

Stereophile Guide to Home Theater

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RB991 & RB993 Power Amplifiers

In some ways, evaluating an amplifier is simple. First, look at the technical specifications to determine the power output. Then, find its price. Next, see how many channels it has. Divide the price by the number of channels to discover the price per channel. Divide this price by the power rating per channel to find out the cost per watt. If you do this math on the Rotel RB-993 and RB-991 amplifiers, you find they both run \$500 per channel and \$2.50 (into 8 OHMS) or \$1.43 (into 4 OHMS) per watt. Now we know their cost, but do we know their value? Unfortunately for the objectivists in the audience, we do not. Overall value includes many intangibles.

The caliber of an amplifier is not just a matter of price and distortion figures. Construction, reliability, and immunity from stress-related failures are all part of the quality equation. Finally, there's the matter of an amp's sonic personality. How an amplifier sounds is based on the innate character of its first 5W of power. This is why some audiophiles opt for stratospherically expensive, underpowered little tubebased fireboxes instead of massive and similarly priced 150-pound, arc-welding, solid-state behemoths.

But in the world of home theater, diminutive single-ended triode amplifiers are not practical; they lack the muscle necessary for pyrotechnics, except when mated to large and efficient horn speakers. On the other hand, the largest tube amps generate enough heat to require their own separate air-conditioning systems. So most of us must opt for solid-state products.

This is where the Rotel RB-991 and RB993 come in. The company has a reputation for making moderately priced solid-state components that offer a good compromise between solid-state power and tube-like sonic suavity. In short, Rotel makes just the sort of component needed for the wonderful world of home theater. Are the RB-993 and RB-991 answers to an audio/videophile's prayers? That all depends on what you petition the Lord for.

The starting block

Instead of the usual plain black boxes, Rotel has come up with something a bit more stylish for the RB-993 and RB-991. They're black alright, and a standard rectangular shape. But instead of the usual boring faceplate, the Rotels have a center section with a power switch and three indicator lights flanked by what appear to be heatsink fins. These aren't really heatsinks, but the effect is clean, modern, and far more interesting than the faceplates on most modestly priced amplifiers.

The backs of the amps have both RCA single-ended and XLR balanced inputs, as well as gold-plated, hexagonal five-way speaker binding posts. The review-sample RB-993 had a built-in 15-amp circuit breaker, while the RB-991 had a standard AC fuse. Instead of the usual IEC AC power-cord receptacles, the RB-993 and RB-991 have hard-wired, two-prong AC cords that seem somewhat thin and flimsy for their power-handling duties. I hope Rotel had other reasons besides economy for their use. The internal circuit topology is simple and straightforward. For low-power applications (up to just under 20W), the amplifier operates in class-A mode, then gradually slides into class-AB operation as power requirements increase.

Internal circuit protection is provided by power-rail fuses located inside the amplifier cabinet. If you blow a fuse, you must unscrew 10 screws to pop the top. There's a turn-on protection circuit and a relay to shut down the amp in case it develops excessive internal temperatures. A large toroidal

power transformer serves as the power supply, but full-wave rectifiers and filter caps feed each channel individually. At just below clipping levels the amplifier can draw nearly 13 amps of current.

The primary difference between the amps (besides the RB-993's extra channel) is that the RB-991 has a 6-by-3-inch, 1 kVA transformer, while the RB-993 has a 6-by-4-inch unit with a 1.2 kVA rating. Also, the RB991 has five output devices per channel, while the RB-993 uses four.

Both amplifiers were extremely well behaved during the review period. They were exceedingly quiet during operation, with no mechanical or electrical hum from their chassis or noise from the speakers. However, the RB-991 and RB-993 generate quite a bit of heat. My cats quickly decided they'd rather sleep elsewhere.

If you decide to use both amps to power a five-channel system, you might be tempted to stack them—they look rather sharp that way—but I recommend an arrangement in which they can have better access to cooling breezes. During some of my testing, I put the RB-993 on top of another amplifier. After about half an hour of driving both amplifiers, I discovered that the RB-993's thermal-protection circuit works quite effectively. It's silent and deadly, with no clicks or pops; only the indicator on the front panel alerts you to the fact that the silence emanating from your speakers is intentional.

