

Avantgarde Acoustic Trio G3 Loudspeakers and SpaceHorn Subwoofers

by Roy Gregory, April 23, 2022

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There aren't many loudspeaker designs that persist unchanged for three decades. The number of those that start out as serious high-end contenders and *maintain* that position is close to zero. Even such legendary designs as the Wilson WATT/Puppy owe their continued status to constant evolution, to the extent that I doubt the current Sasha DAW shares a single component with the original version.

But then Avantgarde's Trio is -- and always was -- different. It looked different, it sounded different, its technology was definitely different, and its departure point was entirely different. In fact, whichever way you look at the Trio, pretty much everything about it is smack-you-in-the-face different. Put plainly, no speaker has ever been as instantly and unmistakably recognizable as the Trio -- conceptually, visually or sonically.

I don't know whether the Trio was the first modern spherical horn speaker, but thirty years ago, before the Internet had raised its ugly head, it was the first one I saw -- and the first to capture the public's imagination. Never had a speaker succeeded in looking simultaneously so right *and* so wrong. When every other loudspeaker seemed to be getting smaller, denser and less efficient, the brilliantly colored and extravagantly skeletal Trio almost literally exploded onto the scene. Always divisive, always challenging, it forced more than one listener to take a step back and a long, hard look at their direction of audio travel.

Thirty years on, things haven't changed that much. The speaker still looks the same, is conceptually identical and driver refinements aside, major developments have mainly revolved around the subwoofers, culminating in the huge, semicircular, BassHorn six-pack, a setup that brought

new meaning to the term *wall of sound*. It still possesses the ability to shock and astound, even if familiarity is beginning to blunt its market impact.



But that was then and this is now -- and it's all change. Avantgarde has reinvented the Trio, and the result is arguably just as revolutionary, just as challenging and just as big a game-changer as the original version. This is now my second encounter with the latest iteration of the Avantgarde flagship -- and if anything it has left me even more impressed. I detailed our first meeting and the thinking behind the substantial changes in the system architecture and technology in an earlier article. I trailed the history and hit the technological highlights, so that's the place to start, if you haven't read it already.

(in current COVID parlance). And this is not change for change's sake. It's no exaggeration to describe the new Trio G3 as revolutionary, both in technological and performance terms. This latest generation hasn't just raised the Trio's game; it has been hit out of the park. Avantgarde's new flagship inherits the mantle of its legendary predecessor and does it more than justice, threatening to have just as big and just as shocking an impact as the original.

So, what lies behind this step change in performance? When I described it as a "from-the-ground-up rethink," I wasn't overstating the case. There's barely a part, internal or external that hasn't been changed, replaced or improved. The deeper you dig, the more you find.



Suffice to say, for the first time in its thirty-year lifespan, the Trio system has undergone a from-the-ground-up rethink. The actual "trumpets" on the midrange and midbass remain, but everything -- and I do mean *everything* -- else has changed. The destination might have remained the same, but the route and the means of transport, the thinking and the execution, have changed or evolved so completely as to represent a technological "circuit breaker"

The relationship between the three spherical horns had always remained stable -- at least until now -- and therein lay a problem. With the offset tweeter, altering the toe-in of the horn array relative to the listener altered the relative distance between the high-frequency horn and the other two. The G3 uses a redesigned tweeter horn that's almost twice as long as the original, actually making the problem worse, as proper time alignment meant pulling the driver



even farther back, forcing it wider to avoid its output being masked by the other trumpets. Avantgarde solved the issue by mounting the tweeter module on a precision slide, allowing users to adjust for correct time alignment irrespective of toe-in. It might sound like a small thing, but in setup terms it's massive, and musically it's transformative.

Trio fans will note that the cruciform base and three-legged space-frame that characterized the original are also gone. A heavy tripod base now anchors the speaker. Three spikes (or "glides") are hidden beneath the legs of the base's "T," allowing precise angular and attitudinal adjustment. The tweeter module is now cantilevered from a single substantial plate, which rises from the base, angling out to provide the necessary offset before stepping back in to continue its strong vertical line. The large barrels that contain the midrange and midbass drivers are sandwiched between that vertical plate and a rectangular-section electronics cabinet that runs from the base to the top of the speaker, a solid, purposeful block that anchors the trumpets physically and visually. The midrange horn has also been stepped back, a move accomplished by increasing the diameter of its barrel. Add that to the new bass, the vertical plate mounting the tweeter and the large, extruded housing for the electronics and the result is far denser (physically and visually). Each Trio G3 horn array, once fully loaded, weighs in at 135kg, or almost 300 pounds. Still unmistakably a Trio, this is a Trio that has encountered the Borg, coming back physically enhanced and with some serious attitude.

Inside the driver barrels you'll find redesigned drive units with more powerful motors and more linear surrounds, promising lower overall distortion. The new annular tweeter is smaller and more rigid, the longer horn allowing it to reach both lower and higher, again with significantly reduced distortion. But the real step-change in the Trio's evolution is contained in that electronics cabinet. While the company has expended significant time and energy refining the passive crossover used by the Trio, even the most complex network wouldn't require all that real estate. Instead, the electronics cabinet is designed to allow users a modular upgrade path, replacing the passive crossover with an active electronics package and ultimately adding a wireless-connection capability -- although that module remains to be finalized.

Active speakers get a bad rep in the audio world, not least because they involve changing your amp and speakers at

the same time, often for multiple amplifiers at considerably greater cost. Interactive systems -- those that use a dedicated amplifier package, often housed within the speaker cabinet -- can save the considerable cost of all the chassis work you'd be buying for up to six channels of amplification and an active crossover, but place your mechanically sensitive electronics at the mercy of the energy generated by (and within) your loudspeakers. That ain't great. The Trio G3s dodge that bullet, simply because their main horn arrays have no cabinet. Instead, by mounting the horn barrels externally on a substantial vertical housing, that volume can double up as the cabinet for the active electronics, if you choose to invest in them. On the one hand, that means that you are paying for the cabinetry whether you are going to use the speaker in active mode or not. On the other, it reduces the price of the active upgrade.

