

# ANTELOPE AUDIO ZODIAC REVIEW

By [Oliver Amnuayphol](#) — May 27, 2012



It wasn't too long ago that, if you were talking about a DAC, or digital-to-analog converter, chances were good you were either an audiophile or recording engineer. Nowadays, many computer audio users also know what a DAC is, thanks to the growing number of low-cost, portable units commonly used to improve the sound of iPods and [headphones](#). So when we received the Antelope Zodiac for review, it definitely piqued our curiosity.

After all, a DAC with a \$1,695 price tag and substantial AC power supply can hardly be described as low cost or portable. But since the Zodiac was designed to be used by — you guessed it — audiophiles and recording engineers, we figured it had to at least sound really, really good. We therefore had to hear for ourselves just how good a nearly \$1,700 DAC and headphone amp could sound, and decided to press ahead with a review. And boy oh boy, are we sure glad we did: The Antelope Audio Zodiac proved to be such an awesome piece of musical goodness that we'd have done our readers a huge disservice by not reviewing it. Read on to find out what makes the Zodiac worth all that loot.

## Out of the box

Pulling out the Zodiac from its simple yet sturdy graphic cardboard box gave us a really big ear-to-ear grin. We were pleasantly surprised by its heft and solidity, especially considering its compact size. We were also impressed with its all-metal enclosure and machined front panel, which spoke to an overall high level of fit and finish. This attention to detail seemed firmly in

keeping with Antelope's up-market, pro-sound and audiophile appeal. Others who came into contact with the Zodiac were quick to complement its fine build quality and good looks. We've seen plenty of higher-priced audiophile gear that wasn't built nearly as well as the Zodiac, and we appreciated the obvious care and thoughtfulness that went into its aesthetic design.

## Features and design

At its core, the Zodiac is simply a digital-to-analog converter and headphone amplifier combined into one chassis. It's intended to provide better sound quality from any digital source component it's partnered with (such as a CD/DVD/Blu-ray player, iPod dock, or a computer/laptop) by converting those sources' digital bits into analog audio and piping it into a suitable audio system or pair of headphones.

The Zodiac's DAC section is capable of processing files with bit depths and sample rates up to 24/192 kHz via its USB or S/PDIF inputs, making it perfect for those who plan on using this to convert their high-resolution, high-bandwidth digital [music](#), such as FLAC or WAV files. The asynchronous USB 2.0 (B) input will accommodate a data transfer rate of up to 480Mbits and features user-selectable modes for both Macs and PCs. The headphone amplifier sports dual headphone outputs and can be used simultaneously with a wide range of headphone impedances.

The front panel features two volume controls, one for main volume, and a smaller knob to the right of it for headphones. Speaking of headphones, two quarter-inch, TRS headphone outputs also reside on the front panel. A multi-function display located near the top center provides information on sample rate, main volume, input type, or USB mode. There's also a signal-lock indicator light, a source selector button and power switch on the front.

Around back are a bevy of inputs and outputs, including: two S/PDIF coaxial digital inputs; two Toslink optical digital inputs; one USB mini-B type connector; and one pair each of XLR and RCA outputs. Inside the box we also found a high-quality USB to USB (B) cable, a fiber-optic (Toslink) cable, and a hefty power cord with a switching power supply adaptor.



About the only gripe we had with the Zodiac was that it didn't come with a remote control. Antelope actually includes one with their higher priced DACs, but we felt this would have been a nice feature to make standard in the base model as well.

*So far, we've only covered the basic functionality of the Zodiac, and if that's all you'd like to know about its design, that's cool—you can skip straight to the performance section of this review. But as we mentioned earlier, the Antelope Zodiac is an over-the-top, no-holds-barred piece of audiophile heaven. As such, what makes it super sweet is all of the crazy tech that's hiding under the hood. Therefore, to do the Zodiac justice, we're going to have to dig deep into the audiophile lexicon and start throwing around heady terms like Word-Clock Jitter and Oven-Controlled Clocking. But don't worry; we'll take the time to explain why these things are important and what they do for your listening pleasure. If you're curious about what makes this \$1,700 piece of gear so special, read on.*

Perhaps the most important feature of the Zodiac is how it deals with jitter, so in order understand what the Zodiac is all about, it's important to first understand what jitter is and how it affects sound quality. Simply put, jitter is the presence of word-clock timing errors in the sampling and conversion processes performed in digital audio gear. These errors distort the analog waveform enough so that we can reliably measure it and hear its effects. Listeners usually describe this as an overall "hardening" of the sound; they'll also cite hearing clipped harmonics and transients along with rhythmic and pitch instability. Since every digital device in the recording chain has its own built-in word clock, jitter can quickly compound into a much bigger problem.

