Antelope Zodiac +

Reviewer: Srajan Ebaen
Financial Interests: click **here**
Source: Ancient Audio Lektor Prime, Raysonic Audio CD228, Apple iMac 1TB with AIFF files up to 24/192, Weiss DAC2, iPod Classic 160GB, Sieben Technology dock
Preamp/Integrated: Esoteric C-03 (transistor), Bent Audio Tap-X (AVC passive), ModWright DM 36.5 (tube)
Amplifier: FirstWatt F5 & J2, ModWright KWA-100 SE, Trafomatic Audio Kaivalya, Octave Audio MRE-130 with SSB, Yamamoto A-09S
Speakers: ASI Tango R, Zu Essence, Boenicke SLS
Headphones: ALO Audio recabled Sennheiser HD800, beyerdynamic T1 and AKG K-702; stock audio-technica W5000; stock Grado PS-1000; HifiMan HE5LE with optional silver wiring and grill mod
Headphone amps: Trafomatic Audio Head One; Woo Audio Model 5; Burson Audio HA-160; Meier Audio Corda Concerto
Cables: Complete loom of ASI Liveline, *Furutech GT2* and *WireWorld Starlight 5²* USB A-to-mini-B cables [on loan], LaCie and Entreq Firewire 800 cables, *Black Cat Cable Veloce* S/PDIF cable [on loan]
Stands: 2 x ASI HeartSong 3-tier, 2 x ASI HeartSong amp stand
Powerline conditioning: 1 x Walker Audio Velocitor S, 1 x Furutech RTP-6
Sundry accessories: Furutech RD-2 CD demagnetizer; Nanotech Nespa Pro; extensive use of Acoustic System Resonators, noise filters and phase inverters, Advanced Acoustics Orbis Wall & Corner units
Room size: 5m x 11.5m W x D, 2.6m ceiling with exposed wooden cross beams every 60cm, plaster over brick walls, suspended wood floor with Tatami-type throw rugs. The listening space opens into the second storey via a staircase and the kitchen/dining room are behind the main listening chair. The latter is thus positioned in the middle of this open floor plan without the usual nearby back wall.
Review Component Retail: $2.500

A YouTube interview with Antelope Audio founder Igor Levin in parts **I**& **II** covers his views on how the randomization of jitter helps create a more analog sound; and how*adding* strategic jitter does, similar to dither, break up modulation patterns to increase the linearity of D/A conversion chips. Mind you, this occurs *after* the signal has first been stripped of jitter and reclocked with a temperature-controlled master clock oscillator plus 4th-generation 64-bit math. Antelope refers to its proprietary technique as *acoustically focused clocking* and jitter management.

One might—very roughly—approximate jitter with harmonic distortion. It's not necessarily lowest THD that wins but exactly how unavoidable remaining total harmonic distortion is *distributed*.

The pro-audio Antelope company is best known for its master clocks including an atomic Rubidium model. How would technology derivative from their Trinity master clock combine with BurrBrown D/A conversion? How about auto-detect source switching, mono summing, analog level control, two headphone outputs with dedicated attenuator and trimmable XLR analog outputs on the back? What of ascending single-box functionality from Zodiac (96kHz USB) to Zodiac Plus (192kHz USB) and Zodiac Gold (384kHz USB)? In the pro sector, Benchmark, dCS, EMM Labs and Weiss all have gone audiophile before. Should one spot a crossover trend?

The middle of the range Zodiac Plus model offers a plethora of sockets including analog RCA *inputs*and RCA/XLR outputs. For digital there are twin coax, twin Toslink and one each mini USB, XLR and BNC word clock in; and XLR and twin coax out. There's also an 18V DC input for the external universal PSU (100-240VAC in, 18VDC/10w out). Dimensions of 4.4 x 6.5 x 7.5" HxWxD (112 x 165 x 190mm) are compact, 4.4lb (2kg) are light to be attractive for desk-top use too. Gold-plated circuit boards for analog and digital are separate and the attenuators (main and headphones) are in the analog domain. Key specs are 129dB of dynamic range, THD+N of 0.0004% and clock stability of <±0.02ppm @ 64.5°C.

As an asynchronous USB 2.0 Hi-Speed device (480Mbits), the Zodiac+ contains firmware (drivers) for which occasional updates might become available. To check the current software version, disconnect the DAC from its PSU for 3 seconds, then hold the source button whilst reconnecting the power supply. The display will now show the software version for 5 seconds. If software updates exist, download them from Antelope's website. With the Zodiac+ in standby connected to the PC via USB, press the mute button until the display shows Ldr (loader mode). Now double-click the downloaded file and

follow the instructions. The 2-phase installation usually takes from 2 to 5 minutes. Upon completion, the Zodiac+ automatically exits loader mode. It must now be rebooted by disconnecting it again from its power supply for at least 3 seconds before restarting it.

or 2.500 pro-audio smackers, the Zodiac Plus offers features which in equivalent audiophile currency buy considerably less from established USB DAC leaders like Ayre and Wavelength. While the **Wyred4Sound DAC2**does meet the Antelope nearly head on, it lacks its headphone sockets, oven-controlled clock, mono function, analog volume control, word-clock and analog inputs.