However, in reality, the relationship between the driving amplifier and the loudspeaker is one of the most critical and complex in the entire system -- especially if you are talking about something as downright unusual as the 109dB, 27-ohm Trios. That means you should absolutely be treating the amp and speakers as a matching pair -- at which point, the arguments against active drive start to crumble and its advantages start to become more and more attractive and operational options multiply. Indeed, as I've already explained in that preceding article, the Trio G3's revolutionary iTron, current-drive amplifiers are only possible because they are used in an active topology.

What makes current drive so special -- and so unusual? At the heart of almost every audio system is a fundamental contradiction: we express the signal as, and amplify, voltage, but it's current that drives a speaker voice coil. The approach only works because of Ohm's law -- namely, that the strength of the electric current flowing through an object is proportional to the electrical voltage at constant resistance. Increase the voltage and you automatically increase the current -- at least as long as the resistance stays constant. The problem is that loudspeaker voice coils don't offer a constant resistance, and that gives a conventional amplifier the jitters. The greater the resistance, the smaller the current flow, and vice versa. In the real world, where loudspeaker impedance is constantly varying with frequency, linear output becomes a faded dream. Throw in variable inductance, back EMF and thermal compression and it's no surprise that the amplifier's job is so challenging, or that its relationship with the driven load so critical.



Rather than relying on voltage to stimulate current flow, a current-drive amplifier actually consists of a voltage/current converter. The result is a current flow that traces the input signal far more accurately, without the time lag associated with transient rise times or many of the issues surrounding variable impedance. There are two telling diagrams in the literature that Avantgarde supplies with the Trio G3. The first shows what happens to voltage and current when a conventional amplifier receives a square-wave input. The (blue) input voltage is tracked almost perfectly by the (green) output voltage, but the (red) current takes time to reach the maximum amplitude -- and then more time to decay. With the current drive shown in the second diagram, the output voltage spikes momentarily (overcoming driver inertia due to inductance) before dropping to almost zero. Meanwhile, the current output traces the input voltage almost perfectly in terms of time and amplitude. Think about that in terms of the driver's movement, and the benefits become almost blindingly obvious.

Theoretically and musically, the result should be organized, quick and clean, and should generate far lower distortion. But achieving those results is not without challenges. Creating a stable, wide-bandwidth voltage-to-current converter is indeed technically challenging -- but for audio purposes, it's the least of your problems. Two issues prevent the use of current drive with any conventional loudspeaker: first, passive crossover networks are effectively invisible to current drive, their filters only working with voltage; second, the fundamental resonance of any driver presents current drive with the electrical equivalent of, if not a black hole then certainly the Marianas Trench. The rising impedance characteristic that marks a driver's resonant frequency would simply demand

ever more current from the driving circuit -- to the point where something broke.

But, in a situation where the amplifier designer controls the loudspeaker design too, where it's possible to use an active crossover and where the limited bandwidth of the speaker system allows you to avoid driver resonance altogether, suddenly current drive becomes a real possibility. Actually, "suddenly" is probably a bit strong. Avantgarde's iTron electronics package, a

symmetrical, single-ended, feedback-free circuit, demanded over five years of research and development and resulted in a patentable amplification circuit. With virtually constant, high-impedance motors and a host of other mechanical and material features designed to maximize the dynamic range, efficiency and linearity of the complete system, the promise of unrestricted dynamic response coupled to unprecedented temporal and phase accuracy is enticing indeed. Each active module contains three channels of amplification and the active crossover necessary for a single horn array. A pair of passive Trio G3 horn arrays is priced at \$95,000, and a set of active modules will set you back an additional \$38,000. That looks like an awfully big potential



performance upgrade for the money -- especially when you consider that you either won't be purchasing, or will be in a position to ditch, an existing amplifier. The list of state-of-the-art, standalone stereo power amps for that sort of cash is almost vanishingly short -- let alone three of them and an active crossover.

But even so, many listeners will at least start with the passive version of the speaker, probably with an existing amp, so I made sure that option was available to me

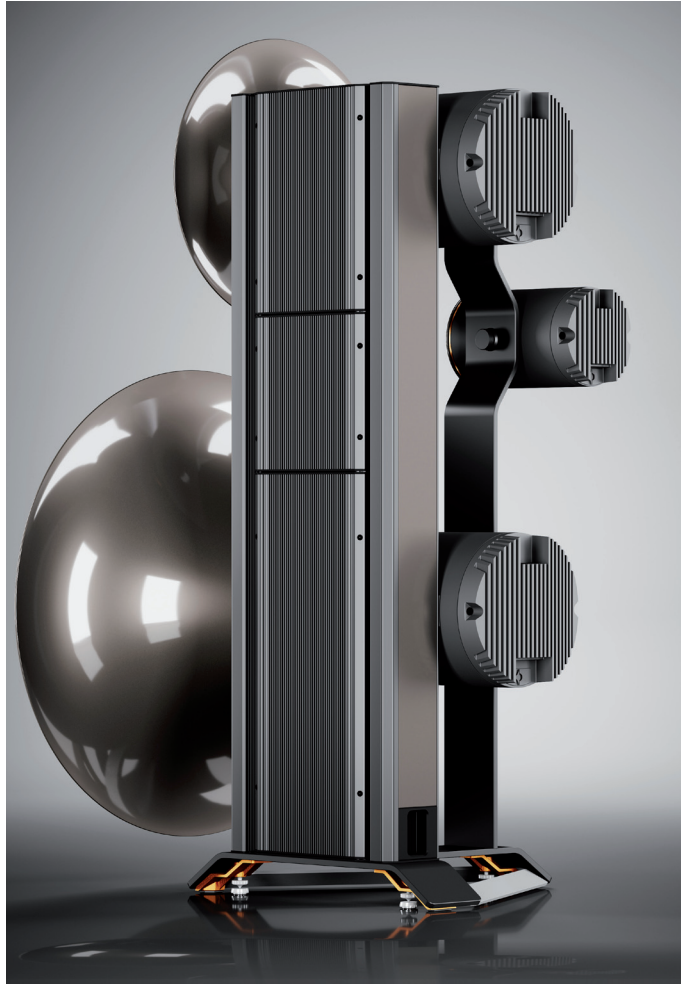


too, in the shape of Avantgarde's own seriously underrated XA power amp (\$15,000). It's an amp that I'm familiar with but also an amp that suits the requirements of the Trio perfectly. One hundred and fifty watts of solid-state power might seem like a strange choice for a horn speaker, but that power qualifies on two counts: it's super quick and super quiet. Not surprisingly, Avantgarde knows exactly what will get the best out of their speakers, and for the most part, wimpy, flea-powered SETs just ain't it.

