

DIGITAL TV DEMYSTIFIED: YOUR QUESTIONS ANSWERED

THE WORLD'S #1 A/V MAGAZINE

# StereoReview®

## SHOPPING MADE SIMPLE

### A Guide to Digital Surround Receivers

### POWER PLAY: FOUR BIG AMPS FACE OFF

### HOW TO GET THE BEST FM AND TV RECEPTION

### REVIEWS

NA  
DE  
HO  
CAMBRIDGE SOUNDWORKS AND INFINITY



#BXBDHMY \*\*\*\*\*5-DIGIT 40222  
#BCH11000098 1#430492 MAY 99 1J  
MR DAVID S BUCHANAN 07 VG07 4990  
1100 OXMOOR WOODS PKY P35/4697  
LOUISVILLE KY 40222-5569

JULY 1998  
US \$3.50  
CANADA \$4.50  
UK £2.50



CONSIDERING THE YEARS WE'VE PUT INTO IT  
IT'S NOT SURPRISING  
HOW MANY YOU'LL GET OUT OF IT.



**CINEMA DSP**  
THE FIELD

**DOLBY**  
DIGITAL

**DIGITAL**  
**dts**  
SURROUND

\*Main Channels (110W x 2), Center Channel (110W), Rear Effects Channels (110W x 2), Front Effects Channels (35W x 2) © 1998 Yamaha Electronics Corporation, USA. Cinema DSP is a trademark of Yamaha Electronics Corporation. Dolby, Dolby Pro Logic and Dolby Digital are trademarks of Dolby Laboratories Licensing Corporation. DTS Digital Surround is a registered trademark of DTS Technology. Yamaha Electronics Corporation, USA, P.O. Box 6660, Buena Park, CA 90622

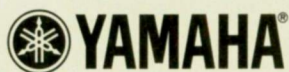
It can resurrect *Jurassic Park*. Rescue *Apollo 13*. Even raise *Titanic*. Not to mention what it can do for the Eagles, Jeff Beck and Boyz II Men.

All with 620 watts RMS.\* Seven channels. And over a hundred years of Yamaha audio experience.

Introducing the DSP-A1. A home theater processor/amplifier crafted with custom microchips designed and manufactured exclusively by Yamaha. And equipped with the proprietary Digital Sound Field Processing we've been refining for more than a dozen years. Technology shaped by countless live concerts and studio sessions using Yamaha products. Right back to our first unplugged performance in 1887.

A century may seem like a lot to put into one home theater component. But after experiencing the DSP-A1, enduring anything less will seem like an eternity.

1. **42 DSP modes** recreate the ambiance of new venues like New York's *The Bottom Line* jazz club using the most advanced measurement techniques yet, while also transporting you to favorite locations like the *Village Gate* and *The Roxy Theatre*.
2. **New Cinema DSP modes**, including a special *Sci-Fi mode*, are optimized for specific types of films as well as *DTS*, *Dolby Digital®* and *Pro Logic* processing to recreate the spacious sensation of a first-run theater.
3. **DTS Digital Surround** lets you experience exact replicas of the soundtrack masters that have helped spectacles ranging from *Jurassic Park* to *Titanic* thrill audiences on over 12,000 screens worldwide.
4. **Yamaha digital technology** applies our years of experience in proprietary *Digital Sound Field Processing* techniques to deliver the greatest possible sonic depth and detail.
5. **3 coaxial digital, 5 optical digital and 1 Dolby Digital RF input** give you nearly twice the options of other systems. And the DSP-A1's extensive control capabilities let you optimize sound for speaker size, subwoofer performance, room acoustics and other listening conditions.
6. **Yamaha Application Specific Integrated Circuits (ASICs)**, custom-engineered to one-half-micron precision, ensure extremely faithful decoding of encoded soundtracks.
7. **5.1 channels for today and tomorrow**. With *DTS* and *Dolby Digital* complemented by inputs for yet-to-be-defined standards, the DSP-A1 may not be able to predict the future—but it's fully equipped to take you there.
8. **Macro-Command Remote Control** lets you program up to seven multi-step procedures to execute at the touch of a button. It also operates additional Yamaha components, and can learn to control components made by others.
9. **Available in unique Amber Gold** with polished wood-style side panels or traditional *Black Satin* metal finish.



WHERE HOME THEATER LIVES

[www.yamaha.com](http://www.yamaha.com)



# How To Celebrate 10 Years Of Making Some Of The Best Speakers Ever:

When we started in 1988, Cambridge SoundWorks became the country's first factory-direct audio company. In 10 years, we've become one of the most successful consumer electronics companies and one of the country's leading speaker companies.

We've succeeded because we make great products – designed by Audio Hall of Fame member and Emmy-winner Henry Kloss. *Audio* magazine says we may have "the best value in the world." And during our 10th Anniversary Celebration, that value is even better. When you buy selected surround sound systems, we'll give you incredible discounts, an industry-best 10-Year Speaker Warranty,<sup>1</sup> and no payments or interest until 1999!<sup>\*</sup>

Here's how we're celebrating 10 years of incredible success.

## Give An Industry-Best Warranty – Extended To 10-Years – For All Customers.

All non-amplified Cambridge SoundWorks home speakers are now covered by our limited 10-Year Parts & Labor Warranty.<sup>1</sup> Whether you buy our *New Ensemble*<sup>®</sup> today or if you bought our original *Ensemble* in 1989. It's our way of saying "thank you" to our hundreds of thousands of customers.

## Offer Special Prices On Surround Systems!

We have assembled some of the very best surround sound systems ever, featuring our *Ensemble* and *MovieWorks*<sup>®</sup> speaker systems. They also feature incredible 10th Anniversary Sale prices – Savings of \$100 to \$400.

## Offer Special Prices On Multimedia Speakers.

We are pleased to announce special prices on our multimedia speakers. *PCWorks*, which "astonished" *PC Magazine*, has been reduced \$30 to \$69.99! *SoundWorks*<sup>®</sup>, which just received the Editors' Choice Award from *PC Magazine*, has been reduced \$70 to only \$149.99! *MicroWorks*<sup>®</sup>, which received the "MVP" Award from *PC Computing* magazine, has been reduced \$100 to only \$249.99!

## Offer "No Payments, No Interest Till 1999!"

If you buy selected surround sound systems, or any Cambridge SoundWorks brand speakers, qualified customers make no payments until 1999!<sup>\*</sup>



## Save \$100 On Ensemble IV Home Theater System – No Payments Till 1999!<sup>\*</sup>

The country's best-sounding affordable surround system. *Ensemble IV Home Theater* was recently rated "Best Buy" by a leading consumer publication. Sony's Pro Logic receiver has 60/60/60/60 watts per channel. 10-Year Parts & Labor Warranty on speakers. 2-year warranty on the receiver. Reg. \$599.98

**NEW! 10 YEAR WARRANTY**

Subwoofer

Shielded Main Speakers

Shielded Center & Surround Speakers

Sony Pro Logic Surround Receiver

10th Anniversary Celebration

**\$499.98**  
\$15 Month\*

## Save \$290 On New Ensemble II Home Theater System – No Payments Till 1999!<sup>\*</sup>

This remarkable system features our outstanding *New Ensemble II* sub/sat speakers. *Stereo Review* said *Ensemble II* "can only be compared with much more expensive speakers." *The Surround*<sup>®</sup> II 5.1 speakers switch from dipole to bipole operation, for great surround sound with any recording. The Harman Kardon was top-rated over models from Yamaha and Denon. Speakers backed by 10-Year Parts & Labor Warranty. Receiver backed by a 2-year warranty. Reg. \$1,289.96

Two-Way Main Speakers

Dual-Woofer Subwoofer

MultiPole™ Surround Speakers

Wide-Dispersion Center Speaker

Top-Rated Harman Kardon Surround Sound Receiver

10th Anniversary Celebration

**\$999.96**  
\$28 Month\*

**NEW! 10 YEAR WARRANTY**

## Save \$400 On MovieWorks 5.1 Home Theater System – No Payments Till 1999!\*

MovieWorks 5.1 makes movies or music sound fantastic. Stereo Review calls it "clearly one of the best one-box home-theater speaker systems I've heard." Sony's Dolby Digital AC-3 receiver uses the latest surround technology. Ten-Year Parts & Labor Warranty on non-amplified speakers.† 2-year warranty on the receiver. Reg. \$2,399.98

**NEW!**  
**10**  
**YEAR**  
**WARRANTY**

150 Watt, 12" Powered Subwoofer.  
"An aural atomic bomb...nothing short of phenomenal." -*Boot*

**10**  
**Anniversary**  
**Celebration**  
**\$1,999<sup>98</sup>**  
\$56 Month\*

Two-Way Shielded  
Main Speakers

Powerful  
Dolby Digital 5.1  
Receiver By Sony

The Surround 5.1  
MultiPole Surround  
Speakers For Dipole  
Or Bipole Operation



Wide-Range High-Output Center Speaker

## Save on our multimedia systems. Save \$100 on MicroWorks High-Output Speaker System. Save \$30 on PCWorks – The Best Multimedia Speaker Value.

MicroWorks is a powerful amplified subwoofer/satellite speaker system – with over four times the acoustic output of most multimedia systems. Its wide frequency range, natural tonal balance and high output make it ideal for presentations, or for a terrific home stereo system or a two-channel home theater sound system. MicroWorks comes with a 30-Day Total Satisfaction Guarantee and a 1-Year Limited Parts & Labor Warranty.

PCWorks is a compact, amplified speaker system which has been carefully fine-tuned to produce the natural, accurate, wide-range sound. Just plug it into a portable CD player, multimedia computer, TV, clock radio, or boom box – anything with a headphone jack – for rich, beautiful sound. PCWorks comes with a 30-Day Total Satisfaction Guarantee and a 1-Year Limited Parts & Labor Warranty.

**10**  
**Anniversary**  
**Celebration**  
**\$249<sup>99</sup>**  
Reg. \$349.99  
**Save \$100**  
\$15 Month\*

PCWorks  
system with satellite speakers  
and subwoofer with built-in  
amplifier comes  
finished in black or  
computer beige

**10**  
**Anniversary**  
**Celebration**  
**\$69<sup>99</sup>**  
Reg. \$99.99  
**Save \$30**



MicroWorks  
system with satellite  
speakers and subwoofer  
with built-in amplifiers comes  
finished in black or  
computer beige.



"You'll be hard-pressed  
to find a better set of speakers for twice the price." *Boot*  
"...one of the leading wonders of the computer world." *PC Gamer*  
"Cambridge SoundWorks manufactures loudspeakers that provide exceptional  
sound quality at affordable prices." *Stereo Review*

"The only speakers you'll ever need."<sup>1</sup> *PC Magazine*  
"I haven't heard better speakers at this price." *PC World 2/97*  
"...as accurate as systems costing twice as much." *PC Gamer*  
"...nothing short of stunning."<sup>2</sup> *Computer Gaming World*  
"In terms of price for performance, it's in a class by itself." *Macworld*  
"...chest-thumpin' bass...crystal-clear highs...no distortion." *Boot*

To Order, Or For A Free Catalog, Call...

**1-800-FOR-HIFI**  
(1-800-367-4434) Or Visit [www.hifi.com](http://www.hifi.com)

**C A M B R I D G E**  
**SOUNDWORKS**

Critically Acclaimed. Factory-Direct.

311 Needham Street, Suite 102, Newton, MA 02464

Tel: 1-800-367-4434 Fax: 617-332-9229 Canada: 1-800-525-4434 [www.hifi.com](http://www.hifi.com) Outside U.S. or Canada: 617-332-5936

# What Does It Take to Improve the World's Greatest Outdoor Speaker Line?



*Model OS10  
5-1/4" woofer;  
1" ElastoDynamic™  
Tweeter*

*Model OS20  
6-1/2" woofer;  
1" ElastoDynamic™  
Tweeter*

(A Little Sibling Rivalry)

## Introducing the OS20.

When we introduced the award-winning OS10 it immediately set the industry standard for indoor/outdoor loudspeakers. So it wasn't surprising when look-alikes began surfacing. What they couldn't duplicate was the rave reviews our speakers have been getting. Actually, we had a tough time outdoing ourselves. But we did.



*Indoors, OS speakers work great as home theater surround speakers, or in damp areas such as bathrooms or saunas—any corner in the home in need of terrific sound. They're also perfect for commercial applications such as bars and restaurants.*

Introducing the OS20. We kept most of the attributes that have made the OS series so successful but added deeper bass, greater dynamics, and higher power handling. The result is *bigger* sound.

The OS20 uses Niles' ElastoDynamic™ tweeter, recognized for delivering extended frequency response with stunning detail and clarity. We've added a 6-1/2" injection-molded, polypropylene woofer cone with a supple butyl-rubber surround and a monstrous magnet structure.

Like all OS Indoor/Outdoor speakers, the OS20's sleek, tapered enclosure tucks neatly into corners or



under eaves, discretely blending with any decor—inside or out. Its clever pivoting bracket (standard equipment on the OS20) gives you endless mounting solutions. Available in white or black, either finish is paintable for a truly customized look.

The OS20 shares the same rugged construction as its siblings. Its beefy, non-resonant cabinet is totally sealed (insects or moisture can't creep in) and will not fade under the sun's harsh rays. The grilles and brackets are aluminum; the connectors are gold-plated; and all the hardware is brass or stainless steel.

For the name and number of your nearest authorized Niles dealer call 1-800-BUY-HIFI (1-800-289-4434).



*Tough enough for marine applications and beach-front living. Exceeds military anti-corrosion specs (MIL-STD-883D).*



*The OS20 was recently awarded the highest overall rating in Home Theater® Magazine's Outdoor Speaker Face Off.\* The OS10 also earned AudioVideo International's® HI-FI Grand Prix Award for 1996 & 1997.*

BLENDING HIGH FIDELITY AND ARCHITECTURE™

NILES AUDIO CORPORATION, INC. P.O. BOX 160818 MIAMI, FLORIDA 33116 TEL: (305) 238-4373 FAX: (305) 238-0185 INTERNET: [www.nilesaudio.com](http://www.nilesaudio.com)

©1998 Niles Audio Corporation, Inc. Niles and the Niles logo are registered trademarks of Niles Audio Corporation, Inc. ElastoDynamic and Blending High Fidelity and Architecture are trademarks of Niles Audio Corporation, Inc. Printed in USA 5/98 AD000345R



\*Call us and we'll send you a free copy of the review



# Stereo Review



**ON THE COVER**

Anchored by a Yamaha RX-V793 Dolby Digital receiver, this home-theater system includes a Philips DVD420 DVD player, VR950 tower speakers and VR12 center speaker from Boston Acoustics, and a 32-inch RCA TV. The A/V stand is an Altra Galaxy GXTV (see page 13). *Starship Troopers* image courtesy Columbia TriStar Home Video.

Digital imaging by Chris Gould

**STEREO REVIEW ONLINE**

**JOIN US**

at our site on America Online and link up with thousands of other people who are interested in the same good stuff you read about in *Stereo Review*. Browse our message boards or search our archives. Somebody swiped the May issue before you could get to it? You can find lots of the information you missed on Stereo Review Online.

**ALL YOU NEED**

is a computer, a modem, and America Online software. To sign up, call America Online at 1-800-603-8181 for a free startup kit. Our keyword is STEREO REVIEW.

SEE YOU IN CYBERSPACE!



Stereo Review, Stereo, Hi-Fi, High Fidelity, and Backbeat are registered trademarks of Hachette Filipacchi Magazines, Inc.

PRINTED IN THE U.S.A.

**18** **Rodriguez Cartoon Caption Contest**

This year's diabolically funny winner

**29** **Technology Update: DTV**  
Digital TV demystified

BY JIM BARRY



**51** **DVD Envy**

Panasonic's portable DVD player proves that size does matter

BY BRIAN FENTON AND DANIEL MANU

**53** **Shopping Made Simple: Digital Surround Receivers**

Check out the basic features of every current model *before* you hit the stores

BY RICH WARREN



**58** **Multichannel Muscle**

Heavy-duty home-theater power amps that can handle the load

BY DANIEL KUMIN



**63** **Clear Signals**

How to choose the right antenna for superior FM and TV reception

BY BRIAN FENTON

**68** **Dipolar Confusion**

The case for using dipole surround speakers in your home theater

BY TOMLINSON HOLMAN

**75** **Best CDs of the Month**

*From the Choirgirl Hotel*

by Tori Amos, a fresh approach to Beethoven's Fifth and Sixth, Grant

Lee Buffalo's *Jubilee*, and modern violin works played by Anne-Sophie Mutter



**DEPARTMENTS AND COLUMNS**

BULLETIN	6
TRACK ONE	8
LETTERS	10
NEW PRODUCTS	13
HOT DVDs	20
AUDIO Q&A	22
TECH TALK	25
SIGNALS	26
POPULAR MUSIC	78
CLASSICAL MUSIC	84
THE HIGH END	96

**EQUIPMENT REPORTS**

DENON DMD-1000 MiniDisc Recorder	33
JVC RX-884V Dolby Digital Receiver	35
INFINITY Component Home Cinema Speakers	42
PLATINUM AUDIO PT-808 Speaker	44
NAD Model 522 CD Player	46
CAMBRIDGE SOUNDWORKS Ensemble II Home Theater Speaker System	48



# bulletin

BY BRIAN FENTON & WILLIAM LIVINGSTONE

## a/v digest

In B&W's most significant product introduction in two decades, it has introduced a new flagship speaker, the Nautilus 801, at \$11,000 a pair, to replace the Matrix 801. . . . Pioneer is introducing portable CD players for the first time, including a LoopMaster X-Ray series with see-through plastic cases. . . . JVC has announced a new Super VHS ET format that makes it possible to record with S-VHS quality on standard VHS tapes. . . . Paramount Home Video, a Divx licensee, has announced that it will also release films on DVD. . . . England's Strategy Analytics, a marketing consultant firm, expects that sales of DVD-ROM computer drives will dwarf those of DVD players, predicting that 500,000 DVD players vs. 1.4 million DVD-ROM drives will be sold this year in the U.S.

## digital radio update

The rollout of digital audio broadcasting (DAB) in Canada has been delayed yet again. Service in Toronto had been scheduled to start last fall, but this August now seems like an optimistic date for a DAB kickoff. . . . Lucent Technologies, which had previously cooperated with USA Digital Radio to develop an in-band, on-channel DAB system for the U.S., has decided to go it alone.

## surroundabout

The Yes *Open Your Eyes* North American Surround Sound Tour, with Alan Parsons as the opening act, was scheduled to kick off on June 18 in Toronto. The sound system for the shows, which are sponsored by Digital Theater Systems (DTS), will have speakers placed at front left, center, and right, and rear left and right, just as in a home surround system. A custom-built Surround Matrix control grid



## DVD AND DIVX SQUARE OFF

Warner Home Video has announced plans to begin a DVD rental program in five test markets, including San Francisco and Richmond, the same cities chosen for the launch of Divx, the pay-per-play flavor of DVD. But Divx has delayed introduction of players into those test markets. The original April date slipped first to late May and then, as we went to press, to mid June. A national rollout is still promised for sometime this summer. Warner, meanwhile, promised that its rental program would be "supported by extensive consumer advertising." And it isn't alone in DVD rentals: Blockbuster, which has been testing DVD in about 100 stores for the last year, is expected to expand DVD software and hardware rentals to about 1,000 stores, a quarter of its total. And Netflix is offering seven-day DVD rentals for \$4 from its Web site, [www.netflix.com](http://www.netflix.com).

with thirty discrete channels controlled by joystick-style pan pots is said to allow instruments or vocals to be "placed" anywhere in the concert hall.

## high-tech operas

Director Robert Wilson and Composer Philip Glass are collaborating on their first major work since *Einstein on the Beach* in 1976. The new opera, *Monsters of Grace*, relies heavily on computer-animated visual effects, many of which will appear in 3-D to audience members wearing special polarizing glasses. Meanwhile, video artist Beryl Korot is teaming with composer Steve Reich to create *Three Tales*, an opera slated to premiere in 2001 that examines the effects of tech-

nology on 20th-century society. It also makes extensive use of computer-generated visuals and audio processing.

## dvd firsts

The electronic rock band Full on the Mouth is the first band or artist to be signed by the Pioneer Music Group, owned by audio giant Pioneer Electronics. "People Mover," the first track from its debut album, has also been issued separately on what is billed as the first DVD single, with both a stereo and a Dolby Digital 5.1-channel surround mix. . . . The first classical music releases on DVD are Mozart's Requiem, with Zubin Mehta conducting the Sarajevo Philharmonic, soloists, and chorus, and two operas from La Scala in

Milan, Mozart's *Don Giovanni* and Rossini's *William Tell*, both conducted by Riccardo Muti. The soundtracks are the original 16-bit two-channel stereo, not 5.1-channel. All three releases are from Image Entertainment.

## recording bias

The head of the Recording Industry Association of America (RIAA), Hilary Rosen, has called on the music community to band together against the kind of homophobia that was demonstrated recently when three high schools in the South canceled appearances by the folk singing duo the Indigo Girls. Rosen said, "What high-school students today need are hope, dreams, self-esteem, and vision. That's what the Indigo Girls' music is all about . . . and it's a shame they are being treated with such disrespect simply because they are gay."

## american graffiti

A marketing executive at Virgin Records was given 45 summonses by the New York City Sanitation Department after stickers promoting its new releases were found on traffic signs on the West Side Highway. The company now faces fines totaling \$4,500. In an unrelated event involving the same stretch of highway, three high-school students were arrested for pasting up decals promoting a band. They were promised free CDs for their work.

## the man with a horn

On Wednesday, July 1, trumpeter Wynton Marsalis is scheduled to conduct the Lincoln Center Jazz Orchestra in a program of jazz concertos, including his own *Big Train* and Duke Ellington's *Boy Meets Horn*. *Jazz at Lincoln Center with Wynton Marsalis* will air at 8:00 p.m. Eastern time on PBS stations. Check local listings.



# More control than you've used to from a car stereo.

Total digital control, that's what we're talking about here—the ability to tweak every conceivable nuance of your system. There's a 13-band digital equalizer with Auto EQ, 3 way digital crossovers, time alignment (for insane imaging), a Hi-Volt Output, Zero-Bit Mute, Hi-Bit processor and Legato Link™ conversion. And it's all built into the headunit chassis, so everything is controlled from the front seat—no add-ons, which means no extra wiring, which means less chance for noise to get in. Yeah, it's a lot of control, but we know you'll get used to it. For the Premier™ dealer near you, give us a call, 800 PIONEER.



**PREMIER**™ HIGH/ER/EST STANDARDS. FROM PIONEER.™



# TRACK ONE

**BOB ANKOSKO**

## Keep It Simple

An old friend called a while back to tell me that he and his wife had experienced an "awesome" home-theater demo in their local electronics store. They were treated to a number of movie clips on a few different systems, but it was the horrific train-wreck scene in *The Fugitive* played on a moderately priced 5.1-channel DVD/Dolby Digital setup that won them over — well, almost.

My buddy had done the math in his head and was about to break out his credit card when the salesman slipped back into the demo room to make his pitch and answer questions. In a matter of minutes, their enthusiasm disintegrated into confusion as the salesman walked them through the system's intricate maze of features, scaring them half to death in the process. Realizing that the receiver at the heart of that superb-sounding demo system had ten times as many features as their stereo receiver at home, they began to reconsider whether they really needed all those new features. That's when they called me.

As anyone who has shopped for audio/video gear in recent years knows, many of today's components are so complex that it's easy to get confused. But after that call, I realized we needed a new approach to the perennial "roundup" story in which we keep you abreast of the latest developments in a particular component category. On page 53, we tackle one of home theater's most exciting (and confusing) components in "Shopping Made Simple: A Guide to Digital Surround Receivers." Besides explaining the basics of high-tech receivers that boast onboard decoding for Dolby Digital surround sound, and in some cases DTS surround as well, we present a two-page table listing the key features of every such receiver now — or soon to be — on store shelves. The accuracy of each entry was checked by the manufacturers themselves. In all, we've catalogued forty-two models, ranging from \$399 to \$2,800. Interestingly, more than half of them are priced at \$1,000 or less, and prices appear to be dropping quickly — good news if you're in the market for a digital receiver. We think you'll find the guide very useful even if you're just *thinking* about a new receiver.

On page 51, we kick off a new department called "Quick Takes" with impressions of Panasonic's sexy new portable DVD player. Having had the opportunity to try out this unique product over a long weekend, I can tell you that it brings new meaning to the phrase "personal entertainment."

Finally, I'm pleased to announce the return of the popular "Tech Talk" column. On page 25, Technical Editor David Ranada picks up where Julian Hirsch, now an editor at large, left off in March. David will offer a mix of opinion and practical advice on a variety of topics relating to audio and video. And to signal that the coverage will be balanced between those areas, we plan to alternate the column's name between "Tech Talk" and "Home Theater."

Oh, one more thing: Please drop us a line (see "Letters" on page 10 for addresses) and let us know how we're doing. Enjoy the issue!

Bob Ankosko, Editor in Chief

## StereoReview®

Editor in Chief  
BOB ANKOSKO

Art Director  
ANDREW THOMPSON

Technical Editor      Senior Editor  
DAVID RANADA      BRIAN FENTON

Managing Editor  
DAVID STEIN

Popular Music Editor      Classical Music Editor  
KEN RICHARDSON      ROBERT RIPPES

Database Manager      Assistant Art Director  
SANTIAGO PIZZINI      DAN FLINT

Assistant Editors  
DANIEL MANU, JAE SEGARRA

Contributing Technical Editors  
DANIEL KUMIN, KEN POHLMANN,  
IAN MASTERS, TOM NOUSAINE

Editors at Large  
JULIAN HIRSCH, WILLIAM LIVINGSTONE

Contributors: Chris Albertson, Rad Bennett, Francis Davis, Rebecca Day, Richard Freed, Will Friedwald, Phyl Garland, Corey Greenberg, David Hall, Bryan Harrell (Tokyo), Jamie James, George Jellinek, Brett Milano, Alanna Nash, Henry Pleasants (London), Parke Puterbaugh, Charles Rodrigues, Eric Salzman, Steve Simels, Craig Stark, Rich Warren

Vice President, Group Publisher  
TONY CATALANO

### CONSUMER ELECTRONICS GROUP ADVERTISING

VP/Associate Publisher  
Scott Constantine

Regional VP/Ad Director, East Coast:  
Charles L. P. Watson, (212) 767-6038

Regional Account Managers, East Coast:  
Christine B. Ead, (212) 767-6025  
Paul C. Smith, (212) 767-6077

Midwest Ad Manager: Jerry Stoeckigt, (312) 923-4804

Regional VP/Ad Director, West Coast:  
Robert Meth, (213) 954-4831

Western Ad Manager: Paula Mayeri, (213) 954-4830

National Record Label Sales Representatives:  
The Mitchell Advertising Group (MAG Inc.)  
Mitch Herskowitz, (212) 490-1715  
Steve Gross, (212) 490-1895

Assistant to the Publisher: Aline J. Pulley  
Promotions Manager: Adele Ferraioli-Kalter  
Operations Mgr./Ad Coordinator: Linda Neuweiler  
Sales Assistant: Yvonne Telesford  
Classified Advertising: (800) 445-6066

Production Manager: Mary M. Lewis  
Senior Production Assistant: Jacqueline Longa  
Production Director: Michael Esposito  
Business Manager: Nicolas Black  
General Manager: Greg Roperti

Subscription information: 303-604-1464



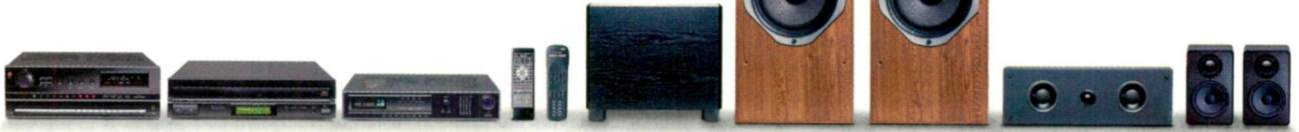
Stereo Review is published  
by Hachette Filipacchi Magazines, Inc.

Chairman: Daniel Filipacchi  
President and CEO: David J. Pecker  
Executive VP and Editorial Director: Jean-Louis Ginibre  
Senior Vice President, COO: John Fennell  
President, Hachette Filipacchi New Media: James P. Docherty  
Senior VP, Director of Corporate Sales: Nicholas Matarazzo  
Senior VP, CFO, & Treasurer: John T. O'Connor  
Senior VP, Manufacturing & Distribution: Anthony R. Romano  
Senior VP, General Counsel: Catherine Flickinger  
VP, Circulation: David W. Leckey  
VP, Communications & Special Projects: Keith Estabrook  
VP, Business Development: Raymond Dreyfus  
VP, Dir. Marketing and Sales Development: Lynn Chaiken  
VP, Corporate Compliance: Carlo A. Boccia

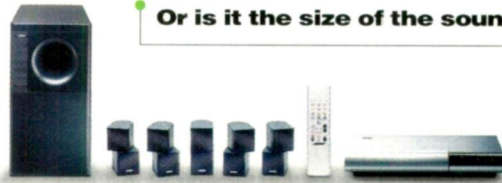


As you begin your search for the ideal home theater audio system, ask yourself what's important:

Is it the size of the equipment?



Or is it the size of the sound?

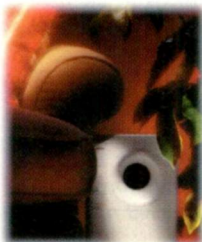


It has long been assumed that bigger equipment means better sound. Not anymore. Bose® Lifestyle® systems allow you to enjoy better sound with less clutter, less equipment and less complication.



- A single, 2½" high music center replaces an entire rack of electronics and includes a built-in CD player and AM/FM tuner.
- Tiny Jewel Cube® speakers are about the size of a computer mouse. And hidden away out of view is the

Acoustimass® module for purer, more natural bass. Your favorite music, movies and sports programs will come to life in a way you simply cannot imagine.



- *Home Theater Technology* summed it up by saying, "Everything is included and carefully thought out.... The performance is awesome."\*



- Please call for your complimentary guide to our Lifestyle® music and home theater systems, and for Bose dealers near you. Then compare the size of Bose sound to the sound of the biggest equipment you can find.

**BOSE**  
Better sound through research®

1-800-444-BOSE Ext. 626 [www.bose.com](http://www.bose.com)

© 1997 Bose Corporation JN98307G \*From a review of the Lifestyle® 12 home theater system

### control freak

I can't believe Ken Pohlmann really wants fewer buttons on audio equipment (May "Signals"). I like buttons and switches — the more there are, the more control I have over my system. Likewise, I prefer to focus a camera myself, to control the aperture and shutter speed, and so on. I do not want a silicon chip making decisions for me. Someday a computer will control every aspect of automobile travel, but I'll still want the feel of the road. And although I use a computer, this letter was typed by hand!

**Murray S. Levine**  
Los Angeles, CA

### waiting for DVD-audio

From the way you talk about DVD-Audio in the May issue, it sounds like it will be a wonderful development with great benefits for audiophiles. I have been trying to decide if I should buy a new CD player or keep the one I purchased about ten years ago. It sounds great, but I would like to hear more depth in the soundstage and less harshness. Should I upgrade to a better CD player or wait for a DVD-Audio player? **Eric Godoy**  
West Chicago, IL

*There's no guarantee that DVD-Audio players will be available soon, and when they are it will take more time before there's much software designed for them. So if you are unhappy with your CD player, it isn't advisable to wait. There have definitely been significant improvements in CD circuitry over the last ten years, even in the lowest-price models.*

### HDCD defended

Pacific Microsonics' HDCD technology has achieved far greater success in the mainstream marketplace than Corey Greenberg's assessment of it as a "niche format . . . confined to a handful of high-end manufacturers and software titles" in his March "High End" column ("Format-of-the-Month Club"). More than 1,000 HDCD recordings have been made to date, of which more than 50 million copies have been sold, 94 have appeared on *Billboard's* Top 200 chart, and 31 have been certified Gold or Platinum by the Recording Industry Association of America. Also, 26 HDCD recordings received 42 Grammy nominations this year.

Top recording artists such as Neil Young, Green Day, Paula Cole, Mark Knopfler, John Lee Hooker, Garth Brooks, Live, Lisa Loeb, and John Mellencamp chose to use HDCD for their most recent recordings. Mr. Greenberg states that HDCD recordings "offer penalized compatibility," or inferior fidelity, when played on standard CD play-

ers. But in today's world, where most consumers do not yet have HDCD decoding, it is difficult to understand why so many top recording professionals would choose to use HDCD unless they found it delivered the best possible fidelity on *all* CD players.

If we look at HDCD playback hardware, over 100 models of HDCD players are now available from 48 manufacturers around the world, and many more are on the way. HDCD is now a standard feature in high-end CD players and digital-to-analog (D/A) converters because in addition to decoding HDCD recordings, the PMD-100 HDCD decoder chip's precision HDCD digital filter improves the fidelity of all CDs.

Mr. Greenberg has predicted impending doom for HDCD, but what he does not seem to understand is that HDCD is not a format. Instead, it is a technology to maximize the fidelity of the formats established by the large consumer-electronics companies. I am sure Mr. Greenberg will be pleased to learn that Pacific Microsonics has already completed development of HDCD technology for the coming DVD-Audio format.

**Andy Johnson**  
VP, Pacific Microsonics  
Berkeley, CA

*See "The High End" on page 96 for Corey Greenberg's comments.*

### priorities

Judging from Tom Nousaine's "To Tweak or Not to Tweak" in June, statistically the equipment all sounds the same (except for speakers), so you should decrease the space for equipment tests and articles and crank up the music reviews. After all, if it weren't for the music, we wouldn't have all of this equipment in the first place. I'll spend my bucks on new recordings over a new piece of equipment any day.

**Gary Marriott**  
Lake Orion, MI

*While we agree that the best equipment is useless without good recordings to play on it, Tom Nousaine's point wasn't "it all sounds the same" but that various much-touted system "tweaks" don't make a significant difference in overall sound quality. Even CD players can sound different, but when the difference is consistent, it has its roots in measurable differences in performance, such as D/A-converter linearity or analog frequency response.*

### DVD dilemma

I have enjoyed your continued coverage of Dolby Digital and DVD and have finally taken the plunge, but I am disappointed by some developments in that field. First, why

start switching between Dolby Digital and DTS for DVDs? I have approximately thirty DVD movies, and they sound absolutely fantastic in Dolby Digital. Some DVD-Audio proponents claim they need more channels, but I have a hard time dealing with the six I already have. As for realism, if you listen to *Air Force One* or *Twister* on DVD, you'll know what a fantastic job Dolby Digital can do. Why not just use the same format for music? If you don't believe that music sounds fantastic on DVD, just shut off your monitor and play *Fleetwood Mac's The Dance*. It is incredible.

Why isn't every studio releasing DVDs? If a studio releases only Divx discs, I won't buy any. When I buy a movie I plan on watching it many times. I hope the studios wake up before they destroy this wonderful medium.

**Roger Rutten**  
Carlos, MN

### two wrongs . . .

While I have to agree with Corey Greenberg in "Aisle of White" (June "The High End") regarding the lack of black musicians on laserdisc and DVD, I take offense at his idea that it is cute to mock white people as "whitey" and "jive turkeys." Just as black people dislike derogatory names for them, white people feel the same. Racist names do not belong in *Stereo Review*.

**Joe Rasenberger**  
Brooklyn, NY

*Corey Greenberg was trying to make his point in a humorous way, but you're right — he went too far. Our apologies.*

### really big home theater

I enjoyed "On Location" by Rebecca Day in the May issue. It has given me many good ideas for my own conversion of a large basement space to a home-entertainment center with a 100-inch screen. However, the pictures in the article offer little in the way of perspective, and there is no mention of the dimensions of the room. What are the minimum room dimensions required for a system of this size?

**Paul Austin**  
Toronto, Ontario

*Room dimensions for home theater will be covered in an upcoming article. The "On Location" room is about 15 x 20 feet, with an adjacent room that flows into it.*

We welcome your letters. Please write to Editor, *Stereo Review*, 1633 Broadway, New York, NY 10019; or e-mail to [StereoEdit@aol.com](mailto:StereoEdit@aol.com). You should include your street address and telephone number for verification. Letters may be edited for clarity and length.

# THE ULTIMATE TAILGATE PARTY MACHINE

**52 WATTS**  
**DUAL SUBS**  
**REMOTE CONTROL**



**JVC**  
**kaboom!**  
**box**

Optional 12 Volt Car Adapter Available

41 Slater Drive Elmwood Park, NJ 07407 [www.jvc.com](http://www.jvc.com)

Do You Really Believe The  
Same Speaker Can Work Just As Well  
Outdoors As Indoors ?

Neither Do We!

**Introducing the Tempest®  
indoor/outdoor  
equalization switch  
from Energy®.**



**One flick for  
indoors.**

It's sound quality you'd expect from a high performance Energy® loud-speaker. Wide dispersion and low distortion from the Energy® Hyperdome™ tweeter mean extended frequency response, with faithful reproduction of ambience and all the musical detail.

The injection molded 5 1/4" woofer delivers smooth full range response, controlled upper range rolloff and tight dispersion in the critical midrange, producing superb transparency and imaging, over an extended soundstage.

**Another  
flick for  
outdoors.**

Snap! Improved bass, equalized for outdoors. Clean and undistorted, with a smooth mid-range and instant musical response.

"Tempest™" is paintable, and is designed to comply with the rigid MIL-STD-883D specification for resistance to the rigors of extreme climates. Available in black or white, it has a unique and flexible mounting system that permits a wide range of installation options.

**No Wonder it's  
Taking the Outdoors  
by Storm.**

**Tempest®**

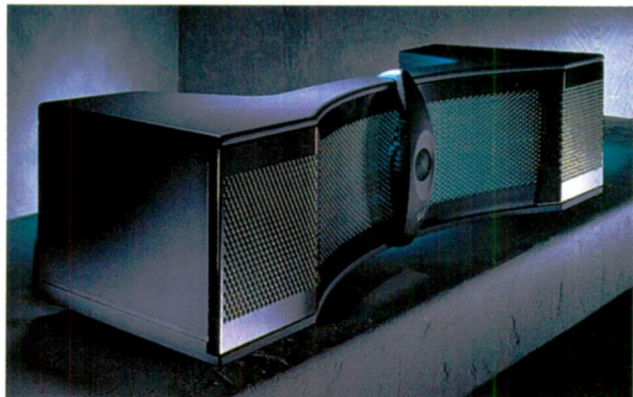
**ENERGY®**  
LOUDSPEAKERS  
MUSICAL TRUTH™

# NEW PRODUCTS



**Marantz** You can record *and* rerecord your own CDs at home with the DR-700 from Marantz. It records both write-once CD-R discs and rewritable CD-RWs from either digital or analog sources. A built-in sampling-rate converter automatically changes digital audio from non-CD sources to the 16-bit/44.1-kHz CD standard. The CD-RW edit features lets you erase individual tracks or the entire disc at once. Both optical and coaxial digital inputs and outputs are provided. Price: \$850. Marantz, Dept. SR, 440 Medinah Rd., Roselle, IL 60172; phone, 630-307-3100; Web, [www.marantzamerica.com](http://www.marantzamerica.com).

**Martin-Logan** Martin-Logan's Cinema center-channel speaker is sure to be the center of attention on top of your TV. It features the company's patented curvilinear line-source (CLS) electrostatic transducer, which is said to provide 30-degree sound dispersion in the 300-Hz to 3.5-kHz range. The speaker, which measures 33½ x 10½ x 8 inches, also has two 5¼-inch woofers in separate sealed subenclosures and a 1-inch soft-dome tweeter. Price: \$1,295. Martin-Logan, Dept. SR, P.O. Box 707, Lawrence, KS 66044; phone, 785-749-0133; Web, [www.martinlogan.com](http://www.martinlogan.com).



ALTRA RESURRECTION (TWENTIETH CENTURY FOX HOME ENTERTAINMENT)

**Altra** Designed to showcase the stars of any home-theater setup, Altra's Galaxy series of audio/video furniture includes the GXTV television stand (above) and the GXA audio cabinet. Both feature a counterbalanced shelving system that gives shelves a "floating" look. The GXTV can hold TVs with up to 32-inch screens, while the GXA can shelve four 20-inch-wide components. Both pieces are available finished in mahogany, black, or "spice" lacquer. Prices: GXTV, \$100; GXA, \$150. Altra Furniture, Dept. SR, 300-1F Route 17 S., Lodi, NJ 07644; phone, 800-628-8321.



**Kenwood** Aimed at first-time home-theater buyers, Kenwood's VR-209 Dolby Digital receiver automatically detects whether an incoming signal is in 5.1-channel Dolby Digital, four-channel Dolby Surround, or stereo and then selects the right decoding/playback mode. Rated to deliver 100 watts each to five channels into 8 ohms, the receiver contains four analog audio and three A/V inputs, one coaxial and one optical digital input, three audio outputs, and two video outputs. The supplied universal preset and programmable remote can control up to nine devices. Price: \$399. Kenwood, Dept. SR, P.O. Box 22745, Long Beach, CA 90801; phone, 800-536-9663; Web, [www.kenwoodusa.com](http://www.kenwoodusa.com).

# NEW PRODUCTS



**Atlantic Technology** Designed to produce a movie-viewing experience without cluttering your listening room, the System 270 from Atlantic Technology includes two 14½-inch-tall Model 271 LR left and right front speakers, two Model 274 SR surrounds, and one Model 273 C center speaker, each with a 1-inch silk-dome tweeter and a rated frequency response of 80 Hz to 20 kHz  $\pm 3$  dB. The Model 271 LRs and Model 273 C have dual 5¼-inch woofers flanking their tweeters, while the Model 274 SRs contain dual 4½-inch woofers in a dipolar array. The 17¾-inch-wide center speaker has controls for high-frequency level and midrange presence. The system is powered by the Model 272 PBM subwoofer, which has a built-in 225-watt power amp and a 12-inch driver in a sealed cabinet. All six speakers are finished in black ash vinyl. Price: \$2,396. Atlantic Technology, Dept. SR, 343 Vanderbilt Ave., Norwood, MA 02062; phone, 781-762-6300; Web, [www.atlantictechnology.com](http://www.atlantictechnology.com).



**Philips Magnavox** Armchair directors will like the Philips Magnavox DVD420 DVD player, whose Digital Zoom feature allows you to magnify any part of the picture four times for extreme close-ups, while its dynamic-range control can compress the audio for late-night viewing. A universal remote with jog/shuttle control also makes the player easier to use. The DVD420, which can play any video CD in addition to DVDs and regular audio CDs, has two pairs of stereo analog outputs and both composite- and S-video outputs. The player comes with a DVD of *The Mask* (New Line Home Video) and a coupon for four other DVDs. Price: \$650. Philips Electronics, Dept. SR, 64 Perimeter Center E., Atlanta, GA 30346; phone, 800-531-0039; Web, [www.philips.com](http://www.philips.com).

**Technics** One of the very few receivers designed to power more than five channels, the Technics SA-AX6 Dolby Pro Logic receiver is rated to deliver 100 watts to each of its six channels, including subwoofer. The receiver also has discrete six-channel inputs for connection to an outboard Dolby Digital or DTS decoder. An Adaptive Subwoofer Control is said to optimize subwoofer output at different listening levels. There are four audio and five A/V inputs (one with S-video). A universal remote is included. Price: \$500. Panasonic, Dept. SR, One Panasonic Way, Secaucus, NJ 07094; phone, 800-211-7262; Web, [www.panasonic.com](http://www.panasonic.com).



## Niles

Splash all you want at your next pool party and it won't hurt the Niles OS-20 indoor/outdoor speaker. Its low-diffraction, glass- and mineral-filled polypropylene cabinet is sealed and said to be impervious to moisture. The OS-20 has a 6½-inch woofer, with a mica-filled cone and butyl-rubber surround, and a wide-dispersion dome tweeter. It comes in paintable white or black and measures 9⅞ x 13 x 7¼ inches. Price: \$500. Niles, Dept. SR, P.O. Box 160818, Miami, FL 33116; phone, 800-2E9-4434; Web, [www.nilesaudio.com](http://www.nilesaudio.com).



## Turtle Beach

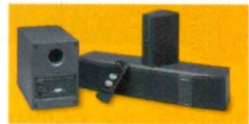
It's no shell game: Turtle Beach Systems promises realistic audio effects with its Montego A3DXstream PCI sound card, which supports the latest PC audio standards and most DOS games. The card features 18-bit analog-to-digital and digital-to-analog converters for high-quality digital mixing. The A3DXstream also accepts an SPDIF expander card for recording and playing digital audio from multimedia sources. Price: \$129. Turtle Beach Systems, Dept. SR, 5 Odell Plaza, Yonkers, NY 10701; phone, 800-233-9377; Web, [www.tbeach.com](http://www.tbeach.com).





Most folks buy a big-screen TV because they want that gigantic movie theater feeling in the comfort of their own living room. Problem is, watching a big screen TV without theater sound is like watching 4th of July fireworks without the "Ka-blam"! That's why we created the Boston SoundBar™ Cinema—a complete home theater system in a very convenient package—three small components connected by three simple wires. Just add a TV and a VCR and you're ready to enjoy big, satisfying theater sound. SoundBar even comes with a pre-programmed remote control, allowing you to operate virtually all your components using one handy device. Best of all, it's priced so you can hear the whole picture without emptying your whole bank account. Of course, seeing—and hearing—is believing. You can do a lot of both at your nearest Boston dealer. And, feel free to use the whole TV screen.

**Hear the whole picture.™**



## Boston SoundBar™ Cinema



**Boston**Acoustics

Boston Acoustics 300 Jubilee Drive Peabody, MA 01960 978.538.5000 [www.bostonacoustics.com](http://www.bostonacoustics.com)

## NEW PRODUCTS



**Proceed** Talk about heavy metal: the AMP 5 power amplifier from Proceed weighs 119 pounds! It's rated to deliver 125 watts continuous into 8 ohms to each of its five channels, all channels driven, or 250 watts each into 4 ohms. Frequency response is given as 20 Hz to 20 kHz  $\pm 0.15$  dB. Each channel has both balanced-XLR and unbalanced RCA inputs. The THX-certified AMP 5 also has gold-plated multi-way binding posts. Protection features include thermal sensors to prevent overheating as well as AC-line filtering and conditioning. Price: \$4,995. Madrigal Audio Labs, Dept. SR, P.O. Box 781, Middletown, CT 06457; phone, 860-346-0896; Web, [www.madrigal.com](http://www.madrigal.com).



**Onkyo** The TX-SV454 Dolby Pro Logic receiver from Onkyo features a dedicated six-channel input, for connection to an outboard Dolby Digital or DTS digital-surround decoder, and Lucasfilm Cinema Re-EQ, which makes soundtracks that were mixed for big theaters sound more natural in a home theater. It is rated to deliver 60 watts per channel to each of the three front channels and 20 watts each to its two surround outputs, or 70 watts per channel in two-channel stereo mode. Four audio and two A/V inputs are provided. A full-system learning remote is included, and the heavy-duty outputs for the front left/right speaker channels are compatible with banana jacks. Price: \$430. Onkyo, Dept. SR, 200 Williams Dr., Ramsey, NJ 07446; phone, 201-825-7950; Web, [www.onkyo.co.jp](http://www.onkyo.co.jp).

### DCM

The OW-2 surround speaker from DCM has an acoustic-suspension enclosure with two angled  $\frac{3}{4}$ -inch dome tweeters and one forward-facing  $6\frac{1}{2}$ -inch woofer. Power handling is rated as 5 to 100 watts, sensitivity as 92 dB, and nominal impedance as 8 ohms. The OW-2 measures  $14\frac{1}{4} \times 10\frac{1}{8} \times 4\frac{5}{8}$  inches and is available in an ivory or black finish with a matching wrap-around grille cloth. Wall-mounting hardware is included. Price: \$230. DCM, Dept. SR, 670 Airport Blvd., Ann Arbor, MI 48108; phone, 800-878-8463; Web, [www.dcmspeakers.com](http://www.dcmspeakers.com).



### Sound Advance

Discreet surround: The 14 x 21-inch SA2B two-way planar speaker from Sound Advance is made of polystyrene and becomes invisible after it's installed in a wall and covered with wallpaper or latex paint. Bandwidth is rated at 70 Hz to 20 kHz. Price: \$1,399 a pair (includes installation). Sound Advance Systems, Dept. SR, 3202 S. Shannon St., Santa Ana, CA 92704; phone, 800-592-4644; Web, [www.soundadvance.com](http://www.soundadvance.com).

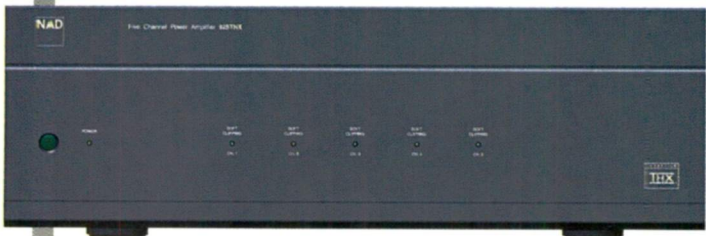
**AudioControl** Everyone at the next sound-off will be able to see how loud your car's system can play with AudioControl's dB-300, a 24-inch-long LED screen that displays sound-pressure level (SPL) readings in bright 10-inch-high numerals. It can be used with AudioControl's SPL-180 microphone, which measures levels between 110 and 175 dB. Both products are compatible with the company's well-regarded SA-3055 real-time spectrum analyzer (also shown). Prices: dB-300, \$899; SPL-180, \$899; SA-3055, \$1,599. AudioControl, Dept. SR, 22410 70th Ave. W., Mountlake Terrace, WA 98043; phone, 425-775-8461; Web, [www.audiocontrol.com](http://www.audiocontrol.com).



# NEW PRODUCTS



**JL Audio** JL Audio has expanded its line of Stealthbox car subwoofers to more than fifty models, including versions for sedans and coupes such as the Audi A4, the Volkswagon Jetta, and the Nissan Maxima. The Honda Accord Stealthbox (above), with JL's Model 10W6 10-inch driver, has a slot-loaded sealed enclosure that fits into the left rear corner of the car's trunk. The rated maximum power-handling capability is 300 watts. Price: \$500. JL Audio, Dept. SR, P.O. Box 839004; phone, 954-981-9497; Web, [www.jlaudio.com](http://www.jlaudio.com).



**NAD** The THX-certified Model 925THX power amplifier from NAD is rated to deliver 125 watts to each of its five channels, all channels driven, into 8 ohms, or 200 watts each to any two channels. The amp uses the company's Holmgren-type power transformer, which is said to improve overall efficiency while reducing hum and stray-field leakage for quieter performance with a wider dynamic range. Protection features monitor thermal excess, DC offset, and overloading. The Model 925THX stands 5½ inches tall and is constructed on an all-metal chassis with gold-plated input jacks and heavy-duty multiway binding-post outputs. An input-level control is provided for each channel. Price: \$1,299. NAD Electronics, Dept. SR, 6 Merchant St., Sharon, MA 02067; phone, 800-263-4641.

**Arcam** British-based Arcam has introduced its first CD changer, the Alpha MCD, featuring a tray-loading Sony disc-transport mechanism. Up to six CDs can be loaded into an internal stack, and tracks and discs can be played in any order. The changer has a 20-bit stereo digital filter and a Crystal Semiconductor digital-to-analog (D/A) converter as well as a coaxial digital output. There are eight separately regulated power supplies and a low-jitter master clock. The analog outputs are gold-plated RCA jacks. The player accepts standard RC-5 remote-control commands for use in a multiroom installation. Price: \$999. Arcam, distributed by Audiophile Systems, Ltd., Dept. SR, 8709 Castle Park Dr., Indianapolis, IN 46256; phone, 888-272-2658; Web, [www.aslgroup.com](http://www.aslgroup.com).



## Sony

Your music won't skip a beat if you take a dip in a mountain stream with Sony's D-ES51 Sports Discman, a water-resistant portable CD player. ESP Steadysound shock protection provides a 20-second music buffer, while a twenty-two-track memory lets you create a custom music mix. Other features include Mega Bass, resume play, and ten playback modes. Price: \$200. Sony, Dept. SR, 1 Sony Dr., Park Ridge, NJ 07656; phone, 800-222-7669; Web, [www.sel.sony.com](http://www.sel.sony.com).



## Infinity

The QPS-1 Quadrapole surround speaker from Infinity is said to provide a diffuse sound field from two pairs of 3-inch full-range drivers mounted at 30-degree angles on a molded front baffle. Sensitivity is given as 88 dB and nominal impedance as 8 ohms. The QPS-1 measures 8½ x 11 x 4½ inches and comes in white or gray finishes. Price: \$349 a pair. Infinity, Dept. SR, 250 Crossways Park Dr., Woodbury, NY 11797; phone, 800-553-3332.



# The 14th annual **Rodrigues** cartoon caption contest and the winner is...

JOHN SLAWSON, of Blackwood, NJ! In this year's contest, Mr. Slawson's caption, printed under the drawing, had our judges rolling on the floor.

As in previous years, we published a drawing by our regular cartoonist Charles Rodrigues in January and invited readers to write the caption. The prizes: the original drawing plus \$500 (we talked management into upping the ante from last year's \$100).

A hearty thanks to Mr. Slawson and the thousands of other readers who submitted captions this time around. Our appreciation also extends to the panel of judges, which consisted of last year's winner, Dr. Carl Burns, and ten other previous winners.

We are especially grateful to Rodrigues for this year's cartoon, one of the most provocative in the contest's history. Rodrigues was represented in Vol. 1, No. 1, of this magazine, in February 1958, and he has contributed to almost every subsequent issue. So, thanks for forty great years!