It retaliates however with remote control and a $1.000 savings. Where Wyred's 24/192 USB interface and firmware were outsourced, Antelope's was developed in-house. Ditto for their 64-bit clock-control algorithms. Though it should be obvious, it bears repeating - analog-domain volume allows the Zodiac Plus to become a miniature preamp no strings attached. It even accepts one non-digital source. That's another potential cost savings and also attractive downsizing proposition. Compared to Antelope, most prior pro-gone-consumer companies like dCS, Meitner and Weiss have positioned themselves on rather pricier turf. This wins the newcomer a clear advantage in today's economic climate. If white is the new black, value is the new hip. From that perspective and despite being black, the Zodiac+ is a very hip proposition. As to its heart beat—the proprietary jitter management algorithm—Leizer Benvenishty of Antelope's sales department acknowledged candidly that comprehending it fully exceeds his grasp and more to the point, that designer Igor Levin wouldn't share word one with the press. Without getting hung up on buzz words like "acoustically focused clocking" (they do have to call it *something*; and yes their site is full of marketing somethings), we'll leave speculation to others and focus on our audiophile prerogative instead: what does it sounds like?

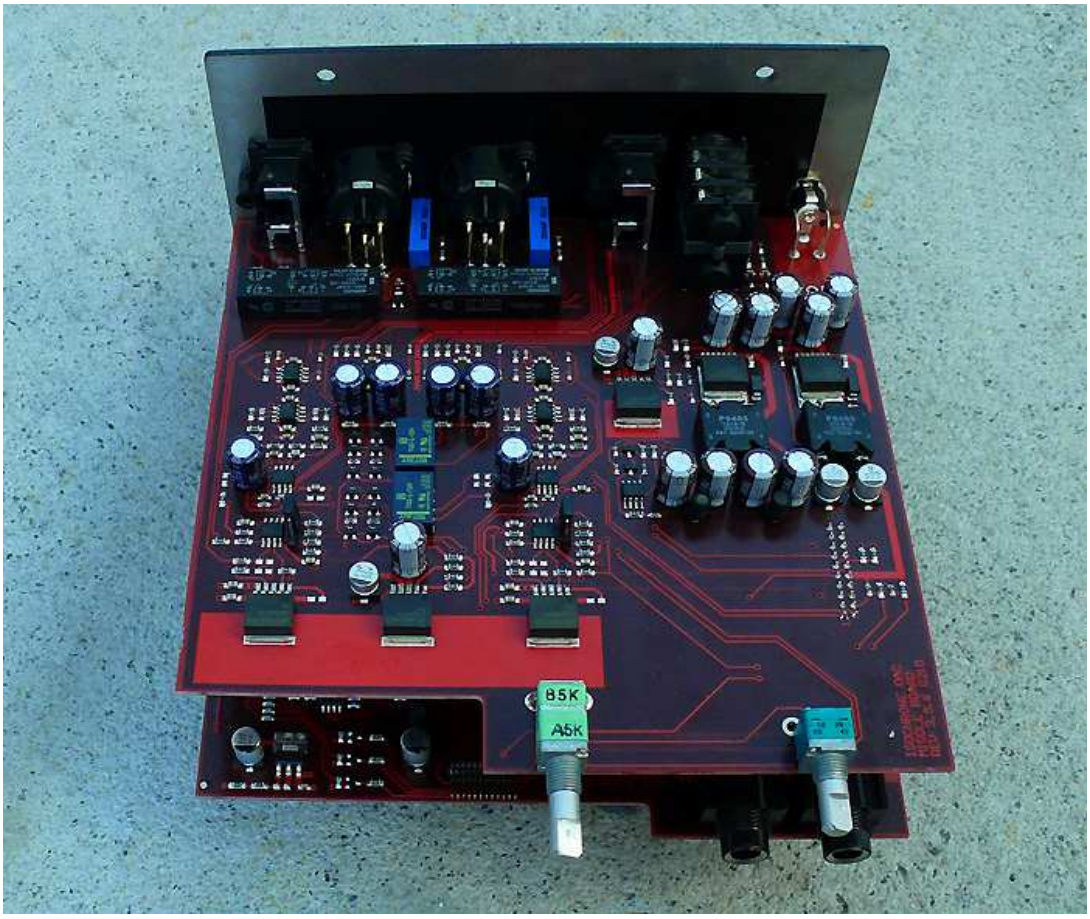
It's presumptuous of course to assume that the Zodiac range was launched just for audiophiles. There aren't enough of our kind left. However, Antelope's website does make a tie-in of background imagery with each model - a DJ or lap-top headphone listener for the basic Zodiac; a mixing console for the Zodiac+; and a Classé/B&W system for the Gold. What turns a Plus into a Gold? "The standard Zodiac does up to 96Khz via optical and USB and 192Khz via S/PDIF. The Gold does up to 384Khz via USB and has a stepped attenuator with gold relays and a cool remote control with soft and full mute function. BurrBrown's 1792-A chip is applied across all three models and the Gold's circuitry differs from the Plus primarily in the analogue domain." To source software that was actually *recorded* at 384kHz and is made available to consumers at that data density seems quite futuristic but remote control and purist attenuation certainly do cater to audiophiles. For the Gold, there's also an optional "heavy duty" power supply to upgrade the laptop-type SMPS. (Here's a company **sheet** with more Antelope talk about how these three models differ.)