The electronics module -- or at least its housing -- solves one other perennial challenge for Trio owners. The original, skeletal frame always looked impressively see-through, but that also meant that it did little to hide the speaker cables. To make matters worse, owners quickly discovered that running better-quality external cables between the trumpet barrels, in place of the internal cables threaded through the frame, delivered a very worthwhile jump in performance -- if not appearance. The Trio G3's electronics module is fashioned in three sections. A square hatch that screws seamlessly into the outer face covers all of the connections to the passive crossover in the upper section and the active module if that is installed in the lower section. A generously proportioned extruded channel with a removable cover runs up the rear of the cabinet, carrying and concealing cables running from the base of the speaker to the connection panel, ensuring that the sculptural elegance of the Trio horn arrays isn't festooned with unsightly wiring.

While the radically different look and technology of the Trio G3 are always going to get the lion's share of the attention, it would be a mistake to overlook the SpaceHorn. It's a crucial part of the system's success and

a big step up in performance (and step down in size) compared to the earlier Avantgarde horn-loaded subs. Those massive, semi-circular Bass Horns might have looked and sounded impressive, but few owners could accommodate them and the looks were divisive. Make an improvement in the performance of the main horn arrays and the quality of the bass was always going to have to improve in step. At the same time, Avantgarde took advantage of the opportunity to revise the BassHorn format, making it more compact, more tractable and more easily accommodated.



The new SpaceHorn is available in two different versions. The dual-driver model costs \$88,000 a pair and is basically a chamfered square, around 44" on a side and 30" high. It contains a folded horn that's almost seven feet long, around 40% longer than the original BassHorn, increasing the speed, impact and clarity of the output. A 1kW amplifier is coupled to a pair of 12" drivers and controlled by a powerful DSP system that offers both twenty preset bass EQs and the ability to define the output parametrically via the Ethernet input and a laptop. An improved driver and its revised relationship to the longer horn have resulted in an 8dB increase in efficiency in the range between 40 and 150Hz.

A single pair of the twin-driver subs proved capable of delivering awesome bass (and I really do mean *awesome*, in the true sense of that word) in my large listening room. Although it is entirely possible to stack SpaceHorns -- and Avantgarde actively promotes the idea that a *real* Trio G3 active setup should have four or even six dual-driver SpaceHorns -- I can't help feeling that only a power-crazed maniac with a listening room the size of Grand Central Station would feel the need. I don't doubt the benefits, but a single pair of subs is plenty impressive on their own.



Which brings me to the second single-driver option. With an identical footprint and electronics package to the dual-driver model, the smaller version stands only 20" high (or wide).

I add the qualification because the smaller version is specifically designed and equipped to be installed horizontally or vertically -- the latter an especially useful facility in tight spaces. It is possible to deploy the dual-driver sub vertically too, but its width/breadth makes that a far less appealing option. What's more, by positioning the single-driver subs in the front corners of the room, the maximum boundary reinforcement that delivers means that they still offer incredible bass power and weight. The downside is that wall-proximity loading does make positional tuning not just a nicety but a necessity, although you should be able to leave that to the dealer installing the system.

The single-driver SpaceHorns cost \$65,500 a pair and make the Trio G3 both more approachable and upgradable. Once heard, the option to trade single-driver SpaceHorns for the dual-driver model might just prove irresistible, space permitting, while the identical footprint, electronics package and daisy-chain facility are just begging for you to stack the single-driver subs on top of your new dual-driver models. Do that and you'll pretty much create a musically and sonically superior equivalent to the old six-pack -- except that it will be about half the size. That's what I call progress.

The arrival of the Trio G3 and SpaceHorns risks creating an unseemly gap in the Avantgarde range. In fact, let's make that more of a yawning chasm.

The previous Trio XD could be combined with the conventional Sub 231, the Short BassHorn or anything up to those six BassHorns. It was a neat, upgradable solution that spread in price all the way from \$81,000 to \$178,000. But the Trio G3 upsets that carefully structured range. The starting price for a pair of passive G3s and single-driver SpaceHorns tips the scales at \$160,500, while stepping up to fully active horn arrays and twin-driver SpaceHorns adds another \$60,500 (with the option to stack additional subs).

On the one hand, that does exactly what the company needs: making potential buyers sit up, take notice and take its products more seriously. On the other, the gap from the Duo XD (at \$43,700) to a Trio G3 setup suddenly looks dauntingly wide. The original plan was to leave the Trio XD and its associated subs in place until the G3 and iTron

technology could be applied further down the line to fill the holes in the range. Unfortunately, stronger-than-expected sales (possibly stimulated by the impending arrival of the Trio G3) have

depleted stocks of both the Trio XD and Duo Mezzo, scuppering both that plan and any intention by customers to bridge the financial gap to a G3 system by running the new Trios with a pair of Sub 231s or Short Basshorns. New more affordable subs will doubtless appear, while the notion of a Duo Mezzo G3 with an active iTron option -- perhaps the next most obvious project -- is particularly tantalizing. Further away still, the possibility of an upgrade to iTron plus new tweeter modules for existing Trios would surely prove popular with Avantgarde's installed customer base. But don't hold your breath for any of these developments. It's far from decided what shape the future Avantgarde range and options will take, and the resulting products are well into the future. Meanwhile, anybody who still wants Trios (or all-horn Duos) and doesn't have the coin for a G3 setup had better move fast, as very few of the older models remain.

Of far more immediate concern is the question of partnering equipment and, in particular, a suitable preamp. In dealing with a speaker system that has a 109dB sensitivity, noise is going to be a serious concern. Not surprisingly, both the XA Power and the iTron electronics modules will only accept balanced connections. The logical as well as the cost-effective place to start is Avantgarde's XA Pre (\$18,000), a fully balanced, battery-powered and ghostly silent line stage. Not only does it possess possibly the sexiest volume control on the planet, but the front fascia can also be color-matched to the trumpets on the Trios -- or anything else you might choose. Few preamps at or near this price are going to offer the necessary facilities or noise performance. Ideally those should include two pairs of balanced outputs to allow direct connection to the subs and the main horn arrays and switchable/adjustable gain to match the operating range to the system sensitivity. The XA Pre proved an ideal partner in all of these respects, delivering its characteristically clean, uncluttered presentation.