This year, as before, entries came from across North America and from such romantic places as Japan, Taiwan, Israel, Peru, Finland, Aruba, Panama, Puerto Rico, and Wauwatosa, Wisconsin. Several hundred Flip Wilson fans submitted the caption "The devil made me do it," which the judges considered a bit weak. Many entries mentioned new technology — 5.1-channel surround sound, DVD, and Divx — and

many more were based on getting rid of a mother-in-law.

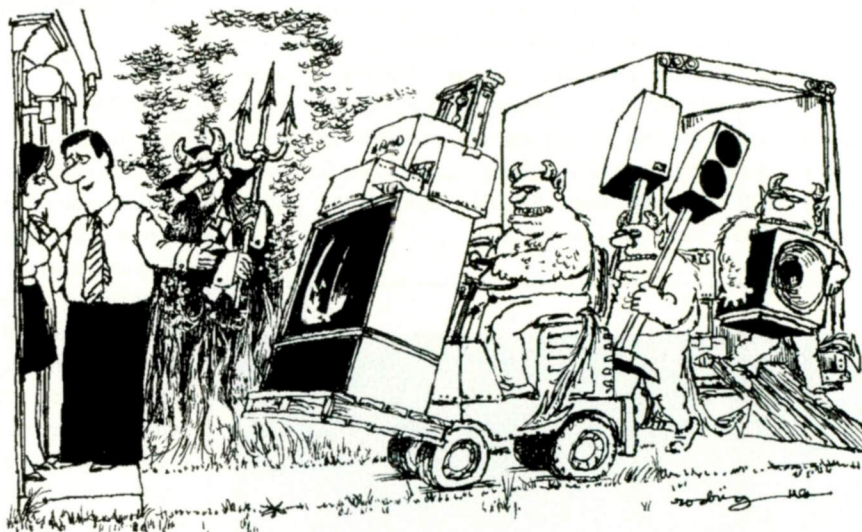
Literary figures who were cited include Dante, Goethe, and Daniel Webster. Not surprisingly, *Damn Yankees* and "Sympathy for the Devil" were the music most often referred to, and frequently named performers include the Grateful Dead, Black Sabbath, the Rolling Stones, Metallica, Megadeth, and Zamphyr. Nonmusical celebrities mentioned were Crazy Eddie, Dr. Kevorkian, and Jerry Falwell.

If you entered the contest, but did not win, we wish you better luck next time. (Look for the January 1999 issue,

which comes out in mid-December.) Mr. Slawson, this year's winner, is the operations manager for a not-for-profit charitable organization and is a long-time reader of *Stereo Review* who enjoys a variety of music, including classical, pop, and rock. When notified of his good fortune, he said, "I can hardly believe I have won. This is the first time I've entered the contest, and I would have been pleased just to be included among the runners up."

We hope the ten runners up listed below are pleased to share Mr. Slawson's 15 minutes of fame.

— William Livingstone



*"Just until after the Super Bowl, and then I'll get hold of a priest, I promise!"*

## runners up

*"I promise this is the last time I ask for your family's help on anything."*

— Joe Perdue, Crystal, MN

*"If this were all Tupperware, you'd have done the same thing."*

— Tom Bonner, Virginia Beach, VA

*"Oh, come on, Marguerite. The Prince of Darkness is coming over. You don't expect him to watch the game on our little system, do you?"*

— Matt Evans, Sumter, SC

*"No kidding. These guys invented the whole 'Buy now, pay later' thing."*

— Ron Villegas, Spotswood, NJ

*"I know what you said, honey, but he told me that hell did freeze over."*

— Paul Thompson, Pensacola, FL

*"666 channels . . . and no Jimmy Swaggart."*

— Richard Kenyada, Lithonia, GA

*"Well, yeah, it did cost more than an arm and a leg."*

— Jerry Milhollan, Modesto, CA

*"I was damned if I did, and I was damned if I didn't."*

— Daryl Byklum, Rochester, MN

*"Honey, I went to school with a guy who sold his soul for an FM radio."*

— John Payne, Farmington, MO

*"It was only our first-born, Marguerite. We can always have more kids."*

— Troy Gau, San Jose, CA

# Very powerful. Very impressive. Very Mitsubishi.



## ***The next generation of the most powerful way to enjoy your Big Screen TV – Mitsubishi's DD-2000.***

*When Mitsubishi introduced its DD-2000 DVD Player, Big Screen viewing reached new heights in excellence with the clarity and dynamic sound that only a DVD player could produce.*

*Movies and programs came alive in epic proportions.*

*With Mitsubishi's next generation DVD player, the DD-2000, Big Screen viewing is now even better. The DD-2000 has all the incredible features that make the DVD format the most powerful way to watch movies and listen to your CDs. It also pushes performance to a new level.*



*The DD-2000's second generation circuitry provides component video output, black level adjustment, 10-bit video resolution, 20-bit audio resolution and a 20% wider video bandwidth. The DD-2000 is even ready to decode future digital audio discs with a 96kHz sampling frequency.*

*The newest generation of DVD players reflects Mitsubishi's tradition of improving upon technological excellence to bring the highest quality of sights and sound to your home entertainment. For the most powerful way to watch movies and listen to your CDs, check out Mitsubishi's DD-2000. It's Big Screen viewing at its finest.*

 **MITSUBISHI**  
THE BIG SCREEN COMPANY™

Please visit our website at <http://www.mitsubishi-tv.com> ©1998 Mitsubishi Consumer Electronics America, Inc.  
Dolby® Digital is a registered trademark of Dolby Laboratories Licensing Corporation

# Hot DVDs

RECOMMENDED NEW TITLES AND CLASSIC REISSUES BY RAD BENNETT

## THE ENGLISH PATIENT

With its flashbacks and slowly revealed mysteries, the Best Picture of 1996 is like an exquisite tapestry, weaving together two great wartime love stories in an epic romance. The DVD release is rather plain as far as extras go — no trailer, no biographies, just a chapter search for finding scenes quickly — but the rich, glowing transfer can stand alone. The laserdisc ver-



MIRAMAX FILM CORP.

By plane: *The English Patient*

sions were good, but the DVD is even sharper and steadier, with details that give you a real feeling for the texture of scenes, sets, and costumes. What's more, the long film fits on one dual-layer side, so there's no need to turn the disc over. The original audio mix, among the best I've heard in theaters over the past several years, is impressive on DVD as well, with outstanding atmosphere, separation, and transparency yet concentrated punch when required.

**One-sided dual-layer; Dolby Digital 5.1; closed captioned; Spanish subtitles; letterbox (1.85:1); 162 min. Miramax Home Entertainment, \$29.99.**

## VERTIGO

Here is the print of Alfred Hitchcock's 1958 suspense thriller that was completely restored by Robert A. Harris and James C. Katz, shown theatrically in 1996, and released in 1997 by MCA as a Signature Edition laserdisc. But that highly regarded laser only hints at the glories to be found on this dual-layer DVD. The color here seems impossibly deep, the detail mind-boggling. Just when you think you've seen the best scene, a new image comes up on the screen

that makes you gasp. The florist shop has blossoms that seem to have aroma, and the waters of San Francisco Bay are so realistic that you can virtually feel the chill when Kim Novak takes the plunge.

In order to use the stereo music tracks, Harris and Katz had to recreate some sound effects; for my money, the tradeoff was a good one because the video restoration needed audio as vivid and spacious as this. The DVD, a Collector's Edition title from Universal, is loaded with extras, including a featurette on the restoration process, a full-length screen-specific commentary, original and restoration trailers, and a foreign ending that is so awful it proves that Hitchcock knew a lot more about making movies than his censors did. The only drawback is the still-frame archive, which, though crystal clear and rock steady, is awkward to use.

**One-sided dual-layer; Dolby Digital 5.1; closed captioned; French and Spanish subtitles; letterbox (1.85:1); 128 min (feature). Universal Home Video, \$34.98.**

## THE DEVIL'S ADVOCATE

Playing a lawyer who has never lost a case, Keanu Reeves is hired by a New York law firm run by the Devil incarnate, portrayed with obvious relish by Al Pacino, who is a delight to behold as he romps through his role. Fans of the 1997 hit will surely be pleased with Warner Home Video's Special Edition DVD. The transfer is nearly as good as it gets, with impressive detail during the final scene involving the controversial white sculpture of human forms, and the Dolby Digital 5.1-channel mix delivers both subtle and spectacular surround sound. The commentary track by director Taylor Hackford sheds light on many moments as he explains how and why more than 30 minutes of scenes were deleted for the theatrical release. His discourse is a mixed blessing, however, as there are times when his voiceover obliterates the dialogue of some restored lines. (Why wasn't DVD's ability to carry simultaneous voice tracks used here?) Extras include TV spots, a theatrical trailer, production notes, biographies, and previews of four Warner Bros. movies in the same genre.

**One-sided dual-layer; English and French, Dolby Digital 5.1; English, French, and Spanish**

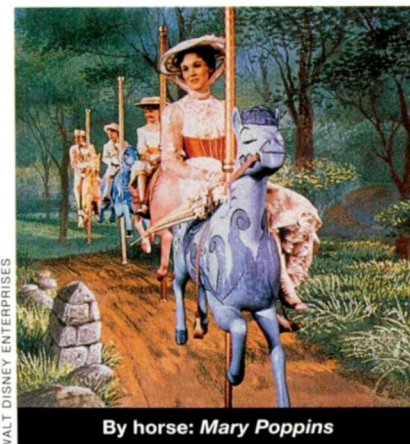
**subtitles; letterbox (2.35:1); 144 min (feature). Warner Home Video, \$24.98.**

## MARY POPPINS

One of the great family entertainments of all time, *Mary Poppins* carried away five Academy Awards in 1964, including Best Actress for newcomer Julie Andrews and both Best Score and Best Song for Richard M. and Robert B. Sherman. Since then, the evergreen title has been a staple of Disney's home-video catalog, being released and re-released many times; it even chalked up three laserdisc editions, two of them letterbox. But none has looked as breathtaking as this DVD, which has luscious color, generous detail, and 99 percent freedom from any digital artifacts — an amazing feat since the nearly 140-minute movie is on a single-layer disc.

The partly animated "Jolly Holiday" chapter shows that DVD will be kind to Disney animation should the company decide to release any in this format. Directional effects of the 5.1-channel mix are minimal, occurring mostly during the fireworks that end the chimney sweeps' "Step in Time" dance sequence, but the surrounds do provide good ambience in music numbers and allow the front channels to open up in pristine clarity and wide separation, with no hole in the middle. *Mary Poppins* on DVD is practically perfect in every way.

**One-sided; Dolby Digital 5.1; closed captioned; letterbox (1.85:1); 139 min. Walt Disney Home Video, \$29.99.**



WALT DISNEY ENTERPRISES

By horse: *Mary Poppins*

# "THE FINEST IN-WALL SPEAKERS IN THE WORLD!"



Audio/Video International  
Grand Prix Product of the Year



Sound&Vision Critics' Choice Award



Consumers Digest Best Buy Award

All in-wall speakers are not created equal! Although they may look similar, most often beauty is only skin deep. Paradigm's extraordinary AMS in-walls, on the other hand, are designed from the inside out to provide stunning state-of-the-art performance that sets the standard for high-end in-wall sound!



What does it take to build the world's finest in-wall speakers? Nothing short of better design execution and better materials. Paradigm's advanced AMS in-walls use an aluminum diecasting that combines the main chassis, mid/bass driver chassis and tweeter faceplate into a single ultra-rigid unit. And, to ensure a solid high strength installation, we use an ultra-rigid diecast aluminum mounting bracket.

Add Paradigm's world renowned driver technology and seamless dividing networks, and the result is dramatically superior in-wall sound for both music and home theater.

*We invite you to visit your nearest AUTHORIZED PARADIGM DEALER and experience these sensational in-wall marvels today. The difference is... simply better sound!*


## Paradigm®

THE ULTIMATE IN HIGH-PERFORMANCE SOUND™

For more information on these fine Paradigm speakers, visit your nearest AUTHORIZED PARADIGM DEALER or write: AUDIOSTREAM, MPO Box 2410, Naugon Falls, NY 14302 (905) 632-0180  
In Canada: PARADIGM, 101 Hanlan Rd. Woodbridge, ON L4L 3P5 (905) 850-2889

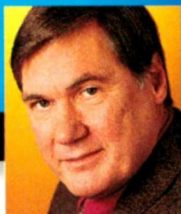
© Paradigm Electronics Inc. • Baxan Corp.

website: [www.paradigm.ca](http://www.paradigm.ca)

Don't miss  
the sonic experience  
of a lifetime, when  
the  tour stops  
in a city near you.

DATE:	CITY:	VENUE:
6/18	Toronto	Molson Amphitheatre
6/19	Montreal	Parc des Illes (Festival)
6/20	Quebec City	Hippodrome de Quebec
6/22	Virginia Beach	GTE Virginia Beach Amphitheatre
6/23	Washington DC	Nissan Pavilion
6/24	Pittsburgh	I.C. Light
6/25	Holmdel	PNC Arts Center
6/27	Camden	Entertainment Center
6/28	Scranton	Montage Mountain
6/30	Boston	Harbor Lights
7/1	Wallingford	Oakdale Theater
7/2	New York	Jones Beach
7/4	Rochester	Finger Lakes
7/5	Detroit	Pine Knob
7/6	Cincinnati	Riverbend
7/7	Cleveland	Blossom Amphitheater
7/9	Chicago	World Music Theater
7/10	Minneapolis	Moon Dance Jam Ranch
7/11	Milwaukee	Marcus Amphitheater
7/12	Indianapolis	Deer Creek
7/14	Denver	Fiddler's Green Amphitheater
7/15	Salt Lake City	E Center
7/17	Vancouver	GM Place
7/18	Seattle	The Winery
7/20	Reno	Reno Hilton
7/21	Concord	Concord Pavillion
7/22	San Diego	San Diego Open Air Theater
7/24	Los Angeles	Universal Amphitheater
7/25	Las Vegas	The Joint @ Hard Rock
7/26	Phoenix	Desert Sky
7/27	El Paso	Abraham-Chavez Theatre
7/28	Santa Fe	Paolo Soleri
7/30	Dallas	Starplex Amphitheatre
7/31	Houston	Woodlands
8/1	Austin	Backyard
8/2	San Antonio	Municipal
8/4	Memphis	Mud Island
8/5	Nashville	Starwood Amphitheatre
8/6	Atlanta	Chastain Park
8/7	Tampa	Ruth Eckerd/TPAC
8/8	Miami	Coral Sky Amphitheatre

Presented by:



# AUDIO Q&A

IAN G. MASTERS

## better FM

**Q.** *In my home office, I have an inexpensive bookshelf system I use to play CDs and the radio. The FM reception is somewhat spotty — even the strongest stations are occasionally too noisy to listen to. The antenna is a 3-foot length of wire, and if I move it around, reception sometimes improves, but not always. What can I do to improve it consistently?*

**Thomas Forshaw  
Birmingham, AL**

**A.** FM reception can be tricky. No one antenna orientation will work for all stations, and occasionally a position that works today may be noisy tomorrow.

You don't say whether your receiver has any provision for addition of an external antenna beyond the scrap of wire. If not, you're probably stuck with what you have and will have to continue fiddling with it, and cursing it some of the time.

If there are antenna connections, however, a T-shaped dipole or TV rabbit-ears antenna may do the trick, although it will require occasional reorienting, too. A number of companies make tunable and powered indoor antennas as well. Beyond that, a rooftop antenna is an option (an ordinary TV antenna fed through a signal splitter usually works fine). See "Clear Signals" on page 63 for a rundown on the different kinds of antennas available and how they perform.

## optical conversion

**Q.** *My CD player has a digital output, so when I bought a MiniDisc recorder with a digital input, I thought I'd be able to dub my CDs to MD in the digital domain. Then I found out that the CD output is coaxial while the MD input is optical. Is there any way to convert a digital audio signal from a coaxial output to an optical input, or do I have to replace one of the components to be able to record digitally?*

**Francisco Baker  
Washington, DC**

**A.** There's no easy way you can convert one to the other. I'm afraid — you'd have to buy another component that allows this, like a fully equipped DAT deck. But before you trash either device, I'd try dubbing through the MiniDisc's analog inputs. Most people can't hear any appreciable difference between an MD dub from an analog source and one from a digital source, and using the analog inputs does allow you to

vary the record level. One of the annoyances of all-digital recording is that the recorded level is always exactly the same as the source, but CDs vary all over the place when it comes to level, making for uneven-sounding compilation dubs. You might also consider buying an inexpensive CD player with an optical output, since its audio quality won't matter for dubbing purposes — you just want to get the data off the disc.

## digital pshhhh . . .

**Q.** *This has been bugging me for years: there is a strange kind of distortion on many digital recordings. Many people I know can't hear it, but it comes in loud and clear to me. It resembles a "pshhhh" sound, and it varies with the attack of the audio signal, especially on things like solo classical piano. Because of this, it will be a sad day indeed when analog audio is buried. What is this sound, and why does it exist?*

**Chris Hewitt  
Salisbury, MD**

**A.** More strange noises have been attributed to the digital recording medium over the years than I care to remember, and they invariably turn out to be caused by something else. Usually they involve something that is audible in a digital recording but masked in analog media.

It reminds me of the time when phono-cartridge design had advanced to the point where models began appearing that exhibited something like flat frequency response. A lot of people didn't like them; they were used to the old muted highs and thought the new cartridges sounded way too bright. That was especially true in the numerous cases where the recording engineers had goosed the highs on an LP to overcome the older cartridges' shortcomings. Some of those old recordings have survived into the CD age uncorrected, and they sound even worse now than they did then.

I'm not sure what it is you're hearing (although you're undoubtedly hearing something). It may be part of the normal transient of a piano, or it may be some sort of modulation noise in the recording mike's preamp, or it may be a resonance in your own speakers that's excited by the transient. Digital recording might reveal any of these, but it does not create them. If it were inherent in the process, it would affect every recording, not just some of them.

The one digital characteristic that will produce an effect like the one you describe





# SURROUNDS AMERICA

SPECIAL GUEST

ALAN  
PARSONS  
LIVE PROJECT

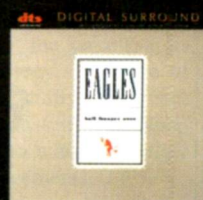
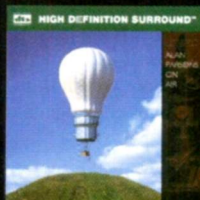
This summer, the legendary rock group YES is rewriting surround sound history! Sponsored by DTS Digital Surround, each concert will feature a unique audio technology that will catapult the YES experience into an amazing new audio dimension.

(Featuring: Jon Anderson, Steve Howe, Chris Squire, Alan White and Billy Sherwood)



# SURROUNDS YOUR LIVING ROOM!

The premier audio format for motion pictures, DTS Digital Surround now offers 5.1 channels of high-resolution music on a standard compact disc. Visit your local audio/video retailer today, and ask for a DTS music demonstration.



For more information, visit the  website @ [www.dtsonline.com](http://www.dtsonline.com)



## SIGNALS

KEN C. POHLMANN

# Passion Play

YOU AND I ARE alone together, and I think it's time we had a talk. You have carried your secret long enough — now you must unburden yourself.

Admit it. You're a technology junkie. The idea of owning the latest, coolest audio/video components gives you a secret thrill that surpasses what a chocoholic feels when a sundae dripping hot fudge is set on the counter in front of him. Nothing is sweeter to you than reveling in toys that your technology-reticent neighbors will discover only years from now. Your skin tingles with delight as you run your fingers across the manufacturing plates on the rear of each chassis, as if they were printed in Braille and you could read the low, low serial numbers that only the earliest units are privileged to carry.

Yet, like all great passions, yours carries a terrible price. Your perch on the leading edge is a precarious one. Your closet is stuffed with such orphans as a quadraphonic receiver, an Elcassette recorder, a DCC recorder, and other inventions that ignited too few imaginations beside your own. According to your therapist, you are compelled to buy every new offering because you are an "early adopter" — a textbook case, she says. You compulsively bet that this month's electronic toy is truly the next great thing. You acknowledge, without complaint, that you pay dearly as companies recoup their R&D costs with the high prices of first-generation components. What cost you \$1,000 last year will cost your shy neighbors a mere \$500 next year.

But the financial cost is nothing compared to your emotional turmoil. You live in a constant state of joy and terror, longing for the newest toy yet fearful that it will be incompatible with your almost-new toys, and thus you will fall behind the leading edge.

Each month you wait by the mailbox, impatient for the next copy of *Stereo Review*, both eagerly anticipating the latest news of what's ahead and deathly afraid of what obsolescence it will bring. Breathing heavily, you scan the colorful pages, fearful of signs that your quest for an audio/video system with everlasting life has again been quashed. Will this month's issue compel you to trickle down your equipment yet again, from the main lis-

tening room to the secondary listening room, from the master bedroom to the guest bedroom, from the patio to the garage and finally to the tool shed? Can your marriage possibly withstand another system upgrade? Is it time to buy a bigger house?

You took out a second mortgage last year to rebuild your main listening room, when you had it redesigned for home theater. You are temporarily in love with the eight speakers — two floor-standing behemoths for stereo listening and a 5.1-channel sub/sat system for movies — but some of the electronics gear is two years old and no longer stirs your passion. Also, you promised yourself new speaker stands this weekend. You treat your stereo system with respect, but the romance is gone; the CD player and tube amplifier are too mature for your tastes.

**When you're an early adopter on the bleeding edge, every technology deserves a deep and passionate commitment.**

It is home-theater components that really excite you! Your palms were moist when you bought your newest A/V receiver. You love your digital satellite receiver, and you're planning to surprise it with a dish heater next winter. The rear-projection TV, former love of your life, is slated for a demotion late this year, when you will take the digital-TV (DTV) plunge. It's the first in a series of wonderfully costly upgrades that the transition to digital will require. Then your eye catches your new DVD player, and you begin to tremble.

You rejoiced when you bought it, thrilled that you could abandon the laser-disc and start a new addiction. And the DVD picture is so alluring, the soft flesh tones beckon for you to touch them. Could a picture possibly be fairer? Surely the colors will look even more lifelike on your new DTV monitor! Then along came Divx, with the prospect of adding modems to DVD players and introducing a new kind of pay-per-view disc. Even if

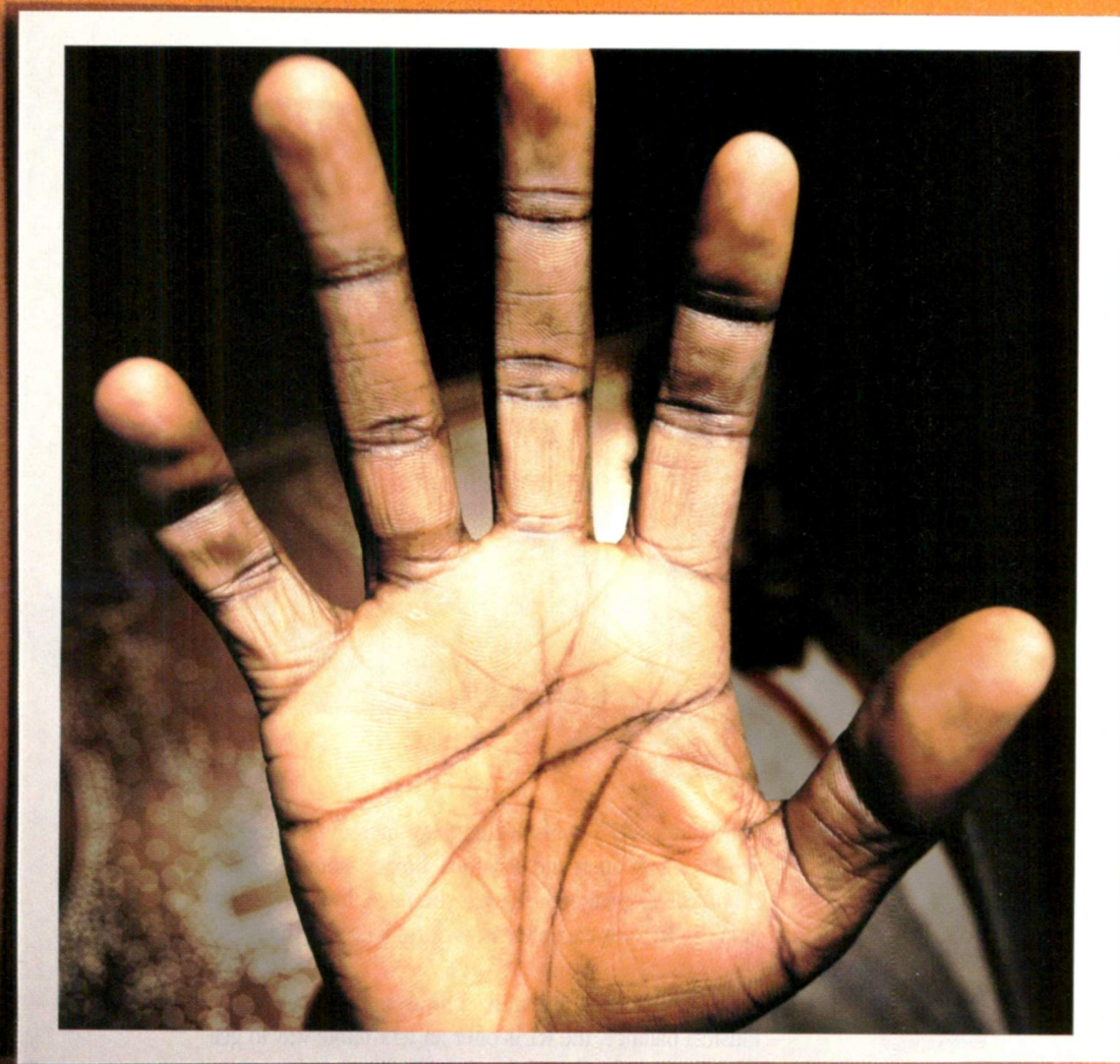
you could somehow resist a Divx player, you certainly couldn't resist the movies that will be released only in the Divx format. And how would you feel if Divx took off and you didn't have it? Could you endure that kind of utter dejection? You're eagerly saving for a Divx player so that you will be able to play your favorite DVD as well as Divx discs.

Now DTS has excited you to a new frenzy. Some people might say that DTS is a minor alternative to Dolby Digital, but when you're on the bleeding edge, every technology deserves a deep and passionate commitment. Thus you were careful to buy a receiver with a DTS decoder. But now you hear that DTS-encoded DVDs will not play on first-generation DVD players. Oh, the emotional highs and lows of an early adopter! How cruelly the manufacturers toy with your affections! Clearly, you'll need a new DVD player, one that can pass the DTS bit-stream to your receiver. Will anyone make a DVD player that is both Divx- and DTS-compatible? Kinky!

Then you think of the new audio formats on the horizon, DVD-Audio and Super Audio CD, and your heart begins to pound! Word has it that the new machines will play some portions of each other's discs, but not the all-important, highest-fidelity portions! For that, you'll need to buy both types of players. The opportunity to go with two new audio formats at once makes you shiver with delight. Oh — you could play them both together, one over the stereo system and one over the home theater! Or maybe you should go all the way and budget for a DVD-Universal player that would play both DVD-Video and DVD-Audio discs, but not Super Audio CDs. The permutations are endless, and you begin to calculate the number of new electrical outlets you'll need. Then there's all the different types of discs waiting for you. You feverishly imagine those hundreds of feet of new shelf space, naked and inviting, waiting for the jewel boxes that you'll adorn it with. Ecstasy! □



"I'VE MADE A  
CD AS UNIQUE  
AS I AM."



**NEW CD  
RECORDER**

**IT'S TIME TO MAKE YOUR OWN CD'S.**

At last you can record on CD from any music source and play back your own compilations on any CD audio system. The CDs you make are you. For more information, call 1-800-831-9191 or visit us at [www.acdr.philips.com](http://www.acdr.philips.com)



**PHILIPS**

*Let's make things better.*

POLK'S RT5 "SOUNDED  
**huge, beefy**  
AND VERY,  
**very musical"**

*Stereophile, April 1998*



RT5 loudspeakers are also superb in home theater setups. (Shown here with the CS225 and the PSW120).

Polk Audio's RT5 loudspeakers have incredible imaging... producing an open and spacious, boxless sound. If bookshelf speakers are what you need, look no farther than the RT5 for exceptional performance and value.

With their excellent dynamic contrast and believable musical balance, the RT5s offer an affordable way to get in touch with the music. So, sit back, listen and enjoy. The RT5s will make your heart *race!*

For an *astounding* demo, visit your nearest Polk™ dealer today. For more information about our products, visit us at [www.polkaudio.com](http://www.polkaudio.com) or give us a call at **1-800-377-7655**.

**polkaudio**  
The Speaker Specialists®

5601 Metro Drive, Baltimore, MD 21215

"Polk Audio", "Polk" and "The Speaker Specialist" are trademarks of Britannia Investment Corporation used under license by Polk Audio Incorporated.

Dealer Locator Number

☎ 1-800-992-2520  
Ad code: 10013

# Digital TV Demystified

Answers to the most common questions

by Jim Barry

Are you ready for high-definition *Geraldo*? Well, how about *World's Wildest Police Videos* with digital enhancements? Ready or not, digital television (DTV) broadcasts will finally begin later this year, long after digital technology has found its way into many other products, from compact discs to digital cameras and DVDs. It took a longer time for digital to get to TV because it takes a lot of computing power to convert video signals, especially live-action sports, into computer code — and because the Federal Communications Commission (FCC) took a whole decade to set a standard for digital TV transmission. So those of us who first heard about high-definition television (HDTV) back when it promised sharper, more realistic pictures of *St. Elsewhere* will be splattered with realism at *Chicago Hope* instead. Maybe.

In December 1996 the FCC finally approved a DTV standard that's as fuzzy as a *Seinfeld* plot, leaving a lot of room for interpretation and maneuvering on the part of broadcasters, cable companies, networks, satellite providers, computer companies, and other parties looking to mine gold in the new medium. Since the new standard is so imprecise and the new medium's potential is so great, the DTV landscape is still misty, leaving most of us with even more questions than before. Here are some of those most commonly asked, with the best answers we have today.

**I've been hearing for years about the coming of high-definition television. Now I hear about digital television. Is it the same thing?**

High-definition TV has indeed been in the works since the Reagan Administration. It was conceived initially to cre-

ate a new analog television transmission system that would deliver pictures as clear and sharp as in movies on film. Such a system was already far along in Japan and in development in Europe, so there was lots of political pressure for the U.S. to catch up.

The FCC asked for proposals, and many were submitted. In the process, engineers at General Instrument developed a radical proposal using digital technology. Soon all but one of the competitive bidders were converting video signals into bitstreams. When the only analog proponent, Japan's NHK, dropped out, the remaining competitors joined forces in a "Grand Alliance" to develop a single system for digital TV in the U.S. Some folks continued to use the terms DTV and HDTV interchange-

ably, but recently more precise definitions have emerged.

**All right, what's the difference?**

The new medium is *digital TV*, in which video programs are transmitted in digital form rather than as the analog waveforms that our conventional NTSC television system has been using for half a century. One of the things that can be done with this powerful digital technology, which transmits 19 megabits per second in a 6-MHz band, is to deliver a picture that's more than twice as good as the best one possible with the current analog system. That will be true *digital HDTV*.

But broadcasters may choose to deliver a less detailed picture and to use some of the available computing power to deliver more channels or other digitized information, whether related to the program or not. You will see this approach described as *standard-definition TV* (SDTV). It will look better than today's broadcasts because it will eliminate the ghosts and "snow" that often plague analog reception, but it will be several notches down from HDTV.

The Consumer Electronics Manufacturers Association (CEMA), the trade group for makers of video, audio, and other electronic products, has estab-



lished a set of standard definitions for the new digital television age. In order to be branded *HDTV*, a set must be capable of reproducing at least 720 scan lines (not the same as lines of horizontal resolution), a widescreen image (16:9 aspect ratio), and a Dolby Digital soundtrack as well as being able to receive all of the different formats allowed by the Advanced Television Systems Committee, an industry group.

**What kind of supplemental material might be sent along with the main TV program? Measurements of *Baywatch stars*? An explanation of how *Fran Drescher* got a prime-time series?**

Interesting ideas, and certainly possible, but think of what you can already do with WebTV or other set-top Internet boxes, like checking out the *Friends* or ABC News Web site during a commercial. That type of information can be sent right along with pictures and sound that will be better than we're used to now.

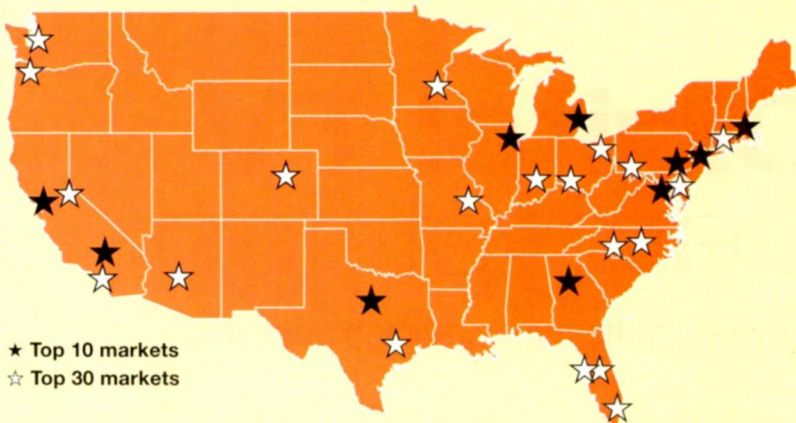
**When and where will DTV and HDTV broadcasts begin?**

The rollout will begin this fall in the Top 10 U.S. markets: New York, Los Angeles, Chicago, San Francisco, Atlanta, Dallas/Fort Worth, Boston, Detroit, Philadelphia, and Washington, DC. The FCC has ordered the CBS, NBC, ABC, and Fox stations and affiliates in those cities to construct digital facilities in time for the rollout, and by November 1999 all stations in the Top 30 markets will be required to have the necessary equipment up and running. The second tier includes Baltimore, Charlotte, Cincinnati, Cleveland, Denver, Hartford/New Haven, Houston, Indianapolis, Miami/Ft. Lauderdale, Minneapolis/St. Paul, Phoenix, Pittsburgh, Raleigh/Durham, San Diego, Seattle/Tacoma, St. Louis, and others (see map). By May 2002, all of the 1,600 or so TV stations in the nation will have to have digital facilities.

**What will be broadcast in digital?**

All four networks previewed their digital TV plans at the big National Association of Broadcasters (NAB) convention this spring. NBC and CBS said they would transmit the highest-quality HDTV pictures in parts of their prime-time schedules this fall, while ABC and Fox committed to delivering less sharp pictures (that is, SDTV-grade) in prime time. Some PBS stations, like WGBH in Boston, also plan to begin digital

DTV Broadcast Rollout Schedule



**TOP 10 MARKETS (30% of U.S. households) by May 1999**

- Atlanta
- Boston
- Chicago
- Dallas/Fort Worth
- Detroit
- Los Angeles
- New York
- Philadelphia
- San Francisco
- Washington, DC

**TOP 30 MARKETS (50% of U.S. households) by November 1999**

- Baltimore
- Charlotte
- Cincinnati
- Cleveland
- Denver
- Hartford/New Haven
- Houston
- Indianapolis
- Miami/Ft. Lauderdale
- Minneapolis/St. Paul
- Orlando/Daytona Beach/Melbourne
- Phoenix
- Pittsburgh
- Portland, OR
- Raleigh/Durham
- Sacramento/Stockton/Modesto, CA
- San Diego
- Seattle/Tacoma
- St. Louis
- Tampa/St. Petersburg/Sarasota

MAP COURTESY OF CEMA

broadcasts this fall. You'll probably see a few programs in true high-definition video and 5.1-channel sound in the evening and less at other times of the day, just as broadcasters switched back and forth between black-and-white and color TV programs in the 1960s.

**Is the HDTV picture really that good?**

Yes! In any of its many formats, it's better than today's TV, and when the technology is used to deliver optimum picture quality, it's spectacular. Our current TV system breaks the image into 525 horizontal scan lines, of which only 480 contain picture information. Digital HDTV is capable of 1,080 scan lines, which is twice the 525-line vertical resolution of our current NTSC format, although broadcasters may choose to deliver a lower-quality picture and use the bandwidth they save to send other information. They may also send the video signal using either progressive or interlaced scanning (more about that later).

**What else will DTV offer besides a great picture?**

We already mentioned some of the Web-like data you'll be able to access, but one of the best elements of the new system is going to be digital surround sound. The HDTV standard includes 5.1-channel Dolby Digital as the standard soundtrack, and when the viewing public gets a listen to movies at home with digital surround sound, they're going to say, "Wow!" And when college and pro football, baseball, auto racing, and the Super Bowl start appearing in homes on wide screens with 5.1-channel sound, sports fans will start clamoring for HDTV the way they've embraced small-dish satellites.

**Will my current TV set still work? Will I have to buy a new one? Can I buy a converter box?**

Yes, no, and yes. The current system of analog TV broadcasting will continue until at least 2006, which is the year that the FCC

and Congress initially set as the target for a complete changeover from analog to digital broadcasting. That was reconsidered, however, and now stations are expected to be able to continue analog broadcasts until 85 percent of households in their viewing area have purchased digital sets.

Whenever the day arrives that analog broadcasts end, if you *haven't* purchased a new digital TV you'll need an inexpensive converter box to translate the digital signals for your existing analog TV. Most of us will probably purchase a new set in the next ten years anyway, and half a dozen years or so from now, once the prices of digital TVs come down, digital sets will overtake analog ones in sales volume.

But if you've just purchased a new TV, don't worry about analog broadcasts ending sometime in the future — your set will still work for a good long time. In addition to at least eight more years of analog network broadcasts, cable and satellite systems are likely to be sending analog signals for the lifetime of any existing NTSC TV set. And VCRs as well as laserdisc and DVD players will work with the new TV sets for the rest of their useful life.

#### **How 'bout the flip side? Will I be able to get the old analog signals on my new digital TV?**

Yes, for a few years anyway. The first generation of digital TVs will include analog tuners, so you can still watch *America's Funniest Home Videos* and other programs being broadcast in the old format without switching TVs.

#### **How much will a DTV set cost? When will the prices come down?**

Well, there are those who say HDTV stands for "High Dollar Television," and there's good reason for that impression. The first sets to arrive in stores this fall are expected to carry prices in the \$6,000 to \$10,000 range. At the Consumer Electronics Show in Las Vegas this past winter, for instance, RCA showed a 60-inch projection model with a \$7,000 price tag. But the good news is that the prices will probably come down pretty quickly. Digital products have historically halved in price every eighteen months, and TV prices have continued to drop for decades even as almost everything else has risen with inflation. Combine those two trends, and digital TV prices should be within reach of the majority of us in a few years.

#### **Will I be able to get HDTV on my multi-media computer?**

Maybe. It seems certain that you'll be able to receive some level of SDTV on computers. But there's a movement afoot, led by Microsoft and some cable titans, that would limit the picture's vertical resolution to 480 lines using progressive scanning (480p), as opposed to the HDTV potential of 1,080 lines with interlaced scanning (1080i).

#### **Progressive? Interlaced? What's the difference?**

Video images are produced by an electron gun scanning a series of horizontal lines onto the inside of the picture tube. Our current NTSC television system uses "interlaced" scanning, in which the gun scans *every other line* on its first pass (1, 3, 5, 7, 9 . . .), then comes back and fills in the even lines to complete the total of 525 lines in a video frame. In "progressive" scanning, until now used primarily in computer monitors, each of the lines is scanned *sequentially* (1, 2, 3, 4, . . .). In an effort to satisfy all of the competing interest groups involved with DTV, the standard approved by the FCC includes fourteen progressive-scan formats and four interlaced-scan formats. So if you buy a TV with the CEMA-approved DTV logo on it, you can be sure that it will handle any of the various formats that broadcasters, cable systems, or satellite systems may use.

#### **I heard that HDTV sets will look different, with a movie-like screen. Why do I need widescreen now that Oprah's lost weight and Roseanne and John Goodman no longer have to fit together on the screen?**

The widescreen format will naturally be an advantage for feature films, which will no longer have to be altered to fit into a narrower TV screen. And it will also provide an entire new dimension for sports on television, with more of the field in view.

#### **Will I get HDTV through my cable? Through my satellite dish? Rooftop or set-top antenna?**

A definite maybe on the cable question. Whether you get HDTV or even digital SDTV is up to the individual cable operators, which would have to install new cable boxes in their customers' homes. There are hundreds of cable companies nationwide, although a few giants — notably TCI, Time Warner, Cablevision, and Cox — control more

than half the market. TCI, along with Microsoft, has been loudly promoting a 480p SDTV format, suggesting that viewers don't need any better picture quality and will want lots of other ancillary data instead. On the other hand, Cablevision and at least one cable programmer, HBO, are on record as supporting true HDTV.

HBO is also delivered on satellite, of course, and DirecTV, one of the two delivery services for DSS, says that it will begin sending HDTV this fall. You'll need a new DirecTV box for it, but if you buy a new widescreen HDTV set, that'll be another route to optimum picture and sound quality.

Perhaps the best news is for those of us who receive television through either a set-top or rooftop antenna. Since the new digital signals will be broadcast on the VHF and UHF Channels 5 to 60, you'll be able to use your existing antenna for DTV, too. We could be in for a new golden age of broadcast TV.

#### **Will my VCR, DVD player, and other video gear work with an HDTV set?**

Yes and no. In addition to their digital tuners, the early DTV sets will include NTSC tuners to receive analog broadcasts, which will be compatible with current-generation analog and digital video machines. At some point in the future, however, DTV sets will not be compatible with analog NTSC video without a converter box. As for the digital DVD format, because its data rate is only half that of DTV, the discs cannot store an HDTV video program.

#### **Don't they already have DTV in Japan? Will ours be different?**

Yes, it's different. Japan has been broadcasting analog HDTV for a decade using the NHK system, which was an early contender to become the U.S. standard but dropped out when the Grand Alliance formed. Since the Japanese system is analog, it isn't as flexible or as easily upgradable as a digital system.

There is a possibility that the U.S. standard will be embraced globally in the coming years. Korea has already adopted it, and the technology has been demonstrated in China, Australia, and Europe. Nevertheless, a different digital system is being launched in Britain and Europe, and given international politics and the experience of three or more analog TV standards co-existing for the past half century, a true global standard may be a long time coming. It's an evolving scenario, so stay tuned. □

# See Bob Rock.

The new Sunfire *True Subwoofer* by Bob Carver has received reviews that are redefining the subwoofer industry.

*There has never been a subwoofer like it!*

There will never be a subwoofer like it!\*

*It's a small eleven inch square  
bass cube, and it shakes the  
walls and rattles the  
rafters. It has its  
own built-in two  
thousand, seven  
hundred watt amp!*

**Trust Bob.  
It Rocks!**

SUB REVIEWS



"The True Subwoofer is an achievement on par with the space shuttle and the twinkie."

—Al Griffin

Home Theater, Feb, 97



"Talk about floor shaking bass...turned up to maximum level, I don't think there was anything in the house that wasn't shaking, including the concrete foundation!"

"Don't, I repeat, don't even think about purchasing another subwoofer without giving the Astonishing True subwoofer a listen"

—Joseph M. Cierniak

The Sensible Sound, Issue # 60



"The lowest, flattest, deepest bass I have EVER heard or measured."

—Julian Hirsh

Stereo Review, Dec. 96



<http://www.sunfirelabs.com>

Bob Carver's  
**Sunfire**  
from his mind ... and soul

\*Strictly speaking: for 20 years or until patent expires.





# Denon DMD-1000 MiniDisc Recorder

DAVID RANADA, TECHNICAL EDITOR

**D**enon is a substantial force in the professional MiniDisc market, and it's nice to find the company applying its mix of well-considered features and good engineering to a consumer-level MD recorder such as the DMD-1000. Although the DMD-1000 has a consumer-level price, it still seems to have inherited quite a bit of professionalism.

There's no question that it is loaded with features. Nearly every useful feature I've encountered on other MD machines appears here, too. There's a full suite of editing functions for reordering, deleting, dividing, and combining recorded tracks. You can add alphanumeric titles to a disc and tracks using the supplied remote control or the multipurpose knob at the bottom right of the front panel. When you're selectively deleting or dividing a track, the knob moves the edit points in increments of 12 milliseconds. And in playback it becomes a jog dial for cueing rapidly from track to track.

The DMD-1000 has a built-in sampling-rate converter that automatically senses a digital audio signal coming in at a 32- or 48-kHz sampling rate and converts it to the 44.1-kHz rate stan-

dard for MiniDiscs as well as CDs. The recorder has one coaxial and two optical digital inputs and one set of analog inputs, all selected by a front-panel switch. While digital output is available only via an optical connector, there is also one set of analog line-level outputs and a front-panel headphone jack with its own volume knob.

The front-panel readout is a vacuum-fluorescent device whose level meters quite accurately indicate the onset of overload when the deck is recording through the analog inputs. The only feature I really missed was an automatic no-signal cutoff for digital dubbing. If the source disc is shorter than the target MD, the deck will fill the MD with silence at the end of the music.

## FAST FACTS

**DIMENSIONS** 17 $\frac{1}{8}$  inches wide, 5 $\frac{1}{4}$  inches high, 13 $\frac{3}{8}$  inches deep

**WEIGHT** 14 pounds

**PRICE** \$599

**MANUFACTURER** Denon Electronics, Dept. SR, 222 New Rd., Parsippany, NJ 07054; phone, 973-575-7810; Web, www.del.denon.com

The manual is complete, very well organized, and nicely illustrated. It includes a complete listing of the front-panel messages that the recorder can display, including the ominous-sounding "impossible," which indicates that an editing operation can't be done.

I never encountered "impossible" in my use of the DMD-1000, but I made only simple demands of its editing features. Error messages during editing are likely only when you move or delete many short segments of signal, as in complex editing jobs such as assembling a complete track out of many short alternative "takes" from a studio-type recording session. While most users will never stress their recorders that hard, it's nice to know that the DMD-1000 can handle such tasks, and with far greater editing control than DAT, recordable CD, or analog tape afford. Only a PC-based audio workstation is more flexible.

For the critical amateur recordist as well as the occasional disc-dubber, the DMD-1000 offers excellent sonic performance, as evidenced by my lab and listening tests. Its input and output facilities offer several different combinations of connections. I decided to test all of them in the lab and ended up producing an unusually extensive set of measurements.

The playback-only results give an indication of performance with the rare (in North America) prerecorded MD and, to some extent, MDs recorded on other machines. But our numbers derive from a standard computer-generated recording of MD test signals that are

"undithered," which means they are inherently distorted. In our tests, these signals produced noise levels that are also below the theoretical limits of what can be obtained with "real" music signals. Therefore, the playback-only results for distortion and noise should not be compared with the other data given below.

On the whole, the data show performance ranging from excellent to superb, but there are a few subtleties hidden behind the numbers. For example, the analog-input noise levels are a couple of decibels better (more negative) than the theoretical performance of a 16-bit digital audio system. This indicates that the DMD-1000 is capable of greater-than-16-bit resolution. Its performance here is a considerable improvement over the first MD machines, whose dynamic range barely matched the 16-bit resolution of the CD system.

Ideally, an MD recorder should be sonically transparent to all the signals it records. My listening tests showed that with extremely critical program material the DMD-1000 was very transparent but not absolutely so — that is, excellent but not perfect.

On the other hand, let me illustrate

just how critical that program material has to be. Using music to show up the deficiencies of the MiniDisc format's ATRAC data-compression system requires a source recording of an instrument that releases high-level bursts of harmonically related high frequencies. And it must be very cleanly recorded so that the subtle fuzzing of initial transients produced by ATRAC encoding will not be confused with the deficiencies of the source recording.

Those requirements led me, after a dozen false leads, to the complete harpsichord music of Jacques Duphly (1715-1789) as played by Yannick Le Gaillard on an imported ADDA four-CD set. That's how esoteric I had to get in order to hear — just barely, and only sometimes, in direct comparisons with the original CD — the subtle sonic degradation introduced by the DMD-1000. Recordings of other demanding instruments, like marimbas, xylophones, and glockenspiels, produced similar results. With more popular material — and practically anything is more popular than Duphly! — it was impossible to reliably distinguish a dub made and played on the DMD-1000 from the original, even in direct comparison.

A comparison of the DMD-1000's dub of the Duphly CD with a copy of the same material made on one of the first MD recorders we tested (which we've kept around for precisely this purpose) demonstrated that the DMD-1000's sound quality is clearly superior. If the results I obtained with this MD recorder are any indication, industry claims of improvements in the sound quality of the MD format are valid.

The DMD-1000 was clearly able to produce recordings of much higher fidelity than even a top-quality cassette deck using Dolby S. I'd even go so far as to say that it produces cleaner recordings than professional analog tape recorders, since it has no wow or flutter and its distortion and noise levels are much lower. Sonically, the Denon DMD-1000 ran a very close second to the best DAT and CD recorders we've tested, and it greatly surpasses them all in ease of use, durability of recording medium, and editing facilities. It is, in fact, overqualified for the popular but relatively mundane task of making CD dubs. It should be seriously considered for use in amateur live-recording and studio work, which is not too surprising considering its heritage. □

## MEASUREMENTS

### Record/Playback Performance

Unless otherwise noted, all digital input signals were dithered and at 44.1-kHz sampling rate with 16-bit data.

### DIGITAL INPUT/ANALOG OUTPUT

#### Frequency response

48-kHz . . . . . 20 Hz to 20 kHz +0.09, -0.01 dB  
44.1-kHz . . . . . 20 Hz to 20 kHz +0.09, -0.01 dB  
32-kHz . . . . . 20 Hz to 15 kHz +0.05, -0.01 dB

#### Noise (A-wtd, re -20 dBFS\*)

normal (de-emphasis off) . . . . . -76.1 dB

#### Distortion (1 kHz, THD+N)

at 0 dBFS\* . . . . . 0.007%  
at -20 dBFS\* . . . . . 0.033%

#### Linearity error (at -90 dBFS\*) . . . . . -1.35 dB

#### Excess noise (without/with signal)

16-bit (EN16) . . . . . 0/2.25 dB  
quasi-20-bit (EN20) . . . . . 15/15.9 dB

### DIGITAL INPUT/DIGITAL OUTPUT

#### Frequency response

20 Hz to 20 kHz +0.01, -0.02 dB

#### Noise (A-wtd, re -20 dBFS\*)

normal (de-emphasis off) . . . . . -75.7 dB

#### Distortion (1 kHz, THD+N)

at 0 dBFS\* . . . . . 0.0032%  
at -20 dBFS\* . . . . . 0.00154%

#### Linearity error (at -90 dBFS\*) . . . . . 0 dB

#### Excess noise (without/with signal)

16-bit (EN16) . . . . . 0 dB  
quasi-20-bit (EN20) . . . . . 14.21/14.21 dB

### ANALOG INPUT/ANALOG OUTPUT

#### Sensitivity (with record volume full up)

0 dBFS\* obtained with a 214-mV input signal

#### Frequency response

20 Hz to 20 kHz +0, -0.17 dB

#### Noise (A-wtd, re -20 dBFS\*) . . . . . -78.5 dB

#### Distortion (1 kHz, THD+N)

at 0 dBFS\* . . . . . 0.039%  
at -20 dBFS\* . . . . . 0.032%

#### Linearity error (at -90 dBFS\*) . . . . . -1.1 dB

### ANALOG INPUT/DIGITAL OUTPUT

#### Frequency response

20 to 20 kHz +0, -0.09 dB

#### Noise (A-wtd, re -20 dBFS\*) . . . . . -78.3 dB

#### Distortion (1 kHz, THD+N)

at 0 dBFS\* . . . . . 0.041%  
at -20 dBFS\* . . . . . 0.015%

#### Linearity error (at -90 dBFS\*) . . . . . 0 dB

\* decibels referred to digital full-scale.

### Playback Performance

Test signals from Sony TGYS1 test MD. The signals were undithered and produce anomalous results for noise, distortion, and linearity (see text).

### ANALOG OUTPUT

#### Maximum output level. . . . . 1.88 volts

#### Frequency response

20 Hz to 20 kHz +0, -0.05 dB

#### Maximum de-emphasis error

-0.54 dB at 16 kHz

#### Noise (A-wtd, re -20 dBFS\*)

normal (de-emphasis off) . . . . . -88.8 dB

#### Distortion (1 kHz, THD+N)

at 0 dBFS\* . . . . . 0.004%  
at -20 dBFS\* . . . . . 0.034%

#### Linearity error (at -90 dBFS\*) . . . . . -1.75 dB

### DIGITAL OUTPUT

#### Frequency response

20 Hz to 20 kHz +0.01, -0.05 dB

#### Noise (A-wtd, re -20 dBFS\*)

normal (de-emphasis off) . . . . . -103.4 dB

#### Distortion (1 kHz, THD+N)

at 0 dBFS\* . . . . . 0.0042%  
at -20 dBFS\* . . . . . 0.018%

#### Linearity error (at -90 dBFS\*) . . . . . -2.2 dB



# JVC RX-884V Dolby Digital Receiver

DANIEL KUMIN, START LABORATORIES

**T**he first JVC receiver to carry Dolby Digital on board, the RX-884V, is an interesting design with a number of unusual features. It also offers a generous surround-mode power rating of 100 watts to each of its five channels into 8 ohms; the two-channel (stereo) power rating is 120 watts per channel. Unfortunately, our test sample revealed a handful of performance lapses, and while some of them might prove too subtle for casual users to notice, they were serious enough that I cannot overlook them (more on these later).