Antelope's proprietary async USB implementation runs a buffer and field-programmable gate array to apply signal dejittering to byte-by-byte data extraction from the buffer. It runs both Windows and OS firmware for bidirectional communication protocols and special device drivers for USB 2.0 high speed. Actual data processing past establishing the data comm link with the host computer of course remains identical between different operating systems. As Igor Levin put it, *"the jitter management module derives the sample rate via a DSP process that is largely insensitive to the USB packet arrival jitter. The reconstructed audio clock is acoustically pleasing and does not contain any measurable jitter products above 10Hz."* For further sound enhancements, one can reference the Zodiac+ to Antelope's 10M+ Trinity/OCX master clock via the word-clock input. This supposedly results in "*dramatically opening up the stereo image to reveal more details in three-dimensional space.*"

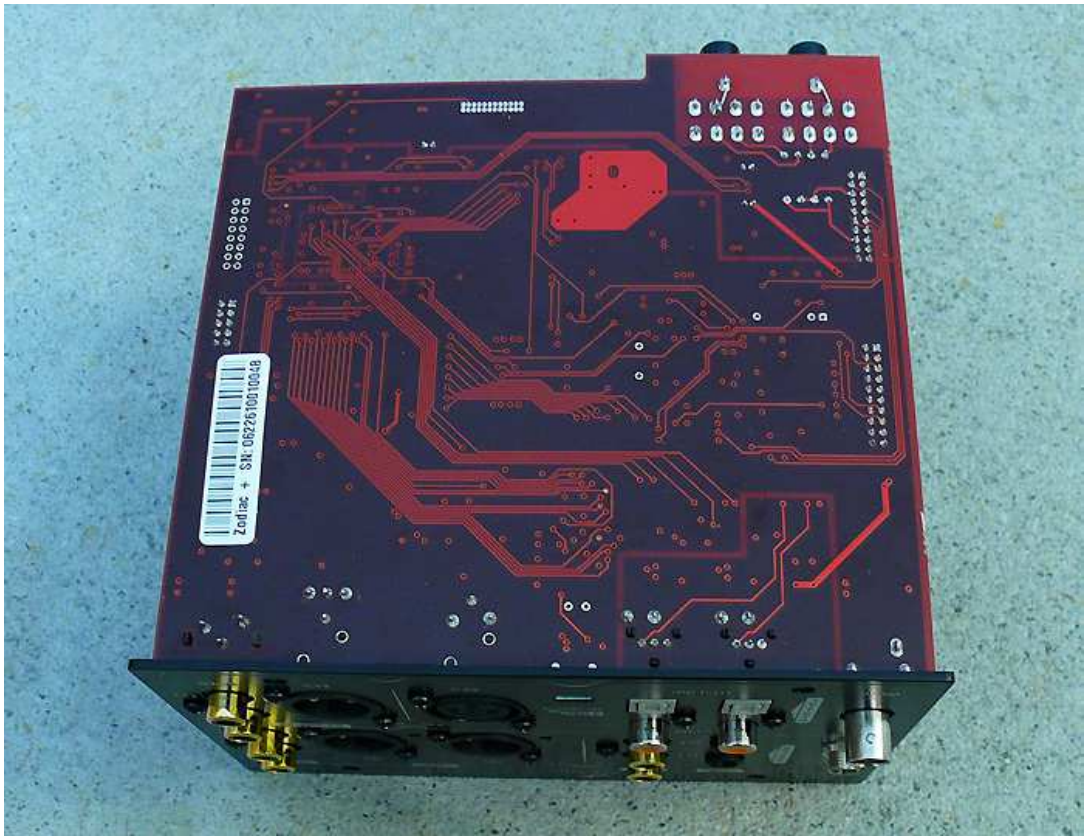
In the shipping box: The Zodiac+ is quite compact. It's no taller than a CD case and just a bit deeper. It ships in a cleverly sub-partitioned carton which includes a cheap Chinese SMPS with locking collar and ferrite clamp on the umbilical, a mains cord, a Toslink cable, a generic USB cable with mini B plug and the owner's manual.

Inside the enclosure: The Zodiac+ slots two PCBs into the ribbed side panels of its black extrusion which nicely avoids screws on any of its sides. These circuit boards communicate with each other via one short multi-pin ribbon cable. Four longitudinal metal shafts bolt front and back panel together. They also insure that the pin connector of the digital board seats properly in the fascia's retainer to run AC power to its push buttons and display.

