

stereophile

GUIDE to HOME THEATER

Reprinted from March/April 2003



**Vienna Acoustics
Strauss/Oratorio/Waltz &
REL Q-401E Sub bass system**

the combined radiating areas of two drivers, thus increasing the Strauss's power-handling capabilities.

The Strauss's woofer begins operation at around 70Hz, which is low enough to free the lower-midrange driver from having a crossover point in critically audible frequencies. According to VA's specifications, the woofer extends down to 26Hz. The woofer is on the side of the cabinet, allowing the Strauss to be set up with its woofer firing toward the room's center or outside walls. Such flexibility in placement makes it possible to achieve better room optimization.

The Oratorio center-channel speaker was designed to work with the Strauss or the larger Mahler speaker. It's a 3-way bass-reflex design with ports on the side, and its tweeter and its midrange driver are identical to those in the Strauss. But instead of having a second midrange driver and a single, side-firing 11-inch woofer, the Oratorio has two front-firing 9-inch woofers that handle frequencies of 33–120Hz. With its raked-back front baffle and aerodynamic parallelogram shape, the Oratorio looks much lighter than its 66 pounds.

Vienna Acoustics' US distributor, Sumiko, also sent along two Waltzes to use as surround speakers. Unlike the Strauss and Oratorio, the Waltz has a 2-way symmetrical configuration in a sealed enclosure. Its cabinet features an asymmetrical angled shape to ease its placement on ceiling, wall, corner, or stand. The speaker's two pairs of connectors, one near the top and one near the bottom, also increase its placement flexibility.

While the Waltz's 1-inch silk-dome tweeter is not as expensive as the one in the Strauss and Oratorio, it's still hand-coated and quite robust. Two 5.5-inch midrange/bass drivers go down to about 70Hz. Vienna Acoustics is so confident of the Waltz's ability to handle full-range signals even at high SPLs that they suggest you set your processor for Large surrounds when using Waltzes as side or rear speakers. *[But we'd recommend you try both Large and Small. With a Large setting, any surround bass that the Waltz cannot reproduce will simply disappear rather than being routed to the subwoofer.—TJN]*

Although the Vienna Acoustics speakers come with very attractive grillecloths, the company representatives who installed them recommended that I do all of my critical listening without them, which I did.

The REL Q401E subwoofer is not made by Vienna Acoustics, but REL is also distributed by Sumiko. A 400W RMS discrete direct-coupled MOSFET amplifier with six output devices and an audiophile-grade toroidal transformer drive a single 12-inch, long-throw driver with a 7.6kg magnet and a 4-layer, edge-wound voice coil. The Q401E is housed in a sealed cabinet with a zero-Q suspension system (so called because the cabinet's resonance, or Q, is outside the frequency range of the sub) controlled by REL's proprietary Active Bass Control (ABC) variable bass filter, which is said to let it fill large rooms without exhibiting strong peaks in its response.

As with virtually all subs, you can use the REL in the standard manner, sending it a line-

level subwoofer signal. In addition, you can simultaneously use it as a low-bass extension for your three front speakers. In this case, you connect the output of the front-speaker amplifier to the proprietary high-level input on the sub. REL supplies a special cable that breaks out into three conductors terminated in bare wire, which are connected to the amp in parallel with the front speakers. Fortunately, the impedance of this input is relatively high, so it doesn't place any significant demand on the amp.

Prelude

Rather than risk injury by attempting to set up speakers weighing 120 pounds each, I requested assistance from Sumiko. They sent Bill Peugh, who has a long and distinguished history of working in high-end audio. After representing the Swiss high-end audio company Goldmund for several years, Peugh created a critically acclaimed line of speakers for Metaphor. He then joined Sumiko.

Sumiko's unique way of setting up speakers is called the Sumiko Theater and Advanced REL, or STAR, system. This involves not only integrating a REL subwoofer to augment the main speakers' bass, but also placing the main speakers to optimally pressurize the room while blending seamlessly to create a 3-dimensional soundstage. A several-days-long training program, run by Terry Medalen, teaches installers how to optimize systems for real-world rooms using the STAR technique.

