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AURALiC ALTAIR wireless streaming DAC

by Chris Martens

H*i-Fi+* has covered many AURALiC products in the past, but two enduring favourites would be the VEGA digital audio processor (or DAC/preamp) reviewed in Issue 106 and the ARIES wireless streaming bridge reviewed in Issue 130. The VEGA (£2,995) is widely regarded as one of today's most versatile (high-res PCM, DXD, and DSD-capable) and best sounding mid-priced high-end DACs, while the ingenious ARIES (£1,495) offers the ability to give virtually any DAC or DAC-equipped component sophisticated, high-resolution streaming capabilities. What is more, USB-type music library drives can be attached directly to the ARIES, thus allowing it to serve not only as a streamer, but also as a standalone music server in its own right.

It is easy to see the appeal of the VEGA and ARIES, both of which were arguably products ahead of their time. At the same time, they are separate components that, more often than not, will wind up being used in systems that will also include separate preamps, possibly headphone amplifiers, and power amplifiers. But what about those who might want a component that combines most of the technical features and sound quality of the VEGA and ARIES, but in a simpler, single-chassis format that is substantially lower in price? This, in a nutshell, is the very design brief that AURALiC's new ALTAIR wireless streaming DAC (£1,749) seeks to address.

Viewed as a high performance DAC, the ALTAIR can be considered a simplified, 'junior' version of the VEGA digital audio processor. While the VEGA offers special ORFEO Class A analogue output modules, a slightly higher specification linear power supply, and very subtly different digital filters than the ALTAIR, the two units are in many

respects more alike than not. Both the ALTAIR and the VEGA use an ESS Sabre DAC, employ AURALiC's Femto Master Clock technology for extremely low jitter, provide linear power supplies based on AURALiC's 'Purer Power' noise reduction technologies, and incorporate four user-selectable PCM digital filter modes (labelled 'PRECISE', 'DYNAMIC', 'BALANCE', and 'SMOOTH') that let users adjust the sonic character of the DAC to fit the requirements of material being played.

The ALTAIR and VEGA can accept audio files in AAC, AIFF, ALAC, APE, DIFF, DSF, FLAC, MP3, OGG, WAV, WV, and WMA formats and can decode PCM files ranging from 44.1 to 384 kHz/32-bit resolutions, as well as DSD64, 128, and 256 files. The ALTAIR offers a host of digital inputs including AES/EBU, coaxial S/PDIF, Toslink (optical S/PDIF), USB 2.0, plus a range of streamer/server inputs.

Viewed as a high performance streamer/server, the ALTAIR is patterned directly after the ARIES and provides multiple streamer/server inputs including connections for an optional external USB drive, an optional dealer or user-installed internal HDD or SSD drive, plus Gigabit Ethernet connectivity via an RJ45 jack, and 802.11b/g/n/ac Tri-band Wi-Fi connectivity supported via a pair of small 'whip' antennas mounted on the ALTAIR's rear panel. The ALTAIR, like the ARIES, can stream audio content from many different sources including shared network folders, the aforementioned optional external or internal drives, UPnP/DLNA media servers, TIDAL, Qobuz, AirPlay, Bluetooth, Songcast, and even Roon. About the only differences between the ALTAIR and ARIES involve the fact that the ARIES offers Dual-band Wi-Fi connectivity rather than the ALTAIR's Tri-band Wi-Fi, the ARIES unlike the ALTAIR does not support internal storage, and the ARIES offers an extensive range of digital outputs, where the ALTAIR offers only a single USB digital output.

Like the ARIES, the ALTAIR uses AURALiC's proprietary Tesla hardware platform, which includes, according to AURALiC, "a Quad-Core Cortex-A9 processor running at 1GHz, 1GB DDR3 onboard memory and 4GB system storage." This platform supports the same basic streaming/server functions as provided by the ARIES, but with new features and functions being added over time via an ongoing series of free firmware updates. Examples of such added features now include gapless playback and multiple room playback capabilities, plus a new Memory Playback feature that "allows the ALTAIR to fetch and cache the entire track in its on-board memory or system storage in advance, and then to play locally without any network data transfer needed." For a future firmware release, AURALiC plans to add Room Acoustic Treatment functionality.

Users can command and control all the diverse aspects of the ALTAIR through the included AURALiC RC-1 remote control or through the firm's signature Lightning DS app, which runs on iOS devices such as the iPad

or iPhone. Alternatively, they can avail themselves of third-party OpenHome or uPnP-compatible software, or Roon. For my tests, I stuck with the all-AURALiC combination of the remote plus Lightning DS running on a recent generation iPad.

