

Antelope Zodiac Gold DAC/Preamp

Clean, Neutral, Accurate & Desirable

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The European firm Antelope Audio is one of the increasing numbers of audio companies with roots in the professional audio market, but that also offers some of its products for audiophiles and other sound quality-conscious consumers. This two-market approach particularly makes sense in digital audio, where R&D costs can be high, and thus it is beneficial to spread them over several markets. In addition, in the digital audio realm, the needs of the two markets overlap when it comes to DACs: both need low distortion digital-to-analog conversion.

Igor Levin founded Antelope Audio in 2005, but Levin's experience in the industry dates back to the origins of an earlier company called Aardvark, which Levin helped found in 1990. Aardvark made a number of pro audio-oriented DACs and related products, but the product that really put Aardvark on the map—and that earned Levin the moniker “Mr. Clocks”—was a high-precision master clock called the AardSync. At the time of the AardSync's release, not many individuals in the pro audio or audiophile communities fully understood how profound the effects of an ultra-precise clock could be on digital audio sound quality. However, the beneficial effects of the Aardvark clock were readily apparent to studio engineers who plugged the AardSync into their recording and playback equipment chains, and the rest is, as they say, history. Almost overnight, Levin had a hit product on his hands (and one that many would say helped to define an entire product category).

When he launched Antelope Audio in 2005, Levin again revisited the topic of precision clocking, looking to use new technologies and ideas to improve upon the performance of the original AardSync. The result involved two related technologies, which Antelope describes as “proprietary 64-bit Acoustically Focused Clocking (AFC)” complete with “Oven Controlled Clock”—technologies incorporated in Antelope’s Isochrone-series (where “Iso” = constant, and “chrone” = time) master clocks, which have won critical acclaim in the pro audio world.

More recently and more importantly for *Playback* readers, Antelope has decided to release a series of three versatile Zodiac DAC/preamp/headphone amps, which—significantly—each incorporate Antelope Audio’s clocking technologies as used in the Isochrone clocks. The range includes the entry-level Zodiac (\$1895) 192kHz/24-bit DAC that promises “excellent pro sound quality at a reasonable price,” the mid-tier Zodiac+ (\$2695) with expanded features and that is billed as a “Mastering DAC”, and the top-of-the-line Zodiac Gold (\$3895, or \$4495 when upgraded with an outboard Voltikus power supply), which is a 384kHz/24-bit DAC that comes with a remote control and is described as “a highly aesthetic audiophile DAC delivering pristine sound quality).

Being “go for the gusto” guys, we at *Playback* opted to try the top-shelf Zodiac Gold with Voltikus power supply for this review, in part simply to see what a product that promises the ultimate in computer/desktop audio functionality might have to offer.

FEATURES/TECHNICAL HIGHLIGHTS



DAC:

- The Zodiac Gold DAC can process up to 24-bit, 384kHz digital audio files, which should allow a good measure of future proofing.
- Antelope says very little about the DAC circuitry itself, other than that there is no upsampling involved.

Clock/De-Jittered Digital Outputs:

- Incorporates the firm's signature "Antelope Oven Controlled Clock", where Antelope says, "the clock is housed in a shielded container where the temperature is kept constant, therefore bringing significant benefits to the detail, dynamics and stereo placement of the audio." The Antelope web site shows an illustration that demonstrates how holding the clock at a constant temperature can reduce timing errors from 10 parts per million (ppm) down to about 0.1 ppm—a readily audible improvement.
- Leveraging the benefits of the Oven Clock, the Zodiac Gold provides two de-jittered/re-clocked digital audio outputs. An Antelope spokesperson told *Playback* that the de-jittered digital outputs are among the most popular (and most highly prized) features of the Zodiac+ and Zodiac Gold models.

Digital Inputs/Outputs:

- The Zodiac Gold offers a total of six digital audio inputs: one AES/EBU, two coaxial S/PDIF, two Toslink, and one USB.
- For the popular USB input, the Zodiac Gold offers distinctive modes for PC and Mac to ensure high data accuracy. The USB input supports a maximum data transfer rate of 480Mbits/sec, thus supporting up to 384kHz/24-bit data files (no, that's not a typo).
- As above, the Zodiac Gold provides two de-jittered, re-clocked digital outputs (one AES/EBU and one coaxial S/PDIF).
- Although many users will be fully satisfied with the Zodiac Gold's "Antelope Oven Clock", the Gold provide a separate BNC clock input for those who might own one of Antelope's upper end Isochrone-series master clocks.

