

Avanti III loudspeaker

Michael Fremer, August, 2001

Success can be a two-edged sword. With the Virgo (reviewed in September 1995), Audio Physic created a \$5000/pair benchmark product at the midpoint of the company's speaker lineup. While an upgraded, \$5800 Virgo is due out soon, the original version will remain in production, its price dropping to \$4495/pair — less than it cost six years ago.

The problem for Audio Physic was that the Virgo was so good at doing the things this well-regarded German company is noted for that the almost-twice-the-price Avanti (originally introduced in 1989 and twice revised), though superior in many respects, was simply not competitive on the showroom floor.

Not that the Virgo is perfect: Its warmish midbass coloration was bothersome to some listeners, and its top end, though detailed, could sound somewhat smoothed-over. The keys to the Virgo's success have been its uncanny overall performance balance, the „disappearing“ act it pulls, and the huge soundfield it generates, which never fails to excite the senses. You just want to keep listening to it. Add to that its surprisingly small, very narrow, and stylish package, and it's not hard to understand the Virgo's continued popularity.

Raising the Bar High

With his \$2495/pair Spark III a big hit in the marketplace, and the stratospherically priced Caldera (\$19,000/pair) and Medea (\$50,000/pair, now discontinued) out of the financial reach of most audiophiles, Audio Physic founder Joachim Gerhard needed a fresh midprice star in the company's speaker lineup, both to attract new customers to the brand and to give longtime Virgo owners a meaningful choice of upgrades. (The current \$6295 Libra, another highly regarded design, doesn't seem to offer sufficient trade-up enticement for the large population of Virgo lovers.)

Gerhard and design partner Manfred Diesterich set out to create a new Avanti at or above the important

\$10,000/pair price point. That's expensive, but in today's marketplace, such a price is affordable for many well-heeled audiophiles, and it's a comfortable financial stepping stone for Virgo owners looking to move up within the brand.

When I wanted to move beyond the Virgos after four happy years, I didn't see (or hear) the second-generation Avanti as my path to sonic fulfillment, nor did the accomplished but somewhat staid-sounding Caldera attract my attention. But when I learned about the new Avanti III and saw and heard prototypes during a factory visit in spring 2000, I needed some questions answered right away: Is the Avanti twice as good as the Virgo? More than twice as good? Or is just another competent but undistinguished design?

The physical and sonic vibes I got from the prototype, and the sense of direction and commitment I felt from Joachim Gerhard during my visit, led me to believe that the Avanti III might be a breakthrough product.

Design

Like many small manufacturers, Audio Physic doesn't build its own drivers or cabinets. Instead, it relies on the R&D of speaker companies like Vifa, SEAS, and ScanSpeak for the raw driver technology, which it then often modifies (and usually improves) to fit its particular needs. The Avanti III uses a new non-ferrofluid dual-concentric ring-radiator tweeter, developed by Vifa, that appears to be essentially flat to 30kHz and is said to extend all the way out to 40kHz. The version used by Audio Physic appears similar that used by Krell in its new LAT-1, that I heard demonstrated at the Home Entertainment 2001 Show in May.

This brings up an important point: Just because two drivers look the same on the outside doesn't mean they're identical inside. Vifa's ring tweeter is apparently available at several different levels of performance and price. A modified version of the expensive edition is used on the Avanti III, mounted on a custom precision-turned, diamond-finished aluminum front plate.

Gerhard's take on metal-cone drivers has shifted 180 degrees since he designed the Virgo. Back then, he told me he was more comfortable with paper cones; that while metal had certain theoretical advantages in terms of stiffness and low mass that could lead to improved dynamics and linearity, its resonance problems had not yet been sufficiently addressed to make it worth using.

While the latest generation of 5" SEAS aluminum-cone drivers attracted Gerhard's attention for the Avanti



III's midrange, resonances at the top of the frequency range made such drivers unacceptable — until the design duo of Gerhard and Diesterich began to apply various materials at different tensions to the cone's underside circumference, where it attaches to the surround. During my visit to the Audio Physic factory, I watched and listened as various materials, including plain old rubber bands, were applied to the cones. The results were dramatic — even when the raw driver, sitting on a test bench, was driven by a portable transistor radio. Unmodified, the driver had a characteristic „pinging“ sound. Modification in place, the „ping“ was gone.