But good as the XA Pre is -- and it is extremely good -- the considerably more expensive CH Precision L1/X1 pairing was to prove superior, especially in temporal and dynamic terms, bringing even greater shape, rhythmic articulation and expressive range to the performance, as well as the essential practical facilities. Given the price of a fully active



Trio G3 setup, the L1/X1 is far from inappropriate. Indeed, I can only wonder what the CH Precision L10 amp might bring to the party.

Finally, as might be expected in any system this revealing of residual noise, grounding proved crucial to extracting the maximum performance from the active modules. Using the daisy-chain XLR sockets (although I could have used one of the chassis fixings), I ran a ground wire from the input/output board, down the rear cable channel of each speaker and into a Nordost QKore unit, positioned under its T-shaped base. This almost invisible arrangement proved so effective in banishing noise and blackening the musical background, produced such a startling improvement in focus, transparency and immediacy, that I'd consider it mandatory and I'd budget accordingly.

Meanwhile back in the (un)real world of audio reviewing, the Trio G3 system creates its own challenges. With single- and dual-driver subs, passive and active main arrays, how many options can one review cover? In part, that's dictated by the performance of the different systems and which combinations offer the greatest price/performance benefits -- and in this case that's easy. Starting from a base setup of passive Trio G3 and single-driver SpaceHorns, each step up the performance ladder, first to iTron active operation and then to dual-driver subs, delivers such a dramatic improvement in overall performance that the flagship setup quickly becomes the only game in town. Yes, the passive Trios allow you to use a much-loved or existing amplifier. Yes, the single-driver SpaceHorns allow you to use the Trio system in smaller rooms or in a less visually dominant fashion. But once you've heard the full rig, unless you are space-limited, there is no going back. Yes, I'll describe the differences between the various setups, but let's first establish just how incredibly capable and impressive a set of active Trio G3s with a single pair of dual-driver SpaceHorns can be.

The challenge facing any Trio owner is, and always has been, integration. The G3 is no different. Look at the system I'm listening to here and it doesn't take a genius to work out that with four horn-loaded bass drivers and an array of spherical horns covering the rest of the range, active electronics and a system sensitivity of 108dB, full bandwidth, extreme dynamic range and impressive immediacy should present no problems. With a system this potent, the issues are all around controlling the prodigious

energy levels and arranging them into some sort of recognizable order. With the wide driver dispersal dictated by the spherical horns and the use of separately placed subwoofers, the physical setup and adjustment of Trio systems has always been critical. More critical than you might imagine as, not only do the spherical horns make toe-in and rake angle of the main arrays crucial, the midbass horns (the large 37" trumpets) start to roll off at around 140Hz, meaning that the subs need to operate far higher up than you might expect in other four-box setups.

For example, using both the Wilson Thor's Hammer and the PureLow LO subs with a range of different Wilson, Göbel, Wilson Benesch and Stenheim speakers, the low-pass setting on the Wilson Active crossover never reached above 40Hz. By running the subs up to 100Hz and above, Avantgarde is making them reach up into the all-important midbass range, a frequency band that is critical to the sense of musical drama, pace and impact. Get it wrong -- or get it out of kilter with the rest of the range -- and the performance as a whole simply falls apart. Weight goes astray and harmonics become detached, robbing voices and instruments of body, presence and color, groups and orchestras of their sense of purpose. Which helps explain why in the past, Trio systems have generated results -- especially at shows -- that have so often proved disappointing. Past experience with the Trio XD and Sub 231 combination demonstrates to me that you can get it right, but the main horn array is so demanding and revealing a partner that it takes considerable work and fine-tuning before things click into place. Moreover, getting it right is the bed-rock on which system performance stands or falls. And if it falls, it really does crash and burn.

So, cutting directly to the chase, let's examine the Trio G3 system's overall continuity and integration -- and where better to start than with solo piano, a single full-range instrument that not only generates a massively complex harmonic signature but depends absolutely on the weight and spacing of notes for its expressive range. Víkingur Ólafsson's performance of the Prelude to Debussy's *La Demoiselle Élue* (Debussy/Rameau [Deutsche Grammophon Gesellschaft 2894838283]) is a perfect case in point, a study in measured poise and the space between notes. The Trio G3s captured it perfectly. The slightest discontinuity, lag or slurring at low frequencies, or in the junction between the subs and the main arrays would be



instantly and devastatingly apparent, a halt or smear in the evolution of the harmonics, a hesitation, discontinuity or jump in the rhythmic flow.

But right from the opening left hand chords, the notes and the rich harmonics spread up and out, like perfect ripples on the silent, black background. The instrument is big, solidly dimensional, rich and vibrant, the overlapping harmonics beautifully layered, developing seamlessly until perfectly killed by the damping pedal. The right-hand notes are crisp, clean, perfectly placed and weighted. It's not just the gap between notes that is so clear and explicit. It is the shape of and pauses between phrases. If slow is harder to achieve than fast, then this is a remarkably impressive place to start. The whole is single, contiguous and almost preternaturally realistic -- not just in terms of the sound of the instrument and the space around it, but in the sense and intent of the person playing it too. That poise and effortless control extend to the quicksilver passages of the Rameau pieces, music that depends absolutely on the precision of its pattern, rather than scale and contrast, so different from the Debussy, yet played here with a natural connection and continuity. If audio systems are about understanding music, it could be argued that this record alone tells you just how accomplished the Trio G3 is.

Integration might be the point on which any subwoofer system stands or falls, but it's also only the beginning of the story. You can make subs easier to integrate by robbing them of depth and weight -- one reason why the smaller subs in a range so often achieve more impressive musical results than their bigger brothers. In order to succeed, a sub must match the speed and textural/harmonic capabilities of the main speakers, and it must extend that musical quality right down the frequency and dynamic range.

