

Acoustic Energy Radiance 1 Speaker System

PRICE: \$4,200 **AT A GLANCE:** Ring radiator tweeter civilizes high frequencies • DXT Lens matches tweeter's dispersion to that of woofer • Subwoofer includes adjustable notch filter

Lord of the Ring

Sometimes a single moment of greatness defines a person or a company, even if other moments of greatness follow. For Judy Garland, it was "Over the Rainbow" in *The Wizard of Oz*. For Acoustic Energy, a British loudspeaker brand, it was the AE1. The monitor took recording studios by storm when it made its debut in 1988, and it soon became a favorite among consumer-level audiophiles as well.

Since then, Acoustic Energy has moved from West London to the bucolic Cotswolds, formed an alliance with a Malaysian manufacturer, and given birth to various speaker lines, including several newer variations of the AE1. One of these days, I'll have to capture five of the classic monitors and put them through their paces. First, let's talk about a new line, the Radiance series, which includes a tower, two monitors, a center, and a sub. This review covers a favorite configuration of mine, with five of the smaller Radiance 1 monitors and the Radiance Sub.

Ring Radiation

The Radiance 1 is about a foot and a half tall. It doesn't loom large, perhaps because its width is a little more than seven inches. Its sides curve toward the back, which is an excellent way of minimizing the polluting influence of standing waves inside the enclosure. The overall visual impact is that of a satellite speaker half the size. It didn't crowd me.

Veneer choices are light natural oak or darker antique oak. I had the former and found it unassumingly beautiful. Its light satin finish was minimal and natural, not glossy or ruthlessly sanded

down. I could feel the wood grain when I ran a fingertip over its surface.

Pull off the well-made aluminum grilles—with especially strong magnets that practically fly onto the speaker—and you'll find this simple two-way design's drivers. They include a tweeter with a one-inch doped fabric diaphragm and a woofer with a five-inch deep-anodized aluminum alloy cone in a diecast aluminum basket. Acoustic Energy says the woofer's dual-wound aluminum voice coils provide the benefits of low distortion and high power handling.

The tweeter is not a conventional dome but the

latest iteration of Vifa's ring radiator according to AE.

"Through the use of motor optimization and special flux stabilizing rings, it has a 10 decibel reduction in motor distortion over previous models. To get the best from this new motor, we went through an intensive process of evaluating different diaphragm materials, varying source, type, and doping levels in order to find the perfect combination, which would give us the widest bandwidth and lowest distortion."

AE says the phase plug at the tweeter's center "helps the directivity at high frequencies by

shaping the loading process across the tweeter diaphragm." The tweeter is recessed into a diecast aluminum waveguide, which AE calls a DXT lens. Most tweeter waveguides focus the output of the tweeter while controlling its interaction with the room. In this case, it's also designed specifically to match the tweeter's dispersion



• The Radiance 1 incorporates dual-wound aluminum voice coils in its woofer for low distortion and high power handling.

• The Radiance Sub has a front-mounted pulp cone driver along with several knobs in back.

SPEAKER:	RADIANCE 1
TYPE:	Two-way, monitor
TWEETER (SIZE IN INCHES, TYPE):	1, doped fabric ring radiator with DXT
MID-WOOFER (SIZE IN INCHES, TYPE):	5.12, aluminum alloy cone
NOMINAL IMPEDANCE (OHMS):	8
RECOMMENDED AMP POWER (WATTS):	20-150
AVAILABLE FINISHES:	Natural oak, antique oak
DIMENSIONS (W X H X D, INCHES):	7.28 x 12.6 x 9.84
WEIGHT (POUNDS):	17.64
PRICE:	\$1,200/pair

with that of the woofer, improving integration around the crossover point. On the back are biwire transparent-nut binding posts.

Notch Your Problems Away

The Radiance Sub includes a front-mounted pulp cone driver of a little less than nine inches in diameter that's housed in a sealed box, to which supplied rubber feet or spikes may be fitted. Seven knobs adorn the back panel. In addition to the usual three for volume, crossover, and power, the sub also has a continuously adjustable phase control and three more controls that apply a notch filter for room correction. While I've had varying results from room correction/EQ features built into surround receivers,

I'm a strong believer in EQ built into subwoofers.

Bloated, uneven, or otherwise imperfect bass response is a common sonic flaw in most rooms. Often it's the one flaw on which all listeners agree, regardless of hearing acuity. If you experiment with subwoofer placement, it usually helps, and some rooms benefit from an extra sub in a second location. But as worthwhile as those strategies are, they can only take you so far. It's sometimes desirable to finish the job by notching out the most objectionable, exaggerated frequency hump. To that end, the Radiance Sub has three controls that manipulate a notch filter, adjusting the frequency of the notch (30-150 hertz), its slope, or width (min/max), and its level (zero to

-12dB).

