hi-fi news

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AUDIO FILE

DIGITAL MUSIC PLAYER

Aurender A30

This high-end digital music machine is a comprehensive package offering ripping, storage, streaming and a built-in DAC. Is Aurender's flagship player master of all?
Review: **Andrew Everard** Lab: **Paul Miller**

For many hi-fi enthusiasts, the idea of 'computer music' is still an alien one, not least because what's claimed to be a simple way of accessing music can seem to be extremely complex. After all, unless you're going to listen to everything via online streaming you need a means of ripping your existing discs, a way to tidy up the metadata tags used as signposts for indexing and search, and of course somewhere to store all the music files. And that's before you even think about how to play it.

Korean-based Aurender has the solution, in a range of server/streamers, of which the £19,000 A30 is among the most comprehensive, adding to internal storage and streaming capability a slot-loading TEAC CD transport, to rip music onto its internal drive. If such a rip/store/stream configuration seems familiar, it may be from past reviews of products from another Korean company, Novatron, and its range of Novafidelity units [*HFN* May '19]. In practice, Aurender's products are pitched somewhat higher, as the pricing suggests.

CACHE FLOW

In an age where so much hi-fi equipment is, at heart, a music-playing computer, with varying emphasis on the first and second parts of that description, the claim for Aurender is more thoughtful. Along with other high-end brands, such as Melco [*HFN* Jun '19], rather than starting with the processor hardware then working out a way to make it sound good, Aurender begins with the audio engineering, and then incorporates the computer stuff.

For example, look at how the A30 stores and serves music: the main storage here is a single 3.5in 10TB hard drive – for which much praise, as so many 'audiophile' servers of this kind have a relatively paltry capacity of just a few terabytes maximum,

requiring extra drives to be hung off them for larger music collections. However, following the belief that solid-state drives, or SSDs, are better suited to music playback than old school spinning-disk storage, the A30 caches music on its way to playback via a 480GB internal SSD.

OK, so not everyone agrees with the 'SSD good, HDD bad' view – Melco, for example, sticks to 'audio optimised' 2.5in miniature HDDs in its digital music library machines – but it's good to see Aurender taking the trouble to buffer its data from the perceived effects of the way in which it's stored. And it does so without what would be the considerable expense of all-SSD storage, or limiting the capacity of the A30 to that of a couple of SSDs.

The company explains that its system 'minimises wear and tear on the main library hard drive. By caching files to the solid-state drive for playback, electrical and acoustic noise resulting from spinning

disks, moving heads and motors are also completely eliminated', and adds that 'If a selected song or album is already cached to the solid-state drive, the hard drive remains asleep'.