It took Peugh several hours to initially set up the VA/REL system in my upstairs screening room, in which I've tried to create a more

SPECIFICATIONS CONTINUED

Vienna Acoustics Waltz

2-way acoustic-suspension surround speaker

Drivers: 1" silk-dome tweeter; two 5.5" XPP midrange cones

Frequency response: 70Hz–20kHz

Sensitivity: 91dB

Impedance: 4 Ω nominal

Recommended power: 50–300W RMS

Finishes: beech, glass black; rosewood, add \$100 each

Dimensions: 18.9" x 7.9" x 3.7" (HxWxD)

Weight: 17 lbs

Price: \$650 each

REL Q401E

Powered subwoofer; active zero-Q acoustic-suspension system with ABC variable bass filter in 25-liter closed box

Driver: 12" long-throw driver with 7.6kg magnet and 4-layer edge-wound voice coil

Frequency range: 16–100Hz

Inputs: 1 RCA (low-level); 1 Neutrik Speakon connector with 25' cable (high-level)

Amplifier input impedance: 100k Ω high level, 10k Ω low level

Amplifier power rating: 400W RMS

Gain control range: 80dB

Driver impedance: 4 Ω

Mains input voltage: 115V, 50/60Hz or 230V, 50/60Hz

Finish: Britex black

Dimensions: 16.54" x 15.43" x 16.93" (HxWxD)

Weight: 66.14 lbs

Price: \$2195

System Price: \$12,495

Manufacturers

Vienna Acoustics and REL

Distributed by Sumiko

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SURROUND SPEAKER SYSTEM

Vienna Acoustics Strauss

Steven Stone

Vienna Acoustics likes to name their speakers after composers and classical musical forms. So far, they've covered Bach, Beethoven, Berg, Brahms, Haydn, Mahler, Mozart, Schoenberg, and Waltz. The Strauss, Oratorio, and Waltz are Vienna's three most recent additions to this distinguished list, and they form the heart of a new home-theater and surround-music system designed for folks who demand great sound without completely gutting their 401(k)s. Batons ready? And ah-one and ah-two...

Overture

Veneered in a honey beech, the Vienna Acoustics Strauss looks ready to conduct a visual symphony. VA has perfected a way of bending veneers around sharply curved edges using membrane presses. This means they can design their cabinets for optimum sonic benefit while still making stylishly shaped enclosures. With baffles of 1.5-inch-thick MDF, extensive internal bracing based on their own finite-element analysis, and a back rake that time-aligns the drivers, the Strauss impresses without looking massive or ungainly.

The Strauss has a 3-way crossover. A 1-inch silk-dome tweeter using a unique multiple-magnet system handles the high frequencies. Its three center-drilled neodymium magnets

guide internal sound waves into a special damping chamber that drastically reduces upper-frequency compression effects and the amplitude of the tweeter's natural resonant frequencies.

The midrange and bass drivers are made of air-dried paper reinforced with carbon fiber to increase rigidity and internal damping. The two midrange drivers share a complementary crossover: The upper driver handles the entire

midrange, while the lower one rolls off its upper-frequency output to concentrate on the lower midrange. The claimed benefits of this arrangement include superior power handling and better imaging: The upper-midrange frequencies, which supply critical imaging and locational cues, are produced by the smaller radiating area of a single driver. The lower-midrange frequencies deliver most of the dynamic energy, and they come from

SPECIFICATIONS**Vienna Acoustics Strauss**

3-way front speaker in bass-reflex cabinet

Drivers: 1" hand-coated, silicone-layered, silk-dome tweeter with 3 neodymium magnets; two 7" carbon-fiber-filled, air-dried, paper-cone midranges; 11" carbon-fiber-filled, air-dried paper-cone woofers

Frequency response: 27Hz-30kHz

Sensitivity: 90dB

Impedance: 4Ω nominal

Recommended power: 50-400W RMS

Finishes: beech, glass black; rosewood, add \$600/pair

Dimensions: 45.7" x 7.7" x 16.7" (HxWxD, without base)

Weight: 120 lbs

Price: \$5995/pair

Vienna Acoustics Oratorio

3-way center speaker in bass-reflex cabinet

Drivers: 1" hand-coated, silicone-layered, silk-dome tweeter with 3 neodymium magnets; 7" carbon-fiber-filled, air-dried, paper-cone midrange; two 9" carbon-fiber-filled, air-dried paper-cone woofer

