

## Equipment Report



# Audionet Stern Linestage and Heisenberg Monoblocks

## Teutonic Masterpieces

Greg Weaver

**F**rom Audionet's beginnings in January 1994, Thomas Gessler's goal has been simple: to create the finest amplifiers. As Audionet moves into its 26th year, Thomas will tell you that over the past quarter of a century, there have been no amplifiers on the market that measured better than his. Still, toward the end of 2013, shortly before Audionet's 20th anniversary and just before the major team expansion of 2014, Thomas had formed the basis for what would become his "Lighthouse" project: the creation of new products that would be generally recognized and remembered as true milestones in the history of audio electronics.

This "Lighthouse" project would take an utterly unfettered approach, with no cost limits or production deadlines. The effort would require time, unconstrained thinking, and perhaps even more of a fresh approach than any work he and his team had undertaken to that point.

Both the concept of naming these "Lighthouse" machines after famous scientists (and hence calling them the Scientist Series) and the idea of involving the highly accomplished German industrial designer Hartmut Esslinger, founder of the Frog Design Group and probably best known in the U.S. for his work with Apple, were the contributions of Audionet Branding & Marketing director Jan Geschke (Mercedes-Benz, Porsche, Dali, and Dynaudio).

Jan reached out to Hartmut via a mutual friend, Dietmar Henneke, a famous Stuttgart-based freelance and automotive photographer. Once up to speed on what Thomas and the Audionet team had in mind, and excited by the thought of what he might be able to contribute, Hartmut committed to the project. In fact, the very reason he chose to work with Gessler and his team was because, in his own words, "Audionet is a fanatic company."

### Objective

The Stern linestage (named for Otto Stern, a German American and 1943 Nobel laureate in physics) and the Heisenberg monoblocks (named for Werner Karl Heisenberg, a German theoretical physicist and one of

the key pioneers of quantum mechanics) are exquisitely executed examples of industrial engineering—so much so, in fact, that the Stern has earned a place in the Smithsonian National Gallery. Unquestionably, its use of a unique, patented Floating Pane Design, which provides optimal resistance against microphonic effects and maximizes thermal stability, contributes significantly to its eye-catching look. Essentially, these machines do not have a fixed body. They are, instead, made up of six massive floating panes, which do not touch each other and are resonance-optimized by pads on an aluminum frame.

Much like the previously reviewed MAX monoblocks and PRE G2 linestage (Issue 279), but with everything taken to an even greater extreme, these machines exhibit great attention to overall design by magnetically and capacitively optimizing the circuit and eschewing the use of any ferro-magnetic materials. All the mounts and bolts of assemblies, such as those used for the transformers, are made of stainless steel, and the circuit-



## Clarus Concerto AC Power Conditioner **Equipment Report**

### Specs & Pricing

**Number of AC outlets:** Eight

**Maximum power deliverable:** 1800W, 120 VAC, 15A

**Dimensions:** 19" x 3.5" x 12.75"

**Weight:** 19 lbs. (8.6 kg)

**Price:** \$3600

**CLARUS**

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### The Clarus Concerto should join your list and is worth an audition.

specially designed multi-level digital filters, and two analog outlets that also use C-Core technology. They are powered on in sequence from high current to digital to analog.

Technologically, the unit uses inductors made of proprietary lengths of copper dipped in liquid polymer to create a thin dielectric and enhance current flow. The gauge is optimized for the 60Hz/120VAC of our geographic region. All four banks use purpose designed inductors, while the digital outlets add a second inductor to filter higher frequencies that can wreak havoc with digital components.


What the unit does is exactly what it is supposed to. It lowers the noise floor without restricting dynamics. But how best to utilize the Concerto? I am a bit stubborn when it comes to high-power amplifiers, mono or stereo. I run them directly into the wall with a good power cord and have always achieved the best performance with this set-up. I believe that any power conditioner limits current to some extent—those TMOV's simply have to do so in order

to function properly. In fact, I find that very high-power or very high-quality mono-blocks actually benefit from their own dedicated 30A line to the panel. *But* I do find that some moderately powered amplifiers or integrated amplifiers can benefit from the noise filtering offered by a good conditioner. To be specific, my Octave V80SE with super black box sounded best direct into the wall. But my Naim Uniti Star sounded better plugged into the Concerto, offering a blacker background with a slightly wider stage and more palpable performer presentation (and the difference was not subtle). My expectation would be that moderately powered amplifiers and integrated equipment in the price range of the Clarus would benefit from the high-current filtering offered. Higher-power equipment with significant current draw would most likely still sound best direct into the wall.