To get the best out of a notch filter, you really need to know the frequency and other parameters of the bass hump that you're trying to correct. The Acoustic Energy sub manual recommends that you experiment with different notch frequencies, aiming for a high slope and a low level. But there's a better way to determine what kind of correction your room really needs. You'll need to measure the room's bass response.

Some subwoofer manufacturers—those reviewed here include Infinity and Mordaunt-Short—supply test CDs and sound pressure level (SPL) meters that are optimized for measuring bass. This encourages users to plot their room responses on a paper graph and adjust accordingly. For this purpose I recommend the Infinity Room Adaptive Bass Optimization System (R.A.B.O.S.) kit, sold for \$60 at www.harmanaudio.com and www.bhphotovideo.com. The measuring process takes about 20 minutes, but when it's done, and you've twiddled the knobs in an appropriate manner, you'll be amazed by how much better your room sounds without a standing wave the size of a whale pounding you every time the subwoofer gets

a gob of bass signal.

Associated equipment for this review included a Rotel RSX-1065 receiver and Panasonic DMP-BD55 Blu-ray player. With the exception of one movie selection, all listening was done with the sub EQ running.

Football Players, Robots, Honeymooners

Oliver Stone's *Any Given Sunday* (BD) is a bleak, harrowing, jarring vision of the football business. I knew it would be a rough ride when Al Pacino started yelling his head off 12 minutes into the running time—he usually waits until the last third of a movie. The film starts with an extended action scene that immediately plunged me, via Dolby TrueHD, into a world of dynamic extremes. Thudding impacts alternated with shocking silences, which showed off the controlled impact and transient response of the Radiance Sub. A variety of football-friendly music came through beautifully, with the hip hop and techno beats powerful, focused, and tuneful. The sub EQ was clearly a resounding success.

Crowd noise was surprisingly muted and panned in a way that suggested its psychological impact on the characters, as opposed to a crowd perspective. To keep dialogue at an intelligible level, I cranked the master volume higher than usual. This made the playing-field scenes fiercely loud, but the ring radiator tweeters seemed to love the extra power. They were mercifully devoid of the compressed, crunching, fatiguing characteristics of an overstressed tweeter.

Wall-E (DVD), the token Dolby Digital selection, was the only one that didn't benefit from the sub EQ—I watched it before dialing in the notch adjustments for my room. The result was what I usually hear from a decent sub trying to make itself heard through my room's standing wave. When the spacecraft lifted off, the midbass was strong but muddy, which made me feel like turning it down. Most of the soundtrack consisted of mechanical noises with strings periodically soaring overhead, which is an excellent strategy for a movie of this kind.



● AE's Radiance speakers come in two beautiful oak finishes.

Photos by Condoro Studios

HT Labs Measures

ACOUSTIC ENERGY RADIANCE 1 SPEAKER SYSTEM

Satellite Sensitivity:
85.5 dB from 500 Hz to 2 kHz

This graph shows the quasi-anechoic (employing close-miking of all woofers)

frequency response of the Radiance One satellite (purple trace) and Radiance Sub subwoofer (blue trace). The passive loudspeaker was measured with its grille at a distance of 1 meter with a 2.83-volt input.

The Radiance One's listening-window response (a five-point

average of axial and +/-15-degree horizontal and vertical responses) measures +1.42/-1.52 decibels from 200 hertz to 10 kilohertz. An average of axial and +/-15-degree horizontal responses measures +1.53/-1.41 dB from 200 Hz to 10 kHz. The -3-dB point is at 57 Hz, and the -6-dB point is at 44 Hz. Impedance reaches a minimum of 5.58 ohms at 205 Hz and a phase angle of -33.77 degrees at 120 Hz.