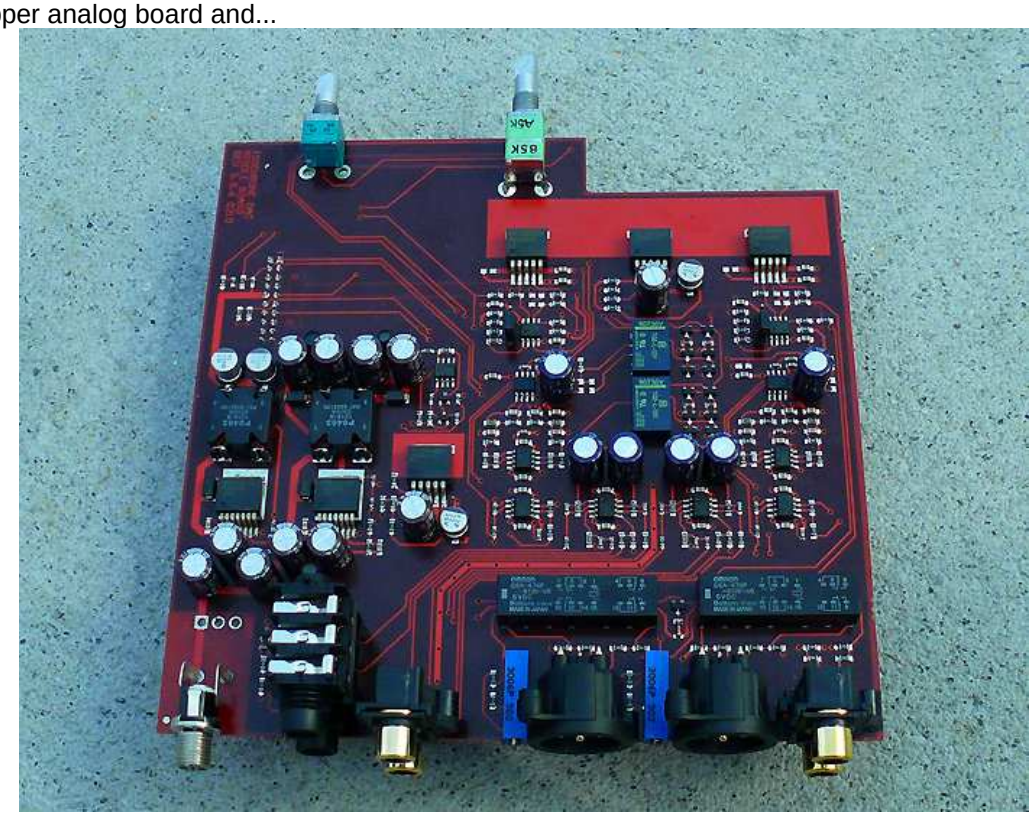
Here is the two-storey assembly moved out of its casing. The blue blocks are precision trim pots for the XLR outputs.



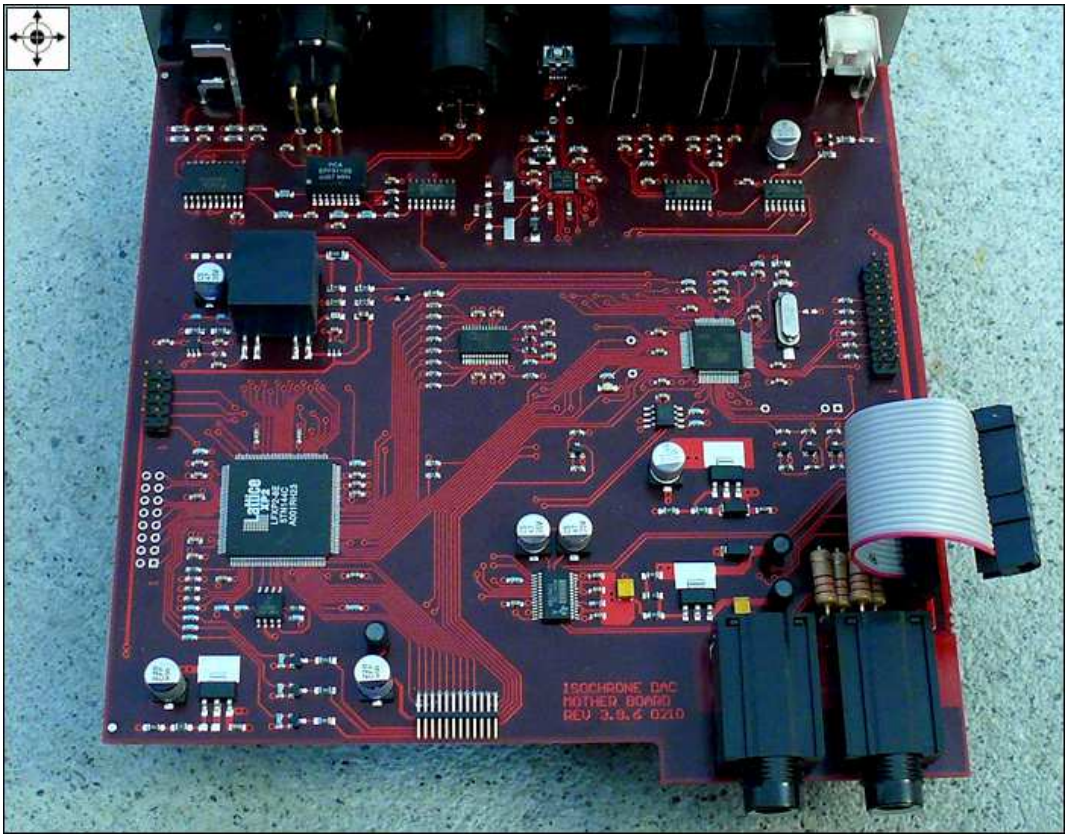
Here is the underside of the digital board.



The upper analog board and...



.. the lower digital board with the temperature-controlled clock, a BurrBrown PCM1792A DAC, the **ISP 1507-A1** USB 2.0 transceiver (that supports high/full/low-speed USB at 480, 12 and 1.5Mbit/s respectively), a flexiFlash™ Lattice XP2 field-programmable array and an Atmel 256K flash-based 32-bit RISC microprocessor.