I am a stalwart believer in filtering all analog and digital gear, and I don't think any non-amplification equipment I own has ever been plugged directly into the wall, even in my room with a dedicated panel and identical-length runs to all my dedicated outlets (20A and 30A), and with ground filters in the breaker box. This kind of equipment

does have current requirements, but they aren't close to the needs of thirsty amplifiers; thus, current-limiting becomes a non-issue. Analog and digital gear is *much* more sensitive to AC line noise from everywhere, and my experience has been that both good cables and good conditioners offer an improvement in audio performance worth the investment. That said, my digital sources and my analog sources benefitted from what the Concerto provided, with clearly blacker backgrounds, more dynamics, and a cleaner canvas upon which to paint the music. Image specificity was also heightened and the stage seemed to take a step closer to the back wall.

If you are one of those who refuse to accept that AC cables or conditioners can make a difference in system performance, I'm surprised you made it this far in my review, and I hope I have changed your mind—or at least opened your mind to a new possibility. To those who already know the improvements conditioners can make, the Clarus Concerto is a solid option in its price range. It does what it is supposed to do, and nothing it's not supposed to do. At its price point there are many options, a lot of them good. The Clarus Concerto should join your list and is worth an audition. I believe system matching and synergy will play the biggest roles in your final decision. As such, I urge you to rely on and utilize your authorized local or on-line dealer to guide you to what suits your system best. **tas**



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# Equipment Report Audionet Stern Linestage and Heisenberg Monoblocks

## Specs & Pricing

### Stern

**Inputs:** Four pair Furutech RCA line; two pair XLR

**Outputs:** Two pair Furutech RCA, one pair Furutech RCA inverting, two pair Furutech XLR

**Frequency response:** 0Hz–2.2MHz (–3dB), DC coupled; 0.3Hz–2.2MHz (–3dB), AC coupled

**SNR:** >123dB

**THN + N:** <–104dB@20kHz / <–116 dB@1kHz

**Output impedance:** 24 ohms (RCA), 48 ohms (XLR)

**Dimensions:** 10.63" x 19.68" x 19.88"

**Weight:** 83.78 lbs.

**Price:** \$45,000

### Heisenberg

**Output:** 530W into 8 ohms, 1050W into 4 ohms, 2100W into 2 ohms

**Inputs:** One Furutech RCA, one Neutrik XLR balanced

**Frequency response:** 0Hz–700kHz (–3dB)

**Damping factor:** >1800@10kHz and >10,000@100Hz

**SNR:** >125dB

**Loudspeaker outputs:** Two pair Furutech

**Input impedance:** RCA, 50k ohms, 33pF; XLR, 7k ohms, 66 pF

**Dimensions:** 10.63" x 19.68" x 19.88"

**Weight:** 145.5 lbs.

**Price:** \$105,000/pr.

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per channel; one each for the positive and negative half-waves. Eight extremely low impedance, silk dielectric, 22,000µF capacitors minimize capacitive ESR (equivalent series resistance), and the Heisenberg employs rhodium in both its fuse and Furutech RCA jacks. The whole design is DC coupled, and the physical layout is based on the shortest practical signal paths.

The Stern linestage comes in two form factors—a vertical version that mimics the Heisenberg profile, and a more traditional, horizontal orientation, which is the model I auditioned. At 19.88" deep, the Stern is even more feature rich than its predecessor, starting with a 7" wide by 4½" tall high-resolution display centered on the upper half of its front face. Four round buttons, two on either side of a large centered triangular one, are aligned immediately beneath the display, and their functions are defined by the mode that the preamp is in at the time, labeled by the actively changing display. Another much larger, round multifunction knob is centered immediately beneath

the triangular button, with a round power button near the bottom left corner of the chassis.