Enter Igor Levin and the company he founded circa 1990, Aardvark Audio. Igor originally started out offering a pair of A/D and D/A converters and produced an external word-clock generator called the AardSync to go with them. But because the AardSync is a standalone clock, it could also be used to sync other digital components with word-clock inputs, not just Aardvark's own converters. Word about the AardSync quickly spread throughout the pro audio community, and countless recording engineers started using it to improve the sound quality of their recordings. In no time at all the AardSync became the reference master clock generator in professional studios the world over.

Flash forward to 2005 when Mr. Levin started his new company, Antelope Audio. He wanted to find ways to take the AardSync to the next level and set about designing a whole new master clock generator. He soon realized that, if he could keep the word clock's quartz crystal oscillator at a constant temperature, he could significantly improve its performance. Igor decided to seal the oscillator inside its own enclosure, thereby thermally stabilizing it.

Thus, Oven-Controlled Clocking was born. The result was just what Mr. Levin had expected: the clock now operated with much better precision, significantly reducing jitter and improving sound quality. Of course, this sort of cutting edge engineering didn't come cheap, but the payoff was reportedly clearer, more realistic sound, with much better tonality and pacing. The same oven-controlled clocking technology eventually made its way into Antelope's range of DACs, including the entry-level Zodiac model reviewed here.

Though effective jitter reduction is a huge part of what makes the Zodiac special, it's not the only trick this DAC has up its sleeve. The Zodiac also deals with any remaining jitter by applying something it calls Acoustically Focused Clocking. In basic terms, AFC redistributes the remaining jitter to help the DACs convert more accurate and linear signals. The result is said to be more innocuous jitter, resulting in smoother, more analog-like sound that's easier to listen to over longer sessions.

In addition to its cutting-edge circuitry, the Zodiac also uses state-of-the-art internal construction techniques. Analog and digital circuits are each built onto their own PCBs, and each circuit also has its own separate power supply. Building an audio component this way definitely increases costs, but it should also improve overall sound quality by preventing any cross-talk while maintaining a super-low noise floor.

Also, those two volume controls mentioned earlier aren't just for convenience, though they certainly are that. The Antelope utilizes a pure analog main volume control and a separate, dedicated, dual-stage amp for headphone duties. Again, this type of design adds to the cost, but this should prevent any lost resolution and lower each circuit's noise floor as well.

We must admit, all of the cutting-edge tech underneath the Zodiac's bonnet really stirred up the giddies in us. There's some seriously clever design think going on here, both tried 'n true and new. We were also impressed by the many smaller finishing touches that went into the Zodiac — like its use of large circular rubber footers instead of stick-on bumpers, or its use of hex head bolts instead of tiny sheet metal screws to hold everything together.



## Performance

To properly put the Zodiac through its paces, we tried using it with a wide range of source components, including: A [Samsung](#) BD-C6500 Blu-ray player; a Marantz SC-11S2 SACD player; a Denon DCD-CX3 SACD player; and a supremely-ancient Dell latitude D810 laptop. Sources were run through various loudspeaker and headphone setups, including: a Marantz PM-11S2 integrated amp; Marantz NR-1602 A/V receiver; Aperion Audio Verus Grand and Verus Forte speakers; Schiit Lyr headphone amplifier; and AKG K701, B&W P5, and Phonak Audeo PFE122 headphones.

Fresh out of the box, the Zodiac sounded a bit congested and closed-in, so we decided to let it break in for at least 20 hours. Once broken-in, we tried it with everything from CDs to MP3s to hi-res, 24/192 FLAC files. As soon as we sat down to listen, we knew we were hearing something special: The Zodiac was delivering some of the most lifelike and realistic music we'd ever heard. Regardless of the bit depth or sampling rate of the music we threw at it, the Antelope DAC always made the most of it; even 128 kbps MP3 files sounded good.

Of course, ultimately the Antelope isn't going to "polish a turd" by somehow magically fixing a poor quality file or recording. But if the Zodiac has something fairly decent to work with, it'll reproduce it with all of the detail and depth that's present.

