

# Primare BD32 (£3250)

Thanks to its universal disc compatibility including native SACD playback, and playback of files up to 24-bit/192kHz, this might be considered an audiophile's dream machine  
 Review: **John Bamford** Lab: **Paul Miller**

**T**ime was when a 'universal' disc player referred to a DVD-Video/Audio machine also capable of playing SACDs – and CDs, of course. The first to appear was Pioneer's DV-747A, in 2002, then considered controversial: such was the rivalry between DVD-Audio and Sony's SACD format.

Since the advent of the hi-def Blu-ray Disc, universal players have been thin on the ground. Naturally all BD players handle CDs and DVD-Videos, but with DVD-A and SACD being of little interest to the masses, only a select clutch of universal players has appeared on the market. D&M has developed a universal BD 'engine' that has appeared in various iterations in luxurious Denon, Marantz and McIntosh players, while US-based Oppo has dominated the affordable end of the world market, with its evolving line of universal players based on platforms from Taiwan's Mediatek Inc.

## SIGNIFICANT OTHERS

Indeed, such is Oppo's dominance that when other universal BD players come to market sporting nominally identical functionality they are often thought of as 'an Oppo in a different box'. Cambridge Audio's recently-introduced models are a case in point, although readers who saw our test of the company's excellent 751BD [*HFN* Aug '11] will know that Cambridge developed its own ten-channel audio board for its player. And so it is with this BD32 from Primare, based around the core of an Oppo BDP-93 but with significant differences under the bonnet to justify its elevated price tag. Of course, the price premium also buys you Primare's heavyweight build quality and chic industrial design, with fabulous OLED front panel display that matches the Swedish firm's EISA Award-winning 32 Series audio components introduced last year.

**RIGHT:** Primare's linear power supply comprises an R-core transformer with separate windings for the heavily regulated analogue and digital supply circuits that are on different PCBs located on opposite sides of the player

As with the Oppo and Cambridge Audio models, Primare's BD32 can play files from USB flash drives and HDDs (FAT32 or NTFS formatted) and eSATA drives too. Trying a selection of files from my 1TB 'digital library' I can confirm compatibility with MP3, FLAC and WAV files (two-channel) all the way up to 24-bit/192kHz – but *not* AIFF.

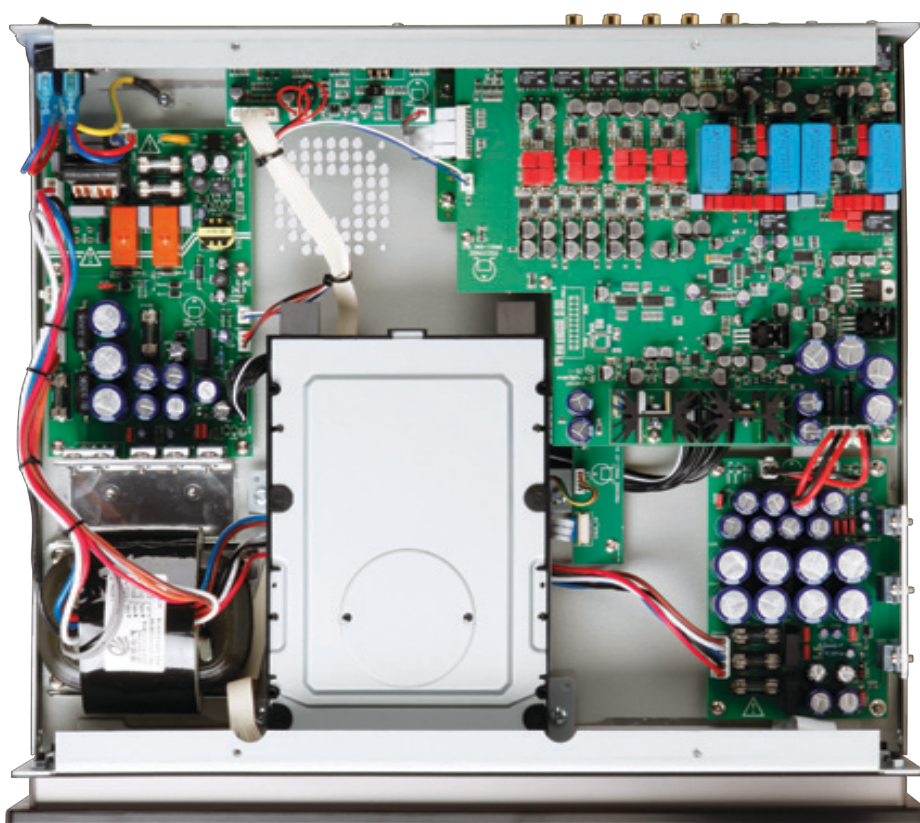
In addition to its Ethernet port to support BD Live and other interactive services via the internet, the BD32 comes with a supplied Wi-Fi dongle compatible with 802.11b/g/n 2.4GHz wireless networks. Currently limited in functionality on this Mediatek platform the player *can* stream audio, video and photos from UPnP media servers on a home network.