First lap

In theory, it's ludicrous to drive a pair of \$22,000 speakers with a \$1000 stereo amplifier. In my music system, however, the reality was not nearly so absurd. The RB-991 proved to be an outstanding performer that can be placed in a system surrounded by far more expensive components. During its entire stay in my main room, nestled between the \$6000 EAD TheaterMaster Signature and the Dunlavy SC-VI speakers, the Rotel never stood out as a weak link in the chain. In my more real-world setup, the RB993 seemed very much at home powering three Dunlavy SC-Ia speakers.

Rotel suggests driving the front right and left channels of a five-channel setup with the RB-991 and using the RB-993 to power the center and rear channels. This might make the best use of the RB series' horsepower, but it's ergonomically inelegant. The whole point of using two- and three-channel amps is so you can place them close to your speakers to minimize speaker-cable runs. At best, Rotel's suggested arrangement means that all speakers end up with long cable runs equidistant from your amps; at worst, the center and rear channels need substantially longer cables than the front left and right. For most of my listening I used the RB-993 for the three front channels, and the RB-991 for the rear channels and two channel setups.

What should you expect from a \$500-per-channel amplifier? Obviously, it should be able to drive your speakers to acceptable volume levels without distress. It should also be reliable. Finally, it must produce an acceptable level of sonic quality. Both Rotels do all this and more. To say they produce audiophile-quality sound is an understatement.

After only a few hours with the RB-991 installed in my main room, it became clear that this is a wonderful-sounding amp. Not only does it satisfy minimum standards for what an amplifier must do, it also satisfies the demands of audiophiles who want nothing less than beautiful sound. Of all the moderately priced solid-state amplifiers I've had in my system, it's certainly the most seductive-sounding.

What makes an amp sound seductive? It's all in the midrange. Like tube amplifiers, the RB-991 and 993 have a certain warmth in the lower midrange that imbues music with a euphonic lilt. Guitars and cellos sound believable, having just the right amount of weight coupled with a sunny timbre. Male voices are both sweet and authoritative.

This was recently illustrated after I saw Richard Thompson in concert; naturally I slapped on his *Across a Crowded Room* (Pioneer Artists PA-86-151) when I got home. This 1985 laserdisc features Thompson playing rock'n'roll with a band that includes Clive Gregson on guitar and Cristine Collister on backing vocals. Thompson sure looked much younger in 1985, but he sounded very much the same as today. The Rotel did a superb job of rendering just the right harmonic balance for his mellifluous crooning.

High, low, and wide

In most home-theater installations, the Rotel's excellent bass capabilities will probably be underutilized. Through the big, full range Dunlavy SC-VI speakers, however, it is clear that the RB-991 and 993 can deliver clean, quick, tight, tuneful bass. On the *Sessions at 54th Street*, Vol. I DVD (Columbia Music Video CDV 50163), the flat-picked Gretsch bass on Shawn Colvin's contribution, "Diamond in the Rough," is startlingly realistic through the Rotel RB-991 /Dunlavy SCVI combo. On movie material like the WWI battle scenes from *Legends of the Fall*, the low-frequency bombast is realistic enough to have you reaching for a helmet and diving into the nearest trench.

The Rotels' treble presentation is sweet without being seriously rolled-off. On the Shawn Colvin selection from the *Sessions* DVD, Stuart Smith's Fender Stratocaster has enough sparkle and bite at high volumes that you'll want to insert earplugs just like at a real concert. On classical material like the new *DVD Music Breakthrough* (Delos DV 7002), violins and triangles have decent air and sheen. Only when compared to far more expensive amps, such as the Pass Aleph 1.2 or Boulder 500AE, is it apparent that the Rotels lack a bit of top-end air. This lack of air extends down into their upper midrange; woodwinds sound slightly closed-in and darker than life.

If you like your soundstage as wide as the Grand Canyon, the RB-991 and 993 are happy to oblige. In both my systems, I was immediately struck by the inordinate width of imaging. In this respect, the Rotels rival even the big Pass Aleph 1.2 monoblocks. Too bad their depth is more like a puddle than a well; even the Marantz MA-500s are the Rotels' equals in the front-to-back category. The RB-991 isn't completely one dimensional, but the depths of symphony orchestra stages are substantially more constricted than in real life. Horns and woodwinds seem to be sitting in each other's laps rather than in separate rows of chairs.

