1992 EQUIPMENT BUYING GUIDE
Compact Disc Players, Receivers, Tuners, Amplifiers, Loudspeakers, and Turntables

THE BEST RECORDS OF THE YEAR

TEST REPORTS
Tannoy Speakers, Denon A/V Preamp, and More
The Mitsubishi CS-3535R 35" TV features a fine pitch screen, digital comb filter, invar shadow mask, velocity scan modulation, dynamic beam forming, and an anti-static coating.
In other words, "Wow, what a picture!"

When we introduced the first 35" direct view TV back in 1986, people couldn't believe that a picture that big could also be that sharp and that beautiful. It's a reaction that has become more pronounced with every passing year. And this year is no exception, thanks to Mitsubishi's commitment to technical innovation.

Take, for example, our exclusive Diamond Vision picture tube. A direct descendant of our stadium display screens, it delivers optimum contrast and color even under the most challenging light conditions.

And this year, we're treating selected Diamond Vision tubes with a special coating that boosts contrast an additional 20% while forming an anti-static shield against dust. It also absorbs ambient room light rather than reflecting it, so your picture never looks washed out.

Our Dynamic Beam Forming technology resulted from the fact that electron beams become distorted as they reach the edges and corners of the screen. Reshaping and refocusing the beams results in a much sharper overall picture.

Also contributing generously to a sharper picture is our exclusive Fine Pitch Screen. By reducing the pitch, or horizontal distance between the phosphor stripes, it delivers a 20% improvement in detail.

We could go on and on about the picture enhancing advantages of our digital comb filters, invar shadow masks and quote from a considerable list of other technical specifications.

But to really appreciate the remarkable picture you get with the CS-3535R direct view 35", you need to do some basic research of your own.

Turn it on and watch it.
UNSURPASSED VALUE IN BOOKSHELF SPEAKERS

Here's Why

The New York Times
"Pinnacle Loudspeakers has achieved wonders with its patented version of a bass reflex enclosure."
— Hans Fantel, October 21, 1990

Stereo Review
"At lower levels the sound character of the PN5+ system was amazingly close to that of our reference speakers which cost nearly twenty times as much!...Quite remarkable!"
— Julian Hirsch, January 1988

HiFi Fidelity
"...The PN6+ is a must hear model for your audition list."
— Robert Lang, November 1989

Stereophile
"The larger PN8+ was shockingly good for the money..."
— Peter Mitchell, April 1990

Inc.
"Good speakers for less than $200 are hard to find. The Pinnacle PN5+...boasts true high fidelity sound in small cabinets."
— Cary Lu, September 1990

Stereo Review
"Hear the PN8+...especially if you are looking for an exceptional value in a speaker."
— Julian Hirsch, July 1990

Heard Enough?

Patented Loudspeakers from $150 per pair.

Pinnacle
255 Executive Drive, Plainview, N.Y. 11803 (516) 576-9052
CIRCLE NO. 26 ON READER SERVICE CARD
Cover
The Klipsch kg-2 speaker, Onkyo DX-708 CD player, and Harman Kardon HK-3600 receiver are among the hundreds of components described in the Equipment Buying Guide beginning on page 51.
Furniture courtesy of Bell'Oggetti; carpet courtesy of ABC Carpets.
Photograph by Roberto Brown

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THE HIGHER THE PERFORMANCE

Compare Maxell's XLII-S to an ordinary cassette. An obvious difference is the size of the windows. Remember: there are no bay windows in rockets, but in houseboats there are.

That tiny little slit of a window allowed us room to build additional support into the cassette shell for greater rigidity and durability.

The shell itself is a compound of ceramic and polymer resins. With 1.4 times the specific gravity of standard cassette shell material, it's anti-resonant, absorbs vibrations that can cause modulation noise.

Inside, the tape is formulated with Black Magnetite—a higher energy magnetic material harnessed by Maxell engineers.

It contributes to the sound CD Review magazine described like this: "Bass response that doesn't stop, staggering dynamics, real music." And in their review of Type II tapes, they...
rated XLII-S, "Head, shoulders and torso above the rest."

Of course, an XLII-S cassette is going to cost you more than one with big, low-performance windows and matching sound.

But not so much more that you have to go to Congress for it.

THE SMALLER THE WINDOWS.

TAKE YOUR MUSIC TO THE MAX.
CAN TUBES WARM UP CD SOUND?

How a very old technology can make a brand new compact disc player sound extraordinarily good

Our ultra-advanced new SD/A-490t includes two vacuum tubes whose classic design has remained unchanged for over 35 years. We and many other critical listeners believe that this anachronistic addition to an already excellent CD player design significantly enhances its sound.

THE AMPLIFIER THAT DOESN'T AMPLIFY.

Between a CD player’s D/A converter and external outputs is circuitry called a buffer amplifier which actually doesn't boost the signal strength at all. Instead, the buffer amp is a unity gain device which increases output current, and acts as a sort of electronic shock absorber, isolating the relatively fragile D/A chip set from the nasty outside world of demanding analog components.

TUBES VERSUS SOLID STATE.

More than 98% of all CD players use solid state devices for buffer amplifiers. A handful of hard-to-find, esoteric designs in the $1200 to $2500 range employ one or more tubes instead. As does our readily-available $699 SD/A-490t.

In ultra-expensive preamplifiers and power amplifiers, tube sound is subjectively described as "mellower", "warmer", "more open and natural" or simply "less harsh than solid state". Objectively, it's safe to say that tubes: 1) Produce even-order distortion versus transistors' odd-order distortion, particularly 3rd harmonics which are especially unpleasant to the ear, 2) Act as a pure Class A device when used in a buffer stage (Class A output is considered the optimal amplifier configuration) 3) "Round off" the waveform when they clip, while over-driven solid state devices cut off sharply, causing audible distortion.

THE SD/A-490T'S OUTPUT SECTION.

Our new CD player uses two 6DJ8 dual triodes placed between the digital-to-analog converter and a motorized volume control. Operated at less than 30% of their maximum capacity, the tubes achieve a highly linear output voltage with very low static and transient distortion while providing very high dynamic headroom.

And because they're "loafing" at 1/3 their rated current capability, the SD/A-490t's tubes are designed to last the life of the CD player without replacement or need for adjustment.

AN ARRAY OF FEATURES AS RICH AS ITS SOUND.

We've designed the SD/A-490t to be both useful and easy-to-use. 21-key front panel or remote programming. Fixed and variable output. Programmed grid display. Random "shuffle" play. Variable length fade. Automatic song selection to fit any length of tape. Even index programming for classical CD's.

The Carver SD/A-490t.

At $699, its suggested retail is $500 less than the nearest competitor with tube output.

THE SD/A-490t

- Dual 6DJ8 Vacuum Tube Output Stage
- Over-sized Disc Stabilizer Transport
- 24-Track Programming with Music Calendar Display and 21-key front panel and remote input
- Indexing
- Random Play
- Motorized Volume Control
- Time Edit/Fade Taping Feature with user-variable time parameters
- 2 to 10 Second Variable Length Fade
- Optical and Coaxial Digital Outputs
- Exclusive Carver Soft EQ

Plus our proprietary Soft EQ circuitry which compensates for variables in spacial (L-R) information and midrange equalization found in many CD's mastered from analog tapes.

BRING YOUR TWO BEST CRITICS TO A CARVER DEALER.

It's tempting to further regale you with how well we think the SD/A-490t's tubes and Single Bit D/A circuitry improve the sound of a compact disc. But your own ears should be the final arbiter of quality. Bring them to a Carver dealer and compare tube output with solid state designs costing $1000 or more. Suffice it to say that almost all critical listeners not only are able to hear a difference, but prefer the sound of the remarkably affordable SD/A-490t's dual triode transfer function.

Powerful • Musical • Accurate

Carver Corporation, Lynnwood, Washington, U.S.A.
Call (206) 775-1202 for information and dealer listings
A Very Hot Offer From Sony.

FREE CDs
When you purchase any Sony portable CD player.

Sony is celebrating 1992, the 10th anniversary of the CD, with a red hot offer.

Buy any Sony Discman® Portable CD Player or Sony Portable CD/Radio/Cassette Recorder between December 27, 1991 and April 5, 1992 and Sony will pick up the tab for up to 3 hot CD titles. So start shopping around for your new Sony. And as soon as you're sold on a particular model, check your model number on the chart below to see how many hit CDs you're entitled to.

### CATEGORY 1

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<th>Selection</th>
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To receive your CDs, mail this coupon postmarked no later than May 5, 1992 along with the bar code (found by model number on it) from the bottom of your Sony CD Portable Player, a copy of your dated sales receipt and a check or money order (no cash) for $2.99 (payable to Sony Corporation) for shipping & handling to: SONY HOT OFFER, PO. Box 1141, Terre Haute, Indiana 47801.

Clearly print your selection number(s) below:

**Name**

**Address**

**City**

**State**

**Zip**

**Model #**

**Serial Number**

**Date purchased**

Offer good only on Sony Discman® Portable CD Players and Sony Portable CD/Radio/Cassette Recorders—those models, beginning with D and CD. Sony reserves the right to substitute compact discs based on supply or availability. Limit one Gift Package per qualifying Sony CD player purchased. Offer valid only in the Continental U.S. (Excludes Alaska, excludes Hawaii). Void where prohibited by law. Misuse of offer will void coupon. Please allow 3-6 weeks for delivery. ©1992 Sony Corporation of America. All rights reserved. Sony Discman, The Leader in Digital Audio, and Compact Disc 10th Anniversaries are trademarks of Sony.
**LETTERS**

**Guns n' Roses**

I thoroughly enjoyed Steve Simels's thrashing of Guns n' Roses' "Use Your Illusion I and II" in December. As a distraught former fan, I have watched with amazement the GNR frenzy that has taken hold of the pop music world. Mr. Simels is correct: The ballads are insincere, whining ditties that completely destroy the rocking mood of the album. As for the social commentary throughout, who cares what a bunch of illiterate drug addicts think?

MIKE WAINSCOTT
Hubert Heights, OH

Concerning the review of Guns n' Roses' "Use Your Illusion," I would bet the Gunners did not want their songs to sound like "some kind of organic whole," and this fan does "care" about ballads such as November Rain. Also, if good hard rock-and-roll sounds like "a bratty three-year-old banging a spoon on his highchair," I will be the first in line to buy my spoon and highchair.

CRAIG K. BREWSTER
Kansas City, MO

Steve Simels says that GNR's Axl Rose "performs the way you'd expect from somebody who thinks Rob Halford of Judas Priest is rock's greatest vocalist." I also think Halford is rock's greatest vocalist. Many people do. Rose, on the other hand, has a terribly annoying voice that in no way resembles Halford's powerful, four-octave pipes.

I've met Halford, and I found him to be a very kind, friendly, decent person. Rose, however, has been in the news recently for starting a riot, hitting a neighbor over the head with a bottle, and writing racist, sexist song lyrics. Mr. Simels's insinuation that Halford is similar to Rose musically or personality-wise is an unfair characterization.

CHRISTOPHER C. DOLL
Modesto, CA

I'm glad Steve Simels didn't condemn the latest release from Guns n' Roses as "a total loss." I can use the discs as coasters.

M. DAVID COLLINS
San Antonio, TX

**New Digital Formats**

In November "Signals," Ken Pohlmann describes Digital Compact Cassettes and MiniDiscs, both of which will use data compression. When the LP gave way to the CD, it was truly a step forward. All the music (audible and inaudible) could be reproduced better than ever before in a compact medium that did not deteriorate over time or with repeated use. Nothing proposed for the future remotely resembles an advance of this magnitude. Unless you think the 1992 Geo represents progress over the 1957 Bel-Air, you will see that in the realm of recorded music, evolution has ended and devolution has begun.

MARTIN H. WILLIAMS
Los Gatos, CA

Data-compressed music formats will provide only subjectively (not objectively) correct reproduction of the original sound. As such, they are a threat to the very concept of high fidelity.

PHIL COHEN
Bay Harbor, FL

I fail to see any general consumer advantages to DAT, DCC, or MD recorders, much less DAB (digital audio broadcasting). CD's played on components matched to a listening room remain the best way to seriously enjoy [recorded] music. I don't feel we need news, advertisements, or DJ jargon in CD-quality sound. The obvious acoustic restrictions and distortions of cars and beaches, plus factors of loss, theft, and damage, are what keep [analog] dubbing decks so popular.

TOM K.
Tiffin, OH

**Dubbing from CD's**

E. Brad Meyer's "How to Make Great Tapes from CD's" in December didn't tell readers about the best connection for making these recordings: a direct patch-cable from the CD player to the tape deck, bypassing the receiver. The tape deck in the recording mode and hooked into the receiver acts as a sound monitor.

GEORGE NUSSBAUM
New York, NY

Your arrangement will work just fine, but unless there is something wrong with your receiver, the results should be the same as recording via its tape-output jacks.

**Amplifier Specs**

Hats off to Julian Hirsch for his November article, "Understanding Amplifier Specifications." As a newcomer to hi-fi, I really appreciated the effort to present this subject in layman's terms.

ARNOLD VANDERSCHOOT
San Rafael, CA

**Cassette Deck Features**

Ian G. Masters's November article on choosing a cassette recorder, "Decked Out in Style," was well written and informative, but I would like to comment on the "What Doesn't [Matter]" portion. Contrary to Mr. Masters, skip and scan functions were available on cassette decks before CD's, and while I usually listen to tapes straight through in my car, at home I often want to locate one or more specific selections. Having the deck count blank spaces before it stops is much faster and more convenient than searching manually.

Also, I am one person who does use the timer function. At least three times a week I record radio programs that are broadcast at inconvenient times for listening, then play the tapes while commuting to work.

Finally, Mr. Masters gives the impression that buying a cassette deck is similar to buying a car and that the purchaser can pick and choose which options he wants and which he doesn't. The truth is, if you choose an upscale three-head deck with Dolby C, you will get many of the options Mr. Masters considers unimportant whether you want them or not.

RAYMOND T. BAXTER
Huntington Beach, CA

**Audible Differences**

I subscribed to STEREO REVIEW some years ago because I was impressed by your articles and test reports stating that there were minimal audible differences between CD players and between moderate- and high-price amplifiers and receivers of 40 watts or more. Your recent article on selecting a CD player (November) again stated that audible differences are minimal to nonexistent. I can only say, "Bravo!"

HARRY B. SOLETSKY
Brookfield, CT

**Corrections**

An incorrect price was given for Bert Stern's "Jazz on a Summer's Day" video in December's round-up of holiday gifts. The correct list price is $99.95.

Two references in David Hall's December review of Lorin Maazel's recording of the Sibelius Fourth and Fifth Symphonies were transposed. The "dissonance-ridden development of the fanfare figure" occurs in the fourth movement of No. 4, not the slow movement, and the place where Mr. Hall meant to say that Maazel "comes dangerously close to sentimentality" in No. 5 was in the very last pages of its slow movement, not its last movement.

We welcome your letters. Please address correspondence to Editor, STEREO REVIEW, 1633 Broadway, New York, NY 10019. You should include your address and telephone number for verification. Letters may be edited for clarity and length.
WITH THE NEW KENWOOD UD-90, THINGS JUST WON'T BE THE SAME AROUND THE HOUSE.

Here's a compact audio/video system that will redefine your living room. The new UD-90. It's designed with our Digital Front Presence circuitry, which uses Digital Signal Processing, or DSP in order to optimize the simulation of actual music environments. So now, the push of a button turns your home into a huge rock concert. A hot jazz club. Or four other venues. Adding to the realism are two built-in Digital Front Presence speakers. Angled outward, they simulate home theater surround sound all by themselves. (But you can still add a pair of rear speakers if you wish.)

There's also Audio Intelligence for high-speed CD to tape dubbing. Automatic equalization. Plus other advanced functions. So call 1-800-4-KENWOOD for a dealer near you. Then sit back and enjoy the show.
Koss

Designed for studio use, the Koss PRO/4XL Stereophone features dynamic elements with a titanium-nitride coating for clarity and detail. The voice coils are copper-clad aluminum to reduce the moving mass of the diaphragm assembly. Bandwidth is given as 10 to 25,000 Hz. The phones have an adjustable headband and pivoting earcups; a 3-foot straight cord and an 8-foot coiled cord are included. Price: $130. Koss Corporation, Dept. SR, 4129 N. Port Washington Ave., Milwaukee, WI 53212.