Stepping up in pace and scale, Starker's reading of the Dvorak Cello Concerto (Dorati and the LSO [Mercury Living Presence SR90303]) presents the system with a very different challenge to the reflective, solo-piano recording, yet one it meets with equal aplomb. The bold, dramatic opening flourishes are delivered with real brio, the brass fanfares ripping out, the bass throbbing, weighty and urgent just as it is live. There's no confusion between the timps and bowed bass, the nature of the sound produced by each distinct in terms of both the shape and texture of the notes. Likewise, bass and cello are equally

separate in space and tone. But perhaps most important, there's no tendency, even in the most enthusiastic passages, for one instrument or group of instruments to blanket another, or to shift position or height in the beautifully defined acoustic space. The bottom end isn't just clearly defined, it's also incredibly stable, instilling a planted stability in the sonic picture as a whole.

That overall sense of drive and almost irresistible musical momentum (Dorati really does give the orchestra its head -- and the orchestra responds with gusto) doesn't come at the expense of low-frequency extension. There's plenty of weight and substance barreling along with the music. The characteristic combination of tension and almost swashbuckling bravado in Starker's playing underlines just why this is such an audiophile favorite. His cello is big, woody and over-voiced, exactly as this recording should be presented. There's no lag or slowing in the lower registers, no notes that leap suddenly and awkwardly from his driven phrases, no thickened or clumsy frequency bands. Instead, the solo part drives the orchestra with its urgency and forceful line. Turning to Rostropovich on [Deutsche Grammophon Gesellschaft SLPM 139 044], there's no missing the greater subtlety, range and interpretive flair of the great man, but at the same time there's no missing the drive, energy and excitement that Starker brings to the piece. The beauty of the Trio G3s is the ease with which they draw out the differences and allow you to appreciate them both -- Karajan and the BPO's disciplined response to Rostropovich's expressive tour de force; Starker, Dorati and the LSO's more flamboyant, colorful and vivid performance.

Nor is it just the contrast between different performances of the same work that the Avantgardes lay bare. The individual style and artistic choices that underpin each performance are equally apparent. *Pyrotechnia*, a recent disc from Bojan Cacic and the Illyrian Consort [Delphian DCD34249], is suggestively subtitled "Fire and fury from 18th Century Italy." It's no idle claim. This collection of violin concertos from Vivaldi, Tartini and Locatelli is delivered with an exuberant dash and energy that are built on an explicit, almost exaggerated sense of rhythmic punctuation, density and contrast. Like many of the small-ensemble performances of baroque music so fashionable these days, the smaller forces invite more agile orchestration and greater shifts in musical density, but this disc takes that to an entertaining extreme, accentuating



the sheer virtuosity demanded by the score. The three violins and one or two violas take the lead, sketching the melodic lines, slashing and jousting between themselves, or elongating slower phrases, all over a foundation of lower-register chorus and continuo parts. Until that is, the cello, bass, thorbo and harpsichord combine to thunder in dramatic contrast to the flashing bows of the smaller strings, exploding in the sort of sudden shift in power, pitch and density you hear so often live and is so seldom matched by audio systems.

the opening track, the Trios achieved a massive, all-enveloping, throbbing musical immersion, the lowest frequency layers subtly undulating and shifting, quivering the air in the room, the listening seat and your ribcage. It's as powerful as it is disconcerting, conjuring the perfect cocktail of uncertainty, awe and veiled threat.

If soundtracks are designed to heighten emotional response and establish atmosphere, the Trio G3s do an



The Avantgardes delivered the full range and contrast, the sudden dynamic shift, the explosive, airborne weight of the small ensemble as it bursts forth in an exhilarating musical *feu de joie*. It's a performance that depends as much on the speed and agility of the bass as its temporal and dynamic continuity with the rest of the range. This isn't just bass; it's bass of a textural, pitch and acoustic quality that few systems can match -- and almost none in the same price range as the Trio G3 and SpaceHorns.

Of course, having made much of just how light on its feet the Trio G3's bass can be, is that articulate, sure-footed agility bought at the expense of real weight and wallop at the very bottom end? Look no further than the *Arrival* soundtrack (Jóhann Jóhannsson [Deutsche Grammophon Gesellschaft 28947 96782]) for proof that, when required, the SpaceHorns can rumble with the best of them. This is music that's all about scale, texture and overlays. From

astonishing job with this one. The heavily looped and synthesized arrangements, accented with vocalized or percussion parts, have a haunting, almost hypnotic quality that makes for compelling listening -- almost as if Steve Reich had simultaneously discovered sequencers and LSD. It's music that's as challenging as it is moving -- and that will challenge any system. That the Avantgardes play it without any suggestion of limited bandwidth or power, dynamic range or textural subtlety, is impressive indeed. You want scale? You've got it. You want drive and juddering impact? Those too. Subtlety and nuance? No problem. If music is built on a foundation of bass, then the sheer quality of both the SpaceHorns' output and its integration goes a long way to explaining this complete system's remarkable musical performance.

I've spent a long time talking about the SpaceHorns and what they bring to the Trio G3 listening experience. Of



course, in doing so I'm also talking about the system as a whole. But what I haven't mentioned yet is in some ways the most interesting and impressive aspect of the new subwoofer designs. The performance outlined above was achieved after minimal tweaking and adjustments to the setup. The dual-driver subs were located centrally and behind the plane of the main horn arrays. Beyond that, it was a question of setting level and some fore and aft positional shifts -- a total of perhaps a couple of hours of work. Compare that to the continual tweaking of the Sub 231's settings over a period of weeks that was necessary when I last reviewed the Trios. The SpaceHorns don't just work really, really well; they're really easy to work with.

With a pair of single-driver subs also on hand for comparison purposes, these were set up, vertically disposed in the front corners of the listening room, a typical space-saving scenario that uses room reinforcement to augment the output of the smaller cabinets. This needed slightly more careful positional adjustments, due to the increased room gain, but was still far from tricky. Okay, so my room has linear, well-vented and well-behaved low frequencies, but in more challenging environments the SpaceHorns offer some twenty bass EQ settings and the final option of a custom DSP setting via computer. One way or another, you can be confident that this is a system that will actually deliver its potent bass potential, in terms of power and quality, regardless of the situation.