Frequency response: 30Hz-30kHz

Sensitivity: 91dB

Impedance: 4Ω nominal

Recommended power: 50-300W RMS

Finishes: beech, glass black; rosewood, add \$300

Dimensions: 29.5" x 9.2" x 14.2" (WxHxD)

Weight: 60 lbs

Price: \$2995

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Strauss front speakers

The principal drawback of the Strauss is its size. These large speakers simply will not fit, sonically or visually, into a small screening room. By "small," I mean anything with dimensions under about 15 feet. You could try to fit them into less space, and they'll never sound actually bad, but you can't expect optimum performance if you have to shoe-horn them into a tiny room. Since my upper-level screening area was part of a much larger space, I was able to experience most of what the speakers had to offer. One of VA's smaller speakers would be more appropriate for smaller rooms.

Sumiko's somewhat unusual setup and calibration procedures may be a problem for some installers and/or rooms. Any Sumiko-certified dealer should be able to correctly employ their STAR system, but whether the results are audibly superior to a more conventional setup is debatable. I often preferred a more standard setup, especially when using derived surround modes—it seemed to more accurately decode 2-channel spatial cues into surround sound. Only when using Dolby Digital or analog-bypass DVD-A material did I find the STAR setup to be slightly more spacious, with better soundstage integration. The Meridian 568.2 made it easy to have both setups available, but with most surround processors, you'll have to choose one way to set up your system.

Coda

Audio critics are often accused of cribbing many of their more obscure terms from the pages of wine journals, whose descriptions of the subtleties of taste and smell make even the most flowery audiophile ramblings seem prosaic in comparison. While I wouldn't go so far as to describe the Vienna Acoustics/REL system as having a raspberry finish with slight overtones of spice and ginger, I would call it colorful and refreshingly dynamic. It's just the thing to go with *Bubble Boy*, an unpretentious Chardonnay, and Paul Newman's low-fat popcorn. Put another way, Vienna Acoustics' Strauss-based system combined the characteristics of two of my favorite speaker systems: the suavity of the Tannoy Dimension with the dynamic exuberance of the Monitor Audio Studio Gold Reference. Though not inexpensive, the VA system delivers everything you pay for: visual style, fine sound, and that certain verve that makes a high-end product special. I'll miss them when they're gone. From me, there's not much higher praise. 



only where the surround processor provides no bass management. That will be the case with most DVD-Audio setups, some SACD systems, and anything that originated as 2-channel analog material and is played back in an analog bypass mode without simulated surround processing of any kind (or CDs where the user prefers to use the player's analog outputs). Coupled with the REL in its augmentation setup, the Vienna Acoustics system excelled with DVD-Audio material, delivering exceptionally full-range musical presentations despite the bass-management limitations of most DVD-A players.

The Vienna Acoustics' midrange presentation commanded my attention. Even at very low volumes, human voices, saxophones, and guitars had a presence that was strikingly life-like. In the real world, microdynamics and subtle volume changes give music delicacy and nuance, and these subtle differences came through the VA system without corruption or homogenization.

The VAs' microdynamic abilities reminded me of the WEGG3 Lunare Surface Mission speakers (reviewed in the February 2002 *Guide*), which also pass every bit of dynamic information with no loss of definition or energy. I can't make direct comparisons between the Vienna Acoustics and WEGG3 systems because I didn't have both at the same time, but both made many other speakers I've heard seem sleepy by comparison.

Along with their microdynamic abilities, the Vienna Acoustics could deliver big crescendos. Loud passages sounded as loud as they can and do in real life. No, bomb blasts didn't clock in at 130dB—most soundtracks use judicious amounts of compression and limiting to spare us excessive aural assault—but on my own uncompressed recordings, the VAs produced SPLs that matched what I measured in the hall during the recordings. They handled a full symphony orchestra's *fff* passages without a whimper, losing no definition during these sonic onslaughts.

Peugh and Medalen had spent what seemed like an inordinate amount of time adjusting their setup for optimum soundstaging and imaging, but the results indicated that their efforts made a difference. Even though the Strausses are larger, with more drivers set farther apart, than many speakers I've had in my upstairs screening room, their imaging precision equaled anything I'd heard. Not only did the VA system deliver excellent lateral imaging, each sound having a particular and

well-defined location, but it delivered superlative layering of sound from back to front. In the explosions during the depth-charge scenes of *Das Boot*, I got a real sense of varying distances. On such well-recorded classical DVD-A discs as MDG's *Breakthrough ... into a new Dimension* (MDG 9061069-5), orchestras had realistic 3-dimensional depth.

