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Beyond the physical

If, as for many, the CD has become a thing of the past for you, Aurender's A10 presents an exceedingly hi-fi way to play digital music from hard drive and online.

SUMMARY

Aurender A10
music server + streamer
Price: $7999

+ Superb sound quality
+ 4TB storage with SSD buffer
+ Excellent iPad app
+ MQA certified for HDD/Tidal

- iPad-only app, absolutely essential for use

So, what next then? If the CD becomes, as seems overwhelmingly likely, our last physical format for digital audio, and if it declines slowly away without being arrested in its downfall by a last-minute reprieve of affection as has vinyl, then what to follow?

For a while it seemed that the iTunes download model would follow, that we would simply buy files instead of CDs. But already file-based music sales are declining too, in favour of subscription music services. And while hi-fi lovers tend to favour ownership, what to do when iTunes continues to sell us music below CD quality, now subscription services can offer stream qualities surpassing it?

We are in a time when ownership and rental of music are becoming intermingled. A modern hi-fi source might choose to reflect this new mix — as does the Aurender A10, a music player with an internal 4TB server on which to store your music files, plus access to online music services (including the MQA high-res streaming available from Tidal), and a very high-quality digital-to-analogue converter inside, ready to produce the analogue music signal for your amplifier and speaker system.

Equipment

Aurender is based in South Korea — "our products are developed and manufactured in Korea" it says, though "product design and marketing is done in California". And this is clearly a company on top of its game — an update to the A10's system software and 'Aurender Conductor' app came through while in our possession, enabling it to fully unfold MQA-encoded files, the very latest 'thing' in high-resolution audio, and not only from files held on internal storage but also streaming from Tidal. That makes this the first non-Meridian DAC for MQA to reach our listening rooms, and the first we know of which can deliver Tidal MQA without using the Tidal desktop app (see panel above right).

Aurender's range of products has been created with common elements but different units for each possible niche need within the digital playback system — so there are DACs, there are network storage and playback units without their own DACs, there's even a DAC which has its own amps inside. Top-of-the-line is the W20 music player, around three times the price of this unit under review, loaded with high-end elements such as complete battery-powered operation and the ability to work to the rhythm of an external clock. Below that this A10

MQA playback from Tidal

Predictably, the ink was barely dry on our story last issue explaining 'How to hear MQA high-res from Tidal' before changes came through, notably in the form of a system software upgrade from Aurender, which included the A10 we had under review.

This confirmed that the information currently on both Tidal and MQA's websites is not entirely accurate in saying that the only way to access a complete unfolding of MQA into its full high-res form is by using the desktop app version of Tidal for PC or Mac. It's demonstrably not true, because with this system update, Aurender's A10 can stream and decode MQA Masters direct from Tidal.

Tidal is accessed directly using Aurender's Conductor app, and the update, says Aurender, delivers "Full Decoder MQA file playback from the internal DAC, with MQA content status displayed on the A10's front panel. In addition, when used with the A10, the Conductor App will now display MQA file information." A 'Masters' tab has been added to the app for filtering MQA from other Tidal albums. Various other improvements were also included.

As we happened to have this A10 under review, we checked for ourselves, and here, to show the proof, is a screenshot of Bowie MQA streaming from Tidal showing its final 192kHz 'MQA Studio' status, and a grab of the Conductor app showing the Masters tab, indicating 437 albums available. We'd note this seems to duplicate the section under Tidal's own desktop interface under Albums/Masters, which as noted in our article last month, does not seem to be the full MQA catalogue available.

But it's all good news, freeing up MQA for other paths to playback. It should be noted, of course, that MQA's audio quality has yet to be properly established, though A-B-ing the Aurender-rendered Tidal stream of Led Zeppelin's *Gallows Pole* against the full FLAC file version through the A10's DAC, we couldn't pick between them. Other questions over MQA have been raised by a blog on Linn's website, which is interesting reading. For now, though, we revel in the easy access to large numbers of high-res albums ready to play at a fingertip's notice.

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sits as a complete 'music player' solution, the successor to the CD player if you like. It has 4TB of internal hard-disk storage for your 'owned music' and can also play from a connected USB drive and load up from NAS drives on your network. And its app, aptly called 'Conductor', also integrates neatly with Tidal's music subscription service, covering the new music 'rental' paradigm.