Circle 120 on reader service card

B·I·C America

The Venturi V62A bookshelf speaker system succeeds B·I·C’s V62. The upgrade uses a new 6-inch woofer, a 1½-inch ferrofluid-cooled dome tweeter, and the Venturi venting system, which is said to deliver the deep bass normally associated with much larger speakers. The improved crossover network is said to result in a more natural-sounding midrange and extended high-frequency response. Dimensions are 8½ x 14 x 9½ inches. Price: $219 a pair. B·I·C America, Dept. SR, 895 E. Hampshire Rd., Stow, OH 44224.

Circle 121 on reader service card

Fultron

Fultron’s Neirbon tweeter for car stereo systems features a magnet made of neodymium, iron, and boron—hence “Neirbon.” The company claims that such a magnet can be smaller and yet more powerful than one made of standard alloys, and combining it with a durable titanium dome and a soft diaphragm is said to result in a clearer, less “brassy” sound than other car tweeters produce. Bandwidth is rated as 1,500 to 20,000 Hz, power handling as 40 watts continuous. The tweeter can be installed either flush or angled. Price: $99 a pair. Fultron, Dept. SR, P.O. Box 177, Memphis, TN 38101.

Circle 122 on reader service card

Infinity

The Infinity ERS 400 in-wall loudspeaker’s bandwidth is rated as 90 to 15,000 Hz, with a sensitivity of 85 dB. Nominal impedance is 4 ohms, and recommended power is 8 to 30 watts per channel. Its 4-inch injection-molded-graphite full-range driver is mounted to a 7 x 7 x 2½-inch “D” baffle that mounts in a 6½-inch-square hole. Price: $160 a pair; $38 for bracket kit. Infinity Systems, Dept. SR, 9409 Owensmouth Ave., Chatsworth, CA 91311.

Circle 123 on reader service card

Adcom

The GFA-545 II power amplifier is an update of Adcom’s well-received GFA-545. The company claims that the new model has improved dynamic range, greater stability into difficult speaker loads, and lower distortion than its predecessor. Its continuous power output is rated at 100 watts per channel into 8 ohms and 150 watts into 4 ohms; dynamic headroom into 4 ohms is rated as 2.1 dB. At 100 watts into 8 ohms, the rated signal-to-noise ratio is greater than 110 dB and input sensitivity is 1.25 volts rms. Input impedance is 100,000 ohms. Options include rack-mounting adaptors and a white front panel. Price: $500; $550 in white; rack adaptors, $20 in black, $25 in white. Adcom, Dept. SR, 11 Elkins Rd., East Brunswick, NJ 08816.

Circle 124 on reader service card
Elegance in Design and Performance
Compact Size and Exceptional Sound

Demand for small, high performance speaker systems has blossomed. Inspired by the often limited space available for loudspeakers and the increasing popularity of home theater systems Polk has developed the exciting new M3.

Unique in performance, shape and size, the M3 is equally at home on a shelf or a wall, in a corner, on a ceiling, or free standing. Whether employed as the primary speaker in a quality high fidelity outfit, as a video surround speaker, or a remote speaker in a secondary location, the M3 will amaze you with its outstanding sonics.
Polk Engineering. Sonic Performance Which Belies the M³ Size and Price.

Polk engineers have managed to squeeze exceptional performance into the compact M³ enclosure. Produced with state-of-the-art manufacturing techniques, the cast composite housing is durable and beautiful, as well as sonically inert. The M³ driver complement includes a Polk high efficiency 5.25 inch woofer/mid-range and a wide dispersion .5 inch fluid-cooled polycarbonate tweeter. Bass performance is enhanced with computer-designed, vented enclosure. High frequency dispersion is optimized by a Critical Dispersion Lens which surrounds the tweeter dome. Precise integration of the drivers is achieved through a sophisticated, full LCR crossover network.

The Polk Integrated Bracket/Mount

The M³ cabinet includes an integral mounting system which allows total placement flexibility. No expensive optional accessories are required to mount your M³ in any of the aforementioned locations. This innovative system also provides an integrated adjustable bracket designed to optimize the speaker angle when the M³ is placed on a shelf. Finally, the smartly angled rear section of the enclosure allows easy corner or shelf placement with maximum space efficiency.

The Bottom Line

The Polk M³ is an exceptionally high value product. Its superior sound and imaging capabilities are unmatched in its class. The small size, incredible placement flexibility, and reasonable cost of the M³ mean you can easily enjoy high quality music reproduction throughout your home or office.

Specifications:
- Driver Complement: 5.25" (133cm) bass/midrange driver, .5" (12mm) polymer dome tweeter
- Size: 11.25"H x 6.5"W x 8.25"D (29cm x 16.5cm x 20.9cm)
- Overall Frequency Response: 67Hz - 22kHz
- Recommended Amplification: 20 - 100 watts/channel
- Nominal Impedance: 8 ohm
- Efficiency: 89dB
- Shipping Weight: 14 lbs, 1 oz / pair (6.4 kg)

©1991 Polk Audio, Inc., All Rights Reserved
Boston Acoustics

The Boston Acoustics Model 404V was designed to be the center-channel speaker in an A/V surround-sound system. It is said to have broad horizontal dispersion for natural-sounding dialogue across a large "sweet spot." The magnetically shielded speaker uses two 4-inch full-range drivers. Frequency response is given as 100 to 17,000 Hz ± 3 dB, sensitivity as 90 dB. Nominal impedance is 8 ohms. Recommended amplifier power is 5 to 50 watts per channel. The Model 404V measures 17 x 5½ x 6½ inches and weighs 8 pounds. Finish is black-ash vinyl with a black grille. Price: $129 each. Boston Acoustics, Dept. SR, 70 Broadway, Lynnfield, MA 01940.

AudioRocks

The Aspen (top in photo) and Newport (bottom) outdoor loudspeakers from AudioRocks are reinforced with fiberglass to prevent resonance. The two-way speaker systems, with 6½-inch polycarbonate-cone woofers and 1-inch dome tweeters, are said to be completely weather-sealed. Bandwidth is rated as 60 to 19,000 Hz, sensitivity as 89 dB. Power handling is 60 watts per speaker. Nominal impedance is 8 ohms. The Aspen measures 17 x 12 x 21 inches, the Newport 19 x 12 x 13 inches. Price (both models): $395 each. AudioRocks, Dept. SR, 2010 N.W. First St., Delray Beach, FL 33445. Circle 126 on reader service card

Nakamichi

The Nakamichi CassetteDeck1.5 has discrete erase, record, and play heads that are independently aligned at the factory and individually shielded to prevent crossfeed and noise-pickup problems. The deck's asymmetrical dual-capstan transport is said to prevent the compounding of flywheel and capstan resonances. Frequency response with Type I (normal-bias) tapes is rated as 20 to 21,000 Hz ± 3 dB, wow-and-flutter as less than ±0.06 percent weighted peak and less than 0.035 percent weighted rms. Features include Dolby B and Dolby C noise reduction, a bias fine-tune control, bidirectional automatic search, a defeatable MPX filter, timer record/play capability, automatic repeat, record mute, and a headphone jack. Price: $699. Nakamichi, Dept. SR, 19701 S. Vermont Ave., Torrance, CA 90502. Circle 125 on reader service card

Tree Dimensions

Tree Dimensions' solid-oak Stack Racks were designed to hold both components and recordings. The SR 08 storage rack (bottom) can hold 75 laserdiscs or 125 LP's. The SR 02 (middle) holds two standard-width components, and the SR 03 (top) holds three standard-width components. The units come assembled and are grooved for stacking. A cotter pin in back helps to stabilize the racks. The SR 08 and SR 03 measure 20 x 14½ x 15 inches, and the SR 02 is 20 x 11½ x 15 inches; inside dimensions for each shelf are 18½ x 5½ x 14 inches. All three racks are available in a natural oak or black finish. Prices: SR 08 and SR 03, $28.50; SR 02, $24; add $2.50 each for black finish. Tree Dimensions, Dept. SR, P.O. Box 609, Boone, NC 28607. Circle 127 on reader service card

M&C Speakerworks

The Series I loudspeaker from M&C Speakerworks uses two 6½-inch polymer woofers and one ¾-inch soft-dome tweeter. Frequency range is given as 37 to 20,000 Hz and sensitivity as 90 dB. Nominal impedance is 4 ohms. Maximum power handling is rated as 150 watts rms. The crossover has two 14-gauge coils and a single low-tolerance capacitor; binding posts are made of gold-plated brass. The ported enclosure is finished in oak veneer. Dimensions are 39 x 12 x 9½ inches, including the supplied matching stand. Price: $800 a pair. M&C Speakerworks, Dept. SR, P.O. Box 151082, San Diego, CA 92175. Circle 128 on reader service card
OWN YOUR FAVORITE MOVIES ON LASERDISC. 3 LASERDISCS $1 EACH.

Here's a great way to build a collection of your favorite movies—on laserdiscs! Just write in the numbers of the 3 laserdiscs you want for $1.00 each, plus shipping and handling. In exchange, you simply agree to buy two more laserdiscs in the next year, at regular Club prices (currently as low as $28.95, plus shipping and handling)—and you may cancel membership at any time after doing so.

Free Magazine sent every four weeks up to 13 times a year, reviewing our Director's Selections—plus scores of alternate choices, including many lower-priced laserdiscs. And you may also receive Special Selection mailings up to four times a year. (That's up to 17 buying opportunities a year).

Buy only what you want! If you want the Director's Selection, do nothing—it will be sent automatically. If you'd prefer an alternate selection, or none at all, just mail the response card always provided by the date specified. And you'll always have 14 days to decide; if not, you may return the selection at our expense.

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Letterbox
Tannoy
The Model 615, part of Tannoy's new Sixes series of loudspeakers, features a flattened-hexagon cabinet design that is said to minimize coloration, diffraction, and standing waves. There is an 8-inch dual-concentric mid/high-frequency driver with a molded cone and a "tulip" waveguide tweeter, an 8-inch woofer, and an 8-inch mass-tuned passive radiator. Frequency response is given as 41 to 30,000 Hz ±3 dB, sensitivity as 92 dB. Recommended amplifier power is 10 to 175 watts per channel. Nominal impedance is 6 ohms. The speaker, which can be biwired, comes with gold-plated binding posts. Dimensions are 38 x 12½ x 8¼ inches. The cabinet is finished in black ash or walnut. Price: $1,399 a pair. Tannoy, Dept. SR, 141 Linden St., Suite G10A, Wellesley, MA 02181.
Circle 129 on reader service card

Bose
The Bose RoomMate Computer Monitor can be connected to a computer's headphone or audio line-output jack; adaptors are provided for stereo or mono signals. The self-powered speakers use Bose's proprietary HVC full-range driver and distortion-limiting circuitry. A volume control is located on the right module. The injection-molded plastic enclosures are magnetically shielded so that the speakers can be used next to a computer screen without distorting its display. Dimensions are 6 x 9 x 6 inches. Price: $339 a pair. Bose Corporation, Dept. SR, The Mountain, Framingham, MA 01701-9168.
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Design Acoustics
The Design Acoustics DA-360 outdoor loudspeaker is said to be impervious to rust, corrosion, and wide variations in temperature and humidity. An omnidirectional two-way system, the DA-360 has an ABS plastic shell housing a 6-inch cone woofer and a 1½-inch piezoelectric tweeter. Bandwidth is rated as 90 to 18,000 Hz and sensitivity as 84 dB. Power handling is given as 15 watts continuous, 30 watts maximum. The 7¾-inch-diameter speaker is 10 inches high. It can be mounted on a standard threaded pipe or from the side or top using the supplied bracket. Price: $90 each. Design Acoustics, Dept. SR, 1221 Commerce Dr., Stow, OH 44224.
Circle 131 on reader service card

Specialty Sound Platforms
The TTCD II hanging platform for turntables and CD players is said to prevent record or disc skipping by transforming vertical vibrations into horizontal ones, which are absorbed by rubber isolators in the supports. Leveling knobs are used to reduce tonearm skating. The platform can be hung as much as 5 feet below most ceilings. Finishes are matte black or oak veneer. Dimensions are 24 x 9 x 16 inches. Price: $70. Specialty Sound Platforms, Dept. SR, 424 Burt Circle, Lewiston, NY 14092.
Circle 132 on reader service card

Eurotek Audio
The Merin (left above) and Dauphin speakers are part of Eurotek's Quadrat Phonologue E Series. The Merin, a bass-reflex three-way system with a 6¼-inch woofer, a 4½-inch midrange, and a 1-inch tweeter, has a rated bandwidth of 32 to 22,000 Hz and sensitivity of 87.5 dB. The two-way Dauphin, with a 6¼-inch woofer and a 1-inch tweeter, has a bandwidth of 36 to 22,000 Hz and sensitivity of 87.5 dB. Nominal impedance for both systems is 4 ohms. The Merin is 18½ x 8¼ x 11½ inches, the Dauphin 15¼ x 8¼ x 11½ inches. Both are available in black or light gray. Prices: Merin, $550 a pair; Dauphin, $450 a pair. Eurotek Audio, Dept. SR, Brandon South, P.O. Box 20004, Brandon, Manitoba R7A 6XA, Canada.
Circle 133 on reader service card
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A U D I O  Q & A
by Ian G. Masters

Low-Frequency Response

My speakers have a specified frequency response of 49 to 20,000 Hz within 2 dB. Recently I bought a test CD and was surprised that I could hear tones as low as 20 Hz. If the speakers are only supposed to respond to frequencies above 49 Hz, how could I hear lower tones?

BRET ALLIE
Sauk Rapids, MN

In frequency-response specifications, the high and low limits indicate the points where the output drops below whatever tolerance has been chosen, in this case 2 dB. That doesn’t mean there is no output at all below the lower limit, but that it is more than 2 dB down from the mid-frequency level—a very small amount. In your case, you should have considerable output well below 49 Hz and at least some way down to the lowest frequencies.

Headphone Hookup

To avoid complaints about noise, I listen to my system through headphones rather than speakers. This is fairly simple with my CD player and cassette deck, which have their own headphone outputs. But neither my tuner nor preamplifier offers such an output, so I have no volume control over that source. Short of replacing my equipment, how can I use the phones to listen to the radio?

CRAIG STEVENS
Edwards, CA

There are several possible answers. Perhaps the simplest is to put your cassette recorder in the record-play mode and listen to FM—and, if you wish, CDs—through the headphone jacks. That may be awkward, however, and it might cause wear on the tape mechanism.

Do you ever listen through speakers? If you do, your amplifier might have a headphone-output jack you could use; if it doesn’t, there’s no real difficulty padding down the speaker outputs for headphone use. Attach the headphone circuit to a second pair of speaker outputs if you have them, or install a simple selector switch. If you don’t have any sort of amplifier now, it would be worthwhile to buy a low-power unit (a couple of watts is all that’s needed) specifically to drive your phones. It needn’t be designed for the purpose, although that would be ideal.

However you choose to go about it, using a power amplifier after your preamplifier will enable you to listen to all of your sources without having to repatch for each one.

Recycled Guitar Amp

I have an old 80-watt bass guitar amplifier and would like to add it to my stereo system as a subwoofer. Is this a plausible idea?

NICK OXLEY
New Haven, CT

Musical-instrument amplifiers, and their built-in or detachable speakers, usually make pretty poor hi-fi components. They are designed to produce—not reproduce—sound, so linearity is not necessarily a virtue; whatever is added is part of the creative process. That’s just as well, because serious compromisers often have to be made to achieve their main objectives: high volume level and durability.

For use as a subwoofer, however, none of that may matter. What is important is low-frequency extension, and the speakers for most guitar amps don’t have it. Few can handle frequencies lower than the fundamental of the lowest string on an electric bass—about 40 Hz—which means that the bottom octave of your recorded music will be lost. For most of us, that’s exactly what we want to hear from a subwoofer; good regular speakers are usually just fine down to 40 Hz.

Hot Cassettes

I have always dutifully removed cassettes from my car to protect them from the sun, as I understood that heat can remove some frequencies. Recently I read a report that suggested no signal loss would occur at temperatures likely to be found in a parked car. Have cassettes been improved to the point where they are no longer affected by heat, or were they ever?