The receiver's front panel is generally conventional, with the usual pushbutton controls and gold-on-black, semi-illegible lettering. Less universal is the front set of A/V convenience inputs, which includes an S-video connection. Two large knob controls are marked Source and Multi-Jog. The Source knob works something like an old-fashioned rotary selector switch, but electronically; there are no stops, and it endlessly cycles through the receiver's ten input options. The Multi-Jog knob is a "data-wheel" whose function is determined by a half-dozen adjacent pushbuttons. Depending on which of these is pressed, it either selects among options, such as surround modes, or adjusts parameters,

such as relative channel levels. And in tuner mode it functions like an old-fashioned tuning dial, though with a digital readout.

There are no conventional tone controls. Instead, the RX-884V includes a Sound Effect Amplifier (SEA). In essence this is a bass-midrange-treble tone control with several preset equalization curves (labeled SEA Rock, SEA Country, and so on) and one user-adjustable EQ curve with bands defined at 100 Hz, 1 kHz, and 10 kHz.

Elsewhere on the front panel are switches for two sets of main (left/right) speakers and a headphone jack. The dot-matrix display is generally clear and informative. The RX-884V also provides quite an extensive on-screen display, with multicolor backgrounds, big, readable text, and a few simple icons. Virtually all functions and setup para-

eters are adjustable on screen using the supplied remote control's four-way cursor keys. Several features are implemented *only* via on-screen menus, such as assigning names to radio presets and operating JVC's proprietary Text Compu-Link inter-component communications system.

Briefly, this system permits disc and track titles and artist information from CDs encoded with the new CD-Text enhancement to be passed from a compatible late-generation JVC CD player to the receiver for display on a connected TV. It also enables users to display disc data they created using compatible JVC CD and MiniDisc gear.

The RX-884V's audio and video connections are generous: three audio-only inputs, including phono and a tape loop, and five A/V inputs (counting the one on the front panel), two of them recording loops. All but one of the A/V inputs (VCR-2) are equipped with both S-video and composite-video jacks. There are two optical digital inputs and one coaxial, which I consider to be about the minimum acceptable complement. There's no AC-3/RF input, which means that you'd need an outboard demodulator to decode Dolby Digital laserdiscs, a common compromise among entry-level digital A/V receivers.

Digital-input selection is a bit odd. One of the front-panel Settings control's steps is "Digital-In," which enables the Multi-Jog knob to cycle through twelve of the thirty-six possible assignments of the receiver's three digital input connections to its four relevant input selections: CD, DVD, DBS (digital broadcast satellite), and MD. Obvious-

## FAST FACTS

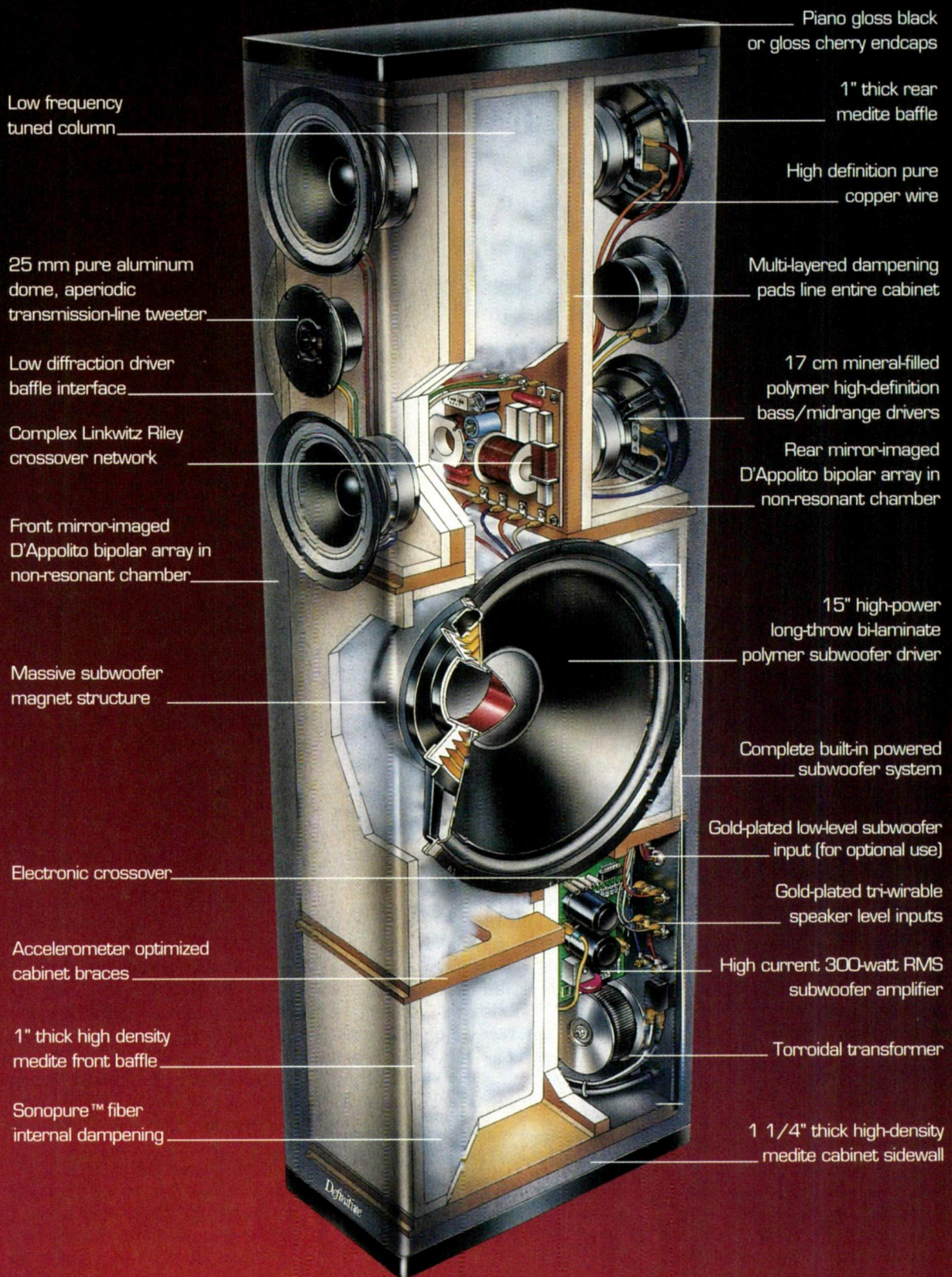
**DIMENSIONS** 17¼ inches wide, 6¼ inches high, 16¼ inches deep

**WEIGHT** 26¼ pounds

**PRICE** \$550

**MANUFACTURER** JVC, Dept. SR, 41 Slater Dr., Elmwood Park, NJ 07407; 800-252-5722; Web, [www.jvc.com](http://www.jvc.com)

# The Advanced Technology Inside Definitive's BP2000



**"...I would choose these speakers for myself."**

**-Julian Hirsch, *Stereo Review***

# Definitive's Bipolar Superspeakers Triumph in Triple Speaker-of-the-Year Grand Prix Victory!

*"The first speaker I have been able to audition in my own familiar surroundings that has given me that special thrill that usually costs ten or more times its price to obtain."*

—Julian Hirsch, *Stereo Review*, USA

## **"Absolutely Unsurpassed"**

—*Prestige HiFi, France*

Our unprecedented Grand Prix triumph confirms what the world's top reviewers all know: that our amazing BP2000, BP2002 and BP2004 combine highly advanced technology and superior build quality to achieve truly unsurpassed sonic performance plus unequalled value.

## **"Literally Staggering"**

—*Home Theater, USA*

Definitive's revolutionary BP2000, BP2002 and BP2004 combine our incredible bipolar technology with dual built-in high-powered subwoofers (BP2000: 15"/300 watts/\$1499 ea., BP2002: 12"/125 watts/\$999 ea., BP2004: 10"/125 watts/\$749) for extraordinary sound quality beyond anything you've ever heard.

## **"The Best Performance You Can Get"**

—*V.T.V., England*

Both music and movies are reproduced with outstanding purity, transparency and life-like realism. And the astounding high resolution imaging, magnificent soundstaging, awesome bass and explosive dynamic impact will totally envelop you in sonic ecstasy. Yes, these speakers are simply amazing!



Definitive's award-winning BP2000, BP2002 and BP2004 Home Theater Systems all combine our revolutionary bipolar technology with two awesome built-in powered subwoofers for unsurpassed performance.

See our dealer list on page 38

## **"Most Spectacular Speakers Ever... Amazing Music and Home Theater"**

—*HiFi Review, Hong Kong*

In addition to being an audiophile's dream, the BP2000, BP2002 and BP2004 are also the main speakers in Definitive's Ultimate Home Theater Systems. These astonishing systems are absolutely the finest sounding available. They recreate a "you are there" virtual reality that actually puts you into the sound-space of the original cinematic action.

## **"Astounding...The Stuff of Dreams"**

—*Home Cinema Choice, England*

Experts agree that these complete Dolby Digital AC-3\* and DTS\* ready home theater systems will deliver the ultimate listening experience in your home. They combine BP2000s, BP2002s and BP2004s with our perfectly timbre-matched center and rear surround speakers. Awesome dual powered subwoofers are already built into the sleek towers. Experience these Grand Prix award-winning superspeakers today!

**Definitive Technology®**  
*The Leader in High-Performance Loudspeakers™*

11105 Valley Hts. Dr. • Baltimore, MD 21117 • (410) 363-7148  
Visit us at <http://www.definitivetech.com> \*Registered trademark

ly, not every combination is available, but there should be enough to meet most needs.

Banana-plug-compatible terminals serve all five speaker outputs, but only the front left and right channels use U.S.-standard spacing. There are no preamplifier (line-level) outputs other than the subwoofer's. A switch near the speaker terminals, labeled Speaker Load Selector, has two positions, Low 4-6 and High 8-16 (more on this later).

I set up the RX-884V according to my usual practice, connecting it to a five-speaker suite comprising B&W Model 803 Series 2 left and right front speakers, a B&W HTM center speaker, and Citation Model 7.3 dipole/bipole surrounds. As usual, I drove all of these speakers full-range to stress the receiver's power outputs as fully as possible,

though for part of my listening tests I also connected a powered subwoofer and activated the receiver's crossovers.

And these induced my first surprise: the receiver's center channel operated in "small" mode — with the low frequencies rolled off and added to the front left/right channels, or to the subwoofer output when that's dialed in at setup — regardless of whether the surround-mode parameter for the center speaker was set to "small" or "large." (The surround-channel "small"/"large" option worked correctly.)

Most home-theater systems should use the "small" center setup mode anyway, to avoid stressing the smaller woofers in most center speakers, so this glitch will be unimportant to typical users. But if you are one of the few who have a large center speaker and

prefer the "center-large" setup for its better balance and spatial realism on male voices and some other material, you'll be out of luck.

In actual use the JVC receiver performed quite well in many respects. Power output (with the load switch set to High) was ample all around. Dolby Pro Logic decoding was generally accurate and smooth, though the surround channels seemed a bit "lumpier" and quite a bit noisier than with the best digital Pro Logic decoders.

Dolby Digital (DD) performance was generally good, delivering plenty of clarity and punch on most program material. The DD dynamic-range control has two positions (many DD receivers in this price range have only on/off), although you have to travel through the setup menus to select or defeat them.

## MEASUREMENTS

### DOLBY DIGITAL (AC-3) PERFORMANCE

All data obtained from Dolby Labs' AC-3 test DVD using "small" speaker settings. Reference levels are 1 watt output with a -20-dBFS\* input unless otherwise stated.

#### Output at clipping into 8 ohms

(1 kHz, Speaker Load switch set at High)  
 one channel driven (front) .....108 watts  
 one channel driven (surround) .....101 watts  
 five channels driven (8 ohms) .....76 watts

#### Output at clipping into 4 ohms

(1 kHz, one channel driven, Speaker Load switch set at High/Low)  
 front left .....166/38 watts  
 front right .....163/38 watts  
 center .....47/22 watts  
 surround .....45/23 watts

#### Distortion at 1 watt (THD+N, 1 kHz)

8 and 4 ohms (worst case) .....0.4%

#### Noise (A-wtd)

worst case (left front) .....-62.2 dB

#### Excess noise (worst case, with signal)

16-bit (EN16) .....13.5 dB

#### Frequency response (worst case)

right front .....25 Hz to 20 kHz +0.1, -1.8 dB

#### Channel imbalance (individual channels set at 0-dB gain)

.....1.5 dB spread at 1 kHz

#### Subwoofer output frequency response

18-dB/octave rolloff above 74 Hz

#### High-pass filter frequency response (with crossover set to 80 Hz)

12-dB/octave rolloff below 80 Hz

#### Max. unclipped subwoofer output

.....1 volt

#### Subwoofer distortion

(worst-case signals; master volume at -6, subwoofer trim at 0 dB) ..... 10%

\* decibels referred to digital full-scale

### DOLBY PRO LOGIC PERFORMANCE, ANALOG INPUTS

Reference input signal levels for noise and distortion measurements are 141.4 mV for the center and surround channels, 200 mV for remaining speakers; subwoofer off.

#### Frequency response

front .....20 Hz to 20 kHz +0, -1.5 dB  
 center .....120 Hz to 20 kHz +0, -1.5 dB  
 surround .....20 Hz to 7 kHz +0, -3 dB

#### Noise (A-wtd)

worst-case (surround) .....-59 dB

#### Distortion (THD+N, 1 kHz, 1 watt)

worst-case (surround and center) .....0.3%

#### Surround-decoder input-overload margins

(analog inputs, at 1 kHz)  
 front (re 2-volt input) .....+1.3 dB  
 center (re 1.4-volt input) .....+4.5 dB  
 surround (re 1.4-volt input) .....+1.5 dB

#### Channel separation (worst-case)

left surround out, right front driven .....43 dB

### STEREO PERFORMANCE, DIGITAL INPUTS

Reference volume setting for noise is the same as for Dolby Digital; subwoofer off.

#### Linearity error (at -90 dBFS\*)

.....-2 dB

#### Noise (A-wtd)

.....-69 dB

#### Excess noise (without/with signal)

16-bit (EN16) .....11/11 dB

#### Tone-control range

100 Hz and 10 kHz .....±9 dB

#### Frequency response (tone controls at detents)

normal (de-emphasis off)  
 20 Hz to 20 kHz +0, -1.4 dB

### STEREO PERFORMANCE, ANALOG INPUTS

#### Output at clipping

(1 kHz; both channels driven)  
 8 ohms .....135 watts  
 4 ohms (High/Low impedance) .....197/38 watts

#### Clipping headroom

(re 130-watt, 8-ohm rating) .....+0.5 dB

#### Dynamic power

8 ohms .....148 watts  
 4 ohms .....208 watts

#### Dynamic headroom

(re 100-watt, 8-ohm rating)  
 8 ohms .....1 dB

#### Distortion (THD+N, 1 kHz)

at rated power (130 watts, 8 ohms) .....0.1%  
 at 1 Watt (8 and 4 ohms) .....0.01%

#### Sensitivity (for 1 watt at max volume)

CD input .....19 mV

#### Input overload level

(re 2-volt input, surround off)  
 CD input .....3.5 dB

#### Analog input frequency response

20 Hz to 20 kHz +0, -0.4 dB

### TUNER SECTION

All figures for FM except frequency response.

#### Sensitivity (50-dB quieting)

mono .....26 dBf  
 stereo .....48.2 dBf

#### Noise (at 65 dBf)

mono .....-76 dB  
 stereo .....-71 dB

#### Distortion (THD+N at 65 dBf)

mono .....0.23%  
 stereo .....0.28%

#### Capture ratio (at 65 dBf)

.....1.3 dB

#### AM rejection

.....66.9 dB

#### Selectivity

alternate-channel .....53.8 dB  
 adjacent-channel .....3 dB

#### Channel separation (1 kHz)

.....56.7 dB

#### Frequency response

FM .....30 Hz to 15 kHz +0.8, -4.1 dB  
 AM .....79 Hz to 2.45 kHz +0.2, -6 dB

# “Definitive’s Subwoofers Win Grand Prix Award for the 4th Straight Year!”

*You must hear our new \$699 PF 15TL subwoofer with a 325-watt amp and 15" woofer for earth-shaking 17 Hz response that will supercharge your system!*

## “Subwoofer of the Year”

— *AudioVideo International*

Year after year our Grand Prix triumphs prove Definitive builds the world’s finest sounding subwoofers, with the perfect synergy of powerful, earth-shaking bass and a refined, expressive musicality.

## “Shook the Concrete Floor”

— *Stereo Review*

Advanced technology, superior engineering and better build quality are the reasons why Definitive subwoofers sound the best. First, we developed PowerField Technology for superior high-power coupling and unexcelled transient detail. Next, we engineered beautiful rock solid monocoque cabinets which house our high-power, high-current amplifiers, fully adjustable electronic crossovers and massive 10", 12", 15" or 18" drivers.

The result is the ultimate in subwoofer performance: awesome bass which thunders to below 15 Hz with complete musical accuracy for your total enjoyment.



*Definitive’s 4 time Grand Prix Award winning subwoofers all combine explosive power with refined musicality to achieve the ultimate in bass performance for your own home theater.*

## Audition Them If You Dare!

Discover the unmatched musical performance and explosive power of Definitive’s PowerField subwoofers for yourself. Brent Butterworth of Home Theater called them “Godzilla-esque,” and England’s *Home Cinema Choice* raved, “...full and effortless with an astounding low extension; so tight, controlled and room-shaking was this bass!”

## Get Explosive Bass from \$449

Six extraordinary new Definitive AC-3+ and DTS+ ready powered subs are now available: the PF 1800 (500 watts, 18" at \$1599), PF 18TL (325 watts, 18" at \$999), PF 1500TL (325 watts, 15" at \$899), PF 15TL (325 watts, 15" at \$699), PF 12TL (125 watts RMS, 12" at \$549) and ProSub100 (125 watts, 10" at \$449). They are all superb. You must hear them today!

**Definitive Technology**  
*The Leader in High-Performance Loudspeakers™*

11105 Valley Hts. Dr. • Baltimore, MD 21117 • (410) 363-7148  
Visit us at <http://www.definitivetech.com>. \*Registered Trademark

The RX-884V's "extra" surround modes include one called Headphone and three variants of 3D Theater, all of them two-channel, "virtual-surround" modes; 3D Digital worked quite well if I carefully positioned the two speakers and adjusted my own listening position accordingly. The other ambience modes — such as Hall, Pavilion, Live Club, and the like — lack any adjustable parameters, and several include rather boingy reverberations in all active channels. I found that the results did not enhance serious music listening.

In addition to the Text Compu-Link feature described earlier, the RX-884V incorporates JVC's "regular" Compu-Link and A/V-Compu-Link protocols, with all the appropriate connectors on its rear panel, enabling extensive "smart-remote" interactions and one-touch functions. I liked the feel of the supplied remote quite a bit. Its buttons are sensibly arranged with reasonable spacing, and the labels are easy to read. The handset operates many JVC components out of the box and is preprogrammed with codes for many popular brands of TVs, VCRs, cable boxes, and satellite receivers — yay! But its DVD functions work only for JVC players — boo, hiss!

As already mentioned, despite its virtues the RX-884V exhibited a few significant performance flaws. The most serious was audible noise and distortion with low-level program signals when any of the surround modes were engaged — including Dolby Digital and Pro Logic. The low-level noise and distortion imposed a transient fuzziness on softer, subtly dynamic sounds, and this combined with a modulating background "graininess" to result in a sort of sonic grunge that was audible from time to time in all channels, even at moderate listening levels, especially with quiet solo-piano recordings.

The piano music of Schumann, a personal favorite, is particularly good for this sort of test, and Andreas Haefliger's recording of the *Davidsbündler-tänze* (Sony Classical 48036), on which I've long relied for critical listening, clearly revealed the JVC receiver's shortcomings in this respect. Elsewhere, the artifact's intensity ranged from audible but subtle, as on the opening bars of "Speak Low" on the Tony Bennett Un-

plugged DVD (in both Dolby Digital and Pro Logic playback), to severe enough to render the music essentially unlistenable, as on the piano "bonus track" of the Delos *DVD Spectacular* audio-only test DVD, Richard Rodney Bennett's *Barcarolle*. Dolby Digital movie soundtracks usually masked the problem with higher-level content, but it was easy to find revealing passages, such as the opening sequence of *Fly Away Home* on DVD, where it was mostly evident in the surround channels.

Next, playing any stereo recordings, such as CDs, via any of the three digital inputs in two-channel mode resulted in a noticeable increase in noise and hum in the two active channels — just the opposite of what you'd expect. This was audible during soft passages played at serious-listening volumes, and an audible "whine" element also emerged at higher settings.

As indicated under "Measurements" on page 38, setting the rear-panel Speaker Load switch to Low severely restricted power to all channels regardless of the actual load impedance presented by the loudspeakers. The receiver's peak undistorted output measured only about 20 or 40 watts per channel with 8- or 4-ohm loads. The result was quite noticeable distortion at anything above a moderately loud volume setting. With the switch set to High, however, the receiver's performance was fine. While the solution is self-evident — leave the switch on High — I find this behavior troubling because it could present problems for unsuspecting users, even though JVC told us that this form of voltage limiting was specifically chosen to protect low-impedance speakers.

The FM tuner proved to be just about average in performance for an entry-level A/V receiver, which is probably adequate for most users but still objectively mediocre (JVC is hardly the lone offender here). AM reception was in the same league.

The JVC RX-884V includes a number of nice touches, and its ratings promise generally competitive performance. Unfortunately, our test sample fell well short of the mark compared with several similarly priced, fine-performing A/V receivers in this increasingly populous component category. □



## Authorized Dealers

- AK- Alaska Audio; Juneau- Pyramid; Anchorage.
- AL- Cohen's Electronics; Montgomery- Kincaid's TV; Tuscaloosa- Likis Audio; Birmingham, Homewood- Palm Audio Video; Huntsville.
- AR- Custom Audio Video; Little Rock.
- AZ- Jerry's Audio Video; Phoenix, Tucson, Scottsdale- Warehouse Electronics; Yuma.
- CA- Access to Music; Larkspur- Accurate A/V; S. Lake Tahoe- Ahead Stereo; Los Angeles- Audio Concepts; Long Beach, San Gabriel- Bay Area Audio; San Jose- Boots Camera; Fresno- Christopher Hansen; West LA- Coast Home Ent.; Atascadero- Creative Stereo; Santa Barbara- David Rutledge Audio; Palm Desert- DB Audio; Berkeley- Digital Ear; Tustin- Dow Stereo Video; San Diego & Suburbs, La Jolla, El Cajon, Chula Vista, Escondido- Dynamic Entertainment; Danville- Lee's Home Theater; Visalia- Monterey Stereo; Monterey- Paradyme; Sacramento- Performance Audio; San Francisco- Replay Multimedia; Modesto- Systems Design; Redondo Beach- Videotek; Westminster- Wilson Home Theater; Woodland Hills, CO- Soundtrack; Denver & Suburbs, Boulder, Ft. Collins, Colorado Springs.
- CT- Al Franklin's; Greenwich- Audio Etc.; Orange- Carstons Stereo/Video; Danbury- Roberts Audio Video; New London- The Sound Room; Westport- Stereo Shop; Newford.
- DC & Washington Suburbs- Myer-Emco.
- DE- Sound Studio; Wilmington.
- FL- Absolute Sound; Winter Park- Audio Advice of NW Florida; Pensacola- Audio Advisors; West Palm Beach- Audio Center; Deerfield Beach- The Audiohouse; Vero Beach- Cooper for Stereo; Clearwater- Hoyt Stereo; Jacksonville- Palm Audio; Destin- Sound Components; Coral Gables- Sound Ideas; Gainesville- Sound Insights; Ft. Pierce- Sound Waves; Lakeland- Stereotapes; Daytona Beach.
- GA- Laser Disc Enterprises; Atlanta- Merit TV; Columbus- Stereo Connections; Valdosta- Stereo Festival; Atlanta.
- HI- Honolulu Home Theater; Honolulu.
- IA- Ultimate Electronics; Cedar Rapids, Des Moines- Archer Audio Video; Ft. Dodge- Audio Video Logic; Des Moines- Audio Visions; Sioux City- Hawkeye Audio; Iowa City, Cedar Falls- Renier's; Dubuque.
- ID- Ultimate Electronics; Boise- Wise Buy; Idaho Falls.
- IL- Absolute Audio; Rockford- United Audio Centers; Chicago & Suburbs- Good Vibes; Champaign- Jon's Home Ctr.; Quincy- Sound Forum; Crystal Lake.
- IN- Classic Stereo; Ft. Wayne, Mishawaka- Kings Great Buys; Evansville- Ovation Audio; Clarksville, Indianapolis, Lafayette.
- KS- Accent Sound; Overland Park- Advance Audio; Wichita- Audio Junction; Junction City, Manhattan.
- KY- Ovation Audio; Lexington, Louisville.
- LA- Alterman Audio; Metairie- Mike's Audio; Baton Rouge- Wright's Sound Gallery; Shreveport.
- MA- Goodwins Audio; Boston, Shrewsbury- Nantucket Sound; Hyannis- Northampton Audio; Northampton- Pittsfield Radio; Pittsfield.
- MD- Gramophone; Baltimore, Ellicott City- Myer-Emco; Gaithersburg, Beltsville, Rockville- Sighs & Sounds; Easton- Soundscape; Baltimore.
- ME- Cookin'; Portland.
- MI- Peeper's; Troy- Classical Jazz; Holland- Sound North; Iron Mtn.- Stereo Center; FRAV; Flint- Curt St.; Listening Room; Saginaw, MI- Audio King; Minneapolis & Suburbs, Rochester, St. Cloud- Audio Designs; Winona.
- MO- Independence A/V; Independence- Sound Central; St. Louis, MS- Ideal Acoustics; Starkville- McLelland TV; Hattiesburg- Players A/V; Ridgeland.
- MT- Rocky Mt. Hi Fi; Great Falls.
- NC- Audio Video Systems; Charlotte- Audio Visions; Wilmington- Now Audio Video; Durham, Greensboro, Raleigh, Winston Salem- Sight and Sound; Greenville- Tri City Electronics; Conover.
- NF- Custom Electronics; Omaha, Lincoln.
- NH- Cookin'; Nashua, Manchester, Newington, Salem, S. Nashua.
- NJ- Camera and TV Stop; Medford, Egg Harbor- Hal's Stereo; Trenton- Monmouth Stereo; Shrewsbury- Woodbridge Stereo; West Caldwell, Woodbridge.
- NM- Ultimate Elect.; Albuquerque- Sound Ideas; Albuquerque.
- NV- Ultimate Elect.; Las Vegas.
- NY- Audio Breakthroughs; Manhasset- Audio Den; Lake Grove- Clark Music; Albany, Syracuse- Stereo Exchange; Manhattan- Hart Elect.; Vestal- Listening Room; Scarsdale- Rowe Camera; Rochester- Speaker Shop; Amherst.
- OH- Audio Craft; Akron, Cleveland, Mayfield Hts., Westlake- Audio Etc.; Dayton- Classic Stereo; Lima- Ohio Valley Audio; Cincinnati- Paragon Sound; Toledo- Stereo Visions; Columbus- Threshold Audio; Heath- Unique Home System; Cincinnati.
- OK- Audio Dimensions; Oklahoma City- Photo World; Stillwater, Shawnee- Ultimate Electronics; Tulsa.
- OR- Bradford's HiFi; Eugene- Chelsea A/V; Portland, Beaverton- Kelly's Home Ctr.; Salem- Magnolia HiFi; (Portland.) Beaverton, Clackamas- Stereo Plant; Bend.
- PA- Audio Junction; Pittsburgh- Gary's Elect.; State College- GNT Stereo; Lancaster- Hart Elect.; Blakely- Hi Fi Home; Abington, Broomall, Camp Hill, Harrisburg- Listening Post; Pittsburgh- Palmer Audio; Allentown- Stereo Shop; Selinsgrove, Williamsport- Stereoland; Natrona Heights- The Stereoop; Greensburg.
- RI- Stereo Discount Ctr.; Providence.
- SC- A/V Design; Charleston- Custom Theater & Audio; Myrtle Beach- Upstairs Audio; Columbia.
- SD- Audio King; Sioux Falls- Sound Pro; Rapid City.
- TN- College HiFi; Chattanooga- Hi Fi Buys; Nashville- Now Audio Video; Knoxville- Modern Music; Memphis- Sound Room; Johnson City.
- TX- Home Entertainment; Dallas, Houston, Plano- Audio Tech; Temple- Audio Video; College Station- Bunkley's Sound Systems; Abilene- Bjorn's; San Antonio- High Fidelity; Austin- Krystal Clear; Dallas- Marvin Electronics; Ft. Worth- Sound Quest; El Paso- Sound Systems; Amarillo.
- UT- AudioWorks; Salt Lake City- Crazy Bob's; St. George- Stokes Bros.; Logan- Ultimate Elect.; Layton, Murray, Orem, Salt Lake City.
- VA- Myer-Emco; Falls Church, Tyson's Corner, Fairfax- Audio Connection; Virginia Beach- Audiobronics; Roanoke- Home Media Store; Richmond, VA- Bunch-Finnegan; Kennewick- Magnolia HiFi; Seattle & Suburbs, Tacoma, Silverdale, Spokane- Pacific Sight & Sound; Wenatchee.
- WI- Absolute Sound & Vision; Sheboygan- Finner's A/V; Milwaukee- Hi Heaven; Appleton, Green Bay- Sound World; Wausau, Puerto Rico- Precision Audio; San Juan.
- Canada- A & B Sound; Calgary, Edmonton, Kelowna, Vancouver & Suburbs, Victoria- Advance Electronics; Winnipeg- Bay Bloor Radio; Toronto- Canadian Sound; Brampton, Ont.- Digital Dynamics; Clearbrook- Harrington Audio; Peterborough, Ont.- Kebesoun; Montreal- Lipton's; Newmarket, Ont.- Sound Decisions; Duncan, B.C.- Sound Gallery; Newfoundland- Sound Room; Vancouver- StereoLand; Windsor- Treble Clef; Ottawa.
- Mexico- Contact Grupo Volumen; Mexico City.

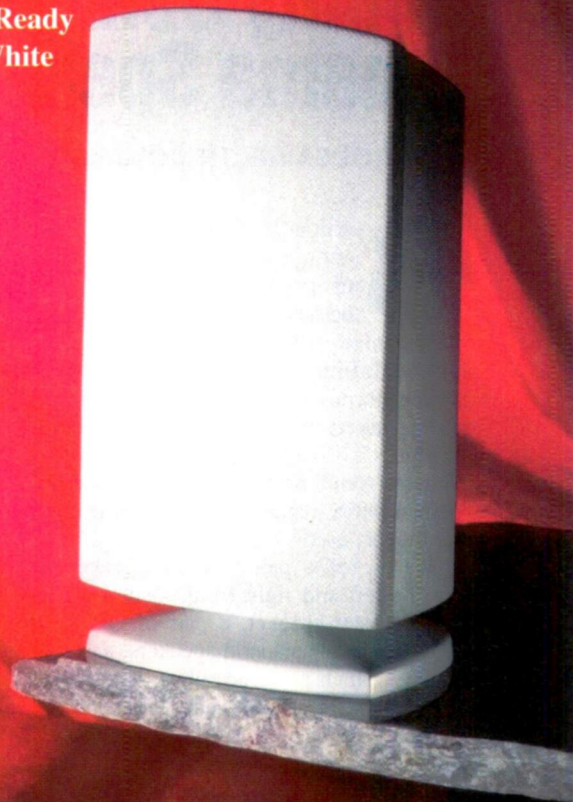
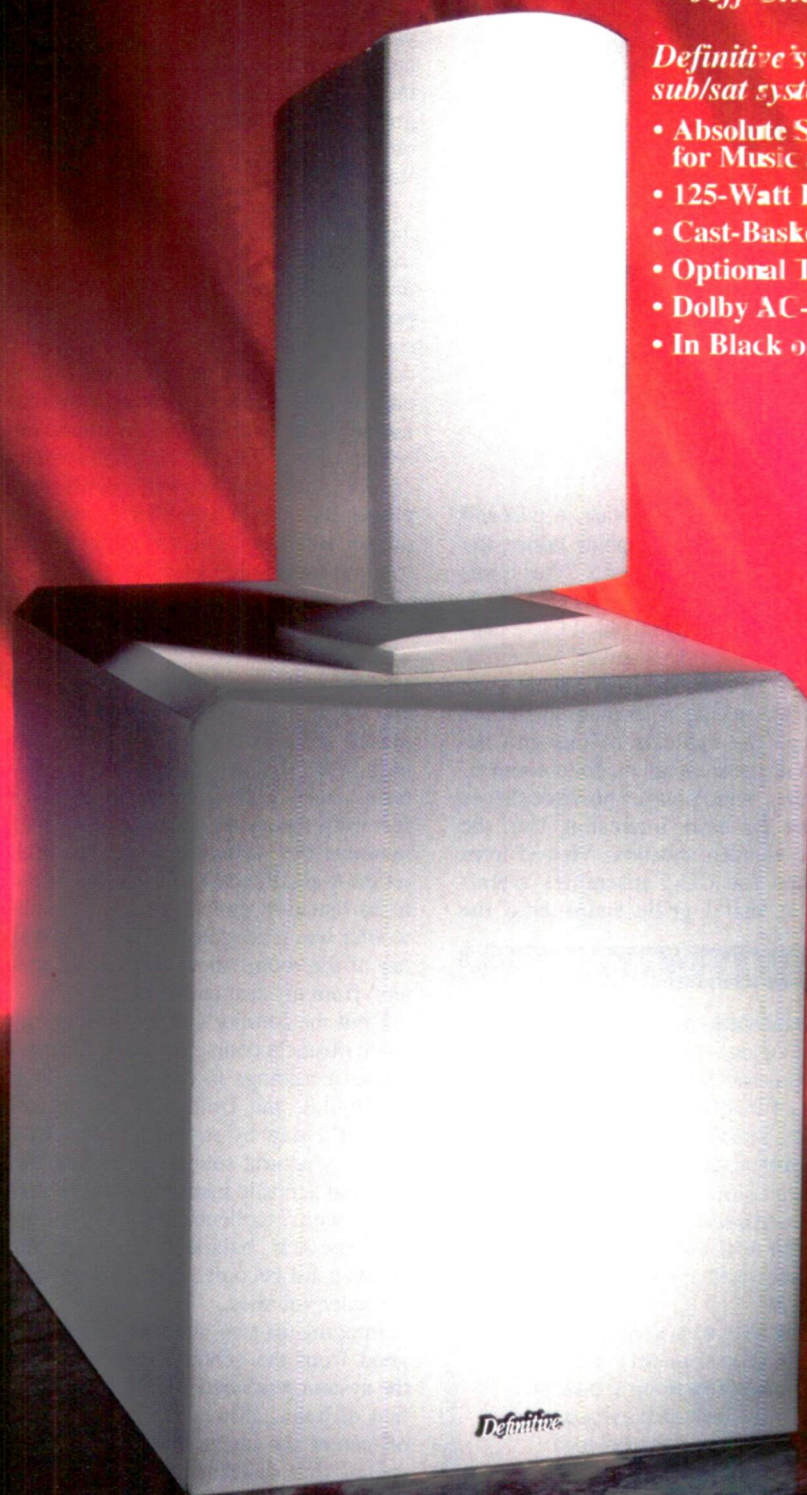


“If you want truly incredible speakers at an unbelievable price, run and get this system.”

—Jeff Cherun, *Home Theater Magazine*

*Definitive's remarkable \$799 ProCinema sub/sat system features:*

- Absolute State-of-the-Art Performance for Music and Home Theater Perfection
- 125-Watt Powered 10" Subwoofer
- Cast-Basket Drivers and Aluminum Tweeters
- Optional Timbre-Matched Center and Rears
- Dolby AC-3\* Ready
- In Black or White



*Home Theater Magazine raves:*

“Truly awesome...close to perfection...clearly sets a new standard for sub/sat systems”

See our dealer list on facing page.

**Definitive Technology®**  
*The Leader in High-Performance Loudspeakers*

11105 Valley Hts. Dr. • Baltimore, MD 21117 • (410) 363-7148

Visit us at <http://www.definitivetech.com>



# Infinity Component Home Cinema Speaker System

TOM NOUSAIN, TN COMMUNICATIONS

**B**ecause of the excellent reputation of Infinity speakers and my positive experience with the company's car products, I was excited to have an opportunity to put an Infinity home-theater speaker system through its paces. The individual speakers were selected from the company's Component Home Cinema system, which promises voice-matched compatibility regardless of the particular models used.

We picked a pair of RS-2 speakers for the left and right front positions, a CC-2 center speaker, a pair of QPS-1 "Quadrapole" surround speakers, and a BU-2 12-inch powered subwoofer. The total ticket for all six speakers is a very competitive \$1,566. Everything carries a five-year limited warranty except the subwoofer amplifier, which is covered for one year.

All of the speakers have a rated power-handling capacity of 100 watts, sensitivity of 89 or 90 dB sound-pressure level (SPL), and nominal impedance of 8 ohms.

The Reference Standard RS-2 has a 6½-inch plastic-cone woofer and a ½-inch soft-dome tweeter, both mounted on the front of the particleboard cabinet and protected by a metal grille. The rubber-surround woofer is screwed directly to the cabinet, while the tweeter, which has its own plastic subenclosure, is af-

fixed to the plastic faceplate. A port and two pairs of binding posts adorn the rear of the cabinet. The RS-2 has a rated bandwidth of 50 Hz to 20 kHz.

The magnetically shielded CC-2 center speaker uses the standard horizontal layout with two 5¼-inch plastic-cone woofers flanking a ½-inch soft-dome tweeter. The cabinets of this and the surround speakers are made of composite plastic, which makes possible shapes that are far more interesting than the classic wooden shoebox. Viewed from the side, the CC-2 resembles a teardrop. A metal grille snaps onto the

front, and the rear has a small alcove for the binding posts, the port, and the Voice-Matching control knob. The control is said to allow up to a 6-dB treble cut above 3,000 Hz.

The CC-2 comes with a clever bent-metal stand that lets you adjust its radiating angle so that it can be aimed at the listening position from above or below the TV screen. Its rated bandwidth is 90 Hz to 20 kHz.

The QPS-1 surround speaker has two pairs of 3-inch paper-cone drivers, each pair angled back from the front plane to increase diffusion. Available in white or gray, the flat, wide cabinet has a hole on its back panel for wall mounting. Rated bandwidth is 80 Hz to 20 kHz.

The BU-2 powered subwoofer's 12-inch paper-cone driver is mounted on the bottom of the cabinet and faces downward. There is a single 3½-inch port near the top front corner of the right side panel. The sub's rear panel contains speaker- and line-level inputs and outputs and all operating controls, including a level control, a crossover setting (from 50 to 200 Hz), and switches for automatic power on/off and phase. Its built-in amplifier is rated to deliver 100 watts. There is no high-pass filtering for satellite speakers.

I set up the Infinity system in my large (5,700-cubic-foot) listening room, which measures 13 x 23 feet with an 18-foot cathedral ceiling. The center and main front speakers were optimally placed on speaker stands 42 inches high. All of the speakers were away from nearby wall surfaces and about 13 feet from the center listening position. I mounted the surrounds 48 inches high on the walls directly to the sides of the main listening couch. The BU-2 subwoofer was placed in the right rear corner of the room, about 6½ feet (2 meters) from my seat on the couch.

I put the Infinity system through my sonic obstacle course of tough film and music recordings in two-channel, Dolby Digital, and Dolby Pro Logic formats. I'll start by saying that the RS-2 is a very natural-sounding speaker. Vocals and acoustic instruments were rendered with excellent clarity, definition, and spectral balance, although the speaker did become somewhat strident at louder volumes.

Imaging in two-channel stereo was good from the center sweet spot, and the system produced a wide soundstage free of holes. However, when I moved off-center the image followed along. I solved that dilemma by switching to

## FAST FACTS

**DIMENSIONS** RS-2, 13 x 7½ x 11¼ inches (H W D); CC-2, 18½ x 6½ x 7¾ inches (W H D); QPS-1, 11 x 8½ x 4½ inches (W H D); BU-2, 14½ x 14½ x 14½ inches

**WEIGHT** RS-2, 12¼ pounds; CC-2, 14½ pounds; QPS-1, 7 pounds; BU-2, 43 pounds

**FINISH** RS-2, black woodgrain; CC-2 flat black; QPS-1, white or gray; BU-2, flat black

**PRICE** RS-2, \$339 a pair; CC-2, \$329; QPS-1, \$349 a pair; BU-2, \$549

**MANUFACTURER** Infinity, Dept. SR, 250 Crossways Park Dr., Woodbury, NY 11797; telephone, 800-553-3332

surround sound, which meant turning on the CC-2 center speaker.

With the center speaker on, vocalists stayed at center stage in all listening positions, and the image remained fixed. Unfortunately, the CC-2 imparted a hollow spectral quality. Vocals, while stable, sounded distant and hard, with extra sibilance. Twisting the Voice-Matching control to its lowest setting helped reduce the sibilance, but the overall spectral balance was only slightly better. This is a problem with practically all horizontally arrayed, multi-driver center speakers. It's caused by poor off-axis frequency response, and the errors get worse the farther you are from the central listening position.

The Infinity system displayed good basic 5.1-channel surround performance. The overall ambient field was fairly well distributed in the room, with only a small gap between the front soundstage and the surround field. Effects that moved into and out of the front stage tended to make small jumps to the surround speakers and would occasionally become localized, but there were no basic directional errors.

The front stage itself had a moderate,

but not outstanding, sense of depth. For example, the acoustic bass should appear well back in the stage in "Tiden Bar Gar," a selection in an Opus One recording especially designed to illustrate soundstage depth. With this system, it was about halfway back.

This Infinity system had quite surprising output capabilities given the limited extension of the BU-2 subwoofer, which could not produce a 25-Hz signal without generating significant second-harmonic distortion (at 50 Hz). There was, however, plenty of output between 60 and 80 Hz. Maximum SPL with a 10-percent distortion limit was 114 dB at 80 Hz.

The complete system registered 110 dB SPL on the "boom" explosion scene from the *Clear and Present Danger* laserdisc and an impressive average of 110 dB with my big-bass CD trio of "Jurassic Lunch" (from Telarc's *Great Fantasy and Adventure Album*), Bass Ecstasy's "It's Live" from the *Bass Erotica* CD, and the cannons in the Telarc recording of the *1812 Overture*. Those high numbers can be credited to the wide-range response of the satellites, the subwoofer's potent upper-bass

output, and the system's excellent overload characteristics.

Of course, the flip side is that true deep bass was lacking. The very first distant T-Rex footstep that telegraphs impending doom in "Jurassic Lunch" was completely absent, and the system didn't go low enough to do justice to organ music. But it played loud, and there was plenty of energy transmitted to my chair on standard-issue rock-and-roll bass, like the opening line of Melissa Etheridge's "Similar Features" (from her debut CD).

The system's dynamic performance was excellent even though it couldn't play really low. Rock bass lines were surprisingly muscular. I just loved how the opening line of Warren Zevon's "Werewolves of London" (from *Excitable Boy*) sounded on this system.

All things considered, this particular collection of Infinity speakers delivers strong performance at a reasonable price. It's not a perfect system, but for the asking price of just under \$1,600 it worked extremely well. With a third RS-2 in place of the CC-2 center speaker, it would be an outstanding sound-quality value. □

## TAKE YOUR SYSTEM FROM ORDINARY, TO EXTRAORDINARY!

"Special effects volume contrasts were absolutely amazing and at times a little frightening."

AV Shopper, April 1997

"The ultimate six-channel amplifier... this is as good as it gets."

Bound for Sound, June 1997



"The 3k6SE may well be the best home theater amplifier available."

Audio, Jan. 1998

"The 3k6SE is the best multi-channel amp you can buy."

Home Theater Mag., July 1998

"Treble had an airy, detailed quality that enhanced the sense of surround sound spaciousness."

Home Theater Mag., May 1997

"...the B&W's sounded unusually punchy and clean; in full five channel surround playback, the volume of clean sound was awesome."

Stereoc Review, June 1997



New digital soundtracks, including DTS and Dolby Digital, require enormous power reserves to fully capture the dynamic peaks found in today's blockbuster movies. *The Society of Motion Picture and Television Engineers*, who set the standards for motion picture soundtracks, now allow for 20 dB gain above dialogue (or 100 times the power!) for today's digital soundtracks. In other words, normal dialogue levels of just 5 watts require your amplifier to be capable of 500 watts for short term dynamic peaks. **Power is critical in today's digital soundtrack era!**

**CINEPRO** multi-channel amplifiers have garnered unprecedented praise since the introduction of the legendary award-winning 3k6. Our 3k6SE *Special Edition*, with a mind-boggling 550 wpc/4 ohms x 6(!), is today's reference high-end multi-channel amplifier. Now, we are proud to introduce our newest home theater powerhouse, the incredible 5-channel 2k5. Featuring our exclusive HPC (High Power Center) technology the 2k5 sets a new standard in affordable, high-power amplification.

**If you want real theater performance — talk to an authorized Cinepro dealer.**

**Experience why CINEPRO multi-channel amplifiers are the acknowledged leaders in home theater amplification.**

**CINEPRO** Real Theater at Home

1030 Vicente, San Francisco, CA 94116 • www.cinepro.com



Call us today for your nearest **CINEPRO** dealer

**1-800-395-1222**



# Platinum Audio PT-808 Speaker

DAVID RANADA, TECHNICAL EDITOR

**P**latinum Audio, a company with a good reputation for its audiophile speakers, has introduced what it describes as “entry-level” speakers in its new PT series. All three models, including the floor-standing PT-808, are said to have “great transparency and dynamics accompanied by deep bass capability.” For once, I agree completely with a manufacturer’s marketing claims.

The PT-808 is a tower-style speaker with three drivers connected in what

Platinum refers to as a “2.5-way” arrangement. A 1-inch fluid-cooled titanium-dome tweeter is mounted between two 7-inch polypropylene-cone woofers that operate over slightly different ranges. The upper woofer covers from 70 Hz to 2.5 kHz and the lower woofer only from 70 Hz to approximately 200 Hz. The lowest frequencies are emitted by three ports, two on the front and one on the back, that together cover the range below 70 Hz.

Platinum rates the PT-808 as a 6-ohm speaker, a rating with which I would agree. The speaker’s measured minimum impedance of 4 ohms occurred at 150 Hz, but it should work fine with amplifier outputs rated for 8-ohm operation. Rated sensitivity of the PT-808 is 92 dB sound-pressure level (SPL) with no test conditions specified; at 1 meter I measured 89 dB SPL with a 2.83-volt, 1-kHz input signal.

The PT-808 is finished in an attractive, semigloss rosewood vinyl over ¾-inch medium-density fiberboard, with a black, removable cloth grille on a plastic frame. All the ports are exposed. Near the rear port are two sets of binding-post input terminals, which are normally interconnected with jumper straps that can be removed for biwiring or bi-amplification.

The other two models in the PT series are the PT-806, a large bookshelf speaker with the same driver complement as the PT-808 that’s suitable for center operation in a home theater, and the PT-801, a small bookshelf speaker.

At about 40 inches tall, the PT-808 should fit easily into most listening rooms, but its height may be a matter of concern from a sonic standpoint. Having tested a long string of stand-mounted and tall tower speakers lately, most of them with tweeters placed at ear level for a seated listener, I found the most striking aspect of the PT-808’s sound quality on first hearing to be the low elevation of its sonic image. Its tweeter sits only 27 inches off the floor, and even from 10 feet away the image was distinctly lower than I’m used to.

For a couple of reasons, this low image placement was tremendously beneficial to classical music. To begin with, nearly all classical recordings are made with the microphones elevated above the performers and are thus recordings of upward-directed sound. Therefore, to reproduce accurately the frequency balance heard from the microphone’s perspective, ideally the sound should hit a listener from *below*.

## FAST FACTS

**DIMENSIONS** 39½ inches high,

9 inches wide, 12 inches deep

**WEIGHT** 22 pounds

**FINISH** semigloss rosewood vinyl

**PRICE** \$799 a pair

**MANUFACTURER** Platinum Audio, Ltd.,  
Dept. SR, 250 Commercial St., Unit 4002,  
Manchester, NH 03101; phone, 603-  
647-7586; Web, [www.platinumaudio.com](http://www.platinumaudio.com)

The second reason the PT-808's low image produced such good results with classical music is more personal. The seats that I can afford in New York City's major concert halls (Carnegie Hall, the Metropolitan Opera, Avery Fisher Hall) and Broadway theaters, and which sound best to my ears, are typically in a balcony.

With the PT-808s I was hearing upward-radiated music from recordings of upward-directed sound, and it was hitting my ears at the same approximate angle as it does when I attend live concerts. Under those conditions, how could the speakers *not* sound realistic? With good symphonic, operatic, and chamber-music recordings, the sense of you-are-there realism was unusually intense, in terms of both image exactitude and the depth of the soundstage. My current favorite full-orchestra spectacular, Richard Danielpour's *Concerto for Orchestra* (Sony Classical), sounded even more stunning than usual thanks to the combined sense of stage depth, hall ambience, and low-frequency impact. More up-close-and-personal chamber-music recordings, such as the Cleveland Quartet's recordings of the Beethoven quartets (Telarc), also came over vividly, with nicely tight imaging, as if heard from a front-row balcony seat in a small hall. A home-made, closely miked, solo-guitar recording sounded amazingly realistic over the PT-808s, with the image forming at the actual height of the guitarist during the recording session.

But not all recorded music produced such a sense of realism, not even all classical music. Pipe-organ music, for example, is not usually heard from a balcony perspective — pipe organs have been located above congregations since the Middle Ages. Hearing organ music over the PT-808s produced a kind of sonic vertigo — sounds that should have been “up” were “down” — that was only partially compensated for by the system's excellent bass performance. While this effect never entirely disappears even with taller speakers (few elevate the sonic image enough for pipe organs), it was more conspicuous with the PT-808s.

Similarly, live small-ensemble jazz is heard from straight on or slightly “up,” at least in the jazz clubs I've been to. Pop music recordings are largely artificial sonic events, like film soundtracks, and they are usually monitored and mixed over speakers at or above the producers' seated ear height. Whether

the low image produced by the PT-808s will bother you in pop, jazz, or movie playback is probably a matter of taste. I found it slightly bothersome only with vocals. It wouldn't be convincing to hear, say, Celine Dion singing from only a couple of feet above the floor.

Besides the low image, the other most striking thing about the PT-808's sound quality was its (curable) touch of nasality, which also stems directly from the speaker's height. Unless you listen while sitting on the floor, you will probably be hearing these speakers from above the tweeter's axis (this applies especially to standing auditions in a dealer's showroom). But the tweeter axis was designed to be the listening axis, as was clear not only from listening but from even the most basic response measurements, such as the readout of our one-third-octave spectrum analyzer.

On the tweeter's axis the PT-808 measured admirably flat, only  $\pm 2.6$  dB from 40 Hz to 16 kHz, with a gently and smoothly downward-sloping response. But at our lab's standard seated-ear-level microphone height of 1 meter (39 inches), and over a range

## **A home-made, closely miked, solo-guitar recording sounded amazingly realistic when heard over the Platinum Audio PT-808s.**

from 9 to 12 feet away, off-axis interference effects among the PT-808's drivers produced a measurable and audible dip of as much as 6 dB in the midrange response (between 3 and 5 kHz), a smaller (3-dB) dip at 1 kHz, and a corresponding slightly nasal coloration on everything from solo voices to massed strings. The amount of coloration was somewhat variable, as it depended on the depth of the interference dips, which in turn could be controlled by changing the listening height above the tweeter axis and, to a lesser extent, the listening distance.

If you don't have a height-adjustable dentist's chair in your listening room, the easiest way to get the best performance out of the PT-808s is to tilt them slightly backward so that their tweeters are aimed more directly at your ears. For my first experiments with tilting the PT-808s, I wedged CD jewel cases under the fronts of the enclosures. A one-jewel-case tilt reduced the colorations

considerably but left enough of the midrange dips to tone down aggressively recorded strings and vocals slightly. The resulting response should suit many tastes and styles of music. A two-jewel-case tilt put my ears directly on the tweeter axis, producing an outstanding neutrality of timbre, which only aided the classical-music realism mentioned above as well as removing nasality and restoring presence to all manner of pop and jazz material. No amount of tilting could help the recorded bottom-heaviness of Madonna's *Ray of Light*, but that disc's “virtual surround-sound” imaging effects came across with unusual effectiveness over the PT-808s.

But who wants to leave CD cases wedged under his speakers? While I've generally pooh-pooed speaker spikes as irrelevant for most installations, they come into their own here. With just the front two spikes supplied with the PT-808s screwed in, the resulting angle produced extremely fine sound quality at a 9- to 12-foot distance.

An alternative to tilting the PT-808s — raising them off the floor with stands — had a deleterious effect on

their bass response, making it more irregular and rolling it off at a higher frequency. If you prefer smaller speakers, Platinum's very similar PT-806 is intended for stand or bookshelf mounting. With the PT-808s sitting on the floor, you can count on them to deliver a respectable amount of bass for speakers of their size, although live-rock-concert levels were not obtainable without strain. Usable response extended down to 30 Hz, and the speaker could cleanly reproduce our special shaped tone bursts at an equivalent very loud 95-dB drive level down to 50 Hz, and down to 40 Hz at a still-loud 90-dB drive level, both impressive figures that show just how robust this speaker is.