While audiophiles of course habitually refer to higher numbers as louder, the Zodiac betrays its pro-audio heritage with a display that calibrates volume in reverse. It shows actual steps of attenuation presumably indicating dB. That makes 0 equal to zero attenuation, i.e. full uncut signal. Now -90 becomes mute (the numerical volume value remains live for 2 seconds before the display reverts to the incoming sample rate for digital inputs or an analog input confirmation as shown above). From mute volume jumps to -55, then proceeds to 40 in increments of 5. Between 40 and 20 each step is 2, then it narrows to 1 between 19 and 13. Then the scheme (at least on my loaner) jumped from 13 to 11 and 9 in steps of 2 again, then hit 8, skipped 7 and from 6 returned to steps of 1 all the way up to zero.

I checked this multiple times in both directions with identical results. I assume this skipping of certain steps is intrinsic to the chosen approach which eschews an optical encoder, relays or stepper pot. To perfectionists the Zodiac Gold's stepped attenuator beckons as will its upgraded power supply. A cheesy off-the-shelf Sino SMPS smaller than a laptop's is the first sign that the Zodiac+ doesn't exactly cater to audiophiles at least on *perception*.

Lift-off: Armed with Furutech's snazzy blue cable, Wireworld's flat Starlight 5² link as well as Antelope's generic USB cable all with the necessary but detestable mini B plugs (try to seat one of them with the component in the usual shelf), my iMac with Snow Leopard at first failed to recognize the Zodiac+. It didn't show as a selectable audio device. My Windows XP-based HP Workstation meanwhile had no issue. It identified the DAC by its proper name right off. My Antelope contact Leizer Benvenishty asked whether I'd checked that USB mode was *UH1*. I had not. For that press/hold the source button while the unit is powered off. If the display shows *UF1* instead, a single press source again will switch it to the desired UH1. Now power up to lock down that setting.

This magically took off the device's invisibility cloak and the iMac suddenly saw it. Switching from iTunes to Amarra next reset the displayed sample rate for Redbook files from 192kHz (iTunes) to 44.1kHz (Amarra 2.0) and to 96kHz or 192kHz for my high-density Linn Records FLAC files. Next I used my Weiss DAC2 as Firewire-to-S/PDIF interface to toggle through all the usual sample rate options in its OS device window. This had the now clock-slaved Zodiac+ track all rate changes without fail (including 88.2kHz and 176.4kHz for which I didn't have native files). Each upsampling change was

accompanied by a single click/flash of the white signal lock LED. Everything was plug & play as advertised. My fears that the Weiss DAC's special Firewire drivers had mysteriously 'deactivated' the native drivers which the Zodiac+ needed were groundless.

The obvious: Calling the Zodiac+ a high-resolution device seems foregone conclusion and cheating. We all knew going in of its BurrBrown/TI **1792-A** chip whose astonishing 132dB S/N ratio makes it that family of parts' highest performing silicon; and of Antelope's advanced jitter management as it is duly surrounded by quite noisy marketing gobbledygook. But sometimes the obvious is simple fact rather than fluff or superficial.

The trouble—and it probably causes recording engineers and pro-audio designers endless consternation who view more resolution as more truth—is that audiophiles often do equate high resolution with superficiality. That references presentations which are sterile, clinical, analytical, dissective and thus bereft of 'soul' or 'musicality'. This isn't the place to debate our strange conventions and touchy-feely terms. Suffice to say that we nearly reflexively counter statements of "you can hear *everything* with that device "with a big question mark. "But does it convey the *emotions*" we want to know. The subtext is huge doubt.

So where on our audiophile checklist do emotions prosper? What technical parameters are responsible? If you point at upper bass impact in the so-called power zone between roughly 100 and 200Hz, the Zodiac+ isn't the most guttural or endowed. This subjectively softens particularly macrodynamics. If you point at tone density or the depth and saturation of tone colors, the Zodiac+ is less dense and saturated than for example the Eastern Electric MiniMax. Between those two machines, Antelope's designer would seem to be the superior digital specialist, his Hong Kong equivalent the analog man. (The Zodiac Gold's primary advantages are said to be in its analog section. This suggests consensus at Antelope that the output stage and/or power supply of the Zodiac+ leave room to build out from).

To my ears, this machine's true forté is spaciousness built upon profound airiness. This combination of qualities strengthens the connective tissue between the notes, what we call recorded reflections, decays and harmonic halos. Rather than mass and impact, the Zodiac+ seems dialled for speed, articulation and nuance. Whether the forthcoming optional "heavy-duty audiophile" power supply—one suspects a traditional rather than SMPS design—increases heft and slam remains to be seen. It would seem a sensible expectation.

If you're amongst those for whom soul spells expansive soundstaging, the Zodiac+ should prove special. Take for example *Cigala & Tango.* It's the ravishing genre-crossing follow-up to the *Lagrimas Negras* canon of three albums where a very gifted Flamenco cantaor met various Cuban pianists. This time the long-haired Gypsy singer reinvents Argentine tango with the same vigour and mindblowing mastery he applied so effectively—and multi award winningly—to Cuban boleros and rancheros before. This album captures him live in front of an appreciative audience (plus saucy violin, bandoneon, piano, flamenco and classical guitar). The Antelope converter conveyed all the cues necessary to suggest significant venue depth and an absence of nearby recorded boundaries.