STEVE GERKEN
Houston, TX

In theory, heat can reduce magnetism, but the temperatures at which that happens are higher than you’ll ever encounter in your car. On the other hand, cassettes are made almost entirely of plastic, which heat can soften or warp. The shells may twist, tape splices may come undone, and the tape itself may become sufficiently deformed that it no longer makes good head contact. As cassettes have become increasingly popular for in-car entertainment, tape manufacturers have indeed made them more heat resistant.
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resistant to these effects, but it's not always possible to predict how a particular cassette will behave in the heat. Removing your cassettes when leaving your car in the sun for a long time is still a wise precaution, and you should never leave a cassette anywhere that it might bake in direct sunlight.

Eliminating Dust

I understand that one basic enemy of stereo gear is dust settling into the components over time. To control that, I am considering placing one of those air-filtering negative-ion generators next to my stereo rack. Is that likely to do any good?

MICHAEL BEDNASH
Boulder City, NV

Alt can't hurt, as long as its motor doesn't induce noise in your system. But dust usually falls from above, so putting a cloth over your components when they're not in use would probably work just as well. Or closing the doors on your equipment cabinet, if there is one. Anyway, dust may be overrated as a menace. Keep it off your turntable to be sure, and spritz your controls with contact cleaner if they need it, and you should be just fine.

Biwiring and Biampling

I intend to wall-mount my new speakers, but the owner's manual suggests that they should be biwired at the very least, and preferably biamplified. I did not expect the expense of a second stereo amplifier, nor would it be convenient to run a second set of cables up my wall. I'm not sure what the advantages of either technique are. Will there be a significant degradation in sound quality if I wire my speakers in the conventional manner?

JOHN A. STANLEY
Mill Valley, CA

Except for the rare instances in which a speaker is designed specifically for biamplification, and thus lacks a built-in passive crossover network to route different frequency ranges to the appropriate drivers, normal amplification is usually best. Adding a second stereo amplifier and cabling for biamplification will increase the amount of power available, but unless the speaker is designed for use with an external line-level electronic crossover between the preamp and power amplifiers (instead of an internal passive crossover), that will be the only benefit, which could be duplicated with less risk of installation error simply by using a single more powerful amp.

As for biwiring, that involves running separate cables from the amplifier outputs to the inputs of the various sections of a speaker's internal crossover; the split happens at the amplifier rather than inside the speakers. The main effect will be to reduce the series resistance between the amplifier and loudspeaker, which can be a good thing, particularly if your speakers are a long way from the amplifier, but in most cases the same benefit can be achieved by using a single set of heavier-gauge speaker cables.

If you have a question about hi-fi, send it to Q&A, STEREO REVIEW, 1633 Broadway, New York, NY 10019. Sorry, only questions chosen for publication can be answered.

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There also existed negative N rays, which decreased visibility, but only at a certain angle of incidence. Blondlot published photos to support his observations, and over a dozen other scientists repeated the N-ray experiments and published their findings.

Robert Williams Wood was a feisty American physicist who had no patience for anything less than scrupulous adherence to the scientific method. He seriously questioned the data that Blondlot and others used to prove the existence of N rays. One day Wood visited Blondlot in his laboratory. Blondlot was conducting an N-ray experiment using an aluminum prism to refract N rays. Wood watched as Blondlot measured the angle of refraction with great precision. Although the measurements were precise and repeatable, they did not agree with known laws of refraction. In response to Wood’s questioning, Blondlot noted that N rays were fascinating in that they did not follow ordinary laws of science, and one of the challenges was discovering the laws that govern them.

Wood asked to observe the measurement again, and in the darkened room he surreptitiously slipped the aluminum prism into his pocket. Blondlot again measured refraction, and he obtained precisely the same results as before—even though the device supposedly refracting the rays was entirely absent. When Wood published an account of this event, it was the end of Blondlot’s career, and the end of N rays.

This particular version of the N-rays tale was related in 1953 by Irving Langmuir, winner of the 1932 Nobel Prize in Chemistry (the text was reprinted in Physics Today in October 1989). Langmuir’s description of the rise and fall of N rays illustrates the nature of pathological science, or, as he put it, “the science of things that aren’t so.”

Blondlot wasn’t a crook. He wasn’t dishonest. He was, in fact, a great scientist who was deluded into a false result by subjectivity, wishful thinking, and the difficulty of dealing with threshold phenomena. Even the most earnest scientist can be swayed by chimerical results that undermine the truth he is pursuing. Langmuir summarized the symptoms of pathological science: The effect is barely detectable. Fantastic theories are suggested to explain the effect. Supporters of the effect can duplicate the result, but critics cannot. Even in the light of disproof, supporters always have an answer. Always.

To anyone who has ever walked into a stereo showroom these symptoms should have a faint ring of familiarity. Some audio technology meets all the requirements of pathological science. For example, several manufacturers sell devices that lift speaker cables off the floor. This is said to improve sound because solid surfaces such as floors are said to disrupt electron flow through cables. The audible improvement is said to be slight, but it becomes more audible with practice. If double-blind testing failed to show any audible difference between supported and unsupported cables, believers would probably give the excuse that the stress of taking the test impaired the listener’s ability to hear the difference. And so on and so forth.

It is all too easy for even experienced, sophisticated listeners to fool themselves into hearing something that isn’t there.

Certainly, because much about audio is subjective, with effects that are often very, very subtle, it is all too easy for even experienced, sophisticated listeners to fool themselves into hearing something that isn’t there. But how do we distinguish pathological science from healthy science in audio? If scientists can be fooled by autosuggestion, what about us mere mortals? Unfortunately, there is no good answer. Our only weapons are Langmuir’s list of symptoms, a healthy skepticism, and common sense.

Next time a manufacturer tries to sell you a CD player with a gold-anodized disc-clamping mechanism, or some liquid-nitrogen-cooled speaker cables, remember Blondlot. Try to make sure you’re not paying extra for N rays. They’re expensive.
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2-V/µs rate at the same output level, which it might not be able to do. The resulting distortion is known as SID.

Virtually all amplifiers use negative feedback, from the output to an earlier stage, to reduce distortion and noise and to flatten and extend frequency response. The early stages operate at a much lower level than the output stage and are not likely to be affected by a slew-rate limitation.

The end result of this situation is that a wide-range input signal that passes undistorted through the early stages of an amplifier can be distorted in the output stage. Worse yet, this distorted signal is fed back to the input, resulting in what is usually called TIM. The solution is either to (1) use "faster" output transistors, or (2) reduce the output voltage swing (lower power output), or (3) limit the signal bandwidth before the input stage, which makes the whole issue moot. Another option, akin to throwing out the baby with the bath water, is to eliminate or drastically reduce the overall (global) negative feedback.

About ten years ago, there was considerable interest in slew-related distortions, but some of us wondered why we had never heard any distortion identifiable as TIM. The answer was simple. As David Hafler (I believe) pointed out, an amplifier that could deliver its rated output at frequencies somewhat higher than the maximum program frequency (20,000 Hz) could not be overloaded by a slewing audio-signal waveform. It would be hard to find a hi-fi amplifier that could not deliver its rated power, or very close to it, up to 40,000 or 50,000 Hz. If it had a simple low-pass filter at its input to attenuate signals above the audio range, TIM would be quite impossible.

There were those who argued that some sources, such as moving-coil phono cartridges, had the capability to generate outputs up to 100 or 200 kHz, from record noise if not from program overtones. Perhaps, although the levels at those frequencies would have to be surprisingly high to cause trouble. But now the CD has solved that "problem" (one I suspect few of us ever suffered from) with a bandwidth rigorously limited to 20,000 Hz. Exit TIM, SID, etc. from the hi-fi lexicon.

The EIA amplifier test standard solves the problem of slew-induced distortion measurement in a simple and elegant fashion. Slew factor is measured by driving an amplifier to its rated output at 1,000 Hz and increasing the frequency (at a constant input level) until the waveform shows 1 percent distortion. The ratio of that frequency to 20,000 Hz is the slew factor. Any number greater than I effectively guarantees negligible slewing distortion in hi-fi listening. In my experience, over hundreds of amplifier tests, the slew factor is rarely less than 4 or 5 and is usually greater than 25.

There is another specification, rarely found these days outside the world of high-end audio, that is, and always has been, of little or no practical significance to the user. I refer to damping factor, the ratio of 8 ohms (a standard loudspeaker impedance rating) to the internal source impedance of the amplifier. The effect of a low source impedance (typically a small fraction of an ohm) is to damp, or suppress, certain resonances in a speaker, especially low-frequency cone resonance.

There is no question that damping is desirable, but there is a catch. The damping resistance includes not only the source impedance of the amplifier but also the resistance of the connecting speaker cables, the speaker's crossover inductor(s), and the voice coil. So if the amplifier's source impedance is 0.01 ohm, the cable resistance is 0.1 ohm, and the speaker's internal resistance is 4 ohms (a typical value), the damping factor is not 800, or even 80, but a mere 2. Spending extra money for an amplifier with a 0.001-ohm impedance, or a cable the size of a garden hose with a 0.01-ohm resistance, will not have the slightest effect on the speaker's damping.

The myth that extremely high damping factors are beneficial has been with us for many decades, and it was as nonsensical forty years ago, when I first became active in high fidelity, as it is today. Most such fads fade away with time, and almost all respond well to a dose of common sense. In the meantime, they are good for a chuckle or two.
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A/V PREAMPLIFIER

JULIAN HIRSCH, HIRSCH-HOUCK LABORATORIES

THE Denon AVP-5000 is a highly versatile preamplifier with extensive video switching capabilities and surround-sound features. Its audio functions include digital signal processing (DSP) that can be used for a number of purposes, including Dolby Pro Logic surround decoding, ambience enhancement for simulation of acoustic environments, three-band parametric equalization, and dynamic-range processing. In fact, the AVP-5000 has two complete DSP stages, which enables it to perform additional processing on the Dolby Pro Logic output from the first stage and, according to Denon, to create better environment simulations than would be possible using a single DSP chip. It also has a large number of input and output ports that can accommodate virtually any array of companion components one might assemble. Built-in analog-to-digital (A/D) converters enable the DSP circuits to work their magic on audio signals from analog as well as digital sources, while output signals from digital inputs and the DSP section are handled by six high-quality digital-to-analog (D/A) converters.

In normal operation, the only visible front-panel features are a large volume knob, several buttons, and a narrow display window, which Denon calls the Multi-Function Display (MFD). Below the window are small green LED's, which light to show the sampling frequency of a digital input signal (32, 44, or 48 kHz), and a red overload LED that indicates an excessive input level to the Dolby Pro Logic circuits. The exterior of the preamplifier, including its controls, is gold colored.

A hinged door across the entire bottom of the panel swings down at a touch to reveal sixteen buttons, two small knobs (balance and input level), a headphone jack, and an S-video socket plus three phono jacks (labeled VIDEO AUX) for temporary connection of a camcorder or other A/V source.

The AVP-5000's rear panel is densely populated with gold-plated phono jacks for video and analog audio input signals from a wide variety of sources including CD, tuner, TV, videodisc, direct broadcast satellite (DBS), and two audio and two video tape decks. (There is no phono input.) Four pairs of analog audio outputs are provided for the VCR's and audio decks. All video inputs and outputs are provided with both S-video and RCA-type composite-video jacks. The preamplifier's four pairs of main audio outputs are...
identified as front, center, rear, and mono (for driving an external powered subwoofer or any other component requiring a line-level mono signal). There are video outputs to a monitor, both for viewing selected video programs and for on-screen display of the preamplifier’s control status.

Digital signal connections include optical input terminals for DBS, videodisc, CD, and DAT sources, coaxial inputs for DBS and CD, and an optical DAT output. Two special jacks are provided for remote power switching of one or two compatible Denon power amplifiers. There are three AC outlets, two of them switched.

Except for volume adjustment, all normal operating functions of the AVP-5000 are performed through pushbutton controls whose effects are indicated by alphanumeric readouts in the display or on a video screen. The number and variety of these effects are extraordinary; our space here does not allow even a mere listing of all the available choices, much less the range of their settings.

The normally visible front-panel buttons are power, two large function controls marked AUDIO and VIDEO, and two smaller ones marked DIGITAL IN and VIDEO SELECT. The video and audio controls select the corresponding input sources, toggling through the available choices on successive operations. The DIGITAL IN button selects digital audio inputs, and the VIDEO SELECT button enables selection of a video source different from the one supplying the audio. Regardless of the information previously displayed, the display shows the selected source as the control is operated. The completely independent choice of audio and video sources, and a similarly independent selection of programs for listening/viewing and recording, provides almost total operating flexibility.

In addition to the normal stereo mode, a direct mode in which all digital processing circuits are disabled, and a standard Dolby Pro Logic mode for movies and video programs recorded in Dolby Surround, the AVP-5000 has a Personal Logic mode that enables the user to vary the normally fixed parameters of Dolby Pro Logic to suit individual taste. Both Dolby modes provide outputs for front, rear, and center channels, plus a phantom center-channel option if no center speaker is supplied. The Personal Logic can also be configured for Theater and Dynamovie effects, which provide an expanded dynamic range, for Cinema response, which mimics the standard theater treble rolloff, and for other special effects.

Other surround-sound choices include Mono Movie, Classic Concert, Rock Concert, Church, Jazz, Stadium, and Disco. These can be configured with a broad range of adjustable parameters, including bass, midrange, and treble levels, initial delay, room size, low-pass filter cutoff, early reflection level, reverberation level, liveness, and a number of others exclusive to the Personal Logic mode. Parameters are chosen by sequential operation of a button and varied using separate plus and minus buttons. The display shows the selected parameter and setting as adjustments are made.

A peculiarity of the AVP-5000 is the delay that is activated when any control is operated. The program is muted, and the display (which normally shows only the mode in use, not the source being heard) changes to show the selected action. The muting and special display remain in effect for at least 3 seconds after completion of the change, after which normal operation resumes with the new setting in effect.

The delay in implementing changes makes it difficult to judge their subjective effects, however. If you make a number of changes together (frequency response, levels, and delays, for example), you receive no feedback while the adjustments are taking place and for several seconds afterward. Fortunately, there is an EFFECTS fea-

**LABORATORY MEASUREMENTS**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output level at clipping</td>
<td>9 volts</td>
</tr>
<tr>
<td>Sensitivity for a 0.5-volt output</td>
<td>75 mV (with input-level adjustment at middle position)</td>
</tr>
<tr>
<td>A-weighted noise (referred to a 0.5-volt output)</td>
<td>-93.5 dB</td>
</tr>
<tr>
<td>1,000-Hz distortion (THD)</td>
<td>0.0038% at 1 volt</td>
</tr>
<tr>
<td>De-emphasis error (digital)</td>
<td>-0.25 dB at 16,000 Hz</td>
</tr>
<tr>
<td>Frequency response: analog</td>
<td>20 to 20,000 Hz, +0, -0.08 dB; digital, 20 to 20,000 Hz, +0, -0.05 dB</td>
</tr>
<tr>
<td>Channel separation (digital)</td>
<td>80 dB at 100 Hz, 77 dB at 1,000 Hz, 52 dB at 20,000 Hz</td>
</tr>
<tr>
<td>Linearity error (digital)</td>
<td>+0.06 dB at 80 dB, +0.4 dB at 90 dB, +0.23 dB at -100 dB</td>
</tr>
</tbody>
</table>

**FEATURES**

- Audio inputs for DBS, TV, videodisc, CD, tuner, two VCR's, two audio tape decks, auxiliary
- Video inputs for DBS, TV, videodisc player, two VCR's
- Video outputs for two monitors (including on-screen control display)
- All video inputs and outputs provided with composite (RCA jack) and S-video connectors
- Audio outputs for VCR's, audio tape decks
- Line-level output pairs for front, center, and rear channels, plus mono
- Optical digital inputs for DBS, videodisc, CD, DAT; coaxial digital inputs for DBS and CD
- Optical digital output for DAT
- Three AC outlets (two switched)
- Digital signal processing (DSP) for nine surround modes (four- and six-channel), including Dolby Pro Logic and Personal Logic with user-programmable parameters
- Adjustable surround parameters include bass, midrange, treble gain; midrange Q; initial delay; room size; low-pass cutoff for rear channels: reverb level; liveness; dynamics
- System remote control learns commands for other components; remote-control connections for one or two Denon power amplifiers

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The Denon AVP-5000's completely independent choice of audio and video sources, and similarly independent selection for listening/viewing and recording, provides almost total operating flexibility.

