity and determine whether or not the volume control is active.

were a Windows 7 PC (running Foobar2000 and configured for DoP) and a Cambridge CXN streamer (connected via coaxial digital).

The first thing I noticed was just how much detail can be plucked out of a recording. My first musical selection was a DSD64 album of 1996-vintage acoustic jazz - Piltch, Davis and Friends' Take One'.

I got real insight into this intimate performance. Each instrument was beautifully-defined, occupying a definite space within the stereo image; the Callia bestowed upon this 20-year-old recording a living presence. Particularly noteworthy was a cover of the Steve Earle composition 'My Old Friend The Blues' - the melody of which stood out here in its beauty. And when drums entered into the equation - as they do in the Piltch-penned 'Horizontal Blue' - the various percussive timbres and their sense of timing were palpable.

Yes, I'm deliberately using 'hi-fi' terminology here. And that's

everything - warts and all.

So if you want above all else the ability to get inside a piece of music, the Callia should be on your shortlist - for it is gifted with an analytical prowess that will be hard to match in its sub-£2k price range. It cuts through the most complex of mixes, as was discovered when playing a variety of sophisticated studio efforts from the likes of Bowie, Radiohead and ELO. I could hear what each musician is doing. I'm convinced a gentle creak from the drummer's stool would present itself if the recording made it audible! I particularly recommend using headphones for this sort of activity; on which subject the Callia's superb

headphone amp is a good match for the DAC section and has plenty of drive.

The only downside is a lack of absolute warmth. The Stranglers' The Gospel According To The Meninblack' was conveyed with filigree detail but the sheer punch of the synth bass line seemed somewhat subdued.

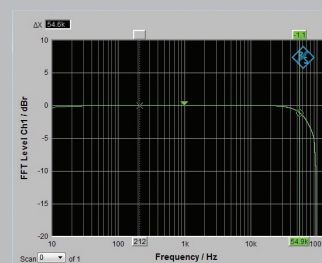
CONCLUSION

The Callia is a fantastic piece of equipment and should be a good match for warm-sounding amps and speakers. It's a DAC whose detail and presence puts it amongst the best in its price range, as a pro DAC able to expose what's deep inside a recording, with clinical prowess.

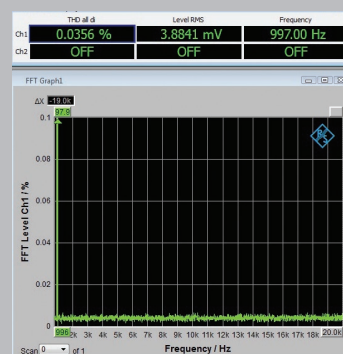
MEASURED PERFORMANCE

The Callia uses a Cirrus Logic CS4398 DAC that offers 120dB dynamic range in Cirrus Logic specs, 115dB in Prism's specs and 116dB under measurement, from its balanced XLR output. From the unbalanced phono socket outputs this figure fell to 115dB. The performance was maintained with S/PDIF input and

FREQUENCY RESPONSE



IMPEDANCE



USB.

This puts Callia in the mid-range, as it were, of current hi-fi digital convertors, with regard to this critical specification. So in terms of dynamic range it offers a good result, but both the Audiolab M-DAC+ (122dB) and Chord Mojo (125dB) manage significantly better.

Distortion at -60dB was very low with 24bit, measuring 0.035% as our analysis shows and this was largely noise rather than true distortion residuals. With CD (16bit) the result was 0.22% as usual, this being from quantisation noise intrinsic to 16bit's inadequate resolution.

Frequency response reached 55kHz (-1dB) with 192kHz sample rate material, falling away above this to the 96kHz upper limit, as a our analysis shows. The TOSLINK optical input accepted 192kHz sample rate, where many others still do not, allowing Callia to work with 192kHz files from Astell&Kern portable hi-res players having only optical output.

Output was 2V from the phono sockets and 3.9V from XLR. The headphone output gave a healthy 4V.

The Callia measured well all round. It offers a good set of results but isn't up with the best in measured terms. NK



You may not get a remote but Prism does supply this impressive 4GB USB stick containing the Windows drivers and operating manual in PDF form.

the thing. Remember when you'd collect records that showed off the full potential of your audio equipment? The Callia is its hardware complement. It's very transparent, with no character of its own and although it allows fine recordings to shine, it lays bare mediocre ones. In all honesty, this is what you should expect from a DAC descended from studio gear. After all, musicians and recording engineers want to hear

PRISM CALLIA
£1800



OUTSTANDING - amongst the best

VALUE - keenly priced

VERDICT

Lacking any of its own character and very revealing, the Prism Callia will appeal to music lovers of an analytical bent.

FOR

- a 'hi-fi' sound of breathtaking clarity and resolution
- good headphone amplifier
- great sense of timing

AGAINST

- ruthlessly-revealing
- no remote handset

Prism Sound Callia
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