

# Cambridge Audio 751BD (€ 1299)

Universal disc players are not especially thick on the ground, so when a new model is launched there's good reason for excitement. **And at just €1299 great excitement.**  
 Review & Lab : Paul Miller.

In the context of almost every product that graces the pages of *Hi-Fi News*, Cambridge Audio has a problem – its wares are almost embarrassingly affordable. But to discount its deceptively slim Azur 751BD Universal disc player as 'too cheap' would be to overlook one of the most comprehensive audiophile bargains of the year.

The story begins with Cambridge's first Universal player, the € 799,00 Azur 650BD (HFN Jun '10) which set the benchmarks for sub € 1000 players. So, while the 650BD lives on, albeit temporarily. The new € 1299,00 751BD is very definitely its high-end big brother. Like its sibling. The 751BD handles CD (HDCD), DVD-V, DVD-A, SACD and BD media, now including 3D movie discs it also supports lossless Dolby True HD and DTS-HD Master Audio decoding through a full 7.1 analogue channels with an additional stereo output to boot.

## Performance platform.

While the 751BD is not an 'upgraded 650BD', in common with every Cambridge DVD/BD player past and present it is based on a Mediatek platform whose high level Linux-based processor handles everything from on-screen display to audio and video decoding. While the latest chip set can support two HDMI 3D-ready outputs, the primary HDMI 1 port in this player is driven instead via a superior Marvell QDEO scaler. The 751BD is also replete with added connectivity. **There's a Wi-Fi dongle and wired Ethernet port to support BD Live and other interactive services via the internet plus an e-Sata connection for playing HD audio and video content from a remote hard drive.** The e-Sata drive is typically a faster option than USB which, for reasons of completeness, is also provided on both the rear panel and fascia. Although currently

**RIGHT: the large silver-coloured chip (top-right) is the Anagram DSP which runs Cambridge's custom upsampling/filter algorithms. The five stereo-DAC chips can be seen running between the back of the disc transport and PSU enclosure**

undisclosed in its comprehensive manual, the 751BD also contains some vestigial UPnP client functionality available via its network connection. The ability to access streamed media from compatible third-party server solutions is likely to be realised via an update in the not-too-distant future. Clearly, Cambridge is taking the description of this as a 'universal' player very seriously indeed but its use of the current Mediatek platform inevitably invites comparison with Oppo's alternative CD/DVD/SACD/BD solution. Nevertheless beyond this shared core the two players diverge quite comprehensively.

Key to the 751BD's distinctiveness as an audiophile product is its bespoke ten-channel audio board. The original and admittedly more affordable 650BD employed a highly integrated multichannel DAC. **By contrast, the 751BD includes a SHARC processor loaded with custom 24-bit/ 192kHz up-sampling and digital filter algorithms, feeding no fewer than five Wolfson WM8740 stereo DACs.** The analogue output stage is a multichannel

version of the tried-and-tested circuit used in Cambridge's 6-series CD players. I should say that while the WM8740 is not the most sophisticated DAC available from Wolfson, it's a great choice here if for no other reason than its internal digital filters can be disabled in deference to Cambridge's own.

## On the menu tonight

As ever with these complex multichannel players, the audiophile needs to be very mindful of the set-up menu, particularly as many of the key parameters are now alarmed at HDMI rather than analogue outputs for example, if you set SACD to 'DSD' in the Audio Format Setup menu then you'll get absolute nothing from the analogue outputs. DSD refers to the bit-stream delivered over HDMI. To listen to SACD directly from the players, you'll need to select 'PCM' from the Audio Format Setup menu and then Multichannel, Stereo or CD mode from the entirely separate Playback Setup > SACD Priority menu.

Similarly, it's also worth visiting the Audio Processing > Speaker Configuration





menu and set all 7 main channels to 'Large' and ensure the sub-woofer is set 'on' to avoid any unnecessary bass management. I'd also recommend you set the Down-mix mode to '7.1 channel' even if you're listening in a two-channel system. Provided you select the appropriate stereo layer/stream from the disc media menu.

If you think the player is lacking in bass clout or sounds distorted at low frequencies then you've almost certainly got one or more main channels set to 'Small' – and this is even the case if you're disheartened because these menus have caught out professional reviewers in the past!