We also measured the performance of the AVP-5000's built-in D/A converters, supplying them with the digital (electrical) output of a Denon DCD-1500H CD player and measuring the preamplifier's output. Its frequency response was slightly flatter than that of the player itself, with absolutely no measurable response change from 40 to 20,000 Hz (probably less than 0.02 dB overall); response was down 0.35 dB at 10 Hz. The channel levels differed by 0.15 dB, although the player itself had perfectly matched output levels.

The linearity of the D/A converters was superb, among the best we have yet measured. The maximum output error was +0.4 dB at -90 dB, dropping to +0.23 dB at -100 dB. Channel separation was 80 dB at 1,000 Hz, narrowing to 76 to 79 dB at 1,000 Hz and 50 to 54 dB at 20,000 Hz. The maximum de-emphasis error was -0.25 dB at 16,000 Hz.

Comments

The electrical performance of the Denon AVP-5000 was excellent, and nothing less than outstanding in its digital section. In listening tests, which included using Dolby Pro Logic with laserdiscs and videocassettes as well as CD's and FM broadcasts, the subjective qualities of its audio performance were exactly what we would expect of a top-rank four-channel surround-sound system (we did not use a separate center-channel speaker, but the phantom center-channel setting worked very well).

The AVP-5000 is unusually complex, however, and we cannot recall using any other audio or A/V component that was so difficult to master. The test unit was a preproduction model, accompanied by a preliminary draft of the English version of the operating manual. The manual had some fifty-seven pages (photocopied with two pages to a sheet), and it was necessary to refer constantly to different sections of it while learning how to operate the preamp. It was a long and painful process, and the fact that the control nomenclature was often less than clear did not make the task any easier. The remote control was, in some ways, even more confusing, although (as with the preamplifier itself) the necessary information was present somewhere in the manual if one was lucky enough to find it.

The AVP-5000's weight was what one might expect from a rather large power amplifier, and we wondered what was responsible for it. Removing the cover from the unit answered that question handily. For one thing, the cover (and probably most of the other metalwork) was steel instead of aluminum, and the interior was filled with well-populated circuit boards—layers and layers of them. It was reminiscent of the interior of our Audio Precision System One test system, which is not much larger than the AVP-5000 and weighs a bit more.

Although we did not feel that we were able to realize the full performance potential of this unusual product in the time available to us, there can no doubt that it is one of the most full-featured high-performance preamplifiers on the market (as well as one of the handsomest).

In any case, we strongly recommend that the AVP-5000 be auditioned at (and bought from) a well-qualified dealer who understands its operation and will be available to guide the purchaser for the time required to master its many features. This is not a product that anyone can expect to operate and use effectively without extensive study and hands-on practice. The reward is an extraordinary level of performance and flexibility for almost any audio-video system one could imagine. If you are planning a sophisticated A/V setup, you should take the time to find out everything this very ambitious preamplifier can do for you. We know of nothing else quite like it.
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What good is Single Bit if you miss a single note?

Today, more and more CD Player manufacturers are making Single Bit the digital format of choice. Gone are the low level linearity problems that plagued multi-bit players which resulted in a loss of musical detail during quieter passages. Gone is the harshness that came from improper bit calibration or the shifting of calibration through time and use.

In their haste to rally around this newer, simpler technology however, many manufacturers have overlooked certain sonic characteristics of Single Bit. After all, what good is it if every single note isn’t perfect?

The first is a phenomenon called CD Jitter. Because of the incredible speed at which a Single Bit D/A Converter has to work, timing errors may occur. In audible terms, these errors manifest themselves as distortion that you hear as muddiness in the bass and lack of clarity in the midrange at high volume levels.

Onkyo resolves this via our proprietary AccuPulse Quartz System. It uses a special quartz oscillator clocking mechanism that maintains rock solid stability throughout the digital-to-analog conversion process. The result is a degree of sonic realism you’ll notice from the instant the disc begins playing.

The smaller, bar-shaped Onkyo AccuPulse Quartz oscillator shown at right prevents timing error vibrations far more effectively than the conventional oscillator at left.
All Single Bit systems must also incorporate some sort of Noise Shaping to remove unwanted switching noise inherent in the high speed D/A conversion. Other companies reduce this noise on a continuous slope from the high to low frequencies, in the belief the music will mask the noise in those areas it might be audible. Onkyo's Zero Shift Noise Shaper technology takes a different approach by completely eliminating noise in the middle of the frequency range where the most critical and complex musical information is contained.

Finally, the process by which Single Bit works, called Pulse Width Modulation, can allow small amounts of distortion to creep into the analog output signal. Again, most manufacturers are willing to let this pass, confident it will be obscured by the music. Onkyo's dedication to high fidelity won't allow us to take this chance. Through a phase inversion process we call our Complementary Distortion Canceler, any chance of distortion reaching the output signal is removed.

Buying a Single Bit CD Player shouldn't require a degree in engineering, just a few questions to insure the player is giving you the best single bit performance possible. You'll find that the answer will be Onkyo.
Tannoy Model 603 Loudspeaker System

Julian Hirsch, Hirsch-Houck Laboratories

Tannoy, one of the oldest British loudspeaker manufacturers, recently announced a new series of speakers, the Sixes, in the development of which the company says every aspect of speaker design was re-examined. We tested the smallest of the series, the Model 603, whose basic qualities are also incorporated in the six larger models.

In general, loudspeaker enclosures have internal resonances, some degree of panel vibration, and external features that produce diffraction of the acoustic output, distorting the spatial qualities of stereo reproduction. In the Tannoy Sixes, the use of hexagonal cabinets is said to minimize internal standing waves and resonances, in part because there are four different sizes among the six panels, which meet at angles of 120 degrees instead of the usual 90 degrees. Tannoy points out that the smaller panels in a hexagonal cabinet tend to have higher resonant frequencies than the panels of conventional enclosures, so that they are less likely to be excited by the low-frequency output of the woofer. A central brace running through the length of each Sixes-series cabinet is bonded to the top and bottom caps, pulling the cabinet into a rigid structure. The cabinets are available finished in simulated black ash or walnut, with marbleized tops.

Diffraction is minimized by driver frames that blend smoothly into the front panel and a framed grille cloth that is positioned in front of the panel with a ½-inch open gap around its periphery. In addition, the 120-degree angles between the side panels and the front panel provide a gradual transition for sound waves as they pass around the cabinet.

The Tannoy Model 603 is a two-way system, with a 5-inch bass driver in a ported enclosure crossing over at 3,500 Hz to a 1-inch aluminum-dome tweeter. The crossover network uses iron-dust-core inductors and polypropylene capacitors. The bass driver has an injection-molded copolymer cone with a concave injection-molded dust cap. The cone is molded with a varying thickness, greatest near the voice coil to minimize cone breakup.

The tweeter's high-temperature voice coil is wound on a Kapton former, and it is damped and cooled by ferrofluid. Tannoy claims a frequency response up to 30,000 Hz ±3 dB for the tweeter, whose dome is protected by a metal grille.

The cabinet's back panel contains the woofer port and the input terminals. The system is designed to be compatible with biwired or biamplified operation: The woofer and tweeter connections are brought out separately to heavy-duty binding posts that accept wire ends, lugs, or single banana plugs (they are spaced too widely for dual banana plugs). The terminals are joined by captive shorting links for conventional operation.

Tannoy recommends that smaller models in the Sixes series, including the Model 603, be mounted on rigid stands for the best imaging. The company offers a series of stands specifically designed for the Sixes, with hexagonal top and floor plates that match
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Squeeze - Play (Reprise)

Stranger In This Town Enemy Strikes Black Apocalypse 91 The

Eddie Money - Right Here Yet Born (Columbia)

(Sire/Reprise)

Lovescape (Columbia)

Nell Diamond -

Mark Whitfield - Patrice

Cheap Trick - The Album (MCA)

Rising (Chrysalis) 428.870

Boototy - The Remix Lover Beside Me (Warner Bros)

Power Of Great Music Attic (Columba)

Aerosmith - Toys In The

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Joe Walsh - Ordinary

ZZ Top - Recycler

Pat Benatar - True Love

Said (Virgin)

Yanni - Reflections Of

Jahmekya (wirgin) 422.139

Melody Makers -

Ziggy Marley & The

Bad English - Backlash

Crowded House - Kitchen (Columbia)

Love (Warner Bros)

Karyn White - Ritual Of

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Rosette - Joyride (EMI)

Classics Players (Angel)

Roger N3rrington -

Hall (Sony Classical)

Midori - Live At Carnegie

Alison Moyet - Hoodoo

Train/Greatest Hits -

(Columbia)

The Egyptiass - Perspex

Island (A&M)

The Egyptiass - Perspex

Gestures In Southern Blue

In The South Vol. 1 Soul

1.0 The Kingdom

Northern (Go' London)

Loved Elvis (Polydor)

Storyteller Ar thology

Train/Greatest Hits -

(Columbia)

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If the application is missing, write to: Columbia

(address redacted) 47811-1129.

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the appearance of the speakers. The relatively light aluminum stands have hollow columns that can be filled with sand or lead shot for added weight. They are fitted with floor spikes, and for rigidity the speaker support plate is screwed into threaded holes in the bottom of the speaker cabinet.

The Tannoy Model 603's specifications include a recommended amplifier power of 10 to 70 watts per channel (peak power, 120 watts), nominal impedance of 6 ohms (minimum, 4 ohms), sensitivity of 86 dB sound-pressure level (SPL) at 1 meter with 2.83 volts input. Frequency response of 60 to 30,000 Hz ± 3 dB, and crossover frequency of 3,500 Hz. The speaker measures 8 1/2 x 13 x 6 inches, and it weighs 8 3/4 pounds. Price: $279 a pair, matching 633 stands, $149 a pair. Tannoy, Dept. SR, 141 Linden St., Suite G10A, Wellesley, MA 02181.

Lab Tests
We tested the Tannoy Model 603 speakers on their stands, without any added weight. They were placed about 3 or 4 feet from the wall behind them, 7 feet apart, and 4 feet from side walls.

The averaged room response from the two speakers was flat within ± 2 dB from 600 to 20,000 Hz, the upper limit of our measurements. Combining the close-miked woofer and port responses yielded a very smooth bass curve that varied only ± 1.5 dB from 50 to 500 Hz and sloped down gently from 500 Hz to the 3,500-Hz crossover point. It overlaid the room response very closely from 100 to 4,000 Hz, producing a composite response curve whose highest point was between 80 and 200 Hz, sloping gently down about 6 dB to the average level in the treble.

The composite curve corresponded almost exactly to the curve we visualized mentally while first listening to the speakers (as always, initial listening preceded testing, with more listening following the measurements). It is unusual for our subjective response to agree so closely with measurements.

The minimum system impedance was 5.2 ohms at 225 Hz, with another dip to 6 ohms at 52 Hz. Maximum readings of 20 to 21 ohms occurred at 25, 90, and 3,500 Hz (the crossover frequency). Sensitivity was 86 dB, as rated. When we drove the system with 4.5 volts, corresponding to an output SPL of 90 dB, the woofer distortion was between 0.8 and 3 percent from 80 to 2,000 Hz, rising to 7.5 percent at 40 Hz. Considerable wind noise could be heard from the port at the lowest frequencies, and this undoubtedly accounted for part of the distortion reading, which included noise. Reducing the drive to the standard sensitivity-measurement level of 2.83 volts lowered the distortion only slightly.

The slightly high bass distortion readings were not surprising in view of the system's tiny woofer. Nonetheless, the Model 603 was able to handle substantial power levels in single-cycle bursts without undue distortion or damage. At 100 Hz, the woofer cone bottomed with a rasp at 105 watts into its 15-ohm impedance. At higher frequencies the amplifier clipped before serious distortion occurred, at 700 to 800 watts output into the speaker's 8- to 9-ohm impedance.

Comments
From our first hearing, the Tannoy 603 compared very favorably with some other speakers costing several times its modest price. Apart from an extraordinary smoothness and lack of coloration, the Model 603's projected one of the best sound stages I have heard in our listening room. The speakers almost disappeared, leaving the sound filling the end of the room and extending well back of the speakers almost vanished, leaving the sound filling the end of the room. The speakers almost disappeared, leaving the sound filling the end of the room and extending well back of the speakers. A speaker of this size and price, combined with a chestiness that does have it. The real reason, I suspect, for the astonishing sound of this speaker is its balance, with all frequencies being generated in plausible proportions. Obviously, this is not a speaker that can be played at ear-splitting levels without exacting a price. It is not a miracle worker, and if the program contains really deep bass, an oversupply of drive will cause some unpleasant sounds to emerge from the speaker's port, if not from the woofer cone.

Testing and listening to the Tannoy Model 603 provided one of the most pleasant surprises I have had in some time. It is a wonderful value, even adding in the price of the optional stands, which considerably simplify placing the speakers for best results.
THE AKG K-500 is a lightweight, circumaural stereo headphone set combining a wide frequency range with above-average wearing comfort. The earpieces are fitted with soft, comfortable cushions, and the backs are made of perforated metal. The outer section of the cushion pivots relative to the smaller section, which contains the driver element, to fit the wearer's head snugly yet comfortably.

The earpieces are mounted on two light, curved tubular elements, which also support a soft leather headband that is free to slide about an inch above each ear for fit. The straight 10-foot connecting cord emerges from the left earpiece. It has a handsome polished-brass stereo phone plug at its other end; unscrewing the quarter-inch plug reveals a stereo mini plug that forms an integral part of the larger plug.

Specifications for the AKG K-500 include a bandwidth of 15 to 27,000 Hz (no tolerance stated), an impedance of 120 ohms, and power handling of 200 milliwatts (mW). Rated sensitivity is a 94-dB sound-pressure level (SPL) with an input of 1 mW. That implies an ability to generate an SPL of 117 dB, which is more than anyone will ever need (extended listening at such levels can cause permanent hearing damage). The headphones weigh just over 8 ounces (not including the cord).

Price: $229. AKG, Dept. SR, 1525 Alvarado St., San Leandro, CA 94577.

Lab Tests

We measured the AKG K-500's frequency response on a standard headphone coupler that simulates the air volume enclosed by the phones on the ears of a typical listener. Since the size and shape of this air volume can have a great effect on the frequency response (above a few kilohertz) at the wearer's ear drum, this measurement is principally useful for comparing different phones rather than for defining the sound quality that will be produced by any particular headphone.

The AKG K-500 was about as comfortable a headphone as I've worn, lighter than most with any claim to high fidelity.

We measured the frequency response by several different methods in the hope that less ambiguous results might be obtained. There were general similarities between all the resulting curves, though they differed somewhat in their details. Our ultimate aim was to try to correlate these data with what we heard from the phones.

All of the response curves showed considerable irregularity at high frequencies (above 5,000 Hz), which is typical of coupler measurements. Nonetheless, the peaks and dips were at about the same frequencies, though sometimes with very different magnitudes, in all the curves, showing that they were indeed effects of the combined headphone and coupler system rather than of the measurements.

The "best looking" curve, which also appeared to be consistent with the sound of the phones, was made with a pink-noise driving signal and measured with a scanning one-third-octave filter. The response varied less than ±2 dB from 50 to 3,000 Hz. Below 50 Hz, it dropped smoothly to −10 dB at 25 Hz. Following a 3-dB dip at 3,500 Hz and a 3-dB rise at 5,000 Hz, the response fell to −4 dB at 8,000 to 10,000 Hz and eventually dropped off above 13,000 Hz (close to the upper limit of the microphone's response) to −10 dB at 17,000 Hz.

With a stepping sine-wave test signal, the response shape was similar, with somewhat narrower and larger peaks and holes at high frequencies.
An FFT response plot with a noise-burst signal (an MLS, or maximum length sequence, measurement) resembled the sine-wave response in its shape but had irregularities of about the same size as those in our swept-filter measurement.

The impedance of each headpiece was 130 ohms at 110 Hz, with a minimum of about 100 ohms at 20 and 1,000 Hz and a smooth rise at high frequencies to about 150 ohms at 20,000 Hz.

We measured the distortion of the phones at 50 Hz (nonlinear distortion was negligible at middle and high frequencies) using input levels of 1 to 5 volts (9 to 220 mW). The distortion, principally second-harmonic, ranged from 2.2 percent at 1 volt to 7 percent at 5 volts.