CRITICAL LISTENING

Also employed in the quest for better sound is a fully linear PSU, with extensive shielding to keep noise away from the DACs and audio electronics. In fact, the A30 uses no fewer than four toroidal transformers, powering the server system, digital output, and the dual DACs, while a capacitor-based uninterruptible power supply protects the unit from power outages. For all that power supply separation, Aurender also provides a 'Critical Listening Mode', which shuts down the CD-ripping electronics, the panel illumination and some other background functions, thereby reducing noise and allowing system resources to be dedicated to the task at hand.
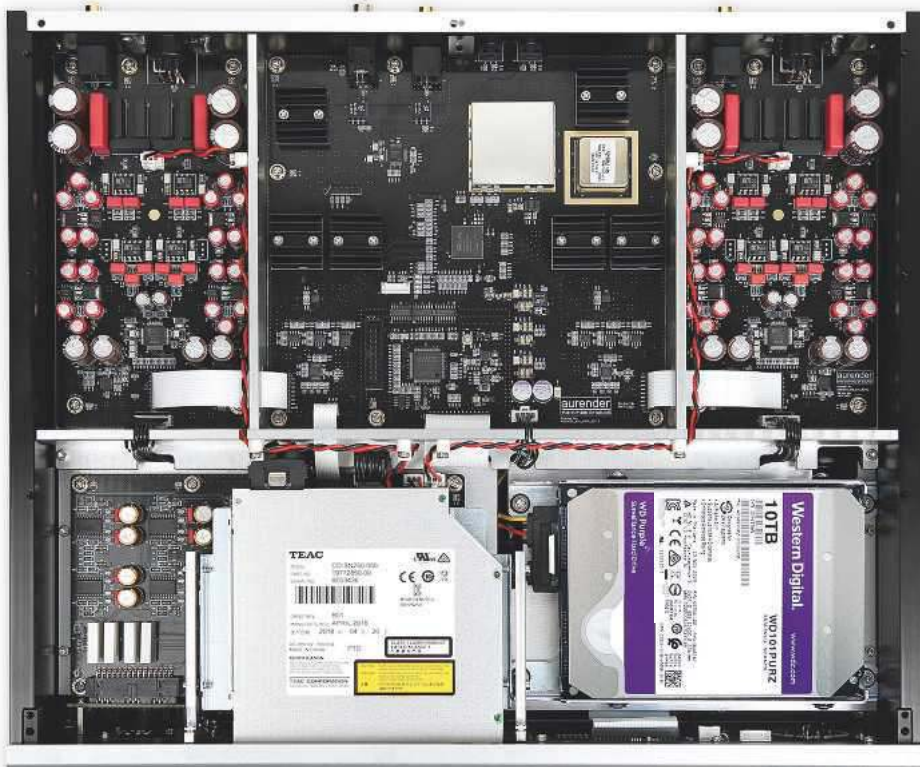
RIGHT: Multiple linear PSUs [beneath] serve the 480GB SSD cache for music playback, TEAC CD drive and 10TB storage HDD [bottom], Intel N4200-based motherboard [top] and dual-mono AK4497 DAC/analogue boards [top, left/right]

Dual-mono AKM AK4497 DACs feature in the analogue section, the A30 providing both MQA decoding and upsampling to 705.6/768kHz for all PCM-based files, as well as DSD up to DSD512. In addition there are user-adjustable digital filters plus the facility to manage analogue filter current [see PM's Lab Report, p67], and the master clock generator is implemented on FPGAs for accuracy and jitter reduction.

As well as both RCA and balanced XLR analogue outputs, usable at either fixed level or straight into a power amp with variable level, the A30 also offers a shielded, low-noise USB output, allowing it to be used with an outboard DAC. Standard digital inputs are included, and the A30 incorporates a dedicated headphone amp section, with a choice of three front-panel sockets for conventional and balanced headphone connections.

USB hard drives or memory devices can be connected to two sockets on the rear, allowing playback from those devices and back-up possibilities – a wise move if one chooses to put all one's musical eggs into one spinning hard drive basket. Meanwhile the onboard streaming section can also address external network storage via its Ethernet connection, as well as allowing the A30 to play online music services.

The A30 can be operated via its front panel or the remote control, but is best navigated and operated via the company's Conductor app on iPad or Android tablet [see boxout, below]. This provides an excellent user interface, and even a choice of themes to suit the user's taste. Both Qobuz and Tidal streaming are embedded in the app, which does a good job of integrating these services with the user's own music library. The A30 also sorts out and tidies up the metadata stored with your music, not only allowing you to find it to play, but also providing information during playback.

🎵 QUICK START

Although I was slightly daunted to unbox the A30 and find only a Quick Start Guide for every model in the Aurender range except the unit I was hefting onto the rack, this player is (almost) falling-off-a-log simple to get up and running. In practice

'The A30 powered out the massive climax of "Mars"'

I was soon loading music onto it over my network, and exploring the comprehensive options on the Conductor app. It was able to bring together my own music library on a big QNAP NAS, Tidal and Qobuz, and its own internal music store, and playing any of them proved very straightforward.

What's more, for all of its impressive bulk, weight, and of course price, the A30 just gets on with the job of making music in an entirely unassuming fashion, and it's easy to overlook just how well it is doing things, so slickly does the music flow. It's pretty much connection-agnostic – RCA or XLR, fixed or variable, along with an exceptional-sounding headphone section – and handles all formats from ripped CDs right up to ultra-high DSD sampling rates with equal grace and directness.