The graphics-driven Lightning DS software package makes it straightforward, easy, and fun to set up and then to use AURALiC's various streaming-capable audio components, including the ARIES, ARIES LE, ARIES MINI, and now the ALTAIR. Lightning DS serves as semi-automated set-up tool that guides users in a step-by-step fashion to configure the ALTAIR, then to connect it to a home network, and finally to begin streaming music or playing content from attached libraries. I would rate Lightning DS as one of the better applications of its kind, though I could see how some might prefer the more elaborate metadata content provided by competing music software packages from Naim and Roon.

Perhaps the only caveat I should mention is that, in some cases, the combination of Lightning DS used in conjunction with some AURALiC streaming components can prove to be quite router-sensitive, when Wi-Fi connections are used. Lightning DS is not particularly sensitive to throughput speeds, but it does require a router that is good at handling UPnP packets, which AURALiC uses for passing control instructions. One 'go-to' router AURALiC specifically recommends is the Netgear R7000 Nighthawk AC1900 Dual Band Wireless Gigabit Smart Home Router. I initially had some Wi-Fi-related set-up problems with the ALTAIR (problems I had not encountered with the ARIES), but those were resolved with help from AURALiC's helpful technical

support team. Just be aware that, if you buy an ALTAIR, you may also need to purchase an AURALiC-recommended Wi-Fi router to go along with it.

How does the ALTAIR sound? That's a fairly complicated question, given that this component is capable of playing many different roles: streamer/server, high-res DAC, digital preamp, and headphone amp. To seek answers, I installed the ALTAIR in my system along with two other headphone amp/preamps (the Schiit Audio Jotunheim and the iFi Audio Pro iCAN), with the original AURALiC VEGA DAC, with my reference Windows/jRiver Music Center music server, and with four superb, top-tier headphones (the ENIGMAcoustics Dharma D1000, the Focal Utopia, the HiFiMAN HE 1000 v2, and the MrSpeakers ETHER Flow). After trying myriad permutations and combinations of these components, here are some of the fundamental conclusions I reached.

ALTAIR as streamer/server: The ALTAIR performed beautifully as a streamer/server, ►



“The ALTAIR matched that performance while also adding subtle, heightened qualities of three-dimensionality and spaciousness.”



▶ effortlessly playing content from its attached library drive, from Internet radio stations, and from TIDAL. As advertised, the ALTAIR had no trouble at all streaming high-res PCM and DSD content. I compared the ALTAIR's server section directly against my jRiver Media Center music server, with both the server and the ALTAIR equipped with identical music library drives, and discovered the ALTAIR was entirely competitive with if not slightly superior to the jRiver server in musical terms. The jRiver server produced a taut, clear, and well defined sound with plenty of high-frequency extension and air, as I expected it would do based on past experience, but the ALTAIR matched that performance while also adding subtle, heightened qualities of three-dimensionality and spaciousness.

A good illustration of these qualities could be drawn from the excerpt from John Tavener's 'Ikons of Eros' as found in the Reference Recordings *30th Anniversary sampler album* (HDCD resolution), which captures the sound of voices, strings, and percussion performing in a highly reverberant setting. As violins sound higher register notes, for example, you can hear their high overtones echoing within the space, and the same goes for the lingering 'skin sounds' of percussion instruments being struck. Both the jRiver server and the ALTAIR successfully

retrieved this musical information, but the ALTAIR helped that information coalesce so as to create a strikingly realistic sensation that you are listening in a large, church-like space possessed of palpable height, breadth, and depth.

ALTAIR as DAC/preamp: For this part, I focused on comparing the ALTAIR DAC/preamp section to the original AURALiC VEGA. As I made back and forth comparisons, my conclusion was that the ALTAIR sounded much like the VEGA, but with a subtly softer and less sharply focused sound overall. This observation held true across recordings captured at CD resolution levels as well as recordings captured in high-res DSD, DXD, and PCM formats. The ALTAIR's sound is well balanced, tonally rich, and offers very good levels of resolution. But by way of comparison, the VEGA offer noticeably higher levels of resolution, more transient speed and impact, an even better sense of natural, organic warmth (thanks, I think, to its ORFEO Class A analogue output modules), and generally sounds as if its imaginary 'Focus Knob' were turned up to '11'. So, as we might expect, the ALTAIR is very good, but the VEGA is even better. Even so, my thought was that the ALTAIR offered roughly 9/10ths the performance of the VEGA, but at roughly half the price.