**Comments**

The AKG K-500's measurements compared very favorably with those of other good dynamic headphones we have tested in the past. The bass in particular, while not reaching down as far as the manufacturer's ratings implied, was smooth and uncolored, and very healthy down to 40 or 50 Hz. Very few phones go deeper than that, and they usually cost quite a bit more than the K-500.

The overall sound quality was excellent. It was airy and light when the program called for that quality, but the K-500 also came about as close to delivering the skin-massaging effect of a large speaker system as is possible with headphones.

Many phones that have very appealing sound are marred by excessive weight or bulk or simply don't fit the head as they should. The AKG K-500 was about as comfortable a headphone as I have worn. Appreciably lighter than most phones with any claim to high-fidelity performance, it was altogether easy to wear for long periods.

Although the AKG K-500 is a truly circumaural phone, because of the perforations on the back of the earpieces it provides no isolation from ambient sound, appearing to be totally transparent to external noises. The reverse effect is also true, but it is not as noticeable. If you are wearing these phones and listening to something at a fairly high volume, others around you will share in the experience but will not be able to appreciate the overall sound quality that envelops you.

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**DCM TimeWindow Three Loudspeaker System**

Julian Hirsch, Hirsch-Houck Laboratories

Since its founding nearly twenty years ago, DCM Corporation has concentrated on designing loudspeakers whose acoustic output is as "time coherent" as possible in order to create stable, well-defined stereo images over a wide listening area. Heading DCM's current product line is the TimeWindow Three (TW3) floor-standing system.

The TW3's radiation pattern is separately controlled in two directions, respectively angled toward the center of the listening area and outward toward the sides of the room. The floor-standing cabinet has a roughly triangular cross section. Its speaker panels—identified as "direct field" and "ambient field"—and their drivers are angled at 112 degrees to each other, with their apex facing the listening area. The rear of the triangle is curved, with the input terminals at the bottom and three knob controls at the top. The terminals are jacks that accept single or dual banana plugs; the speakers are supplied with matching single plugs.

The two speakers are constructed as mirror images of each other, with their direct-field panels facing inward toward the listening area and ambient-field panels facing toward the sides of the room. The output from the ambient-field panels is reflected from...
the walls, while the signals from the direct-field panels reach the listeners by the shortest route to establish the placement of the sound images.

The exterior of the cabinet, except for its finished oak top and bottom plates, is covered by a tightly fitting black cloth sleeve. According to information supplied with the speakers, each TW3 has an 8-inch woofer in a ported transmission-line enclosure, a 6½-inch midrange driver, and two ¾-inch dome tweeters with antidiffraction lenses. The cloth grille is not removable, but DCM indicates that the inward-facing "direct" system consists of a tweeter mounted coaxially with the midrange driver near the top of the panel, while the "ambient" system has a tweeter mounted coaxially with the woofer at the top of the panel and the woofer port near the bottom.

DCM says the TW3's spatial-imaging characteristics are dependent on the relative levels and frequency responses of its direct and ambient outputs. The control knobs on the speakers' back panels have a very limited adjustment range, and their optimum settings must be determined by critical listening. Two of the controls affect the relative amounts of high- and mid-frequency distribution in the room, with each having a total adjustment range of only 3 dB. The third control (tweeter level) affects only frequencies from 6,000 to 18,000 Hz and has a range of 2 dB.

The DCM TimeWindow Three measures 39 inches high, 17 inches wide, and 12 inches deep, and each speaker weighs 45 pounds. The rated system sensitivity is 90 dB sound-pressure level (SPL) at 1 meter with a 2.83 volts of full-band pink-noise input, and its nominal impedance is 8 ohms. The usable power-input range is specified as 5 to 400 watts. The frequency response (nonanechoic) is given as 24 to 18,000 Hz ± 3 dB (this appears to be the summed output from the two speakers with the microphone on the center listening axis). Price: $1,499 a pair. DCM Corporation, Dept. SR, 670 Airport Blvd., Ann Arbor, MI 48108.

Lab Tests
We measured the room response of the two DCM TimeWindow Three speakers by averaging their outputs from a sweeping warble-tone signal, using a single microphone position on the forward axis of the left speaker, about 30 degrees off the axis of the right speaker, and 12 to 15 feet from them. The response curve showed virtually no directional effects up to its 20,000-Hz limit (there were the usual room interactions below 1,000 Hz). Response was almost perfectly flat from 400 to 1,500 Hz. There were 6-dB dips at 2,200 and 10,000 Hz, but the room response was otherwise flat up to 20,000 Hz.

In our close-miked bass-response measurement, the combined woofer and port output reached its maximum (within 1.5 dB) from 50 to 130 Hz, falling off at 6 dB per octave at lower and higher frequencies. The acoustic crossover between the cone and port appeared to be at 80 Hz. It was difficult to splice the low-frequency curve to the room curve because of room effects that made the transition ambiguous, but there was little doubt that the useful response went down to at least 30 Hz—very creditable performance for a single 8-inch woofer.

The system's impedance dipped to 3.6 ohms at 130 Hz and about 3.4 ohms at 20,000 Hz, with a maximum of 14 ohms at 1,500 Hz. Sensitivity of a single speaker system measured 87 dB SPL with a 2.83-volt input, consistent with the manufacturer's 90-dB measurement with both speakers operating. At 4 volts input, corresponding to a 90-dB SPL output, the woofer distortion was about 1 percent from 100 to 500 Hz. At lower frequencies, where the port output was dominant, the port distortion was less than 1 percent down to 40 Hz, increasing to 2.5 percent at 30 Hz and 5 percent at 20 Hz.

We checked the TW3's power-handling ability with single-cycle toneburst signals. At 100 Hz, the woofer cone bottomed with 1,200 watts input to its 5-ohm impedance. At 1,000 and 10,000 Hz, the measurement was limited by the driving amplifier, which clipped at 350 watts into 14 ohms and 800 watts into 4 ohms, respectively.

Comments
The sound stage created by the DCM TimeWindow Three speakers was exceptionally realistic. DCM points out that these speakers can be listened to from a nearby position with good results, yet they will present a stable stereo image over a wide range of locations.

Imaging tests using the Chesky J37 CD confirmed the stability of the sound stage created by these speakers. Whether we stood or sat on the center line between the speakers or in front of one of them, and at almost any distance, the sound came from where it was supposed to. Listening up close, which one would not expect to do with speakers the size of these, did not alter the apparent placement of the sound source—except in one completely natural way. Close listening, especially to orchestral music, resulted in the brighter, more immediate sound character one expects sitting close to an orchestra, along with the wider angular spread that would result from a wide sound source heard close up.

Moving back gave the effect of moving back in the auditorium, with a slightly reduced brightness that would be consistent with a more distant sound source. By sitting in a chair with casters, I could move forward and backward and appreciate the way the spectral balance remained consistent with my distance from the (simulated) orchestra.

The manufacturer's suggestions for trimming the three level controls on the back of the speakers make it plain that this is not something that can be done casually. Frankly, I found the changes, though audible (especially with a pink-noise signal), to be entirely too subtle to warrant the investment of time it would have taken to optimize the speakers in my room, though someone expecting to live with the speakers for a long time might feel differently. The speakers arrived with all the knobs set counterclockwise, and they remained that way during most of our listening tests as well as during our measurements.

Apart from its spatial qualities, the DCM TW3 had a very smooth, well-balanced sound with no significant emphasis or lack in any part of the frequency range. It was highly listenable from anywhere in the room (as this is being written, I am only about 1 foot from the right speaker, listening to a string quartet, yet I am getting a good sense of the overall performance, including its spatial distribution). The TimeWindow Three is an outstanding loudspeaker and definitely worth listening to if your budget extends that far—and even if it doesn't.
The Most Economical Of Adcom's Award-Winning, Best Selling, Critically Acclaimed Amplifiers Is...
Adcom has built its reputation on building a family of amplifiers which has consistently outperformed components costing two and three times as much. The breakthrough GFA-555 "...went on to become one of the best-selling amplifiers of all time"* and is now available as the improved GFA-555II. The new GFA-545II follows in the footsteps of the ever-popular GFA-545. And, the 300 watt GFA-565 mono amplifier continues to astound serious music lovers with its awesome display of pure power.

Now, following the success of the value-packed GFA-535, Adcom introduces its new 60-watt-per-channel GFA-535II. Although its power rating is conservative, its ability to provide pure, distortion-free performance is no small wonder. And, its power output may be considered more than adequate for most home applications using loudspeakers of at least moderate efficiency.

The Adcom Hallmark Of High Current Output

A major factor contributing to the superior performance of all its amplifiers is Adcom's understanding of the benefits derived from high current output design. The ability to deliver large amounts of current instantaneously and continuously into varying load conditions is a true test of an amplifier's performance. In fact, it is this demanding condition of varying impedances and reactive loads that causes most other amplifiers to become unstable and shut down. Adcom high current amplifiers, on the contrary, are designed to cope with these real-life conditions and perform without stress.

Specifically, the Triple-Darlington output stage of the GFA-535II is designed to reduce the effects of speaker impedance variations thereby minimizing
distortion throughout the entire audio spectrum even when driving difficult speakers.

While the GFA-535II is the smallest of the Adcom family, it shares the same high-current design philosophy that has made its bigger brothers so highly respected.

Additionally, by taking advantage of direct coupling, Adcom eliminates the use of coupling capacitors and their inherent tendency of introducing subtle, but detectable distortion. Its circuitry also keeps the damping factor high at all frequencies, lowers phase shift and improves performance into all speakers systems including electrostatics.

**Keeping Cool Even Under The Most Difficult Conditions**

The cooler an amplifier operates, the longer its life will be. Over time, excessive heat build-up causes component values to change, if not break down.

The new Adcom GFA-535II incorporates several improvements designed to minimize heat build-up. Larger heat sinks for each channel increase heat dissipation while improving dynamic bias tracking. Greater overall thermal stability has been achieved.

More cooling vents on the top cover and chassis also contribute to the GFA-535II's cooler operation, even when driving speakers of lower impedances.

Sustained and excessive high power operation may activate a thermal overload protection circuit which will be indicated by an LED on the front panel. When the GFA-535II cools to a safe temperature, its operation is automatically restored. This protection feature assures the continued, long life of the GFA-535II.

*Stereophile, October 1990* (Over please)
Details You Can Hear

Many other refinements have been incorporated into the new GFA-535II to improve its performance and make it an even better value.

Higher grade power supply filter capacitors have been utilized to provide greater power delivery at low frequencies and lower distortion.

A new servo circuit reduces DC voltage at the output. This minimizes woofer cone offset with no signal present, which not only can degrade short term speaker performance, but can reduce their life expectancy because of higher voice coil temperatures.

Even the smallest details are considered important at Adcom. Higher quality, gold-plated input jacks feature Teflon insulators for quieter, dependable source connections. Upgraded gold-plated binding posts make speaker hookups easy, secure and loss-free.

The Adcom GTP-400 Tuner/Preamplifier and GFA-535II has been called the "Cure for the Common Receiver." This combination offers all the advantages of Adcom separate components for about the price of a common receiver.

The Adcom GCD-575 CD Player with Remote Control is a perfect complement to your Adcom music system.

The Adcom GTP-500II Remote Control Tuner/Preamplifier offers superior performance and the convenience of remotely controlling your music system from different rooms.

More Sound, Less Money

All Adcom components are known for their high value, consistently offering superior performance at a reasonable cost. The GFA-535II is perhaps the finest example of Adcom's ability to deliver extraordinary value. Sharing many of the technical breakthroughs of Adcom's bigger models, the GFA-535II provides the remarkably lifelike sound of Adcom, yet at a moderate power level.

The GFA-535II is perfect for those who appreciate state-of-the-art performance and do not require high power levels. For a minimum investment, it is a popular entrée into the world of high-end audio.

Specifications
(to FTC Requirements)

Power output, watts/channel, continuous, 20 Hz - 20 kHz:
- 8 ohms/60
- 4 ohms/100

Signal-to-noise ratio, A-weighted:
- 60 watts into 8 ohms: >110 dB

Input impedance: 100,000 ohms

Input sensitivity:
- 60 watts into 8 ohms: 0.97 V rms
- 1 watt into 8 ohms: 130 mV rms

Damping factor (20 Hz - 20 kHz): >180

Dynamic headroom into 4 ohms: 3.0 dB

Chassis dimensions: 3" (76mm) x 17" (432mm) x 11 1/4" (286mm)

Maximum dimensions: 3 3/8" (86mm) x 17" (432mm) x 12 1/2" (317mm)

Shipping weight: 23 lbs. (10 1/2 kg)

Available options:
- RM-3 rack mount adaptors
- White front panel

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EVERY February for over two decades, the editors and critics of STEREO REVIEW have announced their choices for the top twelve albums of the year, both pop and classical. You’ll find our choices for 1991 on the next two pages, along with an additional twenty-four releases cited as honorable mentions. The winners, as always, were chosen on the basis of musical interest, quality of performance, and sonic excellence. On the pop side, we are pleased this year to be able to honor artists who have not sold large numbers of albums (Sonny Sharrock, Pere Ubu) as well as those who more often go Platinum (Bonnie Raitt, R.E.M.). We are also pleased to present a Special Achievement Award to composer and conductor Leonard Bernstein’s own recording of his Candide. Like its creator, this unique work defies categorization, except perhaps as a truly American musical expression. There’s no doubt, however, that its blend of popular and classical idioms makes it an extremely apt choice as “the best of all possible” recordings this year.

Steve Simels and Robert Ripps
SHIRLEY HORN
You Won't Forget Me
Verve. "A musical experience you won't forget."

SCHOENBERG
Gurrelieder
Soloists, choruses, Berlin Radio Symphony, Riccardo Chailly conducting. LONDON. "Shaped like a first-rate dramatic production."

R.E.M.
Out of Time
Warner Bros. "No faith is needed to get the music."

MOZART
Concertos for Two Pianos; Fantasia in F Minor; Andante and Variations in G Major
Murray Perahia, Radu Lupu, English Chamber Orchestra, SONY CLASSICAL. "Treasurable."

CORIGLIANO
Symphony No. 1
Chicago Symphony, Daniel Barenboim conducting. ERATO. "A triumph."

BEETHOVEN
Fidelio
Jessye Norman, Reiner Goldberg, Kurt Moll, Staatskapelle Dresden, Bernard Haitink conducting. PHILIPS. "Vigorous, tasteful, and thoughtful."

SCHIRLEY HORN
You Won't Forget Me
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R.E.M.
Out of Time
Warner Bros. "No faith is needed to get the music."

BONNIE RAITT
Lack of the Draw
CAPITOL. "Marvelously expressive, earthy music."

RED, HOT + BLUE
A Tribute to Cole Porter to Benefit AIDS Research and Relief
CHRYSALIS. "A generous act of synthesis, perhaps even a cultural milestone."

SONNY SHARROCK
Ask the Ages
AXIOM. "Moves quickly from beautiful melodies to controlled, almost mathematical solos to raw, keening free-for-alls."
SMETANA
Má Vlast
Czech Philharmonic, Rafael Kubelik, conducting. SUPRAPHON. “Gripping.”

BARBER
Symphony No. 1; Piano Concerto; Souvenirs
John Browning, Saint Louis Symphony, Leonard Slatkin conducting. RCA VICTOR. “Blazing virtuosity.”

PERE UBU
Worlds in Collision
MERCURY. “Colorful, evocative music with a light dose of surrealism.”

THE KENTUCKY HEADHUNTERS
Electric Barnyard
MERCURY.

BERNSTEIN
Candide
Soloists, London Symphony Chorus and Orchestra, Leonard Bernstein conducting. DEUTSCHE GRAMMOPHON. “A honey of a performance.”

SPECIAL ACHIEVEMENT

HONORABLE MENTIONS

BEETHOVEN
Symphony No. 3 (“Eroica”); Leonore Overture No. 3
NDR Symphony, Günter Wand cond. RCA VICTOR.

BRAHMS
A German Requiem
Soloists, Monteverdi Choir, Orchestre Révolutionnaire et Romantique, John Eliot Gardiner cond. PHILIPS.

GARTH BROOKS
No Fences
CAPITOL.