Its price reflects solid digital philosophies carefully implemented within. It uses clocking at precise multiples of file frequencies, the clock itself incorporating Field-Programmable Gate Arrays (FPGA) and achieving ultra-low jitter below 100 femto-seconds (that's 0.0000000000001 of a second — light itself would travel only a 30th of a millimetre in such a small amount of time). The DACs are from Asahi Kasei Microdevices (AKM), dual AK4490s which achieve a -110dB noise floor and are particularly highly regarded by developers for their performance during the gradations from silence to music and back again. Operating at 32-bit/768kHz, they enable replay up to 32-bit/384kHz PCM, also DSD64 or DSD128 as DSD over PCM (DoP), and they help the A10 achieve a remarkable 128dB of maximum dynamic range, while the dual-mono configuration achieves a quoted -135dB crosstalk across the audible range. The DACs enjoy their own individual toroidal power transformer for isolation, as do the server and digital sections of the A10.

Should you have even better DACs available, the A10 offers digital output from a fully isolated USB 2.0 output, though we imagine most users will use either the balanced or standard RCA unbalanced outputs into their amplifier of choice. There are two other USB slots into which USB sticks or drives can be plugged to transfer files to the internal memory; one can also be used for direct playback should you manage to fill the internal storage. There is one digital input, an optical SPDIF socket capable to 24-bit/192kHz.

Performance

The A10 has a minimalist aesthetic but is clearly immaculately built, and bafflingly heavy for such a low (55mm high) source component until you open it up and see those significant and separate transformers. In addition to the 4TB internal hard-drive storage, there's a 120GB solid-state drive which caches music as it plays, ensuring the larger mechanical drive never skips a beat.

According to the manual, filling it with files looked easy enough from PC or Mac. We could see the Aurender immediately from our Mac as a network drive, but could not persuade it to mount. Turns out you need to connect with a username and password, which is, by default, 'aurender' and 'aurender' (you can change this in the app). We also loaded from an attached USB drive of music — you use the 'folder' view of the Conductor app to select the files or folders you want, press 'Copy to Aurender', and after a few confirmations the unit pauses while it copies, giving you clear progress information both on the app and the front panel.

Analogue outputs
Balanced or unbalanced outputs can be set to direct (full level) output or volume controlled from the app, the supplied IR remote or the front panel rotary control.

Socketry
One USB slot is a dedicated USB Audio Class 2.0 output for an external DAC, if you don't wish to use the A10's own conversion. The others allow playback – the Aurender A10 can play from one attached USB device, as well as copying files to its own drive.

LEFT: Loading up — select folders on a NAS or USB drive and press 'Copy to'. Or drag and drop files direct from Mac or PC. Simples.

Aurender Conductor app

The Conductor app is for iPad only, but it's well organised and exceedingly versatile.

1 NOW PLAYING shows the current track, and a tap on the artwork brings it to full screen. The A10 searches various online sources to grab metadata and artwork at decent resolution.

2 PLAYLIST EDITOR shows the list of tracks you've added for playback, and it's easy to reorder, delete or jump forward in the queue by pressing something down the list. Playlists can combine content from hard drive or Tidal, and you can also save playlists for future use.

3 BROWSING BUTTONS at the top filter your content by the usual artist/album/song/folder options, but a second row includes direct access to folders of your choice, as well as filters for recent additions, favourites, DSD and high-res PCM.

4 TIDAL BROWSING sees the buttons change to allow filtering of Tidal's catalogue, including access to MQA Masters files, which the Aurender A10 is able to fully unfold for high-res streaming.

Copying a large collection necessarily takes some time, especially as the Aurender then goes through the new files and goes online to find artwork and tag everything with metadata; this can take several hours, with nothing shown in the app as available until it's done. But of course, this is hopefully a one-time thing, and we discovered that later additions are handled delightfully quickly — fast enough that after we had dragged in some new albums and were looking for a 'refresh' button or similar, the app gave a quick flash of realisation, and there they were, ready to play. This seems to be an automatic refresh around a minute after any changes are made.

Since we're already involved with the Conductor app, let's have a look around (see screenshots above). It's a good looking app, though do note that it is for iPad only, with no Android or even an iPhone version available. The unit is almost useless without the app — you can start the A10 and play from the current playlist using the supplied high-quality remote (with its black-on-black button legends), but that's about it. So non-iPad owners should budget to buy an iPad with the Aurender (you may well find it useful for other things, of course!). Also we will give our standard warning for any device which is so entirely app dependent — what happens in 10 years if the company stops supporting it, or disappears, or we don't use

iPads any more? As with Australian TiVo PVRs this year (see *News*), the smartest of devices can become dumb very quickly when support is removed. A PC software control program for the Aurender might provide a longer reassurance of security in this regard.

Longterm tech paranoia aside, though, Conductor is easy to use, and highly versatile.

