

# Melco N10 (N10P/PS10)

The model name may be a mouthful, but this new arrival from the Japanese music server specialist aims high with a separate linear PSU. Are two boxes better than one?  
 Review: **Andrew Everard** Lab: **Paul Miller**

By now the Melco brand is very well-established in the 'computer audio' arena, with a range of fairly similar-looking slimline server devices designed to feed music to network players, or directly to a DAC via a dedicated USB output. However, the offering isn't as rare as once it was, with rivals now providing alternatives to multifunction NAS units, and also claiming audiophile credentials.

Clearly Melco Syncretics Inc needed to up its game – hence the two-box digital music library we have here, the £6750 N10, comprising the N10P (N10-H30-E) storage/player and PS10 outboard PSU. The former's model designation indicates the presence of 3TB of storage, and shares the styling first seen in the company's add-on D100 disc-drive and E100 USB hard drive, at £999 apiece, with silver aluminium main casework offset by contrasting side cheeks. This 'new look' is also a feature of the entry-level N100 library, which sells for £1800 complete with a 2TB hard drive.

**BELOW:** The N10P [left] hosts a 3TB Buffalo-built hard drive, supported on compliant mounts. Fully regulated, linear 5V/12V PSUs [right] feed its LAN and USB-equipped Marvell/Lattice microprocessor-based server mainboard

So while Melco has explored the multibox format before, its D100 and E100 units adding disc-ripping capability and expanded storage to its existing models, the concept underlying the N10 is completely different. Whereas previous models from the company have made great play of the quality of their internal switchmode power supplies, this two-box N10 flagship has multiple linear supplies separated out on the end of a five-pin Neutrik-terminated connection cable.

The units are thus reduced to half-width (215mm) enclosures, the short length of the umbilical more or less mandating side-by-side use, or stacking. I guess the company thinks the PSU is sufficiently shielded by the layers of thick aluminium between the two boxes so that extra distance isn't required.

## BUFFALO TECHNOLOGY

As is the case with all Melco products, the storage here is optimised for music and the demands of streaming. One of the advantages of being part of a group that started out in audio, then branched out

into IT and storage – its best-known brand being Buffalo – is that you can custom-build your own hard drives rather than having to source them from a third party.

But Melco hasn't opted for a solid-state drive for the N10, instead using a 2.5in 'small form factor' hard disk drive, mounted in what the company calls its HS-S2, or

Highly Stable Storage System. This places the drive on a heavy stainless steel plate to provide both damping and heatsinking, then tops it with a 3mm plate for increased acoustic isolation.

That rigid aluminium casework, mounted on a steel chassis, further contributes to the vibrational isolation of the N10, while shifting the toroidal transformer and power supply management into the second box greatly suppresses any electrical interference.

In fitting the N10's business end into this smaller enclosure, Melco has taken the opportunity to give the internal layout a thorough reworking but, as is usual in the company's models, no general-purpose IT or PC parts are used: instead everything here is bespoke. The N10P head unit

“Amazing Grace” shows bass definition at its finest’



**LEFT:** There's little to see on the front of the two units, aside from the bevelled new Melco look, but the on/standby switch for the two is on the otherwise blank power supply, while the head unit has simple four-button navigation and a USB port for loading music

has a new low-profile mainboard that's 'optimised for extreme sound quality' using the same RISC processor and circuit architecture as the company's N1Z series.

## CUSTOM TO THE CORE

Two Gigabit Ethernet ports are fitted to the N10. One is designed for direct connection to a network player without the need for an intermediate data switch, the other hooks-up to your main network for online services and control of the unit. In addition a trio of USB 2.0 Type A ports – one on the front, two on the back – accommodates extra storage/backup devices, loading of files from USB storage, and direct connection to USB DACs.

All data pulled in via the LAN is 'rebuilt' and there's a severe packet filter between here and Player port by way of further isolation and digital signal conditioning. As a matter of course, the N10's custom mainboard is optimised for clocked rather than (potentially noisy) burst data just as the core processor has multi-threading

disabled. So the N10 is emphatically *not* a standard PC mainboard, with default USB and network data handling, in 'hi-fi boxes'.

As a player – used straight into a DAC – the N10 can handle LPCM files to 384kHz/32-bit in FLAC, WAV, ALAC, AIFF and AAC formats as well as DSD64 to 512 in both DSF and DFF formats, while as a server (into a network player) it can also deliver MP3, WMA and OGG. Of course, that's all dependent on the capabilities of the equipment to which it's playing or serving, but whichever route you choose, the N10 arrives ready to deliver, with both a USB cable and a Cat 6 Ethernet cable joining the power supply link in the box.