To hear the contrasts between the ALTAIR and VEGA, try playing Monty Alexander's 'Calypso Blue, Part 2' from *Calypso Blue* [Chesky, 24/192]. This track captures Alexander's keyboards juxtaposed against an ensemble in which acoustic bass and various Caribbean percussion instruments figure prominently. The track sounds gorgeous through the ALTAIR, as it nearly always does, replete with that lovely quality of three-dimensionality I mentioned above. If heard in isolation, the ALTAIR would likely make even most finicky audiophiles happy. However, when the VEGA is brought into play, things get better still: the action of Alexander's keyboards sound clearer and more lucid, the bass sounds slightly deeper and more like the large wooden instrument it actually is, while the transient sounds of the percussion instruments are more sharply and crisply rendered, and the overtones of higher percussion instruments seem to shimmer more brilliantly and to linger longer upon the air. It's not that the ALTAIR is deficient by any means, but that the VEGA takes ▶



- ▶ everything the ALTAIR does right and renders it with an extra n^{th} degree of precision and musical sophistication.

ALTAIR as headphone amplifier: The ALTAIR, unlike either the ARIES or the VEGA, offers a small built-in headphone amplifier, which can be a great convenience and allows the ALTAIR to serve as a hyper-versatile headphone system in its own right. At the same time, though, my thought is that most of the ALTAIR's cost budget was probably allocated to its streamer, server, DAC, and preamp sections. I say this because the headphone amp section, though admirably clear-sounding and articulate, falls short of being able to drive today's top-tier headphones to their fullest potential.

I directly compared the ALTAIR's headphone amp section to the sound of Schiit Audio's Jotunheim headphone amp and to iFi Audio's Pro iCAN amp, using all four of the top-tier reference headphones I mentioned earlier. In each instance, the third-party amplifier delivered a noticeably more robust, full-bodied, and more three-dimensional presentation. By comparison, the ALTAIR headphone amp section tended to sound drier, more two-dimensional, and more lightly balanced (and thus lacking, to a degree, in weight and warmth). However, in all fairness, I should point out that the ALTAIR headphone amp sounded superb when used with custom-fit in-ear monitors such as my Noble Audio Katana's, which are probably the sort easy-to-drive load AURALiC had in mind when creating the ALTAIR's headphone amp section.

As I reflect back on this review, I find myself continually marvelling at just how much sophisticated technology AURALiC has managed to pack into the ALTAIR, and at a sensible price. While the ALTAIR does not quite match the sound quality of AURALiC's flagship ARIES-plus-VEGA combination, the ALTAIR is arguably the next best thing—and it is a single-chassis component that sells for only 39% of the price of the two components upon which it is based! Whether you look at it from the standpoint of convenience, flexibility, performance, or sheer value, the ALTAIR is that rare multi-purpose component that can play many different roles, all of them successfully. +

TECHNICAL SPECIFICATIONS

Type: Wireless streaming DAC

Digital Inputs: Gigabit Ethernet (via RJ45 jack), 802.11b/g/n/ac Tri-Band Wi-Fi connection, USB 2.0 High-Speed for use with optional external or internal USB music library drives, AES/EBU, coaxial S/PDIF, Toslink optical S/PDIF

Digital Outputs: USB 2.0 High-Speed for connections with compatible DACs

Analogue Outputs: One stereo single-ended output (via RCA jacks), one stereo balanced output (via XLR jacks), one headphone output (via 6.35mm phone jack)

Frequency response: 20 Hz – 20 kHz, ± 0.1 dB

THD+N: <0.0003%, 20 Hz – 20 kHz at 0 dBFS

Dynamic range: 124 dB, 20 Hz – 20 kHz, A-weighted

Streaming services supported: Local uPnP/DLNA library content, online streaming from TIDAL and Qobuz, Internet Radio, AirPlay, Songcast, Roon, and music files stored on external or internal USB drives.

Supported file types: AAC, AIFF, ALAC, APE, DIFF, DSF, FLAC, MP3, OGG, WAV, WV, and WMA.

Supported sampling rates:

PCM: 44.1kHz – 384 kHz at 16 – 32 bits

DSD: DSD 64, DSD 128, DSD256

Dimensions (HxWxD): 6.5x 33x23cm

Weight: 3.2kg

Price: £1,799 or \$1,899

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