Moving to the rear and starting at the left, we find the left (upper row) and right (lower row) inputs (two XLR and four RCA) occupying the leftmost two-fifths of the back panel. To their right, occupying the next two-fifths, are the left (upper row) and right (lower row) outputs (a set of RCA inverteds, two XLRs, then two standard RCAs). Finally, in a vertical row in the final fifth at the right-most side of the rear panel, from top to bottom are a WLAN antenna socket, an RS232 serial port, a pair of Audionet optical links (outputs to control other Audionet devices), an additional ground terminal, with an IEC power cord socket and fuse compartment at the bottom.

Offering a bypass mode (to allow integration into home cinema systems), user-definable names, highly adjustable input levels, and a function to remove DC from signal sources for each input, the whole beast is managed by microprocessor control, with

ry and power supply layout is dual mono to maximize channel separation. Considerable attention was paid to board and circuit layout to maximize air flow and afford optimum cooling, helping to provide stable quiescent currents throughout the entire chassis. Finally, all analog circuits are galvanically separated using opto-couplers.

With Stern, both input and output sections, as well as the volume control, are implemented using enhanced discrete Audionet operational amplifier modules, which include advanced mica capacitors. The volume control uses a double-ball-bearing axis, with magnetic ratchet and optical sensing, and is controlled by electronic switches and a real-time-linearized precision-resistor network.

Using four encapsulated and fully decoupled 50VA toroidal transformers, the power supply has two separate transformers



# Equipment Report

## Audionet Stern Linestage and Heisenberg Monoblocks

its own separate power supply monitor, of course.

The massive 145-pound Heisenberg employs an equally impressive power supply, with 200,000 $\mu$ F of total capacitance made up using low-impedance-optimized power capacitors, one encapsulated and decoupled 50VA toroidal transformer for the input stage and one for the driver stage, with two encapsulated and decoupled 1200VA toroidal transformers for the power stage. Ultimately, each separate stage of this amplifier—including device control and detection, mains power zero-crossing monitoring, the input and driver stages, and the power stage—benefits from the advantage of having its own supply. Heisenberg further ups the game over MAX by employing the latest iteration of Audionet's own ULA (Ultra Linear Amplifier) technology, which it claims optimizes real-time linearization of distortions.

As with Stern, Heisenberg is also DC coupled (to eliminate the signal degradation entailed by using capacitors or inductors) and is designed to

leverage the shortest possible practical signal paths.

Gessler stated that every measure has been taken to ensure the integrity of the signal transfer to the speaker output, from eschewing the use of speaker relays to utilizing massive, gold-plated copper rails straight to the output terminals.

It may come as no surprise that Gessler often alludes to spring water to describe the purity of sound that the Audionet team was striving for with these Lighthouse products. Spring water is about as pure as water can be in nature, and once it becomes contaminated with anything else, that contamination is remarkable difficult to remove. So it is with electronic amplification. Once any contaminants are introduced into the original pure electronic signal stream, it is next to impossible to remove them from the resultant audio output.

As with Stern, the Heisenberg employs a microprocessor-controlled protection circuit (with its own separate power supply) for detecting high-frequency noise, DC, overload, and overheating,

and for disconnecting the output at the first sign of trouble. It also makes significant use of rhodium, from the Furutech RCA jacks, through the fuses for both mains and secondary, to the torque speaker terminals.

I don't want to place too much emphasis on measurements because it has long been my view that specifications are a merely a good jumping-off point. Measurements simply cannot predict musical performance. But what Audionet has achieved here technically deserves to be singled out.

First, the listed frequency response of the Stern is given as 0Hz–2.2MHz (–3dB), DC coupled, or 0.3Hz–2.2MHz (–3dB), AC coupled, with a channel separation of >144dB! Stern's upper frequency limit is more than 36 times higher than the equivalently priced Pass Labs Xs, and more than ten times that of the \$90,000 Constellation Altair II. Taking into consideration what may perhaps be the two most direct contenders, it affords more than double the high frequency limit of both the \$51,500 CH Precision L1 and the \$55,000 Soulution 725. Further, most of these highly successful and deservedly well-respected competitors boast channel separation of just over 110dB.