Under app control, the Melco N10 can also stream music from a range of online services including Qobuz and Tidal, and direct purchase and download from online stores including *highresaudio.com*. Aside from the ability to drive it via various control apps, including Melco's own [see boxout, below], it's also possible to control the N10 via the simple quartet of front-

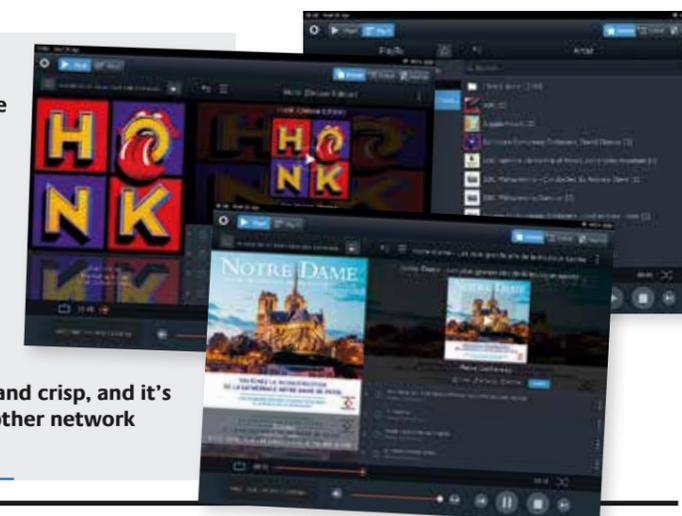
panel buttons and the informative OLED display. And installation is as easy as the navigation: plug the two units together, connect up mains, Ethernet and USBs, press the button under the front left of the head unit, and the red LED on the power supply turns blue to match the lamp that's just illuminated on the other box.

## JURY SERVICE

If the jury's still out on the effect of Melco's libraries when hooked up with a third-party network player – some claim major gains in sound quality, others are less convinced – then the benefits of its direct USB output, driving an outboard DAC, are almost wholly agreed upon. Comparison with a number of laptop and desktop computers, including Windows and OSX models, plus the direct output of my Roon Core/Intel NUC, were illuminating, in that the N10 appeared to bring a little more life and air to the sound, give a firmer bass and in general make music just a little easier to enjoy thanks to its enhanced detail resolution.

## MUSIC HD

The arrival of the dedicated Melco Music HD app will be welcomed by owners wanting to keep the whole experience 'in house', though the basic functions of the N10 can still be driven using a variety of third-party apps, including Bubble UPnP and Linn's Kinsky. However, while the Melco app is available for iOS alone, you'll search in vain for it using your iPhone – it only appears in the App Store when using an iPad, for which it has been designed. That makes sense – this branded version of the mConnect app works much better on a larger screen, and allows the user quick, effective browsing, playlisting and more, as well as access to cloud services including the high-res streams from Qobuz and Tidal, all from within the app. Cover art is large and crisp, and it's easy to select and play tracks from the N10, or indeed any other network storage you may have connected [see inset pictures].



## MELCO N10P/PS10



**ABOVE:** Melco offers network and direct player Ethernet connections from the player [upper] plus two USB-A ports, one to drive a USB DAC and one to connect an (expansion) USB HDD. The 5-pin XLR carries 5/12V DC from the PSU [lower]

However, what's more apposite is that the N10 provides what one could describe as a neutral platform on which a DAC can operate, effectively taking the 'transport effect' out of the equation and allowing the sonic qualities of your digital converter of choice to shine through. Tried with a variety of DACs, from the little Chord Mojo [HFN Jan '16] all the way up to Naim's ND555 [HFN Apr '19], the Melco N10 proved more about the sound of the DAC than any audio signature of its own, as has previously been noted with the server at the heart of editor PM's own Melco-based reference system.

### OLD AND NEW

What's more, the improved clarity the N10 brings to the party is evident across the board, from the most 'audiophile' of recordings through to dense and murky albums of the past. Playing Hawkwind's 1974 *Hall Of The Mountain Grill* [EMI 7243 5 30035 2 4], with its dense washes of synths and driving rock mayhem, it's clear that, with a high-quality DAC, the N10 gives a greater insight into this space-rock mix.

This was obvious even with the live 'You'd Better Believe It', which is a fine example of how good the band could sound at one of their immersive – and mighty loud – gigs.

With an ultra-clean recording, such as the march from Spielberg's 1941 [John Williams At The Movies; Reference Recordings RR-142, 176.4kHz/24-bit], what's noticeable is not just the clarity of the instrumental tone but the sheer explosive punch of the percussion, and this holds true as the track builds to its thunderous conclusion. Fascinating, too, is the focus the

combination of the N10 and the Naim DAC brings to Cyrille Aimée's take on Sondheim on her *Move On* album [Mack Avenue MAC1144; 96kHz/24-bit]. This set almost redefines the concept of close-miked vocals, but on the right system, as here, the quality of Aimée's voice, set against modest instrumental forces, is captivating in its intimacy.