Ultimately, AP developed a material and an application methodology, Active Cone Damping (ACD), that SEAS now incorporates in its manufacturing process — but only for drivers destined for Audio Physic. The midrange driver used in the Avanti III is a heavily modified version of SEAS's original design.

The Avanti III uses two pairs of side-mounted, dualported, floor-firing 61/2“ Peerless woofers (for a total of four woofer per speaker) in push/push configuration, as originally introduced on the first Avanti. Side mounting allows for a narrow, graceful front baffle, and AP claims the driver placement helps equalize pressure on the cabinet walls for lower distortion and better dynamic performance.

The crossover points are 200Hz (6dB/octave), 500Hz (6dB/octave), and 2.2kHz (18dB/octave). Why three points? Because the amount of radiating surface required increases as the frequency decreases. The dual midrange drivers are not there to double the midrange energy. The design uses the lower-midrange driver only in the narrow band between 200 and 500Hz, while the more powerful upper-midrange unit, fitted with dual magnet assemblies, covers 200-2200Hz. The radiating area is thus increased in the lower midrange without encumbering the rest of the response range with unnecessary mass.

The compact, curvaceous cabinet, sourced from a Danish company that builds enclosures for many big-name speaker companies (some of which make their own drivers), is both aesthetically pleasing and technologically advanced. It's surprisingly light, yet extremely rigid and well-damped. The midrange drivers and tweeter occupy isolated chambers within the raked cabinet, which is extensively braced and rounded at the rear to avoid the parallel surfaces that can induce standing waves. A slanted (7 degrees), dual-layer baffle features a front panel of solid, laminated wood specially contoured to minimize diffraction and refraction. This panel's complex design is the result of the patented Hornflex process, which uses a computer program to transfer the three-dimensional shapes onto the two-dimensional patterns used in the actual manufacturing process. The speaker's rear is fitted with a single pair of gold-plated binding posts. A biamping option of dual pairs of posts is available at extra cost.

Setup

Contrary to a popular misconception, Audio Physic speakers are not specifically designed for nearfield

placement and listening, though the setup procedure outlined on Immedia's website is recommended, and works well for other loudspeaker brands as well. Though I listen in the nearfield because of how my room is configured, I was unable to set up the Avanti IIIs using Audio Physic's methodology. Instead, I placed the Avantis where the Sonus Faber Amati Homages usually reside (9' apart, 8' from the listening position, 21/2' from the sidewalls, and about 21/2' from the front wall), then moved them slightly forward to account for the acoustic center of the side-mounted woofers. I ended up with the speakers toed-in so that the tweeter axes crossed just behind my head.

As with the Virgo or any other revealing speaker, setup of the Avanti IIIs proved critical in maximizing high-performance results. Tiny changes in placement yielded enormous sonic differences, especially when it came to locking in the incredible image focus and soundstaging precision these speakers were capable of delivering. Of course, you never know how well a pair of speakers can perform until you try to improve on what you've already achieved. Sometimes you've already reached the upper limit of a product's performance capabilities and are wasting your time. In the case of the Avanti IIIs, I thought I'd maxed them out only to find that I could take them a step further. I also found that the speakers were ruthlessly revealing of a cartridge's vertical tracking angle (VTA) and other minutiae of analog setup.

The narrow Avanti III sits on a pair of metal stabilizer cross-braces with circular feet at each end. Port clearance seemed insufficient on my Berber-carpeted floor using the short threaded points supplied, so I asked and quickly received a longer set. It's a cultural issue: Apparently, Europeans mostly have area rugs and set the speakers on hardwood floors, which is why AP also supplies tiny, cupped, felt-bottomed feet.