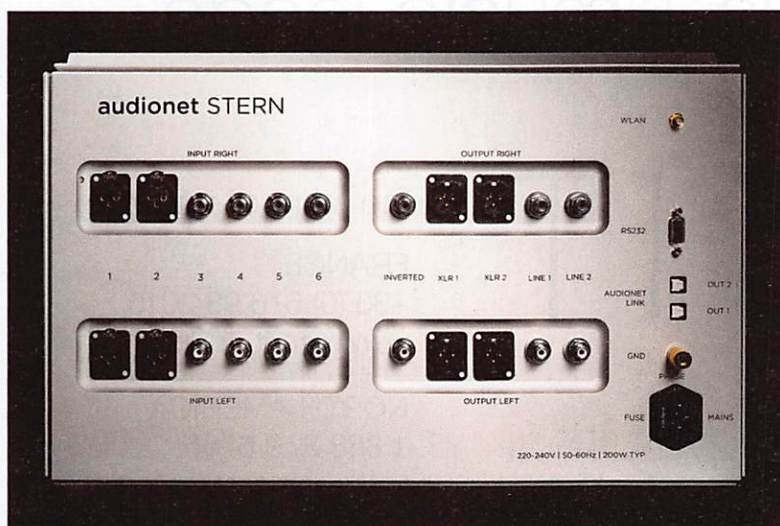
Granted, these upper bandpass limits and channel separation specifications, in and of themselves, prove nothing sonically, as all the aforementioned linestages are exceptional sounding. But, that these Audionet Scientist Series machines can achieve such lofty specs certainly speaks to the capabilities and accomplishments of the Audionet engineering team.

Suffice it to say that the Heisenberg mono amplifiers also have grander specs than many of their similarly (or higher) priced monoblock rivals. While I've never been one to focus solely on specifications, it is easy to see that Audionet is building extremely refined electronics.

### Setup

Bill Parish, owner of GTT Audio & Video, the U.S. distributor for Audionet, delivered and set up these electronics in my large rig, replacing my reference Audionet PRE G2 linestage and MAX monoblocks.

Installing them required some adjustments to my system. First, at approximately 84 pounds, Stern weighs as much as many other companies' monoblock amplifiers. Standing at nearly 10 $\frac{3}{4}$ " tall, it was simply too large to fit in any shelf location of my Grand Prix Audio Monaco equipment-isolation stand. Therefore, we located it on the floor (a carpeted concrete slab) just in front of the equipment stand, in order to allow me to continue using my current reference cabling system. While I would try the Audionets with several looms of cable over their stay, I strive to avoid making more than one significant change at a time. And while I had the required shelf dampers on hand to accommodate the Heisenberg's weight of just over 145 pounds on my GPA amp stands, we chose to forego them, too, removing them entirely, and instead placed the monoblocks in the same location directly on the carpeted slab floor.





# Equipment Report Audionet Stern Linestage and Heisenberg Monoblocks

Outside of their extended stay in my music room, I've heard the Scientists on four other occasions, driving the Gauder Akustik Berlina RC8 Diamond (~\$80,000), and three models from YG Acoustics, the Sonja 2.2 (\$76,800), Sonja XV Jr. (\$189,600), and Sonja XV (\$265,900). During their audition in my large (45' x 13' x 7' 2") room, they drove my reference \$60,000 Von Schweikert Audio VR-55 Aktives and the \$150,000 GamuT Zodiacs.

## Subjective

Once in place and warmed up (all three units had extended run-in time at GTT—in fact, these were the very same units I heard powering the Sonja 2.2s), their sonic performance was immediately something special. Their show-stopping voice was, to me and to everyone who had opportunity to hear them in my room, as arresting as their appearance.

To say that this trio is exceptional in every possible audible and measurable characteristic would be like saying it gets cold at the North Pole in winter. As exceptional as the previous Audionet flagship electronics had been, the change was a paradigm shift more in line with an order of magnitude of improvement. I honestly would not have thought that the differences made by this swap could be so perceptible and significant.

The first thing that was obvious during my auditioning of the Stern and Heisenberg was the perceived starkness, the utter silence from which all music emanated. The noise floor of these components is among the absolute lowest I've experienced from any electronics I've ever had the pleasure of auditioning.

Beginning with the foundational bedrock upon which all other constituents rely, the lowest frequencies were beguiling and masterfully controlled. The leading edge of bass transients were reproduced in an especially lifelike way—one that many other well-respected amplifiers can only begin to emulate. Their ability to provide authentic weight, texture, power, and especially dynamic nuance and fluency was simply beyond reproach.