On various Øystein Sevåg numbers for well-recorded intelligent 'adult contemporary' fare, cymbal workouts were highly finessed and soundstaging rather capacious, the latter due to deliberate studio trickery. This confirmed how today's converter seems especially tuned to retrieve space and air. Compared to my Weiss DAC-2/Minerva which marked my entry into PC audio earlier this year, the lower-priced Antelope staged wider, deeper and with more specificity. By specificity I mean a heightened sense of *there* or image lock that was effective even when sitting off axis.

Some neoclassical string orchestra with sinuous Middle-Eastern inflected solos compliments of Lebanese violinist Claude Chalhoub and members of the Gewandhaus Orchestra Leipzig on *Divan* [Herzog Records] showcased the lithe illuminated aspects of the recording to perfection. The soloist's fluid harmonic shifts of varying bow pressure and angles became very visible, the unison harmonized pizzicatos of massed strings behind him nicely articulated and wispy. Atmospheric, expansive, filigreed and finely nuanced, this type of music seemed ideally positioned to cross off a number of particular strengths of the review component. Very high resolving power coupled to smoothness and finesse rather than brightness and rawness topped that list. Excellent tracking of tone modulations and harmonic envelope distribution scored highly too.

Far from least, fluid rather than choppy mechanical timing made itself felt throughout. This suggested that Antelope's jitter management—which serves timing accuracy after all—was successful at capturing the intangible 'organic' player elements of such poetic and completely non-metronomic music. Back on the question of analog circuit design, using the Plus as preamp amp-direct placed it on the lean slim lit-up and not completely embodied side of the fence. Piano for example would get slightly tinkly and glassy, downplaying the woodily resonant elements in favor of the metallic ones.

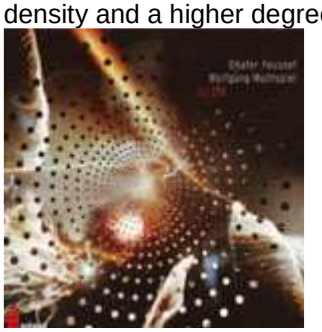
Where I considered the $750 MiniMax a compelling proposition as a DAC/preamp given its price and likely ancillary context, the Zodiac+ operates digitally on a rather higher plane. It's quite likely to end up in more advanced systems. There a premium standalone preamp will obviously scale up dynamics, grippiness, fleshiness and overall oomph. In such contexts, the analog-domain attenuator of the Zodiac+ becomes a transitional feature. You get started with it to approach the assembly of a superior system in stages over time. Should the machine find itself instead in a normal desktop context, its preamp performance would be fully on par. Its digital capabilities of tremendous detail retrieval, overall sophistication and "outer space" soundstaging chops would then simply be the most advanced part of such a system (overkill in more casual parlance).

On bass-heavy ambient fare like Mercan Dede's *800*, the Zodiac+ reminded me of my FirstWatt F5 amplifier and Franck Tchang's LiveLine cables. Fully extended and keenly articulated with clearly discernable pitch, it's about clarity, wiriness and precision, not ultimate impact, growl, mass and mayhem. If you prefer your tonal balance to be up a few dB at 30Hz for example, today's machine won't conform. Such a voicing wouldn't be linear but in many rooms, it can actually be appropriate. Whichever way you look at that, the Zodiac+ isn't a device that supports such aims. Its general character is not that of a heavyweight.

This included upright and e-bass, not just synth trickery. John Matthew Hall whose upright features on the third Balkan Messengers installment *Labyrinth* didn't drop a beat or note but lacked some grunt. DItto for Marc-Michel Le Bevillon whose double bass contributions on the gypsy jazz duel *Double Jeu*between Romane & Stochelo Rosenberg completely alter the traditional Reinhardt/Grappelli mould; and the mighty Vincent Charbonnier and Benoit Dunoyer de Segonzac whose respective backdrops to Jacques Loussier's *40th Anniversary Bach Boo*k and *Mozart Piano Concertos 20/23* make all the difference.

The DAC's handling of timing on the Loussier Trio's *Mozart* was particularly impressive. This trickily shifts between straightahead swing interludes and others where the string orchestra syncopates metronomically correct while the old lion on the piano sneaks in freer jazzier counterpoints simultaneously. This timing friction is very fragile or it hangs up. The Zodiac+ walked that knife edge beautifully. I could relax fully into the trickery rather than tensing up. While still on tell-all piano—here Loussier's later albums are always very well mastered—the earlier comments on high illumination and litheness over mass and ultimate tone density really compounded. The focus wasn't on fleshy timbres but speed, precision and plenty of upper harmonics. It's both intuitive and correct to suspect from all of the above that percussive elements would have been handled with a very high degree of accuracy and needle point but also with a softening of the pressurized followups particularly of kick drums.

Soaring vocals like Dhafer Youssef's on his *Glow* album with Wolfgang Muthspiel obviously followed suit. There was generally less diaphragm and more throat, more vocal cord (string) than resonant cavity (body). To compensate for this general trend, I first set my customary Esoteric C-03 preamp to 12dB of gain, finally to 24dB. Boosting circuit gain on this very clever Japanese design always hangs more flesh on the skeletons. Zero gain favors transient impact and speed as do true passives like my Tap-X autoformer volume control from Bent Audio's John Chapman. The passive here proved ill-matched and too lean. While 24dB on the C-03 usually goes too deep into fat for my tastes, with Antelope's Zodiac+ it tilted the overall tonal balance into more fulsome bass, greater overall image density and a higher degree of copper and blood.