On the left are transport controls and a 'now playing' panel which can be enlarged to full screen showing the album artwork. Then your current playlist appears below. Playlists are fundamental to the Aurender playback system; as you select songs they are added to the playlist, with the resulting list easy to edit and save for future use. Equally importantly it's easy to clear (though we wish this didn't delete and therefore stop the current track). And as with the best playlist builders it allows a choice of behaviour for new tracks added — play it immediately, play it next, or add it to the end of the playlist.

To browse music, an exploration section slides in from the right, and this toggles between the hard-drive music storage and online music subscription — we were using Tidal. The other option is Qobuz, but this service is not yet available to Australia.

Organisational abilities when browsing your music collection are impressive, with not only the usual choices of 'song', 'album', artist, 'folder','genre' etc, but a second row

of folder listings which you can set yourself, simply by putting square brackets around the folders in the hard drive that you want to see there (though this does throw them out of alphabetical position in the main listing). You can also 'play random', which generates a playlist 500 tracks long, which you can then edit to your whim. There are buttons to filter your collection by recent additions (setting the time period in the options), or to isolate only DSD recordings, or 24-bit recordings, or even 16- or 24-bit files at certain sampling rates, so it's easy to settle in for a session of only high-res recordings. You can also star-rate your favourites and then isolate only the very best. Or just search — the smart search window displays results as you type, rather than waiting till you're done. We gather 64-bit iPads get some advantages here.

These folder options are rearranged when you move to Tidal, and allow pretty rapid browsing and searching within Tidal's catalogue. As noted in the panel on the previous page, under Albums there is a 'Masters' tab where you can see all the MQA-encoded goodies ready to be streamed and 'unfolded' into high resolution. There were 437 MQA albums in this list

The various settings add enormous versatility. They extend to customisation of the front panel display, which can be blanked automatically during playback or set to show text information or two styles of VU meter representation, though we've seen better versions of this — the 'needles' here are quite thin and, perhaps because we had chosen the direct output allowed in a recent firmware update, they mainly just slammed from one end to the other or sat statically.
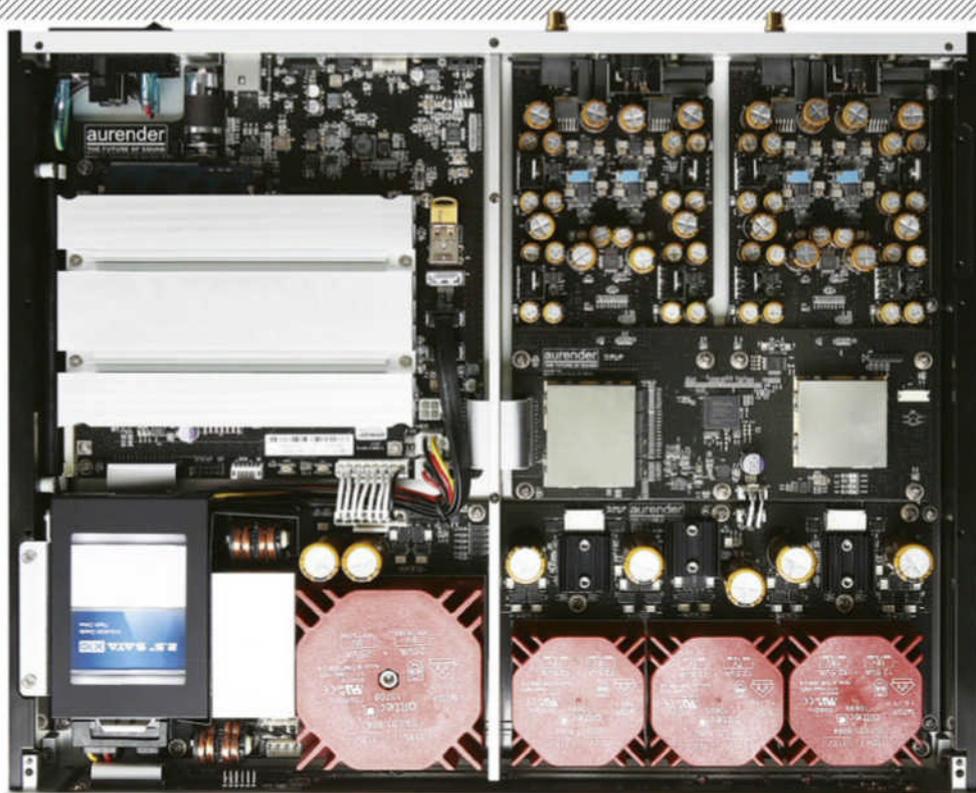
ABOVE: the surprising weight of the Aurender A10 is more easily understood when you take a look inside; separate toroidal transformers power the server, DAC and digital sections of the A10.