For the BD32's dedicated stereo outputs – both single-ended RCAs and balanced connections on XLRs – Primare has employed Crystal's proven CS4398

DSD-capable DAC. The *multichannel* audio stage uses a Crystal CS4382A DSD DAC. A switch-mode power supply is employed to make the BD32 eco-friendly when in standby, but there are regulated linear power supplies individually driving the player's analogue and digital circuits, the SMPS being automatically switched off to avoid any potential interference once the BD32 is fired up. The player's mute circuits are entirely relay-controlled, so you'd better become accustomed to the sound of clicking relays within the Primare's chassis when skipping a disc's tracks/chapters.

## WE READ THE MANUAL

While Primare's set-up menu is obviously based on the same template as that used by Cambridge in its 751BD there are a few subtle – and not so subtle – variations in functionality, quite aside from the BD32's





proprietary balanced analogue and AES/EBU digital outputs. Foremost of these is its native handling of SACD media, which is not only directly available via HDMI (as it is with the 751BD) but is also configurable via the 'Audio Format Set-up' menu for its stereo and multichannel analogue audio outputs. Cambridge's 751BD forces a downsample of all SACD to 88.2kHz LPCM for its analogue outs, but the Crystal DACs at the heart of Primare's BD32 allow SACD to be realised as intended, with a 100kHz+ response.

In common with the 751BD, however, it remains crucial that audiophile owners visit the 'Audio Processing >> Speaker Configuration'

menu and set all seven main channels to 'Large' and ensure the subwoofer is set 'on' to avoid any unnecessary bass management. We'd also recommend you set the Downmix mode to '7.1 channel' even if you're listening in a two-channel system, provided you select the 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 listening to plain vanilla CD through the balanced XLRs. (But these menus have

demonstrably caught out ostensibly experienced magazine 'testers' in the past.)



### PICTURE MARVEL

Via HDMI, pretty much any BD player will deliver impressive images on a high quality display. But, as we already know from the familiar core used in this BD32, featuring dual HDMI 1.4 (3D-capable) ports, its primary HDMI 1 output is driven via a Marvell QDEO Kyoto-G2 video processor.

Consequently the Primare portrayed BD movies such as *Avatar* with spectacular picture fidelity on my 1080P Pioneer PDP-LX5090 plasma display.

Upscaled DVDs looked fabulous too.

Playing various concert discs and multichannel DVD-A and SACDs through a friend's 5.1 home cinema rig one evening made him comment that his three-year-old Panasonic 50in plasma TV had never looked so good, with boldly saturated colours, negligible visible noise and minimal motion artefacts. Nor, it must be said, had he ever heard such rich, deep bass and smooth high frequencies from his 'mid-fi' cinema system when playing hi-res discs. The BD32 is a class act.



### AUDIOPHILE SOURCE TOO

The Primare does indeed sound gloriously luxurious, with an opulent bass character,

**ABOVE:** Chic design matches other Primare components, with OLED display adding a touch of class. Fascia has only basic playback control – you'll need the RCU to navigate BD/DVD menus

multi-coloured midband and sweet HF. Music lovers with purist audio systems won't be concerned about the performance of bitstream versus LPCM output via the player's HDMI outputs (whereby the sound quality will of course ultimately be determined by the decoding, D-to-A conversion and performance of the amplifiers in an accompanying AV receiver) but rather will want to know how good the BD32 sounds as a standalone player, using its analogue outputs.