DEBUSSY
Pelléas et Mélisande
Soloists, Montreal Symphony Chorus and Orchestra, Charles Dutoit cond. LONDON.

ROY HARGROVE
Public Eye
NOVUS.

ROBYN HITCHCOCK
Perspex Island
A&M.

ROBIN HOLCOMB
Elektra/Asylum

HUMPERDINCK
Hänsel und Gretel
Soloists, Symphonie-Orchester des Bayerischen Rundfunks, Jeffrey Tate cond. EMI/ANGEL.

IVES
Country Band March; Four Ragtime Dances; Calcium Light Night; Three Places in New England; other works
Orchestra New England, James Sinclair cond. KOCH INTERNATIONAL.

THE LA’S
Go/LONDON.

MAHLER
Symphony No. 8; Symphony No. 10, Adagio
Soloists, choruses, Vienna Philharmonic.

MAURA O’CONNELL
A Real Life Story
WARNER BROS.

MURRAY PERAHIA
The Aldeburgh Recital
SONY CLASSICAL.

ROSSINI
Cantata, Giovanna d’Areo; Songs
Cecilia Bartoli, Charles Spencer. LONDON.

SCHUMANN
Piano Concerto; Solo Piano Pieces
Thomas Lorango, New Brandenburg Collegium, Anthony Newman cond. NEWPORT CLASSIC.

SCHUMANN
Symphonies Nos. 1 and 4
London Philharmonic, Kurt Masur cond. TELDEC.

MATTHEW SWEET
Girlfriend
ZOO.

RICHARD THOMPSON
Rumor and Sigh
CAPITOL.

VERDI
I Vespri Siciliani
Soloists, Chorus and Orchestra of La Scala, Riccardo Muti cond. EMI/ANGEL.

BERNARD MARSHALL
The Beatiful Ones Are Not Yet Born
COLUMBIA.

KATE & ANNA
McGARRIGLE
Heartbeats Accelerating
PRIVATE MUSIC.

JONI MITCHELL
Night Ride Home
GEFFEN.

MOZART
Arias
Cheryl Studer, Academy of St. Martin in the Fields, Neville Marriner cond. PHILIPS.

ROSSINI
Cantata, Giovanna d’Areo; Songs
Cecilia Bartoli, Charles Spencer. LONDON.
How to make your compact discs last a lifetime

Are you guilty of CD abuse? You could be, without even knowing it, seriously threatening the life of your music collection. But you shouldn’t feel guilty—it’s not all your fault. No, it’s not your parents’ fault either. The brunt of the blame should be borne by those who initially touted the compact disc as a virtually indestructible music storage medium. This estimation was somewhat overoptimistic.

To paraphrase the old “Do magic at home” TV ad, destroying a compact disc is easy once you know the secret. It involves compromising the lacquer coating on the label side of a CD, which seals in the aluminum reflective layer that renders readable the millions of pits that carry the digital information. Cracks in the lacquer allow in oxygen, which oxidizes the aluminum, which makes the CD unplayable, which leaves you with a Christmas-tree ornament.

But don’t despair. Cared for properly, a CD should last indefinitely. Diligently follow the “do’s” shown here, avoid the “don’t’s” like the plague, and save your hard-earned music collection for posterity.

Do lift the CD from its jewel box with care, pressing the spindle to release it and lifting from the rim without touching the disc’s surface.

Don’t bend the disc when lifting or holding it. Persistent bending of a compact disc can eventually lead to cracks in its protective coating.

By Glenn Kenny
DO hold the disc firmly at the rim or with your thumb in the hole and one finger on the rim. Again, keep your fingers off the disc's surface.

DON'T put your hands all over the disc when carrying it, and always be sure to keep foreign matter of any kind away from its surface.

DO clean the disc with a lint-free cloth, wiping gently in a radial motion from the center of the disc out to its edge.

DON'T wipe discs in a circular motion (CD care isn't LP care), and don't use linty cloths—the lint could end up on your CD player's lens.

DO keep CD's in a disc wallet or their jewel boxes if you travel with them. Having a solid surface to rest on is essential to maintaining a disc's health.

DON'T carry discs in an unprotected stack, rubbing up against each other, which can damage them in a number of ways, all of them serious.

DO replace your CD's in their jewel boxes when you're through listening to them, pressing them firmly onto the center spindle as shown.

DON'T leave your CD's scattered around where they can fall prey to dust, smoke, and other environmental hazards typical of home life.
In 1986, Yamaha developed what many industry experts consider the most significant audio advancement since stereo. We're referring to Digital Soundfield Processing.

Digital sampling of actual soundstages to recreate the same acoustic environments you once had to go out to enjoy.

Now this remarkable technology is available in an audio/video receiver: The one you see before you: Yamaha's new RX-V1050.

The RX-V1050 has four DSP settings, in fact: Concert Video, Mono Movie, Rock Concert and Concert Hall.

But what may ultimately be more exciting is something no other receiver can offer: Dolby Pro Logic Enhanced. A technical feat which combines DSP and Digital Dolby Pro Logic.

An incredible enhancement which allows you to enjoy all the sonic information embedded in the movie soundtrack, as well as the acoustics of the theatre, all without leaving the house.

Under the hood, the RX-V1050 sports five power amplifiers—110-watt amplifiers for the left, right and center front channels, and 30-watt amplifiers for each of the rear effects channels.

A high-powered center channel combined with Yamaha's DSP and Digital Dolby Pro Logic enables Yamaha's RX-V1050 receiver to recreate the experience other receivers have promised, but have never quite delivered.

Stop by your nearest Yamaha dealer and hear the new RX-V1050 receiver. The best argument for staying home anyone's ever come up with.

Yamaha

The only receiver that can make your home theatre sound as good as the original.
WE'RE never satisfied. Even though many of us have stereo systems that normal human beings would kill for, we still pore over hi-fi magazines and stare drooling into store windows, dreaming of ways to make our systems sound just a little bit better. Most of the dreams have to do with a bigger amp, or better speakers, or a more elaborate CD player, all of which cost money. But there are ways to spruce up a system's performance without replacing major parts of it or adding new components, and often taking a few simple steps lets you postpone serious upgrading until it's financially convenient. The procedures outlined here won't flatten your wallet, but they might improve your sound.

**Find the Right Location**
Where you place your equipment can have an effect on how it performs, so some fiddling with new positions may yield immediate sonic benefits. Your FM tuner or receiver, for instance, may be susceptible to radio-frequency interference from your CD player; putting some distance between the two components often clears this up (if not, turn off the player when you're listening to FM).
And if your system is plagued by hum or other extraneous noises, rearranging your cables may be the cure.

Loudspeakers are especially sensitive to placement. In any room, what you hear is a mixture of the direct sound from the speakers and a complex "soup" of reflections from the walls, ceiling, and floor. Most of these reflections add a sense of spaciousness, but the near-field reflections from surfaces close to the speakers can combine with the direct sound to produce a new sonic character. Such reflections are excited by the speaker's off-axis radiation, which is rarely as smooth as the on-axis sound, so the combination can be pretty ragged. Shifting your speakers even a few inches may result in a dramatic improvement, so experiment. It's worth it.

By the same token, bass performance can be profoundly affected by the positions of the speakers and the listener relative to each other and to the room boundaries. Again, even slight adjustments can yield major audible gains.

**Clean Up Your Act**

If you haven't done it for a while, the audible improvement that results from cleaning the heads in your cassette deck will be immediately obvious. Heads can pick up oxide particles from tape, and the buildup of these particles will eventually interfere with high-frequency performance, so regular cleaning is a must. And although it won't actually improve sound, periodic head demagnetization will prevent after-the-fact degradation of your existing recordings.

Some audiophiles assiduously polish their CD's and clean the laser lenses in their players as well. There's no harm in this, but things have to be in very bad shape indeed before you can expect to hear an audible improvement. Not so with vinyl—keeping fuzzballs off the stylus and grit off the disc surfaces will pay obvious dividends.

**Patch and Polish**

Most of the minor things that go wrong with audio systems happen between the components, so it only makes sense to lavish some attention on the cables that join things together. If wiggling a patch cord causes crackles or intermittent hum, replace it. If the plugs are a bit loose, they can be cramped slightly with pliers.

More insidious is the gradual increase in noise that can occur because of oxide buildup on either the plugs themselves or the jacks they are connected to. This buildup is inevitable over time with aluminum, of which most connectors are made, but it can often be cured by merely unplugging and replugging the connections a few times. Better still, use some fine sandpaper or contact cleaner on the jacks and plugs. Contact cleaner is also often useful for ridding control knobs and switches of crackles and, in extreme cases, intermittent contact.

**Flatten the Response**

A system's equalizer—whether simple bass and treble controls or a more complicated multiband component—can be useful for tailoring sound to a particular environment, but equalization is easy to overdo. And as we accustom ourselves to the sound we have, it's fairly common to push the controls just a bit more from time to time. Ultimately, we often build substantial peaks or valleys into the response curve that, although sometimes pleasant, could hardly be considered accurate. Every so often, therefore, it's a good idea to return everything to the "flat" position and listen to it that way long enough to become accustomed to it. Then listen carefully for problems in response, if any, and compensate only for those. The sound may seem a bit less dramatic at first, but the fidelity will be higher.

**Keep It on the Level**

A turntable is perhaps the most delicate device in most systems, and its many adjustments can gradually get out of whack. Periodically, it's wise to recalibrate everything as if you were setting up for the first time. Take particular care with stylus tracking force and antiskating, as these can materially affect the ability of the stylus to retain good—and equal—contact with both groove walls. And check that the turntable is level by placing a small spirit level on a disc on the platter and slowly turning it to make sure it is level in all directions. If it isn't, rotate the turntable's adjustable feet, if it has them, or use slips of paper to prop up the low side.

You may also want to try repositioning your turntable to reduce acoustic feedback from low-frequency standing waves. In extreme cases feedback can build up into an unbearable roar, but even if that doesn't happen, it can still cause unnatural bass reproduction. Shifting the turntable just a few inches can make a difference.

**Close the Doors**

A long-term bit of prevention is to keep dust and dirt as far away from your equipment as possible. Covering your components when they're not in use, or keeping them behind closed doors in a cabinet that seals fairly tightly, won't yield immediately audible gains, but it will prevent gradual degradation caused by foreign material that might creep into switches, controls, moving turntable and cassette-deck parts, and the like. It also looks better. Just make sure that the equipment is adequately ventilated when you are using it.
Upgrade Your Reception
The FM radio signals most of us listen to are notoriously hard to pull in: They're either so weak as to be lost in noise, or they bounce around from building to building, causing multipath distortion. Often we're not aware of minor reception problems until they go away, so it's worthwhile to try out some alternatives even if the reception seems okay. In many systems, the only antenna required is the T-shape wire dipole supplied with the tuner or receiver, but its effectiveness is dependent on orientation. Experiment with it in different positions to increase signal level and reduce multipath distortion. If that doesn't help, a directional or powered indoor antenna may provide a clean signal; otherwise a rooftop antenna might be the only answer. Or you could ignore all of that and simply hook into your cable-TV company's FM service, if it has one.

Strike a Match
For anyone who makes tape recordings regularly, matching recorder and tape is crucial. All tapes differ, and optimal performance is possible only if the recorder's bias is adjusted precisely for the tape in use. If your deck has a continuously variable bias trim (rather than the usual three-position bias switch), learn how to use it, and do so with every tape you record. If this facility is not offered on your deck—it seldom is on budget models—it's worth a few bucks to have a service facility adjust your machine for one specific current tape, then use that tape exclusively, at least for critical recordings. The bias should be readjusted every few years, even if you keep using the same tape, as tape manufacturers often alter formulations slightly without changing the designations.

Keep Proper Audio Files
The sound your equipment produces is only as good as the material it has to work with, so take care to store your precious recordings in a manner that will preserve them. Cassettes, for instance, should be kept away not only from heat and cold but also far from stray magnetic fields. Don't pile tapes on a speaker or TV set, and make sure any cupboards they are in don't have magnetic catches. Keep them in their boxes, and if they are not likely to be used again for some time, play them all the way through and don't rewind them. That way, the tapes will be packed smoothly, with no protruding edges.

Compact discs can be stored for short periods in special multicompartment caddies or in changer magazines. For longer periods, however, they should be kept in their jewel boxes and stored on edge, away from extremes of temperature. LP's should be stored vertically as well, with plastic liners inside the sleeves. Pack them fairly tightly for support, but don't cram them together enough to distort the plastic.

Replace Your Stylus
Eventually, any phono stylus will wear. Sound quality will gradually go down and the risk of damage to your LP's will rise. As vinyl records become harder to replace, and as the range of equipment available to play them dwindles, it makes sense to get a replacement stylus, or maybe a whole new cartridge, even if the one you have now still sounds fine. The health of your vinyl record collection will depend on a pristine stylus in the future, but you may not be able to find an appropriate replacement in the coming years.
Take 1 football field, multiply it 19 times, add over 1,000 exhibitors, throw in over 15,000 products, open it to the public, and you have the 1 show to see.

For 25 years, the Consumer Electronics Show has been the place to see the latest, most exciting consumer electronic products. Now, for the first time, it's open to you—the consumer. You'll see the latest in BITS, BYTES, DCC, DAT, CDTV, PC, CD-I, FAX, MIDI, VCR & LCD. Simply call 1-800-388-6901 for information to qualify for 2 free tickets. Join us at McCormick Place this summer. You'll recognize it. It's the building that's 19 times larger than a football field.

CONSUMER ELECTRONICS SHOW
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Whether you’re buying your first CD player, replacing speakers you bought in college, or assembling a full-blown reference system, it pays to scope out your options before confronting that imposing wall of components in your local stereo shop. Does the equipment in question offer the best combination of performance, features, size, and price for your unique listening habits?

Our buying guide is a good starting point, providing specifications, features, and prices for a wide range of audio components, from CD players to turntables (yes, you can still buy record-playing equipment), from high-power separate amplifiers to multi-channel audio/video receivers, from subwoofer/satellite speaker systems to floor-standing towers to electrostats. The listings are necessarily very selective, concentrating on representative models in the main categories of equipment from companies whose products are widely distributed. (Tape recorders and blank tape will be covered in future issues.) If a particular model or brand does not appear in this guide, that does not reflect on its quality.

All information was provided by the manufacturers, and prices that are given are suggested retail (“list”) prices; actual selling prices may vary. For more information, contact the manufacturers (see address list on page 118) or their authorized dealers. Happy hunting.

—Bob Ankosko
ACOUSTIC RESEARCH
X-07 70-W/ch A/V Receiver
Features AV dubbing; close-tolerance metal-film resistors and film capacitors, concealed bass, midrange, treble, balance, loudness, mono tape, VCR, tuning, and speaker controls. 8 AM/8 FM station presets; 7 inputs including gold-plated mm/ MC phono inputs. Amp: 70 W x 2 cont avg into 8 ohms from 20-20,000 Hz with 0.03% THD or 80 x 2 into 4 ohms; SN: 100 dB, FM: Tuner: 50-AM/50-B band tuning; quieting sens 37.2 dB stereo; SN: 80 dB mono, 75 dB stereo at 65 dB, THD 0.3% stereo; cap ratio 1.0; AM rej 60 dB, all-ch sel 70 dB. 17 x 3 3/4 x 15 1/2 in; 25 lb. $800

DURAN & OLUFSEN
Beonmaster 6500 50-W/ch Receiver
AM/FM receiver that integrates with Beosystem 7000 system controller; powerlink connectors to supply audio and digital data for B&O’s Beolab powered speakers; frequency-synthesis tuning with 20 station presets. Amp: 50 W x 2 into 8 ohms with 0.9% THD; FR 20-20,000 Hz ±1.5 dB; in 0.1%; SN: 78 dB phono, 80 dB tape. Tuner: 50-AM/50-B band tuning; quieting sens 40 dB; SN: 70 dB; THD 0.2%; in 0.1%; cap ratio 1.7; adj-ch sel 10 dB, adj-ch sel 70 dB; AM rej 57 dB; ch sep 45 dB. White/black with polished aluminum. 16 5/8 x 2 3/16 x 19.3 lb. $3,000

CARRERA
CH-2530 30-W Receiver
AM/FM receiver featuring headphone jack with level control. Amp: FR 20-20,000 Hz; THD 0.25%. Tuner: 50-AM/50-B band tuning; quieting sens 38 dB stereo; cap ratio 1.7; adj-ch sel 38.6 dB. 13 lb. $200

CARVER
The following receivers feature Carver’s Sonic Hologram Generator, an analog ambience- and image-enhancement circuit.

