

# Xuanqian Wang of AURALiC

by Alan Sircom

**A**URALiC hit the ground running a few years ago with its affordable range of digital audio products designed for audiophile and headphonista alike. That would be enough for most brands and we'd see nothing more from the company for a decade. Instead, AURALiC showed the world the G2 series, and the world took notice. It's rare to find a product line that commands such universal respect anywhere in the audio business. Even what should be bitter rivals say surprisingly good things about AURALiC's line-up.

A part of this comes down to AURALiC's linchpin, Xuanqian Wang. He's the real deal. Not only is he an extremely good audio designer, and something of an engineer's engineer, he's also a surprisingly disarming person to talk to, mercifully free from the Great And All-Powerful Ego that seems to come with the job for many leaders of audio companies. We spoke to Xuanqian Wang during the Munich High End show about the G2 series and the launch of the new GX Femto clock.

## **The G2 series was a radical departure from the original ARIES streamer and VEGA processor. What has changed in the ARIES G2?**

The ARIES G2 is a complete evolution of the original award-winning ARIES. We have introduced many new features. It's quite an extensive list! – our new proprietary Tesla G2 platform incorporates a 1.2GHz quad-core processor, 2Ghz of memory and 8 Gigabytes of data storage, dual galvanic isolation, improved Femto clock, dual Pure-Power internal linear power supply and optional internal 2.5 inch SSD or HDD storage with no capacity limitation so our customers can potentially store an entire collection of music

within the ARIES G2 for the ultimate convenience and speed. We build all of this technology in to a precision made, CNC-machined 'unit chassis' hewn from a solid billet of aluminium fitted with custom made isolation supports. We paid a good deal of attention to the experience of using the product so we use a beautiful 3.97 inch Retina-resolution colour display and metal control buttons, which enable full music library access and product set up on screen.

## **What has changed in the VEGA G2?**

Our original VEGA was a pure digital to analogue convertor which attracted many customers largely due to its very natural, fatigue free sound quality. VEGA, together with the original ARIES, accelerated the growth of our company in quite a short space of time. In VEGA G2 we wanted to implement our latest technologies, many as featured in our ARIES G2 with the addition of our own resistive ladder fully analogue volume control and dedicated analogue input which enables users to achieve tremendous performance from analogue sources, such as a top flight turntable and phono stage. Furthermore, we developed our own proprietary 'Lightning Link' interface to connect G series products together to facilitate multi-product operation which is important in order to incorporate our ARIES G2 and LEO GX Reference Clock. Last, but not least, we have implemented streaming functions in to VEGA G2 for customers who require the simplicity of one unit that can simply be connected to a pair of active loudspeakers or stereo power amplifier.

## **The original line included the ALTAIR wireless streaming DAC and the POLARIS wireless streaming integrated amplifier. Why are they missing from the G2 Series?**

The G series is a big change and progression for our product range – it not only has a different style, but also uses different technologies which are higher in cost. POLARIS and ALTAIR still offer great performance and value for money.

## **The LEO GX is your first Reference Master Clock. What makes it stand out against its rivals?**

LEO GX is a breakthrough in digital audio system clocking – the first master clock ever that can work with a DAC directly taking control of the VEGA G2 clock. Instead of merely synchronizing with the LEO GX, the VEGA G2 actually uses the exceptionally high frequency incoming clock from the LEO GX directly as its own working signal. In other words, the LEO GX bypasses the internal VEGA G2 clock circuit entirely and drives waveform creation directly with its signal. No more PLL (phase-locked loop), and no more limitations.

The LEO GX clock is so precise that existing benchmarks aren't detailed enough to accurately represent what it can do. Instead, we use Allan deviation to describe the resolution of the LEO GX, which is like looking at phase noise



closely enough to detect shifts of +/-1Hz or even +/-0.1Hz. The Allan deviation of the LEO GX Reference Master Clock comes in at  $2E-12$  (at 1 second), which is equal to a 10MHz rubidium atomic clock with phase noise of +/-1Hz at -110dBc/Hz, or an amazing 500 times less jitter than an 82fs Femto clock oscillator.