Hooked up to my two-channel reference system, using the BD32's balanced outputs into my trusty Mark Levinson No.383 amplifier, the player delivered a natural, unforced sound that was unquestionably high-end and very refined. Think again if you're of the opinion that only dedicated CD players can play CDs 'properly', for here is a universal Blu-ray player that sounds quite fabulous with CD: vibrant and punchy, always up-beat and energetic in its musical delivery – and mellifluous too.

Listening to the charming 'Letters From The Sky' by Cape Town's indie rock power trio Civil Twilight, from the band's eponymously-titled debut album of 2009 [Wind-up 60150131522], showed that the BD32 is vivid and quite explicit in nature, adding little character of its own to source recordings. With its stirring John Barry-esque chord sequence, 'Letters From The Sky' demonstrated a nice feeling of air around the piano and voice, although the recording studio's processing effects have clearly added a slightly hard-edged sibilance to the production. I was impressed by the manner in which the Primare handled the brilliant tonality of the track, remaining faithful to the sharp, forward sound while keeping the sibilance in check. Later in the piece, as the layers of sound built up, the drums remained crisp and focused while the 'pump' of air from the lowest frequencies of bass and

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## THE (BASS) MANAGEMENT

Because all Oppo-based players share a common platform it's reasonable to assume they all share the same anomalies in bass management. So the Primare, like the Cambridge 751BD, offers a drop of –5dB in LFE output relative to all main channels set to 'Large' with no re-distribution of centre channel output if this is set to 'Small' unless, oddly, the surround channels are also set to 'Small'. Also, with the LFE/Sub channel turned off, its bass contribution does not appear to be mixed into the main channels unless one or more of them is also set to 'Small'. The problem here is that if either centre or surround are set to 'Small' then the front channels can be overloaded and clip. Counter-intuitively, if both centre and surround are set to small, this does not happen. My advice? Leave all main channels set to 'Large' and the sub channel 'On' almost regardless of your speaker configuration as it'll simply sound better this way. PM

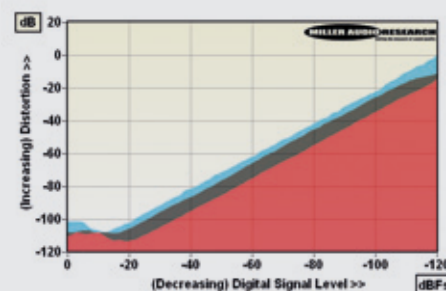


## LAB REPORT

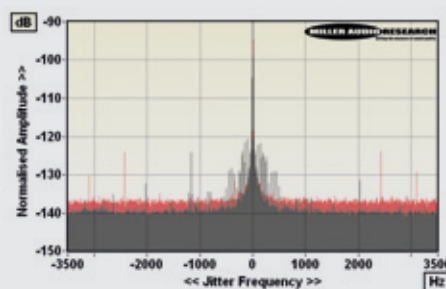
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The full gamut of CD, SACD, DVD, DVD-A, Dolby and bass managements tests and graphs runs into three figures and is best viewed, and compared with those for the Cambridge 751BD, from the QC Suite reports available by clicking on the red 'Download' button at [www.hifinews.co.uk](http://www.hifinews.co.uk). A/B comparisons between the BD32 and 751BD are complicated right at the outset as the former delivers a far higher 4.3V peak output from both balanced XLR and its unbalanced RCA connections. The A-wtd S/N ratio is commensurately higher too at 113.3dB (balanced XLR) and 110.0dB (single-ended RCA) while distortion is lower via XLR at 0.00012-0.001% across the audio range but fractionally higher, thanks to a 3rd harmonic, at 0.007-0.001% via the unbalanced RCAs. THD via 24-bit BD/DVD is uniformly lower than with 16-bit (CD) [Graph 1, below].

Interestingly, the high frequency crosstalk is worse via the XLRs (-120dB to -62dB) than via the RCAs (-120dB to -95dB, 20Hz-20kHz), probably due to differences in capacitive coupling in the layouts of these analogue circuits. Low-level linearity is superb via native SACD with errors of just  $\pm 0.1$ dB over a massive 130dB dynamic range while the response rolls away by -11dB/60kHz to -37dB/100kHz. 192kHz DVD-A and WAV/FLAC media (via USB stick) offer a flatter response still, falling by just -1.7dB/60kHz and -4.0dB/90kHz. There are no alternative filter settings in the BD32, stopband suppression amounting to 107dB (CD), 103dB (48k DVD) and just 22dB with 96k DVD. Jitter is fabulously low at 40psec via SACD with PSU-related jitter amounting to just 85psec affecting LPCM sources on the RCA outs only [see Graph 2, below]. PM