HR-772 140-W Receiver
AM/FM receiver. Features asymmetrical charge-coupled FM circuitry; 5 audio inputs; 2 video programming and control settings; 3 video and 6 audio inputs; A/B speaker outputs. 30 AM/FM presets; wireless remote control. $500

DENON
DRA-1035R 130-W/ch A/V Receiver
AM/FM receiver with optical Class A amplifier circuitry. Features pure-current power supply; video switching; simulcast copy function and simulcast-stereo circuitry; switchable wide/narrow FM IF bandwidth; variable loudness control; source-direct switch; separate input and record-out selectors; remote speaker switching; pre-out/main-in jacks; 7 audio and 3 video inputs. FL tuning/status display; 40 station presets; seek, preset-scan, and manual-step tuning; last-station memory; connection for RC-615 system remote; RC-770 LCD programmable remote control. 130 W x 2 into 8 ohms from 20-20,000 Hz with 0.015% THD; SN: 75 dB MC; 92 dB MM; 103 dB lin. FM tuner: 50-AM/50-B band tuning; quieting sens 37.3 dB stereo; cap ratio 1.3 dB; SN: 82 dB stereo at 1.0 Hz. $1,000

AVR-810 265-W A/V Receiver
5-channel AM/FM receiver. Features Dolby Pro Logic decoder with 7 surround modes; digital delay adjustable from 0 to 40 ms in 5-ms steps; 3-S/v inputs; 2 video outputs; 5 video inputs; 9 video outputs; 9 audio inputs; 8 audio outputs; rear-panel preamp outputs; mono subwoofer output; front-panel preamp inputs; auto-input balance. FL FR front-panel display; 16 AM/FM presets; last-station memory; programmable remote control. 80 W x 2 + 35 x 3 (center, rear) into 8 ohms. FM tuner: 50-AM/50-B band tuning; quieting sens 38.5 dB stereo; SN: 75 dB stereo; THD 0.2% stereo. $750

AVR-610 205-W A/V Receiver
5-channel AM/FM receiver. Features Dolby Pro Logic decoder with 6 surround modes; digital delay adjustable from 0 to 40 ms in 5-ms steps; 3 video inputs; 2 video outputs; 6 audio inputs; 4 audio outputs; rear-panel preamp outputs; front-panel dubbing inputs; auto-input balance. FL FR front-panel display; 16 AM/FM presets; last-station memory; programmable remote control. 55 W x 3 (front left, center, and right) + 20 x 2 (rear) into 8 ohms. FM tuner: 50-AM/50-B band tuning; quieting sens 38.5 dB stereo; SN: 75 dB stereo; THD 0.2% stereo. $600

DRA-455R 55-W/ch A/V Receiver
AM/FM receiver. Features all-discrete amplifiers; oversized power transformer; electronic switching; bass EQ circuit; low-imp capability. Variable loudness control; 16 station presets; last-station memory; video terminals. 55 W x 2 into 8 ohms from 20-20,000 Hz with 0.05% THD; SN: 78 dB MM. 95 dB line. FM: cap ratio 1.5 dB; SN: 78 dB stereo; THD 0.15% stereo; SN: 55 dB. $350

DRA-355R As above, no video section. 40 W x 2 into 8 ohms with 0.05% THD. $280

DUAL
CH-5950RC 70-W/ch Receiver
AM/FM receiver. Features Class A amplification; digital quartz-synthesis tuning; brush metal housing; 6 inputs including phono; gold-plated phono and CD inputs. 16 nonvolatile AM/FM presets; FM stereo monitor, automatic station scan; bass, treble, balance, and loudness controls; motor-driven volume control; wireless remote control. 70 W x 2 cont avg into 8 ohms at 1,000 Hz or 130 W x 2 into 4 ohms; power bandwidth 10-70,000 Hz; SN: 75 dB phono, 95 dB line. Tuner: SN: 75 dB. Black anodized finish. $620

CR-9065RC 60-W/ch Receiver
AM/FM receiver. Features Class A amplification; digital quartz-synthesis tuning; matrix surround sound; 6 inputs including phono; gold-plated phono and CD inputs; banana/screw-type connections for 2 speaker pairs with AB switching. Switchable direct output; 40 station presets; auto/manual station scan; auto preset store; 4-character station naming; 2-color LCD; motor-driven volume control; bass, treble, balance, and loudness controls: wireless remote control. 60 W x 2 into 8 ohms or 75 x 2 into 4 ohms. Black finish. $480

FISHER
RS-627B 100-W/ch Receiver
AM/FM receiver with Class A-II circuitry. Features quartz-synthesis tuning; 24 presets; FM muting; source-direct switch; CD-record switch; 5-band graphic EQ; remote control with volume. 100 W x 2 into 8 ohms; FR 20-20,000 Hz; THD 0.05%; SN: 55 dB. $500

RS-646 300-W A/V Receiver
5-channel AM/FM receiver. Features Class A-I circuitry; Dolby Pro Logic decoder with 3-channel amplifier; 7-band graphic EQ; 8 inputs with A/V switching; 30 station presets with auto scan; motor-driven volume control; on/off switch; 4-function universal remote control. 120 W x 2 + 20 x 3 into 8 ohms; THD 0.05%. Tuner: 50 dB quieting sens 41.2 dB stereo; cap ratio 1.5 dB; all-ch sel 55 dB; 17% x 5½ x 13½ in. $450

RS-615B 60-W/ch Receiver
AM/FM receiver. Features 5-band graphic EQ; 24 AM/FM presets; auto scan; FM muting; loudness switch; FL display; remote control. 60 W x 2 into 8 ohms; FR 20-20,000 Hz; THD 0.09%. $350

HARMAN KARDON
All receivers feature a digital-synthesis, quartz-lock AM/FM tuner with seek and remote control.

HK3600 75-W/ch Receiver
Dual tape and AV monitors; interactive video switching; programmable memory; 7-way tape-copy selector; 16 AM/FM presets. 75 W x 2 cont avg into 8 ohms with 0.09% THD. $799

HK3500 50-W/ch Receiver
2 tape monitors; 3 line-level inputs; subwoofer output; 7-way tape-copy selector; 16 AM/FM presets. 50 W x 2 cont avg into 8 ohms with 0.09% THD. $619

HK3400 35-W/ch Receiver
2 tape monitors; 2 line-level inputs; subwoofer output with level control; 16 AM/FM presets. 35 W x 2 cont avg into 8 ohms with 0.09% THD. $449

JVC
RX-1030VTN 370-W A/V Receiver
5-channel AM/FM receiver with symphony-hall, pavilion, stadium, live-club, church, and opera-house digital ambience modes; Dolby Pro Logic decoder; JVC 3 Stereo mode, room-size, front/center, back, and surround modes: Dolby stereo. $2,000
<table>
<thead>
<tr>
<th>Model</th>
<th>Receiver</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>RX-805VTN 290-W A/V Receiver</td>
<td>5-channel AM/FM receiver. Features Dolby Pro Logic decoder with adjustable digital delay, 7-band computerized graphic EQ, 5 EQ presets; 2 video inputs; connections for 2 speaker pairs. Stores presets for each program source and tuner preset; 40 AM/FM presets, programmable remote control. 100 W x 2 cont avg into 8 ohms; 10.0% THD at 1,000 Hz. FM tuner: 50 dB quieting stereo 38.3 dB, stereo 40 dB; cap ratio 1.5 dB; 171/8 x 61/6 x 13% in; 19 lb</td>
<td>$1,500</td>
</tr>
<tr>
<td>RX-505VTN 200-W A/V Receiver</td>
<td>4-channel AM/FM receiver. Features Dolby Surround decoder with adjustable digital delay; 5-band computerized graphic EQ with 5 EQ presets; 2 video inputs; connections for 2 speaker pairs. Stores presets for each program source and tuner preset; 40 AM/FM presets; remote control. 80 W x 2 cont avg into 8 ohms; 0.05% THD + 20 x 2 (rear) into 8 ohms at 1,000 Hz. FM tuner: 50 dB quieting stereo 38.3 dB, stereo 40 dB; cap ratio 1.5 dB; 171/4 x 51/4 x 15% in; 18 lb</td>
<td>$380</td>
</tr>
<tr>
<td>KR-V6030 230-W A/V Receiver</td>
<td>4-channel AM/FM receiver. Features Dolby Surround decoder; Dolby Time Link digital-delay system; app-amping circuitry; CD direct input; 2 sets of video inputs/outputs; 20 tuner presets; preset scan; multichannel remote capability;养 100 W x 2 or 75 x 3 (front left, right, center) + 15 x 2 (rear); FR 20-20,000 Hz: 0.05 dB; THD 0.006%. Tuner: 50 dB quieting stereo 38.2 dB, AM/REJ 65 dB; cap ratio 2.0 dB; 171/8 x 61/6 x 13% in; 27 lb</td>
<td>$599</td>
</tr>
<tr>
<td>KR-V6030 230-W A/V Receiver</td>
<td>4-channel AM/FM receiver. Features Dolby Surround decoder; Dolby Time Link digital-delay system; app-amping circuitry; CD direct input; 2 sets of video inputs/outputs; 20 tuner presets; preset scan; multichannel remote capability;养 100 W x 2 or 75 x 3 (front left, right, center) + 15 x 2 (rear); FR 20-20,000 Hz: 0.05 dB; THD 0.006%. Tuner: 50 dB quieting stereo 38.2 dB, AM/REJ 65 dB; cap ratio 2.0 dB; 171/8 x 61/6 x 13% in; 27 lb</td>
<td>$599</td>
</tr>
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<td>KR-V6030 230-W A/V Receiver</td>
<td>4-channel AM/FM receiver. Features Dolby Surround decoder; Dolby Time Link digital-delay system; app-amping circuitry; CD direct input; 2 sets of video inputs/outputs; 20 tuner presets; preset scan; multichannel remote capability;养 100 W x 2 or 75 x 3 (front left, right, center) + 15 x 2 (rear); FR 20-20,000 Hz: 0.05 dB; THD 0.006%. Tuner: 50 dB quieting stereo 38.2 dB, AM/REJ 65 dB; cap ratio 2.0 dB; 171/8 x 61/6 x 13% in; 27 lb</td>
<td>$599</td>
</tr>
<tr>
<td>R-341 35-W/A/V Receiver</td>
<td>AM/FM receiver. Features voltage-driven amplification with Duo-Delta feedback loop and Star topology; 150 ms partial risk shunt-out. Remote-out and main-in jacks; 4-way binding posts. Sleep timer: multi-room remote control. 35 W x 2 cont avg into 8 ohms: THD 0.05%. Tuner: 50 dB quieting stereo 14 dB mono, 38 dB stereo; cap ratio 1.5; all-ch sel 65 dB; 171/8 x 51/4 x 14% in; 17 lb</td>
<td>$450</td>
</tr>
<tr>
<td>MARANTZ SR-93 330-W Surround Receiver</td>
<td>5-channel AM/FM receiver. Features Dolby Pro Logic decoder with digital delay: 5 video inputs/outputs; AV inputs; front-panel camcorder input; 5 pre-out/main-in connectors: subwoofer output; connections for 9 speakers; satellite antenna inputs; 30 AM/FM presets; multiroom capability for 2 rooms; with optional kit; programmable remote control. 100 W x 2 or 70 x 1 (center) or 30 x 2 (rear) cont avg into 8 ohms: THD 0.09% from 20-20,000 Hz. Tuner: usable sens 13.5 dB; SN 68 dB stereo. Gold finish with side panels</td>
<td>$1,099</td>
</tr>
<tr>
<td>JENWOOD KR-A5030</td>
<td>38.2 dB stereo; AM/REJ 65 dB; cap ratio 2.0 dB. 171/8 x 51/4 x 13% in; 25 lb</td>
<td>$399</td>
</tr>
<tr>
<td>LUXMAN RV-371 290-W Surround Receiver</td>
<td>5-channel AM/FM receiver. Features Dolby Pro Logic decoder with simulated-surround modes and variable rear digital time delay: voltage-driven amplification with Duo Beta feedback loop and Star topology; 2-way AV Dubbing; S-video connectors; 11 AV inputs with separate record-out selectors, front-panel AV jacks; remote control. Amp: FR 20-20,000 Hz: 0.05 dB; THD 0.009% into 8 ohms; SN 77 dB, power 100 dB line. Tuner: 50 dB quieting stereo 38.2 dB, AM/REJ 65 dB; cap ratio 2.0 dB wide, 2.2 dB narrow. 171/8 x 51/4 x 11% in; 19 lb</td>
<td>$299</td>
</tr>
<tr>
<td>LUXMAN RV-371 290-W Surround Receiver</td>
<td>5-channel AM/FM receiver. Features Dolby Pro Logic decoder with simulated-surround modes and variable rear digital time delay: voltage-driven amplification with Duo Beta feedback loop and Star topology; 2-way AV Dubbing; S-video connectors; 11 AV inputs with separate record-out selectors, front-panel AV jacks; remote control. Amp: FR 20-20,000 Hz: 0.05 dB; THD 0.009% into 8 ohms; SN 77 dB, power 100 dB line. Tuner: 50 dB quieting stereo 38.2 dB, AM/REJ 65 dB; cap ratio 2.0 dB wide, 2.2 dB narrow. 171/8 x 51/4 x 11% in; 19 lb</td>
<td>$299</td>
</tr>
<tr>
<td>R-311 100-W/A/V Receiver</td>
<td>AM/FM receiver. Features voltage-driven amplification with Duo-Delta feedback loop and Star topology; S-video connectors; front-panel AV jacks; 11 AV inputs with separate record-out selectors. 2-way AV Dubbing capability; one-touch CD-deck synchro recording with select Luxman components; fixed-level preamp output jacks; remote control. 70 W x 2 + 50 x 3 (center) cont avg into 8 ohms; THD 0.05%.</td>
<td>$1,400</td>
</tr>
<tr>
<td>R-351 55-W/A/V Receiver</td>
<td>AM/FM receiver. Features voltage-driven amplification with Duo-Delta feedback loop and Star topology; S-video connectors; fixed-level preamp output jacks; 8-position record-out selector; one-touch CD-deck synchro recording with select Luxman components; 2-way dubbing capability, multichannel remote control. 55 W x 2 cont avg into 8 ohms; THD 0.05%. Tuner: 50 dB quieting stereo 14 dB mono, 38 dB stereo; cap ratio 1.5; all-ch sel 65 dB; 171/8 x 51/4 x 11% in; 19 lb</td>
<td>$650</td>
</tr>
</tbody>
</table>

**Kenwood KR-A5030**

**LUXMAN RV-371 290-W Surround Receiver**

**R-311 100-W/A/V Receiver**

**R-351 55-W/A/V Receiver**

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S-video inputs; center-channel subwoofer, and line-level outputs; gold-plated jacks. A/V rec selection, on-screen menu. 10-channel memory list menu. 125 W x 2 from 20-20,000 Hz with 0.05% THD + 25 x 2 from 50-10,000 Hz with 0.5% THD (rear) into 8 ohms. FM tuner: 50-dB quieting sensitivity 37.2 dB stereo; AM rej 60 dB; cap ratio 1 dB IHF; alt-ch sel 60 dB IHF. 16½ x 6½ x 15½ in; 27 lb. $1,399

M-R6030 200-W A/V Receiver 4-channel AM/FM receiver. Features Dolby Surround decoder with stadium, club, and theater modes; 20 ms rear-channel delay. 80 W x 2 from 20-20,000 Hz with 0.05% THD + 20 x 2 from 50-10,000 Hz with 0.5% THD (rear) into 8 ohms. FR 20-20,000 Hz +0, -0.5 dB; SN 100 dB; THD 0.1%; 50-dB quieting sensitivity 15.7 dB mono, 38.5 dB stereo; cap ratio 2 dB. 17 x 4 x 14½ in. $649