In all, I found the PT-808 to be an excellent medium-size, medium-price speaker — as long as it's tilted backward — that should be particularly attractive to classical-music enthusiasts and others who want to get the low-down on good sound. □



# NAD Model 522 CD Player

KEN C. POHLMANN, HAMMER LABORATORIES

In this gee-whiz age of DVD players, home theater, small-dish satellite systems, cell phones, laptops, pagers, and fast-food croissants, it's all too easy to take CD players for granted. That's unfortunate, because it was CD technology that ushered in the digital era of entertainment electronics — and supercharged the personal computer industry, too. Without the CD, we'd still be jumping up every time an LP needle got stuck in a groove and loading Windows 98 from a foot-tall stack of floppies.

Meanwhile, CD players deliver incredible stereo sound to all kinds of listeners, from newbies to audiophiles, and aside from a few Luddites, we all agree that a well-recorded CD can sound great. The term "CD quality" has become the sonic gold standard.

The NAD Model 522 is an example of state-of-the-art CD technology. Its simple front panel demonstrates that a user interface does not have to be complicated to be good. Simultaneously, its sparse interior demonstrates the incredible degree of integration that CD technology has achieved, resulting in both lower manufacturing costs and greater reliability. I have always associated NAD with cost-effective designs that

deliver great bang for the buck. Given the opportunity for value afforded by the maturation of the CD format, I expected that the NAD 522 would provide exceptional value.

The player's front panel will be instantly familiar to anyone who has seen any other NAD component and should warm the hearts of NAD aficionados. Besides the power button, the drawer button, and the usual transport buttons, there's one to show elapsed track time or remaining disc time, one for track or disc repeat, and one for random play. A somewhat pale display shows times, track numbers, and play mode. If your VCR is flashing 12:00, or you live with someone like that, then this player is for you. But even a technophobe could

probably cope with a front-panel headphone jack, and I would have liked one.

The Model 522's rear panel is even simpler than its front. It has two RCA jacks and a power cord, period. Although a stereo analog line-level output is sufficient for a CD player, I would have liked at least one digital output.

The interior contains the (largely plastic) disc transport, one printed-circuit board, and the power transformer. The digital-to-analog (D/A) converter is the Burr-Brown PCM1710U, which claims a 20-bit resolution and has an eight-times-oversampling digital filter on board. This chip is a staple of low-cost CD players, and if you feel you need a better one, you'll have to buy a more expensive player.

The Model 522 incorporates a number of design niceties. Separate power regulators for analog and digital sections help isolate digital noise from analog circuits, and the circuit-board traces around the D/A converter are said to minimize radio-frequency (RF) interference. Metal-film resistors and polypropylene capacitors are used in critical places, and the Philips NE5532 op-amps used in the analog output sections are a notch above the ordinary for less distortion and a lower noise floor.

Whereas most remote controls have more buttons than the elevator in a skyscraper, the Model 522's remote, unsurprisingly, has only twenty-two. That includes a numeric keypad so that you can select tracks directly.

Since the CD format's introduction

## FAST FACTS

**DIMENSIONS** 17 inches wide, 3¼ inches high, and 11¼ inches deep

**WEIGHT** 8¾ pounds

**PRICE** \$299

**MANUFACTURER** NAD Electronics, distributed by Lenbrook America, Dept. SR, 6 Merchant St., Sharon, MA 02067; phone, 800-263-4641; Web, [www.nadelectronics.com](http://www.nadelectronics.com)

in 1983, I've bench-tested hundreds of CD players. The very first ones I measured were pretty good, but even low-cost players today should deliver good performance, no excuses. The NAD 522 does not need any excuses. Frequency response was flat to less than 0.5 dB, distortion at 0 dB was less than 0.003 percent, and noise referred to -20 dB was about -90 dB A-weighted. In other words, by the numbers this is a typically good CD player. If a salesman tries to sell you some other player because its distortion is 0.002 percent instead of 0.003 percent, take your business elsewhere; the difference is less than trivial. On the other hand, the Model 522 wasn't able to track disc defects greater than 1,500 micrometers. While that certainly exceeds the CD specification, as my aging discs get increasingly dinged up, I could use better tracking ability. Also, the player was slow to initialize discs. In today's fast-paced world, 8 seconds is too long.

Because the Model 522's button count is low, and its on-screen menus nonexistent, I was able to spend less time learning to use it than actually listening to it (what a concept!). Recently I've been listening to Philip Glass's *Heroes Symphony* (Point Music 454 388), which is based on themes by David Bowie and Brian Eno. Although I wasn't impressed by the first few playings, it has since grown on me (why is it that I can listen to the same piece of music many, many times but I can rarely watch the same movie more than once or twice?). It is well recorded,

with lots of inner detail. I auditioned the NAD 522 with it, checking for the player's ability to convey soft and delicate musical elements, reverberation "tails," and "silent" room ambience — three of the hardest things to reproduce well. The first two are particularly tough given the complexity of orchestral strings and brass.

I certainly did not hear any overt problems in these playback challenges. The NAD player seemed to be quite transparent, conveying what I knew to be on the CD. When I boosted the low-level signals, however, a slight spectral grunge was audible, perhaps from the D/A converter or the analog output stage. Because the effect was slight, I'd have to run a double-blind listening test with several listeners to be sure if it would even be audible to most people.

If you're looking for a good reference CD, you can pick anything on the dmp label. Not surprisingly, the NAD 522 did a fine job of playing the Steve Davis Project's *Quality of Silence* CD (coincidentally, the catalog number is dmp 522). The recording's sparse, natural acoustics are ethereally populated by such sonic land mines as delicate percussion hits and soft, cool saxophone lines.

The Model 522 survived the challenge without incident; in particular, those delicate percussion transients were cleanly reproduced. Throughout, the player seemed quite transparent, and it required laborious efforts (cranking up soft nuances to louder levels) to convince myself that there was any underlying spectral grunge. Although a high-end player may sound better with carefully selected music signals over a topnotch system, I was satisfied for the most part that the NAD 522 would be sonically neutral with most music over most systems. In other words, although this is advertised as an entry-level player, it has better than entry-level sonics.

The CD has evolved into a truly egalitarian format (the hallmark of digital technologies) in which the greatest distinctions between low- and high-end models are in styling and features, and even low-cost players can compete sonically with pricy ones. In this case, the entry-level NAD 522 eschews elaborate features and flashy styling in favor of no-nonsense fidelity, using modestly priced parts to good advantage. While its difference in price from high-end models is easy to see, the sonic differences are infinitely more subtle. In other words, it is a true NAD. □

## MEASUREMENTS

Tests performed by David Ranada; all but defect tracking and impact resistance used Stereo Review's CD player test disc.

**Maximum output** .....2.1 volts

**Frequency response** (20 Hz to 20 kHz)  
normal (de-emphasis off) .....+0, -0.35 dB

**Noise** (A-wtd, re -20 dBFS\*)  
normal (de-emphasis off) .....-72.9 dB

**Excess noise** (without/with signal)  
16-bit (EN16) .....1.15/5.15 dB

**Distortion** (THD+N, 1 kHz)  
at 0 dBFS\* .....0.0028%  
at -20 dBFS\* .....0.023%

**Linearity** (at -90 dBFS\*) .....-0.17 dB

**Defect tracking**  
(Pierre Verany test disc).....1,500 µm

**Impact resistance** .....top, A; sides, A

\* decibels referred to digital full-scale



# FREE Audio Catalog

At Cambridge SoundWorks we make unique, critically-acclaimed speakers and music systems designed by Henry Kloss (founder of AR, KLH & Advent). We sell them—and components from companies like Sony, Harman Kardon, Carver and others—factory-direct, with no expensive middlemen. Call today and find out why *Audio* magazine said we may have "the best value in the world."

- Call toll-free - 8AM-Midnight (ET), 365 days a year-even holidays.
- Save hundreds on components and systems from Cambridge SoundWorks, Sony, Aiwa, Harman Kardon, Panasonic, JVC and more.
- Audio experts will answer your questions before and after you buy.
- 30-Day Total Satisfaction Guarantee on all products.

## "MovieWorks 5.1 Definitely Delivers The Goods."

Stereo Review

*MovieWorks™ 5.1* by Henry Kloss. A no-compromise surround sound speaker system with awesome powered sub and *MultiPole™* surround speakers—able to switch from dipole to bipole operation. Stereo Review says, "genuinely full-range, legitimately cinematic home theater surround sound...open, detailed, up front sound with an unexpectedly sumptuous bottom end."



**\$1,799<sup>99</sup>**

1-800-FOR-HIFI  
CAMBRIDGE  
SOUNDWORKS  
Critically Acclaimed. Factory-Direct.

311 Needham Street, Suite 102, Newton MA 02464  
Tel: 1-800-367-4434 Fax: 617-332-9229  
Canada: 1-800-525-4434 Outside U.S. or Canada: 617-332-5936  
World Wide Web Address: www.hifi.com

©1998 Cambridge SoundWorks, Inc.  
MovieWorks & MultiPole are trademarks of Cambridge SoundWorks, Inc.



# Cambridge SoundWorks Ensemble II Home Theater Speaker System

KEN C. POHLMANN, HAMMER LABORATORIES

**C**ambridge SoundWorks is celebrating its 10th anniversary. In one short decade, it has become well known as a manufacturer of speakers notable for their high sound quality and low prices. The Cambridge SoundWorks saga began with the Ensemble speaker system, comprising two satellites and two bass modules. This successful design was followed by the Ensemble II, with two satellites and one bass module. In its latest incarnation, the trio is joined by a center-channel speaker and two surround speakers, which together sell for \$990 as the Ensemble II home-theater system.

Each Ensemble II front satellite is a two-way speaker with a sealed, acoustic-suspension enclosure of ABS plastic. A nonremovable metal grille conceals a 1 $\frac{3}{4}$ -inch cone tweeter (with integral  $\frac{5}{8}$ -inch dome) and a 3 $\frac{1}{2}$ -inch cone midrange driver. On the back of the enclosure are binding posts, a keyhole slot, and a threaded socket for mounting. Conveniently, the bottom rear of the enclosure is slotted so that it can be mounted flat against a wall and still accommodate speaker wire.

The Center Channel II, also an

acoustic-suspension speaker, has an enclosure of vinyl-covered wood. The modified two-way design features the same tweeter as in the front left and right speakers and two 2 $\frac{3}{4}$ -inch cone midrange drivers. The drivers are concealed behind a removable cloth grille. The rear of the cabinet has a pair of binding posts.

The Surround II 5.1 speaker is also a two-way acoustic-suspension design

## FAST FACTS

**DIMENSIONS** front, 8 x 5 x 4 $\frac{1}{4}$  inches (H W D); center, 14 x 4 x 7 $\frac{7}{8}$  inches (W H D); surround, 6 $\frac{7}{8}$  x 4 $\frac{1}{2}$  x 4 $\frac{1}{2}$  inches (H W D); bass module, 14 $\frac{1}{8}$  x 7 $\frac{3}{4}$  x 16 $\frac{1}{8}$  inches (H W D)

**WEIGHT** front, 7 pounds; center, 9 pounds; surround, 9 pounds; bass module, 34 pounds

**FINISH** front and surround, gray Nextel or painted white; center, black vinyl; bass module, black vinyl or painted white

**PRICE** \$990

**MANUFACTURER** Cambridge SoundWorks, Dept. SR, 311 Needham St., Newton, MA 02164; phone, 800-367-4434; Web, www.hifi.com

with an ABS plastic enclosure. The wall-mountable speaker has one 2-inch driver that points forward and a rearward 2 $\frac{3}{4}$ -inch driver (with an integral 1 $\frac{1}{4}$ -inch dome). A rocker switch on the front side (toward the listener) is used to select either dipolar or bipolar operating mode. The drivers are concealed behind nonremovable metal grilles. The back of the enclosure sports spring-loaded wiring clips, a keyhole slot for mounting, a threaded socket, and a slot for speaker wire so that it can be placed flat on a wall.

The Ensemble II bass module's vinyl-covered wood enclosure is ported and houses two 6 $\frac{1}{2}$ -inch drivers. On the bottom of the cabinet, which rests on four beefy rubber feet, are two pairs of binding posts. Impedance is rated at 6 ohms; all the other speakers in the system are rated at 8 ohms. Unlike most home-theater bass modules and subwoofers, this one is not powered. You'll need to power it by connecting it in parallel with your receiver's front left/right speaker outputs or by connecting it to a dedicated subwoofer output, if there is one.

Using speaker stands to elevate the front satellite and surround speakers to about ear level, I positioned them in the tried-and-true locations in my listening room. Similarly, I placed the bass module along the front wall between the left speaker and the TV set and the center speaker below the screen and angled upward. The front satellites, the surrounds, and the bass module all lack magnetic shielding and thus cannot be placed near a TV. I also unhappily discovered that even the center speaker is not adequately shielded; it caused slight discoloration and distortions in the picture when it was placed next to my monitor. I had to move it away to prevent video problems.

Because my receiver (like most of them) lacks a powered subwoofer output, I used the front main channels to power both the satellites and the bass module. Specifically, I ran two speaker cables from the receiver to each of the two pairs of binding posts on the bass module, and then I ran cables from the binding posts to the front satellites.

After verifying that overall frequency response was adequately flat at the listening position, I adjusted my receiver's bass control until there was a fairly smooth blend with the main speakers. Unfortunately, I was not able to adjust the cutoff frequency of the subwoofer channel.



Finally, while playing a variety of music selections, I nudged the speakers into their final positions and made final tweaks to the bass level. I cannot stress too much that, as in real estate, in home theater (speaker) location is everything. Experiment!

To audition this suite of Cambridge SoundWorks speakers, I first played a variety of DVD movies. One of my current favorites is *Das Boot*, which I find particularly good for testing subwoofers. The Ensemble II bass module did a good job of rumbling the room with low-frequency effects such as diesel-engine noise and explosions, especially given its relatively small drivers and cabinet size. It may not be able to reach the true depths of bass response, but it will let you keep your lease.

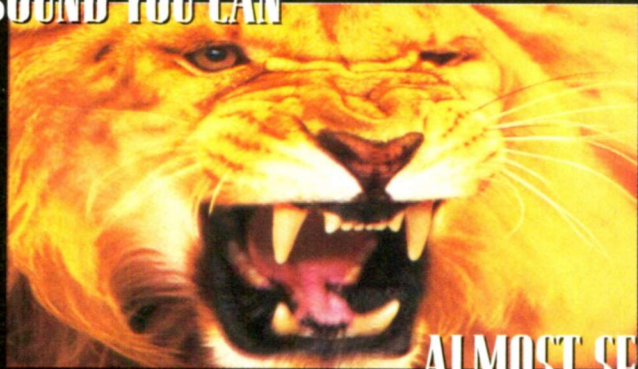
The bass module did not seem to be particularly efficient, and to get solid-sounding response I had to turn up the receiver's bass control beyond where the pink-noise test had suggested it should be. Fortunately, the Ensemble II module gladly accepted reasonably cranked-up power levels, audibly bottoming out only when pushed hard. All in all, it did a respectable job.

I was also fairly pleased with the front left/right and center speakers. Although the sound quality of the satellites tended toward the overly crisp, and had a slight "tube" coloration, it was extremely clean and clear. The lush score of *Das Boot* (which has a truly memorable main theme) was well reproduced, but the sound became a little harsh in the upper midrange, particularly in the strings and brass. On the up side, the left/right front speakers were quite efficient, reproducing loud levels when fed relatively modest power.

The center speaker's tonal balance was well matched to that of the satellites, and it delivered highly intelligible dialogue — the critical criterion for a center speaker. It also had good horizontal dispersion, an important requirement in my house if you've been unceremoniously relegated to an off-futon seat. (Jennifer, bring a Merlot next time, and I might seat you on-axis.)

As noted, the surround speakers have a switch for bipolar or dipolar operation. It appears to reverse the polarity of the smaller driver so that in bipolar mode it is in phase with the larger one, providing sound with greater directionality and more precise imaging (albeit with much wider dispersion than most speakers because the drivers are facing in opposite directions). In dipolar mode

# SOUND YOU CAN



# ALMOST SEE



© Phase Technology Corp.

## Virtual Reality In Home Entertainment

It's a jungle out there in home-theater land!

Let Phase Technology be your guide to movies, music and more with critically acclaimed home theater, audiophile and in-wall speaker systems.

Now presenting our latest crowning achievement—the user-adjustable Mode PC-3 multi-purpose speaker. Its ideal for front, rear and center use in any multi-channel system.

Your hunt is over. Audition the Model PC-3 and experience sound so real, you can almost see it.

**PHASE**  
TECHNOLOGY

1-888-PHASE TK  
www.phasetech.com

***It doesn't require a decoder or processor...  
Yet it provides the most  
astounding sonic realism  
you have ever experienced!***

*To hear it all you need are  
CDs or cassettes from:*

**THE BINAURAL SOURCE**  
and a pair of headphones!

- 130 true binaural recordings from Europe and the U.S. (most are exclusive with us)
- variety of music, nature sounds and audio dramas
- completely compatible for loudspeaker playback
- also startling surround sound with any ambience decoder!

For **FREE** demos, visit us at **www.binaural.com**  
latest releases, extensive FAQs and news.

Or call/write for **FREE** catalog.  
800-934-0442 • Box 1727 • Ross, CA 94957

**REPACKAGED & REMASTERED!!**

THE ORIGINAL LONDON CAST

**Les Misérables**  
THE MUSICAL SENSATION



THE ORIGINAL LONDON CAST

featuring  
**Colm Wilkerson and Patti LuPone**

The Audiophile Version  
State-of-the-art 20 bit mastering  
from the original analog tapes  
All new CD package with  
gold foil artwork

**“The Original London Cast recording is the basis for all of the other recordings that have been done including the Broadway version”**

available at



©1998 Relativity Recordings, Inc.  
Distributed by Red Distribution.

the two drivers are out of phase, providing diffuse radiation that is more enveloping and less directional. Generally, with movie soundtracks where the surround channels mainly add ambience, I almost always preferred the dipolar mode and was satisfied with the speakers' enveloping sound field. In fact, in the dipolar mode they did a first-rate job of achieving invisibility — blending into the soundscape so that their positions could not be localized. Moreover, the surrounds delivered reasonably good sound quality, with only an occasional touch of harshness. And I loved that dipole/bi-pole switch.

To test how the system handled music playback, I played stereo recordings using a variety of surround-processing modes. In the latter category, I turned to a Denon DVD of Beethoven's Third Symphony and Chopin's Piano Concerto No. 2 (LC8723) as well as several DTS-encoded music discs, such as the Eagles' *Hell Freezes Over* (DTS CD-1006), decoded by a Millennium 2.4.6 processor.

For reasons I can't really explain, the ear seems more forgiving when the brain is occupied with pictures, much less so when it is occupied solely with music. The Ensemble II system fared less well in music-only roles compared with its home-theater performance. Although the sound quality will be adequate for some listeners, others will hear the limitations necessitated by the system's modest price. Most notably, the front left/right speakers sounded hard when taxed with violin and other upper-frequency string sounds, and loud brass and female vocals also revealed a strident sound quality. The deficiency was less apparent with pop music, and some listeners will undoubtedly appreciate the Ensemble II system's aggressive presence, but it gave me enough listener fatigue to induce the urge to "turn it down!"

The center speaker did not share the same harshness, and it blended well into the front soundstage. The surrounds also passed muster in the recordings in which they were lightly used, mainly reproducing hall ambience. They also sounded quite good when reproducing discrete signals. With the DTS-encoded recordings, I switched the surround speakers to their bipolar mode since the surround channels had directional in-

formation. This really tightened up the imaging and immensely improved the effect of listening to discrete instruments placed in a 360-degree soundstage. The ability to switch dispersion modes is a great feature.

The bass module, which did a great job with movies, was somewhat less appealing when reproducing complex musical bass lines. Because bass performance is intricately linked with room acoustics, I tried a number of different

## The Ensemble II bass module did a good job of rumbling the room with low-frequency effects like explosions.

locations in the room. I finally found one (near the corner) that provided a bigger and smoother bass response, but I still regretted the lack of controls to tailor the module's response. Nevertheless, if you work carefully with placement, you can achieve good musicality with this speaker.

This collection of Cambridge SoundWorks speakers handles movie sound quite well within the constraints of its relatively low price. The speakers' small size make them easy to place, and they will envelop you with better sound than you'll hear in most movie theaters. Of course, since the bass module is not powered, make sure that your receiver has sufficient power to drive both the satellites and the sub simultaneously, or else that an adequate power source is available.

The music side of the equation is much tougher. Perhaps because these speakers were all designed to work in a variety of configurations and not as one integral package, they don't always work together optimally when asked to convey music. If music is your passion, I recommend stepping up to higher-quality speakers up front. Still, this isn't a bad little speaker system, and if your main interest is movie playback, it will certainly get you through your musical interludes. The Ensemble II home-theater system again demonstrates why Cambridge SoundWorks has earned an enviable reputation for delivering quality at a modest price. □

# DVD Envy

**Panasonic's  
DVD-L10  
portable DVD  
player proves  
that size  
does matter**



**Working at** *Stereo Review* is a fun job, but it has its downside — at least for me. I live on Long Island, and riding the Long Island Rail Road is not my idea of a good time. I'd rather do almost anything else than spend a couple of hours a day sitting on a train.

But once I discovered Panasonic's DVD-L10 portable DVD player, I actually started thinking about bypassing the express trains for the locals — the ride lasts longer. With the DVD-L10, I could pop in *Das Boot* (Columbia TriStar Home Video), plug in my headphones, and be transported from a commuter train in the morning rush to a German U-boat.

There's no question that I'd rather be watching movies in my home theater. It's hard to beat the impact of a good 5.1-channel setup with a big-screen TV. Unfortunately, I don't get the time to enjoy it as much as I'd like — and my family can never seem to agree on a movie. So, funny as it might seem, I found that I was watching far more movies on the Panasonic's little 5 x 3-inch widescreen LCD than at home. And contrary to my expectations, where there was a gripping story line the small screen didn't bother me a bit.

I admit, though, that I felt a little sorry for the people sitting around me. They couldn't keep their eyes off the DVD-L10, even though they couldn't hear a thing. On the other hand, I was happy to be a kind of DVD evangelist to my fellow commuters, answering questions about the format while playing with it.

It's a pretty sexy gizmo, right down to its nifty combo joystick/pushbutton for accessing the player and disc menus. But at \$1,399, the DVD-L10 is primarily a rich-boy's toy. The picture is amazingly bright and clear, though in some scenes the screen's pixel structure became visible, especially when I used the zoom display mode. When hooked into a home theater, however, the DVD-L10 delivered the same superb pictures and 5.1-channel sound I've come to expect from DVD, and the supplied remote enables it to operate just like its full-size brethren.

All right, even though the DVD-L10 is probably the coolest piece of equipment I'll get to play with this year. I do have one gripe. As a portable player, it's bound to be used in such loud places as trains, planes, and cars. So why isn't there an audio compression mode? I found myself fiddling with the volume control too often, and sometimes I couldn't turn it high enough to catch soft dialogue.

My only other complaint is that I had to send our review sample back to Panasonic.

— Brian Fenton

**Want to make** your seatmates burn with jealousy the next time you're on an airplane? As the in-flight movie begins, don't bother grabbing the airline headphones or straining your neck to see the screen. Instead, just reach into your bag, whip out the Panasonic DVD-L10, and settle back with some honey-roasted nuts to enjoy the unedited film of *your* choice with high-quality stereo sound and a clear, if small, picture.

The player is smaller and easier to carry than a laptop computer, and twice as much fun as a portable CD or tape player. Among its handiest features is a Display Mode button that allows films recorded in either pan-and-scan or the overpraised letterbox format to be expanded both vertically and horizontally to fill the player's little LCD screen, eliminating those annoying black bands above and below letterboxed pictures.

The DVD-L10 also delivered on two other video fronts crucial to this movie nut: still/pause and slow-motion play. Although the brilliantly twisted images in the dark thriller *Seven* (New Line Home Video) flicker past almost too quickly to register at normal speed, with the still/pause button and slow-motion function I was able to savor the villain's diabolical handiwork (and the achievement of the make-up artists) for as long as I wanted.

The player was less consistent with other visual elements. Darker-lit shots in *Seven*, especially during the discovery scenes, appeared a little muddy, though the climactic desert sequence looked appropriately bright and shimmering. Picture clarity was a greater problem for the DVD-L10 — many scenes seemed too fuzzy, or pixilated, maybe because I was using the zoom mode.

In terms of audio, however, the DVD-L10 performed flawlessly through stereo headphones, letting Howard Shore's eerie, pounding score for *Seven* rattle my head as the film's horrors unfolded. The player not only excelled with bombastic sounds but also clearly picked up subtle noises that add a realistic layer to a soundtrack, like the scratching of a pen on a notepad.

One last point: After a couple hours of use, the DVD-L10 got hot enough to make it uncomfortable to balance on my lap. But that's what the fold-down tray in front of you is for.

— Daniel Manu

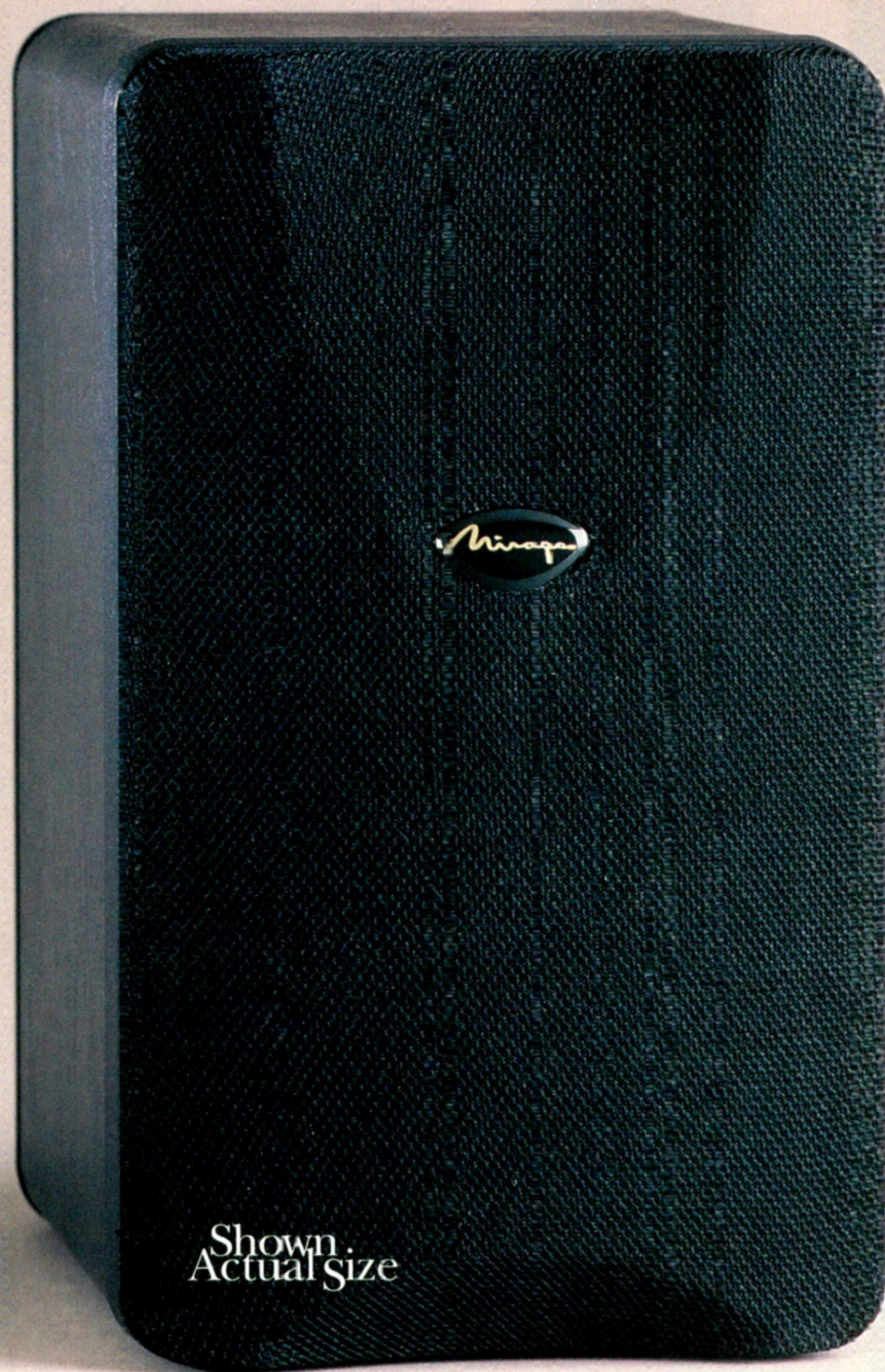
**DIMENSIONS** 6½ inches wide, 6½ inches deep, 1¾ inches high

**WEIGHT** 2 pounds

**PRICE** \$1,399

**MANUFACTURER** Panasonic, Dept. SR, One Panasonic Way, Secaucus, NJ 07094 phone, 800-211-7262; Web, www.panasonic.com

We put the "Impact" into  
**Compact**  
Mirage AVS-Series MicroSystem



It's here and it's hot. From the minds at Mirage comes "home theater in a box", delivering high performance and high flexibility without the high price.

The AVS System. 3-1/2" 2-way speakers with real 1" dome tweeters for broad frequency response and high sensitivity. Complete with built-in low frequency overload protection to blend perfectly with the outstanding Mirage PS-Series powered subwoofers.

Softly contoured corners add elegance and reduce edge diffraction. Front and rear molded copolymer baffles are locked into a one-piece solid wood cabinet for increased rigidity and amazing performance.

The miraculous new AVS System from Mirage. Discover the real power and impact of compact home theater.



AUDITION THE AVS-SERIES MICROSYSTEM  
AT THE AUTHORIZED MIRAGE DEALER  
IN YOUR AREA OR LOOK US UP ON THE  
WEB: [www.miragespeakers.com](http://www.miragespeakers.com)

*Mirage*

A DIVISION OF AUDIO PRODUCTS INTERNATIONAL CORP.,  
3641 MCNICOLL AVENUE, SCARBOROUGH  
ONTARIO, CANADA M1X 1G5  
TELEPHONE (416)321-1800 FAX (416)321-1500



shopping made simple

# A Guide to Digital Surround Receivers

## What you need to know before you hit the stores

**D**UCK! The I-beam dangling from that helicopter is heading straight for your head!

Okay, you can relax — you're safe in your home theater. It just *sounded* as if you were live at the scene. Digital surround sound strikes again.

Unlike previous surround-sound formats, today's 5.1-channel Dolby Digital and DTS formats deliver five discrete full-range channels, plus a low-frequency-effects (LFE) channel for the deep bass produced by Godzilla's footsteps or the terrifying rumble of an approaching tornado.

Dolby Digital is far and away the leading 5.1-channel format, and all of the A/V receivers in the comprehensive guide accompanying this story are equipped to decode Dolby Digital signals as well as the previous standard, Dolby Pro Logic.

But upstart DTS is challenging Dolby's market dominance. Relatively few A/V receivers have built-in DTS decoders, although many can accommodate an external one.

No scientific listening tests have been done to determine whether the differences between Dolby Digital and DTS are audibly significant. And it's unclear how important DTS will become in the Dolby-dominated DVD market. (In fact, as we went to press no DTS-encoded DVDs were yet available, and when DTS DVDs *do* become available, they'll still have to contain a two-channel PCM digital soundtrack that can be decoded in Pro Logic.)

Dolby originally called its 5.1-channel technology AC-3, for "audio coding, iteration three," a decidedly less than sexy name. Maybe Dolby should have said that "AC" stood for

by Rich Warren

Adrenaline Cinema. Instead, the company hitched its name to the hottest word in electronics: digital. When you go shopping, though, you'll still hear plenty of salespeople talking about AC-3. And you'll probably also hear them calling the LFE channel the "subwoofer channel," an understandable misnomer since a subwoofer is the most popular way to reproduce it.

Dolby Pro Logic served home-theater enthusiasts nobly for nearly a decade, but its four channels (front right, center, and left and one surround channel sent to two speakers) are no match for the six discrete channels that digital technology allows. The breadth and depth of sound that can now be reproduced were previously impossible at home. Pro Logic provided significantly more home-theater realism than plain two-channel stereo, and Dolby Digital raises the bar by at least as much.

You may not be able to afford a TV that'll give you a picture as big and clear as you'll see in a movie house, but

Dolby Digital soundtracks, and you needed specially equipped laserdisc players to extract them. The arrival of DVD widened the availability of Dolby Digital, and the debut of digital TV (DTV) this fall (see page 29) will further expand its horizon. Manufacturers are racing new Dolby Digital receivers to market as fast as we can compile this guide. They require no more effort to operate than an ordinary stereo receiver — once you set them up — and they have no problem reproducing good old two-channel stereo from CDs or Dolby Pro Logic sound from videotapes and older laserdiscs.

Most Dolby Digital receivers can supply equal power to all five main channels, which only the best Pro Logic-only models would do. So if the director decides that an explosion should happen off-screen behind you, it will sound as impressive as one on-screen in front — if your system is set up for full-range surround speakers and the speakers themselves can handle it.

clubs and concert halls so that music played back through the receiver could sound as if you were in the audience. Sony uses measurements from its Columbia/TriStar film-scoring and sound-mixing stages in California. Other companies have calculated their own algorithms to represent different kinds of performing spaces from cabarets to stadiums. And, as you might expect, the results vary.

Some receivers try to tailor the sound to the genre of movie you're viewing, such as an action flick, a drama, or a musical. Yamaha offers a 70-mm mode that creates a wider sound field for movies recorded in that extra-wide-screen format. Digital signal processing opens the doors to all these spaces. With the five discrete, equally powered main channels now available, plus the LFE channel, engineers can sculpt more realistic, or fantastic, sonic environments. Many receivers offer more than a dozen DSP choices, including both movie and music modes. Yamaha goes beyond 5.1 channels in its flagship model by adding a pair of lower-power front-effect channels. These additional channels, which require an extra pair of small speakers to reproduce, take surround sound to an even higher level of flexibility and realism.

A few of the most expensive Dolby Digital receivers are THX-certified, which means that they contain certain features and meet a certain standard of performance and quality. THX certification guarantees, for example, that the receiver provides properly configured Cinema Re-EQ processing to restore a correct tonal balance to film soundtracks. The equalization curve used for soundtracks makes them sound fine in a movie theater but too bright in a home theater. Re-EQ undoes this brightness and has proven so useful that some manufacturers are including it alone, without the other THX features, or are putting in similar circuits of their own.

Many surround receivers brim with such a large number of DSP modes that they have jog/shuttle dials on their front panels to let you cycle through all the options. All come with universal remote controls, some of which have LCD readouts.

An on-screen display (like the one shown on page 53) greatly aids system setup. For example, while viewing a graphic depiction of speakers placed in a room, you can enter your own room's dimensions and your preferred listening position. Some receivers even walk you

You can **AFFORD** a system that'll give you sound quality **SURPASSING** what you'll hear in virtually any cinema.

you *can* afford a system that'll give you sound quality surpassing what you'll hear in virtually any cinema. The first Dolby Digital receivers hit the market almost three years ago and cost about \$2,000. Today you can buy one for less than \$400 — barely more than a comparable Pro Logic-only model. New mass-produced decoder chips drove this dramatic price decline.

For the best of all possible home theaters, you'll probably want to upgrade the surround speakers that you used with your Pro Logic setup. The two discrete surround channels in a 5.1-channel soundtrack are full-range, and you won't want to scrimp on the power fed to them. But don't be afraid to upgrade a piece at a time. Your present suite of speakers will probably sound just fine with Dolby Digital recordings — at least until you get used to some of the spectacular effects that a 5.1-channel system makes possible. Then you'll appreciate the difference that a better set of speakers will make.

Initially only laserdiscs contained

Since very few A/V receivers include an amplifier for the LFE channel, a powered subwoofer can really help. All of the receivers in our guide provide five channels of amplification and a line-level output for a powered subwoofer.

These receivers take the word "digital" seriously. Many convert all incoming analog signals to digital so that equalization, level balancing, and Pro Logic decoding also occur in the digital domain. All offer at least a couple of digital inputs and at least one digital output. Of course, the receiver converts the signal back to analog at the power-amplifier stage to drive your analog speakers.

To fill all those channels when you're not spinning a DVD or laserdisc, receiver manufacturers use digital signal processing (DSP) to synthesize a plethora of surround options, ranging from Pro Logic enhancement to the recreation of the ambience of a medieval cathedral. Yamaha, for example, sent its engineers around the world to measure the acoustic signature of famous jazz

# shopping made simple digital surround receivers

Manufacturer	Model	Price <sup>1</sup>	Watts per Channel <sup>2</sup>	Digital Inputs			Analog Inputs	Surround Modes <sup>3</sup>	Feature Highlights
				Opt	Coax	RF			
<b>B&amp;K COMPONENTS</b> 2100 Old Union Rd. Buffalo, NY 14227 800-543-5252 www.bkcomp.com	AVR202	\$2,798	105 x 5	5	6	—	7 A/V (all with S-video)	11 (8 music)	DTS decoding. Automatically selects active digital or analog source, S-video or composite-video, and surround format. On-screen display. Dual zone. 5-year warranty.
	AVR101	\$2,498	105 x 5	5	6	—	7 A/V (all with S-video)	10 (8 music)	As AVR202 except no DTS decoding.
<b>DENON</b> 222 New Rd. Parsippany, NJ 07054 973-575-7810 www.del.denon.com	AVR-5600	\$2,800	140 x 5	3	1	1	4 audio, 5 A/V (all with S-video)	13 (7 music)	THX-certified. On-screen display. Five-channel stereo mode. Front speakers biwirable. Radio Data System (RDS) tuner.
	AVR-3600	\$1,800	110 x 5	1	1	1	4 audio, 5 A/V (all with S-video)	9 (7 music)	Five-channel stereo mode. On-screen display. Front speakers biwirable.
	AVR-3200	\$1,200	85 x 5	1	1	1	3 audio, 4 A/V (all with S-video)	8 (6 music)	As AVR-3600.
	AVR-2700	\$799	80 x 5	1	2	—	3 audio, 4 A/V (all with S-video)	8 (6 music)	Five-channel stereo mode. Center channel available in all surround modes.
<b>HARMAN KARDON</b> 250 Crossways Park Dr. Woodbury, NY 11797 800-645-7484 www.harman.com	AVR85	\$1,699	85 x 5	1	1	1	3 audio, 5 A/V (3 with S-video)	6 (2 music)	Multiroom capability. Front-panel A/V input. High-current amplifier.
	AVR75	\$999	65 x 5	1	1	1	3 audio, 5 A/V (3 with S-video)	6 (2 music)	On-screen menus. Front-panel A/V input. High-current amplifier.
	AVR55	\$799	55 x 5	1	1	1	3 audio, 5 A/V (no S-video)	7 (4 music)	Front-panel A/V input. High-current amplifier.
<b>JVC</b> 41 Slater Dr. Elmwood Park, NJ 07407 800-252-5722 www.jvc.com	RX-1024V	\$900	100 x 5	2	1	—	3 audio, 5 A/V (4 with S-video)	13 (6 music)	3D-Phonic creates 4 simulated surround modes from two speakers. Front-panel A/V input with S-video. 3-band equalizer. On-screen display. Auto power on when TV is turned on. K2 interface isolates incoming digital signal. Back-lit remote control.
	RX-884V	\$550	120 x 5	2	1	—	3 audio, 5 A/V (4 with S-video)	13 (6 music)	As RX-1024V, no K2 interface or back-lit remote. User-adjustable EQ settings memorized by source.
<b>KENWOOD</b> P.O. Box 22745 Long Beach, CA 90801 800-536-9663 www.kenwoodusa.com	VR-2090	\$999	100 x 5 <sup>4</sup>	2	2	—	4 audio, 5 A/V (all with S-video)	8 (5 music)	DTS decoding. Automatic switching between DD, DPL, and DTS. Multiroom-capable, compatible with home automation systems. Two-way Power Pad remote control with LCD.
	VR-2080	\$799	100 x 5 <sup>4</sup>	2	2	—	4 audio, 5 A/V	8 (5 music)	DTS decoding. As VR-2090 without multiroom facilities.
	VR-209	\$399	100 x 5	1	1	—	4 audio, 5 A/V	2	Selects proper decoding for source.
<b>MARANTZ</b> 440 Medinah Rd. Roselle, IL 60172 630-307-3100 www.marantzamerica.com	SR-880	\$1,500	110 x 3 + 60 x 2	1	1	1	3 audio, 5 A/V (4 with S-video)	6 (2 music)	On-screen display. Multiroom-capable. RC2000 remote control with LCD.
	SR-780	\$1,200	80 x 5	1	1	1	2 audio, 5 A/V (2 with S-video)	6 (2 music)	Lucasfilm Cinema Re-EQ. Night mode. Multiroom/multi-source-capable. RC2000 Mark II remote control.
	SR-680	\$1,000	60 x 5	1	1	1	2 audio, 5 A/V	6 (2 music)	As SR-780 without multiroom/multi-source capability.
	SR-580	\$699	60 x 5	1	1	1	3 audio, 5 A/V	4	On-screen menu. Night mode.
<b>MITSUBISHI</b> 6100 Atlantic Blvd. Norcross, GA 30071-1305 800-332-2119 www.mitsubishi-tv.com	M-VR1000	\$1,499	100 x 3 + 60 x 2 <sup>4</sup> ; 125 x 2 <sup>4</sup> (stereo)	—	2	—	4 audio, 4 A/V (all with S-video)	4 (2 music)	On-screen menu. Front-panel A/V input.
	M-VR800	\$1,099	70 x 3 <sup>4</sup> + 70 x 2 <sup>5</sup> ; 85 x 2 <sup>4</sup> (stereo)	1	2	—	4 audio, 4 A/V (all with S-video)	5 (1 music)	On-screen menu. Front-panel A/V input.

<sup>1</sup> Manufacturers' quoted prices; dealer prices may vary. <sup>2</sup> Two-channel (stereo) rating is given only if different from five-channel rating.

<sup>3</sup> All models listed include both Dolby Digital and Dolby Pro Logic surround modes. <sup>4</sup> into 6 ohms <sup>5</sup> into 4 ohms

cut out this table for easy reference

## shopping made simple digital surround receivers

Manufacturer	Model	Price <sup>1</sup>	Watts per Channel <sup>2</sup>	Digital Inputs			Analog Inputs	Surround Modes <sup>3</sup>	Feature Highlights
				Opt	Coax	RF			
<b>ONKYO</b> 200 Williams Dr. Ramsey, NJ 07446 201-825-7950 www.onkyo.co.jp.	TX-DS939 Integra	\$2,800	100 x 5; 120 x 2 (stereo)	2	1	1	4 audio, 7 A/V (all with S-video)	18 (11 music)	THX-certified. On-screen display. Front-panel A/V input. Microphone for auto calibration and setup. Midnight Theater mode.
	TX-DS838 Integra	\$1,500	90 x 3 + 50 x 2; 100 x 2 (stereo)	1	1	1	4 audio, 4 A/V (all with S-video)	12 (5 music)	Automatic surround-mode switching. Re-EQ. On-screen display. Midnight Theater mode.
	TX-DS747	\$1,000	80 x 3 + 40 x 2; 90 x 2 (stereo)	1	2	—	4 audio, 4 A/V (all with S-video)	12 (6 music)	As TX-DS838 plus timbre matching.
<b>PIONEER</b> P.O. Box 1540 Long Beach, CA 90801 800-746-6337 www.pioneerelectronics.com	Elite VSX-09TX	\$1,750	100 x 5 <sup>4</sup> ; 110 x 2 (stereo)	1	1	1	4 audio, 5 A/V (all with S-video)	7 (4 music)	THX-certified. On-screen display. Front-panel A/V input. Microphone for auto calibration and setup. Midnight Theater mode. Multiroom/multi-source capable.
	Elite VSX-07TX	\$1,450	100 x 5 <sup>4</sup> ; 110 x 2 (stereo)	1	1	1	4 audio, 5 A/V (all with S-video)	7 (4 music)	As VSX-09TX without rosewood side panels.
	VSX-D906S	\$1,210	100 x 5 <sup>4</sup>	1	1	1	4 audio, 5 A/V (4 with S-video)	8 (3 music)	On-screen display. Front-panel A/V input.
	Elite VSX-14	\$800	100 x 5	1	1	—	3 audio, 3 A/V	7 (3 music)	On-screen menu. Front-panel A/V input. Multiroom output.
	VSX-D607S	\$599	100 x 5	1	1	—	3 audio, 4 A/V	7 (3 music)	Front-panel A/V input.
	VSX-D557	\$499	100 x 5	1	1	—	3 audio, 4 A/V	7 (3 music)	Preprogrammed remote control.
<b>SHERWOOD</b> 14830 Alondra Blvd. La Mirada, CA 90638 800-962-3203 www.sherwoodusa.com	Newcastle R-945	\$1,299	100 x 5; 125 x 2 (stereo)	1	1	1	5 audio, 5 A/V (all with S-video)	8 (4 music)	DTS decoding. On-screen display.
	Newcastle R-925	\$899	100 x 5; 125 x 2 (stereo)	1	1	1	5 audio, 5 A/V	7 (4 music)	Programmable video input labeling.
<b>SONY</b> One Sony Dr. Park Ridge, NJ 07656 800-222-7669 www.sel.sony.com	STR-DA90ESG	\$1,600	100 x 5	4	1	1	5 audio, 5 A/V (all with S-video)	48 (29 music)	Graphical user interface. VisionTouch remote control.
	STR-DA80ES	\$1,200	100 x 5	4	1	1	5 audio, 5 A/V (all with S-video)	48 (29 music)	Dual monitor outputs.
	STR-DA50ES	\$999	100 x 5	3	1	—	5 audio, 5 A/V (all with S-video)	29 (10 music)	DTS decoding. Touchscreen two-way LCD remote with graphical user interface. Virtual Surround and 3D modes.
	STR-DA30ES	\$799	80 x 5	3	1	—	5 audio, 5 A/V (all with S-video)	29 (10 music)	DTS decoding. LCD remote. Virtual Surround and 3D modes.
	STR-DE925	\$599	110 x 5	3	1	—	5 audio, 5 A/V	29 (10 music)	DTS decoding. Two-way LCD remote. Wireless output for surround channels. Virtual Surround and 3D modes.
	STR-DE825	\$499	100 x 5	3	1	—	4 audio, 6 A/V	25 (10 music)	As STR-DE925 without DTS.
<b>TOSHIBA</b> 82 Totowa Rd. Wayne, NJ 07470 800-631-3811 www.toshiba.com/tacp	XB1507	\$999	100 x 5	—	1	1	1 audio, 4 A/V	7 (4 music)	Multiroom-capable. Front-panel A/V input.
<b>YAMAHA</b> 6660 Orangethorpe Ave. Buena Park, CA 90620 800-492-6242 www.yamaha.com	RX-V2092	\$1,599	100 x 5 + 25 x 2 (front-effect)	1	2	—	4 audio, 5 A/V (all with S-video)	13 (6 music)	Tri-field Cinema DSP mode uses extra front-effect channels for greater depth. Multiroom/multi-source capable.
	RX-V992	\$999	80 x 5	1	2	—	4 audio, 5 A/V (all with S-video)	13 (6 music)	Tri-field Cinema DSP enhancement but without extra channels. On-screen display. Speaker impedance switch-selectable for optimum matching.
	R-V1103	\$799	100 x 5	1	2	—	4 audio, 4 A/V (2 S-video)	13 (6 music)	As RX-V992.
	RX-V793	\$799	80 x 5	1	2	—	4 audio, 4 A/V (2 S-video)	13 (6 music)	As RX-V992.

cut out this table for easy reference



## Trouble in Paradise?

THE CURRENT CROP of digital surround-sound receivers have more features and better performance than ever before — and at enticingly affordable prices. However, when you arrive home with your new treasure, you may find some cubic zirconia among the genuine diamonds. If you're replacing a receiver that's ten to twenty years old, you may notice that your favorite FM radio station doesn't sound quite as good on the new receiver as it did on your old one. A squint at the spec sheet will reveal that the tuner in your new super receiver is no jewel. In this age of rapid technological progress, why would tuner performance regress?

Broadcasters, unable to transmit CD-quality sound, threw in the towel. While most stations never tried to push the envelope of FM sound quality, most of those that did lost interest when CDs came along, and so did their listeners. Most people no longer care about radio fidelity as the medium slouches toward background music rather than serious listening. Sensing this shift of interest, manufacturers responded accordingly. An extra feature or two, or an extra 10 watts, do more to sell a receiver than a high-quality tuner.

According to David Birch-Jones, industry veteran and marketing manager for Denon, "The tuner section is something that's essentially transparent at retail. People don't ask about tuner quality when they buy an A/V receiver, so retailers don't spend any time on it, and as a result, a manufacturer that spends money to upgrade a tuner can't get a return on its investment." He also noted some technological challenges that face receiver manufacturers today: "The more digital circuitry inside an A/V receiver, the harder it is to engineer a stellar tuner because of all the complexities of shielding. When receivers were analog from back end to front, there was nothing inside to cause tuner interference. Now all receivers have at least half a dozen microprocessors, and all those chips are, in effect, little radio stations broadcasting digital hash."

Besides poor tuner sections, another common frustration is that receivers never seem to have enough digital inputs, or else the right *kind* of digital inputs. You

may buy a DVD player with only an optical digital output and then discover that your receiver has only coaxial digital inputs, or vice versa. Why are there never enough compatible digital connections?

Companies unanimously answer this query with one word: cost. Pioneer's brand manager, David McCollough, said "it's a matter of trying to hit strategic price points, because it is such a competitive market. Sometimes that means a compromise here or a compromise there." Denon's Birch-Jones concurred on cost, but added, "With all the speaker jacks, input jacks, and AC outlets, plus all their labels, there's not a whole lot of free real estate on the back of a receiver. And there's no universal opinion about whether optical or coaxial connectors should be used. Many lean toward optical connectors because they're immune to RF pollution. For the FCC and the even more stringent European CE, that becomes a critical factor."

All but the least expensive large-screen TVs include S-video inputs to optimize picture quality. Similarly, laserdisc and DVD players and S-VHS VCRs include S-video outputs. However, most people still watch tapes on conventional VCRs, which use composite-video outputs. Wouldn't it be nice if receivers could convert all composite-video input signals to S-video, and all S-video inputs to composite, so that only a single cable would be needed between the receiver and TV and so that the receiver could be used as a single master switcher?

Birch-Jones summed it up: "It's terribly expensive to put a color-TV decoder — which is essentially what a composite- to S-video converter is — in a receiver. It is a feature customers won't pay for because it's on the back panel and buried inside the unit. Yet it could add 10 to 15 percent to the retail cost of an \$800 A/V receiver." McCollough agreed: "Pioneer has included composite- to S-video conversion in the past, but it's very expensive to implement. In many cases it's something that would benefit relatively few people. For the majority it would cost extra but sit there unused." — R.W.

through speaker-placement options. Not all digital surround receivers include on-screen displays, but all do generate pink noise for speaker-level calibration and balancing.

If your budget permits, look for the greatest number of inputs and outputs, both analog and digital. The back panel of the receiver should have input jacks for each of its amplifier channels. That way, if another format or sonic enhancement comes down the road in a few years, you can plug an outboard adapter for it into your receiver. Line-level outputs for each channel are also a plus

in case you want to use outboard amplification.

All of the digital surround receivers on the market offer at least three video inputs and switch them along with their accompanying audio. Generally, the more you pay, the more S-video inputs you'll get in addition to the standard composite-video. These new receivers are generally more video-friendly than previous generations of receivers.

Power output averages 100 watts per channel, though a few receivers deliver more or less. Read the fine print, since some manufacturers rate the power de-

livered into 6 or 4 ohms rather than the customary 8 ohms to make the receiver appear more muscular than it's likely to be in most systems.

Digital surround receivers are a bridge from the audio world to true home theater. They offer more ways to enjoy your music than previous audio-only receivers and most Pro Logic models. You can still listen to just two channels for music if you prefer, but when the movie begins, you'll revel in those 5.1 great-sounding Dolby Digital or DTS channels, especially the impact of those low-frequency effects. □

IF YOU WANT BIG SOUND, you need big power — there's no way around it. Home-theater receivers have developed impressive capabilities, but having to cram five powerful amplifiers into a single chassis — along with lots of delicate, noise-sensitive digital audio and tuner circuitry — imposes some limits on just how much real-world oomph you can expect. Meanwhile, specsmanship has been reborn: one "100 watts x five channels" receiver may be hard to compare with another because of variations in bandwidth, distortion, and load impedance. So if you want to feel ready to run when *Dante's Peak* blows its top, a somewhat more studly power plant may be in order.

One increasingly popular approach is to add a five-channel home-theater power amplifier to an A/V receiver or preamp/surround processor. By far the most common configuration is one that delivers equal power to the five main speakers of a typical home theater: left, center, and right up front plus left and right on the sides or in the rear. This layout assumes that the host system will employ a powered subwoofer (or no subwoofer). Consequently, three of the four amps we rounded up for review are five-channel jobs; the fourth provides six outputs, with additional flexibility in bridging (combining two channels to form a single higher-power channel).