Listening

I ended up having the Avanti IIIs for two extended periods of time, before and after HE 2001. After three weeks of extensive listening, I had to ship them to New York City, where they were used in one of the Sound By Singer rooms at the Show, driven by Hovland electronics, an Accuphase CD player, and an Immedia RPM-1 turntable with RPM-2 tonearm and Helikon cartridge. Aside from the amplifier, turntable, CD player, and cables, Show attendees got to hear a reasonably close approximation of my review system, including electronics, tonearm, and cartridge. If you heard AP's system at HE2001, you got a taste of what I've been hearing for well over a month. Yummy.

I got to spend the first day after the Show at home with the new Hovland Sapphire tube amp. Even under lousy Show conditions, that system had sounded very musical to my ears. At home in my acoustically tweaked room, the Avanti IIIs, driven by all-Hovland electronics, sounded even more impressive. I spent the rest of the month with the Avanti IIIs driven by my reference Musical Fidelity Nu-Vista 300 power amplifier.

When I'd parted company with the Virgos, I'd willingly given up some of their astounding imaging and

soundstaging prowess to get the Sonus Faber Amatis' rich, voluptuous, swoon-inducing delicacy and inner detail. I'd traded brisk athleticism and excitement for raw, seductive sex. The Avanti III delivered all that I'd given up and more, with surprising ease — in fact, without ever pausing for a breath.

If cleanliness is next to godliness, the Avantis were next to godlike — so clean, so detailed, so revealing — and yet, when everything (including the source material) was right, so rich, so fundamentally correct and satisfying. Take Willie Nelson's „Stardust,“ from the album of the same name (Columbia JC 35305 or Classic Records' 180gm vinyl reissue): The Avanti IIIs delivered the track with each element neatly separated yet seemingly connected to a delicate whole. Nelson's voice was out front, compact and hovering vividly in three dimensions. His chest was present, but without „chestiness.“ As Nelson varied the volume of his voice within the phrasing, he seemed to pitch slightly forward and back. There was no „overhang“ to the voice. It was there in bold relief, with nothing but black beyond, all the way to the drum kit. The drums, crisply rendered but not overcooked, were punctuated by woody rimshots, the pop of each of which was followed by a gentle trail-off. The cleanliness of the brush and cymbal work was memorable. Booker T's juicy-toned organ hovered in the distance, and the closely miked acoustic guitar picked the melody smartly in midfield. Each cleanly delineated musical development had a consequence that the ear could follow, even as new events piled on in rapid succession.

Within this simple, spacious arrangement was a wide variety of tones, textures, and, especially, events. The Avanti delivered each the way a cold, clear night delivers the stars. But don't think I'm implying that the Avanti sounded cold. Hardly. With clarity and focus comes an inviting, almost warming certainty. Along with its superb clarity, the other standout quality of the Avanti that remains with me was its top-to-bottom rhythmic coherence. Its ultrafast, ultradetailed top end was matched by its tight, nimble, well-damped midbass and bass. Where the Virgo is warm and somewhat hung-over in the bass, the Avanti was lean and muscular — which is not the same as „thin.“ The Hovland preamp brought a new level of microdynamic bass control to my system. The Avanti III brought that subtle, rolling sensation of ultra-low-level bass articulation and control to new heights of delicacy and detail.

The Avanti IIIs disappeared even more effectively than did the Virgos; having not lived with that sensation for two years (at least not to the same degree), I spent many, many late nights catching up on it. The Avanti IIIs managed to delineate and differentiate the positions of lateral images with even greater precision than the Virgos had (as I remembered them playing very familiar recordings), while rendering those images in greater relief against blacker, clearer backgrounds.

I played the original UK LP edition of the Beatles' Abbey Road straight through one night at relatively high SPLs and was enthralled by the speakers' ability to let me follow each Beatle's vocal line with ease, though they're mixed together spatially. The distinctive vocal timbres seemed to hold together with greater authority than I remembered ever hearing, and I noted that Ringo's drums were rendered unusually cleanly, with-

out compression or edginess. Top-end extension was satisfyingly open and airy, without etch, and without the highs pulling apart from the musical mix — though when recordings had been artificially and unpleasantly brightened, there was no escaping it in the playback through the Avanti IIIs.