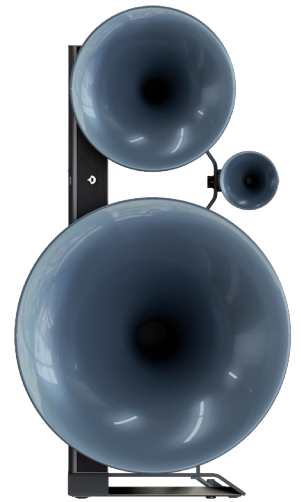
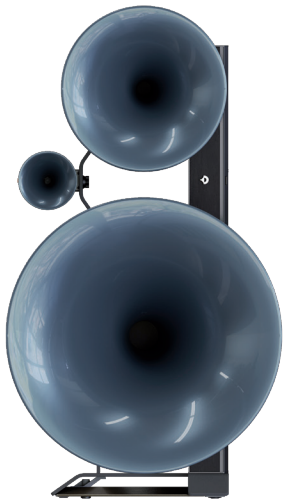
Listening to the Trio G3/XA Power setup is certainly impressive enough, but, as I've already suggested, the iTron active modules elevate the performance to not so much another level as another dimension. Fire up the onboard amps and it's like making the speakers disappear -- both as a source of sound and an obstruction in its path. As big as they are -- and let's be honest, the frontal area of a Trio G3 is visually imposing -- the sound simply steps away into a single, contiguous space that extends behind and beyond the plane of the speakers. Turn out the lights and try as you might, you'll struggle to locate those individual trumpets, or even the main arrays as a whole. But more importantly, the sense of the sound coming through the system reproducing it falls away too. Notes start and stop with a temporal precision and attack that are utterly natural and simply, suddenly sound right. And *sudden* is the word. You don't realize just how far the rise time of most speaker systems deviates from reality until you hear the job done properly. Our ears and brains

can compensate to a remarkable degree, but not needing to do so is like the proverbial flashbulb going off.

The effect is *real* in every sense of that overworked word. You'll hear it on voices and instruments, individual notes, chords and phrases. But perhaps the most obvious impact comes on drum fills. So impressive are the sudden speed, attack, weight and propulsive grunt of a good drummer let off the leash that you'll be scurrying around looking for examples, from the avalanche interjections on Elvis Costello's *This Year's Model* [Radar RAD3] to Dire Straits' *Making Movies* [Vertigo 6359 034] and even -- shudder -- Phil Collins's "In the Air Tonight" (from *Face Value* [Virgin V2185]).

You'll also have noticed that throughout the extended discussion of the speaker system's bottom end the subject kept creeping inexorably up the frequency range. While the cello might not constitute too much of a stretch, you might well wonder what a Vivaldi violin part has to do with the musical nether regions. The answer, of course, is *everything*. So, shifting focus to the musical performance as a whole, it comes as no surprise to learn that the Trio G3s thrive on the riotous energy and propulsive drive of Steve Earle's *Copperhead Road* [Geffen 02517 65898], the boisterously enthusiastic backing of the Pogues gaining an added sense of direction and purpose, thanks to the speakers' easy grasp of the dynamic envelope. But even here -- and as impressive as that thunderous opening crash of songs like the title track or "Johnny Come Lately" undoubtedly are -- it's the quieter, more reflective numbers like "Even When I'm Blue" and the controlled desperation of "You Belong To Me" that really hit home. The phenomenal control of dynamic range and level gives explicit shape to the vocal and instrumental phrases, the curl of a lip, accented attack or sustained note. It translates directly into pain and fear, loss or longing, joy, wonder or excitement. The Trio G3s are no slouches when it comes to instrumental color, and they excel in the realm of harmonic development, but it's the emotional range that dazzles.

Just try on the sardonic and self-deprecating humor, the knowing honesty of Aimee Mann's *Lost In Space* [Mobile Fidelity UDSACD 2021]. The downbeat tempo and spacious arrangements leave plenty of room for Mann to work on her vocals, the tellingly dead-pan delivery of "Real Bad News" underpinning the clever lyrical dexterity,



the rhythms in the language as well as the music. The front-room recording is layered with incidental noise and textures, a sonic vista the Trio G3s allow you to dive right into. When the album reaches the catchy inevitability of “The Moth,” the fatal attraction of the flame flickers all too real, dancing just out of reach on the easy, fluid mobility of that irresistible bass line. It underpins just how fully the speakers subordinate their purpose to the performance being played. Each album sounds distinct; often each track of each album sounds distinct. If (like me) you crave the sense of human agency in the making of the music, there are few speakers that get you closer than the Trio G3s.

The stark, exposed vocals on Suzanne Vega’s *Close-Up Series, Volume 3* [Amanuensis MOVLP375] are almost preternaturally real, the dotted rhythms and jagged guitar chords of “Solitude Standing” a perfect foil for the unsettling lyrics. Vega’s voice is present, held in space above the guitar, that immediacy making her diction, her lips, throat and chest distinct players in a carefully orchestrated whole. The precise, almost mannered spacing of the words, the changing phrasing, makes perfect sense of the song -- while the clarity and temporal precision of the Trio G3s makes perfect sense of the way it is sung. Few instruments can match the familiarity of the human voice as a test for the communicative capabilities of an audio system. This is one test at which the Trio G3 excels.

That vocal dexterity, the ability not to just “life” into a vocal but “sense” into the song, might just be the Trio G3’s super power. Try listening to Ella and Billie to see what I

mean. Try playing *Ella Fitzgerald Sings the Duke Ellington Songbook* [Verve/Speakers Corner MGCV 4010-4] as a place to start. A track like “Lost In Meditation” underlines the smooth, pitch-perfect richness of Ella’s voice, the effortless phrasing and rhythmic articulation, while the scat vocal on “Perdido” perfectly displays the innate musicality of her improvised vocalization. Turning to Billie Holiday’s *Lady Sings The Blues* [Clef MGC-721], songs like “Strange Fruit” and “No Good Man,” for all their emotional power, show a very different and far less polished vocal style. But which do you prefer? Instead, take a track like “Just One of Those Things” (from *Songs For Distingué Lovers* [Verve MGVS-6021] and Ella’s *Cole Porter Songbook* [Verve MGCV 4001-2], respectively). Working with the same material, there’s no mistaking Ella’s finesse and technique, her centered vocals and absolute mastery of phrasing, but Billie brings another different dimension to the song, working the lyric with an articulate flexibility and almost personal intimacy. It’s almost as if for Ella the song is an exercise, an opportunity to display and dazzle with her talents. But Billie? She feels it. That contrast isn’t to say that one is better than or preferable to the other. That depends on taste and also the material, but the difference in approach between these two great vocalists has never been quite so explicitly stated -- at least not in my audio experience. It’s an incredibly impressive example of the Trio G3’s musical abilities and insight -- at least in part because it is simply so effortless and undemonstrative. It’s almost like the speakers are saying, “Well, isn’t it obvious?”