I mentioned earlier that the Vienna Acoustics system was on the slightly warm side of neutral, and this was not due to any lack of high-frequency extension or air. After the Tannoy Dimension's supertweeters and the Monitor Audio's ceramic aluminum-dome tweeters, I was surprised to find a silk-dome tweeter able to deliver equally high levels of

finesse and articulation in the highs. Even on slightly dark recordings, such as Béla Fleck's *Acoustic Planet* DVD-A (Warner Bros. 47332-9), the VA system rendered high-frequency information with superb clarity. On bright, slightly nasty movie soundtracks such as *SLC Punk!*, the top end was never spitty or overly sibilant.

MEASUREMENTS

The Vienna Acoustics Strauss's sensitivity measured about 87dB/W/m. The ported enclosure of the Strauss appeared to be heavily damped, making a clear determination of its loading frequency difficult. But judging from the impedance plots below 90Hz, there were significant differences between the two samples in their low-frequency loading. The sample whose measurements are presented here appeared to be tuned to a significantly higher frequency than the other, suggesting some production inconsistencies in either the woofers themselves or in the amount of damping material used in the cabinets. The sample's fully measured minimum impedance was 2.7Ω at 50Hz. I would judge the nominal impedance to be 6Ω.

Fortunately, the impedance's phase angle is relatively low. The Strauss seems to be a moderately difficult load, but any stable amplifier comfortable with loads that dip below 4Ω (i.e., many separate amps but few receivers) should be able to drive it.

The Strauss's pseudo-anechoic response at tweeter height, averaged over a 30° forward horizontal angle and combined with the nearfield responses of the woofer and port, is shown in Fig. 1 (violet). The useful bass extends down to approximately 33Hz (-10dB relative to the output at 100Hz). The on-axis average is a little bumpy, but the average deviation across most of the range is within ±2dB. Nevertheless, the deviations are significant enough to suggest some audible forwardness through the midrange and a bit of added zip in the extreme high frequencies. But SS noticed no such anomalies, perhaps because the off-axis results are noticeably smoother, which should result in an overall in-room response a bit more linear than the 30° average shown.

Fig. 2 again shows the Strauss's averaged horizontal front response (violet), plus the vertical responses taken at +15° (red) and -15° (blue) relative to the tweeter. These measurements were taken with the speaker set up as intended: with its dedicated base providing a significant backtilt. As you move up or down off the vertical axis, a significant suckout appears in the response near what may be the (unspecified) mid/tweeter crossover

point, which you should keep in mind when auditioning the speaker: Sit down and keep your ears as close to tweeter height as possible.

Like the Strauss, the ported loading of the Oratorio is atypical, making precise interpretation of its loading frequency difficult. I would rate its nominal impedance at 4Ω; the minimum impedance was 2.4Ω at 78Hz. The sensitivity measured approximately 89dB/W/m; its overall impedance characteristic suggests that, like the Strauss, the Oratorio should be moderately difficult to drive—acceptable for many well-designed, separate amps but unsuitable for receivers, most of which are uncomfortable with low-impedance loads.



Fig. 1: Vienna Acoustics Strauss, pseudo-anechoic horizontal response at 45° (red) and 60° (blue) relative to tweeter axis.



Fig. 3: Vienna Acoustics Oratorio, pseudo-anechoic horizontal response at 45° (red) and 60° (blue) relative to tweeter axis.

All figures: Violet: Pseudo-anechoic response on tweeter axis, averaged across a 30° horizontal window, combined with nearfield responses of woofer and port.

The Oratorio's measured front horizontal response, taken on the tweeter axis and averaged in the same manner as described above for the Strauss, is shown in Fig. 3 (violet). The useful bass extension is approximately 52Hz (-10dB relative to the output at 100Hz). The 30° averaged response is smoother than that of the Strauss up to about 1kHz, and the overall curve indicates a somewhat laid-back quality through the low to mid-treble.