You can even set it to pause slightly when switching between formats, avoiding any clicks or pops while the A30 gets its digital act together, which is as good an indication as any how well-sorted a piece of hardware this digital music player is. ➔

BETTER METADATA

Switch from 'physical media' to computer stored music, and you enter the shady world of metadata – inaudible extra information that enables a player, and thus its user, to navigate a library of music and enjoy additional information about what's being played. How music is tagged, and how the player handles those tags, can make or break the listening experience, even down to the way a specific player interacts with data offered up by a particular UPnP server package.

Aurender handles this by having its own 'Smart Tag Editor' built into the A30, letting the user dive into the metadata and tidy things up. You can alter tags for artist, genre, composer and conductor for a whole album, or just a single track, just by clicking the information on the Conductor app [pictured, right]. You can also edit artwork, designating front and back covers, or changing the picture. The system will search the Internet for a cover image for you, or you can even snap the album cover with the camera on the device running the app, and then use that picture instead.

ABOVE: At the rear are pairs of coaxial (RCA and BNC) and optical S/PDIF inputs, one USB Audio Class 2.0 output and balanced (XLR) plus single-ended (RCA) analogue outs. Ethernet and two USB 3.0 ports support network connectivity and file transfers

Clean, detailed and precise: that's the best way to describe the A30, and while it doesn't deliver the biggest or most romantic of sonic pictures, there's much to admire in the way it handles rhythms and dynamics, and the focus of the images it creates. Play a set such as the Michael Stern/Kansas City Symphony recording of Holst's *The Planets* [Reference Recordings RR-146; DSD64], and the A30 is as adept powering out the massive climax of 'Mars' as it is with the ethereal voices of 'Neptune'. Yes, some audiophiles may require a little more warmth and generosity in the sound, which just occasionally can be a little too dry, but things are natural and fluid, with no hint of the mechanical about them.

SPELLBINDING CARE

This is apparent in the sweeping soundscapes of Max Richter's music for 'Ad Astra' [Deutsche Grammophon, n/a cat no], mixing spacey voices and instruments with stabs of driving electronica. As ever with the A30, all musical elements are very much in place, and the fine detail extracted with exquisite, spellbinding care – but there's no suggestion of the 'soundscape' being viewed through rose-tinted spectacles.

By way of contrast, the close-detailed yet resonant sound of Stile Antico's polyphony on *A Spanish Nativity* [Harmonia Mundi 902312DI; DXD 352.8kHz/24-bit] played more directly

LEFT: Aurender's hand-held remote governs input and volume plus basic navigation of the menu. For all else, use the app [p65]

into the A30's hands, for here the delineation of the ensemble's voices and the sense of the acoustic space around them was deeply impressive. And with the 'one take' jazz of Angelo Verploegen and Jasper van Holten's tribute to celebrated Ellington tracks, *The Duke Book* [Just Listen JL019; DSD512], the player seemingly revelled in the simple instrumentation of horn and drums, delivering a real close-up view of the two musicians.

If all that sounds a bit 'hi-fi', it's because that's the way the A30 sounds – clear and to the point with everything under tight control. As a result it delivers a sound that's packed with detail, more so even with CD rips that I suspected sounded a smidge better than the original in some cases, thanks to the multiple-reads and error-correction used in the ripping process.

Even with pretty raw-edged music, for example some of the bluesier tracks from ZZ Top's *Rio Grande Mud* [from *The Complete Studio Albums 1970-1990*; Warner Bros, 192kHz/24-bit], the A30 kept its cool. Here, where the band winds up its sound into the form for which it would become famous, the A30 makes every nuance clear without the merest suggestion of harshness. Its sophistication never slips... ⏻


HI-FI NEWS VERDICT

There's no denying that the A30 is a remarkably comprehensive device, and – from its stylish lines and display through to the slick Conductor app – clearly one that's been thoroughly thought through. It handles a huge range of formats, is easy to configure and a delight to use. Settle on a favoured digital filter and 'current mode', and few network/ streaming DACs will deliver so much musical information.