If you're getting the idea that I really loved the Avanti III, you're correct. It offered superb dynamics at both ends of the scale and never sounded compressed, even when played at ultra-high SPLs. Its tonal coloration was impressively low. In fact, aside from a slight but very noticeable leanness in the midbass that seemed to drop off a few dBs over the entire range (and could have been a room-related issue), the Avanti ranks with the Infinity Prelude MTS as, subjectively, the least-colored speaker I've reviewed.

One-third-octave tones on Alan Parsons' Sound Check CD (Mobile Fidelity SPCD-15) indicated a speaker with a superbly flat in-room response, and I've never heard sweep tones reproduced with such evenness. This speaker should produce a super-clean waterfall curve; its off-axis response seemed to be free of sonic bumps and bruises, making side-chair listening a pleasure. I know — I often had to give up the sweet spot!

The Avanti bettered the Infinity Prelude in the mid-range, however, being somewhat more revealing and delicate, and definitely more detailed and less congested. Female vocals, for example, had a clarity and focus that easily surpassed what I remembered the Prelude delivering. But the Infinity, with its built-in powered 12" subwoofer, stomped all over the Avanti in the deep-bass department. Though the Avanti III is rated at 28Hz-40kHz, -3dB, in my room its response at 25Hz was audible but minimal, and 30Hz was only somewhat better.

Because of its audibly flat and extended HF response and seemingly lean midbass, the Avanti III could sometimes sound somewhat thin overall — even, some might say, „analytical“ — especially if you're used to or crave whomp-'em stomp-'em room-warming bass and mid-bass.

Certainly the Avanti III's overall character wasn't as „rich“ as, for example, the Amati Homage's. The lack of midbass warmth could also contribute to the sensation that the speaker couldn't fill a moderately large room. In fact, it's recommended for rooms of 210-460ft² with ceilings of average height. My review pair had no problem filling my moderately sized, 15' by 21' (315ft³) space.

There's a solution to the bottom-end problem: Add a subwoofer. There are two new subwoofers coming from Audio Physic, but they weren't available for this review; I used the older AP Rhea. The Avanti III's clean and subjectively flat low-end response, which sounded as if it rolled off evenly below 40Hz, meant that dialing-in the subwoofer without overlap was not difficult. The result was bottom-octave extension without mid-bass muddiness.

I hear you: „\$11,000 and I still need a subwoofer?“ Well, you don't need a subwoofer with the Avanti III. There was plenty of satisfying, well-defined, nonmechanical deep bass, but not of the stomach-socking sort. The bass definition I got was of the „six-pack stomach variety“: tight and exceptionally well-defined. Bass of the stomach-socking variety will require a subwoofer. So will reproduction of the biggest organ pipes.

But if your main concern is with the Avanti III's rhythmic talents, don't worry about a subwoofer. The speaker's abilities to swing, carry a beat, and communicate rhythm and pacing were absolutely first-class. In that regard, the Avanti III beat the Infinity Prelude, the Virgo, and the Amati Homage, which rhythmically delivers a mature and satisfyingly wet kiss compared to the Avanti's muscular teenaged tongue.

High clarity, ultra-low distortion, accurate timbral and rhythmic presentation, breathtaking soundstaging (width, depth, and height), three-dimensional imaging, natural focus without hyper edge-definition — you should hear all of these attributes and many others if you audition the Avanti IIIs in a well-set-up demo. But most important, the Avanti III delivered music with ease. And despite their analytical honesty, and unlike some other analytical speakers, they did so without imparting a medicinal aftertaste.

Comparing an original UK Island pressing of John Martyn's exceptionally fine Solid Air (Island ILPS 9226) with the recent Simply Vinyl reissue revealed subtle but striking differences: By itself, the SV reissue sounded like an outstanding recording. The original, however, put holographic, 3-D Martyn in a space — my room — and made the reissue sound cardboard-cutout two-dimensional by comparison. This difference was audible through the Amati Homages, but not with the same stark, vivid clarity.

Listening to the Avanti IIIs late into night after night, I experienced new insight into the physical and emotional underpinnings of some of my favorite recordings. The mental nourishment was accompanied by waves of sheer, sensual sonic pleasure. How much more do you expect a loudspeaker to communicate?