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)



ABOVE: High resolution jitter plot comparing 24-bit BD/DVD (red) with SACD (black). Mild PSU sidebands

### HI-FI NEWS SPECIFICATIONS

Maximum output level/Impedance	4.3Vrms/97ohm (XLR out)
A-wtd S/N ratio (XLR / RCA)	113.3dB / 110.0dB
Distortion (1kHz, 0dBfs/-30dBfs)	0.00012% / 0.0016%
Distortion & Noise (20kHz, 0dBfs/-30dBfs)	0.0009% / 0.002%
Frequency response (20Hz-20kHz)	+0.00dB to -0.11dB
Digital jitter (CD/SACD/DVD/BD)	116/37/85/45psec
Resolution @ -100dB (CD/SACD)	$\pm 0.2$ dB / $\pm 0.1$ dB
Power consumption	45W
Dimensions (WHD)	430x106x375mm



ABOVE: Left to right – ethernet and secondary HDMI ports, component/composite video, USB and e-Sata connections, primary HDMI out, opt/coax digital audio and (above) 7.1 channel plus stereo RCA and balanced XLR analogue audio outs

kick-drum served up a visceral wallop in my listening room.

Bowed string bass appeared richly textured and went very low indeed when playing *Renaissance*, a composition from the 1995 Al Di Meola/Stamley Clarke/Jean-Luc Ponty collaboration *The Right Of Strings* [Gai Saber 7243 8 34167 2 1]. Violin and acoustic guitar had good body and form within the stereo image, together with lifelike transient attack – the BD32 resolving fine detail to expose each performer's personal acoustic space.

In recent times I've enjoyed cherished moments with price-no-object high-end CD players costing as much as luxury cars – and a few tasty standalone DACs to boot – but didn't feel in the least bit short-changed listening to the BD32. Audiophile reference recordings such as Sheffield Labs' direct-to-two-track 'Gone With The Wind' from *James Newton Howard And Friends* [Sheffield Lab CD-23] were delivered with startling realism, the image of musicians performing between and behind my speakers seeming uncannily real.

### SO FORGET THE MANUAL

Stereo SACD playback was stellar. Barb Jung's arrangement of the classic 'Lilac Wine' from her *Just Like A Woman (Hymn To Nina)* SACD [Linn AKD 309] sounded as vivid as I have ever heard it, the piano deliciously resonant and the emotive phrasing of Mark Lockheart's accompanying reeds adding poignancy to the husky intimacy of Jung's voice.

Perhaps your system already incorporates a high-end DAC with 24-bit/192kHz capable S/PDIF and/or AES/EBU inputs. If so, you'll be intrigued to learn that, despite what it says in the user manual, the BD32 *does* work as a hi-res DVD-A

transport, outputting two-channel data from its coaxial and XLR digital output sockets all the way up to 24/192 from encrypted DVD-Audio discs. But, as you'd expect, the digital outputs are muted when playing SACDs.

I confirmed its capability using a selection of CPPM-encrypted DVD-A discs, including the 24/96 and 24/192 sides of the double-sided re-master of *The Captain And Me* by The Doobie Brothers [Warner/Rhino 8122-78347-9] and ELP's wonderfully grandiose *Brain Salad Surgery* [24/96 DVD-A re-master, Warner/Rhino R9 75980]. Hooked up to a Musical Fidelity M1 DAC, the input(s) locked on, the front panel LEDs that confirm sampling frequency lit as appropriate, and sound issued forthwith from the DAC's analogue outputs!

I A/B'd the sound of the BD32's analogue outputs alongside the M1 DAC's, and can tell you the M1 was trounced by the Primare player itself. For all the M1's agile, crisp sound, the BD32 was more wholesome and full-bodied – more Marilyn Monroe than Kiera Knightley. ☺

### HI-FI NEWS VERDICT

If expensive compared with Oppo and Cambridge Audio models that offer similar functionality, Primare's BD32 can be considered an audiophile bargain in the world of high-end components. Hi-fi perfectionists will certainly appreciate its native handling of SACDs and its plush tonality – it sounds detailed, airy and sophisticated with all recorded media. A worthy universal source for any high-end system.

Sound Quality: 87%

