



Rotel RSP-985 Digital Controller: Princely Performance & Yeoman Price

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In the performance-per-dollar sweepstakes, few companies can match Rotel. Beginning in the 1980's with a landmark \$400 CD player, Rotel created products that have no business sounding as good as they do at their prices. CD players and DACs continue to be a strength, but the company has also built CD transports, power and integrated amplifiers, and receivers that deliver Upstairs sound at Downstairs prices. Now Rotel has stepped seriously into the world of multi-channel digital controllers with the new RSP-985.

Not so very long ago, the only options for high-performance controllers were top units from firms such as Krell, Theta, and Meridian. These models, typically configured, cost over \$10,000. For many a home-theater system, this sum amounts to the *total* budget for audio gear, which includes a DVD player, a multi-channel amplifier, and 5.1 speakers. Some companies have recently succeeded in bringing the price of good performance down, as in such components as the Theta Casa Nova and the Proceed AVP (review, Issue 28). But these models, in the \$5,000 range, are hardly "affordable."

At the lower end of the spectrum is a wealth of excellent multi-channel receivers that include a digital controller as well as five channels of amplification for about \$1,000. Such a component is an excellent way to enter the world of multi-channel sound, but the price point, space limitations, and shared power-supply architecture pose certain compromises that inevitably limit performance. Thus, until now, a rather substantial gap between price and performance has continued to exist.

The Rotel RSP-985, unlike the typical multi-channel receiver, is not about compromise. Its charter, as with many Rotel products, is to sound as good as the best despite its low price. For \$1,995, the RSP delivers a bevy of features. It is fully able to decode Dolby Digital, Dolby Pro Logic, DTS, and standard PCM digital sources. It is THX Ultra certified. It supports analog inputs, performs video switching, permits independently selectable source and volume for a second zone, and offers four multi-channel acoustic simulations. In a particularly forward-looking touch, this controller sports a DB-25 input connector for coupling with external 5.1 channel sources (such as a DVD-A player) and a DB-25 output connector for a no-fuss single cable connection to a multi-channel amplifier. Finally, the RPS-985 comes with a back-



lit, full-function remote that can control up to seven other audio/video components. Clearly there is nothing "budget" about the RSP's connection and control capabilities.

But the real promise of the RSP-985 lies inside. The central D-to-A and A-to-D converters are 24-bit Crystal units closely related to those that have made Rotel's 2-channel digital products popular. (To this day, my own reference DAC is a \$600 Rotel piece that I have compared favorably to competitors costing much more.) In addition, the 985 contains three Motorola 56009 DSP chips to control all other digital processing.

Operation

Set-up of the 985 was straightforward, accomplished via the unit's on-screen menus. These allow overall system configuration in areas such as relative speaker balance and delay, as well as input-specific options like volume offset and default output mode (two channel, Pro Logic, etc.) when a 5.1 digital signal is not present. Other menus are used to let the unit know whether or not there is a center channel present, and whether there is a subwoofer.

One limitation I found is in the area of bass management. Control over the subwoofer's operational parameters is limited to specifying whether the main speakers are "Small" or "Large." Based on this input, the 985 decides how it is going to handle the subwoofer. If "Small" is selected, the main speakers are rolled off at 80 Hz, while the subwoofer carries this frequency on down. If "Large" is selected, the main speakers are run full range, but the subwoofer operation is more complicated. For stereo and Pro Logic sources, the subwoofer will behave as in the "Small" scenario, delivering frequencies of 80 Hz and below. For Dolby Digital and DTS sources, the subwoofer will play only the LFE (Low Frequency Effects) information, just as it should.

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Unfortunately, the 985 offers no means for the user to modify this. If 80 Hz is not the ideal crossover point to achieve the ideal blend with one's main speakers – and experience indicates that it often isn't – there is no other direct choice. Further, the 985 cannot support multiple subwoofers. These shortcomings are disappointing, but not disastrous. To put this issue in perspective, consider that bass management is one of the few, perhaps the only area where the Rotel gives up significant functionality to its far more expensive competition. Furthermore, there is a way to work around this limitation if Rotel's chosen bass parameters do not yield a satisfactory blend in a particular system. The subwoofer menu of the RSP 985 can be set to "Subwoofer: No." In this case, the LFE information will be routed to the main speaker. The subwoofer can then be connected in line with the main speakers, thus allowing the user to manage crossover frequencies and blend via the subwoofer's own controls in lieu of the Rotel.

Once configured, the 985 goes about its business with quiet competence, a high degree of automation, and an ease of use. The unit is not without its quirks, however. For one, the only TosLink connection is for the input labeled "Tuner." Most of the backlit remote's buttons have the function printed on the button itself, but a few do not. The latter become mystery switches in a dark room. More seriously, the controller will occasionally clip off the first second of a CD track. And it is quite annoying that only analog inputs can actually be monitored via the Tape Monitor output. But given the 985's performance envelope, these problems quickly fade to black.