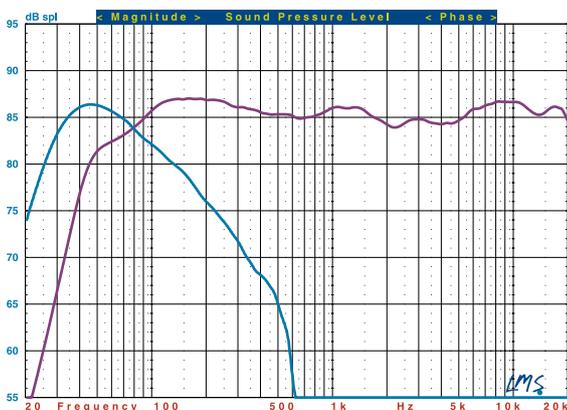
The Radiance Sub's close-miked response, normalized to the level at 80 Hz, indicates that the lower -3-dB point is at 27 Hz and the -6-dB point is at 23 Hz. The upper -3-dB point is at 119 Hz using the AV Subwoofer Line-In connection. —MJP

Visit our Website for a detailed explanation of our testing regimen, plus a list of our reference gear.

on the web



ACOUSTIC ENERGY RADIANCE 1 SPEAKER SYSTEM



The Radiances made the noises palatable and filled the boundaries of an agreeably large soundfield with the strings.

The Heartbreak Kid (BD), in Dolby TrueHD, has Ben Stiller flying through marital mayhem as if he'd been shot from a cannon. Whoever picked the soundtrack music was clearly a David Bowie fan. Several classic songs enjoyed the benefits of remixing in clean lossless surround—most notably “Suffragette City,” which plays over the end credits. As with most comedies, this one was mixed like a good TV program, so I could watch the whole thing at a low

master volume setting without missing any dialogue.

Celebration, Psychedelia, Percussion

André Previn: An 80th Birthday Celebration (CD) is a showcase for the composer, conductor, and jazz pianist with material from 1961 to 1995. With sterling stereo performance and five matched speakers for Dolby Pro Logic II, I often had a hard time deciding which mode I preferred. They were both satisfying on some level. In stereo, there was so much happening between the speakers that activating the center was



Connections

RADIANCE SUB SUBWOOFER ENCLOSURE

TYPE: Sealed **WOOFER (SIZE IN INCHES, TYPE):** 8.66, pulp cone **RATED POWER (WATTS):** 200 RMS, 400 peak **CONNECTIONS:** LFE-mono in and stereo line-level in/out, RCA **CROSSOVER BYPASS:** LFE **AVAILABLE FINISHES:** Natural oak, antique oak **DIMENSIONS (W X H X D, INCHES):** 14.17 x 16.14 x 12.8 **WEIGHT (POUNDS):** 37.48 **PRICE:** \$1,200

rarely advantageous. Incidentally, that is a hallmark of a great speaker. But in surround, the soundstage became an equally seamless soundfield, with greater depth, yet without the unevenness that's imposed by an often ill-conceived horizontal center. Either way, the performance was complemented by highs that were fully developed but not edgy or hyped.

Jefferson Airplane's live album *Bless Its Pointed Little Head* (LP) documents the band at Fillmore West and East in its glory days circa 1968. The charismatically loose-limbed performance was unfortunately complemented by some slackness at the mixing desk. Perhaps the biggest casualty was Jack Casady's barnstorming and texture-rich bass. The Radiance Sub accordingly reflected its reduced status in the mix, but I wondered if a simple sub volume hike would bring it back up to par. With most subs, this is a move I wouldn't attempt because my room's standing wave would clobber me. But with a calibrated sub in my arsenal, I took courage and goosed the 200-watt sub's volume knob to 60 percent of the max (higher than usual for my smallish room). That brought Jack back to life with a roar. The band's abundance of singers (Grace Slick, Marty Balin,

Jorma Kaukonen, Paul Kantner) all got their chances to shine. The Radiance 1 seemed to cherish Slick's voice, bringing out its typical steely cutting edge and some almost subliminal velvet timbre.

Music for Piano and Drums by Patrick Moraz and Bill Bruford (LP) may be a victim of 1983-vintage digital recording, judging from the blurred *bish* of cymbals. But Bruford's drums thrived in all their restless eloquence—each one precisely tuned, given the ideal measure of impact, and suspended in a three-dimensional space that persisted in stereo or surround. The light, bright piano sound favored by Moraz shared the space, with his glittering glissandos cascading through the soundstage. There was so much to listen to, I barely noticed the absence of a bass player.

With the Radiance line, Acoustic Energy lives up to its 20-year-old reputation for making fabulous loudspeakers. Listening to the ring radiator tweeter was a particular pleasure. If you find your current speakers harsh, but you don't want to give up extended frequency response, you may love the Radiance 1 (and its Radiance kin). The Radiance Sub delivers the benefits of in-room EQ in spades. It's like waking up from a bad dream—oh, so that's what bass is supposed to sound like! These are great speakers and overachievers in their price range. Try them, and you may fall in love. 🍷

* Audio editor Mark Fleischmann is also the author of the annually updated book *Practical Home Theater* (www.quietriverpress.com).

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