Analog Inputs/Outputs:

- The preamp section of the Zodiac Gold provides two stereo analog inputs (one balanced via TRS jacks, the other single-ended via RCA jacks).
- The Zodiac Gold preamp also provides two sets of stereo analog outputs (one set balanced via XLR connectors with precision trim-able output levels, and one set unbalanced via RCA jacks).
- The headphone amp section of the Zodiac Gold provides two ¼-inch TRS (phone jack) outputs.

Preamp

- The preamp uses an analog volume control to avoid any loss of resolution (digital volume controls necessarily throw away data to do their job).
- The volume control is a gold stepped relay attenuator, for precise channel-to-channel tracking that is accurate to within 0.05dB.
- A simple yet flexible remote control is included. As pretty as it is functional, the remote features "aluminum unibody" construction.



Headphone Amp

- Finally, the Zodiac Gold headphone amp is taken just as seriously as the preamp section, which only makes sense, given the significance of headphones in the pro world.
- The headphone amp features a separate volume control that functions independently from the preamp volume control, indicating that the preamp and headphone amps do not share circuitry.
- Antelope describes the headphone amp circuit as an “ultra linear, dual-stage” design.
- We particularly liked the fact that Antelope provides switching to optimize the amp for low impedance or high impedance headphones.

Power Supply

- The Voltikus power supply is a low noise, regulated design. The idea is to further ensure a clean electrical environment for all the delicate signal handling and timing going on inside the Zodiac Gold.

OVERVIEW

Consider this DAC/Pre/headphone amp if:

- Sonic delicacy, spaciousness, and detail are critical to you; the Zodiac Gold delivers all three in spades.
- Also consider the Zodiac Gold if you like the idea of a single component that merges the functions of a very high performance DAC, de-jitter module for digital audio signals, preamp (with balanced and unbalanced inputs and outputs), and a dedicated headphone amp.

Look further if:

- Macro-dynamic slam is at the top of your list of sonic needs, or...
- You really need maximum output in order to drive very tough headphone loads (e.g., very low-efficiency planar-magnetic or dynamic headphones).

Ratings

- Tonal Balance: **9.5**
- Clarity: **9.5**
- Dynamics: **9.0**
- Output Flexibility: **9.5**
- Value: **9.0**

SONIC CHARACTER

As “three products in one,” the Zodiac Gold with Voltikus power supply presents the reviewer with quite a bit of complexity. To avoid getting too entangled in the myriad possible details and comparisons, I’ve chosen to concentrate on the aspects of the Zodiac that are likely to differentiate it from other products (or product combinations) that you might consider.

Zodiac Gold DAC

The DAC is arguably the most distinctive element here, both technically and sonically. (While both the Zodiac Gold preamp and headphone amp sections are well executed, they alone are perhaps not the reasons most customers would choose this product; it’s the DAC that pushes this product over the goal line). Thus, our working assumption is that almost all buyers will end up using the DAC.

Many people, when listening to DACs, find it hard to distinguish between them. In my experience this often is the case because the differences between DACs show up in their handling of transient sounds

—sounds that are presented at different times and in different ways in various recordings (and types of music). As a result, comparisons that involve slowly switching between components can make it difficult to observe key sonic differences between DACs in “real-time.”

Nonetheless, extensive listening to the Zodiac Gold, and comparison to other DACs over long periods of time reveals that the Antelope has a distinctive way of dealing with some transients. In particular, the Zodiac Gold delivers a cleaner leading edge to treble transients than do many DACs. This is true, even when the comparison is with DACs I would rate as very good to excellent. Another way of saying this is that there are DACs that plainly distort the leading edge of, say, notes from cymbals or snare drums, or that can be heard in the upper ranges of pianos or guitars. But even when we go to many DACs whose behavior in isolation seems exemplary on these kinds of transient sounds, I would say the Zodiac Gold often manages to sound just a bit cleaner, and thus more three-dimensional.

