



BUDGET PRODUCTIONS

How Low Can You Go?

Can a \$500, 40-watt-per-channel budget amp really cut it for home theater?

by Brent Butterworth



Every home-theater nut wants to get into separate components, but most of us don't feel too great about paying the price. Usually, the combined price of a separate preamp/processor and five- or six-channel amp starts at about \$2,000. That's just a little too steep a price for your average 2.5-kid, two-car, three-TV workin' man to swing, which is why so many of the *HT* readers I talk to tend to gravitate to \$1,200 receivers instead.

But though you usually save eight bills or more by buying a receiver, you sacrifice sound quality, versatility, and that pride in ownership that comes from knowing you spent a little (or a lot) more than you can afford. That's why all of our editors swear by separates. Even when I was using the little \$399 Cambridge Sound-

Works Ensemble IV speakers we reviewed in the January '96 issue, I found I still greatly preferred the sound of separates.

Check out an *HT Buyer's Guide*, though, and you'll find that you *can* get into separates for the price of a good receiver. You can get a Pro Logic preamp/processor for \$600 to \$800, and you'll find that the cheapest multichannel amp you can buy costs only \$500. That's six amp channels for less than you'd usually pay for two!

The amp is Rotel's RB-956AX, one I've had the pleasure of using for the last two years. But because it's rated at only 30 watts per channel, I never gave it that much of a chance—instead of using it to power all my speakers, I used its bridging switches to set it up for three 90-watt channels instead of six 30s. I used it to power my

center and surround speakers, with a beefier Rotel RB-980BX stereo amp for the left and right front speakers. When I heard that newer versions of the 956 were rated at 40 watts per channel, though, I decided it deserved a serious audition, where it bore the full responsibility of powering a home-theater sound system.

The 956's compact chassis and clean layout make its design very workable in a modest home theater. The rear panel pairs off the amps; each of the three pairs has two inputs, a bridging switch, and two sets of speaker-cable binding posts. The posts are the same OK-quality types you'd find on a receiver—they'll take banana and Delttron plugs, bare wire, and pin connectors, but a collar around each post prevents the use of spade connectors. (Fine by me, because I hate spades, anyway.) The front panel has level controls for each pair of amps, with indicator lights to show if the pairs are bridged. The amp comes with a five-year warranty.

Watts Is Watts—Or Is They?

You might be inclined to write off a 40-watt-per-channel amp without hearing a note through it, but don't be so hasty—putting a whole lot of stock in power ratings is a sure-fire way to get stuck with a lousy-sounding amp. Some companies rate their amps very conservatively. Others don't. If you don't believe me, check out the cheeseball electronics stores in New York City. I used to walk past one on 8th Avenue that always featured suspicious stuff like "200-watt-per-channel" stereo amps for \$150 or so. One look at



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these "powahowse!" amps and you'd just *know* they'd sound like chainsaws.

In the RB-956AX's case, things get even more complicated, because its low power rating doesn't reflect its true capability. An amplifier's power output is



Bridging switches on the back panel let you convert the RB-956AX's six 40-watt channels into three 90-watt channels.

determined by two factors: the maximum power output of its power supply, and the amount of power its output transistors can handle. The RB-956AX power supply can only put out 40 watts into all six channels simultaneously before it distorts. But its output transistors can actually handle more like 100 watts per channel, according to Bartlett, and they have bigger heat sinks than a 40-watt amp needs. If you're not driving all six channels full-blast, you get more power per channel from the power supply, and the transistors can still handle it. Bartlett says that when only four channels are running, you get in excess of 60 watts per channel.

How often will you drive all six channels full-blast? Not too often. Obviously, if you're playing stereo

music, the RB-956AX will have plenty of power on tap. But you might be surprised to find out that even in Pro Logic, you're never driving all the channels to full power. Because of the nature of the steering circuitry in Pro Logic decoders, all four channels (left, center, right, and surround) can't run full-blast. As a result, only a

couple of channels need a lot of power at any one time; the quieter channels usually only need about a fourth as much power, because every 3-dB boost requires a doubling of amplifier power.

If you use a powered subwoofer, you need even less power, because the subwoofer's amp will relieve the RB-956AX of the demanding task of shoving

those big woofer cones back and forth. And when you think about it, you'll probably never use more than five of the 956's channels. Usually, you use the sixth channel of a multichannel amp to drive a subwoofer, but 40 watts just won't cut it for that duty unless you set up your home theater in the closet.