Conclusion

Rather than beat you over the head with a play-by-play of what my usual reference recordings sounded like through the Avanti III, I've tried to convey the big, generalized picture. Like the Infinity Prelude, the Avanti III proved that it's possible to design a flat-response loudspeaker that does not sound antiseptic, bright, or hard — one that still manages to communicate the meaning and mystery of music while presenting a vivid, accurate, and detailed picture of what has been recorded or what is being reproduced. VTA set too high? You'll know it.

Truly flat response should open up the timbral palette, not create a cold, sterile, monochromatic musical world. The Avanti III proved that. It easily delineated the delicate individual instrumental colors within an orchestra's massed strings, for example, while preserving the coherence of the whole. The difference between spurious „detail“ created by response peaks and genuine detail created by flat response was made clear by the Avanti III's performance in the mid- to high-frequency range.

Though not particularly large speakers, the Avanti IIIs produced a very large, airy sonic picture while managing to „disappear“ from sight, even when I stared at them. Not since I owned the Virgos have so many newcomers sat in the sweet spot to listen, only to say,

„Where's the music coming from?“ — or to point to the amplifier between them and say, „Is it coming from there?“

Audio Physic speakers are noted for their holographic imaging and superb three-dimensional soundstaging. No one will be disappointed by the Avanti IIIs' spatial performance, which is not only exceptional but among the very best I've heard. I stared them down with the lights on and they still managed to exit the building, leaving me in the presence of a musical event that asserted itself with uncommon ease.

The Avanti III proved to be a low-coloration, low-distortion, high-performance speaker free of glaring tonal glitches or rhythmic discontinuities. While, like the Virgo, it brought a great number of strengths to the table, it was the Avanti's overall balance that impressed and kept me coming back for more, night after night. Aside from a slight leanness in the midbass, that missing bottom octave, and poorly designed gold-plated binding-post knobs that feature finger-shredding, pain-inducing ridges, the Audio Physic Avanti III is a superb-sounding loudspeaker that I'm betting will measure as impressively as it sounds.

I periodically begin to think I've stripped all of the hidden detail from the pits or grooves of my favorite recordings, but then along comes a component like the Avanti III to reveal new details and, more important, fresh musical insights.

Longtime Virgo owners waiting for something meaningful to move up to within the Audio Physic family can stop waiting — the Avanti III is markedly better in every way. Anyone else looking to drop \$11k on a pair of loudspeakers should consider the Avanti III as well. It delivers.

Specifications

Description: 3 1/2-way, floorstanding, moving-coil loudspeaker. Drive-units: one 1" ring-radiator tweeter, two 5" aluminum-cone midrange drivers with Active Cone Damping (ACD), four 6 1/2" woofers. Crossovers: 200Hz, 500Hz, 2.2kHz. Frequency response: 28Hz-40kHz, -3dB. Nominal impedance: 4 ohms. Sensitivity: 89dB/W/m. Power rating: 250W.

Dimensions: 44" H by 71/2-91/2" W by 16" D. Weight: 92 lbs each. Finishes: Maccassar Ebony; add \$1000 for cherry or maple. Serial numbers of units reviewed: 739A/B.

Price: \$10,995/pair. Approximate number of dealers: 35.

Manufacturer

Audio Physic, Gallbergweg 50, 59929 Brilon, Germany.
Web: www.audiophysic.de.

US distributor: Immedia, 1717A Fourth Street, Berkeley, CA 94710.
Tel: (510) 559-2050. Fax: (510) 559-1855.
Web: www.immediasound.com.

Associated Equipment

Analog sources: Simon Yorke, Acoustic Signature Final Tool turntables; Graham 2.0, Immedia RPM-2, Triplaner VI, Rega RB300 (Incognito rewired), SME 309 tonearms; Lyra Helikon, Helikon mono, Clearaudio Insider, Transfiguration Temper Supreme, Sumiko Celebration cartridges.

Digital source: Marantz SA-1 SACD player.

Preamplification: Hovland HP-100, Audio Research Reference Phono.