Sound Quality: 86%

| 0 | - | - | - | - | - | - | - | - | - | 100 |

The A30's technical performance is best described by examining its host of user-options. For starters there are no fewer than seven digital filters – a mix of linear phase (Sharp and Slow Roll-Off), minimum phase (Short Delay/Sharp Roll-Off and Short Delay /Slow Roll-Off), a hybrid type (Low Dispersion/Short Delay) and two NOS types (Super Slow Roll-Off 1 and 2). All offer a trade-off between pre and post-ringing (or no ringing in the case of the NOS filters) for greater or lesser stopband rejection (69dB, 5.4dB, 69dB, 5.4dB, 1.5dB, 1.5dB and 22dB, respectively) and treble extension (–0.1dB/20kHz, –5.0dB, –0.1dB, –5.0dB, –3.3dB, –3.3dB and –0.65dB/20kHz, all with 48kHz data). The A30's output is phase-inverting with all these filter options.

Also, the upsampling option and 'current mode' have an impact – the former reducing digital jitter from 155psec (48kHz/ 96kHz) to 130psec, though still slightly 'untidy' [Graph 2, below]. 'Max current' delivers a measurable reduction in high frequency/ high level distortion by improving the overload performance of the analogue output stage from 0.0009% ('less current' mode) down to 0.0005% ('max current' mode) at 20kHz/0dBFs [see Graph 1, below]. Distortion through bass and midrange reaches an impressive minimum of 0.00004% at –10dBFs – hence the rescaling of Graph 1 down to –140dB, putting the A30 in the exalted company of Chord's DAVE [*HFN* Apr '16] and the dCS Vivaldi One [*HFN* Feb '18]. In addition, the maximum 5.3V output is issued from an amazingly low 200mohm source impedance – making the A30 very 'interconnect agnostic' – while the impressively wide 116.8dB S/N is unchanged regardless of current mode, upsampling or digital filter. **PM**
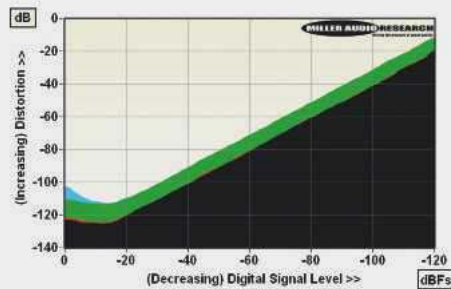
ABOVE: Dist. vs. 48kHz/24-bit level over a 120dB dynamic range ('max current' – 1kHz, black and 20kHz, green; 'less current' – 1kHz red and 20kHz cyan)
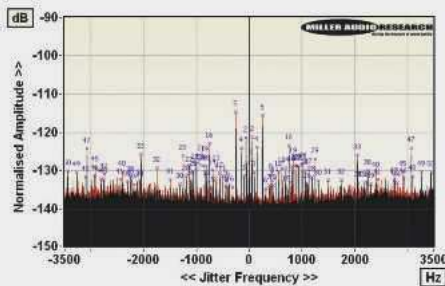
ABOVE: High res. 48kHz/24-bit jitter spectrum (red, native 48kFs, with mkrs; black, upsampled to 192kFs)

HI-FI NEWS SPECIFICATIONS

Maximum output level / Impedance	5.29Vrms / 200mohm (XLR)
A-wtd S/N ratio	116.8dB
Distortion (1kHz, 0dBFs/–30dBFs)	0.00038% / 0.00008%
Distortion & Noise (20kHz, 0dBFs/–30dBFs)	0.00085% / 0.00025%
Freq. resp. (20Hz-20kHz/45kHz/90kHz)	+0.0 to –0.1dB/–1.2dB/–4.5dB
Digital jitter (less curr./max + upsample)	155psec / 130psec
Resolution @ –100dB/–120dB	±0.1dB / ±0.3dB
Power consumption	49W (1W standby)
Dimensions (WHD) / **Weight**	430x141x355mm / 17kg