I've heard a great number of otherwise exceptional amplifiers that exhibit proficiency in low-frequency extension, tonal finesse, and textural rendition, but are woefully inadequate when it comes to rendering the punch, impact, and attack of a kick drum or tympani strike—or the eerie sensation of the compression of the air and pressurization of a room created by the lowest tones of a large pipe organ. There was none of that inadequacy with this Audionet duo.

The improvement in bass performance, from the lowest recorded frequencies up into the midbass, was extraordinary. Only a handful of other electronics in my experience exhibit anywhere near the control, transient

speed, and weight that these machines have. The way they flesh out remarkably replete texture with dense and authentic tone color is simply extraordinarily realistic.

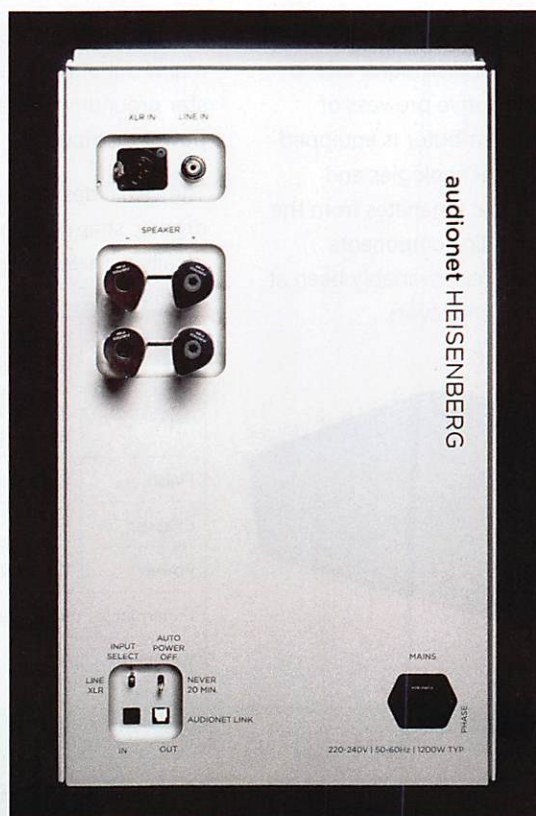
As you might expect, midrange purity, transparency, tone color, and especially texture are exquisite. These Audionet electronics simply breathe life into this part of the audio spectrum, bestowing on them a remarkable sense of realism. In the midrange and lower treble, they almost seem to delight in articulating enunciation or breathing artifacts and serving up any other forms of vocalization with which they are challenged.

All the myriad nuances of instrumental voices—human, stringed, reed, and brass, even the percussive voices of drums and cymbals—are reproduced more tangibly

than I've ever noted from other solid-state electronics. Their ability to create a genuine sense of the body, bloom, and texture of instruments is matched only by the overt realism with which they reproduce transient detail and timbre. As a result, in overall tonal and textual character, as well as bloom and expansive body, the midrange truly begins to encroach on the performance of the finest valve designs like those from Audio Research and the Valve Amplification Company.

Information above 3.5kHz is delightfully fleshed out, with a startlingly faithful sense of size, space, and ambience, and is astonishingly replete with detail, exhibiting almost photo-realistic definition. Rife with natural reverberant decay, the uppermost octave establishes that sense of graceful effortlessness, of unfettered extension, that creates the ethereal, near-magical perception of the air around instruments. When listening to ride cymbals with jazz or blues combos, or triangles within classical recordings, you are treated to clear and uncongested detail, with vivid, precise attack and distinct ambient decay. Trailing edges of events linger on for tens of seconds when the recording has captured that aspect of the performance.

As remarkable as I have found the high-frequency extension, clarity, transparency, and transient response from brands like Constellation, CH Precision, darTZeel, and SouLution, the Stern/Heisenberg combo easily matches and, I'd argue, effortlessly bests them all. It presents impressively pure, eloquently articulate high frequencies, all with remarkable transient speed that





# Equipment Report

## Audionet Stern Linestage and Heisenberg Monoblocks

seems just about as flawless as can be produced today, never producing that hard, wiry sound that some solid-state overachievers can deliver, especially when pushed hard, or when reconstructing complex and highly dynamic material. That hardness immediately drives home the reality that you're listening to recreated, not live, music. In this regard, they create a considerably truer musical experience than virtually any other electronics I have yet encountered.