Performance

Let's take a closer look at exactly what is going right with this product. First and most important is the 985's way with dynamics. They can be big and bold, as is called for in many films. The sudden dynamic shifts that are part of scenes like Chapter 24 of *The Fifth Element* (Columbia), where a space-age classical opera abruptly shifts into high gear (in more ways than one), need to be presented cleanly and effortlessly if they are to have their intended impact. The 985 possesses this sense of "jump" to a degree that will literally make you jump in your seat.

And yet this controller can also deliver exquisitely nuanced dynamics. This ability is never more apparent than when listening to vocals, such as Roseanne Cash's "If I Were a Man" from the *10 Song Demo* CD [Capitol CDP 7243 8 32390 2 3]. Again, there is the sense of ease and openness as the singer's vocal expressions rise and fall. But the 985's subtlety also deftly conveys the singer's rapidly shifting emotional intentions. In other words, the dynamic nuances translate directly to emotional nuances that are often missed in lesser products.

Soundstaging and imaging are equally impressive. On orchestral music, the Rotel conjures a fully developed soundstage, with individual instruments precisely yet naturally placed within that stage. Vocals are similarly well positioned. As you would expect, this characteristic is equally apparent when viewing films. The 985 generates a veritable cocoon of sonics, surrounding the listener in a seamless, airtight chamber. Individual sounds equate to

their visual counterparts with pinpoint precision, even without the benefit of a center channel speaker.¹ And movie dialog is highly intelligible.

Rounding out the Rotel's virtues are its essentially neutral tonal balance and its energetic rhythmic thrust. Both are in evidence on a well-recorded pop CD track like "Unravel Me" from Sara MacLachan's *Surfacing* [Arista 07822-18970-2]. Listening to this track, I was again struck by how many things the Rotel gets right. It is this combination of qualities that raises the 985 above the ranks of mid-fi.

Of course, there are deficiencies, but they are mostly small in degree. The vocals I lauded above are nonetheless a bit more forward than they should be and teeter on the brink of stridency. The 985's bass is consistently on the anemic side on stereo music, though this does not interfere with its reproduction of rhythmic drive. And this anemia is nowhere to be found in video applications, where the Rotel drives the subwoofer (all LFE or 80 Hz and below) with abandon.

Finally, the 985 is missing the last ounce of resolution and detail. I am referring here primarily to transients such as the pluck of fingers on strings or the initial whack of sticks on a drumhead. On a delicate track like "Tennessee Waltz" from *Rendezvous* [Blue Note 7243 8 55484 2 0], my reference DAC was better able to produce the characteristic tinkle of the electric piano's upper range, the throaty rosin of the string bass, and the bell-like clarity of the percussive touches. Because the 985 cannot quite summon these details, there is a small but undeniable puncture in the illusion of reality. At the same time, because the losses are minor, there is no forfeit in the enjoyment of either musicality or theatricality.

Before wrapping up my evaluation of this controller, I tested its performance with analog rather than digital inputs. I was not expecting good results, for the 985 has no "analog pass-through" capability. All analog sources must undergo an A-to-D conversion. Once in the digital domain, they can be manipulated for surround sound by the DSP chips or sent straight to the digital volume control before it is D-to-A converted back to analog. This torturous route would not appear to be a prescription for high fidelity.

So it surprised me that it worked well. Those Crystal chips must be awfully good, because the entire process nets out to very little signal degradation. The nature of the degradation is similar to that found for digital sources. (This is not surprising, since all signals travel through the same DAC and digital line stage.) That is, there was a loss of fullness in the bass and a small loss of transient detail. But I was struck once again by how many things the 985 was doing right.


On my best source and toughest test, LPs, the Rotel acquitted itself admirably, even remarkably. (Yes, you can play a turntable through the 985! All you need is a phono stage to feed it.) When playing *Porgy and Bess* [Decca 609-11], the 985 preserved the recording's wonderful sense of air and of a full stage of musicians. That stage was not quite as deep as my reference preamp can produce, but what I was hearing was very close to reference quality.

The biggest difference between the Rotel and my reference preamp was the loss of the extreme high frequencies. This was most noticeable on female vocals, where the lack of air and uppermost overtones made them feel slightly squashed compared to the reference. Those missing

¹ My current reference set-up does not include a center-channel speaker, primarily because one that matches my main drivers is not available yet. However, I'm beginning to wonder if one is really needed.

upper-upper frequencies reduced the feeling of unlimited range, power, and crystalline clarity LPs can deliver. Overall, though, despite the lack of an analog pass-through, users should not hesitate to run their analog sources through the RSP. It will do them nearly full justice.