To see what you can get for your money, we selected power amps at three price levels and put them through their paces. Despite their disparate prices and distinguishing features, the Adcom GFA-7500 (\$1,500), Harman Kardon Model 2.1 (\$1,500), Classé CAV-75 (\$1,995), and Sunfire Cinema Grand (\$2,375) have much in common. All except the six-channel Classé are, as mentioned, five-channel models. All are rated for relatively high power, ranging from the Classé's 75 watts per channel to the Sunfire's 200 watts per channel, and are intended to deliver full dynamics in four- or five-speaker Dolby Pro Logic-based surround systems or 5.1-channel digital surround systems. All furnish high-grade accouterments: gold-plated input jacks, heavy-duty, multiway output terminals, an optional auto-power-on/off

# HOME THEATER POWER AMPS THAT CAN HANDLE THE LOAD

by Daniel Kumin

# MULTICHANNEL

# W

# S

# S

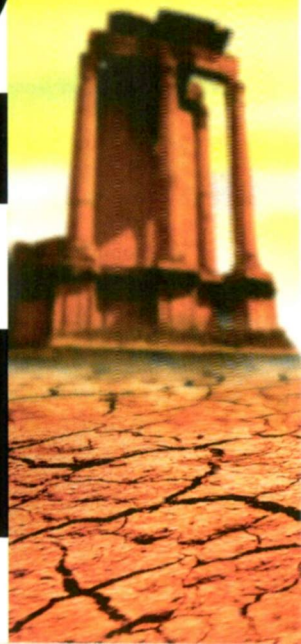
# G

# F

# M

ATLAS-CLASS  
AMPS:  
(from top)  
Adcom GFA-7500,  
Harman Kardon  
Model 2.1,  
Classé CAV-75,  
Sunfire  
Cinema Grand

DIGITAL IMAGING BY  
CHRIS GOULD





7500

Herisson-Kardon 21

NCC-21000

Classé

WETTERHOLZ

mode, and carefully finished metalwork. None includes input-level adjustments — sensible enough since these amps are intended for use with surround processors that provide calibrated level controls for each channel.

I used each amp to power my reference speaker array, with B&W Model 803/2 towers in the front left and right positions, a B&W HTM center speaker, and Citation Model 2.3 surrounds. For this test I ran all five speakers full-range to challenge the limits of each amplifier. I auditioned the amps using DVDs and laserdiscs (both Dolby Digital and DTS), DSS broadcasts, and both conventional and multichannel DTS-encoded CDs, all reproduced using a Yamaha DSP-A1 integrated amp/surround processor as a five-channel preamp.

I played a variety of program material, including a handful of selections that are very familiar to me. Among the movie soundtracks were *Clear and Present Danger*, *Toy Story*, and *Apollo 13* on Dolby Digital and DTS laserdiscs and *Unforgiven* and *Amadeus* on Dolby Digital DVDs. Stereo music selections included *Earwitness*, a remarkable CD of performances on the Isophon Steinway Reproducing Piano, and dmp's *Thom Rotella Band*. Multichannel music selections included the Allman Brothers' *Live at the Fillmore* and the DMP Big Band's *Glenn Miller Project*, both DTS-encoded CDs, and Delos's outstanding Dolby Digital recording of the *1812 Overture* on its *DVD Spectacular* demo DVD. I listened extensively to music in stereo and surround at both moderate and serious concert-like levels and to movies at volumes ranging from family-style to all-stops-out cinematic.

## Harman Kardon Model 2.1

Harman Kardon's five-channel Model 2.1 is very simple, with only a power switch, a pilot light (it changes color to denote standby, on, or protection mode), and an elegant illuminated logo on its front panel. On the rear are five RCA-jack inputs, five output binding posts, and a mini-jack for the low-voltage DC auto-on/off trigger input.

Harman Kardon describes the amp as providing high-current output capability with an ultra-wide-bandwidth design that uses low levels of negative feedback, principles most audiophiles would applaud. The Model 2.1 is a rather tall component because its main power transformer, a big toroidal (doughnut-shaped) unit, is bolted on-edge against the front panel rather than flat to the floor of the chassis. A single enclosed heat sink holds



## Harman Kardon Model 2.1

### RATED OUTPUT PER CHANNEL

(five channels driven, from 20 Hz to 20 kHz with less than 0.03% THD): 100 watts into 8 ohms, 150 watts into 4 ohms

**SPECIAL FEATURES** Low-feedback circuit design

**DIMENSIONS** 17¼ x 7½ x 15¼ inches

**WEIGHT** 47 pounds

**PRICE** \$1,500

**MANUFACTURER** Harman Kardon, Dept. SR, 250 Crossways Park Dr., Woodbury, NY 11797; phone, 800-645-7484; Web, [www.harman.com](http://www.harman.com)

the output devices for all five channels, while a single narrow circuit board across the rear supplies input/driver circuitry; individual power-supply filtering/rectification for each channel is on another, similar board. The construction is tidy and careful, and superior-grade parts are in evidence here and there. Endowed with an impressive, ¾-inch-thick solid front panel, the Model 2.1 carries a relatively light-gauge, slightly clanky top cover, though all-around finish is quite nice.

The Harman Kardon 2.1 ran warm (and idled slightly warm) but never became truly hot to the touch, even on the test bench. It did produce a slight mechanical buzzing — not excessive, but just audible in a very quiet room. Sonic performance was first-rate. The amp was very quiet, and its musical delivery was neutral. The 2.1 had ample full-system output for home-theater chills and spills. However, at truly cinema-like volumes — which can require an *average* sound-pressure level (SPL) approaching 100 dB during the loudest scenes (the missile impact from *Clear and Present Danger*, for example) — it sometimes ran short on reserves in my full-range (no subwoofer) test system. Adding a powered subwoofer would probably eliminate this limitation in most if not all systems. Harman Kardon's design is a no-nonsense one that does the job without fanfare but with excellent bottom-line results.

## Adcom GFA-7500

Adcom amps have an established reputation for presenting substantial power and performance in cost-effective packages, with a minimum of frills, fuss, or nonsense. The THX-certified GFA-7500 is very much in this vein.

Only a large power switch with an inset pilot light and two LEDs per channel (Distortion Alert and Thermal Protection) adorn the attractively ridged front panel — an Adcom hallmark. The back panel is equally plain, carrying inputs, outputs, a twenty-five-pin DB-25 jack for optional single-cable connection (a THX-supported multichannel standard), and a mini-jack for a 12-volt auto-on/off trigger. Inside, I found a single big toroidal transformer mounted on-edge to the front panel, as in the Harman Kardon amp, and five modular boards, each carrying 24,000 µF of storage capacitance, plus six bipolar output transistors for each channel bolted to big internal heat sinks. Construction was tidy indeed, entirely modular and devoid of hand-wiring — easy to service.

Under the gun, the Adcom GFA-7500 delivered enough power to make the notion of a significant wattage increase seem extravagant if not superfluous. Whether in two-channel or 5.1-channel digital surround mode, the amp was always quiet, quick, and clean, with excellent dynamic control and no hint of stress or audible "sweat." The *1812 Overture* finale from the Delos Dolby Digital music disc was quite literally spintingling — and I've



## Adcom GFA-7500

**RATED OUTPUT PER CHANNEL** (five channels driven, from 20 Hz to 20 kHz with less than 0.075% THD): 150 watts into 8 ohms, 225 watts into 4 ohms

**SPECIAL FEATURES** Multipin DB-25 input/output connector

**DIMENSIONS** 17 x 7¼ x 15 inches

**WEIGHT** 56 pounds

**PRICE** \$1,500

**MANUFACTURER** Adcom, Dept. SR, 11 Elkins Rd., East Brunswick, NJ 08816; 732-390-1130; Web, [www.adcom.com](http://www.adcom.com)

heard it at least twenty-five times. The GFA-7500 stuck me as almost perfectly neutral in balance and able to deliver satisfying bottom-octave weight and solar-plexus punch. Pushed beyond its very high limits, it did clip audibly (and relatively "hard"), but at this extreme level the surround speakers were also under stress, as were my ears. Just about the only complaint I can muster is that the Adcom amp produced a very soft mechanical buzz, which was obscured by virtually any music or soundtrack, no matter how soft, but audible in a silent room. This is a very solidly built five-channel power block that should provide ample motivation for all but the most demanding speakers or biggest home-theater spaces.

## Classé CAV-75

Classé, a Québécoise (Canadian) firm that produces a variety of stereo and multi-channel power amps and stereo preamps, carries solid credentials in the world of "sensible high-end" — if that's not too much of an oxymoron. Unique among the four amps in this comparison, the CAV-75 has a six-channel layout, which allows users to bridge (combine) pairs of channels into single, 150-watt outputs. You can configure one, two, or three high-power outputs to create the following layouts: 75 W x 4 + 150 W x 1, 150 W x 2 + 75 W x 2, or 150 W x 3. Bridging requires removal of the top cover to move internal jumpers. For this report, I auditioned the Classé amplifier in its unbridged, 75-watt-per-channel mode.

The Classé won my best-of-show vote for visuals thanks to its sumptuous, one-piece cast-aluminum front panel with integral handles (not rack-mount-standard, however). More than a third of an inch thick, this buff billet has a classy (ouch!) silver-white brushed finish (black is an option) and is adorned by a single round power button with a red pilot lamp.

The Canadian amp's cover is almost as spiffy, three or four times thicker than the average sheet-metal top and with rounded edges. Around back the CAV-75 supplies top-grade, panel-mount RCA inputs, extra-heavy output binding posts, a removable IEC power cord, and a telephone-type auto-on-trigger input jack, which requires a Classé preamp or "receiver box" (according to the manual) to function.

As I expected, the CAV-75 was just as handsomely constructed inside. Its layout is a bit unusual: a moderately large toroidal transformer occupies one front corner, and the other is given over to a small board containing sixteen 4,700- $\mu$ F storage capacitors. (The multiple-small-cap con-



### Classé CAV-75

#### RATED OUTPUT PER CHANNEL

(six channels driven, from 20 Hz to 20 kHz, no THD specified): 75 watts into 8 ohms, 150 watts per bridged channel pair (no 4-ohm rating)

**SPECIAL FEATURES** Three channel pairs bridgeable

**DIMENSIONS** 19 x 5½ x 15 inches

**WEIGHT** 40 pounds

**PRICE** \$1,995

**MANUFACTURER** Classé Audio, Dept. SR, 5070 François-Cusson, Lachine, Quebec H8T 1B3; phone, 514-636-6384; Web, [www.classeaudio.com](http://www.classeaudio.com)

cept is promoted by some makers as enabling "faster" dynamic power-supply response on transients.) The same board also holds twelve 3.15-ampere fuses, one for each channel's plus and minus power-supply "rails." Most of the rest of the interior is given over to a single large, fully enclosed heat-sink assembly; the output devices are mounted to its underside. Three two-channel input/driver boards are arrayed along the back edge, fully modular for easy service and very nicely assembled from top-grade components, including all-discrete transistors.

I auditioned the CAV-75 with five channels active, leaving one channel idle. The amp delivered superb, exceptionally low-noise sound, with only a very modest sacrifice in peak-level performance compared with the more powerful (on paper) Adcom and Sunfire amps. In critical two-channel listening, the CAV-75 reproduced the unique ambient sound of the *Earwitness* CD's piano with finesse. Bottom-octave power and definition were well maintained in strength and impact on the Thom Rotella rock-jazz disc, and when I drove it hard the CAV-75 seemed to clip more gracefully (though a tick earlier) than the Harman Kardon and Adcom amps reviewed here.

In multichannel use, the Classé CAV-75 amp held up very well, with enough output for any listening I'd be likely to contemplate in the real world. Again, add a powered sub to your system, and you'd

have enough headroom to eliminate almost any power worries. In terms of the ultimate surround-sound "grunt," only the Sunfire quantitatively outclassed (ouch!) the Classé by a meaningful margin. The CAV-75 is a terrific amp that's obviously lovingly assembled and crafted.

## Sunfire Cinema Grand

Sunfire is the third major corporate venture of audio designer Bob Carver, its predecessors being Phase Linear (1970s) and Carver Corporation (1980s). The Sunfire Cinema Grand embodies a long-brewing Bob Carver amplifier concept, which he calls the "power-tracking downconverter" amplifier.

Space prohibits much detail, but very briefly, the design employs a "smart" power supply that tracks the audio input with relatively high accuracy. This forms a sort of "amp within an amp" in concert with more or less conventional bipolar-transistor output stages. Since the voltage difference between these devices' speaker outputs and their "tracking" power-supply voltages can be held to a very low level, waste heat is very slight. The Sunfire amp is super-efficient and can thus eschew the large heat sinks used by conventional high-power amps.

In the flesh, the Cinema Grand looks more conventional than it is. The exterior is finished in a smooth, anodized brushed aluminum, which is indeed handsome but



### Sunfire Cinema Grand

**RATED OUTPUT PER CHANNEL** (five channels driven, from 20 Hz to 20 kHz with less than 0.5% THD): 200 watts into 8 ohms, 400 watts into 4 ohms (at clipping)

**SPECIAL FEATURES** Innovative, high-power amplifier design; Voltage Source and Current Source main outputs

**DIMENSIONS** 19 x 6½ x 15¾ inches

**WEIGHT** 45 pounds

**PRICE** \$2,375

**MANUFACTURER** Sunfire Corporation, Dept. SR, P.O. Box 1589, Snohomish, WA 98290; phone, 206-335-4748; Web, [www.sunfirelabs.com](http://www.sunfirelabs.com)

# Measurements

	<b>Adcom GFA-7500</b>	<b>Harman Kardon Model 2.1</b>	<b>Classé CAV-75</b>	<b>Sunfire Cinema Grand</b>
<b>OUTPUT AT CLIPPING INTO 8 OHMS<sup>1</sup></b> (one, three, five channels driven)	214, 182, 166	124, 118, 107	89, 81, 72	247, 244, 233
<b>OUTPUT AT CLIPPING INTO 4 OHMS<sup>1</sup></b> (three channels driven)	278	187	132	400
<b>DISTORTION INTO 8 OHMS<sup>2</sup></b> (one, three, five channels driven)	0.05%	0.02%	0.01%, 0.01%, 0.02%	0.03%, 0.02%, 0.03%
<b>DISTORTION INTO 4 OHMS<sup>2</sup></b> (three channels driven)	0.05%	0.02%	0.02%	0.04% <sup>3</sup>
<b>SENSITIVITY</b> (for rated output)	125 mV	98.5 mV	83.5 mV	134 mV
<b>NOISE</b> (A-wtd, re 1 watt)	-96.4 dB	-96.5 dB	-95.5 dB	-76.3 dB
<b>FREQUENCY RESPONSE</b> (20 Hz to 20 kHz)	+0, -1.6 dB	+0, -0.3 dB	+0, -0.7 dB	+0.3, -0.2 dB <sup>4</sup>
<b>CHANNEL BALANCE</b>	0.3-dB spread	0.2-dB spread	0.07-dB spread	2.1-dB spread

<sup>1</sup> in watts, at 1 kHz, for 0.5% THD plus noise

<sup>2</sup> THD, 1 kHz, rated power

<sup>3</sup> Measuring the Sunfire with multiple channels driving 4-ohm loads repeatedly blew its 10-ampere (slow-blow) line fuse. I obtained this result by putting a 15-ampere fuse in place for short-term measurement only. That's *not* recommended for normal use, but the manual says that a 12-ampere slow-blow fuse is permissible.

<sup>4</sup> measured from Voltage Source outputs

scratches easily. The cover has no grilles on top (a sure sign of extraordinarily cool-running efficiency), only small slots on each side, while the front panel is featureless except for a single large analog meter displaying power-supply energy in joules, scaled to 500.

The Cinema Grand is unique among our quartet in offering pro-style, balanced-XLR inputs in addition to conventional (unbalanced) RCA jacks. Balanced inputs can reduce hum and noise pickup, but they must be connected to a source component with balanced outputs to deliver the advantage. The two unbalanced jacks per channel are marked "Normal: Use Either," presumably indicating cost-effective, dual-jack input parts.

Even more unusual, the front left and right speaker outputs are also doubled, each with two pairs of binding posts. One is labeled Voltage Source, the other Current Source. The first pair is conventional, with the extremely low output impedance typical of transistor amps. The second pair Sunfire calls "... a higher-impedance current-source output, which many prefer for electrostatic, planar-magnetic, or ribbon speakers." Sunfire also suggests, if you have biwireable speakers, wiring the Voltage Source terminals to woofers and the Current Source posts to mid/tweeter arrays for the best of both worlds.

Inside the amp, the Current Source jacks connect to a big, 1-ohm wire-wound power resistor (somewhat inductive) in series with each normal (Voltage Source) output. This arrangement should, at least

to some degree, mimic the behavior of a classic tube amp's output transformer when driving typical multiway dynamic speakers, inducing frequency-response variations of perhaps  $\pm 1$  dB (among other possible effects). Elsewhere inside, a single big power transformer resides within a tall, round enclosure surrounded by circuit boards of conventional components. All output transistors, solid-state switches (HEXFETs), and voltage regulators are bolted directly to the chassis floor — there are no heat sinks whatsoever.

In the full system the Sunfire amp delivered dynamic potential that was effectively limitless in my 20 x 16-foot studio — it certainly exceeded my ears' appetite for volume. Big-action sequences, such as the *Clear and Present Danger* missile impact and the *Apollo 13* blast-off, literally rocked the room — as did the Allmans' classic live, DTS-remastered CD. If my B&W 803/2 speakers were capable of it (their useful limit of 35 Hz or so precludes full impact from big-bass events), I have little doubt that the Sunfire amplifier would have produced all the bottom-octave extension and punch you could want from either movies or music. Although the Cinema Grand was not as quiet as the other three amps in terms of hum and buzz, which were slightly more audible in ear-to-tweeter tests, its noise floor was obscured by virtually any program material, even recorded ambience during musical pauses and "silent" movie scenes. Along with its impressive overall level capabilities, the Cinema Grand provided

a significant boost in surround-channel punch in wide-range, surround-intensive movie scenes (I ran the surround speakers full-range in this test).

In critical two-channel music listening, the amp delivered sound that was precise and "fast," with controlled, unexaggerated lower octaves. Listening to the Current Source outputs yielded a warmer, fuller balance and very slightly "tighter" bass. Subsequent measurement of these outputs with an actual loudspeaker connected revealed the expected response: a broad peak of 1 to 2 dB in the 500-Hz to 2-kHz region, a narrower one around 50 Hz, and a rolloff of more than 1 dB from 2 to 10 kHz. Sunfire's unique design is a true innovation, resulting in an excellent-performing, massively powerful amplifier.

## Powering Off

Each of these amplifiers offers demonstrable performance and value. The combination of brute force and sonic excellence in Sunfire's Cinema Grand is quite literally without precedence, while the elegant Classé Audio CAV-75 delivers classic high-end quality at a price that is not, comparatively speaking, so very high-end. Meanwhile, both the Adcom GFA-7500 and the Harman Kardon Model 2.1 vigorously demonstrate just how much power and quality of construction can be had without compromising sonic performance. It may seem a cliché, but in truth I could live happily with any of these power amps as my permanent home-theater power source. □

# clear signals

How to choose the right antenna for superior FM and TV reception

**A**ntennas, it seems, have come full circle. At one time, everyone recognized the need for them, whether to increase TV viewing options or to receive some semblance of high fidelity from a stereo FM tuner. As cable TV proliferated, however, antennas largely came down from rooftops — or at least they were not replaced when a storm or home-improvement project forced their removal.

Today, external antennas are considered ugly and unnecessary. Many homeowners associations go so far as to prohibit them, forcing cable delivery on residents.

Ironically, before cable-TV companies became primarily distributors of satellite-delivered programming, cable was generally known as CATV, for community-antenna television, or MATV, for master-antenna television. One master antenna, with a suitable mounting position, was used to receive signals from over-the-air broadcasters, and the clean signals were then shared among households that couldn't otherwise receive them — because the town was located in a valley where mountains blocked the transmissions, for example.

It's also ironic that it is small-dish direct-broadcast satellite receivers that are causing a resurgence in interest in traditional antennas. Because local TV stations are not widely available via satellite, many satellite viewers are finding that

an antenna is essential if they want to drop their cable companies and still receive the local channels.

When digital TV (DTV) begins its rollout later this year, an antenna will likely be the best way to get it. Cable companies, in fact, are fighting against "must-carry" regulations that would require them to pass through all DTV formats.

For FM reception, too, an antenna can make or break the performance of even the best tuner or receiver. Don't dismiss FM as a low-fi medium. Although its bandwidth is limited to 15 kHz at the top end, most listeners would be hard pressed to tell the difference between a *good* FM signal and a CD with most program material. It's not the bandwidth limitation that is FM's greatest hi-fi hindrance but "multipath" reception and broadcasters' disregard for good sound.

Fidelity aside, FM radio is unmatched as a way to discover new music that you might want to purchase on CD. Of course, most radio stations are not aimed at serious music listeners and play only commercially successful music that will attract the listeners their advertisers want to reach. But whatever your tastes, there's a wealth of excellent music out there on small, noncommercial stations. You might not be aware of it simply because you've never heard it — either because you don't have an antenna, or because the one you do have is a ball of wire behind your receiver.

by Brian Fenton

## Signal Propagation

Both TV and FM signals travel in straight lines instead of following the earth's surface the way AM signals do. To work adequately, your receiving antenna must have an unobstructed "line of sight" to the transmitting antenna. It's no coincidence that TV and FM stations usually locate their antennas together on the highest hill or building in an area. (In New York City, for example, all major TV and FM stations have their transmitters at the top of either the Empire State Building or the World Trade Center.) All else being equal, the higher your antenna is mounted, the better it will perform, because it will be able to "see" farther past the horizon.

But even if your antenna can see the transmitting antenna, there are still some potential reception pitfalls. Multi-

path reception — where multiple signals from the same broadcast are received, one directly from the transmitter and others reflected off buildings or mountains — is perhaps the most common. With TV signals, multipath shows up as ghosts. With FM, it shows up as increased noise and distortion. You're probably most familiar with multipath on FM from the "picket-fencing" effect often encountered when listening to a radio program in a moving car.

Another problem affecting reception could be signal strength. If you're too far away from a transmitter, its signal might be too weak for you to receive even if your antenna is up high. But being too close can also be a problem, especially if your receiver isn't selective enough or is subject to front-end overload. Fortunately, it is possible to surmount both

multipath and signal-strength problems with the right antenna.

How do you choose the right antenna? First, decide what you want to receive. Let's assume that you want one antenna to receive FM, VHF-TV (Channels 2-13) and UHF-TV (Channels 14-69). Plenty of antennas are sold as VHF/UHF/FM models, and many of them work well in strong-signal areas. But designing an antenna that does all three jobs well even with marginal signals is very difficult because of the huge range of frequencies involved. Designing an antenna that performs as well at 800 MHz as it does at 50 MHz is not a trivial matter.

## FM Antennas

There are two broad categories of FM antennas available: *passive* and *ampli-*

## Antennas Put to the Test

Can the right antenna really make a difference? To find out, we tested the performance of five different FM antennas. We used two high-performance FM tuners, the Day Sequerra FM Reference and the Onkyo TS-9090II, to pull in thirteen stations that varied in transmitter power, antenna height, and distance and direction from our test site — my house on Long Island, about 35 miles east of midtown Manhattan. The stations were selected to help us simulate how each antenna would be likely to perform in urban, suburban, and fringe (rural) areas.

I mounted the fixed directional antennas in a position that optimized reception of signals from New York City, and I optimized each adjustable antenna for best reception on each station. In short, I installed and used them the way most people would. To orient and adjust the antennas, I used the signal-strength meters and oscilloscope on the tuners as well as my ears. I graded reception for each station on a scale of 0 to 4, ranging from no signal, or unlistenable even in mono, to a strong signal with clean, quiet stereo even during the softest passages.

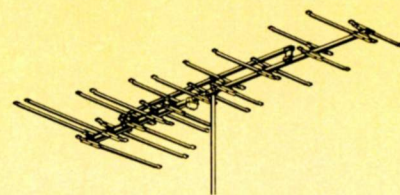
I repeated the tests over the course of several months, in all kinds of weather conditions and at different times of the day, and then analyzed the results to get a picture of each antenna's overall performance. I also evaluated the performance of three TV antennas, but those results are more subjective because the sample of different kinds of stations was smaller.

### Day Sequerra FM360 FM Antenna

Day Sequerra took the "spouse approval factor" into account in designing the wall-mountable FM360 antenna (\$99). It measures 31 x 3 inches, its thickness varying from about 1/8 inch at the edges to about 3/8 inch at the center of its rounded face. It can be painted or even covered with wallpaper, and a super-thin coaxial cable connects the antenna (technically, an end-fed fan monopole) to a wall-mounted power adapter. An F connector on the adapter feeds coax to the receiver. Another thin wire coming from the adapter is for connection to a receiver's AM antenna input, which I didn't use for this test.

In our tests, the FM360 proved to be an excellent suburban performer with good multipath resistance. Its amplifier, unfortunately, is not adjustable, so urban dwellers would probably want to use an attenuator (fixed and variable attenuators are readily available) with the FM360.

Day Sequerra, Dept. SR, 520 Fellowship Rd., Suite E502, Mount Laurel, NJ 08054; 609-222-4141; [www.daysequerra.com](http://www.daysequerra.com)



### Winegard Chromstar CA-6065 FM Antenna

Winegard's CA-6065 FM antenna (\$127), the company's biggest, has ten elements and a length of over 10 feet. It's not likely that you'll be able to fit it into your attic, as its maximum width is just under 6 feet and its turning radius slightly more.

The ten-element Yagi design makes the CA-6065 highly directional. It has a very narrow focus and receives signals almost exclusively from the front, virtually ignoring those arriving from behind it. With it and the Channel Master Colorotor 9510A antenna rotator, I was able to receive signals from opposite directions consistently. I was also able to receive clearly some weaker signals that the other antennas couldn't touch.

With the exception of better multipath rejection, the CA-6065 didn't significantly outperform the other antennas on local stations or on strong stations 35 miles away. But on weak and distant stations, it was the clear champ. If you're in a fringe-reception area, or between two cities that both have stations of interest, this is the antenna for you.

Winegard, Dept. SR, 3000 Kirkwood St., Burlington, IA 52601; 319-754-0600; [www.winegard.com](http://www.winegard.com)



fed (or active). Each of those categories can also be broken down into *directional* and *omnidirectional*.

The antenna you are probably most familiar with is the T-shaped "half-wave" wire *dipole* that's included with virtually every FM receiver sold. It's called a dipole because it is bidirectional, and it's called a half-wave dipole because its arms stretch out to half the wavelength of the center of the FM band (98 MHz), or about 57 inches. Such wire dipole antennas come in two flavors, *basic* (single-wire arms) and *folded* (twin-lead arms).

Incidentally, it's easy to make your own dipole, and there are a couple of reasons why you might be able to build a better one than you could buy. For example, if you're having trouble only with a low-power college station at the

bottom of the dial, you could custom-cut the dipole for that frequency. It should be longer than usual to improve reception at the bottom end of the band (63¾ inches for 88.1 MHz) and shorter than usual to help at the top end (52 inches for 107.9 MHz). A telescoping rabbit-ears antenna (a kind of dipole) could also be a good choice because you can vary the length of the arms for best reception anywhere in the band.

A dipole is a bidirectional antenna — it receives signals that arrive from both its front and back, and it's less sensitive to signals coming in at its ends. Obviously, then, positioning the antenna properly will have an important effect on its performance. Unfortunately, dipoles sometimes work best in strange, tilted configurations. They are also affected by their surroundings, and it can

be frustrating to adjust one properly because it'll perform one way while you are holding it and differently once you step back from it.

Other indoor antennas are available in a wide variety of shapes and sizes — and a wide variety of prices as well. Typically, they are small, designed to be placed on top of a receiver or TV, and they contain built-in amplifiers. Some amplified antennas have a pre-selector so that the amplifier's operation can be "peaked" (maximized) for the desired frequency. The gain of amplified antennas can usually be adjusted.

Small amplified set-top antennas can perform adequately in urban or suburban areas and, at best, can approach the performance of a dipole — while being much more convenient to use. But David Day, the owner and founder of

### Fanfare FM-2G FM Antenna

Fanfare's FM-2G (\$85) is intended for urban, suburban, and near-fringe FM reception. Technically, it's a half-wave, vertical, end-fed dipole. Its single stainless-steel element is about 56 inches tall, and it is attached to a hermetically sealed, 2-inch-tall cylindrical loading coil that's about an inch in diameter. An F connector protrudes from the bottom of the loading coil for connection to 75-ohm coaxial cable. An L bracket is provided for wall-mounting the antenna, either inside or outside the house. A 25-foot length of RG-59 coaxial cable is also included.

The FM-2G is omnidirectional, and it performed well with stations arriving from different directions without needing readjustment. Of course, when two stations used the same frequency, the FM-2G wasn't able to distinguish between them as a directional antenna would. On the other hand, the vertically polarized FM-2G proved to be less susceptible to multipath interference.

The FM-2G is aesthetically unobtrusive because its thin vertical element disappears at a distance. If an omnidirectional outdoor antenna is what you need, then you'll be happy with the FM-2G.

Fanfare, Dept. SR, 2100 Old Union Rd.,  
Buffalo, NY 14277; 905-793-7953;  
[www.fanfare.com](http://www.fanfare.com)



### Parsec Receptor FM Antenna

When I first saw the Parsec Receptor (\$45), I thought, "It looks pretty cool, but it probably won't work."

I was half right. It does look pretty cool. It's got a tiltable 13½-inch main element on a circular base, which houses an amplifier. The tiltable element isn't there just for aesthetic reasons. When it's pointing straight up, the Receptor is omnidirectional. When it's horizontal, the Receptor is bidirectional. Point it midway, and the antenna achieves some combination of the two reception patterns — and might be just what you need. With the Receptor, making adjustments for optimal reception was easy and smooth.

The built-in amplifier is essential to get decent performance from such a small receiving element, but don't expect it to work miracles. The Receptor isn't going to make signals appear out of nowhere, but it beats a wire dipole because it's a heck of a lot easier to adjust.

Parsec, Dept. SR, 2950 Lake Emma Dr., Lake Mary,  
FL 32746; 800-732-6866; [www.recoton.com](http://www.recoton.com)



### Terk FMPRO FM Antenna

Terk's FMPRO (\$120) is built on the premise that a half-wave dipole is already a pretty good antenna. So Terk put one inside an off-white plastic case measuring about 59 x 1 x 2½ inches, adding an amplifier and an F-type coaxial connector in the black plastic center section. The FMPRO is intended to be hung horizontally in an attic, on an inside wall, or, since its housing is weatherproof, on the side of a house. Its slim dimensions will make it inconspicuous wherever you put it.

The FMPRO amplifier is switchable. Its power supply, a wall-mounting DC adapter, can be located back by the receiver and connected to a small box that you place in line with the coaxial cable from the FMPRO. A switch on the box turns on the amp if necessary to overcome the losses in long runs of cable.

All that was required to get good suburban/near-fringe performance from the FMPRO was to find the right location for it. None of the walls in my suburban house face the right direction, so I hung it from the attic rafters, with excellent results.

Terk Technologies, Dept. SR, 63 Mall Dr.,  
Commack, NY 11725; 516-543-1900; [www.terk.com](http://www.terk.com)

Day Sequerra, one of the few companies specializing in high-end tuners, noted that "if amplifiers were the answer, everyone could use a 1-inch antenna and a high-power amplifier and get good reception. It just doesn't work that way." Hans Rabong, a thirty-year veteran with the antenna manufacturer Winegard, expressed a similar sentiment: "If a good amplifier was all you needed, we'd make one size of antenna and fifty different amps."

Undoubtedly, an amplified antenna will produce a higher signal level, which will be clearly obvious if your tuner has a signal-level meter. That doesn't mean, however, that the signal will *sound* better. Amplified antennas will typically amplify noise as well, leaving you with a stronger *and* noisier signal. When comparing antennas for

this article (see below), I virtually ignored the tuners' signal-level meters. It was always possible to get a higher signal-level reading with an active antenna, but the high level had little to do with the signal's listenability.

If you're not in a metropolitan area, or if the stations you want to listen to are far away or low-powered, and you just can't get adequate reception with a dipole, then it's time to move to something bigger — something like a rooftop antenna. Don't worry if you can't put an antenna on your roof because of an uncooperative landlord or homeowners association. It will probably work almost as well in your attic.

Most larger FM antennas are based on the folded dipole. One common attic-mount antenna is the omnidirectional *S-shaped dipole*. Getting it up high

and away from materials that could affect its operation — such as aluminum siding and gutters — will help its performance. Another omnidirectional antenna based on the folded dipole is the *turnstile*, sometimes called a *crossed dipole*. Basically, this is two folded dipoles that cross each other at the center, making 90-degree angles, like a times sign (X). Yet another omnidirectional antenna is the *half-wave vertical*. It has higher gain than a dipole, and it can be less conspicuous.

If you want to listen primarily to stations from one direction (a common situation in many suburbs), a higher-gain directional antenna like a *Yagi* would be the right choice. These are also based on the folded dipole but add extra elements in front (directors) and back (reflectors). As the number of elements in

## Antennas Put to the Test

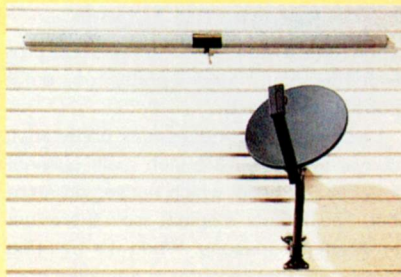
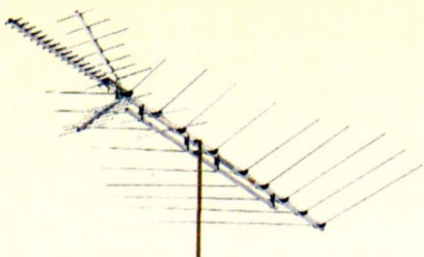
### RadioShack VU-190 XR TV/FM Antenna

RadioShack's VU-190 XR (\$100) is probably what comes to mind when you think of an outdoor TV antenna. It's a rather large VHF/UHF/FM Yagi type that has fifty-seven elements to cover the three bands, spread over a boom longer than 13 feet. The antenna's maximum width is 8 feet.

I mounted the VU-190 XR on top of a Channel Master Colorotor 9510 rotator mounted on a mast secured to my house's chimney. The height of the antenna from the ground was about 35 feet.

The performance results were not really surprising. The VU-190 XR outperformed the other TV antennas on all bands, providing clear, snow-free reception. The rotator let us turn the antenna to catch watchable stations from Connecticut and New Jersey as well as New York. There's no question about it: get a big antenna like the VU-190 XR, put it up high, aim it right, and it will make you forget that cable even carries your local channels.

RadioShack, Dept. SR, 100 Tandy Center, Fort Worth, TX 76102; 817-415-3011; [www.tandy.com](http://www.tandy.com).



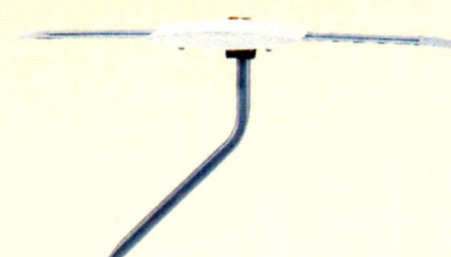
### Winegard Sensor SR-2190 TV Antenna

The Winegard Sensor SR-2190 amplified VHF/UHF antenna (\$103) looks something like an alien spaceship. An oblong center pod houses the amplifier. Two wings with down-bent tips protrude from the pod — the total wingspan is 46½ inches, making it a relatively easy antenna to install. The amplifier's power supply mounts remotely and feeds power to the antenna via the coaxial cable.

Its construction and installation manual suggest that the Sensor is a bidirectional antenna. I mounted it in my attic and was surprised to find that it favored signals arriving from its front over those arriving from its rear.

Despite its small size, the Sensor was a good performer. It fell short of the Terk TV50 on the VHF low band, and, unlike the TV50, the Sensor needed its amplifier to receive any signal on Channels 2 through 5. On the other hand, it was a super antenna for UHF reception.

Winegard, Dept. SR, 3000 Kirkwood St., Burlington, IA 52601; 319-754-0600; [www.winegard.com](http://www.winegard.com)



### Terk TV50 TV Antenna

According to the manufacturer, the Terk TV50 (\$130) is "an ideal complement to DSS receiving systems" because it's relatively unobtrusive. It's also shipped with a pair of "diplexers," which combine antenna and satellite signals into a single coaxial feed. Also supplied with the antenna are four lengths of coaxial cable (30, 20, 6, and 3 feet).

The TV50 looks very similar to Terk's FMPRO, but it's longer (73 inches) so that it can do a better job on the low VHF channels. It has a similar remote-switchable amplifier to overcome losses from long cable runs, multiple splitters, and other signal attenuation.

Mounted in my attic, the TV50 did a credible job of pulling in UHF and high-band VHF stations. It fared less well on low-band VHF (Channels 2 to 5). But its performance should still make a satellite subscriber happy enough to cancel his cable subscription.

Terk Technologies, Dept. SR, 63 Mall Dr., Commack, NY 11725; 516-543-1900; [www.terk.com](http://www.terk.com)

an antenna increases, its overall gain will increase and its directivity will become sharper. A multi-element Yagi would be ideal if, for example, you wanted to listen to a weak distant station to the west that was being interfered with by a strong local station to the east.

Of course, if you also want to receive stations to the east sometimes, you need to be able to point the antenna that way. A rotor, like the Channel Master Model 9510 Colorotor (also available as the \$65 RadioShack 15-1225) that I used in the tests below, is essential.

### TV Antenna Types

Like FM antennas, TV antennas can be grouped into broad categories such as set-top or outdoor, active or passive. Set-top antennas include *rabbit ears* for

VHF, *loops* or *bow-ties* for UHF. Outdoor TV antennas are typically Yagi or *log-periodic* designs. They might be designed for VHF only or a combination of VHF, UHF, and FM. Some TV antennas contain an "FM trap," which filters out the FM band to reduce interference on Channel 6, and obviously these won't provide good FM reception. But if FM reception is important to you, a typical VHF/UHF/FM antenna might not perform well enough, either.

I asked Winegard's Rabong how the FM performance of one of his company's larger TV/FM antennas compares with that of the FM-only CA6065 that we tested. "Basically," he said, "with the TV/FM antenna you're using only one element, the Channel 6 director, for FM, so you could expect a 6.7-dB gain. With the CA6065, you have ten ele-

ments for FM, with a gain of 9.7 dB at 88 MHz and 10.6 dB from the middle of the band on up." In other words, the FM signal delivered by the FM-only antenna is at least twice as strong as the one delivered by the TV/FM combo.

THERE'S NO DOUBT that the right antenna, in the right location, can make a tremendous difference in what you can hear and see from your tuner or TV. If you can put a big antenna up high, you'll get the best performance, no question. On the other hand, some compact amplified indoor antennas can produce acceptable results if they're properly installed. If you've been making do with the reception from a casually draped folded dipole, you owe it to yourself to find out what an upgrade can do. □

## A Tale of Two Tuners: Day Sequerra FM Reference and Onkyo Integra TS-9090II

THE DAY SEQUERRA FM Reference tuner (\$5,500) has a built-in oscilloscope to help you get the best possible reception. Otherwise the front panel is reasonably sparse: six pushbuttons on each side, a rotary tuning control, and a five-digit LED frequency readout.

Don't let the digital readout fool you — the FM Reference is an analog tuner. Digital tuners allow for easy implementation of such features as station preset memories — something that the FM Reference tuner lacks. But according to Day Sequerra, the analog tuning design avoids the inherent tradeoffs of a digital-synthesis tuning system, including insufficient tuning accuracy and increased noise. It even lacks automatic frequency control, which the manufacturer says is a source of RF noise.

The tuning oscilloscope's function is controlled by three of the left-hand pushbuttons. FM Tuning Display lets you center



a station on its frequency and get a reading on signal strength. Tuner Vector Display and Tuner Balanced Vector Display let you see the relative gain, phase, and stereo-separation characteristics of the FM program material. I used the display primarily

to orient the antennas I was testing for minimum multipath, which is more important to the quality of the received signal than maximum signal strength.

If money's no object and digital conveniences are not important to you, then you'll definitely enjoy the performance of Day Sequerra's FM Reference tuner.

Day Sequerra, Dept. SR, 520 Fellowship Rd., Suite E502, Mount Laurel, NJ 08054; 609-222-4141; [www.daysequerra.com](http://www.daysequerra.com)

ONKYO'S INTEGRA TS-9090II (\$789) is a quartz-synthesis FM tuner that delivers all of the niceties you'd expect from a digital tuner, including twenty station presets, preset scan, auto search/seek tuning, and even an auto-memory function that scans the FM band and fills the presets with what it finds. It has a remote control, both fixed- and variable-level line outputs so that you can use the tuner's remote to adjust volume, and a host of other features that are kind of rare.

The top right corner of the front panel holds a useful collection of buttons. First is RF Mode, which sets the gain of the RF section for either local or distant reception. Next is the IF Bandwidth selector, which goes beyond the usual wide and narrow settings with a super-narrow mode that is very useful in pulling a weak station out of adjacent-channel noise. Other tuner controls include a stereo/mono selector, a muting button for weaker stations, and an

antenna selector for choosing between two different antenna inputs. There's also a Hi Blend button that reduces stereo separation to help quiet reception.



The tuner's microprocessor-controlled Automatic Precision Reception (APR) system automatically sets the RF gain, the IF bandwidth, the hi-blend function, and the mono/stereo mode — it even chooses which antenna is a better choice for the selected station. You can override any of the choices, but I usually found that the APR system got it right on the first try. All of the settings can be stored along with the station's frequency in the preset memories.

The lighted signal-strength meter gives either a relative indication of signal strength or the actual signal level, measured in dBf (decibels referred to 1 femtowatt). There's no oscilloscope on the T-9090II, but there are rear-panel jacks for connection to one so that you can keep an eye on multipath.

If you're fed up with the lackluster tuner performance of most of today's receivers, you'll appreciate what the T-9090II can do — especially when it's attached to a good antenna.

Onkyo, Dept. SR, 200 Williams Dr., Ramsey, NJ 07446; 201-825-7950; [www.onkyo.co.jp](http://www.onkyo.co.jp)

MANY PEOPLE planning to upgrade their stereo systems from two channels to five or more channels are confused about whether they should use direct-radiating or diffuse-radiating surround speakers. A preference for diffuse-radiating surrounds — usually dipoles — is well established for playback of movie soundtracks, but are dipoles also best for multichannel reproduction of music? That is not an idle question considering that a DVD-Audio standard is close to being defined, and by next year we may start seeing 5.1-channel music DVDs (some discs might include still pictures, but most of the space will be for audio).

Corey Greenberg's "High End" column in the February issue (titled "Dipolar Disorder") expressed his preference for direct-radiating surround speakers for music. Unfortunately, he also muddied the waters a bit, particularly by repeating the story (often heard from audio dealers) that dipole surrounds were developed as a bandage

from stereo recordings by extracting a difference signal ( $L - R$ , or left channel minus the right channel) and then sending it through a time-delay circuit to make sure transients stayed localized in the front image by means of the "precedence effect" (this is also the reason for the surround-channel delay in Dolby Pro Logic systems). I did just that in a kind of prototype home-theater system I built using an Advent VideoBeam 1000A projection TV, a pair of Klipsch La Scala speakers (which have controlled vertical directivity) in front, and a pair of KLH Model 9 full-range panel-dipole electrostatics located to the sides of the listening area, with their dipole "nulls" (direction of minimum sound radiation) pointed toward the listeners.

There were no Dolby Surround-encoded recordings in those days, and not even any consumer VCRs, so what to do for program material? Stereo TV (MTS) had yet to be invented, so the only programs available at home with

### Why Dipoles?

Another myth commonly heard in stores that should also be questioned is that discrete 5.1-channel sound does away with the need for dipoles. Advertisers and dealers oversimplify for marketing reasons, speaking as though THX were an "answer" to Pro Logic and Dolby Digital (AC-3) an "answer" to THX. The truth is that THX circuitry does post-processing on audio signals delivered by Pro Logic, Dolby Digital, or DTS decoders in order to get closer to the intent of the originators of the program material. In the case of a movie soundtrack, THX processing is designed to enable a home theater "to accurately recreate the film mixing stage where the soundtrack was created, allowing you to hear the soundtrack that the filmmaker intended," to quote from the Dolby Labs Web site.

One reason I was looking into such a system in the mid-1970s was that even though quadrasonic sound had failed, it still seemed desirable to seek a more

# DIPOLAR

## The case for dipole surround

for a problem with matrixed Dolby Pro Logic surround sound. Since Pro Logic has only one surround channel, but feeds two speakers from it, it makes sense to suppose that the dipole surround speaker was invented to overcome the effects of a single DPL surround channel presented over two side-mounted speakers. The most important effect is localization of the surround-channel sound either in the listener's head, if he is seated exactly on the center line between two identical surround speakers, or else at the closer speaker if he is seated off center.

It's a plausible story, but dipole surround speakers were *not* invented to overcome this problem of Dolby Pro Logic. The use of dipole speakers for *increased diffusion* of ambience goes back at least to 1974, long before Dolby Stereo theater sound was transferred into consumer media. In those days, it was in vogue to "recover" ambience

both a picture and stereo sound were "simulcasts" (broadcast on TV and FM simultaneously) of *Don Kirshner's Rock Concert*.

On more than one Saturday night I brought in naïve listeners — Harvard students — and demonstrated this setup to them. The students did not know that the panels at their sides were loudspeakers, and I did my best, by riding gain between front and back, to keep them from realizing what was going on. Everyone who heard this system was very impressed by its ability to produce a sonic image in front and *diffuse* ambient sound all around at one and the same time, but they weren't at all aware of how it was being done. So the dipolar approach was not invented to cure the surround-localization problem of Dolby Pro Logic, which hadn't been invented yet anyway. (The localization problem has since been solved by THX "decorrelation" processing.)

spacious effect than we could get by looking through the sonic window generated by just left and right front speakers. Quad failed not only because of the war between incompatible delivery systems — matrix vs. discrete, QS vs. SQ vs. CD-4 — but also because it didn't work as promised even with four discrete channels on a high-quality master tape. The engineering effort had all gone into delivery media, with virtually none into recording and reproduction techniques. When the BBC studied quad in detail, with the four speakers arranged in the traditional square, it was found to be sorely lacking in the ability to image sound from various directions: imaging worked fairly well in front and back, but it was very poor at the sides. Thus, the idea that all the speakers in a surround-sound setup should be identical is questionable, because not even identical speakers result in equal sound all around the listener.

Despite quad's failure, it is nonetheless useful to be able to "break the proscenium" with surround sound, extending imaging beyond the front of the soundstage. A psychoacoustic experiment was done in 1972 to determine the minimum number of channels necessary to make a sound field audibly diffuse. (The reverberation component of recorded sound should be reproduced as a diffuse sound field, since that is what occurs with reverberation naturally.) Twenty loudspeakers were set up in a circle, each 18 degrees apart, and various numbers of them at varying angles were activated with separate noise sources. The key finding was that it took a minimum of five channels to produce a diffuse sound field.

Before we celebrate that our current 5.1-channel systems have it covered, however, let's look at the angles required to produce the effect of sonic envelopment (see Figure 1):  $\pm 36$  degrees off the center axis, which is close to what we're used to with stereo

Two different listening panels were formed, one made up of people naïve about sound reproduction (they had only simple stereo systems, if any at all) and one made up of very sophisticated listeners indeed — the very people who had mixed the soundtracks of the films represented in the tests. Both panels did blind A/B comparisons between systems using dipole and monopole (direct-radiating) surround speakers, with the levels and frequency responses of the different pairs of surrounds carefully matched so that radiation pattern was the principal variable.

*All of the listeners in both panels preferred the dipole surrounds over the monopoles, and for exactly the reason that Corey Greenberg cited in his column, that dipoles "deliver a more expansive sense of ambience."* The direct-radiating surrounds were easily localized by the listeners and thus failed to give a surround effect. I reported these results in the *Journal of the Audio Engineering Society* (the audio industry's

For a match in frequency response between the two types of surround speaker, the dipole surround has to have flat power response, that is, flat response measured as a sum of the speaker's output in all directions, not just in one particular direction. A good conventional monopole (direct-radiating) speaker should also have a flat response, but measured only on and close to its main axis of radiation. If both the monopole and dipole are THX-certified, the response of the two types should match. Corey's listening experience with two unmatched speaker models could have been overwhelmed just by the frequency-response differences between them — a brighter loudspeaker will be perceived as producing "more detail."

### Surround Utopia

I recently participated in the design of a home-theater-style listening environment for a major Hollywood studio, built so that the sound engineers can as-

# surround speakers • Tomlinson Holman

speakers;  $\pm 108$  degrees off-axis, which corresponds well with the usual recommended placement for left and right surrounds; and 180 degrees off-axis, or directly behind the listener! For the best frontal imaging, though, we've learned that a center front channel is required, and something that all multichannel delivery systems provide (Figure 2). How can we reconcile these seemingly contradictory requirements?

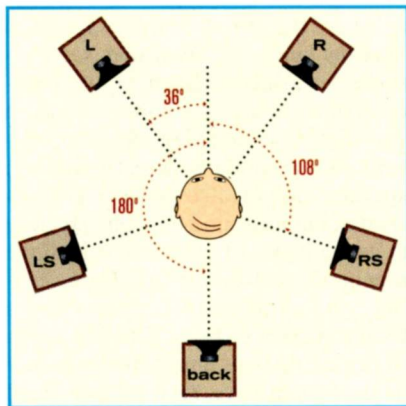
Fast forward to 1986, the year that the dollar value of video recordings sold exceeded that of movie tickets sold. I began researching how to recreate the experience of the best motion-picture theaters at home. This was a logical follow-up to the theatrical THX system, which was designed to help movie theaters achieve what the directors and mixers of films intended. Of course, I remembered that earlier experiment, but I wanted the foundations of Home THX to be even more scientific.

equivalent of the *New England Journal of Medicine*).

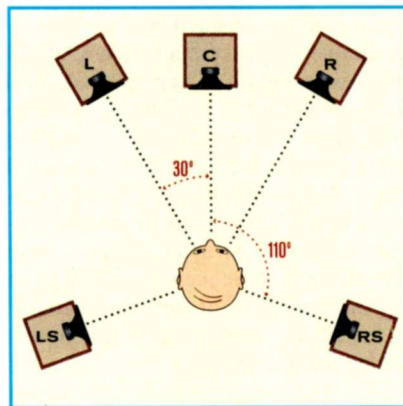
Corey, however, also said that he finds "more detail" with monopole surrounds, and he therefore prefers them for music as opposed to movie soundtracks. One reason he hears more detail with monopoles is that he hasn't compared the two kinds of speakers in a system where their levels and frequency responses are matched — the dipole surrounds he used to discredit the principle weren't even THX-certified, which would have helped produce a relatively flat response at the listening position. The original intent of the Home THX specifications was to match the response of the dipole surrounds with that of good monopoles so that either could be used interchangeably to reproduce surround-channel signals, without the surround-channel response getting noticeably brighter or duller, for instance, when switching between them.

sess video releases under highly standardized yet homelike conditions. We started with a blank slate and were able to specify everything about the room, including the dimensions and acoustics, as well as all parts of the sound system. When it came to surround speakers, I asked for both types (dipole and monopole) to be installed, with an A/B switch, and they were adjusted and equalized until their levels and frequency responses matched.

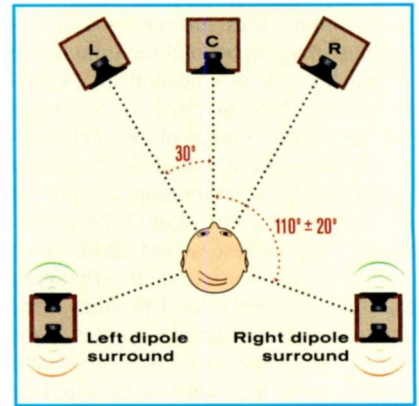
In addition to having used this room for a few hours myself, I also solicited feedback from the long-term users. Most of them have agreed with me that envelopment is better with the dipoles (see Figure 3): the front and surround channels seem to integrate better with spatial effects, like thunder rumbling around the room, and front-to-back pans are smoother. When listening closely for quality control, the sound engineers prefer the direct-radiating (monopole)



**Figure 1.** In an interesting psychoacoustic experiment performed in 1972, it was found that to create a diffuse and enveloping sound field, a minimum of five speakers are needed — but one of them has to be placed directly behind the listener. These results help explain why quadrasonic sound failed.



**Figure 2.** A standard 5.1-channel speaker setup has the left and right front speakers about 30 degrees off the axis where the center speaker is placed, with the two surround speakers about 110 degrees off center. But if direct-radiating (monopole) surrounds are used, those five speakers cannot produce the sensation of being immersed in a diffuse sound field as in Figure 1.



**Figure 3.** To combine the effect of a realistic sonic image in front of the listener with the effect of immersion in a diffuse sound field using only five speakers, you need diffuse-radiating (dipole) surround speakers. Dipole surrounds also produce a larger “sweet spot” for listening compared with monopoles.

If you think home theater is the only reason for the dipolar approach, think again. Diffuse ambience is just as important for music.

surrounds, because they emphasize defects such as small clicks or dropouts, which are indeed easily localized. But when listening for pleasure, most do prefer the dipolar approach.

One clear advantage in favor of the dipoles is the larger “sweet spot” they make available. The level of a direct-radiating speaker falls as you move away from it. With a dipole, the null direction is pointed at the listener, so the variation in perceived volume along the null direction is more uniform than with a direct radiator, since virtually all the energy received along this line has been reflected by the room. This effect widens the listening area for high-quality reproduction compared with the direct-radiator approach.