By “cleaner,” here, I mean that the rising edges of transient sounds as rendered by the Zodiac Gold, sound more appropriately relaxed and natural when compared with the sound of live music (the absolute sound). It seems that the initial transient sound as reproduced by the Zodiac Gold exhibits noticeably less overshoot than would be the case with many other excellent DACs. An important and musically significant result of the Zodiac Gold’s clean transient performance is that the rest of the note—that is, the note’s body and decay sounds—don’t get masked by overshoot and other transient problems. Thus you get, overall, a better sense of note-by-note decay and can hear the small signals (for example, subliminal echoes and reverberations) that reveal the space in which the recording was made. This spaciousness is a distinctive aspect of the best DACs.



The Zodiac Gold is also well and truly detailed, by which I mean that it is revealing of the kinds of natural low-level information that I referenced above. Frankly, some equipment gets called “detailed,” when in fact it has problems with transient overshoot that create the false illusion of a “better defined” sound. With the Zodiac Gold, however, the sonic detail that is served up is the real thing—quite the opposite of the fake detail some gear foists off on unsuspecting listeners.

The other aspect of the Zodiac Gold DAC that I found to be distinctive is its bass performance. My view is that the weighting of the Zodiac Gold’s bass, as measured by amplitude, is quite accurate and normal. And yet, some bass transients via the Zodiac Gold seem to lack the last bit of punch that they have in reality and via other good DACs. In this regard the Zodiac Gold is not alone, in that it reminds me of what I consider the best current DAC available, the Meridian 808.3. Both these superb DACs have accurately weighted bass, but lack a bit of low-end “slam;” I cannot explain the origins of this phenomenon, but there you have it.

I should also say that the sonic characteristics I’ve described are, in the global scheme of things, pretty subtle. I would not recommend running out to purchase a product like the Zodiac Gold if you are looking for a really large or obvious transformation of the sound of your system. This doesn’t mean that you

can't hear the differences on offer here, because that's not the case at all, but rather that the resulting differences don't change everything the way a change in speakers, room acoustics or sometimes amplifiers can. (If a product, like the Zodiac Gold DAC, has very low distortion, but in a category where competing products also generally have fairly low distortion, this almost has to be the case.).

Zodiac Gold Preamp

Moving on to the preamp section, I was impressed with how neutral the Zodiac Gold is. When I find a really good DAC that has been integrated, as in the Zodiac Gold, with the functionality of a preamp and/or headphone amp, I always worry that those "other function" will turn out to be the weak link. But that is not the case here. Apart from differences in features, I don't know that you can find a unit sonically superior to the Zodiac Gold until you reach the top echelon of today's highest of high-end preamps (products that typically cost quite a bit more than the Antelope does).

But with that said, let me add that many users choose certain preamps, not for their accuracy or neutrality, but for their subtle and presumably euphonic colorations. Their hope, I suspect, is to tweak the overall system sound by selecting a preamp whose colorations (or distortions) complement or offset weaknesses in the other system components. Let me simply say that the Zodiac Gold's inherent neutrality might actually make it frustrating for "tweakers," simply because the preamp is devoid of romantic-sounding colorations or embellishments. Instead, the Antelope is all about purity and neutrality on a 24/7 basis. Interestingly, though, this doesn't mean the Zodiac Gold sounds cold, clinical, edgy, or sterile: as in our discussion of the DAC section, above, it means the preamp sounds natural, unforced, and relaxed.



Zodiac Gold Headphone Amp

Similarly, I thought the headphone amp was quite good. It sounds balanced and open, with very low

grain. It has enough oomph to drive moderately difficult headphones like the Sennheiser HD800s, but some people might feel that the gain and overall drive capabilities of the Zodiac Gold are not quite sufficient for really tough headphones like the HiFiMAN HE-6. If you are super picky about your headphone listening, you might also find that the Zodiac doesn't quite provide enough high frequency "air" to make you happy.

