

Auralic Altair G2.1

Built as a 'box within a box', and promising a slicker all-round performance, Auralic's G2.1 series now extends to the fully-fledged Altair streaming DAC/preamplifier
 Review: **Andrew Everard** Lab: **Paul Miller**

We've commented previously on the similarity – at least in styling – between many of the products in the Auralic range, and here's another head-scratcher in the form of the Altair G2.1. It's only a little more than the Aries G2.1 'Wireless Streaming Transporter' [HFN Feb '21] – £4599 plays £4199 – yet this model, designated a 'Digital Audio Streamer', is a much more comprehensive product. It comes complete with onboard DAC, a preamp that allows it to drive a power amp or a pair of active speakers directly, and there are even analogue inputs – a line level and MM phono – to reinforce that role as a complete system hub.

Indeed, you can go even further with the option of an internal hard drive to allow the Altair G2.1 to function as a network music store as well as accessing external storage. Specifying it with a 2TB SSD installed adds £400 to the price, while looking around Auralic's retailers finds it with a 1TB SSD fitted for £4699, or a 4TB drive for £4899. All these are reasonable add-on costs considering the premium charged by some computing brands for a storage upgrade.

LIKE LIGHTNING

Bought 'as is', without the internal storage options, this is still an extremely flexible device. Leave aside the analogue capability for a moment, and you can play music into it via optical, coaxial and AES/EBU inputs; connect a computer via its asynchronous USB-B port, or an external USB store using the USB-A; or stream to it over a home network using either Wi-Fi (for which twin antennae are provided) or Ethernet. It also has both Bluetooth and AirPlay connectivity and is also Roon-ready, allowing the Altair G2.1 to be used as an endpoint with a system built around a Roon Core.

RIGHT: One linear PSU [top right] feeds screened areas for phono eq [bottom right], the DACs [top left], ladder volume controls [centre left] and 'Class A Orfeo Output modules' [heatsink, bottom left]. Optional HDD would sit above volume cans

If you don't go down the Roon route, the Altair G2.1 itself supports a range of online streaming services, as well as being able to stream from the user's own network library. Qobuz and Tidal are built-in, as is Internet radio, and it can also work with Songcast and Spotify Connect.

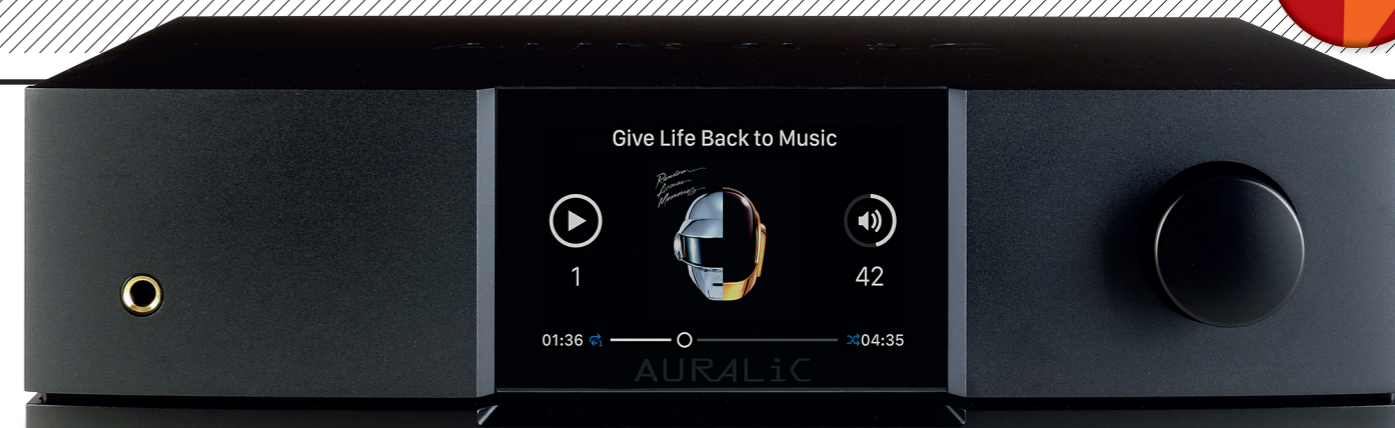
Making sense of all this is Auralic's own Lightning DS operating system, which works in conjunction with the well-sorted app of the same name, and is available for Apple iOS devices. There's also the option of controlling the unit using the Lightning Web Control Interface: it's just a matter of reading the Altair G2.1's IP address from its settings menu, typing that into a web browser, and you're in business.