In Sum

The Rotel RSP-985 is a highly flexible, feature-laden digital controller that delivers a measure of performance that belies its modest price. Its bevy of sonic strengths add up to a high degree of realism and involvement, whether the source is music or video, digital or analog. Its shortcomings and ergonomic lapses do not severely dent the pleasure it delivers. 

Manufacturer Information

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Source: Reviewer purchase
Price: \$1,999

Associated Equipment

Analog Front-End: Goldmund Studietto/Graham 2.0/
Clearaudio Insider
Digital Front-End: Goldmund Mimesis 36, Rotel RDP-980
Analog Preamplifier: Goldmund Mimesis 22
Power Amplifiers: Goldmund Mimesis 29.4,
Goldmund Mimesis 8
Speakers: Metaphor 1, Metaphor 2
Cables: Empirical Design Omniwire II
Accessories: Goldmund cones, ASC Tube Traps,
Empirical Design power cords

Manufacturer's Response

Many thanks to Alan Taffel for his generous review of the RSP-985. We...understand his comments regarding the subwoofer crossover point: The 80 Hz point is part of the THX specification and it is something we are required to do in order to meet their technical criteria. I believe Alan's work around subwoofer connection is entirely suitable and I agree with him that this does offer a much-needed alternative when connecting multiple subs.

THX prefers consumers to use THX-certified loudspeakers, but in truth, there are a host of good speakers that can be used with the Rotel processor and the majority will work optimally with the subwoofer cut-off at 80 Hertz.

...I would like to thank Alan for some very useful input he made during his evaluation; his comments and those of responsible reviewers like him help manufacturers make better products.

MIKE BARTLETT
VICE PRESIDENT & GENERAL MANAGER

Neil Gader Comments

I cannot compare performance envelopes of the Rotel versus the higher-priced controllers like the Proceed and the Theta, but I can lend some perspective on how it performs as a step-up from most audio-video receivers. Make that a big step-up! My nutshell summary says that products like the popular Rotel RSX-965 and the NAD T770, both of which I lauded in these pages, require a greater suspension of disbelief than the RSP-985. They are less able to make a seamless transition among the five channels, a requirement for limiting the gaps in the surround presentation. Naturally, your brain is quick to fill in those gaps, especially when sound is supplemented with visual images. Drawing on your experience, you imagine its sonic completion based upon what you are seeing and what you're not seeing. In spite of the fact that the 5.1 format is still a patchwork, this Rotel controller filled in more of those gaps, with seams that were a bit less frayed. For example, the atmosphere within the hull of the U-boat in *Das Boot* could at times feel continuous from front to rear and filled with the rhythmic pulsation of the diesel engines and the groaning pressure of the ocean's maw. The constant dripping from burst bulkheads made me want to place buckets under my speakers. This was subliminal surround at its most brilliant because it suggested without distracting from the action. Wordlessly, it kept the tension level extremely high. The Rotel controller deserves high marks for this kind of precision.

In an early scene in the remake of *The Thomas Crown Affair*, Pierce Brosnan is standing in the large gallery of the Metropolitan Museum in New York City. The RSP-985 scaled the size of the hall with accurate steering of reverberant fields and delay information, which includes hard-soled footsteps, whispering, and distant street noise. The effect in my listening room was uncommon; it went from sounding heavily damped to hugely "live," a character that only a very large volume of space can assume. I suspect the majority of the credit goes to Motorola's DSP chips and their implementation, but the effectiveness of THX filtering should not be discounted. It provided a smoothing and refinement to the signal that helped create a three-dimensional continuity.

On five-channel orchestral recordings like those engineered by John Eargle for Delos [DV-7002], imaging was vastly more precise and cleaner. The air around the instruments didn't have the synthesized feel that is often my impression with other processors. In surround situations, this allowed a greater degree of latitude in seating position. If you're in a traditional off-axis relationship to the L/R, you'd normally get an ear full of the more proximate loudspeaker. On these Delos recordings, through a good processor, you merely feel that you've shifted down a few seats in the same row. It's not perfect, but it's reassuring when the orchestra members remain roughly in the same position on the stage.

In two-channel mode, I found the RSP-985 just as AT describes. It performs quite well, generally, but its upper frequencies can sound a bit strident – a point I also discovered on the Roseanne Cash recording that AT so admires. Similarly, on Holly Cole's cover of Tom Waits' "Jersey Girl," the back-up singers lose some of their silky sensuality and sound a little coarse and undefined. My only real complaint was the narrowing and foreshortening of the soundstage that occurred on reference recordings like the Liszt Preludes [*Nature's Realm: Water Lily WS-66-DVD*]. The players sounded as if they were caught in a sonic "anamorphic" squeeze.

One ergonomic quibble is the lack of a display on the front panel of the RSP-985. I dislike having to be tethered to the on-screen display in order to perform even the most mundane actions. And watching the red lights shuttle between functions on the front panel of the processor is similarly uninformative. 