Soundstage focus is somewhat vague as well: Images are slightly diffused, and edges trail off rather than having distinct starting and stopping points. On the Boston Camerata's *Musique Judeo-Baroque* CD (Harmonic Mundi 190121), voices that are clearly situated in space through the Boulder 500AE are less specific and more tenuous through the RB-991.

"Pace" is a relatively new equipment performance parameter pioneered by *Stereophile* senior contributing editor Martin Colloms. Simply put, pace indicates an electronic device's ability to permit the subtle microdynamics and rhythms of its source to pass through unscathed. The Rotels might not be the fastest or most sprightly amps on God's green earth, but they're respectable performers in the pace department. The subtle rhythmic variations of Emma Kirkby's and David Thomas' voices on *Shakespeare's Lutenist* (Virgin Classics CDC 7 59321) survive the trip through the Rotels largely intact. Yo-Yo Ma's contribution to the *Sessions* DVD, "Libertango," is seductively danceable.

Much of the excitement in both movies and music comes from dynamic contrasts. Both Rotel amps do a remarkably fine job in this critical regard. Sinéad O'Connor's selection on *Sessions at West 54th Street*, "The Last Day of Our Acquaintance," begins as a whisper and builds slowly to a scream. Both Rotel amps nicely hold up both ends of the dynamic spectrum. On the DVD of *The English Patient* (Miramax I 14175), murmurs and plane crashes are also handled with equanimity.

Detail-freak audiophiles who obsess on low-level information will be somewhat disappointed by the

Rotels' performance in this area. They aren't bad at dredging up inner detail, but they go only so far before low-level information becomes somewhat homogenized. Subtle sounds buried deep in the mix are not as easy to discern as they are through the Pass Aleph 1.2s. The Rotels are certainly no worse than the Marantz MA-500 monoblocks at dredging up detail, but they're certainly not state-of-the-art in this respect.

A tight race

Compared to the \$750 Bryston PowerPac120 monoblocks (reviewed in the June 1998 issue), the Rotels largely hold their own. The Brystons have a more matter-of-fact presentation, with less midrange warmth and a drier overall harmonic balance. The Rotels have a noticeably wider soundstage, but the Brystons have better image specificity and focus. The Brystons' soundstage presentation is also more forward, while the front of the Rotels' stage is several feet behind the speaker grilles.

Low-level details are more discernible through the Brystons, but the Rotels have a bit more ease at high levels. Both amps have excellent low-end weight and power, the only difference being the Rotels' ever-so-slightly-warmer midbass. The Brystons are clearly superior on depth rendition, delivering a much better sense of front-to-back layering. They also have a bit more top-end air and extreme upper-frequency extension.

Harmonically, the Rotel amps are quite similar to the three-channel Kinergetics KBA-380 (\$1900). Both have a sweet upper-frequency rendition coupled with a somewhat laid-back overall harmonic balance. The KBA-380 has much better depth rendition, but the Rotels are its equals in soundstage width.

Lateral focus and low-level detail are clearly superior through the KBA-380, but the RB-991 and RB-993 are its equals in dynamic ease and high-level punch. The Kinergetics has more upper frequency and midrange air, but the Rotels are almost as smooth. They lack only a tiny bit of the Kinergetics' low-level refinement.

Checked flag

When you've reviewed as many amplifiers as I have over the years, it's easy to get blasé about the moderately priced examples. Luckily, the Rotel amplifiers aren't just another couple of budget boxes. Both the RB-991 and RB-993 are capable of rousing even the most jaded and complacent reviewer from his apathy. Why? Because they make listening fun. They have both the dynamic abilities and the harmonic personality to make soundtracks and music come alive. In this respect, the RB-991 and RB-993 perform on a level far above their pedestrian price-point.

The word "benchmark" is bandied about by reviewers almost as readily as a ping pong ball at a teen recreation center, but these two amps are worthy of that mantle in the \$500-per-channel category. Take it from a guy who's been living with \$2500-per channel amps for quite a few years: These Rotels are damn fine performers. While I wouldn't go so far as to proclaim the RB-991 and RB-993 perfect-their wimpy AC cords alone preclude that classification-I will say they are a superb and satisfying value. Try them, you'll probably like them . . . a lot.