Sufiaana 'The complete Sufi experience' on Sony Music is a quite inspired 5-CD compilation of contemporary Indian/Pakistani vocal music with some amazing Qawwali highlights. One of those is Rahat Fateh Ali Khan's "Man Kunto Maula" on the *Traditional* disc. Well recorded for a change, it sports utterly jubilant vocalizing by a traditional Qawwali party of fresh young voices. The tune itself is just modernized enough to be readily approachable by Western audiences. Even utter atheists with no sympathy for religious song will feel the little hairs at their napes rise as the circular theme builds in intensity and one upper-octave vocal peak after the next reaches for the heavens as different singers take turns to top each other. Such devotional music needs to be played at realistic levels for the full impact and obviously relies on fully incarnated flesh 'n' blood performers to come off.

Still feeling just a bit shy on incarnation factor, what seemed called for was a strategic infusion of valves. My 30:70 tube/transistor Trafomatic Audio Kaivalya monos turned out tailor made for this assignment. Their low 3V input sensitivity proved highly copasetic with the 24dB preamp gain setting by design and in this exact configuration, Antelope's new Zodiac+ finally hit—nearly—all of my hot buttons.

Now piano, cello and Renaud Garcia Fons' giant bowed upright all had proper fleshiness and gumption. Though I'd given up just a bit of first-octave power where the 100wpc ModWright KWA-100 SE excels over the non SE version and my 25-watt EL84 monos, I considered it a perfectly fair and proper trade. The newcomer now snuggled into my usual reference setup just so and over my customary Weiss DAC-2 added more spectacular soundstaging and an appealing touch of upper harmonic sophistication.

Converter conclusion: Antelope Audio's new Zodiac+ is an exciting timely entry into the currently very happening scene of USB DACs. Compact enough to fit on the desktop even as monitor stand, feature-rich enough for the most demanding audiophile without charging for a bling enclosure that would do nothing for sonics, this machine telegraphs that its designer Igor Levin understands digital audio at a very high level indeed. Where in this middle-of-the-range model I still suspect certain limitations—deliberate perhaps due to price—are the output stage and power supply. There an earlier inspection of the $1.500 Wyred4Sound DAC2 scored higher. However, this analog angle should see itself addressed by the forthcoming Zodiac Gold model. If for $1000 more (that seems to be the currently targeted price) it can address the somewhat funky volume control of the Plus and beef up its analog circuit portions for greater density and bass power, the Gold could well become the do-it-all new star performer in this sector. Should the standard Zodiac's main difference to the Plus be its reduced connectivity and limited USB data density, budget-conscious shoppers ought to check out that model very closely*now*.

Compared to the Weiss Minerva/DAC2 which due to its widespread reviews has become a benchmark many readers can relate to without having heard one, the Plus already beats it on features, soundstaging, harmonic finesse and price. Where it still takes second place is on body and bass heft. For today's unproven newcomer that's an unexpected but most excellent result. Vis-à-vis the competition, it seems opportune to issue a stern "watch out!" Poke all the fun or disbelief you will at the copywriter of Antelope's marketing materials. Once you lend a critical ear to the Zodiac+, there's real substance. Whatever the lingo, its technical solutions *work*. It'll remain for the test bench jocks to confirm with measurements what Igor Levin has pulled off and how. From a subjective listening approach, he's already more than kosher.

Headphone performance: The comparison against Burson Audio's new $1.100**HA160D** headphone amp with USB & S/PDIF DAC plus variable outputs [right] was illuminating whilst being nearly predictive (relative to personal beliefs of course). At this level of implementation specifically to build a headphone system around, which would be dominant - ultimate converter technology (Antelope, digital) or beefier all-discrete power supply and output stage (Burson, analog)? If the Burson photo had you bet on it, you'd have won. Cross referencing proved that the Zodiac's already described DAC traits didn't waver or drift.

To headphones, the Antelope was Sennheiser's HD800 while the Burson was beyer-dynamic's T1. The Zodiac+ was more aerated, lithe and fluffy plus—here the tie-in with the stock HD800 stops—*smooth*. This combination of qualities proved very much secondary however to the Australian's audibly greater drive. It translated into higher solidity, density, tone color richness and, quite simply, more *substance*. That suite of qualities dominated. The general difference was very much like swapping in a more powerful speaker amplifier. Superior control nets greater firmness, higher power greater dynamic contrasts. While smaller amps in a line routinely are somewhat more sophisticated, that's often outweighed by improved drive into wide-bandwidth more demanding loads.

