

Convergence: Getting Started

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June 2001

Easy Listening

**ROTEL'S new mid-priced
preamp-processor**

ROTEL

SURROUND SOUND PROCESSOR
RSP-876

STANDBY

Dig It!

An interview with the
director of *Austin Powers*
and *Meet the Parents*

IN-DEPTH REVIEWS:

Panasonic DLP rear-projection HDTV

Princeton Graphics 29-inch HDTV

Marantz SR-14EX A/V receiver

Acoustic Research Phantom speaker system

\$4.99 US, \$5.99 CAN



SURROUND-SOUND PREAMPLIFIER-PROCESSOR

Rotel RSP-976

Robert Deutsch

They just keep on comin'—new surround preamplifier-processors, that is. While manufacturers of ultra-high-end products of this genre are in a holding pattern, frustrated by the lack of digital out-

put standards for SACD and DVD-Audio, purveyors of more moderately priced products are outdoing themselves, providing the best value involving the technologies available right now. Rotel's latest entry in

this field is the RSP-976, and, as we shall see, it's a formidable one.

Features and Design

Given its relatively low price of \$1199, the RSP-976 is provided with an exceptionally generous set of features. Inputs include provisions for two audio and five audio/video sources, all of the inputs accepting analog signals or digital signals from one of three digital coaxial and two TosLink optical digital inputs. There's also a separate tape in/out loop. Input source buttons can be configured to give priority to analog or digital inputs. Analog sources can be recorded while listening to a different input source, and the separate Zone 2 L/R analog outputs can be configured for fixed or variable output. There are two digital audio outputs: coaxial and TosLink. The main audio outputs are the standard Front L/C/R and Rear L/R, and there's a single Subwoofer output.

On the video side are five composite, five S-video, and two component video inputs, plus three composite/S-video outputs (for recording purposes, without onscreen display) and composite, S-video (with OSD), and component video monitor outputs. Miscellaneous inputs/outputs include two 12V trigger connections, and an RJ-45 computer I/O for computer control of the RSP-976's functions (but not for

SPECIFICATIONS

RSP-976 Surround-sound preamplifier-processor

Modes: Dolby Pro Logic, Dolby Digital, DTS, 2-channel stereo, 3-channel stereo, 4 DSP music modes

Audio inputs: 7 analog line level, 3 digital coaxial, 2 digital TosLink, 5.1-channel analog; 1 set audio tape recorder inputs/outputs

Video inputs: 5 composite, 5 S-video, 2 component

Digital outputs: 1 coaxial, 1 TosLink

Video outputs: 3 composite, 3 S-video, 1 composite monitor, 1 S-video monitor, 1 component monitor

Audio outputs: L/R front, Center, L/R surround, subwoofer, Zone 2 L/R

Additional inputs/outputs: RJ-45 computer connection, 2 IR outputs, 1 external remote input, 2 12V trigger outputs

Audio frequency responses: 10Hz–20kHz, ±1dB (line level); 10Hz–20kHz, ±0.3dB (digital level)

S/N ratio: 92dB (stereo), analog, 90dB (Dolby Digital, DTS); all IHF A-weighted

Input sensitivity/impedance:

200mV/47k Ω (line level)

Tone controls: Bass/Treble: ±8dB @ 100Hz/10kHz

Line output level: 600mV (200mV input)

Video frequency response:

3Hz–10MHz, ±3dB

Video S/N ratio: 45dB

Video input impedance: 75 Ω

Video output impedance: 75 Ω

Power consumption: 40W

Serial number: 048 0291021

Dimensions: 17 $\frac{1}{8}$ " × 4 $\frac{3}{4}$ " × 11 $\frac{1}{8}$ " (W×H×D)

Weight: 6.9kg

Price: \$1199

Manufacturer

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downloading software updates).

A feature included in the RSP-976 that's missing from even some high-end surround preamp-processors is a 5.1-channel analog audio input. (The Myriad Systems MDP 500 tops the RSP-976 by having a 7.1-channel input, but it costs \$2595.) The 5.1-channel input is intended to accommodate DVD-A and SACD players, functioning essentially as a 6-channel line-level preamp. There is overall volume control in the analog domain, which avoids the additional distortion that would result from extra A/D and D/A conversion stages. The downside of maintaining the analog signal path is that channel balance, delay, and bass management must be handled by the source device. This is a problem for the currently available SACD and DVD-A players, which typically lack onboard bass management. The problem won't be solved until the industry agrees on a digital output format for SACD and DVD-A players, or until these players are designed to include flexible channel-balance/delay/bass-management functions through their analog outputs. No surround preamp-processor can deal with a format that doesn't exist, but at least the RSP-976 is ready for the latter scenario.