Power amplifiers: Hovland Sapphire (prototype), Musical Fidelity Nu-Vista 300.

Loudspeakers: Sonus Faber Amati Homage.

Cables: Phono: Hovland Music Groove DIN/RCA and RCA/RCA. Interconnect: Harmonic Technology Pro-Silway II and Magic. Speaker: Harmonic Technology Woofer. AC: JPS Labs, Electra Glide Fatboy, PS Audio Lab, Wireworld Electra Series III.

Accessories: PS Audio Power Plant P300 and P600 AC regenerators, Sounds of Silence Vibraplant active isolation platform, Symposium Tungsten Rollerblocks, Grand Prix Audio Monaco amplifier stands, Walker motor drive, Finite Elemente Pagode and Zoethecus equipment stands, A.R.T. Q dampers, Walker Valid Points, ASC Tube Traps, Shakti Stones and On-Lines, RPG BAD and Abffusor panels.

Michael Fremer

Measurements

The Audio Physic Avanti III's B-weighted sensitivity was a fairly high 88.6dB(B)/2.83V/m, fractionally but insignificantly below the specified 89dB/W/m. However, its plot of impedance magnitude and phase against frequency (fig.1) revealed it to be a „4 ohm“ design; ie, it actually draws 2W from the amplifier to raise the rated sound-pressure level. The speaker's minimum impedance is around 3.5 ohms in the low bass and upper midrange, which should not present problems to good 4 ohm-rated amplifiers. While the phase angle is generally benign, there is a coincidence of low impedance and high phase angle around 20Hz. Fortunately, with the exception of classical organ recordings, there is rarely any significant music energy down there — but the Avanti would hardly be the speaker of choice for fans of organ CDs, in any case.

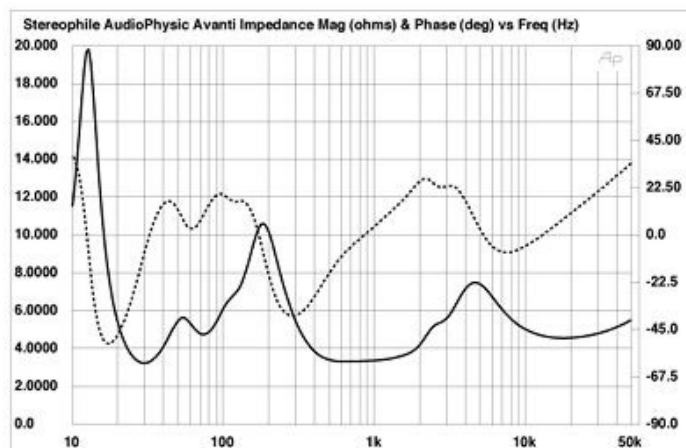


Fig.1 Audio Physic Avanti III, electrical impedance (solid) and phase (dashed). (2 ohms/vertical div.)

The traces in fig.1 are free from discontinuities that might otherwise indicate the presence of cabinet resonances. Unfortunately, an equipment failure meant I could not perform any accelerometer measurements of the Audio Physic's beautifully curved enclosure walls. However, listening to the cabinet with a stethoscope while the speaker reproduced swept sinewaves and pink noise indicated that it was basically free from vibrational resonances.

The Avanti's downward-firing ports mean that the exact tuning of the reflex-loaded woofers will change according to the gap between the base of the speaker and the floor. For my measurements, I placed the speaker's feet on 1" blocks of Styrofoam, which gave the saddle centered at 29Hz in the fig.1 magnitude trace, indicating the ports' tuning frequency. But there are some other twists in the traces between 40Hz and 160Hz that suggest something else is going on.

On the left side of fig.2 are shown the individual responses of the side-mounted woofers and the downward-firing ports, taken in the nearfield; ie, with the microphone capsule very close to the radiating element. (To measure the port, I placed the mike on the floor, adjacent to the edge of the cabinet.) As expected, the minimum in the woofer response at 29Hz coincides with both the maximum in the port output and the frequency of the bass saddle in fig.1.