While Antelope's headphone output had sufficient voltage to generate fully satisfactory levels from today's best headphones—on loudness, the Zodiac's circuit was as 'powerful' as the Burson—and while it was of obviously higher quality than raw convenience sockets on receivers; it was bested by the less than half-priced Australian. The latter's raison d'être is first and foremost as dedicated headphone amplifier. To that platform were then added a DAC and relay-switched inputs. The Zodiac+ seems first and foremost a converter to which were tagged headphone outputs for studio monitoring. For demanding audiophile headfiers, the Burson is the better more focused choice. For those adamant about the last few potential percentage points of D/A conversion and 24/192 async USB, the $2.200 combo of $1.500 Wyred4Sound DAC2 plus $699 Burson Audio HA160 from my circle of hardware familiars would be the top offering in this price range. In that context, don't think of the Zodiac+ as a headphone amp with DAC. Think of it as a very advanced pro-audio DAC with studio caliber (but not ultimate audiophile) headphone sockets.

USB cables: Over my ALO Audio-rewired HD800 as the headphone in my collection that most complemented the Zodiac+'s harmonic and soundstage strengths, the differences in USB cables were narrower than over my regular speaker systems but still trackable. The WireWorld had the most top-end air and upper harmonic elucidation, the Furutech was the warmest and fullest. Compared to those two, the generic cable included with the DAC was the sharpest. However, rather than any unequivocal and obvious best, I expect that most listeners would eventually identify a slight favorite—mine was the Furutech—but (surprise?) not single out the generic as the clear loser. At lengths up to 2 meters, with standard rather than mini plugs and over speaker systems, I had previously heard rather larger differences between generic cables and Entreq's for example. I had thus settled on the latter as an unambiguous choice. With the two half-meter aftermarket cables now vs. the longer generic, headphone listeners shouldn't—as in, ought not to—be in any rush to upgrade. The cable differences I perceived fell very much into the highly diminished return on investment category. Running Amarra 2.0 in memory (buffer) over hard-disk mode for example was a rather bigger step up in performance.

Over my regular speaker system where particularly soundstaging and bass impact differ to headphones, the subtle difference shades of the three USB cables became more pronounced. While the prior WireWorld and Furutech differences held—with the American being more detailed from the upper midrange on up, the Japanese fuller and mellower in the opposite direction—the upset came from the generic. Far from being outclassed, its grippier rawer character could have had many listeners prefer it to the more 'civilized' renderings of the special cables. A few years ago, I reviewed Melody Valve Hifi's 2A3 integrated to conclude that standard Sovtek power triodes sounded far better than the same tubes held up vs. costlier glass in other amps - as though the designer had specifically voiced his amp around the affordable Sovtek bottles. I of course won't suggest that Igor Levin has optimized his USB input for the included freebie wire. I will simply stress that before *you* stress over a fancier cable, give the generic one a fair shake. You could be surprised.

What you perhaps should take more serious is what readers Tony Piquer and Ted Brady had to say. The former found that "...as owner of an Antelope Zodiac+ I must say that it needs more run-in if you want to get the best from it. I came to the same conclusions as you and I even emailed the importer to ask Antelope Audio about the lack of impact of the bass and body. After some more weeks of continuous playing the DAC suddenly made more bass so I suggest you keep it for some additional weeks and report on the changes if those finally occur. My sample needed at least 800 hours if not more."

Ted Brady: "As one who owns the DAC2 (and many other of your inventory….Wyred STP SE, ModWright etc.) and has evaluated the Antelope Zodiac Plus, among others, I have to agree with a large part of your recently completed review. The speed, finesse and overall depth/airiness of presentation tells me that Antelope knows clocking; they know jitter management! However, I found that the missing heft you described started showing itself after about 200-300 hours of break in. Not quite up to the Weiss DAC2 mind you but significantly more than earlier in my demo. This was one aspect of the sound that changed the most with more mileage. Wondered how many miles you put on it."

I originally clocked about 200 before putting keys to pixels. I then ran up another good 100 hours before penning this last page. While the Zodiac+ did flesh out just a bit more, my Weiss DAC2 still overshadowed it on incarnation factor. I did not feel that I had to rewrite my original assessment.

Meanwhile Igor Levin announced that "we have a software control panel coming out and inspired by your remark about the pro-audio nature of the dB scale have added an option switchable from the control panel that will display the level on a 0 to 100% scale."

Wrap: As a 1st-gen pro-audio platform introduced to the consumer audio market, Antelope's Zodiac+ is an impressive debut. Out of the gate it competes on the level of the two DAC2s from Wyred4Sound and Weiss respectively and outfeatures them both. With such a positioning, the Zodiac Gold's upgrades of stepped attenuator and beefier power supply and output stage have the very real—actually, highly likely—potential of catapulting that machine to the very top of the heap. The Plus' showing suggested to me that its (digital) front end already is there. To fully catch up with the audiophile competition merely requires additional efforts on the (analog) back end. If the Gold delivers that, I expect that it could really upset the status quo.

Quality of packing: Very good.
Reusability of packing: A few times.
Ease of unpacking/repacking: Effective.
Condition of component received: Flawless.
Completeness of delivery: Perfect. Includes owner's manual and generic Toslink, USB and power cable.
Human interactions: Sales manager Leizer Benvenishty was very responsive and helpful.
Pricing: A hi-tech high value.
Final comments & suggestions: Volume control tracking of fine setting vs. display readout could be improved. Sonically, the Zodiac+ majors on soundstaging, air, upper harmonics, speed and very high resolution. Depending on system context, ultimate body, density, color saturation and bass power may need to come from elsewhere. In my context, class A push/pull EL84 monos in feedback pentode mode plus a high gain transistor preamp provided the appropriate reinforcement.