You might have figured out by now that the RB-956AX isn't the amp for an AC-3 setup, because unlike Pro Logic, AC-3 can run all of its channels full-blast at any time. And AC-3's extended dynamic range pretty much demands 100 watts of power in each channel. Without plenty of power in an AC-3 setup, you're likely to get lots of distortion.

Oh, by the way, the old RB-956AX I had sitting around? After popping the lid, I realized it's identical to the factory-fresh model Rotel sent me. According to Bartlett, the

design hasn't changed except for a minor transformer upgrade implemented very early in the production run. Rotel hadn't planned the amp as a 40-watter, but realized it had grossly underrated the amp's power, so they increased the published rating. I had a 40-watt-per-channel amp the whole time and didn't know it!

Reality Time for Rotel

So blah blah blah blah blah. Lots of technical talk here, but very little to convince you that this seemingly wussy amp can actually cut it in a real-world home theater. What that takes is a real-world test, and that's exactly what I gave it.

I didn't want to give the amp too easy a time—I don't have any idea what speakers you're using, so I chose a pair of Mirage M-890i bipolars which, at only 84-dB sensitivity, present a tough load for an amplifier. (They require four times as much amp power to reach a particular volume as a more typical, 90-dB sensitivity speaker, which would be more appropriate for use with this amp.) I added a little Mirage MBS satellite for the center, and a couple of Cambridge SoundWorks The Surround II dipole speakers for surround. Given that this system was very inefficient and had no powered subwoofer, it was as high a hurdle as I could set for the RB-956AX. I fed the amp with signals from an AMC AV81HT THX preamp/processor, a Pioneer CLD-97 laserdisc player, and a Toshiba M-781 VHS VCR.

What really amazed me is that the little Rotel was able to drive this big load up to full Dolby reference



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level (105-dB peaks). And that was in a pretty good-sized, 3,000+ cubic-foot room. No, the sound wasn't crystalline, but it was better than I've ever gotten from a receiver (and I've tried several receivers in my home). Whoever designed this amp seems to have concentrated on the midrange, which is very smooth and never fatiguing. I concentrate on voices when I listen, so this amp won me over real fast. The mids are a little coarse when you compare them to what you hear from the \$2,850 JBL S650 THX five-channel amp I use at home, and the \$1,295 Acurus 200X3 three-channel we use as a reference in the magazine's listening room. But the mids actually blow away what I've heard from many, many amps that cost a lot more than this Rotel.

The highs are there, but they definitely lack the sparkle I heard from the more expensive amps—they're more in line with what you'd hear from a good \$1,200 receiver. Ditto the bass, which resembles what you get from some tube amps. It's not tight by any means, but it is very full, so you don't get the thin balance most inexpensive amps give you. On some movie soundtracks, the bass actually sounded *better* than with the big JBL amp—the softness gave the bass an overwhelming character, in contrast with the JBL's very tightly controlled low end.

The amp throws a reasonably broad soundstage, but nothing like what you get with the Acurus. This point really hit home when I tried the Rotel with the Sonus Fabers featured in this month's System Review. The Sonuses throw a huge, Carnegie-Hall soundstage with the Acurus, but

things shrink down to Village Vanguard level with the RB-956AX.

I also tried running the RB-956AX in bridged mode. Normally I don't go much for bridging, because when you bridge two amp channels, each one sees only half the speaker's impedance, and thus has a much tougher load to drive. Anyway, I expected the RB-956AX to sound the same bridged, but louder. Much to my surprise, bridging four channels into two (and thus increasing the power to a rated 90 watts per channel) pushed this decent-for-\$500 amp into the realm of real high-end sound. The bass tightened up a bit, the highs reappeared as if from nowhere, and the midrange became even smoother.

So would I buy this amp? Absolutely, and I'd recommend it to you as long as you don't make a habit of cranking your system up often. Pairing this thing off with Rotel's \$599 RSP-960AX preamp/processor and five halfway decent 0.5-meter interconnect cables will give you a \$1,200 combo that sounds better than any receiver I've heard in its price range. Granted, it won't give you the sheer crankage, the number of inputs, or the advanced switching and multiroom capability you get with most \$1,200 receivers. But it will give you enough inputs for most systems, enough power for most tastes, and very smooth sound. And you have a nice upgrade path—add another RB-956AX and bridge them both or add an RB-980BX for the left and right speakers. Yeah, spending more *will* get you better sound quality. But if this were my price range, this would be my choice. ▾

*Critical
Acclaim
for Rotel's
RB956
Multichannel
Amplifier*