Both the app and the web version cover both basic operation and detail settings. You can, for example, enable the internal resampling system, upsampling

or downsampling across a 44.1kHz to 384kHz range – all this running under the control of Auralic's custom 'Dual Femto' master clocks. There's also a built-in – and very flexible – parametric equaliser, and you can even tailor the sound to suit your speaker positions, with adjustable gain and distance parameters. It's no substitute for getting your speakers placed correctly, but in the real world it could prove handy.

DIGITAL WIZARDRY

Dig even deeper and there's a huge raft of adjustment available here, including setting a fixed output should you want to use the Altair G2.1 into a conventional amp or preamp. You can also set the brightness and format of the display, the automatic power-on parameters, and select from a range of digital filter options [see PM's boxout, p55]. Having spent some time



ABOVE: The 4in TFT display reveals the library of albums/songs available or in play (inc. cover art) in addition to allowing the user to navigate the comprehensive system/set-up menu

packaging – it may only be 34cm wide but it weighs a respectable 9.5kg.

STRAIGHT TALKER

As I mentioned, I stuck with the 'Smooth' digital filter for the majority of my listening, and used the Altair G2.1 straight into my Naim NAP 250 power amp, as well as connecting it as a line source into the Naim Supernait 3 in my 'other' system, in both cases using my tried-and-tested Neat Acoustics and PMC loudspeakers for auditioning. Regardless of which set-up was employed, the Altair G2.1 proved a neutral and extremely clean source, presenting high levels of detail while never sounding mechanical or artificial. Indeed, it delivered excellent levels of musical involvement

across a wide range of musical genres, again, regardless of the input that I used.

Whether with streams from online services, low-res Internet radio, or hi-res music served up from my NAS, the experience of using the Altair G2.1 was generally a case of 'move along, nothing to see here': the components into which you play it are going to have much more of an

effect on the sound than this unit. True, the performance was very slightly drier when compared to my reference Naim ND555 [HFN Apr '19], which delivers more body and a greater sense of presence and performers being placed before the listeners, but that's hardly a criticism given the difference in price between the two.

Above all, the Auralic Altair G2.1 'communicates'. Play a demanding recording such as the recent Trondheim Symphony Orchestra set of Kleiberg concertos [2L 2L-166-SABD, DXD], and the sheer focus of the sound, and the natural balance of the solo instrument against

trying these filters, I can safely say the one you choose will be a matter of personal taste, and I really wouldn't devote too much time experimenting. Find the one you like – I ended up with 'Smooth', but you may disagree – and forget about it.

Depending on the input you choose, the Altair G2.1 can handle digital datastreams at up to 384kHz/32-bit and DSD512, the higher limits achievable via both network and USB connection from a computer (for which Windows users will need a driver) or USB storage, whether from a connected drive or optional internal storage. The legacy digital inputs – optical, coaxial and AES/EBU – top out at 192kHz/24-bit, but can accept DSD64 via DoP if required.

The analogue line and MM phono inputs bypass the digital wizardry of Auralic's 'Tesla' platform and can be configured to fixed level in a 'home theatre bypass'

mode. These inputs also go straight to Auralic's 'resistor-ladder' volume control and to its proprietary 'Orfeo' Class A output stages to either unbalanced RCA or balanced XLRs. There's also a 6.35mm headphone socket on the front panel, along with a large, sharp and informative display and a single control covering volume and 'push and twist' menu access.