If you think that home theater, with its emphasis on frontal images and surround envelopment, is the only reason for the dipolar approach, think again. Diffuse ambience is just as important

for pure music reproduction. Probably the most popular multichannel work to date has been John Eargle’s recording of Tchaikovsky’s *1812 Overture* with the Dallas Symphony. John says that the best reproduction of it he has heard was in a large room at an Audio Engineering Society meeting in Toronto, where the front channels were handled by direct radiators and four dipole surrounds were used to reproduce the ambience of the space where the recording was made, the well-respected Meyer-son Hall in Dallas. He says that he could “walk the room” in Toronto and get an experience like “walking the hall” in Dallas.

Both surround approaches have adherents, as Corey Greenberg’s column suggests. If you’re not convinced one way or the other, you could have it both ways with M&K’s “Tripole” surround speakers or similar approaches from other manufacturers.

Ultimately your choice, if unaffected by marketplace “noise,” will most likely tend toward dipoles if you listen for pleasure with family and friends to movies or to music placed in an acoustic space, and toward monopoles if you want to be alone, in the middle of the band. Probably the marketplace has made too much of the distinction between these types of surround speakers since each type produces both a direct and a diffuse sound field. How much sound image or sonic envelopment is emphasized relative to the other is really just a matter of degree.

**Tomlinson Holman** is president of *TMH Labs* ([www.tmhlab.com](http://www.tmhlab.com)) and professor of sound at the University of Southern California. He patented the concept of a dedicated dipolar surround speaker, set the original standards for Lucasfilm’s THX, and coined the term “5.1 channels.”

# ARE YOU LEAVING THE FUN OUT OF YOUR PICTURES?



You can have the right equipment and still leave fun—the essential ingredient—out of your picture-taking. Well, fun is never left out of *Popular Photography*!

**Let us help you take the best pictures... and have the best time!**

With the finest, state-of-the-art equipment lab, *Popular Photography's* camera, film and lens reports set the world standard for product reviews. Whether snapping pictures of friends, family, foliage or favorite vacation spots...debating digital re-mastering... or considering a lens shutter camera, you'll find the advice and professional know-how necessary to make your shots electric and the processing easy.

Study the portfolios of recognized masters in portraiture, sports shots and travel photography...meet the industry's promising new comers and pick up pointers from our interviews with top photographers.

No matter how much or how little you know about picture taking, there's always a new technique or technology to test and learn—isn't that what the fun of photography is all about? If you agree, subscribe to *Popular Photography* now! And save up to 73% off the annual newsstand cost!

- 1 year (12 issues) for \$11.97 — Save 72%!**
- 2 years (24 issues) for \$22.97 — Save 73%!**
- 3 years (36 issues) for \$33.97 — Save 73%!**

**popular**  
**PHOTOGRAPHY**

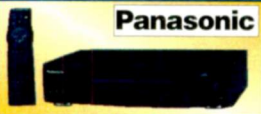
Popular Photography P.O. Box 51803, Boulder, Colorado 80322-1803

Canadian orders add \$8 per year (includes 7% GST); foreign orders add \$8 per year for postage. Payment in U.S. funds must accompany order. Please allow 30 to 60 days for delivery of first issue.





## Hi-Fi Stereo VCRs



### Panasonic

## Panasonic PV-8662

### VHS Hi-Fi Stereo VCR

- 4 heads •VCR Plus+ •Auto clock set •Digital auto picture
- Commercial advance •Remote control

### \$249<sup>99</sup>

(PAN PV8662)

### Panasonic PV-8450

- 4 heads, trilingual on-screen display, auto clock set, TV/cable box universal remote...**'169'**

### Samsung VR8807

- 4 heads, Diamond Head™ long-life video heads, VCR Plus+, high speed mechanism, remote...**'199'**

### Sony SLV-678HF NEW!

- 4 heads, digital auto tracking, Adaptive Picture Control II, multi-brand remote...**'199'**

### Sony SLV-778HF NEW!

- 4 heads, VCR Plus+, auto clock set, Adaptive Picture Control II, commercial advance, remote...**'249'**

### JVC HR-VP638

- HLS Hi-Fi Stereo, 4-heads, VCR Plus+ with cable box controller, jog/shuttle control...**'259'**

## Sony Digital Technology



### Sony MDS-JE510

### MiniDisc Recorder

- Up to 74 minutes stereo/148 minutes mono recording •Un-do editing function •25-step programming •Jog dial •Remote control

### CALL

(SON MDSJE510)

### Sony INT-W200 WebTV™ Internet Terminal

- Integrates Internet & TV programming with built-in tuner, requires WebTV™ service...**'199'**

### Sony MDS-S38

- MiniDisc Recorder, 10-sec. shock resistant memory, Jog dial, 25-track programming...**CALL**

### Sony SAS-AD3

- Digital Satellite System, compact 18" design, 10-event timer, joystick remote...**CALL**

### Sony MDS-BUNDLE4

- Home MiniDisc Recorder & a portable player, includes 2 blank discs...**CALL**

### Sony DTC-ZE700

- DAT Recorder, Super Bit Mapping™ technology, optical & coaxial digital inputs...**CALL**

## Aiwa Mini Systems



### Aiwa NSX-A303

### Mini Audio System

- 30 watts/channel •3-disc CD changer •Dual cassette deck •32-AM/FM presets •2-way speaker •Remote control

### \$199<sup>99</sup>

(AIW NSXA303)

### Aiwa LCX-350

- Ultra-mini, top-loading CD player, auto-reverse cassette, remote...**'149'**

### Aiwa NSX-A505

- 50 watts/ch, 3-disc CD, dual cassette, AM/FM, karaoke mic, mixing, remote...**'249'**

### Aiwa NSX-A707

- 80 watts/ch, 3-disc CD, AM/FM, dual auto-rev., cassette, karaoke mic, mixing, remote...**CALL**

### Aiwa NSX-A909

- 30 watts/ch + 80 watts/ch, for built-in subwoofer •3-disc CD, AM/FM, dual auto-rev. cassette...**CALL**

### Aiwa NSX-MT920

- Mini Theater™, 100w x 2 + 33w x 3, 3-disc CD, Dolby Pro Logic, dual auto-rev. cassette...**CALL**

### ASK ABOUT OUR EXTENDED WARRANTY

## ASK ABOUT OUR EXTENDED WARRANTY

**TO ORDER BY MAIL:** SEND MONEY ORDER, CERTIFIED OR CASHIER'S CHECK, MASTERCARD, VISA, AMERICAN EXPRESS or DISCOVER CARD (include Interbank No., expiration date & signature) To: J&R Music World, 59-50 Queens Midtown Expwy, Maspeth, Queens, NY 11378. Personal & business checks must clear our Authorization Center before processing. Shipping, handling & Insurance Charge (Continental US) is 5% of the total order with a \$4.95 minimum for orders up to \$500; 4% for orders over \$500 to \$1000; 3% for orders over \$1000 to \$1500; 2% for orders over \$1500 to \$2000; 1% for orders over \$2000. For heavy-weight, over-sized items, shipment by air, or to Canada, Hawaii, Alaska, Virgin Islands & Puerto Rico, please call for information. DO NOT SEND CASH. Sorry, no C.O.D.'s. NY residents please add sales tax. ORDERS SUBJECT TO VERIFICATION & ACCEPTANCE. NOT RESPONSIBLE FOR TYPOGRAPHICAL OR PICTORIAL ERRORS. ALL MERCHANDISE SHIPPED BRAND NEW, FACTORY FRESH & 100% GUARANTEED. Some quantities may be limited. Copyright 1998 J&R Music World, City of N.Y., Dept. of Consumer Affairs License Numbers 0900310/0900615/0900616/0900617

# J&R MUSIC WORLD®

## DVD - Digital Video Discs

### Passenger 57 DVD \$19.99

### Bronx Tale DVD \$19.99

### Sweet Hereafter DVD \$19.99

### Deconstructing Harry DVD \$19.99

### Lifeforce DVD \$19.99

### Tomorrow Never Dies DVD \$19.99

### Spice World DVD \$24.99

### As Good As It Gets DVD \$24.99

### American Pop DVD \$24.99

### Desperate Measures DVD \$24.99

### Starship Troopers DVD \$24.99

### Copland DVD \$24.99



### Tron \$24<sup>99</sup>



### Pulp Fiction DVD \$24.99

### Sea of Love DVD \$19.99

### Carlito's Way DVD \$21.99

### Daylight Collector's Edition DVD \$29.99

### Psycho Collector's Edition DVD \$29.99

### Street Fighter Collector's Edition DVD \$29.99

### Getaway (1993) DVD \$19.99

### Dragon- The Bruce Lee Story Collector's Edition DVD \$29.99

### Chamber DVD \$19.99

### © Buena Vista Pictures Distribution, Inc.



## DVD Players

### Panasonic



### Panasonic DVD-A110

### DVD Player

- Plays DVDs, video & audio CDs •Coaxial/optical digital audio out •Virtual surround sound •Remote

### \$399<sup>99</sup>

(PAN DVD A110)

### Toshiba SD-2107

- Plays DVDs, video CDs & audio CDs, 5.1 ch. Dolby Digital Surround Sound, remote...**'439'**

### JVC XV-1000BK

- Plays DVDs, video CDs & audio CDs, on-screen Graphical User Interface, remote...**'449'**

### Panasonic DVD-A310

- Plays DVDs, video CDs & audio CDs, advanced Dolby Digital 5.1 ch. decoder, remote...**CALL**

### Toshiba SD-3107

- Plays DVDs, video CDs & audio CDs, 5.1 ch. Dolby Digital Surround Sound, Spotlizer™ 3D...**'549'**

### Sony DVP-S7000

- Plays DVDs, video CDs & audio CDs, SmoothScan™ special effects, component video out, remote...**CALL**

## Turntables



### Thorens TD180

### 3-Speed Belt Drive Turntable

- 33, 45, 78 r.p.m. •Automatic shut-off & auto-rotate
- Synchronous motor •External power supply •Includes Stanton cartridge

### \$299<sup>99</sup>

(THN 180)

### TEAC PA-400

- Fully-automatic, includes built-in phono preamp & cartridge...**'99'**

### Technics SL-BD22K

- Semi-automatic, belt-drive, P-mount style arm, pitch control, black...**'154'**

### Gemini PT-2000

- Professional Manual DJ Direct Drive, quartz lock, pitch control, feather-touch start/stop...**'368'**

### Thorens TD280 Mk IV

- Belt-drive, 33/45, auto shut-off, includes Stanton cartridge...**'369'**

### Technics SL-1200II

- Professional Manual, direct-drive, quartz lock, pitch control...**'479'**

## Separate Components



### Harman/Kardon PT2500

### Home Theater A/V Tuner-Controller

- A/V control center with Dolby Pro Logic, Dolby 3 Stereo, Theater & Hall modes •30-AM/FM presets •Remote control

### \$299<sup>99</sup>

(HK PT2500)

### AudioSource AMP Two

- Power Amp, 80 watts/channel, switchable to 200 watts mono...**'299'**

### AudioSource AMP Three

- Power Amp, 150 watts/channel, switchable to 400 watts mono...**'399'**

### Harman/Kardon PA5800

- 5-Channel Home Theater Power Amp, 80 watts x 5, high-current design...**'549'**

### AudioSource PreAmp/Tuner Two

- AM/FM tuner with 18 presets, phono & video inputs, remote...**'399'**

### Dynaco PAS-4

- Vacuum Tube Preamp, MM phono preamp, 50% Off Mfg. Sug. Retail (\$999)...**'499<sup>99</sup>'**

## CD Portable Stereo



### Panasonic RX-ED77

### CD/Radio/Dual Cassette Portable Stereo

- CD player with 36-track programming •Dual auto-reverse cassette •10-FM/10-AM presets •3-D sound •Remote

### \$199<sup>99</sup>

(PAN RXED77)

### Aiwa CSD-ES225

- CD/Radio/Cassette, top-loading CD player, 0 Sound 3D enhancement, bass boost...**'69'**

### Panasonic RX-DS16

- CD/Radio/Cassette, front-loading CD player, 10-AM/10-FM presets, 3-D Sound...**'89'**

### Aiwa CSD-ED76

- CD/Radio/Cassette, top-loading CD player, digital AM/FM, auto-reverse cassette...**'129'**

### JVC PC-X204

- CD/Radio/Cassette, top-loading CD, 15-AM/15-FM presets, 3-piece, remote...**'149'**

### JVC PC-XC11

- 3-CD Triple-Tray Changer/Radio/Dual Cassette, 15-AM/15-FM presets, 3-piece, remote...**'179'**

## Televisions



### Sony VPL-W400Q

### LCD Video Projector

- Dynamic brightness level of 400 ANSI lumen & 600 lines of horizontal resolution •4:3 & 16:9 aspect ratios •For screens 41" to 300" •Digital TV ready

### CALL

(SON VPLW400Q)

### Samsung TXG2746

- 27" Stereo Color TV, flatter, dark tint picture tube, universal remote...**'349'**

### Panasonic CT-27SF14

- 27" Superflat™ Stereo Color TV/Monitor, up to 700-line horizontal res., remote...**CALL**

### Samsung TXF2899

- 27" + 1" Ultra-Flat Stereo Color, new aspect ratio allows viewing additional 1 3/8" of TV...**'649'**

### Sony KV-32XBR48

- 32" Trinitron™ XBR™ Stereo Color TV/Monitor, twin-view picture-and-picture...**CALL**

### Sony KV-53XBR45

- 53" Videoscopic xBR™ Big Screen Projection TV, 2-tuner picture-in-picture...**CALL**

## Mini Audio Systems



### Sony PMC-M2

### MiniAudio/CD/AM/FM Micro Component Stereo System

- 1-touch CD to MD duplication •AM/FM digital tuner •Digital bass boost •25 watts per channel •2-way speakers •Remote

### \$499<sup>99</sup>

(SON PMCM2)

### Panasonic SC-AK25

- 50 watts/ch., 5-disc CD changer, dual auto-reverse cassette, 24 AM/FM presets, remote...**'249'**

### JVC FS-2000

- Ultra-micro system, CD/AM/FM, cherrywood speakers, remote...**CALL**

### JBL Harmony™

- CD player, AM/FM tuner, 2-way speakers, with powered woofer, dual alarm, remote...**CALL**

### JVC EXTDS

- 20w x 2 + 60w for subwoofer (built-in), 3-CD changer, auto-rev. cassette, AM/FM, remote...**CALL**

### Denon D-M7

- 30w x 2, 3-CD changer, auto-rev. cassette, AM/FM, 2-way Mission speakers, remote...**CALL**

## Fax/Multi-Function



### Panasonic KX-FP200

### Plain Paper Fax Machine

- Up to 28 pages of document memory •150-sheet cassette •Broadcasting •64-line half-tone •Copier function •98# autodialer

### \$219<sup>99</sup>

Mail-In Rebate (PAN KXFP200)

### Sharp UX-107

- Compact Fax Machine, 20-sheet auto-document feeder, printer & scanner PC-link capability...**'149'**

### Canon FAXPHONE B640

- Plain Paper Fax/Copier, Ultra High Quality image processing with 64 shades of gray...**'279'**

### Panasonic KX-FMC230

- 6-In-One Multi-Function Fax System With 900 MHz Cordless Phone NEW LOW PRICE...**'399'**

### Hewlett-Packard OfficeJet 600

- Color Printer/Copier/Scanner & Plain Paper Fax (HP C5313A)...**'499'**

### Brother MFC-7550MC

- 6-In-1 Multi-Function with Fax/Printer/Copier/Scanner/PC fax & message center...**'699'**

## Computer Peripherals



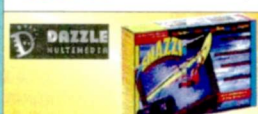
### Smart and Friendly™ CD-RW 426 Deluxe

### Internal CD Recorder

- 4x record/2x rewrite/6x read •SCSI II host adapter & software

### \$599<sup>99</sup>

(SMD SAF786)



### Dazzle Multimedia SNAZZI

### Video PCI Add-In Card

- Record, edit & transmit full-screen digital video & snapshots in your PC

### \$349<sup>99</sup>

(DAZ 8000)

For a more complete selection of Audio, Video, Computers & more, ALL AT DISCOUNT PRICES Call For FREE catalogue!



ORDER TOLL-FREE, 24 HOURS, 7 DAYS A WEEK

### 800-221-8180

VISIT J&R MUSIC WORLD AT

31 PARK ROW, NY, NY

[www.jandr.com](http://www.jandr.com)

AOL Keyword: J&R



# Sound City

Since 1986

EXCEEDING YOUR EXPECTATIONS™

THE BEST BRANDS!  
THE BEST PRICES!  
THE BEST SERVICE!

Sound City is one of the country's leading full-service dealers of high performance Audio/Video and Custom Home Theater products. From an entry level set-up to an audiophile-grade stereo system, all the way up to a full blown state-of-the-art Home Theater, Sound City has unmatched selection, service and expertise. In addition, our huge buying power allows us to offer excellent savings on select manufacturer closeouts on first-quality audio, video and car stereo products.



## CAR CASSETTE/CD PACKAGE

**Sony XR-C350**  
Cassette Receiver With CD Controller  
• Auto reverse cassette deck • 18 FM and 12 AM presets  
• Sony D-Bass dynamic bass control  
• 35W x 4 Internal amplifier • CD/MD changer control  
• Rear preamp output • Full detachable faceplate

**Sony CDX-705**  
10 Disc CD Changer  
• Faster CD changing • 0-90° Angle  
• SuperSuspension shock isolation system  
• D-Bass digital processing  
• Custom File memory  
• 1-Bit ΔΣ D/A converter

**PACKAGE DEAL! \$329**

**LAST CALL!**

**\$599**

## Chase Technologies RLC-1

Remote Line Controller

- Adds remote control to older, non-remote equipped systems
- Compact design
- Six front panel red LED indicators
- Frequency Response: 20Hz-20KHz
- Switched AC power outlet with a 500 watt capacity
- Features power on/off, volume up/down balance, mute, bass and treble controls, input switching for 4 line level sources • Patent pending

By Barry Willis stereophile Nov. 1997

"Its sonic transparency... Iso lent it a degree of reverse-snobbery appeal. My own extended use of the RLC-1 convinced me of its val[ue]..."

**\$59**

## Sonance MRC100 Media Room Controller

- 2 Zone auto switching source selector
- 3 AV inputs & 3 audio inputs
- Two outputs home theater of music with "autolink" when a video source is on, the home music system is automatically switched on and fed to all audio and video speakers • Manual override
- Listen to TV through whole house system
- Video and audio switched auto/on AC outlet

**Orig \$599 \$99**

## Sonance D6000

In-Wall Speakers

- The world's most adjustable speaker!
- Dip switches in front of speaker for flexible output adjustments
- Pivoting tweeter-3/4" Aluminum dome
- 2-1/2" Poly cone midrange • 8" Dual voice coil
- 100 Watt power handling capability
- Frequency response: 33Hz-21KHz

**Orig \$959 \$499**

## Sonance D-5000

3-Way In-Wall Speakers

- Adjustable dip switch settings for woofer/midrange and tweeters
- 8" Polypropylene woofer
- 2-1/2" Treated paper midrange
- 5/8" Pivoting poly dome, ferrofluid cooled tweeter
- 100W Power handling capability

**Orig \$799 \$349**

## Sonance S1R (round)

Best Value Coaxial Speaker On the Market.

- 6 1/2" Polypropylene woofer
- 2" Cone tweeter mounted
- FR: 70 - 19KHz • 90dB Efficiency
- 8 Ohm impedance
- 35W Power handling (NOT SHOWN)

**Orig \$249 \$89**



## CAR AUDIO DEALS!

### Soundstream Reference 700SX

5/3 Channel Power Amplifier  
• 150W x 2 @ 4 ohm • 700W x 1 @ 2 or 1 ohm

**Orig \$599 \$359**

### Soundstream REF1000SX

2/1 Channel Car Amplifier  
• 235W x 2 rated power at 4 ohm, 14.4V  
• 1000W x 1 total power output at 2 ohm

**Orig \$799 \$479**

### Soundstream SA244

4/3/2 Channel Amplifier  
• 60W x 4 at 4Ω • 180W x 2 at 4Ω • Bass EQ (45Hz)

**Orig \$479 \$279**

### Sony XM4501

4 Channel Car Stereo Amplifier  
• 50 Watts x 4, 20-20KHz • 130W x 2 Bridged

**Orig \$299 \$159**

### Denon DCA-450

2/1 Channel Power Amplifier  
• 100W x 2 Max power output

**Orig \$150 \$99**

### Denon DCA-550

4/3/2 Channel Power Amplifier  
• 50W x 4 Max power output • 100W x 2 Max power

**Orig \$180 \$119**

### Rockford Fosgate #7750

2 Channel Car Amplifier  
• 100 Watt x 2 output • Bridgeable • Older style

**Orig \$629 \$399**

### Soundstream REF300SX

2/1 Channel Car Amplifier  
• 50W x 2 rated power at 4 ohm, 12V  
• 300W x 1 total power output at 2 ohm

**Orig \$399 \$239**

### Soundstream REF414S

4 Channel Car Amplifier  
• 50W x 4 rated power at 4 ohm, 12V  
• 80W x 4 rated power at 4 ohm, 14.4V

**Orig \$599 \$359**

### a/d/s/ 630X

6/5/3/2 Channel Car Amplifier  
• 30W x 6, 30W x 2+ 60W x 2, 30W x 4+60W x 1

**Orig \$549 \$299**

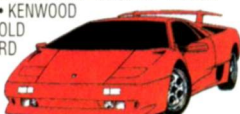
### a/d/s/ 830X

8/7/6/5/4 Channel Car Amplifier  
• 30W x 8, 30W x 6+ 60W x 1, 30W x 4+60W x 2

**Orig \$749 \$349**

## FACTORY AUTHORIZED

A/D/S/ • ALPINE • BAZOOKA • CLARION • COUSTIC • DENON  
DYNAMAT • INFINITY • JVC • KENWOOD  
PANASONIC • PHOENIX GOLD  
POLK AUDIO • PPI • ROCKFORD  
FOSGATE • SONY • SOUND-  
STREAM • US ACOUSTICS  
some brands not avail mailorder



SALE • SAEL • SALE • SALE

SALE • SAEL • SALE • SALE

## COMPLETE HOME THEATER SYSTEM



### Atlantic Technology 250.1 Home Theater System

Bigger is not always better when it comes to speakers and Atlantic Technology 250.1 six-speaker ensemble proves it. Though the front, center and surround speakers are small in dimensions, they're sound is big and accurate. The 251.1LR contains two 4" polypropylene woofers and a 3/4" dome tweeter. Recommended power from 10-150 watts. The 253.1C center channel measures uses the same drivers as 251.1LR. It also includes midrange and high frequency timbre matching controls. The 254.1SR uses two 4" woofers and two 1/2" tweeters, angled and phased to produce an ambient sound field. The 262PBM is a 150 watt powered subwoofer in an acoustic suspension cabinet that contains a single 12" driver. Rated response is a conservative 35Hz to 125Hz.



### Panasonic DVD-A310

Dolby® Digital and DTS Compatible DVD Player  
• Dual coax/toslink digital outputs • Component video outputs  
• Compatible with DTS encoded DVD titles  
• Advanced Dolby® Digital 5.1 ch. surround decoder  
• 10-Bit video D/A converter  
• 5-Speed smooth motion scan  
• Universal joystick remote

**CALL**

**CALL**

## THX® HOME THEATER SYSTEM



### Atlantic Technology 353C

3-Way Center Channel

- Dual 5 3/4" polypropylene woofers
- Dual 3" mid drivers
- 1" Neodymium tweeter
- Tiltable base

### Atlantic Technology 354SR

Dolby® Surround Speakers

- Dual 4" polypropylene woofers
- Dual 3/4" mylar dome tweeters

### Atlantic Technology 351LR

3-Way Front Speakers

- Dual 5 3/4" polypropylene woofers
- Dual 3" mid drivers
- 1" Neodymium tweeter

### Atlantic Technology 352PBM

Powered Subwoofer

- 12" Composite cone woofer
- 200W High current amp
- 24db/Octave

**CALL FOR SPECIAL PACKAGE DEALS!**

SHOP US ON-LINE  
www.soundcity.com

shop over 500 products  
online... it's safe and easy!

come see us on  
IMALL

**CALL TOLL FREE: 1-800-542-7283**

FOR INFORMATION &  
CUSTOMER SERVICE  
973-263-6060

WE SHIP  
WORLDWIDE  
No Credit Card Surcharges

RETAIL HOURS  
Mon - Fri  
10am - 9pm EST  
Sat 9am - 6pm EST  
Sun 11am - 5pm EST

MAIL ORDER HOURS  
Mon - Fri  
8am - 10pm EST  
Sat 9am - 6pm EST  
Sun 10am - 5pm EST

VISA MasterCard Discover Novus para  
Store: 89 Route 46 East • Danville, NJ 07834  
Offices: 45 Indian La. East • Towaco, NJ 07082

Factory Authorized for all brands we sell • Not responsible for typographical errors • NO refunds on video or installed car stereo products • 30 Day defective exchange from date of receipt • All returns for refund must be made within 14 days of receipt of goods and are subject to a restocking fee • Items must be in original condition and packaging • Shipping handling not refundable • This ad and its contents supercede all other magazine pricing

Source Code #SR38

Dolby® is a registered trademark of Dolby Laboratories  
THX® is a registered trademark of Lucasfilm LTD

# BEST OF THE MONTH

REVIEWS

OUR CRITICS CHOOSE THE OUTSTANDING CURRENT RELEASES



TERRY RICHARDSON/ATLANTIC

## Welcome to the Hotel Amos

**T**ori Amos gets so much attention for the sexual and religious psychodramas in her lyrics that it's easy to forget she has a classic pop voice and a graceful way with a melody. On her fourth solo album, she makes sure you don't forget. While it's less high-concept than her last couple of albums (and that's not necessarily a bad thing), *From the Choirgirl Hotel* suggests that she's fallen back in love with pop music,

and it sports the most shimmering hooks she's ever come up with.

The music here is being widely hyped as a return to the loud guitar-rock style Amos ditched after her debut on 1988's notorious and long-unavailable group effort, *Y Kant Tori Read*, but that's nonsense. For one thing, that record wasn't really the hair-metal period piece it's rumored to be; it just sounded like Kate Bush with too many drum machines. And

although *Choirgirl Hotel* goes for a fuller band sound than usual — and pulls back from the art-rock ledge of Amos's last album, the overambitious *Boys for Pele* — it isn't that startling a departure. The arrangements have just gotten richer, using guitars and drums in a manner more textural than rock-and-roll.

Amos explores keyboards other than her trademark piano, most surprisingly in "Hotel," whose synthesizer flourishes are positively ELP-ish. Her secret weapon remains the great Meters bassist George Porter, Jr., who sneaks in touches of fuzz and funk. And Amos flexes her vocals to match the album's diversity. She can still deliver an effective ballad, but when she gets a little nasty — notably in "Raspberry Swirl," where her voice is distorted à la P J Harvey — the results are thrilling.

Her lyrics, it should be noted, are getting more oblique with each album. I miss the frankness and daring of songs like "Silent All These Years" and "Me and a Gun" (from *Little Earthquakes*), both about the aftermath of rape. On the other hand, the blending of love and obsession in "Spark" and "She's Your Cocaine" is the sort of thing she has always specialized in. And when she gets uncharacteristically direct in "Playboy Mommy," as a wayward mother confronts daughter in gorgeous torch-ballad fashion, she proves that the fully grown Tori Amos can be as grabbing as the young and impulsive one.

Brett Milano

### TORI AMOS From the *Choirgirl Hotel*

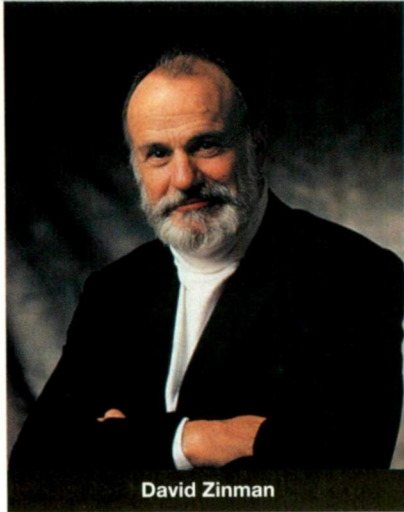
*Spark*; *Cruel*; *Black-Dove* (January); *Raspberry Swirl*; *Jackie's Strength*; *i i e e e*; *Liquid Diamonds*; *She's Your Cocaine*; *Northern Lad*; *Hotel*; *Playboy Mommy*; *Pandora's Aquarium* (Atlantic, 54 min)

## Zinman's Fresh, Bold Beethoven

**T**here are still points to be made about Beethoven's symphonies, the essential core of the symphonic repertory, and David Zinman makes several on his superb new Arte Nova CD of the Fifth and Sixth (the "Pastoral") with his Zurich Tonhalle Orchestra. The disc is the first installment of what is said to be the first integral recording of the Nine based on the recent critical edition published by Bärenreiter.

Most listeners will be less interested in musicological fine points than in the overall dramatic enlivenment Zinman brings to these works, achieved in large part

through his fleet pacing but also by his meticulous care for detail and apparently instinctive sense of balance. His own study of Beethoven's scores antedated the period-instrument movement's discovery that the composer was actually serious about tempos faster than what had become the norm in our time. Most conspicuous in this respect are the famous low-strings trio in the scherzo of the Symphony No. 5 (no lumbering mammoths here) and the entire opening movement of the "Pastoral," which fairly bubbles over with joy. The slower sections of the Sixth are truly heartfelt, while the outer ones of the Fifth are suitably galvanic. The orchestral playing is a joy in its own right: solid, assured, with a rich string resonance and characterful winds and brass. The richness of the recorded sound itself is also quite exceptional, and perfectly suited to these performances of this music.



David Zinman

DAVID W. HARP/BALTIMORE SYMPHONY

As for the new edition, changes in dynamics here and there may be too subtle to be noticed without a score, but listeners really familiar with these symphonies will notice the various extended passages for winds — the contemplative elaboration

for the oboe a little past the middle of the opening movement of the Fifth, the added prominence of the flute at various points in the "Pastoral" — that brighten the overall texture and make the music generally more eventful without altering its familiar character.

With its super-bargain price as well as the virtues noted above, this Arte Nova CD should make the music irresistible to first-time listeners while at the same time serving as a welcome restorative to veteran music-lovers who may feel they know this familiar material all too well. And it creates the highest expectations for the rest of Zinman's Beethoven-symphony cycle.

Richard Freed

#### BEETHOVEN

#### Symphonies No. 5 and No. 6 ("Pastoral")

Zurich Tonhalle Orchestra, David Zinman cond.  
(Arte Nova/BMG 49695, 74 min)

## The Great Playings of Grant Lee Buffalo

It is so rare to hear so many well-crafted songs lined up one after another that the release of Grant Lee Buffalo's *Jubilee* is cause for jubilation. The band's fourth album works within the venerable continuum of guitar-based rock from midperiod Beatles to Neil Young and Crazy Horse, yet it talks in fevered tongues of its own, evoking a frontier mythos that is more a matter of spirit than specifics. Certainly, bandleader Grant Lee Phillips is a rare talent with an inner flame that burns brightly. His crag-

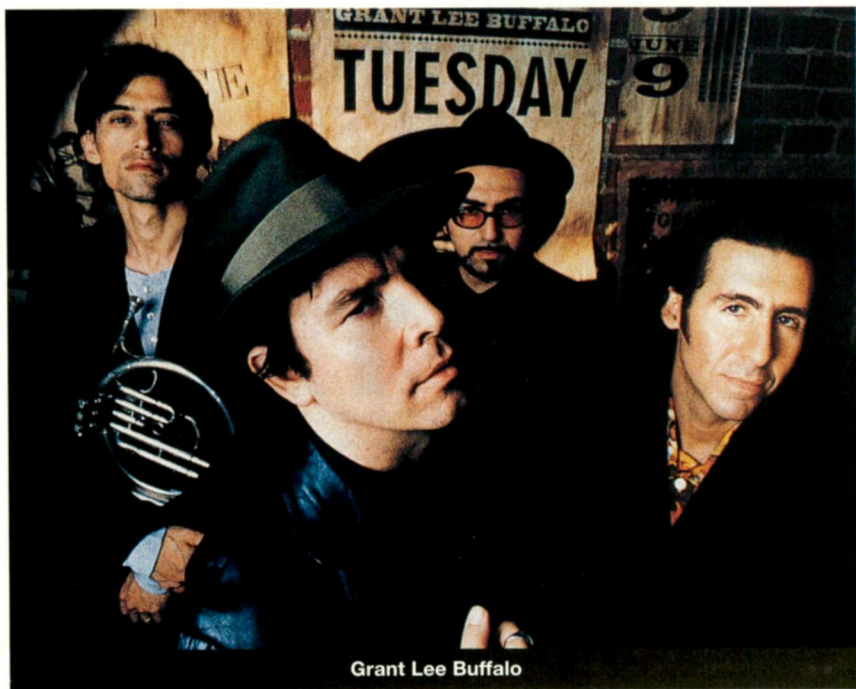
gy guitar, shivery midrange voice, dusky melodicism, and weird-but-hooky songwriting make *Jubilee* one of the year's freshest albums.

The band makes like a hurricane right at the start with "APB," a soulfully chugging rocker that finds Phillips's voice rising to a keening wail in the song's Motown-worthy chorus. The falsetto returns in the next track, "Seconds," seconding its disorientation with eerie sha-la-la's and pun-filled wordplay. A gooseflesh-raising sense of some larger reality looms behind

the album as Grant Lee Buffalo works in an almost ritual, incantatory fashion, often with disarmingly gorgeous and involuted melodies like those of "Change Your Tune" and "SuperSloMotion." Phillips latches onto a twisted vernacular in conjuring the faintly menacing rural landscape of "Come to Mama, She Say" and "My, My, My," which employ, respectively, the steely twang of a dobro and some ragged but right blues harmonica (played by Robyn Hitchcock!). Then there's the handful of simply touching, tuneful love songs, notably "Truly, Truly," with layers of strummed guitars leading to a knockout singalong chorus. Throughout, new member Dan Rothschild provides firm but melodic bass while longtime drummer Joey Peters plants the songs in rich, organic soil.

I can't help but think there's an indefinable link between Buffalo Springfield (the Great American Rock Band) and Grant Lee Buffalo. Both seem welded to an essential, earthy concept of their homeland and a rootsy yet forward-thinking approach to music, with the electric guitar as a kind of mastiff pointing the way down the dusty trail into a teeming wilderness. On *Jubilee*, that wilderness is a most enchanting place, full of raw emotions and ghostly fire.

MATTHEW WELCH/WARNER BROS.



Grant Lee Buffalo

#### GRANT LEE BUFFALO *Jubilee*

*APB*; *Seconds*; *Change Your Tune*; *Testimony*; *Truly, Truly*; *SuperSloMotion*; *Fine How'd Ya Do*; *Come to Mama, She Say*; *8 Mile Road*; *Everybody Needs a Little Sanctuary*; *My, My, My*; *Crooked Dice*; *Jubilee*; *The Shallow End* (Slash/Warner Bros., 59 min)

# The Impassioned Violin Of Anne-Sophie Mutter

**A**nne-Sophie Mutter's new CD on Deutsche Grammophon coupling Krzysztof Penderecki's recent and large-scale Violin Concerto No. 2 with Bartok's masterly but smaller-scale Violin Sonata No. 2 adds up to a stunning hour of listening.

Penderecki wrote his Second Concerto (1992-95) for Mutter, and throughout the performance, with the composer himself conducting the London Symphony, she proves herself magnificently worthy of that honor. It is both less dour and less somber than the Concerto No. 1 of twenty years earlier, which was dedicated to Isaac Stern (his Columbia recording of it hasn't been reissued by Sony on CD), and a lot more convincing in its musical substance. Like much of Penderecki's later work, it is a departure from the hyperexpressionism of the 1960 *Threnody for the Victims of Hiroshima* for which he first became widely known.

Although far more volatile than its predecessor concerto, the Concerto No. 2 is also cast as a single uninterrupted movement in expanded sonata form. Most of the contemporary coloristic vocabulary is brought into play, especially in the percussion department. The solo-violin writing is full of acrobatics, but that is tempered by a wealth of lyrical episodes, cul-

minating in the final 8 minutes, which may best be considered a deeply moving epilogue. The musical language might be described as post-Shostakovich, with strong resonances from that master's later works, including some near quotations. I suspect that in the long run this concerto will fare better as a repertoire piece than the Concerto No. 1. The recording job is a model of crystalline clarity and expert balancing, making a dazzling impact.

Mutter's performance of Bartok's Second Violin Sonata, written in 1922, is every bit as exciting. Having vented his spleen the year before in the First Violin Sonata, Bartok turned out a much more listener-friendly work in the Second, which superbly demonstrates his unique flair for the amalgamation of Hungarian folk idiom into the classical mainstream. A rhapsodic *parlando rubato* movement is followed by gorgeously ferocious dance music. Bartok himself played the work often with a variety of violin virtuosos, including Joseph Szigeti. The Vanguard CD with their recording of it should not be missed, but the magnificently impassioned performance by Mutter and her



TOM SPECHT/DEUTSCHE GRAMMOPHON

Anne-Sophie Mutter

collaborator, the pianist Lambert Orkis, is all by itself worth the price of this new disc. The excellent recording is from a 1995 Berlin recital. On all counts, this is a knockout CD!  
*David Hall*

## PENDERECKI

### Violin Concerto No. 2

## BARTOK

### Violin Sonata No. 2

Anne-Sophie Mutter, violin; Lambert Orkis, piano; London Symphony, Krzysztof Penderecki cond. (Deutsche Grammophon 453 507, 58 min)



### CLOSE ENCOUNTERS OF THE THIRD KIND

(Arista/Masters) Resequenced, remixed, and 20-bit-remastered version of the soundtrack, celebrating the film's twentieth anniversary and adding 40 minutes of previously unreleased music.

### LEADBELLY Shout On: Leadbelly Legacy Vol. 3

(Smithsonian Folkways)

### JOSH WHITE

Free and Equal Blues

(Smithsonian Folkways)

### SLEEPY JOHN ESTES Goin' to Brownsville

(Testament/HMG/Hightone)

### FRED McDOWELL

Levee Camp Blues

(Testament/HMG/Hightone)

Bluestime! First two from the 1940s, second two from the 1960s.

### PAT MARTINO

### Head and Heart; We'll Be Together Again

(32 Jazz) The first title, a double CD, combines 1974's *Live!*

(recorded in 1972) and 1975's *Consciousness*. The second title, budget-priced, is the jazz guitarist's long-out-of-print album from 1976.

### HAYLEY MILLS Let's Get Together with Hayley Mills

(Walt Disney)

### LOUIS PRIMA/GIA MAIONE Let's Fly with Mary Poppins

(Walt Disney)

Two from Disney's new Archive

Collection, the first featuring the teen star in 1962, the second a 1965 homage including two Italian versions: "*Siamo Svegli*" ("Stay Awake") and "*Supercalifragilistic-Espiralidoso*."

### SYNERGY Electronic Realizations for Rock Orchestra; Sequencer; Cords

(PolyGram/Chronicles) Landmark recordings from 1975 and 1978 by electronic-music pioneer Larry Fast, later a Peter Gabriel collaborator.

### IVES The Unanswered Question; "Holidays" Symphony; Central Park in the Dark

### CARTER Concerto for Orchestra

New York Philharmonic, Leonard Bernstein cond. (Sony 60203) "*The Fourth of July* [from the "Holidays" Symphony] sweeps all before it in a sheer intoxication of sound and every-man-for-himself rhythmic patterning" (November 1968).

## MOZART

### The Magic Flute (highlights)

Popp, Jerusalem, Brendel, Gruberova, others; Bavarian Radio Chorus and Orchestra, Bernard Haitink cond. (EMI 72098) "... a sound and uncontroversial performance" (June 1982), now at budget price.

## MARCEL TABUTEAU

### Excerpts

Philadelphia Orchestra, Leopold Stokowski cond. (Boston BR1021) Selections from RCA Victor's vaults (all mono) featuring the orchestra's long-time first-chair oboist, ranging from a 1924 *Firebird* to a legendary 1940 recording of Mozart's *Sinfonia Concertante*.

## WOLF Spanish Songbook

Elisabeth Schwarzkopf, soprano; Dietrich Fischer-Dieskau, baritone; Gerald Moore, piano (DG 457 726, two CDs) "A major contribution to the song literature" (April 1968).

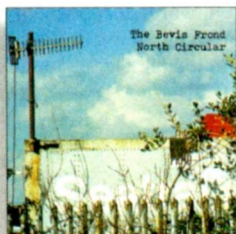
NEW RECORDINGS REVIEWED BY CHRIS ALBERTSON, FRANCIS DAVIS, WILL FRIEDWALD, PHYL GARLAND, BRETT MILANO, ALANNA NASH, PARKE PUTERBAUGH, KEN RICHARDSON, AND STEVE SIMELS

**THE BEVIS FROND** *North Circular*

(Flydaddy, two CDs, 127 min;  
P.O. Box 545, Newport, RI 02840)

★★★

Nick Saloman, who records as the Bevis Frond, reads like a one-man compilation of great English eccentrics, with bits of Robyn Hitchcock's wordplay, Billy Bragg's heavily accented vocals, Julian Cope's acid consciousness, XTC's affinity for the late



Sixties, and Richard Thompson's flair for a ripping guitar solo. And Saloman's recent rise to cult-hero status has prompted him to release a deluge of music. *North Circular*, a two-CD set with 23 standard songs and three epics, comes on the heels of last year's *Son of Walter*, a mere 79-minute single CD.

It's a truism that every spotty double album could have made a killer single disc, and that's certainly the case here. Saloman plays every instrument, and his overdubs add up to a convincing and stripped-down rock band, but he can't always tell a good song idea from a tired one. The three long tracks are the main offenders; "Heritage Coast," for example, gives him nine minutes to noodle away on guitar, but the Jimi Hendrix-inspired "Growing Up" gets the job done better in three. The strongest moments are a dozen pop songs seemingly about a romantic breakup, a mundane topic for Saloman but one he mines convincingly. *B.M.*

**JERRY CANTRELL** *Boggy Depot*

(Columbia, 63 min)

★★

**SCOTT WEILAND** *12 Bar Blues*

(Atlantic, 59 min)

★★

Coming from two of grungedom's biggest bands, guitarist Jerry Cantrell and singer Scott Weiland go it alone and take divergent paths. Cantrell sounds a lot like

Alice in Chains on *Boggy Depot*, whereas Weiland steers clear of Stone Temple Pilots on *12 Bar Blues*. There's only one problem for each: Cantrell doesn't sing as forcefully as Layne Staley, and Weiland doesn't play with the same hooky fire as STP.

To be sure, fans of Alice will find much to like on *Boggy Depot*, as Cantrell is joined by Alice drummer Sean Kinney for a good old-fashioned fuzz-pedal-to-the-metal hammering session. And in "Between," Cantrell proves he has a sense of humor and is capable of a more varied musical outlook. But he doesn't prove these things often enough. His lyrics are generally regrettable despite the often fascinating martial rigidity of the music, and his voice doesn't hold up over the course of an hour.

Weiland, on the other hand, keeps the menu varied on *12 Bar Blues* (even though the title insinuates the opposite). Eclectic to a fault, he throws in everything but the kitchen sink, including beatbox, theremin, cello, loops, synths, "galactic surf guitar," and vibes (lots of vibes). As for lyrics, moments of self-revelation like "Where's the Man" occasionally poke above the jaded irony. Overall, *12 Bar Blues* is a semi-inspired mess. It's crisply recorded, however, and owners of high-end systems whose tastes run to twisted post-grunge cabaret spiked with dollops of dissonance may want to showcase it as a demonstration disc. *P.P.*

**GANG STARR** *Moment of Truth*

(Noo Trybe/Virgin, 79 min)

★★★

Given the tedious state of hip-hop today, Gang Starr frontman Guru's complex ruminations deliver enough theories and contradictions to keep you hooked. "Royalty" leans hard on self-esteem — which here includes being adored by women. By now, a mass of flyhoneyes has got to be the weariest rap-success image around. You'd think that after ten years, Guru would know the difference between insight and cliché.

After all, he can perform his share of lyrical miracles. "JFK 2 LAX" weaves the need for strength and self-determination with a few cautionary tales about taking the world at face value. And DJ Premier's contributions to *Moment of Truth* shouldn't be overlooked. "Above the Clouds" rolls along over music that sounds like it was cribbed from a martial-arts movie, while "Itz a Set Up" is married to a beat so funky you can feel it tugging on your leg.

Still, the album's best moments are sometimes forced into tired old forms. "In Memory of . . ." is another tribute to fallen MCs, which seems unnecessary even if it's a hundred times more listenable than Puff Daddy's Police rip-off "I'll Be Missing You." From a rapper as inventive as Guru and a producer as voracious as DJ Premier, you expect more. *Claudia Perry*

Three Women



Linda McCartney, 1941-1998  
Wendy O. Williams, 1949-1998  
Tammy Wynette, 1942-1998



**PERE UBU** Pennsylvania

(Tim/Kerr, 70 min)

★★★★

**P**ere Ubu will never be normal-sounding rockers, but it's fun to hear them try. If anybody but David Thomas were singing, *Pennsylvania* would sound right at home on the radio. It's easily the catchiest Pere Ubu album since 1989's *Cloudland*, where they tried their hand at keyboard-driven New Wave pop. The surprise here is that guitarist Tom Herman has rejoined after a 15-year absence, playing alongside latter-day guitarist Jim Jones. The result: Pere Ubu is now a monster of a guitar band, phasing out keyboards and flirting with classic blues-rock as never before. The acoustic/slide-guitar mix in "SAD.TXT" is downright Zeppelin-esque, and in "Woolie Bullie" (the latest in a string of borrowed song titles) Ubu locks into a monolithic, pounding riff that may be the dumbest thing these folks have ever played, and it sounds great.

Things aren't too conventional, of course. The band still loves clattering rhythms and oblong song structures; a fake-Tibetan chant, "The Duke's Saharan Ambitions," may be the catchiest thing here. Although Thomas keeps his vocals out of the extreme high register, his worldview has darkened as his voice has deepened. A sense of dread runs through *Pennsylvania*, but so does Thomas's emotional generosity and willingness to send himself up. And the band's umpteenth rejuvenation is adventurous enough for longtime Ubu-ites but rocking enough to play in Peoria, if not Pennsylvania. *B.M.*

**PULP** This Is Hardcore

(Island, 65 min)

★★

**P**ulp is better appreciated in concept than in execution. Theoretically, its brand of Ray Davies-style social observation mixed with first-generation punk class-consciousness and 1990s sonics should make the hair on the back of my neck stand up. And, of course, leader Jarvis Cocker did win my undying affection a few years ago when he flipped Michael Jackson the bird at a Brit music-awards show. Which is a roundabout way of saying that if attitude were everything, Pulp would be the greatest band in the world. Unfortunately, it isn't.

*This Is Hardcore* shows that Cocker is still a clever wordsmith in a sub-Kinks way ("I am not Jesus, though I have the same initials"), and the band has graduated to a

modified glam-rock sound somewhere between *Ziggy Stardust* and Brian Eno-era Roxy Music, which is interesting without being terribly involving. Overall, however, the ironies seem ham-fisted (including the deliberately cheesy production), and the sheer Englishness of the whole thing comes off as — dare I say it? — sort of provincial. Then again, maybe I just don't get it. *S.S.*

**SANTANA** Santana

(Columbia/Legacy, 62 min)

★★★★

**ABRAXAS**

(Columbia/Legacy, 51 min)

★★★★

**SANTANA**

(Columbia/Legacy, 57 min)

★★★★★

**H**aving earned kudos for its overhaul of the Byrds catalog, Columbia's Legacy division now gives the Expanded Edition treatment to Santana, starting with the first three albums. We could talk all day about the significance of these titles, but let's not; let's just say that the music retains every bit of its ingenuity and fire, especially in today's world-music climate. And these 24-bit Super Bit Mapped remasters, packaged with generous artwork and with liner notes by Ben Fong-Torres, sound terrific.

You'll certainly want 1969's *Santana* and 1970's *Abraxas* for the hits and other favorites, but you'll also want them for the live bonuses. *Santana* has three tracks from the original Woodstock festival: "Savor," "Fried Neckbones," and the uncut "Soul Sacrifice." *Abraxas* offers three extras from the Royal Albert Hall: "Se a Cabo," "Toussaint L'Overture," and "Black Magic Woman/Gypsy Queen." However, the *first* thing you should buy is the lesser-known *Santana* from 1971, a.k.a. *Santana 3*. This is the band's absolute pinnacle, and the remastering lends great clarity to the multiple layers of percussion and guitar. The bonuses here are from the Fillmore West: "Batuka," "Jungle Strut," and "Gumbo." Note to collectors: a studio outtake from the album, the subtle jam "Folsom Street," is available only on Legacy's *Santana* sampler, as are two amusing 1969 radio commercials. *K.R.*

**SUGARSMACK** Tank Top City

(Sire, 60 min)

★★★★

**MUSCADINE** The Ballad of Hope Nicholls

(Sire, 52 min)

★★★★

**JOLENE** In the Gloaming

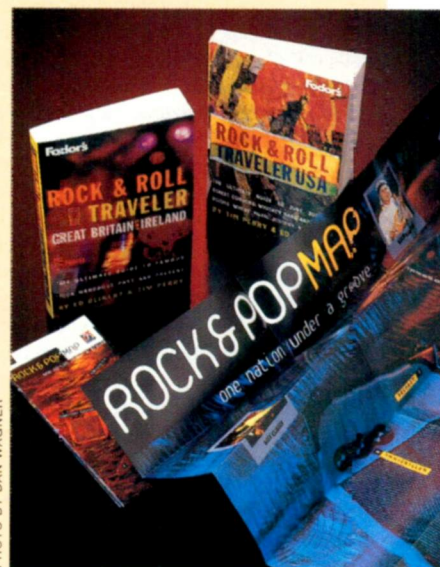
(Sire, 57 min)

★★★★

**F**or years the city of Charlotte, North Carolina, has been home to a thriving music scene that has been overshadowed by the hipper college-town goings-on a few hours away in Chapel Hill. A triumvirate of

# VACATION!

Summertime, and the travelin' is easy . . . when you've got the right guides. If you're going to the U.K. for a little R&R — rest & relaxation *and* rock & roll — first grab a copy of the free *Rock & Pop Map* just issued by the British Tourist Authority in association with the London attraction Rock Circus. More a brochure than an actual map, it identifies famous sites in England, Scotland, Wales, and Northern Ireland. Find the Oasis Leisure Centre, source of the name of you know who; it's in the English town of Swindon. Want to dig deeper? The same locale is the haunt of XTC, as noted in detail in *Rock & Roll Traveler: Great Britain and Ireland*, a 340-page paperback by Ed Glinert and Tim Perry (Fodor's, \$19). And, hey, if you're just packing up the car and heading out on the American highways, get Glinert and Perry's previous *Rock & Roll Traveler USA* so you can find Bruce Springsteen's *E Street* — which is in Belmar, New Jersey, not Asbury Park.



releases from Sire Records goes a long way toward redressing that imbalance.

Sugarsmack is the premier band out of Charlotte by virtue of longevity (with roots dating back to the late, lamented Fetchin Bones) and cutting-edge brilliance. *Tank Top City* is a 16-song luge ride through wild terrain. The challenges include Hope Nicholls's brash vocals and the prickly web of

## STAR SYSTEM

Excellent ★★★★★

Very good ★★★★

Good ★★★

Fair ★★

Poor ★



ThaMuseMeant

amelodic riffs and broken rhythms from guitarist Chris Chandek, bassist Aaron Pitkin, and drummer John Adamian. The secret of getting on the band's wavelength when listening to a song like "Reagan" is to just say no to logic and submit to the band's altered neural pathways.

So pervasive an influence is Sugarsmack's singer in this neck of the urban jungle that Muscadine calls its debut album *The Ballad of Hope Nicholls*. It's not literally about her but figuratively addresses the independent spirit she personifies. In its scope and its deliberately paced, atmospherically spacious songs, the album is comparable to Radiohead's *OK Computer*. Burry, sibilant vocals dance along the edges of a midtempo musical ether in which fuzztone guitar riffs flirt with a jazzy countenance or achieve a rock-hard critical mass through steady repetition.

Jolene is the most conventional band of this lot, and the woody earnestness of its songs puts it in roughly the same ballpark as Wilco and Son Volt. But Jolene also rises above the ordinary by virtue of meaty songs, John Crooke's hickory-smoked vocals, and the rootsy self-assurance of the ensemble playing. The band keeps a slow fire burning throughout *In the Gloaming*, with sparks flaring up in the homespun rockers "Wave to the Worrying" and "Star Town." P.P.

**THAMUSEMEANT** *Sweet Things*  
(*ThaMuseMeant*, 66 min; P.O. Box 262, Santa Fe, NM 87504; [www.thamusemeant.com](http://www.thamusemeant.com))

★★★★

**W**alking down Austin's Sixth Street one night at the recent South by Southwest Music and Media Conference, I happened across some buskers who were playing a killer "Matty Groves" as well as an original called "My Death Comes a Callin'" that included yodels to die for. A proper gig the next night confirmed my first impression: ThaMuseMeant, from Santa Fe, deserves to make a million hatfuls of coins.