Once you've got the 75BD foundation running smoothly, then you can experiment with this three digital filter options that are selected directly from the front panel rather than via remote or set-up menu. The various Linear, Minimum and Steep filter modus were first implemented in Cambridge's superb DacMagic converter (HFN Feb '09), the code derived from a joint project between Cambridge's engineers and Anagram Technologies(see box-below)

**Marvellous images**

In response to those readers who have asked me make mention of picture performance, here's a word or two. Picture quality at 1080p is now markedly improved over the integrated scaler utilised in the 650BD, the Marvell QDEO solution feeding HDMI offering smoother transcoding of 50/60Hz

movies than HDMI 2 with full support for 30/36-bit Deep colour, should you have a compatible display. Colours are a little better saturated, video noise more sympathetically handled and the whole visual experience arguably that bit better realised than we'd have any right to expect from a player at the price.

**The air was blu**

I imagine we'll need read some online home theatre reviews with the 751BD assessed through its HDMI output into a external AV receiver. This tells you about the Mediatek processor but nothing about the sound of the player with CD, DVD-A, SACD or BD Music media. With this analogue outputs hooked into my Krell S-1200 multichannel processor/preamp the true

**'I failed the Fruit Pastille challenge and sat, open-mouthed**

potential of Cambridge's analogue stage was revealed. And what a job its engineers have done, for even well-known favourites like Dire Straits' Brothers in Arms (Vertigo CD 824499) took on a very fresh aspect, the keyboard opener to 'Money for nothing' preparing 3 broad and open acoustic for the ensuring crack of percussion and free and easy bass.

Easily escaping the bounds of my B&W 802 loudspeakers (p86), the airy staging of this track, and album as a whole, is realised by precious few CD spinners, let alone a highly integrated Multi-format player such as this. Brothers... also proved an ideal vehicle with which to test drive those digital filter options,

**ABOVE: More badges than buttons, the 751BD is almost invariably driven by its remote control. Disc loading is very fast, the latest Mediatek engine making light work of Java-heavy BD's**

my preference wavering between Linear and Minimum Phase. The former let little of the brassy percussion to the imagination while lifting Knopfler's energetic vocals clear into the room with no apparent effort. Minimum Phase was subjectively smoother but also a little less open and transparent. I ended up where I started, with Linear Phase in tow.

**Sweet success**

With CD offering such a spirited and open-hearted sound the temptation to graduate directly to hi-res multichannel audio without first stepping through stereo SACD and DVD-A was a real 'Fruit Pastille challenge'. Needless to say I failed and within seconds was sitting open-mouthed transfixed by the swirling clarity of Mozart's Violin Concerto in D Major presented on the 21 label (2138D). Delivered in lossless 5.1 DTS-HD Master Audio at a full 24-bit/192kHz per channel, the Cambridge 751BD stepped confidently up to the mark, building a genuinely believable picture of the church venue and the circular configuration of the performers as strings, high and low. Shimmered in a torus that enveloped the room.

I've heard this piece sound a little bolder before, with the Marantz UD-9004 for example (HFN Dec '09), but never more delicately composed as free of compression and clutter. The same recording rendered via multichannel SACD proved instructive, for

**FILTER FORUM**

Not only does the Azur 751BD employ a SCHARC DSP to upsample all internally decoded media to 24-bit/192kHz but there's plenty of spare overhead to accommodate three different digital filter algorithms prior to the Wolfson DACs. The Linear Phase filter offers a constant group delay, yielding a time-coherent output with limited pre/post ringing and was my preferred option when listening to CD's. The Minimum Phase option behaves like an Aposising filter, freeing the impulse response of any unnatural pre-ringing but increasing the energy of its post-ringing and incurring a non-linear group delay. The final Steep filter option is the classical brickwall approach that offers little damping of any pre/post-ringing but provides a linear phase output with excellent attenuation of any digital images immediately outside of the audio range.



**ABOVE: the 751BD's speaker configuration menu cycles through size, distance and level (Small) xover frequency is set in another menu**

# LAB REPORT



**ABOVE:** Left to right - Ethernet and secondary HDMI ports, component/composite video, USB (here with wireless receiver), e-Sata port, primary HDMI out, opt/coax digital audio and 7.1 channel plus stereo RCA analogue audio outputs

here the 751BD sounded rather less lucid, the flighty exuberance of the violins clipped and the vaults of the church seemingly diminished. Evidently the player's downsampling of SACD to 8.8 kHz LPCM is insufficiently transparent and Cambridge's latest multichannel analogue output too revealing for this format to be enjoyed at its very best. DVD-Audio is another matter. *Faith Hill's Cry* (Warner 48001-9) sounded consistently punchy and detailed in both multichannel and stereo guises, the latter benefiting from post-production input from *Doug Sax*. This early 5.1 channel mix attempts to place the vocalist and harmonies smack inside the listener's head. But demands very accurate speaker placement to achieve the desired effect. The 751BD certainly played its part, its uniform freedom from added colour the strident but untiring articulation and very quiet background of all channels combining to yield a very organic, holistic soundfield.