As is the case with all the company's G2.1-series products, the latest Altair features Auralic's interference-busting 'Unity Chassis' design, its copper

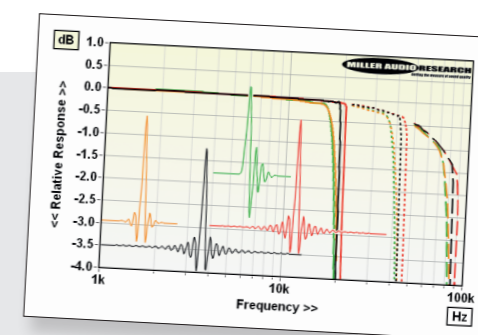
inner case held within a substantial aluminium chassis mounted on sprung feet for mechanical isolation. That's the inside story: the outer impression is of a product hiding its complexity behind a simple and elegant exterior, and with a noticeable sense of solidity when you heft it from the

"The rich weight of the orchestra is breathtaking"

FILTER FLIRTING

In common with the earlier Altair G1, this G2.1 variant offers some user-selectable 'sound tuning' in the form of four alternative digital filters – Precise, Dynamic, Balance and Smooth. Seven pre-programmed filter algorithms are baked into the ESS DAC but it will also accept custom versions, typically generated using MATLAB and then downloaded as C code. For the Altair G2.1 the response is flattest with all sample rates via the Dynamic filter [see inset Graph]. The respective time (impulse) and frequency responses with 48kHz media (solid traces), 96kHz (dotted) and 192kHz (dashed) are colour-coded here in black, red, orange and green. These are a mix of linear phase (Precise, Dynamic, Balance) and minimum phase (Smooth) filters that trade response extension and stopband rejection (99dB, 83dB, 14dB and 18dB, respectively) for reduced group delay and pre-ringing.

For example, 'Precise' [black] is a typical high-order linear phase type with long pre/post ringing and moderate group delay but a flat and extended HF response with a steep cut-off and excellent rejection of aliasing images. Time domain performance is traded for excellent frequency domain performance in a filter ideally suited to lower sample rate media. 'Smooth' [green] offers a contrast with its slightly early but gentle HF roll-off and poor alias rejection, but much reduced 'time domain' distortion. The benefits of this type of filter progressively outweigh any 'negatives' at higher sample rates, but let your ears decide! PM

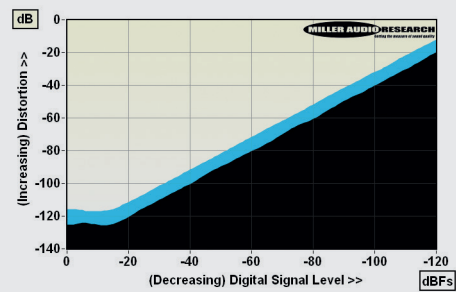


LAB REPORT

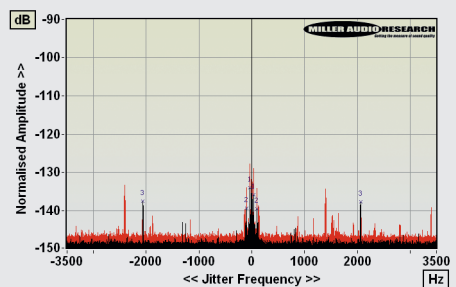
AURALIC ALTAIR G2.1

This generational uplift from Auralic's G1 platform [see *HFN* Feb '21] sees improvements in processing speed, functionality, file format handling and technical performance. The latter is the focus of this report where the Altair G2.1 clocks-up a very high 4.9V output from a remarkably low 200-300mohm source impedance. Not only will this drive any interconnect/amplifier combination but, with a suitable adapter, would also serve as a very effective secondary headphone amplifier. This is a function of Auralic's self-titled 'Orfeo' output stage which, tag-teamed with ESS's tried-and-tested 9038 DACs, maintains a fabulously low 0.00003-0.0003% distortion (20Hz-20kHz) over the top 15dB of its dynamic range [see Graph 1, below]. Although Auralic specifies its own master clocks for the Altair G2.1, the jitter rejection performance of these ESS DACs is already well proven. Here, digital jitter is vanishingly low, with a correlated figure of <15psec across all sample rates and inputs. The lack of any uncorrelated, noise-like, jitter is reflected in the sharpness of the central J-test signal [see Graph 2, below] and this typically bodes very well indeed for the stability and focus of stereo images.