JAMIE HART

The easy way to peg the quartet is to say it's a jam band, but this is laser-focused, song-oriented jamming. And although the band's name may seem awkward, it's an apt description of the amusement you get each time the four bring a song to a close, having gone exactly where the muse meant them to go. You'll find "Matty Groves" on their first album, 1995's *Live at Tha Mine Shaft Tavern*, and "My Death Comes a Callin'" on last year's *Breakfast Epiphanies*, but the band hits its stride on *Sweet Things*. The many highlights include the slinky hook of "The Man with Saleable Eyes," the tough picking of "Innocent Again," and the loping twang of "I Love You (Oh Well)."

Most of all, the album shows how each member of a quartet can be equally indispensable. Nathan Moore is the acoustic guitarist, co-vocalist, and songwriter, and he's a master of poetic reveries but also partial to direct lines like "Lord, if I know anything at all / It's that life is such a long fall / You can try flying, but you're better off / Just looking down for something soft." David Tiller is the multi-instrumentalist, dazzling to no end on mandolin. Jeff Sussmann is the drummer, holding everything together with quick hands. And Aimée Curl is the bassist and, as the other vocalist, the band's secret weapon, trumping Natalie Merchant and Edie Brickell with a voice both fresh and old-timey, as if recalled from a long-ago radio show. That said, here's hoping she doesn't get The Big Head and leave the band, for ThaMuseMeant is indeed a *band*, and a marvelous one at that. K.R.

**THE ZOMBIES** *Zombie Heaven*

(*Big Beat/Ace*, four CDs, five hours)

★★★★

**D**evoting a four-CD boxed set to a band that had only three hits in its brief career may seem like overkill, but in the case of the Zombies it's not only justified but overdue. Although they've been influential over the years — try to imagine Smashmouth's "Walking on the Sun" without the example of "She's Not There" — they've gotten critical short shrift except in rabid pop circles. Adding insult to injury, they've been represented on CD mostly by bogus stereo mixes derived from alternate takes. Fortunately, the 119 tracks on the British import *Zombie Heaven* are remastered to perfection from the original tapes.

These guys were amazing songwriters and musicians, and Colin Blunstone sang like a wounded angel. There's a lot of stuff here to digest, to be sure, and the fourth CD, "Live on the BBC," is merely interesting. But the rest is pretty sensational: a cleaned-up version of the first album plus all the singles, a disc of fascinating studio outtakes and demos, and, best of all, a great-sounding new version of *Odessey & Oracle*, their deliberately misspelled final

album, which remains one of the last great gasps of post-*Pepper* art-pop. There's also "The Lost Album" of stuff that Rod Argent worked on after the Zombies broke up; most of it, quite lovely, sounds a lot like the first album by Argent's eponymous band, which in this case is a compliment despite the bloated behemoth that ensemble turned out to be. And the lavish booklet has extensive interviews with all five Zombs, who turn out to have good memories. S.S.

## COLLECTIONS

**WHAT'S THAT I HEAR?**

**The Songs of Phil Ochs**

(*Sliced Bread*, two CDs, 128 min; P.O. Box 606, Blue Bell, PA 19422; [www.slicedbread.com](http://www.slicedbread.com))

★★★★

**P**hil Ochs was convinced that a good topical song could survive the test of time as both art and an instrument of social change. Twenty-two years after his death, he's proved mostly right by *What's That I Hear?*, a two-CD set of his music as interpreted by two dozen performers. While the love ballad "Changes," the tongue-in-cheek "Chords of Fame," and the rhythmic "Tape from California" don't have quite the staying power Ochs might have wished for, most of these songs are as muscular and sinewy today as they were three decades ago. And that's true whether the performers merely dust off the originals or drape them in contemporary arrangements, as Aztec Two Step's Rex Fowler does in recasting "There but for Fortune" to a reggae beat with new lyrics about Tiananmen Square.

Producer Gene Shay was wise to mix younger folk lions (John Gorka, the Roches, John Wesley Harding) with Ochs's more grizzled Greenwich Village survivors (Dave Van Ronk, Eric Andersen, Tom Paxton), but the real stars here are the songs, including three that were never released in his lifetime: "Hands," "Freedom Riders," and "Sailors and Soldiers." It's hard to find an offering in all of popular music as sad and beautiful as "No More Songs" (Karen Savoca), as heart-rending as the itinerant-worker lament "Bracero" (Gorka), or as uplifting as "Power and the Glory" (Magpie). Just one spin through "Iron Lady" (Anne Hills), a stunningly agile and ambitious song about capital punishment, and it's easy to see that Ochs's targets are still out there. Looks like his songs have more work to do. A.N.

**WHERE HAVE ALL THE FLOWERS**

**GONE** The Songs of Pete Seeger

(*Appleseed/Red House*, two CDs, 147 min)

★★★★

**U**nlike many modern folk singers with lucrative record contracts, Pete Seeger never made much money from his devotion to championing the labor movement, civil



# One Call



**GETS IT ALL!**  
PRICE \* DELIVERY \* SERVICE

## AUDIO

AC-3 AV Receivers  
Separates  
Speakers  
CDs  
Book Shelf  
Car  
Portable  
AC3-THX Processors  
Interconnects  
Phones

## VIDEO

DVD  
DSS  
Camcorders  
Digital VCRs  
VCRs  
TVs  
Home Theater  
Projection  
Laser  
Videonics



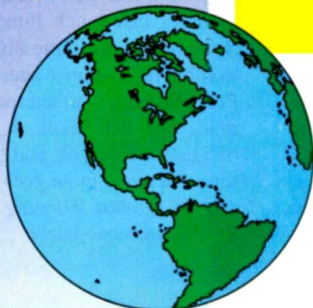
# 1-800-540-0900

**FAX: (509) 838-4387**

[onecall@iea.com](mailto:onecall@iea.com)  
[www.onecall.com](http://www.onecall.com)

7 Days a Week 6:30am to 7pm PST  
418 W. Riverside Spokane, WA 99201

*Visit our Mega-Site!*  
[www.onecall.com](http://www.onecall.com)



Developed together with  
**Microsoft**  
& the VERIO Group



*Apply for our One Call credit card and get  
90 DAYS, NO PAYMENT, NO INTEREST\* O.A.C.*

\*Interest accrues from date of purchase, but no payments are required during the promotional period. To avoid finance charges being assessed, your purchase must be paid in full within 90 days. Finance charges are calculated on the average daily balance. The monthly periodic rate is 1.65%. The annual percentage rate is 19.8%. This 90 day credit offer applies only to purchases on the One Call credit card. The One Call card is issued by Dial National Bank, One Monies, IA. Credit is subject to customer approval by Dial National Bank.

P.O.'s ACCEPTED

# Colonel Video & Audio

## AUDIO & VIDEO SPECIALIST

1-800-277-5632



Receivers  
Speakers  
CD Changers  
VCR'S

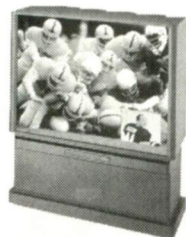


Audio/Video  
Separates



Subwoofers  
DVD  
Dolby Digital  
Receivers  
Speakers

DSS  
Home Theater  
Projection TV's  
LCD Projectors



Camcorders  
and  
Accessories

Over a million satisfied customers!!!



Factory  
Authorized  
on all Major  
Brands Since  
1981!

Best Prices...  
Immediate Delivery...  
Knowledgeable Service...  
Open 7 days a/week!!  
Member of **BBB** of Houston



C.O.D. & P.O.'s  
Mon-Thurs 9-9 Fri-Sat 9-7 Sun 10-6 CST  
Fax (713) 910-5868

10765 Kingspoint • Hous., TX 77075  
e-mail: [colonel@phoenix.net](mailto:colonel@phoenix.net)

web site: [www.colonelvideo.com](http://www.colonelvideo.com)

see our website for policies and procedures. Harris County, TX is jurisdiction for all transactions. Returns subject to a 10% restock fee if box is unopened/still sealed and fifteen (15%) if box has been opened. Shipping and handling charges are non-refundable. Missing manual book, accessories and the like, restocking will increase in five (5%) increments. We are not responsible for typos.

## popularmusic

rights, peace in war-torn times, or the environment. Perhaps because he had few people to satisfy except himself, his songs brim with conviction and integrity, an infectious combination for any interpreter. Executive producer Jim Musselman has drawn from a vast, multicultural body of interpreters for the 39 songs of *Where Have All the Flowers Gone*, an ebullient tribute album to the folk singer whose social-activism-through-music set the standard for the genre before many of these performers were born.

In some instances, the musicians here happily inform the songs with concerns of a more global community than Seeger might have intended. And with performers like Bruce Springsteen ("We Shall Overcome"), Nanci Griffith ("If I Had a Hammer"), Indigo Girls ("Letter to Eve"), and Greg Brown ("Sailing Down My Golden River"), the collection has numerous highlights. Chief among them are Jackson Browne and Bonnie Raitt's emotional duet in "Kisses Sweeter Than Wine," Ani DiFranco's provocative treatment of "My Name Is Lisa Kalvelage," and actor Tim Robbins's theatrical rendition of "All My Children of the Sun." Anyone looking for a primer on the power and beauty of topical songwriting would do well to start here.

A.N.

## JAZZ

### RAVI COLTRANE Moving Pictures

(RCA Victor, 67 min)

★★★★★

Here is the first recording as a leader by the 32-year-old son of you know who. On the value of his name alone, Ravi Coltrane could have signed a major-label contract long ago, but he chose to wait until he felt he was ready. The wait was worth it: *Moving Pictures* is the strongest debut album in recent memory, and one of the best jazz albums of the year to date.

If anything, Coltrane sounds less like his father than do most of today's other young saxophonists; the closest resemblance is his luminous tone in the ballads, especially in "Narcine." His major influence, in both his harmonic ideas and his jagged approach to rhythm, would appear to be Joe Henderson, represented here by "Inner Urge." A stark sense of drama and a judiciousness in constructing solos are among Coltrane's chief assets as an improviser, and they are foregrounded in three tracks that add an African percussion trio to the crack rhythm section of pianist Michael Cain, bassist Lonnie Plaxico, and drummer Jeff "Tain" Watts.

I could complain that Ravi Coltrane's soprano is not up to the level of his tenor, or that his version of Horace Silver's "Peace" drags a bit. But these are minor flaws in an album that makes me optimistic about this young musician's future.

F.D.

### NICHOLAS PAYTON Payton's Place

(Verve, 71 min)

★★★★★

The exceptional performances here by Nicholas Payton may simply be maturation taking its course, but I suspect it is also spurred on by a kind of cutting contest, as Payton's quintet is sometimes joined by fellow trumpeters Roy Hargrove and Wynnton Marsalis. I have long admired Hargrove — and long been disappointed by Marsalis's lack of progress as a jazz artist, but he does quite well in this company, helping to make it a formidable brass trio: "The Three Trumpeteers," to borrow from one of the titles. And the stellar supporting cast includes pianist Anthony Wonsey and tenor saxophonist Tim Warfield, with a guest appearance by tenorman Joshua Redman.

All these fine performers notwithstanding, it is Payton himself who sparks the set, which, like his sources of inspiration, is a mix of bop, funk, and Fifties romps with roots that dig deeper still. Payton becomes incendiary in such numbers as "Concentric Circles" and "With a Song in My Heart." A highlight is his articulate solo in Wayne Shorter's "Paraphernalia," and a soothing contrast is the quintet's laid-back reading of "The Last Goodbye." Except for a lackluster version of the Stylistics hit "People Make the World Go Round," *Payton's Place* is one of the most impressive releases by the current crop of new players.

C.A.

### SONNY ROLLINS Global Warming

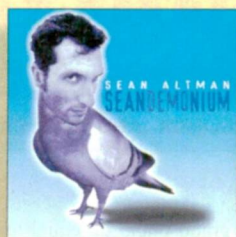
(Milestone, 50 min)

★★★★★

My favorite moment on Sonny Rollins's *Global Warming* might be in "Change Partners," the album's only standard, where he is so closely miked that we hear him hoarsely drawing a breath before barking out a phrase in the lower register of his horn. The tenor saxophonist sounds better here than he has on any of his other recent albums, by which I mean the engineering captures something of the gruff-toned Rollins from his Prestige and RCA Victor albums of the 1950s and 1960s. More good news: he's in a jousting mood, whether trading fours with Idris Muhammad on "Change Partners" or daring the rhythm section to follow him as he drifts in and out of a chord sequence in "Mother Nature's Blues" and in and out of tempo in "Clear-Cut Boogie." When Rollins is at the top of his game, as he is in those performances, no other improviser can touch him. Pianist Stephen Scott makes an impressive showing, as do trombonist Clifton Anderson and drummer Perry Wilson, who alternates with Muhammad. The title track is one of Rollins's obligatory calypsos, and "Island Lady" is a tune that never quite goes anywhere, but the rest of *Global Warming* betters anything Rollins has done lately.

F.D.

## QUICK FIXES



### SEAN ALTMAN Seandemonium

(Big Sean Music, 64 min; phone orders, 800-711-3627; www.bigsean.com)

★ ★ ★

Frontman from Rockapella ("Where in the World Is Carmen Sandiego?") goes solo and, natch, delights with vocal gymnastics, but he also serves up some fine ballads and pop songs with instruments. Fun. *K.R.*

### BLUIETT/JACKSON/THIAM

Same Space

(Justin Time, 60 min) ★

Pianist D.D. Jackson is one of the most exciting jazz musicians to come along in recent years. He doesn't let me down here, but I question the wisdom of performing with Hamiet Bluiett, whose sax is as offensive as the squeal of a stuck pig. Mor Thiam, meanwhile, plays djembe and sings. It's a mix that could have been interesting if Bluiett weren't straining so hard to be different. *C.A.*

### THE FAMILY STAND Connected

(EastWest, 62 min) ★ ★ ★ ★

The Family Stand continues to promote the resurgence of soulful song-making in black popular music. "Keepin' You Satisfied" reflects the influence of Stevie Wonder; "You're Mine" and "Don't Ask Why" employ harder-edged rock. But the most riveting track is "You Don't Have to Worry," in which the father of a racially mixed child looks to his little girl's future as the parents split up. *P.G.*

### FOREVER TANGO

(RCA Victor, two CDs, 100 min)

★ ★ ★ ★

The cast recording of the hit Broadway revue captures the melancholy and passion of the tango while emphasizing its original kinetic energy. The few vocal numbers convey an authentic air of desperation reminiscent of the smoky clubs where I treated my midlife crisis with booze and Latin music. *William Livingstone*

# CALL US LAST

WE WILL  
**BEAT ANY PRICE**

printed in this magazine on

**HOME ELECTRONICS & CAR AUDIO**

*Factory Authorized Dealers Since 1979*

Home Products

DVD · AC-3 · CD PLAYERS · AMPS · PREAMPS · TUNERS  
· PRO-LOGIC & STEREO RECEIVERS · SUBWOOFERS  
· LOUDSPEAKERS · PROCESSORS · OUTDOOR SPEAKERS  
· EQUALIZERS · IN WALLS & ACCY'S

Car Products

CD CHANGERS · AM/FM CASSETTE RADIOS · CD HEAD UNITS  
· AMPLIFIERS · EQUALIZERS · SPEAKERS

**BEST PRICE**

**BEST SERVICE**

**THE  
SOUND  
APPROACH**

6067 JERICHO TPKE., COMMACK, NY 11725  
ON LONG ISLAND CALL (516) 499-7680

# 800-368-2344

All items are factory sealed and carry full manufacturers warranty.

## MCM AUDIO SELECT™



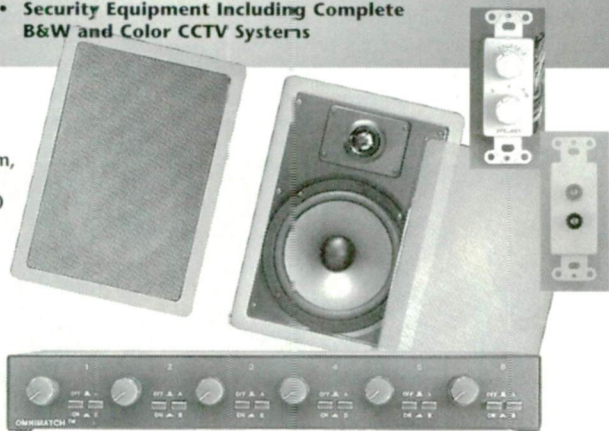
- Specialized Tools and Installation Aids
- Bulk Cable Including CL2 Rated In-Wall Speaker Wire
- Wall Plates, Jacks and Terminal Blocks
- In-Wall Volume Controls Speakers and Speaker Selectors
- Security Equipment Including Complete B&W and Color CCTV Systems

Whether installing a home theater system, background music, security or CCTV system, MCM has what you need. With over 39,000 items stocked, MCM Electronics is the source for all of your specialized electronics needs.



**FREE  
Catalog!**

Hours:  
M-F 7 a.m. - 9 p.m.,  
Sat. 9 a.m. - 6 p.m. EST.



Call today toll free!

**1-800-543-4330** Same Day Shipping!

Visit our website  
[www.mcmelectronics.com](http://www.mcmelectronics.com)

In stock orders  
received by 5:00 p.m.  
(YOUR TIME), are  
shipped the same day.



MCM ELECTRONICS®  
650 CONGRESS PARK DR.  
CENTERVILLE, OH 45459  
A PREMIER FARNELL Company

**SOURCE CODE: SR25**

NEW RECORDINGS REVIEWED BY RICHARD FREED, DAVID HALL, JAMIE JAMES, GEORGE JELLINEK, AND ERIC SALZMAN

## BACH Mass in B Minor

Collegium Vocale, Philippe Herreweghe cond. (*Harmonia Mundi 901614.15, two CDs, 109 min*)

★★★★

Philippe Herreweghe's new recording of Bach's Mass in B Minor, the latest entry in a crowded field, adheres to the prevailing taste for scaled-down forces that



clearly delineate the inner architecture of the score, deploying a fine chamber orchestra and a chorus of only four or five singers per part. The result is well played and thoroughly satisfying, and he has an excellent ensemble of soloists. The "Domine Deus,"

in particular, with soprano Johannette Zimmer and tenor Christoph Prégardien, is a heavenly meld of two gorgeous voices. If you're shopping for a Mass in B Minor on old instruments, this is a good choice. *J.J.*

## BEETHOVEN Triple Concerto BRAHMS Double Concerto

Pinchas Zukerman, violin; Ralph Kirshbaum, cello; John Browning, piano; London Symphony, Christoph Eschenbach cond. (*RCA Victor 68964, 71 min*)

★★★★

There is a pervading sense of ensemble musicking among equals in this recording rather than any attempt to overwhelm the listener with the soloists' individual personalities. The Beethoven Triple Concerto has always struck me as a kind of throwback — expanded and amiable *Hausmusik* somewhat in the spirit of his much earlier septet for strings and winds. It profits from the intimately scaled performance here, though the sonic ambience of EMI's Abbey Road Studio 1 is rather wide open. As always, there is the problem of keeping

a modern grand piano on equal terms with the violin and cello, a feat managed quite decently in this case.

The first movement of the Brahms Double Concerto seems less knotty than usual here, thanks to a tempo that's somewhat on the broad side, while the sense of give and take (and eventual reconciliation) between the expertly balanced soloists is tellingly communicated. The meltingly lovely slow movement is a joy to the ear. The pacing of the finale is also a bit out of the ordinary, not at all foursquare, and it keeps the music moving. The performance is more companionable than challenging, but all the more enjoyable for that. *D.H.*

## MONTEVERDI 1610 Vespers

Boston Baroque, Martin Pearlman cond. (*Telarc 80453, two CDs, 93 min*)

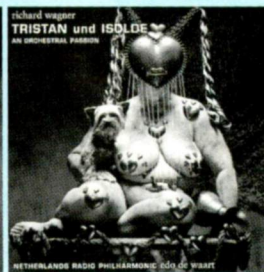
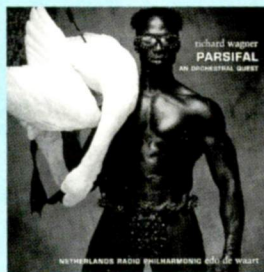
★★★★

Is Monteverdi's Vespers of 1610 a single great masterpiece equal to the Bach B Minor Mass or the Beethoven *Missa Solemnis*? Or is it just a collection of plainchant settings that the composer published as a kind of job application to be music director of St. Mark's in Venice? Martin Pearlman takes the former view, and he makes a good case for it in this impressive recording, which not only employs the kind of choral and instrumental forces that might actually have been used at the time, but also simulates the spatial orchestration characteristic of music performed at the Basilica of San Marco in the early seventeenth century.

Most of the major movements of the Vespers are based on plainchant around which the composer has woven contrapuntal textures for voices and instruments, and this gives them some semblance of unity. But technical prowess is not the whole story; at its best, this music offers stunning dramatic effects stemming from the use of spatial counterpoint. Alas, not everything is equally involving. The earlier numbers seem

## Mein Camp

RECORDING COMPANIES SEEM DESPERATE THESE DAYS to attract younger, more diverse audiences for classical music. A bust of Beethoven on the cover no longer seems to do the trick, so crossover repertory, catchy titles, and biceps 'n' cleavage have all been tried. Now three new BMG Classics CDs of condensed orchestral versions of Wagnerian operas, with the Netherlands Radio Philhar-



monic conducted by Edo de Waart, take the "marketing *über alles*" concept to new heights with provocative cover photos by the Dutch photographer Erwin Olaf. Drag Rhinemaidens, a kinky Parsifal, and a nude Isolde certainly bring a cutting edge to these Teutonic legends. If it ain't over till the fat lady sings, what can it mean when she strips? — Robert Ripp

## STAR SYSTEM

Excellent ★★★★★

Very good ★★★★

Good ★★★

Fair ★★

Poor ★

slow and less imaginative in their close adherence to the texts. Be patient. Everything is beautifully played and sung, as well as stunningly recorded, and as the Vespers proceed a certain magic begins to take hold. You begin to understand why the Boston Baroque is perhaps the outstanding period-instrument ensemble in this country.

In spite of a few early longueurs, this recording affirms the ensemble's strengths, and the very effective use of space makes no small contribution to the recreation of a special moment in musical history. *E.S.*

**MOZART Clarinet Concerto; Oboe Concerto; Bassoon Concerto**

Franklin Cohen, clarinet; John Mack, oboe; David McGill, bassoon; Cleveland Orchestra, Christoph von Dohnanyi cond. (*London 443 176, 69 min*)

★★★

This is the second London CD on which Christoph von Dohnanyi has presented first-chair players from his superb orchestra as soloists in Mozart concertos. David McGill shows a particularly persuasive sense of proprietary zeal, affection, and joy in the Bassoon Concerto. He seems to revel both in his solo turn and in the give-and-take with his sterling associates. In their own solo turns, however, his two fellow principals, John Mack and Franklin Cohen, seem merely tidy: confident and secure, but doing little to give shape or character to their performances and fairly perfunctory in their cadenzas. While it is an exalted level of tidiness, to be sure, the Clarinet Concerto in particular is a masterwork that demands more in the way of productive involvement than Cohen gives it, and there is no scarcity of superior recordings. *R.F.*

**SCHUBERT Winterreise**

Thomas Hampson, baritone; Wolfgang Sawallisch, piano (*EMI 56445, 70 min*)

★★★★

The forlorn protagonist of Schubert's *Winterreise* is a young man prematurely aged by rejection, pain, and world-weariness. The most effective interpreters of this harrowing journey have been baritones, but tenors have also given us memorable accounts. Youth and maturity are gratifyingly combined in the high baritone of Thomas Hampson, who can sing five of the twenty-four songs in the original tenor keys and the others with only minor transpositions.

This is a *Winterreise* free of exaggerations, startling dynamic contrasts, or unconventional tempos. Hampson prefers understatement, yet his subtle means can effectively contrast the passages marked "leise" (soft) or "stark" (strong) in "Rast." He also responds to the harmonic restlessness in "Einsamkeit" and makes the quiet heart-break of "Auf dem Flusse" very moving. The wrenching tragedy Hans Hotter conveyed in

© 1981 AL HIRSCHFELD. ART REPRODUCED BY SPECIAL ARRANGEMENT WITH HIRSCHFELD'S EXCLUSIVE REPRESENTATIVE, THE MARGO FEIDEN GALLERIES LTD., NEW YORK

# Hoop Dreams

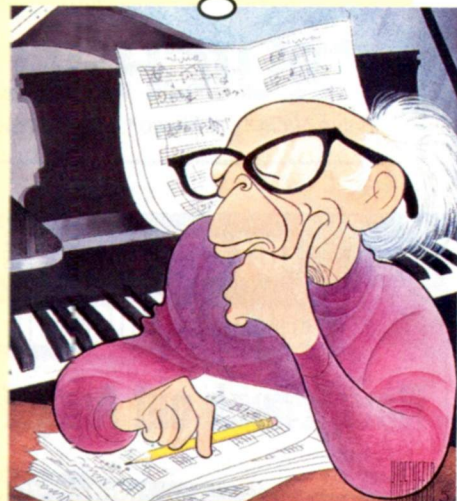
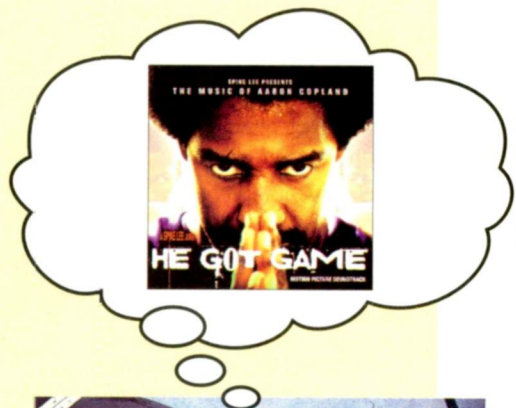
When Spike Lee was writing the masterly screenplay for his new movie, *He Got Game*, he came to see basketball as the American national sport, as popular on the prairies of Oklahoma as in the ghettos of Brooklyn. And when he wondered what music might be universal enough to embrace all America, he thought of Aaron Copland's. "When I listen to his music," Lee has said, "I hear America, and basketball is America. . . . It's like he wrote the score for this film."

If you find the combination of Copland and Lee incomprehensible, just watch the opening montage that unfurls under the title credits. Leisurely and expansive, it is supported entirely by Copland's *John Henry*, a salute to a nineteenth-century African-American folk hero. The simple, wide-open tune is severed by percussive crashes, just as Lee's cross-country basketball images are interrupted by grim urban reality. Another example: At the very first dribble of a basketball game, the "Hoedown" from *Rodeo* enters with a crash. As long as you forget the original cowboy imagery, it's a perfect match — its energy infectious, its rhythms propulsive.

Most of the performances of Copland's music used in *He Got Game* were recorded by the London Symphony under the direction of the composer in the 1960s and newly remastered for the film and a Sony Classical CD (60593). On the original Columbia Masterworks LPs these recordings sounded murky, boxy, and

devoid of brilliance, but now they have clarity and pizzazz. The movie also features new songs by the reunited rappers Public Enemy, but these are separately available on a Def Jam CD.

— K. Robert Schwarz



this work, or the enormous dramatic range Dietrich Fischer-Dieskau commanded in his best years, is absent here. What we get is an unflinching beauty and steadiness of tone, with *fortes* that do not rant and a *mezza-voce* without crooning. Wolfgang Sawallisch's smooth yet assertive pianism confirms that he, too, is attuned to Schubert. *G.J.*

**SCHUMANN Manfred Overture; Symphony No. 2; Konzertstück for Four Horns and Orchestra**

Philharmonia Orchestra, Christian Thielemann cond. (*Deutsche Grammophon 453 482, 76 min*)

★★★★

Christian Thielemann appears to be the latest of the under-40 Middle-European conductors aspiring to the laurels of the late Herbert von Karajan. To judge from this very interesting and varied all-Schu-

mann CD, he has a real mind of his own. Right away in the opening chords of the *Manfred Overture*, instead of an imperious pronouncement we get a world-weary *legato* treatment that took me several listenings to become used to, and the main body of the turbulent score is more freewheeling and rhapsodic than one might expect.

Quite different is the *Konzertstück*, or concert piece, for four horns and orchestra, which has a wonderful whooping exuberance in the first movement, a lovely "romance," and a virtuosic finale that would test the mettle of one hornist, let alone four. Phenomenal playing by the Philharmonia's horn quartet is backed up by Thielemann's superbly assured conducting and an A-1 recording job done in a London church.

The Second Symphony is the main business of this CD, and, as with the *Manfred*

# The disc is mini. So what's the big noise about?

**S**ony calls it MD — MiniDisc. Maybe you've seen the ads for it. They're gorgeous. But frankly, they don't tell you much.

For example, you can record an entire album onto MiniDisc or make a "hits" mix of your favorite songs, and then add, delete or move songs around without having to start all over.

There's a lot more, too, and Crutchfield is where

*Crutchfield — authorized website and catalog for Sony, Sony MiniDisc, and virtually every other top audio and video brand, too.*

## CRUTCHFIELD

Home Audio • Car Stereo • Video • Home Theater

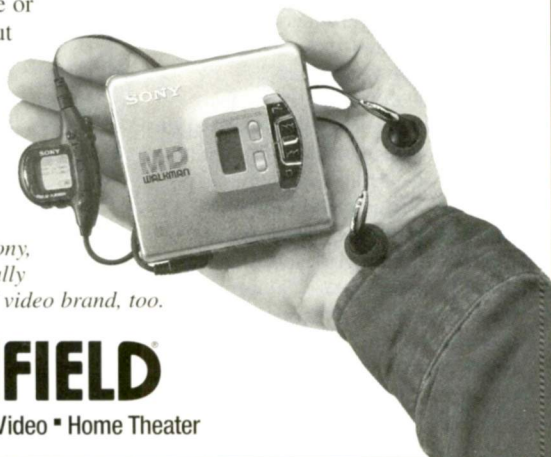
you'll find it. Just go to our website or call for our free catalog and see.

on the web:

[www.crutchfield.com/md](http://www.crutchfield.com/md)

or call for your FREE catalog:

**1-800-955-9009** ask for extension "SR"



## classicalmusic

Overture, Thielemann's reading has its controversial elements, chiefly gear-shifting in the faster movements and such touches as a quick breathing pause with each entry of the exposition codetta theme in the first movement. The scherzo's second trio is drastically slowed down, and the exuberant and sometimes hectic finale strikes me as decidedly too freewheeling. The great slow movement, however, is exquisitely limned, with great poise and subtlety. The recording is bright and spacious, but given the church acoustics, it seems a bit bass-shy. *D.H.*

### R. STRAUSS *Die Frau ohne Schatten*

Voigt, Heppner, Schwarz, Grundheber, Hass, others; Chorus and Orchestra of the Dresden State Opera. Giuseppe Sinopoli cond. (Teldec 13156, three CDs, 184 min)

★★★

**R**ichard Strauss's *Die Frau ohne Schatten* is an opera of great complexity, full of orchestral thrills along with extraordinary vocal challenges. It can be an overwhelming theatrical experience even though the verbose and symbol-laden libretto makes it occasionally hard to take.

Giuseppe Sinopoli's control of the opera's complexities is masterly indeed. The orchestral interludes seamlessly bind the various episodes together in rich and vibrant colors, and he and the recording engineers deserve special praise for keeping the staggering array of forces in the proper balance.

Except for the unpleasantly shrill and wobbly Sabine Hass as the Dyer's Wife, the singing principals are a distinguished lot. The heroic tenor sound that Ben Heppner brings to the Emperor's music is ennobled by a smooth legato. Future exposure to the taxing role of the Empress will enable soprano Deborah Voigt to endow it with a sharper, more personalized profile; vocally she has already mastered its fearsome hurdles. Bass-baritone Franz Grundheber exudes warm humanity in his eloquently sung portrayal of Barak the Dyer, and mezzo Hanna Schwarz creates such a formidable presence as the enigmatic Nurse that her small vocal blemishes seem negligible.

In the theater, *Die Frau* is frequently cut, a procedure that was also followed here. Some of the cuts in the first act seem reasonable, but the third act is too drastically streamlined. I can recommend this set, but other recordings feature casts of comparable excellence and are uncut. *G.J.*

### TAKEMITSU *From me flows what you call Time; Twill by Twilight; Requiem*

Nexus; Pacific Symphony, Carl St. Clair cond. (Sony 63044, 62 min)

★★★★

**I**mpressionism lives! Or at least it did in the work of Toru Takemitsu (1930-1996), whose music evolved throughout his life toward a grand shimmer of sonic light and

You see him on the Today Show.  
You read his column in USA Today.

Now, check out Andy Pargh's new magazine.

Home Theater...Motorcycles...Computers...Cameras

**THE GADGET GURU'S BEST STUFF**

Your Guide To This Summer's Hottest Products

Andy Pargh, The Gadget Guru as seen on Today

**On Newsstands June 9**

color that can only be compared to a handful of pages in the work of Debussy. Takemitsu's early style, epitomized by the expressionistic *Requiem*, long his best-known piece, was strongly influenced by European modernism; later he picked up influences from John Cage and Morton Feldman. Ironically, while *Requiem* has re-emerged as the composer's own elegy, most listeners today will prefer the gorgeous, sensuous wallow of the later works, *From me flows what you call Time* and *Twill by Twilight*.

The Pacific Symphony, orchestra in residence at the Arts Center in Orange County, California, has turned into an important and forward-looking musical organization, and this beautiful recording is a feather in its cap. The five-man Nexus percussion ensemble joins the orchestra in *Time*, at 36 minutes the longest work here. E.S.

## COLLECTIONS

### JEANNE GOLAN

#### Time Tracks

Jeanne Golan, piano (*Albany 211*, 74 min)

★★★★

Jeanne Golan's explanation of the title of this collection, *Time Tracks* — as relating to music as "the structuring of time" — is not particularly persuasive, but her program and the performances themselves add up to one of the nicest surprises of the season. In Beethoven's E Major Sonata, Op. 109, she allows the music to unfold in the most uncluttered, splendidly balanced way, making its points in human terms, including a hint of humor in the concluding variation movement, without rhetorical underscoring.

The refreshing Beethoven is followed by two fairly recent American works: Cornelius Cardew's charming *Piano Album* (three descriptive miniatures) and Alvin Curran's extended memorial piece *For Cornelius*, the middle section of which, as Golan points out in her note, contains certain parallels with the final movement of the Beethoven sonata. There's still more: two of Granados's *Goyescas* and Conlon Nancarrow's intellectually playful *Two Canons for Ursula*. It adds up to an imaginatively balanced recital in which Golan identifies persuasively with all the material. The recording itself is outstanding in its well-focused realism. R.F.

### HAKAN HAGEGARD

#### Songs of Brahms, Sibelius, and Stenhammar

Hakan Hagegard, baritone; Warren Jones, piano (*RCA Victor 68097*, 67 min)

★★★★

The first two songs of Brahms's Op. 105 are among his most intimate, but some may be put off by the baritone Hakan Hagegard's almost crooning approach to "*Wie Melodien*." The vocal production is still

veiled but works better in "*Immer leiser*." "*Klage*," with its textural resonances of Schubert's *Winterreise*, benefits from more forthright delivery and is one of the best in the Brahms group. Deeply moving also is the somber "*Auf dem Kirchhofe*" with its quotation from a Bach chorale. "*Verrat*" provides a dramatic conclusion to the Op. 105 set, and Hagegard makes the most of this song of betrayal. In Brahms's *Four Serious Songs*, however, Hagegard faces very heavy re-

corded competition, and I found myself wishing for more vocal heft.

Hagegard is truly in his own element, and his native Swedish, in the Sibelius and Stenhammar (Sibelius used Swedish texts for his songs). The last five Sibelius songs are among the composer's best loved, and in the famous "*Svarta rosor*" the singer rises to a splendid final climax. The Stenhammar songs have great poetic and narrative charm but make no attempt to scale emo-



CALL US FOR PRICE AND  
ADVICE, WE'RE VERY NICE!

**800-978-6253**

CALL 8AM - MIDNIGHT • 7 DAYS A WEEK

**KENWOOD**  
1090VR  
**DOLBY® DIGITAL AC-3 RECEIVER**

- 150 Watt X5 (Front, Center, Surround)
- 5.1 Channel K-STAT Discrete Amp
- On Screen Operation/5 Channel DSP
- Dual-Room/Dual-Source
- Universal Back Lit Remote

**\$599**

**AFFORDABLE PRICES  
FOR TODAY'S ECONOMY  
PRICE • SELECTION • SERVICE**

**SMILE! WE LOVE YA!**

**UNCLE'S STEREO**  
216 W 72ND ST., NEW YORK, NY 10023

STORE HOURS: MON-SAT 10:30-7:30 • SUN 11:00-5:30  
FAX 212-721-7587 NYC 212-721-7500  
N.Y. CONSUMER AFFAIRS LIC. #0904418

VISIT OUR WEB SITE AT <http://www.unclestereo.com>

**This  
Months  
Super  
Special!**

**PIONEER**



PDF906  
**101 DISC CD  
FILE CHANGER**

- Custom File/Random Play
- Optical Digital Output
- Auto Digital Level Controller • Best Selection Memory
- Full Function Remote

**\$179**

**AUDIO  
VIDEO  
FROM A  
TO Z  
AND  
THEN  
SOME!**

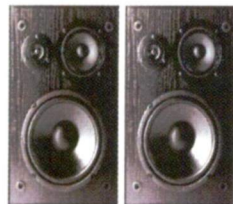
**TOSHIBA**



SD3107  
**DVD DIGITAL VIDEO  
AND CD PLAYER**

- AC-3 Dolby® Digital Output
- S-Video • Vocal Karaoke
- Picture Zoom • Multi Aspect Ratio & Angle
- Component Input • Multi Audio • 10-Bit DAC For Video • 500 Lines Resolution
- DSS/Cable Universal Remote Control

**\$449**



LET US  
WINE AND DINE  
YOU AS A  
THANK YOU  
FOR BEING A  
LOYAL READER

TRANSMEDIA  
NETWORK INC.

3081 3100 1234 5678

Stereo Review

We'd like to express our appreciation to you for being a loyal reader of STEREO REVIEW magazine by offering you a free membership to the Transmedia Dining Card.

### ENJOY...

20% SAVINGS EVERY TIME YOU DINE OUT AT MORE THAN 7,000 PARTICIPATING RESTAURANTS (on all food and drinks, excluding tax and tip).

### SIGN UP...

- Simply by calling 1-800-422-5090.
- Mention Code TSTR and identify yourself as a STEREO REVIEW magazine subscriber.
- Register your Visa®, MasterCard®, The American Express Card®, or Discover®/NOVUS.™

### HOW TO...

Present your Transmedia Card as payment in any Transmedia restaurant. Your dining receipt will show the full price of your meal. The full charge of the meal will appear on the next statement of the credit card you registered, along with the Transmedia credit of 20 percent!

### STEREO REVIEW SUBSCRIBER BONUS

SAVE AN ADDITIONAL  
10% OFF OF YOUR FIRST  
TRANSMEDIA DINE (within  
60 days) FOR A TOTAL  
SAVINGS OF 30%!\*  
\*Limit one per account.

ONCE AGAIN,  
THANK YOU FOR  
YOUR LOYALTY.  
HAPPY DINING!

## QUICK FIXES

### BACH Goldberg Variations

Kurt Rodarmer, guitar (*Sony 60257, 74 min*)

★★★★

Bach's keyboard masterpiece sits surprisingly well on the guitar. Its plucked strings suggest the Baroque sound of the harpsichord while being easier on modern ears. Rodarmer meets the technical demands of the music with easy virtuosity while maintaining the guitar's warmth and intimacy. He says he loves this work, and the performance makes that clear.

*William Livingstone*

### BRAHMS Piano Concerto No. 2

Maurizio Pollini, piano; Berlin Philharmonic, Claudio Abbado cond. (*Deutsche Grammophon 453 505, 49 min*)

★★★★

Pollini and Abbado recorded the Second Concerto with the Vienna Philharmonic more than twenty years ago. Their Berlin remake has a greater sense of momentum and all-round involvement, with a slow movement that is endearing as well as noble and a convincingly vital scherzo. In both outer movements they meet Brahms on his own terms in respect to expressiveness, and they bring out the lambent coloring that is so much a part of this work's particular character. *R.F.*

### DOHNANYI Violin Concertos Nos. 1 and 2

Vilmos Szabadi, violin; Budapest Symphony, Tamas Vasary cond. (*Hungaroton 31759, 69 min*)

Ernst von Dohnanyi's Violin Concerto No. 1 is a World War I-vintage, late-Romantic work in four easy-to-take movements. The Second Concerto, from 1949, has a poignant slow movement and is full of delightful melodic and polyphonic surprises, like a cadenza near the end that pits the solo violin against the orchestra's principal horn. The performances here are spirited and accurate, the studio recording clean but a bit constricted in ambience. *D.H.*

### MAHLER Symphony No. 5

Royal Concertgebouw Orchestra, Riccardo Chailly cond. (*London 458 860, 71 min*)

★★★★

It has always been a pleasure to hear the Concertgebouw Orchestra in Mahler, and the new Fifth Symphony is perhaps the strongest segment so far in the ongoing series under Chailly. Indeed, among current recordings of this work taken at the broad tempos now in vogue, it would be hard to find another one that so success-

fully combines virtuoso performance, a genuine sense of involvement, and superb sonics. *R.F.*

### PROKOFIEV Romeo and Juliet (excerpts)

Berlin Philharmonic, Claudio Abbado cond. (*Deutsche Grammophon 453 439, 68 min*)

★★

Abbado prepared his own sequence of excerpts for this live recording, twenty numbers in all, some from the three concert suites Prokofiev prepared and some from the full ballet score. The performance is smooth and tasteful and moves along well, but it seems curiously objective — "distanced" may be a better term, like the difference between merely observing a great drama and actually taking part in it. *R.F.*

### STEINER King Kong

Moscow Symphony, William J. Stromberg cond. (*Marco Polo 8.223763, 72 min*)

★★★

*King Kong*, released in 1933, was one of the first classic films of the talkie era — not least because of Max Steiner's brilliant music. He underscored the exotic flavor and high adventure of the story



with sweeping, colorful invention that echoes the late Romantics and even harks back to the Orientalism of Rimsky-Korsakov. This is the first complete digital recording of the score, and it's played with competence and some flair by the Moscow Symphony led by a young American conductor. *J.J.*

### VERDI Arias

Roberto Alagna, tenor; Berlin Philharmonic, Claudio Abbado cond. (*EMI 56567, 64 min*)

★★★★

Initially overhyped as "the Fourth Tenor" and opera's No. 1 hunk, Alagna has survived to give some very satisfying performances. In this collection of arias spanning Verdi's career, he shows that he has learned a lot in a short time about acting with the voice. It contains some genuine thrills. *W.L.*



tional peaks, and Hagegard does them to a turn. The recording is eminently satisfactory, as is the sensitive and knowing pianism of Warren Jones. *D.H.*

#### GIDON KREMER

##### From My Home

Gidon Kremer, violin; Vadim Sacharov, piano; Deutsche Kammerphilharmonie (Teldec 14654, 79 min)

★★★★

Gidon Kremer says in his notes for this recording, "I associate the Baltic states with the gray of the sea." A lovely collection of violin music by contemporary composers of his native region, it proves that in music gray can contain a whole world of emotional expression. None of the composers is well known in the West save Arvo Pärt, represented by his hypnotic *Fratres* for violin, string orchestra, and percussion.

*Musica Dolorosa* for string orchestra by Peteris Vasks is a magnificent study in darkest gray, verging on black, that progresses from a sweeping, harmonic expression of longing to the angry, fractured chaos of regret. Immediately following it is the half-hour-long *Nevertheless* by Georgs Pececis, an exquisite concerto in which the intertwining wisps of melody for violin and piano are solidly supported by the string orchestra's harmonic backbone: palest hues of a gray dawn, infused with hopeful shades of rose. The mood is further lightened by two sets of miniatures for solo violin, a bravura, atonal partita by Vytautas Barkauskas and the delightful *Two Grasshopper Dances* by Peteris Plakidis.

The disc opens with its most traditional work, the liltingly melodic *Elegy* for violin and string orchestra by Balys Dvarionas (1904-1972), the only nonliving composer represented, and it concludes with a piece by the youngest one, Erkki-Sven Tuur (born 1959), whose *Conversio* for violin and piano begins tentatively with apparently unrelated fragments of melody that build into an animated, tightly constructed duet. Kremer's playing throughout shines with a passionate conviction that seems to have inspired his collaborators. *J.J.*

#### ROMANESCA

##### Phantasticus

(Harmonia Mundi 907211, 73 min)

★★★★

Ever heard of Giovanni Paolo Cima? Giovanni Antonio Pandolfi, Nicolò Corradini or Johann Hieronymus Kapsberger? Cima is said to have written (or, at any rate, published) the first "modern" sonatas. "Phantasticus" refers to the style of instrumental fantasy that became popular in the early Baroque — really the beginnings of modern instrumental music. The most famous composer represented here is Frescobaldi, organist at St. Peter's and a major influence

on later generations. Cima, Kapsberger, and the others were string players — fiddlers or pluckers on the big lute known as theorbo.

Romanesca consists of violinist Andrew Manze, theorboist Nigel North, and John Toll, who plays harpsichord and organ; theorbo and keyboards are as important as violin in this program. *Romanesca* is also the name of a famous dance tune with its accompanying harmonies on which composers loved to make variations, and except for a wonderful toccata by Kapsberger, every piece here is either a set of variations on *Romanesca* or a fantasy sonata based on it.

Almost all of the music sounds like improvisations that happened to get written down, and it is to the credit of these musicians that they make you think they are improvising them all over again. The written notes are not even the half of it, and without a bit of rapture this music can seem dull and meandering. Fortunately, rapture is one thing these musicians know well how to capture. Listen to Corradini's Sonata "La Sfondrata," a passionate work and performance that truly fits the notion of "phantasticus." *E.S.*

**COPYRIGHT © 1998 BY HACHETTE FILIPACCHI MAGAZINES, INC.** All rights reserved. Stereo Review, July 1998, Volume 63, Number 7. Stereo Review (ISSN 0039-1220) is published monthly by Hachette Filipacchi Magazines, Inc. at 1633 Broadway, New York, NY 10019; telephone (212) 767-6000. One-year subscription rate for the United States and its possessions, \$19.94; Canada, \$27.94 (includes 7% GST tax; Canadian Business Number 126018209RT, IPN Sales Agreement Number 99236); all other countries, \$27.94; cash orders only, payable in U.S. currency. Periodical postage paid at New York, NY 10001, and at additional mailing offices. Authorized as periodical mail by the Post Office Department, Ottawa, Canada, and for payment of postage in cash. **POSTMASTER/SUBSCRIPTION SERVICE:** Please send change-of-address forms and all subscription correspondence to Stereo Review, P.O. Box 55627, Boulder, CO 80322-5627; or e-mail to [hachette@neodata.com](mailto:hachette@neodata.com) (indicate that it concerns Stereo Review). Please allow at least eight weeks for the change of address to become effective. Include both your old and your new address, enclosing, if possible, an address label from a recent issue. If you have a subscription problem, write or e-mail to the above address or call (303) 604-1464; fax (303) 604-7455. **PERMISSIONS:** Material in this publication may not be reproduced in any form without permission. Requests for permission should be directed to: The Editor, Stereo Review, 1633 Broadway, New York, NY 10019. **BACK ISSUES** are available. Write to ISI/Stereo Review, 30 Montgomery Street, Jersey City, NJ 07302. For each copy ordered, enclose a check or money order for \$5.95 in U.S. funds (\$7.25 for orders sent to Canada, \$12.95 for other foreign locations); add \$2 to those prices for each copy of the 1998 *Stereo Buyer's Guide* annual. For telephone credit-card orders, call (201) 451-9420. **EDITORIAL CONTRIBUTIONS** must be accompanied by return postage and will be handled with reasonable care, but the publisher assumes no responsibility for the return or safety of unsolicited manuscripts, art, or photographs. **PRIVACY:** Occasionally we share information with other reputable companies whose products and services might interest you. If you prefer not to participate in this opportunity, please call the following number and indicate that to the operator: (303) 604-1464.

## Get In The Mix!



## FREE

### 132-Page Color Catalog

The Pro Sound & Stage Lighting catalog is jam packed with all the hottest products. You'll find a huge selection of pro audio, DJ gear, recording, keyboards, groove gear, software, lighting effects, books & videos, cases, cables, hard-to-find accessories, mics and much more. Compare thousands of top name brand



*Technics, JBL, Denon, JVC, Roland, Gemini, QSC, Crown, Numark, Sony, Shure, Alesis, Mackie, Akai, Cerwin-Vega American DJ & many more.*



products side-by-side. Our low discount prices are guaranteed to be the best you'll find—even 30-days after your purchase. Most orders are shipped out the same day received from our giant inventory.

## CALL TODAY FOR YOUR FREE COPY!

### 1-800-672-4268

Outside the U.S.A. 1-714-891-5914

Mon. - Fri. - 6am - 10pm

Sat. & Sun. 8am - 5pm (PST)

Online Catalog - [www.pssl.com](http://www.pssl.com)

Fax Toll Free 1-888-PSSL-FAX (777-5329)



## PRO SOUND & STAGE LIGHTING™

11711 Monarch St, Garden Grove, CA 92841

Since 1976

# CD STORAGE

CONNECTION

For advertising information  
call 1-800-445-6066,  
or fax 1-212-767-5624.

## The Ultimate STORAGE CABINET



### The Cube by Lorentz Design



Stores  
306 CD's  
or any combination  
of CD's, DVD's,  
CD-ROM, VHS, Cassettes, etc.

- Featuring our patented ALLSTOP STORAGE SYSTEM, no slots, no plastic molds, no wasted space • Full-extension drawer slides • From high quality oak veneers and hardwood
- 23" H x 19 1/2" W x 17 1/2" D • Fully assembled • Stackable •

Call **800-933-0403**

to order or for a free, color brochure detailing all our disc, tape & component storage CUBES.

LDI, Inc. • P.O. Box 277 • Lanesboro, MN 55949  
Fax: 507-467-2468 • Or e-mail us your  
brochure request at [lorentz@polaristel.net](mailto:lorentz@polaristel.net)

## Component Storage +



Combo 3R



Combo 4R

- + Quick, no tool assembly.
- + Solid steel support system.
- + 15 standard models.
- + Custom units available.
- + Flexible shelf spacing.
- + Solid oak, walnut, cherry or black MDF shelves.



Combo 8R

Get your free information kit today!

**SORICÉ** PO Box 747-71  
Nutley, NJ 07110  
Call: 800-432-8005 Fax: 201-667-8686  
e-mail: [soriceav@aol.com](mailto:soriceav@aol.com)

## CD/VHS CASE

~~\$159<sup>95</sup>~~  
**\$129<sup>95</sup>**

(SPECIAL SALE)

- > Holds 504 CD's or Combination of CD's, Tapes, Cassettes
- > Furniture Quality Oak Construction
- > Fully Assembled Dowel Shelf Unit
- > Hand-Rubbed Danish Oil Finish
- > Immediate Delivery in Oak or Black

30 Day Unconditional Money Back Guarantee

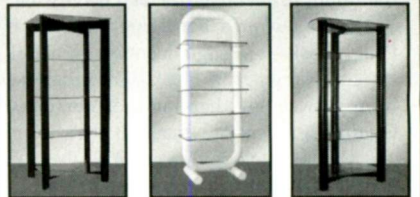
We offer a complete line of products in oak and black

**1-800-878-7458**



HY-Q ENTERPRISES • 14040 MEAD ST. • LONGMONT, CO 80504

## Progressive Structures™



Call today for color literature on our full line of media furniture.

Phone 612.452.7088 Fax 612.452.2862

**Jon Alexander™**  
Furniture Design, Inc.

2000 Skyline Drive St. Paul, MN 55121

# Infinite CD capacity

Imagine 270 CDs in one drawer.  
Then, imagine modular media cabinetry.  
Now, let your imagination run wild...

Please call to receive a catalog on storage cabinets you can't outgrow.

**800-387-9790**  
Fax: 905-475-1154 [www.can-am.ca](http://www.can-am.ca)

**C A N - A M**

## THE BAGS DESIGN GROUP

"We'll even design a piece to your exact specifications!"

- ▼ #4803 2-BAY Component Center
- ▶ #PRO-54 Custom Component Center
- ◀ #PRO-1000 Holds 1000 CDs/DVDs
- ▶ #PRO-33 Audio Rack
- ▲ Media Raxx/Waves
- ▲ #3003 3-BAY Component Center
- ▲ #PRO-44 TV Component Table
- ◀ #6665 LP/Laser Storage Rack Holds 1600

4147-A Transport St. Ventura, California 93003

**805/644-2185**

Contact us today for a copy of our detailed newsletter  
**THE BAGS REPORT now IN COLOR**  
For your local dealer visit

**[www.billybags.com](http://www.billybags.com)**

# Stereo Review CLASSIFIED

For Advertising Information Call 1-800-445-6066, 9am-5pm EST

**PLEASE NOTE:** It is impossible for us to verify all of the claims of advertisers, including product availability and existence of warranties. To confirm that an advertiser is authorized to sell a product, we suggest you contact the manufacturer directly. Please review our *Tips for Mail Order Purchasers* in this section.