### No spiky sound

Not that the 751BD is a softy at heart, for it's more than capable of reacting to the more well, 'grungier' of rock recordings with a fearsome energy. Thus I found myself pinned by *'Four Chords That Made A Million'* from the Porcupine Tree's *Lightbulb Sun* (Kscope DVD-A 102.) The powerful drum sound thundering all about me while the over-processed vocals and reverb held court at the front of the room. Intense, certainly but musically energising rather than a muddled aural assault.

That's the 751BD in a nutshell – very composed, delightfully

transparent, impressively extended trough bass and treble and never less than wholeheartedly engaging.

This is no less true of external media – just pop a USB stick into the 751BD, select 'Music' from the menu and then scroll through the albums and tracks it contains. My (FLAC) rip of *Massive Attack's Helgoland* positively thundered from the 802s, the band's trademark subsonic bass register delivered with stunning authority – deep, solid, tuneful and free of waffle. Powerful albums like these also demonstrate the 751BD's crafty avoidance of musical trouble. It simply never bites off more than it can comfortably chew, so if there's detail missing, you just don't notice!

I'll wrap –up this review by returning to Blu-ray and another 21 recording. This time Arne Nordheim's *Cikada Duo* soundscape (2139BD).

And his rather extreme cascade of synthesiser, piano and percussion which provoked a genuine sensation of acoustic height via the 751BD. This feeling that instruments are dripping from the ceiling is a contrived feature of the composer's work, but it takes a very good player to realise his intent. So if you ever get the opportunity to hear both in action, give yourself a treat and grab it with both ears.

## HI-FI NEWS VERDICT

Rightly close to offering all things to all audiophiles and cinephiles alike, the Cambridge Azur 751BD shows, once again, we must never judge a book by its cover, however mundane its face.

Moreover, this multi-format player demonstrates the Cambridge team's unerring grasp of how to engineer superlative sound quality into an economic package. Lord knows what they'd achieve if cost was no object....

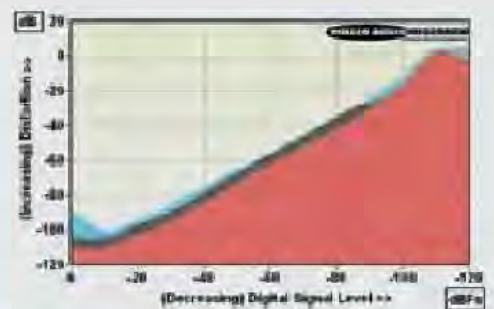
Sound Quality: 85%

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I'll start this lab report where I normally sign off and suggest. For the fullest information, you download the various QC suite test reports on the 751BD's CD, SACD, DVD-A, DVD, Dolby and bass management performance via [www.hifinews.co.uk](http://www.hifinews.co.uk). In a nutshell this is a very fine player, offering a maximum 2.07V output and 107dB A-and SN ratio from all seven (plus two stereo) main analogue outputs. Distortion varies from 0.0003-0.0028% (20 Hz- 20 kHz) with CD to 0.0002 - 0.004 % with SACD and 0.0002-0.0035% from 6-channel 24-bit/96kHz DVD-A Graph 1. Below. Illustrates that 24-bit BD/DVD media (red infill) has a slight edge over 16-bit CD but the consistency of the distortion trends versus digital level is very impressive indeed.

As with other Mediatek engines, SACD is down-sampled to 88.2kHz. Cambridge, however, then upsamples this to 24-bit/192kHz prior to conversation through live WM8740 DACs. Nevertheless because downsampling to 38.2kHz occurs first, the SACD response is limited to /0.7dB/30kHz and /10dB/40kHz (96kFs) and -4dB/60kHz to -31dB/80kHz (192kFs, Linear filter.). Jitter is fabulously low, thanks to the upsampling process. Achieving 40psec with 48kHz media -10psec with 96kHz media and -50psec with resampled SACD (see Graph 2. below).



ABOVE: Distortion versus digital signal level over a 120dB dynamic range. 24-bit BD / DVD (1kHz, red) vs. 16-bit CD (1kHz, black; 20kHz, blue)