In similar vein, the S/N is a very wide 117dB (A-wtd, re. 0dBV) and resolution good to ± 0.02 dB over a 100dB dynamic range and ± 0.2 dB over a full 110dB dynamic range, suggesting an effective 20-bit resolution for the Altair G2.1. Once again both digital and analogue engineering is at play here, the latter also assisting in the super-wide 135dB midrange channel separation, falling to a still-impressive 105dB at 20kHz. The channel balance is good to ± 0.03 dB, as expected with Auralic's precision ladder volume control. From whatever angle you choose to view, the Altair G2.1 has no obvious blind spots... PM



ABOVE: Distortion vs. USB 24-bit digital signal level over a 120dB range at 1kHz (black) and 20kHz (blue)



ABOVE: High res. jitter spectrum via S/PDIF and USB (black, 48kHz/24-bit with markers; red, 96kHz/24-bit)

HI-FI NEWS SPECIFICATIONS

Maximum output level / Impedance	4.91Vrms / 200-300mohm
A-wtd S/N ratio (USB / Network)	117.0dB / 117.0dB
Distortion (1kHz, 0dBFS/-30dBFS)	0.00003% / 0.00012%
Distortion & Noise (20kHz, 0dBFS/-30dBFS)	0.0002% / 0.0003%
Freq. resp. (20Hz-20kHz/45kHz/90kHz)	+0.0 to -0.1dB/-0.7dB/-2.1dB
Digital jitter (48kHz / 96kHz)	14psec / 14psec
Resolution (re. -100dBFS / -110dBFS)	± 0.02 dB / ± 0.2 dB
Power consumption	17W (1W standby)
Dimensions (WHD) / Weight	340x80x320mm / 9.5kg



ABOVE: Wired/wireless network control/streaming supplements access to more music via internal and external (HDD) USB-A drives. A USB-B (DSD512/DXD) input is joined by Toslink, coax and AES (DSD64/192kHz) alongside analogue line and phono inputs. Variable analogue output is on RCAs and balanced XLRs

the rich weight of the orchestra is breathtaking. As, I might add, is the sense of presence and space in the soundstage, and the speed and rhythmic drive on offer.

The same goes for Charlie Haden, Jan Garbarek and Egberto Gismonti's 1980 *Magico* album [ECM E1151]. Here the Altair G2.1 really gets its teeth into the label's typically gorgeous production, allowing the sax to soar above the deep, superbly-resolved bass, while the guitar and piano are also given full licence to be heard to thrilling effect. It's all so effortless, as well as being a richly rewarding listen, and the recordings don't have to be state-of-the-art for this player to work its magic.

JOYOUS EXPERIENCE

Even with the Bill Evans take on 'Alfie' from his *Another Time - The Hilversum Concert* album, recorded (admittedly magnificently) back in 1968 and revived to DSD by the 2xHD label [2XHDRE1069], the sound brims with the easygoing interplay between Evans, Eddie Gomez and Jack DeJohnette in front of a small audience. It's a joyous experience via the Altair G2.1.

The timbres of real voices and instruments are a major strength here, for while mainstream pop

is revealed in all its autotuned awfulness, give it something like 'Little Black Dress' from *The Blessed Unrest*, the 2013 Sara Bareilles album [Epic 88883739832; HDtracks 88.2kHz/24-bit], and it punches out not only every line of the vocal, but also the gutsy accompaniment, with real definition and impact. It's a sound to have you wanting to explore more of the singer's catalogue, fairer than which one really can't say.

It's also as adept when growling out some driving rock as it is when playing more hi-fi-show-friendly music. This review period coincided with the demise of ZZ Top bassist Dusty Hill, which almost inevitably led to a couple of evenings with me immersed deep in Texas boogie. I can tell you that from the slow-burn blues of 'Just Got Back From Baby's' all the way through to the charging guitar solo of 'Cheap Sunglasses', this new Altair did proud the exhaustive *Goin' 50* compilation [Warner Bros 0603497851621].

Its analogue output drove the amplification, and thus the speakers, to suitably raucous effect, while still keeping those good-time rhythms rolling as the trio powered on. I even played the odd track - well all right then, quite a lot of them! - several times, just to immerse myself in all the thunder and snarl. ☺

HI-FI NEWS VERDICT

Describe the Altair G2.1 as a technical tour-de-force, and one might seem to have fallen for all Auralic's proprietary technology, or to damn it with faint praise. Far from it: this excellent digital front-end combines ease of use and flexibility, and then layers on a crisp, clean and gutsy sound as adept at crashing out boogie as it is summoning up all the atmosphere of a classical concerto or intimate jazz trio.

Sound Quality: 87%



ABOVE: Hidden under the top-plate and screening the digital electronics within is a branded, silver-coloured enclosure