### TOP-FLIGHT

That combination of clarity and dynamics is also much in evidence with the exceptional concert recordings on Béla Fleck and The Flecktones' *Live Art* [Warner Bros 9362-46247-2], from the crispness of Fleck's picking through the grumbling bass and propulsive percussion. Victor Wootten's stunning solo version of 'Amazing Grace' shows the bass definition here at its finest, while the extended jams with some illustrious guests illustrate just how much detail is on offer when the Melco N10 is combined with high-quality digital-to-analogue conversion. ☺

### HI-FI NEWS VERDICT

As ever, it's hard to allocate a sound quality score to a product such as this, as it's more about what it *doesn't* do to the audio. But the N10 certainly provides a neutral platform for your DAC of choice, and when you add in the convenience, its ease of use once set-up and loaded with music, the slick looks of the new two-box format and the overall sense of a product built for purpose, it's surely impossible to ignore.

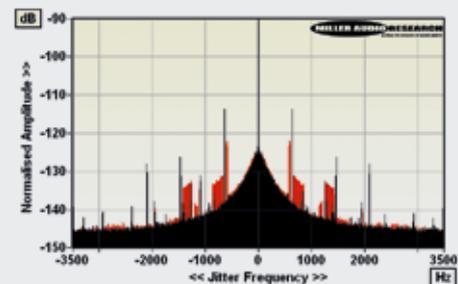
Sound Quality: 88%



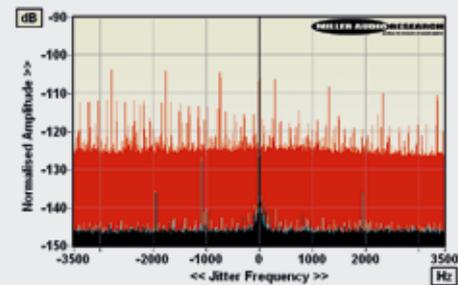
Melco's flagship N10 is not only a music storage device but, like the Pro-Ject Stream Box S2 Ultra [HFN Oct '18], Roon Nucleus+ [HFN May '18], Melco N1ZS20/2 [HFN Jun '17], N1ZS10 [HFN Feb '15], N1AH40 [HFN Aug '15] and N1ZH60 [HFN Jun '16], it is also a transcoding/signal conditioning device. Consequently, any uplift in performance over a conventional NAS or PC/Mac 'delivery service' can only be inferred via a third-party player or DAC. The jitter suppression and/or galvanic isolation of the attached USB DAC is a factor here, so a DAC with excellent data recovery/re-clocking may not express a significant difference. Similarly, a DAC that incurs jitter at the chip level will suffer the same jitter sidebands in the analogue domain regardless of the coherence of the digital data.

For my tests Melco's latest (v1.02) firmware was installed and a series of alternative onboard DACs driven via the N10's 'USB DAC' output. The AC-powered Oppo Sonica DAC [HFN Oct '17] still showed a low-rate skirt of uncorrelated jitter – the cause inside the Sonica itself. A typical PC-to-Sonica USB connection yielded 155psec of jitter, falling to 114psec via the Melco N1ZS20/Sonica [black spectrum, Graph 1] and traded here for a more complex pattern at a near-identical 115psec [red].

Hub-powered USB DACs often provide a good indication of incoming data integrity and noise on the +5V supply, and here iFi Audio's iDSD DAC showed a drop in jitter from 140psec to 15psec. Chord's battery-powered Mojo [HFN Jan '16] witnessed a huge improvement from its typical PC/USB jitter of 50psec and S/N ratio of 103.8dB to 12psec and 113.7dB, respectively, via the N10. In this case, the right channel demonstrated the most significant jitter suppression, just ridding itself of the minuscule residuals seen with the N1ZS20/2 [black versus cyan spectra, Graph 2 below]. Every little counts! PM



**ABOVE:** 48kHz/24-bit jitter spectra from an Oppo Sonica DAC over USB (black, via Melco N1ZS20/2 USB player out; red, via Melco N10 USB player output)



**ABOVE:** 48kHz/24-bit jitter spectra from a Chord Mojo over USB (red, via standard PC; cyan, via Melco N1ZS20/2; black via Melco N10 player output)

### HI-FI NEWS SPECIFICATIONS

Digital inputs	1x Ethernet; 2x USB-A
Digital outputs	1x USB 2.0 Type A; 1x Ethernet
Digital jitter (Oppo Sonica)	115psec (155psec via PC USB)
Digital jitter (iFi Audio iDSD)	15psec (140psec via PC USB)
Digital jitter (Chord Mojo)	30psec (85psec via PC USB)
Power consumption	10W
Dimensions (WHD) / Weight	215x61x269 (273)mm / 8.5kg (total)