The RSP-976's surround-sound capabilities are the by-now-standard assortment: Dolby Digital (including Dolby Pro Logic, if so encoded), DTS, and four DSP music modes. There is also 2-channel stereo, plus 3-channel stereo (F/C/R) for playback of Dolby Pro Logic in systems lacking rear speakers. Multichannel Dolby Digital/DTS material can be downmixed to stereo if desired. There are bass and treble tone controls (accessible only from the front panel), and three levels of dynamic-range compression are available for Dolby Digital signals. The features still missing from my surround-processor wish list are adjustable subwoofer crossover frequencies and a treble re-equalization/filter to tame overly bright soundtracks. (The treble control does this to some extent, but it's not as precisely designed for the job as a dedicated re-eq filter.)

The RSP-976 is built around the Cirrus Logic CS4926 chip, which handles all surround-sound decoding and bass-management functions and is classified as being capable of Dolby Digital Group A performance. It's supported by what Rotel describes as "specially chosen and trimmed A/D and D/A converters," low-

ESR capacitors, and a high-current power supply specifically designed and manufactured in Rotel's factory for the RSP-976.

REVIEW SYSTEM

Sources

Sony DVP-S7000 DVD player
Rotel RDV-1080 DVD player
JVC HR-4700U VCR

Display

Mitsubishi VS/VE 507CA 52" front-projection TV
Pioneer PDP-505HD 50" plasma monitor

Power Amp

Bryston 9B-ST

Speakers

Dunlavy SC-1 (5)
Velodyne HGS-10 subwoofer

Cables

Digital: TARA Labs Decade
Interconnect: assorted AudioQuest
Speaker: AudioQuest Type 6+
Video: Monster M1000v

Misc.

Chang Lightspeed CLS HT1000 power-line conditioner
AudioPrism QuietLine LF-1 Mk.II parallel power-line filters



The D/A converters are delta-sigma units from Asahi Kasei, and are capable of 24-bit/96kHz performance.

Setup

A surround preamp-processor is a pretty

complex piece of equipment, in terms of both design and setup. In the case of the RSP-976, setup is made easier by one of the most clearly written owner's manuals I've seen. The presentation is logical, and the manual provides explanations and

reasons for choices. For example, rather than saying "If your speakers are small, use the Small setting," the manual says, "If your rear speakers have limited bass capability or if you would prefer that the bass go to the subwoofer, use the Small setting."

A TOUCH OF HDTV IN THE NIGHT

As faithful *SGHT* readers might recall, my video display is an ancient Mitsubishi 52-inch front-projection TV. It refuses to die, still presenting a surprisingly good picture when seen at my usual 15-foot viewing distance. However, it's clearly the component in my home-theater system most in need of upgrading. These are exciting times in video, with new technologies like plasma displays and DLP projectors gaining popularity and prices dropping, so I've been making do with the Mits a bit longer, waiting for the next technical advancement and drop in price. Meanwhile, to assist me in evaluating the Rotel RSP-976's video switching capability and to get some hands-on experience with the latest in video displays, I borrowed a Pioneer PDP-505HD 50-inch plasma unit, and took this as an opportunity to change from cable to satellite reception, which includes an HDTV channel.

Although I've made it a point to check out the video displays at every CES and have tried to keep up with the advances, my experience is limited when compared to that of people like Tom Norton, John Gannon, Steven Stone, or Joel Brinkley. My comments about the Pioneer PDP-505HD should be considered as observations, not a review as such.

Nevertheless, I have to report that I was quite blown away by the quality of the Pioneer's picture: bright, sharp (corner-to-corner), good contrast, realistic colors, and a virtual absence of movement artifacts. Those with a critical eye might point out that any plasma's blacks are not *quite* black, but this really didn't bother me. I've seen quite a few plasmas at shows, and my conclusion has been that the technology is not quite there. With the Pioneer, I'd say that it is there, and I am much drawn to the advantages of a 4-inch-thick display that needs no tweaking of convergence and can be enjoyed with the lights on. If they can now get the price down—to, say, \$10,000 from the current \$17,000—I think sales will really take off. I know I'll be giving it serious consideration.

The Pioneer plasma looked great with anamorphic DVDs, and really came into its own with the satellite HDTV feed. Here in the Toronto area there are no local HDTV broadcasts, but Canadian satellite providers StarChoice and Bell ExpressVu each maintain an HDTV demo channel. In changing from cable to satellite, I went for StarChoice, which seems to be more aggressive about including HDTV pro-

gramming.

I've now had the service for three months and am generally quite impressed. Picture quality is significantly better than cable on almost every channel, and so far I've experienced weather-related interference with the picture on only one occasion. For most of the day, the HDTV channel runs demo material from PBS—lots of shots of flowers bending in the breeze and close-ups of lighthouses—but in the evening they pick up US network shows shot in HDTV. I'd given up on the new *The Fugitive* series after seeing the first few episodes, but seeing it in HDTV was like watching a different show. Backgrounds that had been indistinct were now sharp and detailed, so there was more of a sense of being there. Even the irritating MTV-style cinematography of *Nash Bridges* was slightly less annoying in HDTV.