**Why 'LEO GX' as opposed to 'LEO G2'?**

LEO takes the "X" designation however because its clocking duties will be globally applicable to future G Series systems as well. So if we offer next-generation models down the road, LEO GX will remain compatible with any updated G series DACs.

**Describe the steps for someone building a G2-Series digital system.**

**Is there a universal progression as you go from one box to the complete system?**

G2 series is designed to be very flexible with products to suit different applications. For instance, ARIES G2 is perfect for those wanting to add top performance streaming to a system, with the option of internal storage, which already has a DAC because the unit is designed with digital out on S/PDIF and USB — I think that's why the original ARIES was so popular finding its way in to many high-end separates systems. The VEGA G2 will further improve the performance when connected with 'Lightning Link' to an ARIES G2 if a pre-amplifier is required. That said, VEGA G2 will operate as a stand-alone streaming

DAC in its own right if the requirement is for a one box solution. Optimum performance is achieved when using the LEO GX with the VEGA G2, ARIES G2, and 'Lightning Link' connected. Performance is extraordinary and pushes the performance of what is achievable from streamed digital audio sources.

**Which product in the G2-Series surprised you by being hardest to design, and why?**

VEGA G2 has such a unique structure that the design process has taken a considerable period of time. VEGA G2 is virtually a 'digital recorder' that records all incoming digital signals to our Tesla platform for precision buffering and processing — this methodology of design is an example of the numerous technologies we employ in striving for authentic, natural sound. Hardware and software design is challenging and complex, but I really enjoy the process and it's immensely rewarding. ▶

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► **Which G2-Series product surprised you by its performance, and why?**

That’s a tricky question. I can’t single out one product. During long-term design and research, we’ve reached the conclusion that it is hard to build up a solid basis for development by solely relying on either instrument testing or attentive listening. Only with the discovery of the link between scientific data and auditory sense can we succeed in seeking reliable criteria of evaluation during the R&D process. As a result, we set up mathematical models between our subjective listening experiences and objective measurements at the very beginning of the development process. We’ve expanded all of our R&D work based on these mathematical models. With this methodical approach, we really feel all products we produce don’t have surprises, but a thoroughly ‘designed’ level of performance and are real value for money.

**Is the ‘computer and DAC’ dead in high-end, high-resolution audio?**

Yes, the original reason that people listened to music through their computer was because it was the only way to manage a music library and play high resolution music. Right now, we have all kinds of different music streamers on the the market; most streamers use the Linux system with USB audio outputs and support all PCM and DSD sampling rates. There is no

reason to keep a noisy computer in the listening room anymore. We’re also starting to see many customers move away from storing their music, toward streaming from high resolution services such as Qobuz at up to 24-bit 192Khz. The indicators are that more and more people like to access all their favorite music they may have purchased on CD together with new music in great quality from a high quality streaming service – its like visiting a record store to browse for new and interesting music anytime you like. Fewer people store their music now in large parts of the EU.

**How important is flexibility in app control today? Do you prefer people adopting a rigid set of apps, or like people to experiment? Why?**

The control interface of a music streamer is so important and can make a product a success or failure. The convenience of usage is the first priority when we design the control application. We developed our app for IOS on iPad and iPhone, but third-party apps for IOS and Android also work. I have seen so many people make decision to buy an AURALiC streamer just because of our app. Lightning DS is, again, our own proprietary design and something we’re very proud of. The interface is highly intuitive and engaging – the layout of text, artist & album information, crisp album artwork, suggestions for further listening all contribute to an enjoyable user experience. We believe it’s absolutely the best way to browse and enjoy listening to music.

**What do you think will be the next big innovation in digital?**

Digital signal processing will be the next big thing in digital audio. We have been actively developing a variety of real high-end quality signal processing algorithms for a long time. Taking upsampling as an example, we have developed an algorithm that can upsample all incoming signals to DSD512 format with quality beyond measurement. To run this algorithm in real time, we have to use an FPGA chip thant cost about £10,000 five years ago, but we have recently successfully made it run on a £2,000 processing platform since the processors are today lower cost and more powerful. I believe we will be able to make this upsampling technology available in the next few years. +