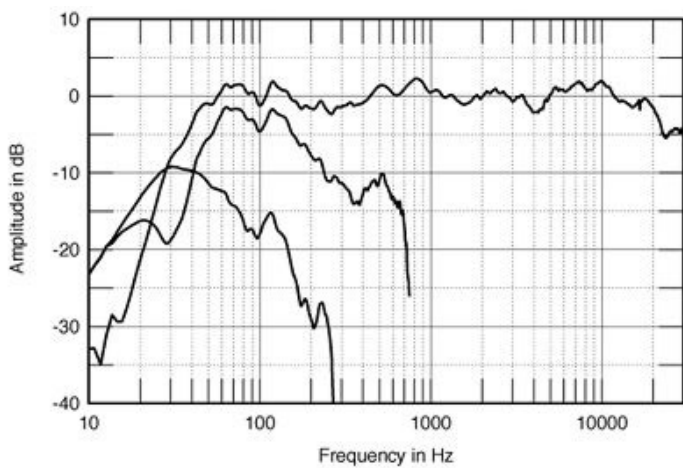


Fig.2 Audio Physic Avanti III, anechoic response on tweeter axis at 50", averaged across 30 degrees horizontal window and corrected for microphone response, with the nearfield woofer and port responses plotted below 750Hz and 275Hz, respectively.

But look at the notch around 100Hz in the woofer and port responses. There is presumably some kind of anti-resonance at this frequency, and it shows up as well in the complex sum (taking magnitude, phase, and physical separation of the drivers into account) of the port, woofer, and midrange outputs (top trace in fig.2 below 350Hz). Both ports and woofers can be seen to roll off smoothly above their passbands, however, and while there is a suggestion of a peak in the woofer response at 500Hz, this is suppressed by the crossover. (The changeover between the woofers and the midrange units appears to be set at 200Hz.) That Michael found the bass a little lean comes as no surprise; the ports seem to be doing little to support the speaker's midbass output.

Higher in frequency (fig.2), the Avanti is basically extremely flat in its tweeter-axis response. However, very slight lacks of energy can be seen in the lower midrange and at 4kHz. The former occurs in a region where the frequency resolution of my quasi-anechoic measurement technique is poor. This is also the lower crossover region, and a region where the room acoustics and boundary conditions will have an effect. Nevertheless, it does look like the upper midrange is slightly exaggerated; in my own auditioning of the Avanti in Michael's room, I felt its balance to be slightly on the forward side.

The Avanti's use of small-diameter midrange units, a narrow baffle, and sensible crossover implementation endows the speaker with superb lateral dispersion (fig.3). The even spacing of the contour lines in this graph and the smooth, well-controlled off-axis rolloff in the top two audio octaves are virtually textbook; no wonder MF found the Avantis to offer „incredible image focus and soundstaging precision,“ something I heard for myself in his room.

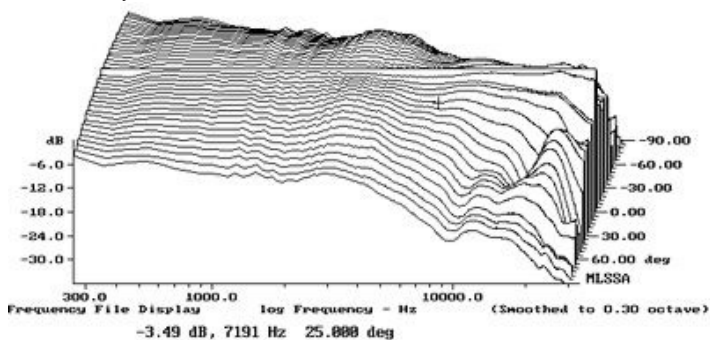


Fig.3 Audio Physic Avanti III, lateral response family at 50", normalized to response on tweeter axis, from back to front: differences in response 90 degrees-5 degrees off-axis, reference response, differences in response 5 degrees-90 degrees off-axis.

In the vertical plane (fig.4), the response doesn't change significantly over quite a wide angle, though if you sit very low, a suckout begins to appear at the upper crossover frequency.