In fact, the Zodiac was one of the most highly resolving components we'd ever heard. Audiophiles are notorious for talking about how they could hear details they've never heard before, but in this case, that statement is completely justified. We could easily make out recorded details lesser gear would have glossed over, like the particular sound a sticky, freshly-rosined bow makes when pulled across violin strings for the first time. It was this level of detail tied to holographic imaging that gave music played through the Zodiac a "you-are-there" tactility and presence reminiscent of real instruments in real space.

Treble reproduction via the Zodiac was one of the most naturally-extended and pristine we've ever laid ears on from. Instruments like cymbals rang true and resolved into pure, shimmering decays without ever tending to brightness. Midrange and vocals also sounded clear and present without ever getting pushed forward in the mix and was even good enough for us to enjoy listening to massed choral music for hours on end.



But it was the Antelope DAC's way with bass that most impressed us. Kick drums had a deep, pressurizing thud, and upright bass had all of its woody resonance intact. But once we played something with heavy synthesized bass, like Kruder and Dorfmeister's classic electronica album, *The K&D Sessions*, we were simply awestruck. The bass was positively subterranean, with awesome extension, scale, and sheer power.

Note however that this awesome bass presence never seemed excessive in any way, nor did it smear low-frequency notes together like some lesser gear tends to. Instead, the Zodiac wowed us with its stunning pitch, clarity and definition. Things like left-hand piano runs on a concert grand, or up tempo bass guitar riffs sounded clear and easy to follow, allowing us to better enjoy music and recordings that emphasized these sounds.

Consequently, the Zodiac could seem to have more bass, and thus its own sonic signature, when compared to most other DACs available on the market today. We don't think this is a bad thing at all. In fact, we'd say it's just about right. And that quite possibly, it's all of the other guys who maybe have it wrong.

Much of today's cutting-edge audio gear, fine-sounding though they may be, seems just a smidge too anemic and lean from the lower mids down to the bass, in our humble opinion. We can only guess as to why that is. Maybe it's to give the impression of heightened midrange and treble detail. Or maybe it's just the fashionable audiophile thing to do right now.

Whatever the reason, the Zodiac is the first component we've heard in a long while that really delivers the impact and robust nature of the lower registers in the same way you'd probably hear them live, amplified or not. The Antelope just had a realistically bolder, bigger, and more fully developed sound without ever being slow or sluggish.

Which leads us to perhaps the Zodiac's greatest strengths — its impeccable pace, rhythm and timing. We haven't the foggiest whether it's due to that jitter reduction mojo or other secret sauce, but the Zodiac DAC boogies like no other. Listen to something up tempo like *Sax of a Kind* from Noah Preminger's *Dry Bridge Road* to hear how the Zodiac conveys all of the explosive, propulsive energy barely contained in this piece. We could even hear how the Zodiac effortlessly pushes the music forward on music without a rhythm section, like chamber music or solo stride piano.

We should also mention that the Zodiac sounded equally awesome through a component system with speakers or straight into a pair of high-quality headphones. Never once did the headphone amp break a sweat — not even with the notoriously difficult to drive AKG K701s. We've heard some standalone headphone amps that cost almost as much as the Zodiac that couldn't drive the AKGs nearly as well; that Antelope adds this to a state of the art DAC is even more icing on the cake.

## Conclusion

Considering everything it has to offer, the Antelope Zodiac earns our highest, most enthusiastic recommendation. Try and try and we might, we couldn't find one thing to criticize about it, save for its lack of remote. It consistently brought out the best of everything we played through it in a way that sounded more like live music being made in a real space. Moreover, it delivered the goods regardless of the type or quality level of associated gear. If ever there was an audiophile component that could be tagged as "most able to play well with others," this would certainly be it. Sadly, the Zodiac's price of admission will be too steep for many of the folks who would most benefit from it. But if you love music and can afford it, the Antelope Audio Zodiac is definitely worth it. We couldn't imagine anyone who wouldn't be pleased as punch with the Zodiac's way of connecting the listener to his or her music. The Antelope Zodiac is, quite simply, the best DAC plus headphone amp we've ever heard.

## Highs

- State of the art, audiophile sound quality regardless of input type
- Stunning bass performance
- Highly resolving and engaging sound
- Accepts high-bandwidth, lossless music files
- Even makes lower-res MP3s sound good
- Top-class build-quality and fit and finish
- Excellent headphone amp capable of driving difficult and varied loads
- Separate headphone and preamp level volume controls

## Lows

- Price puts it out of reach for many potential users
- No remote control