### RECORDS

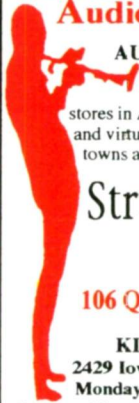
LV/CD/RECORD COLLECTOR'S SUPPLIES. Jewel boxes, jackets, sleeves, etc. CABCO-663, BOX 8212, COLUMBUS, OH 43201. (614) 267-8468. JProto1@aol.com

NEEDLES/CARTRIDGES & Belts--Expert Consultations. All Major Brands, One of Largest Stocks in Country including Old/Obsolete Models. NEEDLE EXPRESS. 1-800-982-2620. www.needleexpress.com

### AUTHORIZED

### AUTHORIZED

## "One of America's Finest Audio/Video Stores"



### AUTHORIZED DEALER

We stock 106 brands of Audio, Video and Car Stereo, only a few stores in America can make this statement and virtually all of us are located in college towns adjacent to hi-tech Universities. *KU*

## Straight Talk...

for 39 Years

**14 Showrooms  
106 Quality Manufacturers**

### KIEF'S AUDIO/VIDEO

2429 Iowa St., Lawrence, KS 66046  
Monday through Saturday 10am-6pm  
<http://www.kiefsav.com/>

## AUDIO/VIDEO

### 785-842-1811

OUR 22ND YEAR! CALL 1(800) 826-0520. ★ NAD ★ SONY ES ★ ONKYO ★ CARVER ★ KEF ★ HARMAN KARDON ★ LEXICON ★ ADCOM ★ NAKAMICHI ★ AMC ★ POLK AUDIO ★ SUNFIRE ★ ATLANTIC TECHNOLOGY ★ PROAC ★ TARGET ★ VELODYNE ★ PSB ★ PANAMAX ★ MONSTER CABLE ★ JAMC ★ GRADO ★ AUDIOCONTROL ★ a/d/s ★ THORENS ★ SANUS SYSTEMS ★ NILES AUDIO ★ OMNIMOUNT ★ SOUNDSTREAM ★ ROCKFORD FOSGATE ★ SOUND SELLER, BOX 224, 2808 CAHILL, MARINETTE, WI 54143-0224.

### FOR SALE

## PLEASE NOTE:

### A ★ AFTER A PRODUCT INDICATES THE ADVERTISER IS AN AUTHORIZED DEALER FOR THAT PRODUCT.

**AUDIO  
VISUAL**

## Xpress

800-419-2323

Audio Receivers  
CD Players  
Mini Disc  
Tape Decks  
Dat Recorders  
Mini Systems

Home Speakers  
Subwoofers  
Center Channels  
Car Stereo  
Car Amplifiers  
Radar Detectors

Video  
DVD  
DSS  
VCR  
Camcorders  
TV's  
Laser Discs

All Brands from A to Z and More

**Audio Xpress** 3550 Lawson Blvd SW  
Oceanside, NJ 11572

We accept MC, Visa, Amex, Discover & COD 1-800-419-2323

Quality Audio Furniture at 20% off Retail Price! Featuring Archetype System from Salamander Designs Ltd. MEI, 1-800-879-5267. [www.audiofurniture.com](http://www.audiofurniture.com)

## the Happy Medium

[www.HappyMedium.com](http://www.HappyMedium.com)

- ARCHITECTURAL AUDIO
- DAT
- MINIDISC
- WORLD BAND RADIO
- PRO WALKMAN
- CABLES
- FIELD RECORDERS
- DSS
- SONY DST
- CUSTOM INSTALLATION
- HOME THEATER
- ACCESSORIES

- ADS
- AMC
- ATLANTIC TECHNOLOGY
- BANG & OLUFSEN
- CARVER
- CELESTION
- GRADO
- HARMAN KARDON
- JVC
- KEF
- LEXICON
- MONSTER CABLE
- NAD
- NAKAMICHI
- NILES AUDIO
- PANAMAX
- POLK AUDIO
- PSB SPEAKERS
- SANUS SYSTEMS
- SUNFIRE
- SONY HI-FI
- TARGET
- THORENS

430 State Street • Madison, WI 53703 • FAX 1(608) 255-4425

## 1-800-906 HI-FI (4434)

FRIENDLY ADVICE! FREE SHIPPING! MIRAGE, KINERGETICS, NAD, PARASOUND, KEF, AUDIOQUEST, KIMBER, STRAIGHTWIRE, MORE! READ BROTHERS, 593-B KING, CHARLESTON, SOUTH CAROLINA 29403. (803)723-7276. RBS@charleston.net

## AV ELECTRONICS

HOME THEATER - DVD

### 888-540-8333

**AUTHORIZED DEALER**

FOR EVERY COMPONENT SOLD!

1585 ROUTE 46 EAST, LITTLE FALLS, NJ 07424  
TEL: 973 256-1122 • FAX: 973 256-5388

[www.avielectronics.com](http://www.avielectronics.com)

## the Sound Seller

Authorized Dealer For:

- ADCOM
- a/d/s
- AMC
- ATLANTIC TECHNOLOGY
- AUDIOCONTROL
- BELLES
- CARVER
- CELESTION
- GRADO LABS
- HARMAN KARDON
- INFINITY
- JAMO
- KEF
- LEXICON
- MONSTER CABLE
- NAD
- NAKAMICHI
- NILES AUDIO
- NITTY GRITTY
- OMNIMOUNT
- PANAMAX
- POLK AUDIO
- PpAc
- PSB SPEAKERS
- SANUS FURNITURE
- SONY
- SONY HI-FI
- SOUND ANCHORS
- TARGET STANDS
- THORENS
- TICE AUDIO
- VELODYNE

2808 Cahill Road, P.O. Box 224  
Marinette, WI 54143 • (715) 735-9002

## 1-800-826-0520

CALL TEREI WORLD FOR GREAT DEALS ON ALL YOUR CAR STEREO NEEDS! MANY QUALITY BRANDS AT DISCOUNT PRICES, INCLUDING DENON/HOME! FREE UPS SHIPPING! CALL OR WRITE FOR FREE SALES FLYER! (914) 782-6044, POB 596, MONROE, NY 10950. OUR 11TH YEAR. E-MAIL: [caraudio@inf-net.com](mailto:caraudio@inf-net.com)

SAVE 40% ON HIGH-END home speakers, subwoofers, amplifiers. FREE CATALOG! FTRD.3023 E. Sangamon Ave., Springfield, IL 62702. 1-800-283-4644.

### COMPACT DISCS

10,000 PREOWNED CDs. SERVING THE WORLD FOR 14 YEARS. Popular/Jazz/Classical. Buy/Sell. Send \$3.00 (refundable) for 28 page catalog. Audio House, PO Box 531, Grand Blanc, MI 48439-0531. 810-695-3415 <http://audiohousecd.com>

### WANTED TO BUY

LP's & CD's BOUGHT & SOLD: Classical, Rock, Jazz, Audiophile, Etc. PRINCETON RECORD EXCHANGE, 20 Tulane St., Princeton, NJ 08542. (609) 921-0881. <http://www.prex.com>

## SMILE

Photo, Video and Electronics

For Orders Only 1800-516-4228  
NY Res dents & Information 1-212 967-5900

RECEIVERS	CAR STEREO
VSX-D906 649.95 VSX-D607 439.95 VSX-D506 309.95 VSX-D466 279.95 VSX-456 219.95 VSX-406 169.95 DENON AVR-5600 Call AVR-3600 AVR-3200 639.95 AVR-2700 504.95 AVR-2400 444.95 AVR-1400 319.95 JVC RX-864VBK 238.95 RX-774VBK 309.95 RX-864VBK 369.95 RX-1024VBK 579.95 TECHNICS SA-AX920 259.95 SA-AX720 224.95 SA-AX300 229.95 SX-E200 149.95 SONY STR-DE1015 554.95 STR-DE915G 439.95 STR-DE1505 369.95 STR-DE715G 309.95 PIONEER PDF-1006 284.95 PDF-957 214.95 PDF-907 179.95 PDF-607 154.95 PDF-507 149.95 PDF-407 139.95 CD-PCX205 239.95 CD-PCX255 304.95 CD-PCX270 554.95 CD-KCX55 174.95	PI2305-FM12375 MS-MS2 204.95 (CD-50+) FM633-12355 PS30 CD-VC 50 (Voice Cntrl) KEH-P6600R KEH-P6600W KEH-2925 KEH-2180 KEH-1870 KEH-1818 KEH-P4700 KEH-3939 KEH1700 DEH-245 DEH-P545W DEH-P85 DHR DEH-9735 KEH-345 DEH-P75 DH DEH-PR35R-RW DEH-45 DH EG-4500/6500 DEH-P645 FHP-700 EG-7600/9200 PREMIERE SPRKS AMP'S & OVERSEAS STORES SONY XR-1750 94.95 XRC-7200 169.95 XR-2390 99.95 XE-2180 184.95 XR-2600 169.95 XR-480 184.95 XRC-5100 114.95 XRC-580 234.95 XRC-6100 128.95 XRC-U220 99.95 CDX-C910 539.95 CDX-C860 389.95 CDX-C780 242.95 CDX-91 ES 399.95 CDX-762 224.95 CDX-805 ES 228.95 CDX-415FR 239.95 XRC-C900 374.95 CDX-C900 CALL CDX-165 ES 269.95 CDX-505FR 209.95 CDX-715 194.95 RMX-509F 99.95 MDX-62 324.85 RMX-C7900 279.95 WX-C570 New Double Din CD/Cassette 389.95
TECHNICS	CLARION
SL-PD788 134.95 SL-PD888 144.95 SL-PD988 172.95 SL-MC70 159.95 JVC XL-MC228K 199.95 XL-M-C334 229.95 XL-M418BK 189.95 XL-F254BK 182.95 Pioneer CTW-F-3817R CTW 606R 178.95 JVC TDW-718EK 199.95 TDW 354BK 159.95 SONY TCW-E 635 184.95 TCWE 805S 217.95 Technics RSTC7515 159.95 RST97515 189.95	635 174 1235 199 AMIGO SYSTEM CALL DRX-9375R 414.95 DRB-5177 289.95 DRX-6475 289.95 DRB-5475 199.95 DRX-6475 233.95 ADC-8255 644.95 DRX-9255 638.95 5680-CD CALL KDC-7470 246.95 RMX-509F 99.95 ARX-6470 182.95 ARX-5470 129.95 74 99 5100 134 KENWOOD KDC-8009 CALL KDC-2009 249.95 KDC-8009 224.95 KDC-53009 172.95 KDC-53009 212.95 KDC-4805 183.95 KDC-C711 212.95 KDC-C661 199.95 KDC-C461 188.95 KRC-805 224.95 KDC-7470 246.95 RMX-509F 99.95 KRC-705 206.95 KRC-405 129.95 KRC-605 164.95 KRC-305 122.95
DVD PLAYER	MINI SYSTEM
DENON 2000 499.95 DENON 3000 579.95 TOSHIBA 2101 339.95 TOSHIBA 3107 449.95 RCA 5200 359.95 RCA 5500 429.95 JVC 1000 379.95 JVC 2000 499.95 Panasonic DVD 05 349 Panasonic DVD 110 329 Panasonic DVD 10 469 Panasonic DVD K510 359 SONY DVP-S-520 379 SONY DVP-S-5000 459 SONY DVP-S-6200 Call SONY DVP-S-7000 799 PIONEER DVD-505 349 PIONEER DVD 909 719	AIAWA MSX-M390 489 MSX-M730 389 MSX-A80 359 MSX-A72 314 MSX-450 244 MSX-A30 289 SONY MHC-RX30 279.95 MHC-RX40 309.95 MHC-RX100 399.95 MHC-P100 329.95 JVC FS1000 229.95 FS2000 284.95 FS5000 264.95 MXD17611 379.95 FISHER DCS-M210 189.95 DCS-M310 264.95 DCS-M310 264.95 1570 114.95 1495S 139.95 2270 149.95 2250 166.95 975 DENON CHS-5614 269.95 CHM-5611 249.95 CHM-5628HF 299.95 MDA-W890 969.95
NURMUK	UNIDENT
CD-7030 449.95 CD-810 234.95 DM175 XLS (3) MIXED 189.95 PEAVEY P-1200 449.95 GEMINI CD 9500 MK1 449.95 CD 9800 579.95 SHURE MIKES 12AM 49.95 14AM 54.95 TVSRD 329.95 DOD R 512 True Stereo Multi Effects Processor 179.95	New! 1595SE 189.95 New! 3300 194.95 1580 (Voice) 154.95 1490 (AT) 169.95 1570 114.95 1495S 139.95 2270 149.95 2250 166.95 975 DENON CHS-5614 269.95 CHM-5611 249.95 CHM-5628HF 299.95 MDA-W890 969.95

Retail & Mail Order 25 WEST 35th ST. FAX 244 124.95  
 NEW YORK, NY 10001 (BETWEEN 57th & 6th Ave) 1-800-699-2836  
 Hours: MON-THURS 9-6, FRI 9-2, SUN 10-4 1-212-967-5912  
 ASK FOR ANY NON ADVERTISED ITEMS WE HAVE IT!

FOR SALE

FOR SALE

FRIENDLY PEOPLE, EXPERT ADVICE, and THE LOWEST PRICES!

HOME THEATER SPECIALISTS

**ABC**

American Buyer's Club International

**1-800-354-1324**

130 Highway 33 • Englishtown, NJ 07726

**THX - AC-3 Consultants**

For info & customer  
service call  
**732-780-6600**  
Fax orders  
**732-294-7480**

VISIT OUR WEBSITE

**WWW.ABCSTEREO.COM**

**RECEIVERS**



**YAMAHA**  
RX-V992 AC-3 799  
RX-V2092 AC-3 CALL

**HARMAN/KARDON**  
AVR85 CALL  
AVR25 MK II 439

**DENON**  
AVR2600 CALL  
AVR3200 AC-3  
AVR5600 THX

**PIONEER**  
VSX-D906 899  
VSX-D606 CALL

**SEPARATES**  
**CINEPRO**  
3K6 CALL  
**NAD**  
216THX AMP

**PARASOUND**  
P/SP-1000 PRO-LOGIC  
HCA 1206 AMP

**ADCOM**  
GTP 600 PRE AMP  
GFA7000 AMP

**SPEAKERS**



**KEF**  
Q70 CALL  
MODEL THREE CALL

**PSB**  
STRATUS GOLD CALL  
STRATUS MINI NEW

**WHARFDALE**  
DIAMOND 7.2 CALL

**ATLANTIC TECHNOLOGY**  
350.1 THX  
250.1 AC-3

**BOSE**  
AM 10 NEW LOW PRICE  
AM 7 II LOWEST PRICE

**AUDES**  
GOLD025 TOWER 1799

**KRIX**  
EQUINOX Award Winner  
APEX TOWER

**KLIPSCH**  
KLF20 CALL

**DVD PLAYERS**



**TOSHIBA**  
SD3107 CALL

**PIONEER**  
DVL700 DVD/LD/CD  
**SONY**  
DVP-S5000 CALL

**YAMAHA**  
DVD1000 AC-3  
**PANASONIC**  
DVD-A300 AC-3

**DENON**  
DVD-2000 CALL

**SUBWOOFERS**



**LOWEST PRICES!**  
CLEMETS... RICHTER II CALL  
M&K MX-125  
KLIPSCH KSV-200  
YAMAHA YST-SW150 299  
BIC I200R  
AUDES SW101

**CD PLAYERS**



**DYNACO**  
CDV-2 TOP RATED

**DENON**  
DCM460 339

**NAKAMICHI**  
ALL MODELS CALL  
**YAMAHA**  
CDC665 239

**BIG SCREEN**

HITACHI AUTHORIZED  
TOSHIBA DEALER  
SONY CALL  
MITSUBISHI CALL

**BOSE**

**dynaco**

**PIONEER**

**SONY**

**YAMAHA**



**MILLION DOLLAR INVENTORY**

5 YEAR WARRANTIES AVAILABLE ON ALL PRODUCTS

All products are new USA merchandise covered by the manufacturers warranty or ABC's exclusive limited warranty.



**WHOLESALE CONNECTION**

To order call: **1-800-226-2800**  
[www.wholesaleconnection.com](http://www.wholesaleconnection.com)

**Receivers**

RX662 CALL RX882 CALL  
RX992 CALL

**TECHNICS**  
SAAX710 CALL SAAX910 CALL  
SHAC300 CALL

**PIONEER**  
VSX49 CALL VSX0506 CALL  
VSX59 CALL VSX0606 CALL  
VSX79 CALL VSX0906 CALL

**KENWOOD**  
1070VR CALL 1080VR CALL  
1090VR CALL KR9900 CALL

**HARMAN/KARDON**  
AVR40 CALL AVR55 CALL  
AVR75 CALL AVR85 CALL

**ONKYO**  
TXSV35 CALL TXDS838 CALL  
TXSV636 CALL TXDS939 CALL

**CARVER**  
HTR880 CALL AV705X CALL

**CD Players**

**PIONEER**  
PDF79 CALL PDF908 CALL  
PDF59 CALL PDF506 CALL

**KENWOOD**  
1070CD CALL 1060CD CALL

**ONKYO**  
DXC330 CALL DXC530 CALL

**HARMAN/KARDON**  
FL8300 CALL FL8450 CALL

**TECHNICS**  
SLP0887 CALL SLMC400 CALL

**SONY**  
CDPCX200 CALL CDPCX250 CALL

**Tape Decks**

**JVC**  
TDV662 CALL  
TDW718 CALL

**HARMAN/KARDON**  
DC520 CALL  
**PIONEER**  
CTW606 CALL  
CTW616 CALL

**TECHNICS**  
RSTR75 CALL  
**SONY**  
TCWE805 CALL  
TCWE805 CALL

**ONKYO**  
TARW909 CALL

**DVD Players**

**PIONEER**  
DV500 CALL  
**PIONEER**  
DVL700 CALL

**TOSHIBA**  
SD2107 CALL  
**TOSHIBA**  
SD3107 CALL

**PANASONIC**  
DVDA100 CALL  
**PANASONIC**  
DVDA300 CALL  
**PIONEER LASER**  
CLD0406 CALL  
**PIONEER LASER**  
CLD599 CALL

**DSS All Brands-Call**

**Camcorders**

**GRAXM25** CALL GRAX920 CALL  
**GRDVM1** CALL

**PANASONIC**  
PVL857 CALL PVL657 CALL  
**PDV710** CALL

**CANON**  
ES400 CALL ES6000 CALL  
**OPTURA** CALL

**Portable CD'S**

**SONY**  
D368 CALL D465 CALL  
DM805 CALL DE307CK CALL

**KENWOOD**  
DPC671 CALL DPC971 CALL  
**PANASONIC**  
SLS321C CALL SLS651C CALL

**Call for Brands & Models Not Listed**

24 HR. Fax (516)564-9593 PO'S Welcome  
We accept MC, Visa, Amex, Discover & COD We ship FEDEX  
**WHOLESALE CONNECTION** 361 Charles St. West Hempstead, NY 11552

**Mini Systems**

**AIWA**  
NSXA30 CALL NSXA50 CALL  
NSX477 CALL NSX492 CALL  
NSXMT710 CALL NSXMT90 CALL  
XRMT10 CALL XRM30A CALL  
XRMT100 CALL ZVM702 CALL

**JVC**  
FS1000 CALL FS2000 CALL  
EXT035 CALL EXT07 CALL  
MT0791 CALL

**PANASONIC**  
SCAK20 CALL SCAK90 CALL

**Dat Recorders**  
Portable & Home Call

**Mini Disc Recorders**  
Portable & Home Call

**Home Speakers**

**JBL**  
HL5810 CALL  
HL8820 CALL ESC550 CALL  
SCS115 CALL SC1210 CALL

**INFINITY**  
SM65 CALL  
SM85 CALL  
SM105 CALL  
SM115 CALL  
SM125 CALL  
SM135 CALL

**OUTRIGGER**  
V504 CALL VS251 CALL  
V604 CALL VS251 CALL  
V802 CALL V825I CALL

**BOSCH**  
201 CALL 151BK CALL  
301 CALL 100BK CALL

**Powered Subwoofers**  
**INFINITY**  
BU1 CALL  
BU2 CALL  
**BIC**  
V1000R CALL  
V200R CALL

**MTX**  
PS12 CALL  
PS15 CALL  
**SAW101** CALL  
**TSW40** CALL  
**TSW50** CALL

**Center Channels**  
**INFINITY**  
VIDEO1 CALL  
VIDEO2 CALL  
**BIC**  
VS2CLR CALL  
V62CLR CALL

**Car Stereo**  
**PIONEER**  
KEHP414 CALL DEH56 CALL  
KEHP515 CALL DEH56 CALL  
KEHP818 CALL DEH590H CALL  
CDXFM629 CALL DEHP85 CALL  
CDXFM727 CALL DEHP85 CALL  
DXPS000 CALL CDXP626S CALL

**PANASONIC**  
CDOP6550 CALL CDOPX95 CALL  
**XRCA50** CALL CDXA60 CALL  
**XRCA50** CALL CDXA60 CALL  
**CDX5059F** CALL MDXC670 CALL  
**CDX705** CALL

**JVC**  
KSRT420 CALL KD65720 CALL  
KSRT520 CALL KD65920 CALL  
**KOMAR69F** CALL **KOMAR8** CALL

**KENWOOD**  
KRCT703 CALL KDC6005 CALL  
KRCT903 CALL KDC7005 CALL  
**KDCC604** CALL **KDC8005** CALL

**Radar Detectors**  
**BEL**  
9451 CALL 85051 CALL  
85511 CALL

**WHISTLER**  
1565WH CALL 1575WH CALL  
**UNIDEN**  
LRD6499 CALL LR06599 CALL  
LRD2200 CALL

**Telephones**  
**SONY**  
SPPD010 CALL SPPM920 CALL  
SPPS960 CALL

**PANASONIC**  
KXTCC912 CALL KXTCC912 CALL  
KXTCC342 CALL KXTCC940 CALL  
KXTCC970 CALL KXTCC940 CALL

**TOSHIBA**  
FT986 CALL FT8006 CALL

PROFESSIONAL • NIGHT CLUB • MOBILE DJ • SUPER STORE

**AMC** American Music Center Inc.

PROFESSIONAL ADVICE! • QUALITY PRODUCTS! • COMPLETE SATISFACTION!

- Mobile DJ
- Night Club
- Pro Audio
- Effects Lighting
- Complete Satisfaction



Call For Your  
**FREE Catalog!**

**1-888-577-4AMC**  
www.americanmusiccenter.com (4262)

Components that define the present. Systems that anticipate the future.



**Reference** AudioVideo

Our 20th year!

**800.947.4434**

so. cal. 310.517.1700  
fax 310.517.1732

www.reference-av.com

Competitive Prices • Courteous Service • Expert Advice

Authorized dealer for the finest audio & video brands:

ADA	Celestion	Magnum Dynalab	Sharp
ATI	Citation	Meridian	Sonace
Atlantic Tech...	Creek	Mirage	Scny
Audible Illusions	DCM	M.I.T.	Spection
Audio Control	Denon	Mitsubishi	Straightwire
Audio Power	Fantare	NAD	Target
Audioquest	Grado	Nestorovic	Thorens
Bag End	Hafner	Niles	Tice
Balanced Audio	Hales	Nitty Gritty	Toshiba
Bryston	Harman Kardon	Nordost Flatline	Townsend
Bybee	Infinity	Pioneer Elite	Von Schweikert
Cal Audio Labs	Jamo	ProAc	WPI
Cardas	JBL Synthesis	PSB	Wireworld
Carver	KEF	Rega	X.O
Cary	Kimber Kable	Roomtone	...and more

18214 Dalton Ave., Dept. SP, Gardena, CA 90248  
e-mail: rav2000@aol.com

**SINGERS! REMOVE VOCALS**  
Unlimited, Low Cost, Instantly Available  
Background Music from Original Standard  
Recordings! Does Everything Karaoke  
does... Better and gives you the  
Thompson Vocal Eliminator™  
Free Brochure & Demo Tape  
LT Sound Dept. SR-15  
7980 LT Parkway, Lithonia GA 30058  
Internet: <http://ltsound.com>  
24 Hour Demo/Info Request Line (770)482-2485 Ext 50  
When You Want Something Better Than Karaoke!



**Cellular Extensions**

Get a 2nd phone on your existing. #  
NO extra monthly charge! No second bill!  
Phones starting from \$175.

Also Now Available For Most Areas:  
**EMERGENCY CELL PHONE with NO MONTHLY BILL OR CHARGES.**

SECURITY & PIECE OF MIND FOR ALL YOUR LOVED ONES.  
FREE 911 CALLS PLUS CALLING/CREDIT CARD AND COLLECT CALLS. GET ONE FOR EACH CAR & MEMBER OF THE FAMILY. FROM \$99.00 AND NOTHING ELSE TO PAY EVER!

24HR INFORMATION, CALL FROM YOUR FAX—(714) 581-7460  
OR TO ORDER NOW CALL G.C.: 1-800-457-4556. NO AirTouch subscribers.

<http://www.audioclimax.com>

**AUDIO CLIMAX**

Professional Lighting & Sound  
DJ Gear • Effects Lighting • Pro Audio • Nightclubs



**1-800-773-4235**  
Call Us For Your Free Catalog!

FOR SALE

**SBH** (800) 451-5851  
 MON. FRI. 8-7 SUNDAY 9-6  
 NY (718) 438-1027  
 FAX: (718) 438-4621 • 1678 53RD ST. BKLYN, N.Y. 11204

**ENTERPRISES**

**HOMESTEREOS**

**JVC**  
 RECEIVERS  
 RX 662 239, RX 772 339, RX 882 379, RX 992 419  
 CASSETTE DECKS  
 TDW 254 159, TDW 318 174, TDW 354 174, TDW 318 204  
**CD PLAYERS**  
 ALM 418 204, KLM 222 279, KLF 252 179, KCM 318 174

**MINICOMPONENTS**  
 IS 1000 244, IS 2000 279, IS 3000 409, MID 4111 274, MID 4611 344, MID 7611 409

**PIONEER**  
**VIDEO LASER PLAYERS**  
 DVL 909 744, DV 305 319, CLD 604 464, CLD 804 344  
**RECEIVERS**  
 VS4206 5 445, VS4206 5 429, VS4206 5 374, VS4206 5 275, VS4516 214, VS4516 171  
**DISC PLAYERS/RECORDERS**  
 PD100 224, PD100 157, PD100 147, PD100 147, PD100 147  
 PD100 147, PD100 147  
**CASSETTE DECKS**  
 CTW 4140 190, CTW 4040 179, CTW 4048 147, CTW 2018 137

**TECHNICS**  
**CASSETTE DECKS**  
 RS 173 157, RS 173 195  
**RECEIVERS**  
 SAK 110 154, SAK 310 169, SAK 510 239, SAK 720 216, SAK 920 249, SAK 10 589  
**CD PLAYERS**  
 SLP 087 174, SLP 167 194, SLP 262 216, SLP 410 239, SLP 610 209

**SONY**  
**CASSETTE DECKS**  
 TCWE 805 239, TCWE 405 169, TCWE 715 209, STRDE 8156 359, STRDE 8156 209  
**CD PLAYERS**  
 CDPCX 270 259, CDPCX 255 309

**AIWA**  
**MINICOMPONENTS**  
 NSM 070 475, NSM 041 279, NSM 070 399, NSM 040 245, NSM 070 279, NSM 040 216

**ALPINE**  
 CDA 7449 329, CDA 7444 389, CDA 7442 345, CDA 7444 389, CDA 7817 234, CDE 7811 285  
**Clarion**  
 CLK 7830 263, COM 7836 229, COM 7833 199, CDA 7834 209, CDA 7832 209, CDA 7817 469, CDA 7836 339, CDE 7815 339, CDE 7836 339, CDA 7304 294, CDA 5614 268, CDM 411 234, CDA 7559 479, TDA 7364 250, TDA 7348 276, TDA 7347 179, TDA 7344 165

**BLAUPUNKT**  
 Las Vegas 249, Denver 209, Miami 198, Aspen 179, San Diego 149, Boston 139

**RADAR DETECTORS**  
**BB**  
 7101 109, 741 579 129, 815 571 274, 9451 159, 810 571 199, 7401 119, 8451 149, 841 571 CALL

**uniden**  
 UR041995 69, UR042995 74, UR043995 79, UR044995 114, UR045995 149

**TIPS FOR MAIL ORDER PURCHASERS**

It is impossible for us to verify all of the claims of advertisers, including product availability and existence of warranties. Therefore, the following information is provided for your protection.

1. Confirm price and merchandise information with the seller, including brand, model, color or finish, accessories and rebates included in the price.
  2. Understand the seller's return and refund-policy, including the allowable return period, who pays the postage for returned merchandise, and whether there is any "restocking" charge.
  3. Understand the product's warranty. Is there a manufacturer's warranty, and if so, is it from a U.S. or foreign manufacturer? Note that many manufacturers assert that, even if the product comes with a U.S. manufacturer's warranty card, if you purchase from an unauthorized dealer, you are not covered by the manufacturer's warranty. If in doubt, contact the manufacturer directly. In addition to, or instead of, the manufacturer's warranty, the seller may offer its own warranty. In either case, what is covered by warranty, how long is the warranty period, where will the product be serviced, what do you have to do, and will the product be repaired or replaced? You may want to receive a copy of the written warranty before placing your order.
  4. Keep a copy of all transactions, including cancelled checks, receipts and correspondence. If you pay by credit card, you may have a greater recourse in the event the advertiser does not perform. (Check the complaint procedures of your credit card companies). For phone orders, make a note of the order including merchandise ordered, price, order date, expected delivery date and salesperson's name.
  5. If the merchandise is not shipped within the promised time or if no time was promised, 30 days of receipt of the order, you generally have the right to cancel the order and get a refund.
  6. Merchandise substitution without your express prior consent is not allowed.
  7. If you have a problem with your order or the merchandise, write a letter to the seller with all the pertinent information and keep a copy.
  8. If you are unable to obtain satisfaction from the seller, contact the consumer protection agency in the seller's state or your local Post Office.
- If, after following the below guidelines, you experience a problem with a mail order advertiser that you are unable to resolve, please let us know. WRITE to Susan Ross, Special Marketing, 45th floor, Hachette Filipacchi Magazines, 1633 Broadway, NY, NY 10019. Be sure to include copies of all correspondence.

**SATELLITE TV**

FREE DSS TEST CARD information package. Works with new system. Write SIGNAL SOLUTIONS, 2711 Buford Rd., Suite 180, Richmond, VA 23235.

**HALF PRICE SATELLITE TV**

Complete Systems including FREE Shipping or FREE Install Kit

16 Bit SINGLE (RB)	FREE!
16 Bit DUAL (RB)	\$ 44
16 Bit SINGLE (NEW)	\$ 88
16 Bit DUAL (NEW)	\$ 144
32 Bit SINGLE (DISH)	\$ 44
32 Bit DUAL (DISH)	\$ 88
32 Bit SINGLE (DSS)	\$ 144
32 Bit DUAL (DSS)	\$ 188
32 Bit SINGLE (Deluxe)	\$ 188
32 Bit DUAL (Deluxe)	\$ 288
D-VHS VCR / Receiver, Dual LNB	\$ 588

- Additional Receivers from \$99
- Initial Activation Required
- All Factory Warranties Included

Call Toll Free  
**(877) 220 DISH**  
 (877) 220-3474  
**HALF PRICE SATELLITE COMPANY**  
 205 State Hwy 9, Howell, N.J. 07728

Authorized Dealer for  


**CABLE TV**

CABLE TV EQUIPMENT & ACCESSORIES. Quality products at affordable prices. 30 day money back guarantee. 1-year warranty. Quantity discount. Dealers welcome. 1-888-828-7712.

CALL 1 (800)-72-BOXES(26937) FOR UNBEATABLE PRICES ON ALL YOUR CABLE EQUIPMENT. MONEY-BACK GUARANTEE. DEALERS WELCOME. VISA/MASTERCARD/DISCOVER/C.O.D. QUALITY ENTERTAINMENT. WE WON'T BE UNDERSOLD!!!

FREE TV Cable catalog Products & Pricing on Revolutionary Full Viewing Boxes with Dealership 800/676-6342.

DESCRAMBLERS—CLEARS ALL CHANNELS ON CABLE TV. WHOLESALE PRICES, HIGHEST QUALITY, 30 DAY MONEY BACK GUARANTEE, 1 YEAR WARRANTY. CABLE KING: 1-800-544-9279.

**FREE CABLE**

CABLE DESCRAMBLER KIT. Only \$14.95! See all premium & pay-per-view channels. Why pay hundreds more? For more information: 1-800-752-1389.

CABLE DESCRAMBLER/VIDEO OUTLET. 30 DAY TRIAL—1 YEAR WARRANTY. ALL NEW EQUIPMENT. MOST CREDIT CARDS & C.O.D. CALL NOW: 1-800-586-9920.

CABLE TV CONVERTERS SAVE \$1000 ALL MODELS AVAILABLE IN STOCK. LOWEST PRICES 1 YEAR WARRANTY QUALITY PRODUCTS FRIENDLIEST SERVICE OPEN 6 DAYS. TL ELECTRONICS TOLL FREE 1-888-822-6047.

STAY HOME FOR THE MOVIES AND SAVE! Cable TV Descramblers. All Makes and Models. Best Prices. Call ELITE TECHNOLOGIES: 1-800-579-7681.

**VIDEO PLUS AUDIO**  
 490 2nd Street Pike, Southampton, PA 18966  
*If you don't see what you're looking for, please call*

**SPEAKERS & SUBS**      **AUDIO COMPONENTS**

**VIDEO EQUIPMENT**

**HOME THEATER PACKAGES**

Acoustic Research  
 Atlantic Technology  
 Bose, Canon  
 Harmon/Kardon  
 Jamo, JBL  
 JVC, Kenwood,  
 Monster Cable, NAD  
 Sony, Toshiba, Infinity  
 and much more!

or call us for door to door delivery

**800-226-6784**

**LASER VIDEO**

**WIDE SCREEN**  
**MOVIES on LASER DISC**  
 800-893-0390    215-721-8688  
**LASERTOWN VIDEO DISCS**  
 50 SCHOOL HOUSE RD    www.1.laserdisc.com  
 KULPSVILLE, PA 19443    **FREE CATALOG**

**MISCELLANEOUS**

CLASSICAL MUSIC LOVERS' EXCHANGE®. Nationwide link between unattached music lovers. Write CMLE, Box 1239, New York, NY 10116. (800) 233-CMLS.

**HOME THEATER**

**THX ALL BRANDS ELECTRONICS AC3**

**SPEAKERS**      **AUDIO**      **VIDEO**      **HOME THEATER**  
 SUBWOOFERS    RECEIVERS/AMPS    TV'S/VIDEO'S

FOR INSTANT PRICING AND MONTHLY SPECIALS VISIT OUR WEB SITE!  
 E-MAIL: [order2save@aol.com](mailto:order2save@aol.com)  
 URL: [www.avhts.com/allbrands](http://www.avhts.com/allbrands)

**1-888-312-SAVE**

SAVE UP TO 40%!

**CABLE TV**

**ALL CABLE BOXES!**

★ **LOWEST PRICES** ★

NEWEST DIGITAL EQUIPMENT

**1-800-665-5017**

No Florida Sales

ATTENTION: TEST UNITS at below Wholesale Prices. Save big on Cable Bills; or resell to make a Profit. Open 7 Days. 888-596-6126 pager 917-223-6685.

CABLE TV CONVERTERS & DESCRAMBLERS. FREE 30 DAY TRIAL. FREE ONE-YEAR WARRANTY. QUALITY EQUIPMENT. VISA/MC/DISC/AMEX/COD. PC ELECTRONICS: 1-800-675-7125.

**CABLE TV CONVERTERS & EQUIPMENT**  **Lowest Prices**

**We Will Beat Any Price**

**30 Day Money Back Guarantee**

**1 Year Warranty**

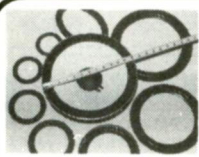
**Dealer Pricing**

TRI CITY VIDEO  
**800-582-0989**

**DVD**

DVDCITY, YOUR DVD SPECIALISTS, we stock all major brands. Satisfaction guaranteed. Call 1 (888) DVD CITY now for great prices or visit <http://www.dvdcity.com>

**LOUDSPEAKERS**



**ROTTEN FOAM?**

- Simply Speakers - Factory Authorized Service - All Brands JBL, Bose, Advent, EPI, CV, AR, Infinity & More!
- Worldwide Service - Re-coning & Re-foaming.
- Huge selection of D.I.Y. Foam Kits - We Ship Daily!
- Foam Rot Preventative Kits.

**CALL TOLL FREE TODAY!**

1-800-767-4041 SIMPLY SPEAKERS, 11203 49TH STREET N., CLEARWATER, FL 33762. [www.simply-speakers.com](http://www.simply-speakers.com). WE CAN SOLVE YOUR SPEAKER PROBLEMS. SATISFACTION GUARANTEED!! VISA/MC/DISC/AMEX.

Read about the famous NEW-FOAM Repair process in *Stereo Review* June 1996

**Standard and Deluxe NEW-FOAM Kits**

**NEWFOAM** NOW WITH VIDEO TELEPHONE TECH LINE SUPPORT

Satisfaction Guaranteed • Se Habla Español  
Speaker Repair & Replacement Parts  
Worldwide Service Since 1979

1-800-NEW-FOAM = 1-800-487-2349  
WORLDWIDE SPEAKER REPAIR, PARTS, AND ACCESSORIES. Call us with your speaker problems. VISA/MC/AMEX/DISC. [www.NEWFOAM.com](http://www.NEWFOAM.com)

**PARTS EXPRESS** ELECTRONICS & MORE **SPEAKER CATALOG**

The Parts Express catalog is a must for the serious speaker enthusiast! We are a nationally known electronics distributor that takes pride in our huge selection of products and our first rate customer service. We stock a dizzying array of audio related components including raw loudspeaker drivers for home and car, home theatre products, connectors, wire, test equipment, plus numerous accessories. So what are you waiting for ... call for your FREE 268 page catalog today!



Source Code: SRM

**1-800-338-0531**

Parts Express  
725 Pleasant Valley Dr., Springboro, Ohio 45066-1158  
Phone: 513/743-3000 ♦ FAX: 513/743-1677  
E-mail: [sales@parts-express.com](mailto:sales@parts-express.com)

**FOR SALE**

**NEW WORLD AUDIO**  
WHOLESALE PRICES



**PAYING RETAIL**

- ADS
- ALPINE
- ATL TECH.
- B&O
- BOSE
- CARVER
- DENON
- HK
- INFINITY
- KENWOOD
- KLIPSCH
- M&K
- MARANTZ
- MB QUART
- NAD
- NAK
- NILES
- ONKYO
- SONANCE
- SONY ES
- VELODYNE
- AND MORE

**(800) 311-0392**

Products come with manufacturers warranty or NWA warranty

**AudioLab**

**Stereo and Video Center**

492 Lincoln Highway Fairless Hills, Pa 19030

**800-513-8555** We are conveniently located just minutes from Philadelphia and NJ.

<p>Adcom Arcam Atlantic Tech Atlantis racks Audiolab Audioquest Ayre Acoustic B&amp;K B&amp;W BDI Cal Audio Lab Cambridge Denon HK Jamo JM Lab Jolida Lexicon Lovan Lightspeed M&amp;K</p>	<p><b>Monthly Special</b> <b>Parasound Nomad 10</b></p>  <p><b>Call for price</b> 2 way outdoor speaker 6-1/2" woofer, carbon fiber reinforced cone, 2" voice coil, huge 3.25 pound magnet, Polyurethane rubber surround, 1" soft dome tweeter with ferrofluid damping. 89 dB sensitivity. Available in white.</p> <p><small>Some items are not available thru mail order, please support your local dealer!</small></p>	<p>Marantz MIT Mad MHT Nova Onkyo Osiris Parasound Psb Raga Rotel Runco Salamander Sharpvision Solid Sunfire Tannoy Vandersteen Velodyne VTL Yamaha</p>
--	--	---

**ADVERTISERS...**

**Reach proven mail order buyers!**  
They turn to us when they are looking for purchasing information and advice.

Advertise your products and services in a low-cost environment that sells. Millions of your prime prospects can be found in the industry leading titles of *Hachette Filipacchi Magazines, Inc.*

To place a classified ad, simply call us **Toll-Free** and reserve your space today!

**1-800-445-6066** (9am-5pm EST)

or Fax your order to 212-767-5624.

**Stereo Review**

**SUBSCRIBER SERVICE**



PLACE LABEL HERE

**MOVING?** Please give us 8 weeks advance notice. Attach label with your old address, and write in new address below.

**RENEWING?** Check box below and attach label with corrections marked, if any.

**SUBSCRIBING?** Check box and fill in coupon. For gift subscriptions attach a separate sheet.

**Send STEREO REVIEW for 1 year at \$19.94**

- New Subscription  Renewal  
 Payment enclosed  Bill me

Canadian and foreign orders add \$8 per year.\*

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_

STATE \_\_\_\_\_

ZIP \_\_\_\_\_

**1(303)604-1464**  
**FAX 1(303)604-7455**

**STEREO REVIEW**

P.O. Box 55627, Boulder CO 80322

\*Payment in U.S. funds must accompany order.

# contacts

HOW TO REACH ADVERTISERS IN THIS ISSUE

PAGE	ADVERTISER	WEB SITE/E-MAIL	PHONE
24, 95	America Online	www.aol.com	800-603-8181
49	Binaural Source	www.binaural.com	800-934-0442
9	Bose	www.bose.com	800-444-BOSE, ext.626
15	Boston Acoustics	www.bostonacoustics.com	978-538-5000
2-3, 47	Cambridge SoundWorks	www.hifi.com	800-367-4434
43	Cinepro Theater Products	www.cinepro.com	800-395-1222
82	Colonel Video	www.colonelvideo.com	800-277-5632
16a,b	Columbia House CD Club		
86	Crutchfield	www.crutchfield.com/md	800-955-9009
36-37, 39, 40-41	Definitive Technology	www.definitivetech.com	410-363-7148
22, 23	DTS	www.dtstech.com or image-entertainment.com	
24	800 Every CD	www.everycd.com	800-EVERY CD
12	Energy	www.energy-speakers.com	416-321-1800
86	Gadget Guru	www.gadgetguru.com	
72-73	J&R Music World	www.jandr.com	800-221-8180
11	JVC	www.jvc.com	800-252-5722
C4	Marlboro		
52	Mirage	www.miragespeakers.com	416-321-1800
19	Mitsubishi	www.mitsubishi-tv.com	
83	MCM Electronics	www.mcmelectronics.com	800-543-4300
4	Niles Audio	www.nilesaudio.com	800-289-4434
81	One Call	www.onecall.com	800-540-0900
21	Paradigm	www.paradigm.ca	905-632-0180
49	Phase Technology	www.phasetech.com	888-PHASE-TK
27	Philips Magnavox	www.philips.com	800-531-0039
7	Pioneer-Car	www.pioneerelectronics.com	800-746-6337
28	Polk Audio	www.polkaudio.com	800-377-7655
71	<i>Popular Photography</i>		
89	Pro Sound Stage & Lighting	www.pssl.com	800-672-4268
50	Relativity Records	www.relativityrecords.com	
C3	Sony	www.sony.com/minidisc	800-222-7669
83	Sound Approach		800-368-2344
74	Sound City	www.soundcity.com	800-542-7283
32	Sunfire	www.sunfirelabs.com	206-335-4748
88	Transmedia Network, Inc.		800-422-5090
87	Uncle's Stereo	www.unclestereo.com	800-978-6253
C2-1	Yamaha	www.yamaha.com	800-497-6242

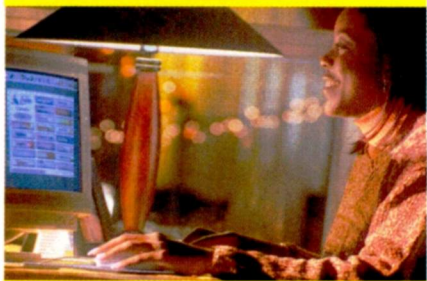
## Easily



## the most popular



## way to the net.



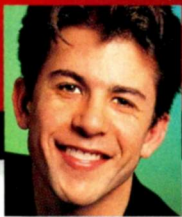
**AMERICA**  
*Online*

So easy to use,  
no wonder it's #1

**Call 1-800-827-6364**

Availability may be limited,  
especially during peak times.

©1998 America Online, Inc.



# THE HIGH END

COREY GREENBERG

## New and Improved

WHEN YOU STRIP AWAY all the boy-toy fetishism and get to the meat of the matter, it comes down to this: high-end audio is about progress toward reproduced sound that's indistinguishable from that of the original event. It's pretty simple, really. And if a manufacturer is truly pushing the state of the art forward to bring better sound to the public, I relish the opportunity to recommend its products to *Stereo Review* readers.

But what if a new product *doesn't* sound better? What if it's new but *unimproved*? Unfortunately, I see this all the time from the high-end skunkworks: new speakers that don't sound any better than last year's model, or expensive CD players that don't sound any better than my \$300 NAD player.

I can't get excited about the new and unimproved, and dammit, I *want* to get excited! I want to feel like I felt when I was a kid swapping out my el-cheapo phono cartridge with a brand-new Shure V-15, or when I heard one of the earliest demonstrations of discrete-channel Dolby Digital compared with Dolby Pro Logic. I want to jump up on my seat and dance because I've suddenly heard the sound snap into focus where before there was muddle. It's exciting as hell to hear true progress in audio reproduction, and if you're reading this magazine, I'm sure you've had the experience a time or two yourself.

Still, part of my job is sifting the fool's gold from the real thing. In "Letters" this issue, Pacific Microsonics' marketing VP Andy Johnson takes me to task for dismissing HDCD, the company's "High Definition Compatible Digital" encode-decode process for CDs. It performs selective on-the-fly audio compression and digital filter switching but requires an expensive CD player or an external digital processor with the HDCD chip set for proper playback. Mr. Johnson cites the number of HDCD-encoded titles released in the past five years — more than a thousand, including a few you'd actually want to listen to — to refute my contention that HDCD is a failed format-of-the-month that's irrelevant even to the vast majority of hard-core audiophiles.

Mr. Johnson's defense of HDCD is to be expected. But what troubles me is that

his letter makes only passing mention of the issue of *better sound*, which is the only reason anyone would even consider HDCD in the first place. Instead, he talks up things like the number of Grammy nominations of recordings that happened to be HDCD-encoded, as if the Grammys have anything at all to do with recorded sound quality instead of being massive, barely legal vote-buying campaigns that are waged by the major labels. (Believe me, I've worked in radio, and I've seen the weasels up close. It's not pretty.)

Johnson goes on to argue that "... in today's world, where most consumers do not yet have HDCD decoding, it is difficult to understand why so many top recording professionals would choose to use HDCD unless they found it delivered the best possible fidelity on all CD players." First of all, this is an untruth —

**I don't think** that HDCD is a scam —  
I just don't think it moves the sonic marker  
any farther ahead than plain-Jane CD.

while the artifacts heard from an undecoded HDCD disc may be mostly benign on the average audio system, this is a far cry from "the best possible fidelity on all CD players." Personally, I don't like the way undecoded HDCD discs sound, and I pass up such CDs even though a handful have been titles I was interested in.

Second, Mr. Johnson would do well to leave alone the subject of passing fancy among "top recording professionals." Otherwise he may as well join me in lumping HDCD with such past studio flavors-of-the-month as BBE and Aphex audio exciters (that is, harmonic-distortion generators), which also enjoyed brief endorsement by the very same "top recording professionals" before being consigned to the dumpsters out back behind their studios. When I talk to high-end audio manufacturers about HDCD, even the licensees who build the players and the digital-to-analog (D/A) converters that include the HDCD chip set concede the format's irrelevancy to audiophiles and

general consumers alike. It's also worth knowing that of the three audiophile-oriented music labels producing the very best-sounding CDs today — DCC, Mobile Fidelity, and JVC (the XRCD series) — none endorses HDCD or uses the processing on any of its releases. Why is that, do you suppose?

Now, I actually like HDCD's co-inventor, Keith Johnson, a great deal, and I have the utmost respect for his legendary recording prowess (showcased on the Reference Recordings label) as well as his golden ears. I know Keith well enough to know that his seriousness in all matters audio extends to HDCD and its purported aim of improving the sound quality of CDs. In short, I don't think HDCD is a scam. I just don't think it moves the sonic marker any farther ahead than plain-Jane CD, and it actually makes things slightly worse for 99.9 percent of the CD-buying public. To me, that's not progress.

Mr. Johnson couldn't be more wrong when he says in his letter, "I am sure Mr. Greenberg will be pleased to learn that

Pacific Microsonics has already completed development of HDCD technology for the coming DVD-Audio format." The fact is, HDCD would be a giant step *backward* for DVD-Audio, and you can rest assured that nobody in the DVD Consortium is seriously considering its adoption for the next-generation super-audio format. Some of these guys have unusually shaped skulls, but none of them, to my knowledge, is a true pinhead.

Maybe growing up with LPs raised my expectations when it comes to audio progress. Back in their day, I heard massive, unmistakable differences whenever I upgraded to a better phono cartridge, turntable, or preamp. This is the fun part of high-end audio, the part that still gets me juiced after all these years. So when a new product or format claims to push the art forward these days, I expect to hear something — anything — happen. It's important to keep that in mind when comparing things that matter, like DVD-Audio, with things that don't. □



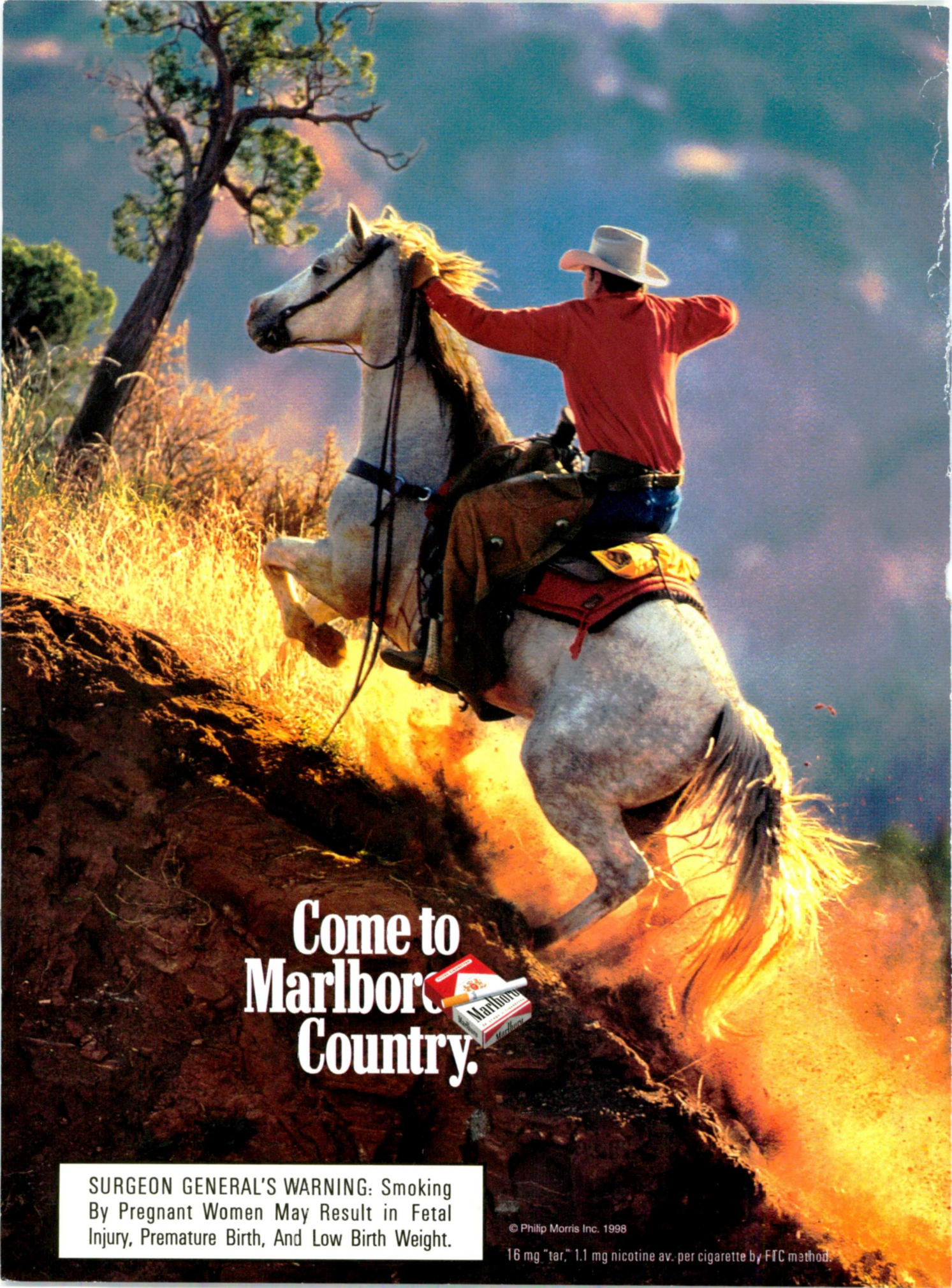
SONY



RECORDABLE PORTABLE DIGITAL VIRTUALLY UNSHOCKABLE MINIDISC YOU KNOW YOU WANT IT... MAKE IT WITH MD.



TYRA ON THE MAKE.

A cowboy wearing a red long-sleeved shirt, a light-colored cowboy hat, and brown chaps is riding a white horse. The horse is rearing up on its hind legs on a dirt mound, kicking up a cloud of golden dust. The scene is set against a dramatic sunset sky with orange and blue hues. A single tree stands on the left side of the frame.

**Come to  
Marlboro  
Country.**

**SURGEON GENERAL'S WARNING: Smoking By Pregnant Women May Result in Fetal Injury, Premature Birth, And Low Birth Weight.**

© Philip Morris Inc. 1998

16 mg "tar," 1.1 mg nicotine av. per cigarette by FTC method.