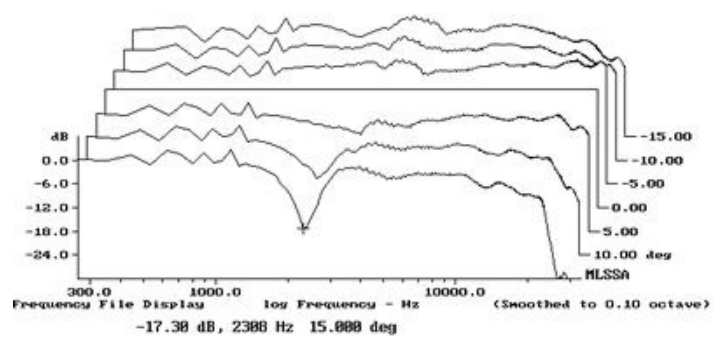


Fig.4 Audio Physic Avanti III, vertical response family at 50", from back to front: differences in response 15 degrees-5 degrees above tweeter axis, reference response, differences in response 5 degrees-15 degrees below tweeter axis.

In the time domain, the Avanti's step response (fig.5) indicates that the three upper-frequency units are connected with the same positive acoustic polarity, even though, despite its sloped-back baffle, the speaker is not time-coherent. The woofers are connected with inverted acoustic polarity, which leads to a smooth hand-over of the step wave from the midrange units in fig.5, which in turn implies good frequency-domain integration between the units.

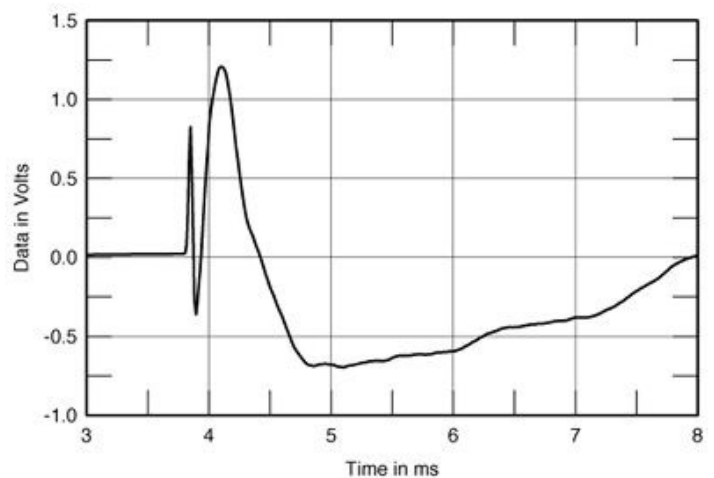


Fig.5 Audio Physic Avanti III, step response on tweeter axis at 50" (5ms time window, 30kHz bandwidth).

Finally, the Audio Physic's cumulative spectral-decay plot (fig.6) is simply superb! Other than some well-suppressed delayed energy at 5.3kHz, which I suspect is due to a metal-cone mode, the graph is beautifully clean, which correlates with the speaker's clear presentation and absence of treble grain.

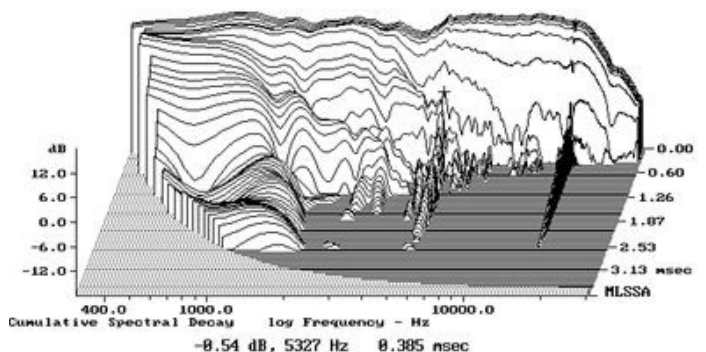


Fig.6 Audio Physic Avanti III, cumulative spectral-decay plot at 50" (0.15ms risetime).

The three earlier Audio Physic speakers from Joachim Gerhard that I tried — the Tempo, Step, and Virgo — all impressed me with their solid engineering and excellent sound quality. The Avanti III exceeds my expectations.

John Atkinson