The original Trios scored big on musical expression at a time when dynamics, life and communicative immediacy



were being crushed out of audio systems in a headlong plunge toward flat frequency response and inadequate measurements. Those measurements might have gotten more sophisticated, although it's questionable whether they are actually any more valuable when it comes to assessing musical performance. Coloration levels have dropped too, as drivers and cabinets have improved. But that doesn't stop the Trio G3 from being a stark and timely reminder of just what matters when it comes to reproducing recorded music. Pattern and dynamic discrimination trump pretty much anything. Combine that sense of temporal organization (pitch and placement, the gaps between the notes, if you will) with extended, linear bandwidth and you've got yourself a speaker system that can reproduce the full expressive range in any performance.

And a capability that's just made for the latent promise of streamed music. Using the recently arrived Wadax Reference Server, feeding files to the Wadax Reference DAC via the proprietary Akasa interface (an optical lead the thickness of your thumb, with connectors that are each the size and shape of a small pear and that keep the fragile data away from your noisy network), trawling the annals of Qobuz and Tidal finally began to deliver on a musical level. Starting out with a Hilary Hahn recording of the Elgar Violin Concerto (a Deutsche Grammophon 88.2kHz/24-bit download), there was an unmistakable Englishness to both the LSO and Colin Davis's direction. But while the rich tonality and fluid ensemble playing were as impressive as they were recognizable, Hahn's poise and precision were completely over-faced by the concentrated orchestral performance, an eclipse that was as total as her "Lark Ascending" was fragile and breathtakingly beautiful. It was hard to believe that this was not just the same performers but the same recording. This underlines just how important program choices are for some performers, with Hahn and Vilde Frang being obvious examples of superb players with flawless technique but whose voices are just too small to translate to the larger works. No speaker system that I have used has made that choice as starkly apparent as this from Avantgarde, speakers that make it just as critical and just as obvious as it is live.

As if to inadvertently reinforce the lesson, I moved on to stream the 1932 performance of the Elgar performed by Menuhin with the composer conducting an earlier LSO. Despite the age of the mono recording, the focused

intensity and the confident security of Menuhin's line, the vigorous sense of purpose and direction he injected into not just his own playing but the orchestral accompaniment, were salutary examples of the art of balancing the concerto form.

But from a reviewing standpoint, what impressed was the ease with which the Trio G3s allowed me to appreciate that artistry without the age or the quality of the recording diminishing the quality of the performance. We often talk about a system's ability to cut to the core of a recording. The Trio G3s transcend that capability, simply unfurling the performance, whether it's the (possibly) chemically fueled excess of Steve Earle or the masterful technique of Yehudi Menuhin, the natural affinity of du Pré for Elgar's work, or Gil Shaham for Barber.

The substance and presence that the speakers invest in solo instruments, whether genuinely solo or playing as part of a larger ensemble, derive directly from the stability and seamless continuity through the low frequencies. That extends to the clarity and pattern brought to small groups and larger performances, the natural perspective, scale and the easy way in which the various pieces slip into place -- or not. Awkward instrumental or orchestral discontinuities, like Rattle's belching orchestral eruptions that sound so out of place and out of proportion against Uchida's astonishing delicacy, poise and fragile lines in the slow movement of Beethoven's 4th Piano Concerto [BPHR 180243], or the disjointed meter of Luz Casal's vocal on "These Days" (Jackson Browne, *Love Is Strange* [Inside Recordings INR5111-0]) are laid bare with the same clarity. But they still appear as artifacts or events within the music, rather than alien insertions or distractions. They might be down to poor judgment or linguistic nuance, but they are still part of the whole, the Trio G3s refusing to point a finger or pull the performance apart. Just like the humor in Jordi Savall's Beethoven Symphonies [AliaVox AVSA9937] or the intimacy and tension in the Attacca Quartet's *Orange* (Caroline Shaw [Nonesuch 075597921434]) they are an integral part of the performance, and these speakers maintain the coherence and that sense of performance like few others.

What's the difference in performance between the passive and active Trios? It's the obvious question to ask and, in one sense at least, it's easy to answer. Listen to the Trio G3 in passive mode, with a decent, conventional amplifier, and you will hear a very good hi-fi system. Switch to the



iTron active drive and just like that the musicians are there, in the room with you. It's night-and-day difference and, aware of the power of comparison, Avantgarde has arranged the system so that it's possible to switch from passive to active drive on the fly. If you make the switch more than once, it will only be because you can't quite credit the magnitude of the difference. But yes, it really is *that* big.

Of course, that doesn't tell you what the passive Trio rig sounds like -- and you need to prepare for a surprise there too. Horns in general -- and the Trio was no exception -- can sound disjointed and brash if they are not set up with the requisite care. But if that's what you are expecting from the G3s, think again. The coherence and presence of the fully active setup carry over to the passive system. Play a familiar classical piece and the scale and perspective will be spot on, the balance rich and distinctly midhall, with that rounded warmth that many listeners find so enjoyable. But here it's blended with a surging sense of body and energy that works equally well on music as different as Sibelius and the Special AKA.