StarChoice will be transferring part of its service to the recently launched Anik F1 satellite, and I've been told by Bruce Barr, StarChoice's marketing VP, that their plan is to provide all HDTV programming available from the US networks. Now, if only those networks stopped dragging their heels on HDTV...—RD



that I've reviewed in the past year (Thule PR-250B, Theta Casa Nova, Myryad Systems MDP 500) range in price from \$2700 to \$5100—generally competitive prices for the sound quality and features presented. My favorite of the three is the Thule PR-250B, which, while somewhat limited in features, offers sound quality that comes closest to that of a high-end stereo preamp. This was my system's processor when I changed over to the Rotel RSP-976.

My initial impression was that the RSP-976's basic sound quality was similar to that of the Thule PR-250B. This impression persisted through my continued experience of the RSP-976, using mostly DVDs as source materials. Highs were clean, extended, and not overbright (excessive brightness is a common problem with inexpensive digital equipment and solid-state electronics); the sound was generally open, uncongested, and there was a nice sense of surround envelopment with Dolby Digital or DTS 5.1 sources. The soundtracks of *Toy Story* and *Toy Story 2* had much the same clarity that was apparent through the Thule PR-250B and other pricey surround processors. Even 2-channel stereo—which, without the video dimension and surround effects that compete for your attention, tends to be more revealing of sonic problems—sounded quite good. The sound had an attractive dynamic crispness, supporting Rotel's claim of a high-current power supply.

The RSP-976's four music modes add DSP-synthesized ambience effects to music and/or other sources that lack surround-sound encoding, each mode simulating a larger acoustic environment than the one before. I tried these with music CDs but can't say that I cared much for any of them. Where I *might* have found them useful would have been for movies that are in Dolby Digital 1.0—including classic musi-

cal, like *Singin' in the Rain*. Unfortunately, the RSP-976—like most other surround preamp-processors—restricts the playback of Dolby Digital material to the number of channels encoded in the source. This is like making eyeglasses available only to those whose vision is pretty good to begin with.

What with reviewing for *Stereophile* as well as *SGHT*, I have a fairly steady stream of interesting, often quite expensive equipment passing through my audio and home-theater rooms. When people visit, they usually know of my line of work, and they invariably want a demo, expecting to be blown away by the experience. The pressure is on, and if I'm reviewing less-than-multi-megabuck components, I'm tempted to say, "Keep in mind that I'm using this value-for-money product only because I'm reviewing it; you should hear the system when I have all the *really* good stuff in it." I usually manage to resist giving in to this temptation, but this time I wasn't even tempted. The RSP-976's performance required no excuses.

Does that mean that the \$1195 Rotel essentially matched the sonic performance of the \$2990 Thule PR-250B? Not quite. Switching back and forth between the Rotel and the Thule, and paying closer attention to the more subtle sonic attributes, revealed the Thule to be more transparent and detailed, with greater specificity to its surround effects. The Thule undoubtedly is a better-sounding processor, and, without considering price and features, remains my top choice. However, the sonic differences are small in absolute terms, and many people would judge that they fade into insignificance when considering the price differential. The Rotel is actually ahead on features, notably its 5.1 input.

Video

The RSP-976 is unusual in that it provides actual specifications for the bandwidth

(with tolerance limits yet!) and signal/noise ratio of its video switching circuitry. The video bandwidth is specified as 3Hz–10MHz, ± 3 dB, but Rotel's Mike Bartlett told me that the RSP-976's component-video output actually has a 3dB-down point of 16.5MHz for the model sold in North America, and 23.5MHz for the European version. In any case, the RSP-976 joins the select number of surround processors that produced no visible signal degradation when I viewed DVDs through composite video on my usual video display.

To provide a more critical evaluation of the RSP-976's video capability, I borrowed a Pioneer 50-inch PDP-505HD plasma unit, an HDTV-capable display that converts all inputs to 720p (see sidebar, "A Touch of HDTV in the Night"). Using the Sony DVP-7000 DVD player and comparing direct component in vs. routed through the RSP-976 (using Monster's ISF-certified M1000v component video cables), I could see a slight loss of contrast and resolution with the signal routed through the RSP-976. With an HDTV signal (StarChoice satellite feed, General Instrument HDD-200 HDTV decoder) routed through the RSP-976, the picture looked pretty impressive, but the direct connection was crisper and sharper, making the indirect connection look soft in comparison. [The specified video bandwidth is insufficient to fully resolve the fine details in a high-definition source.—JJG]

A no-brainer?

"No-brainer" is a trendy expression, but I dislike the term. No matter how easy the decision or predictable the outcome, you need brains to figure out whether it's a decision you want to make or an outcome that's important to you. I won't suggest that buying the Rotel RSP-976 is a no-brainer. For lots of people, \$1199 represents too much of an investment; others will spend that on a pair of interconnects. If you're one of the people in the middle, and you want sound and video quality that are as close to the best as possible but for a moderate price, then using your brains might lead you to consider the RSP-976. It performs well with the surround-sound formats that are available now, and its 5.1-channel analog input provides a degree of insurance against future obsolescence. In the Rotel tradition, it's another product offering outstanding value. 