So, as you see, it's easy to get enthused about the app and the many *many* options within it. But of course in the end it's the music that matters. And the A10 proved a blinder in this regard. Those DACs and their implementation are superb, and of course they get the best chance to shine thanks to a 120GB solid-state drive cache for playback, so there's no worry or trouble dragging stuff off the mechanical hard drive in time.

Result: immaculate timing and an endless stream of thrilling performances, whether album by album or set to random play. One early example was The Who's *1921* from 'Tommy' (24/96 FLAC, HDTracks), the opening guitar edge of which absolutely cracked in, a 1969 recording sounding as fresh and powerful as the day it was committed to tape; this really does deliver on the promise of master recordings played at home. On Led Zeppelin's *Gallows Pole* (24/96 FLAC, 2015 remasters) the subtle right-channel reverb on the left-channel guitar could be discerned clearly over the silent space of the opening, the layers building up through the second verse, and Bonham kicking in for the third section, the mix maintained as an intact whole even while every element remained individually audible. We usually prefer our Zep on vinyl, but the clarity here was bewitching.

The beautiful AIX recording of a John Gorkha session, 'The Gypsy Life', was handled with the utmost delicacy, a fine example of a system creating an original event in your home. With a good recording and a

solid system on the back of this player, those 'you are there' moments flow in abundance from the A10.

But it also spun unexpected recordings into new light — Talking Heads' *Life During Wartime* (an MQA file from the hard drive) was sharp-edged and funky, its bass solid, its percussion tight, and its soundstaging riveting in its reality. Coldplay's *Adventure of a Lifetime* (also MQA) is quite a processed pop recording, but its potential shortcomings seemed minimised by the Aurender and its energy maximised, so that its drop-then-dance mix changes emerged with a wonderful combination of clarity and party-pleasing glow-band musical delight.

Another classic given life by the superb timing here was *Mood For A Day*, the Steve Howe acoustic solo from 'Fragile', the finger work and picking edges oh-so-immaculately tight, even his left-channel breath intakes given real presence; we don't recall ever hearing this better. We gratefully let the album continue on to *Long Distance Runaround* and the late great Mr Squire's showpiece *The Fish*, its wild complexities of bass delivered without a hint of confusion.

Our experience of Tidal is partly described in the earlier panel, but the integrated access to the service within the app, and its abilities to deliver full MQA unfolding on the fly, certainly makes exploration of Tidal's catalogue a joy. From the Masters section we enjoyed *Jesus Alone* by Nick Cave, his larger-than-life vocal richly emblazoned across the mix. Some MQAs were a little less successful

—Joni Mitchell's 'Court & Spark' seemed a little lightweight, but we're sure that's the file, not the Aurender, which proved effortless in its accuracy throughout our time with it.

And we like its thoughtful touches, such as the option to fade gently when pausing.

For those who love to mess with the finer points of sound, the settings allow users to access the AK4490 DACs' five digital filter options, along with analogue filters to select between "Max Current, Less Current, or Minimum Current" output levels, which Aurender says will have "varying results with each audio system and music content, so we encourage the user to experiment". We're not sure if changes these get implemented on the fly — there was no break in playback indicating they were selected — but we couldn't hear the slightest difference between any of them. But again, the implementation is thoughtful in making it clear and easy to quickly return to the factory defaults.

Watch out when messing with your power plugs — even the Quick Start Guide makes clear that you must power down the Aurender properly, saying that simply yanking the power may result in "unmounting or corrupting the internal SSD drive, crippling or rendering the unit inoperative". A problem given Australia's current penchant for brown-outs and black-outs? We asked Aurender, who replied that *"The long answer is, this normally does not happen, since when an abrupt power down is detected after the unit reboots, the system logs prompt a couple of checks of the hard disk(s) and SSD before starting the OS. It is only when an error occurs in this process (due to a corrupted drive) that the unit halts booting. We have remote support capability and in many cases can fix this type of software level issue remotely."*

Conclusion

A couple of caveats — remember this is almost entirely iPad-dependent, so you will always need an iPad available and charged. And its streaming services include currently only Tidal in Australia, though that could be changed with future upgrades. As for quality of app, we have barely a word to say against it, and for quality of playback, none at all. We loved the Aurender A10 from loading to listening, and if a combination of streaming and hard-drive music serving is what you need, this is a corker. ✛ *Jez Ford*