The Oratorio's ±15° vertical off-axis performance (Fig. 4) shows that the speaker performs best on-axis, with positions above the axis less detrimental than those below.—Thomas J. Norton



Fig. 2: Vienna Acoustics Strauss, pseudo-anechoic vertical response at +15° (red) and -15° (blue) relative to tweeter axis.



Fig. 4: Vienna Acoustics Oratorio, pseudo-anechoic vertical response at +15° (red) and -15° (blue) relative to tweeter axis.



Oratorio center speaker

real-world home-theater environment than my downstairs megabucks room. The home-theater space is contained within a larger room that also includes my kitchen and living room. The entire space measures 24x29 feet, with a phalanx of 6-foot-high ASC Tube Traps defining the rear boundary of the smaller, 14x15 feet home-theater area. These traps also provide an ideal place to situate rear speakers. Other acoustical elements include a row of ASC wall treatments evenly spaced on the front wall, six randomly spaced Ceiling Clouds, an ASC Shadowcaster outside each speaker, and a thick 7x5 oriental rug, all of which help damp the home theater's room acoustics. The final results make for an ideal area to enjoy a film on a direct-view or rear-projection monitor.

Peugh let the system burn in for a few days, then returned with Terry Medalen, who assisted in the final adjustments. The final speaker positions were somewhat, but not radically, different from what I've used in the past with other speaker systems. All of the main speakers were well clear of nearby walls, and the REL Q401E subwoofer was positioned in the left front corner of the room.

Peugh and Medalen spent another few hours adjusting the system's crossover frequencies and electronic time alignment. Fortunately, my Meridian 568 preamp-

processor can save multiple system configurations, which makes different setups available at the push of a button. The STAR setup involved setting speaker distances based on what Peugh and Medalen heard instead of actual measured distances—not the way I usually set up a system. When they'd completed their setup, they saved it under the name SUMIKO. Then I set up the system according to the more standard procedure of measuring distances, and saved it as STONE. Peugh and Medalen also set up the front speakers as large full-range transducers with no bass rolloff, so the REL Q401E would augment their bass output. I set up my system parameters with a 45Hz front-channel rolloff. I used both system configurations during my listening sessions. Put another way, the SUMIKO setup used the REL subwoofer in Sumiko's recommended bass augmentation mode, while the STONE setup employed the REL more as a conventional subwoofer.

Crescendo

Every speaker falls to one side or the other of perfect neutrality. Harmonically, the Vienna Acoustics system was on the warm side, not because of an excess of lower-midrange energy or a lack of high-frequency extension, but because of its innate musicality. The Strausses infused sources with a slightly rosy glow. Compared to the Tannoy Dimension

system, the VA speakers were not quite as warm or euphonic, and they provided a more forward and dynamic midrange that gave music a bit more life and energy.

Even without the REL subwoofer to augment their bass response, the Strauss and Oratorio speakers did a fine job with bass-intensive sources. In theory, disconnecting the REL removes bass information below 40Hz, but on most material it was hard to hear any difference; the Strauss and Oratorio speakers had more than adequate bass extension of their own. With especially dynamic material, such as my own live concert recordings played back in derived surround modes, I preferred a 45Hz crossover setting in the Meridian for the front speakers. This reduced the amount of extreme LF information fed to the front-channel amplifier, liberating it from the power-sapping drudgery of reproducing low bass. With the 45Hz crossover, music had greater dynamic ease because the amplifier wasn't working so hard. The same was true for the most bass-heavy soundtracks.

In fact, for any program material that originated digitally—including Dolby Digital, DTS, and CDs—I preferred to use the REL Q401E subwoofer in the conventional mode, crossed over to the main speakers at 45Hz. The REL's augmentation mode really comes into its own

REVIEW SYSTEM

Sources

Meridian 598 DVD-Audio player
Meridian 596 DVD player
Toshiba SD-9200 DVD player

Preamp-Processors

Meridian 568.2 & 562
Lexicon MC-12

Power Amps

Pass Labs X-3
Bryston PowerPac 120

Cables

Interconnect: Synergistic Research Designer's Reference

Speaker: Synergistic Research Resolution Reference

Video: VideoQuest S-1 S-VHS, VSB-1 RCA/coaxial

Misc.

Monster AVS 2000 voltage stabilizer
Monster Power Center 5000 power conditioner
PS Audio Power Plant 300 power conditioner
Camelot Technologies Dragon S.1 DVD interface box