With the 45rpm release of *88 Basie Street* [Pablo Records], from the moment the needle landed in the groove, beyond being swept away by the utter naturalness of the presentation, I was picking up subtleties of hall acoustics that I'd never before heard in all my years of listening to this LP. Transients were crisper, more sharply and accurately delineated; tone color and texture were astonishingly accurate; and every aspect of the presentation was depicted with full, honest bloom and ample body.

"Duke's Place," from the Louis Armstrong and Duke Ellington collaboration *Recording Together for the First Time* [Roulette, Classic Records], was an absolute revelation of the musicians' spatial relationships within the soundstage and of vibrant, faithful timbre. And the rhythmic pace, the timing and drive of the music, had never been presented with more frenetic power!

With my longtime favorite version of Beethoven's Symphony No. 9 by the Chicago Symphony Orchestra and Chorus under Sir

Georg Solti [MFSL 2-516], I was hearing bowing subtleties and nuances, hall space, the air of and around the strings, brass, and even percussion instruments in the most relaxed, holographic, and natural manner. I had never heard the resonant naturalness, as well as the tone and texture, of the horns on this pressing expressed with more realism or with such an elevated level of emotional engagement.

Listening to that entire Fourth Movement, the "Ode to Joy," I was inextricably drawn into the performance by a newfound purity in tone color, textural complexity and density, and the remarkable distinction of the individual voices of the primary vocalists as well as those of the

massed chorus. This striking specificity of the vocalists clarified both their enunciation and their specific physical location, coincidentally resulted in a more cogent, coherent presentation of the choral performance, rendering a sound that was more natural, organic, and relaxed, rather than artificially illuminated. This audition was without question among the most convincingly and clearly I had ever "seen" a performance with my ears.

Shifting to popular music, I dropped my Supertramp *Crime of the Century* [MFQR 1-005] into play, and it was also a revelatory listen. The way these Audionet electronics recreated the sound of a snare drum—its location,

## Audionet Stern Linestage and Heisenberg Monoblocks **Equipment Report**

size, tone, and body—was simply unnerving. With these Scientist Series electronics, the multitracked vocals on “If Everyone Was Listening” were clearly revealed, not just hinted at. The closing track, “Crime of the Century,” was portrayed with the most focused and lifelike intimacy I’ve ever noted.

### Summing Up

Acknowledging the remarkable advancements we’ve witnessed in solid-state amplification over the past dozen years or so, especially those leveraged by a number of industry leaders, most notably from the U.S., Germany, and Switzerland, nothing else in my immediate experience better demonstrates the transis-

tor’s ability to accurately and artfully combine delicacy with power, focus with bloom, resolution with body, detail with texture, and clarity with expressiveness than the Stern and Heisenberg. These flagship Scientist Series products from Audionet should be seen as more than merely the significant accomplishment of Thomas Gessler’s vision; they represent the embodiment of the most refined triple threat available today—class-leading design and build-quality, outstanding specifications, and landmark sonic performance.

Visually, the Stern/Heisenberg combination also makes an arresting impression. There are only a handful of audio devices that speak anywhere near as strongly to my

aesthetic sensibilities and can convey this remarkable sense of a powerful and imposing identity.

On the test bench, the other contenders in this luxury class, be they the most highly regarded from Switzerland, the United States, or Germany, cannot measure up in some areas; taken at face value, many of the Audionet specifications appear in select areas to set today’s benchmarks.

And sonically, this linestage and monoblock combo offers a degree of resolution and subsequent transparency I’ve yet to hear from any other equivalently or lesser-priced series of electronics, and in fact, surpasses the performance I’ve heard from any solid-state players at any price. Yet much like anything else in audio, and across most all disciplines in general, it is not the individual constituent capabilities that infuse these remarkable machines with their undeniable and enchanting magic; it is their synergy.

I know that if I had the means (I’ll be paying for my new speakers for some time yet), the Audionet Stern and Heisenberg’s would be a permanent part of my system. Those of you reading this who can afford to acquire such exotic and exquisite equipment should make sure to find a way to audition the Scientist Series devices before you settle on any purchase. If you don’t, and you get to hear their contributions afterward, you may discover that you are still riding the audiophile-upgrade merry-go-round. Don’t say I didn’t warn you! **tas**