One can argue about whether this perceived lack of the Nth degree of "air" is simply a matter of the Zodiac Gold being more accurate than some other headphone amps, but either way let's note that some (perhaps many) headphone enthusiasts would argue that satisfying listening necessarily involves matching the colorations of their amps to the characteristics of their preferred 'phones. Again, the Antelope's "just the facts, Ma'am" sonic presentation may frustrate those who prefer to look at the world through the audio equivalent of "rose-tinted glasses." In our eyes, though, the Zodiac Gold's honesty and neutrality are both big plusses.

MUSICAL EXAMPLES

On Shelby Lynne's "Breakfast In Bed" from *Just A Little Lovin'* [Lost Highway], the Zodiac Gold sounded more "analog" than our reference DACs, which is to say it seemed a bit more compressed, but a little less shouty and smoother. The Zodiac doesn't make sharp transient dynamics seem edgy, and at the same time on macro-dynamics that build up over time, the Zodiac seems very stable and coherent.

Kate Rusby's acoustic guitar on "I Wish" from the album *10* [Compass] showed a similar graceful handling of micro-dynamics. The leading edge and the harmonics have a natural proportioning through the Zodiac.

Feist's song "The Bad In Each of Us" from *Metals* [Cherrytree/Interscope] opens with some significant deep bass. The Zodiac renders this clearly and with plenty of depth, but I would say that the sound is little less punchy than on our reference DAC.

Ben Sollee's "How To See The Sun Rise" from *Learning To Bend* [R.E.D.] shows the even-handed clarity of the Zodiac. The track shows less treble splash and more open and extended dynamics than our reference DAC and therefore simply sounds more realistic.

VALUE

The value of "combination" products always depends significantly on which elements of the combination you plan to use. That said, if you think of the Zodiac Gold with Voltikus power supply as a three-piece ensemble (DAC + preamp + separate headphone amp), you could view its \$4495 price as quite fair. After all, you might easily pay \$1000 for a headphone amp, and \$2000 for a preamp and \$2000 for a high-end DAC. In fact, you could pay much more for each in order to achieve the level of quality on offer here. But if you are shopping in this price (and quality) range, the point is that the Zodiac Gold combines circuits that are competitive in each area, and it puts them in a compact package.

While we're on the subject of packaging, we had mixed feelings about the Zodiac Gold's controls. The build quality and feel is exemplary, but we were much less convinced by the use of a multi-function LED display window to signal various operational modes. For example, if you engage output muting, that fact is indicated only by subtly dimming the main display window (in our view, a pretty ambiguous way of showing that muting is engaged). Other control functions are also indicated in ambiguous or confusing ways. For instance, if you press the SOURCE button once, the LED display shows the *currently selected* source, but if you press the SOURCE button twice in rapid succession the Zodiac Gold will switch to the next active input (the preamp has active input sensing, so it will skip over unused inputs). These switching and display strategies may offer specific benefits for the pro audio community, but they make the Zodiac Gold seem a bit idiosyncratic for audiophiles and headphone enthusiasts accustomed to more conventional components.

BOTTOM LINE:

Antelope Audio's Zodiac Gold with Voltikus combines a very low distortion DAC that treats the nuances

of music carefully, with a highly neutral preamp and a solid headphone amp. If sonic accuracy is a paramount concern, the Zodiac Gold belongs high on your list for products to evaluate.

SPECS & PRICING

Antelope Audio Zodiac Gold with Voltikus Power Supply

Resolution: Up to 24-bit (supports 16-bit)

Sample Rate: USB, up to 384kHz; S/PDIF, up to 384 kHz

Digital Inputs: one USB 2.0, two S/PDIF, two Toslink, one AES/EBU

Stereo Analog Inputs: one set balanced (via TRS jacks), and set unbalanced (via RCA jacks)

Digital Outputs: one AES/EBU and one S/PDIF, both de-jittered and re-clocked

Stereo Analog Outputs: one unbalanced (via RCA jacks), one balanced (via XLR jacks—with precision trim-able output levels on both channels)

Headphone Outputs: two via ¼" TRS jacks (phone jacks), both with user selectable 0 or 120 ohm impedance

Frequency Response: 20Hz – 40kHz, +0.0/- 0.1 dB

Signal/Noise Ratio: 129 db

THD + Noise: .0004%

Dimensions (H x W x D): 4.4" x 6.5" x 7.5" (main unit)

Price: \$3895, or \$4495 as tested with Voltikus power supply module