Switch to active and the sound is *transformed*. You move closer to the band, which spreads and separates with a natural sense of place and tonal distinction. The acoustic space locks in and the instruments and voices are locked within it. There is an almost palpable sense of presence, immediacy, texture and the musical energy coming off the different instruments. With Jordi Savall's Beethoven 4th and 5th Symphonies, there is an incredible, crisp clarity to the playing, that suddenness to the start of each note and phrase injecting an overall sense of purpose and direction that leave you in no doubt that these are period instruments and that this orchestra (Le Concert Des Nations) is not just at the top of its game, it's seriously enjoying being there. That enthusiasm is infectious, and the active Trios project its full potency. The single drum rattles and rolls with gusto, the horns stab and blare, while the strings throb and quiver, jammed into the confines of the church in which the recording was made and which gives the small orchestra its remarkable sense of power and density.

System compression is the great enemy of musical satisfaction, robbing recordings of life and energy, pace and involvement. Having 109dB to play with certainly helps, but the active Trio G3s take things a whole step further. Startling dynamic range is one thing, but it needs

to be harnessed to a proper sense of the musical event. What the Trio G3s are capable of is delivering a sound that's devoid of expressive compression, and it's not apparent quite how fundamental that is until you hear it demonstrated.

The experience of living with the Trio G3 system is a sonic and musical epiphany. You learn what it is that you've been chasing for so long (and what's been missing from so many other systems). You learn just how much music is robbed by more conventional and familiar approaches. Most of all, you learn just how forgiving and accommodating you have become of those serial failings you've grown to accept. For a seasoned audiophile, listening to familiar recordings on the Trio G3 system is a little like witnessing the first Fosbury Flop or the arrival of the rear-engined Cooper Formula 1 car. The Trio G3 gets you to (or beyond) the same goal. It just gets there by a totally different and unexpected route. The established order will never be the same again and you can't unsee, unhear or unlearn the lessons of experience. It doesn't invalidate other approaches, but it does shine a harsh light on their flaws and shortcomings.

In many ways, the Trio G3 system represents a perfect storm of potential performance benefits. Our deterministic tendencies make it easy to focus on the spherical horn drivers or iTron amplification, but let's not forget that this is a *system* solution. It combines not just those more obvious features but also active drive, separate subwoofer enclosures (with electronic bass EQ), extraordinary efficiency and wide bandwidth: all features that have at one time or another been declared revolutionary. In the past, those individual performance goals have been accompanied by inevitable, associated compromises. The strength of the Trio G3 system lies in the way it combines all of those attributes in a mutually supportive, balanced design that finally unleashes their collective potential. Other speakers have combined at least some of these approaches. But the Trio G3 system is the first to combine them all in a genuine cost-no-object assault on the high-end status quo. The result is a step-change in the cost of musical performance. With this latest Avantgarde, you can have the presence and immediacy of a high-efficiency system combined with the linearity, integration, coherence and temporal superiority to tackle the best conventional approaches -- all at a price that, while far from approachable for most of us, is still around one fifth of the cost of current state-of-the-art systems.



Is the Trio G3 system as good as the very best? I don't know because I haven't heard the very best Trio G3 system -- the one with six bass horns. But if you can accommodate the Trio G3 with a single pair of SpaceHorns and want to match or better its performance, I can't see you getting close unless you look at speakers like the Tidal Akira or the Wilson XVX (with subs) -- along with the amplification to match. Either option represents a serious step up in price. That makes the Trio G3 more than just musically impressive. It makes it impressive value too. For those of us for whom even the most modest Trio setup is simply too large or too expensive, the iTron technology will

find its way into more affordable and more easily accommodated Avantgarde speakers, like the Duo models. An active Duo Mezzo, with its horn-loaded bass cabinet and twin spherical horns, remains for me a simply mouth-watering prospect.

Meanwhile, if performance matters -- if the musical performance matters -- then this latest Avantgarde Trio G3 system redraws the audio landscape just as certainly as, and even more profoundly than, the original. The rules have always been the same; it's just that high-end audio finally caught up.

Prices: Trio G3 (passive), \$91,000 per pair plus \$4000 for Nature Cap passive crossovers; Trio G3 iTron electronics package, \$38,000 per pair; single-driver SpaceHorn, \$65,500 per pair; dual-driver SpaceHorn, \$88,000 per pair.

Warranty: Ten years on material fatigue, five years for drivers and color-coating, two years for electronics.

Avantgarde Acoustic
Lautsprechersysteme GmbH
Nibelungenstrasse 349
D-64686 Lautertal -- Reichenbach, Germany
+49 6254 306100. www.avantgarde-acoustic.com

Associated Equipment

Analog: Grand Prix Audio Monaco v2.0 turntable with Kuzma 4Point tonearm; Kuzma Stabi M turntable with Kuzma 4Point tonearm; Lyra Etna Lambda SL, Dorian and Dorian Mono cartridges; Fuuga cartridge; Connoisseur 4.2 PLE and CH Precision P1/X1 phono stages.

Digital: Wadax Atlantis Reference transport and Atlantis Reference DAC.

Preamplifiers: CH Precision L1/X1, Connoisseur 4.2 LE.

Power amplifiers: Avantgarde XA Power stereo amplifier, pair of CH Precision M1.1 amps, Berning Quadrature Z monoblocks.

Subwoofers: A pair of PureLow LO subs with Wilson Active crossover and CH Precision M1.1 or VTL S-200 amplifiers.

Cables and power: Complete loom of Nordost Odin from AC socket to speaker terminals. Power distribution was via Quantum QB8s, with a mix of Quantum Qx2 and Qx4 power purifiers and Qv2 AC harmonizers. Also in use are CAD Ground Control and Nordost Qkore grounding systems.

Supports: Harmonic Resolution Systems RXR, or Grand Prix Monaco Modular rack with Formula shelves. These are used with Nordost SortKone, HRS Nimbus and Vortex or Grand Prix Audio Apex equipment couplers, and HRS damping plates throughout. Grand Prix Audio Monaco and Silverstone 4 amp stands. Cables elevated on Furutech NCF Boosters.

Acoustic treatment: As well as the broadband absorption placed behind the listening seat, I employ a combination of RPG Skyline and LeadingEdge D Panel and Flat Panel microperforated acoustic devices.

Accessories: Essential accessories include the SmarTractor protractor, a USB microscope and Aesthetic cartridge demagnetizer, two precision spirit levels (one bubble, one digital) and laser, a really long tape measure and plenty of painters' tape. Extensive use of the Furutech anti-static and demagnetizing devices and the Kuzma Ultrasonic record-cleaning machine.