Receiver3 37-W Receiver Features isolated-ground topology; multiregulated power supply; quartz-locked frequency-synthesis PLL tuner; pre-out jacks. Multiroom control capability; motorized volume control; 10 AM/FM station presets; remote A/B speaker switching; system remote control. FR 20-20,000 Hz +0, -0.5 dB; SN 100 dB; THD 0.1%; 50-dB quieting sensitivity 15.7 dB mono, 38.5 dB stereo; cap ratio 2 dB. 17 x 4 x 14½ in. $649

NAD Model 7400 100-W/Ch Web Receiver Bridgeable AM/FM receiver with power-envelope circuitry. Features soft-clipping circuit; discrete 4-transistor phono preamp with MM/MC switch. 14 AM/FM presets; semiparametric tone controls; bass EQ; preamp-out/main-in loop. 100 W x 2 cont avg: dynamic headroom +5.7 dB. Rack mountable. $999

Model 7100X 60-W/Ch Web Receiver Bridgeable AM/FM receiver with power-envelope circuitry. Features soft-clipping circuit; discrete 4-transistor phono preamp with MM/MC switch. 14 AM/FM presets; bass EQ; preamp-out/main-in loop; remote control. 60 W x 2 cont avg... $749

Model 7000 40-W/Ch Web Receiver AM/FM receiver with power-envelope circuitry. Features soft-clipping circuit; discrete 4-transistor phono preamp with MM/MC switch. 14 AM/FM presets; bass EQ; preamp-out/main-in loop; remote control. 60 W x 2 cont avg... $799

Model 701 25-W/Ch Web Receiver AM/FM receiver with power-envelope circuitry. Features soft-clipping circuit; switchable phono/liner input. 20 tuner presets; infrared/repeater control/logic input for system remote; remote/ off volume; remote control. $349

NAKAMICHI Receiver 80-W/Ch A/V Receiver Features Harmonic Time Alignment amplifier circuitry: isolated-ground topology; multiregulated power supply; video buffer amp; quartz-locked frequency-synthesis PLL tuner; ceramic resonator multiplex section; isolation buffer at tuner output stage; pre-out/main-in jacks; 3 video inputs, 2 video outputs. Multiroom control capability; motor-driven volume control; 10 AM/FM station presets: remote A/B speaker switching, system remote control. FR 20-20,000 Hz +0, -0.5 dB; SN 100 dB; THD 0.1%; 50-dB quieting sensitivity 14.7 dB mono, 37.5 dB stereo. 17 x 4 x 14½ in; 24.3 lb. $949

Receiver2 55-W/Ch Receiver Features Harmonic Time Alignment amplifier circuitry: isolated-ground topology; multiregulated power supply; quartz-locked frequency-synthesis PLL tuner; isolation buffer at tuner output stage; pre-out/main-in jacks. Multiroom control capability; motorized volume control; 10 AM/FM station presets; remote A/B speaker switching; system remote control. FR 20-20,000 Hz +0, -0.5 dB; SN 100 dB; THD 0.1%; 50-dB quieting sensitivity 14.7 dB mono, 37.5 dB stereo. 17 x 4 x 14½ in; 24.3 lb. $949

NAD Model 7000 70-W Receiver Features digital-synthesis tuning; protection circuitry; switchable subsonic filter. 30 station presets; 2-way tape dubbing while listening to another source; video dubbing; alphanumeric display. 100 W x 2 into 8 ohms with 0.05% THD; FR 20-20,000 Hz +1 dB; SN 85 dB phone, 95 dB line. Tuner: AM FM, fixed control; FM sens 1.7 μV at 3% THD; cap ratio 2.5; SN 72 DB 17½ x 5½ x 15 in; 23.4 lb. $450

ONKYO TX-SV90 PRO 290-W A/V Receiver 5-channel AM/FM receiver with discrete outputs. Features Dolby Pro Logic decoder; hall and matrix surround modes; adjustable digital delay; simulated stereo; dynamic bass expander; 20 station presets with battery-free backup; 25,000-Hz-step cable fine tuning; S-video connectors; front-panel canceorder inputs; programmable remote control. $1,000

TX-SV70 PRO 315-W A/V Receiver 5-channel AM/FM receiver with discrete outputs. Features Dolby Pro Logic decoder; hall and matrix surround modes, Dolby 3 Stereo processor; 2-room capability; adjustable digital delay; front-panel A/V input terminal; 4-way binding posts. On-screen display; 6 audio and 4 video inputs; 30 station presets; classified memory scan; FM mute/mode switch; headphone jack; sleep timer; programmable remote control. 85 W x 2 + 85 x 1 (center) + 30 x 2 (rear). $850

TX-SV50 PRO 200-W A/V Receiver 4-channel AM/FM receiver with discrete outputs. Features Dolby Pro Logic decoder; hall and matrix surround modes; 2-room capability; adjustable digital delay; 6 audio and 4 video inputs; pre-out jack for center output; 4-way binding posts. 30 station presets; classified memory scan; FM mute/mode switch; headphone jack; sleep timer; programmable remote control. 70 W x 2 + 30 x 2 (rear). $630

TX-906 174-W A/V Receiver 4-channel AM/FM receiver with discrete outputs. Features Dolby Pro Logic decoder, multiple source capability; hall surround mode; 2-room capability; pre-out jacks for rear and center; 4-category classified memory scan: 10-key direct station tuning; video dubbing; sleep timer; remote control. 75 W x 2 + 12 x 2 (rear). $550

TX-902 50-W Receiver Low-imp-drive amplifier sections: discrete outputs. Features 30 station presets; battery-free backup; 6 inputs; connections for 2 speaker pairs; 6-category classified memory tuning; logic-controlled channel switching; touch keys; 10-key direct-station tuning; remote control unit. 50 W x 2 cont avg into 8 ohms from 40-20,000 Hz. with 0.2% THD; dynamic power 90 W x 2 into 4 ohms or 110 x 2 into 3 ohms; FR 20-30,000 Hz ± 1 dB. $270

OPTIMUS, BY RADIO SHACK STAV-3100 100-W/Ch A/V Receiver AM/FM receiver. Features digital-synthesis tuning; protection circuitry; switchable subsonic filter. 30 station presets; 2-way tape dubbing while listening to another source; video dubbing; alphanumeric display. 100 W x 2 into 8 ohms with 0.05% THD; FR 20-20,000 Hz ±1 dB; SN 85 dB phone, 95 dB line. Tuner: AM FM fixed control; FM sens 1.7 μV at 3% THD; cap ratio 2.5; SN 72 DB 17½ x 5½ x 15 in; 23.4 lb. $450

STAV-2170 100-W/Ch Receiver AM/FM receiver. 4 inputs including MM phono; 8 AM/16 FM presets; loudness, FM mono/mute, and tape-monitor controls. FR 20-20,000 Hz ±1 dB; SN 82 dB phone, 95 dB line. FM tuner: sens 9.8 dB; cap ratio 2 dB; SN 72 DB; THD 0.4%; ch sep 45 dB at 1,000 Hz. $539

STAV-795 50-W/Ch Receiver AM/FM receiver. Digital tuning; 4 inputs including MM phono; 18 station presets; bass and treble controls; FM muting; loudness and tape monitor controls. FR 40-20,000 Hz with 0.5% THD... $199

PHILIPS FR-980 280-W A/V Receiver 4-channel AM/FM receiver. Features Dolby Surround decoder; matrix, spatial, stereo, and mono surround modes; programmable decoder; 7-band graphic EQ with programmable acoustic memory; dual motorized volume control, record selector with parallel recording capability; MM/MC phone settings; 9 audio inputs; 4 audio outputs; 4 video inputs, 3 video outputs; headphone jack. 50-key universal remote control with LCD display. 125 W x 2 + 15 x 2 (rear); SN 75 dB; THD 0.1%; 16½ x 4½ x 15½ in; 35 lb. $999

FR-70 70-W/Ch A/V Receiver Features discrete output transistors; subsonic filter built into phono preamp section; dual F-type FM input connectors; 6 audio inputs including phono; 2 audio outputs; 3 video inputs; 2 video outputs; 30 random presets with scan, auto scan; remote control... $499

FR-60. As above, 50 W x 2... $399

FR-50. As above, 50 W x 2... $299

PIONEER All the following except the SX-2900 feature multi-room capability with the optional MR-100 infrared remote sensor.

VSX-D15 380-W A/V Receiver 5-channel AM/FM receiver. Features Dolby Pro Logic decoder; digital signal processor with 5 soundfield presets and adjustable delay time; sound-direct switch, front-panel A/V input; 6 video inputs; video adapter loop; 2 mono center-channel outputs; 5 audio inputs; split-screen video enhancer with five preset levels; S-video
displays; multifunction jog dial; pre-out/power
anti-resonance design; 6 video and 5 audio inputs;
5-channel AM/FM receiver. Features Dolby Pro
Logic with digital delay adjustable in 2-ms steps
between 16 and 30 ms; 4 surround modes; 4 audio
inputs and 3 video inputs; gold-plated terminals;
auto input balance. 30 AM/FM presets with scan;
custom memory for creating groups of 5 stations
with scan for each group; 5 tone presets; sleep
timer with auto dimmer; programmable remote
control. 100 W x 2 + 23 x 1 (center) + 18 x 2
(rear)...
$600

VSX-9900S 370-W A/V Receiver
5-channel AM/FM receiver. Features Dolby Pro
Logic decoder; digital signal processor with ad-
justable delay time and 5 soundfield presets; 6
video and 5 audio outputs; 3 S-video terminals;
subwoofer output. 30 AM/FM presets; split-screen
video enhancer; preamp-output/pwr-amp-input
terminals for front, center, and rear; 5-channel
level meters; jog dial; sleep timer; programmable
remote control. 125 W x 2 with 0.005% THD
+ 0.003% (center, rear) with 0.08% THD into 8
ohms; 20% x 10% x 19% in; 37 lb...
$1,350

VSX-9900S 285-W A/V Receiver
5-channel AM/FM receiver. Features Dolby Pro
Logic decoder; digital signal processor with ad-
justable delay time and 5 soundfield presets; 6
video and 5 audio inputs; 3 S-video terminals;
subwoofer output. 30 AM/FM presets; split-screen
video enhancer; preamp-output/pwr-amp-input
terminals for front, center, and rear; 5-channel
level meters; jog dial; sleep timer; programmable
remote control. 105 W x 2 with 0.008% THD
+ 0.003% (center, rear) with 0.08% THD into 8
ohms. 19% x 8 x 18% in; 27 lb...
$1,120

VSX-9900S 236-W A/V Receiver
4-channel AM/FM receiver. Features Dolby Sur-
round decoder with digital delay; surround, stu-
dio, and simulated studio surround modes; 4
video inputs; 5 audio inputs; preamp-output/pwr-
amp-amp-input terminals for front, rear, and cen-
ter. Acoustic memory for bass/treble settings;
sound field memory; 30 AM/FM presets; 5
tone presets; sleep timer; memory scan; pro-
grammable remote control. 100 W x 2 with
0.008% THD + 0.003% (center, rear) with 0.08%
THD into 8 ohms. 19% x 8 x 18% in; 27 lb...
$770

VSX-3900S 185-W A/V Receiver
5-channel AM/FM receiver. Features Dolby Pro
Logic decoder; digital signal processor with ad-
justable delay time and 5 soundfield presets; 6
video and 5 audio inputs; 3 S-video terminals;
subwoofer output. 30 AM/FM presets; split-screen
video enhancer; preamp-output/pwr-amp-input
terminals for front, center, and rear; 5-channel
level meters; jog dial; sleep timer; programmable
remote control. 105 W x 2 with 0.008% THD
+ 0.003% (center, rear) with 0.08% THD into 8
ohms. 19% x 8 x 18% in; 37 lb...
$1,350

VSX-3900S 155-W A/V Receiver
4-channel AM/FM receiver. Features Dolby Sur-
round decoder; simulates studio surround sound;
4 video inputs; 5 audio inputs; preamp-output/pwr-
amp-amp-input terminals for front, rear, and cen-
ter. Acoustic memory for bass/treble settings;
sound field memory; 30 AM/FM presets; 5
tone presets; sleep timer; memory scan; pro-
grammable remote control. 100 W x 2 with
0.008% THD + 0.003% (center, rear) with 0.08%
THD into 8 ohms. 19% x 8 x 18% in; 27 lb...
$750

VSX-2900 65-W Receiver
AM/FM receiver with SR remote. Features 5-band
graphic EQ; quartz-synthesizer PLL tuning; 5 audio
inputs; motor-driven volume control; 30 AM/FM
presets; direct access; custom memory; memory
scan; connections for 2 speaker pairs. 65 W x 2
total cont avg into 8 ohms; FR 20-20,000 Hz; THD
0.07%. 16% x 4 1/4 x 13 1/4 in; 17 lb...
$500

Elite Series
Both models can operate a remote source.

VSX-95 370-W A/V Receiver
5-channel AM/FM receiver. Features Dolby Pro
Logic with digital delay adjustable in 1-ms steps;
digital signal processing with 5 soundfield pre-
sets; discrete power output devices; complement-
tary capacitor design; copper-plated chassis;
anti-resonance design; 6 video and 5 audio inputs;
3 S-video terminals; auto input balance; split-
screen video enhancer. Dots-matrix-and-on-screen
displays; multifunction jog dial; pre-out/power
input for front, center, and rear; 30 AM/FM pre-
sets; sleep timer with auto dimmer; programmable
remote control. 125 W x 2 + 40 x 1 (center) +
40 x 2 (rear). Urushi finish...
$1,350

VSX-51 261-W A/V Receiver
5-channel AM/FM receiver. Features Dolby Pro
Logic with digital delay adjustable in 2-ms steps
station presets; preset scan; auto/manual tuning;
31-key remote control. 35 W x 2 cont avg into 8
ohms from 40-20,000 Hz with 0.05% THD. 16.5
x 4 1/4 x 11 1/4 in; 12 lb...
$1,100

SHARP
RA-R75AV 75-W A/V Receiver
AM/FM receiver. Features PLL quartz-synthesis
tuning; multi-mode surround sound with digital
time-delay circuit; 5-band graphic EQ; 3 video
inputs. Motorized rotary volume control with LED;
fast boost, auto scan tuning; 30 station pre-
sets; multi-mode surround sound with digital
time-delay circuit; 75 W x 2 into 8 ohms with 0.05%
THD...
$430

SHERWOOD
RX-5010R 200-W A/V Receiver
AM/FM receiver. Features Dolby Surround decod-
er with theater and stadium surround modes;
discrete amplifier stage; fully-complementary
output devices; independent preamp, amp, and
tuner circuit boards. Independent video switch-
ing; signal processor loop; 4 audio inputs; 3 video
inputs including 1 on front panel; 30 tuner pre-
sets; video dubbing; sleep timer; wireless remote
control. Amp: 85 W x 2 with 0.02% THD + 15 x 2
(rear). Dynamic power 150 W/ch. FM tuner: 50-DB
quieting sensing 45.75 dB; cap ratio 1.25 dB;
alt-channel 55 dB; usable sens 10.8 dB monon6
12 dB stereo; FR 30-15,000 Hz ±1 dB. 17 1/4 x 5 x 12
in; 17 lb...
$300

RX-5010R 65-W Receiver
AM/FM receiver. Features discrete amplifier stage;
fully-complementary output devices; ma-
ti surround sound; independent preamp, amp,
and tuner circuit boards; quartz-reference digital
FM tuning with dual-gate MOSFET front ends;
signal processor loop; 5 audio inputs. 30 tuner pre-
sets; sleep timer; motorized volume control;
bypassable tone controls; wireless remote con-
trol. Amp: 65 W x 2 with 0.05% THD; dynamic
power 125 W/ch. FM tuner: 50-DB quieting sensing
37.5 dB; cap ratio 1.25 dB; alt-channel 55 dB; usable
sens 10.8 dB monono6 72 dB stereo; FR 30-15,000 Hz ±1 dB. 17 1/4 x 5 x 12
in; 17 lb...
$285

SONY
STR-D2070 300-W A/V Receiver
4-channel AM/FM receiver. Features DSP for ambi-
ence simulation; surround sound, parametric EQ,
and dynamic range compression/extension; Dolby
Pro Logic decoder; 3 video inputs; digital inputs;
dual-room link control; spectrum analyzer.
Motorized volume; video edit; sleep timer; 30
AM/FM presets; programmable remote control.
120 W x 2 + 30 x 2 (center, rear) into 8 ohms; THD
0.008%. Tuner: 50-DB quieting sensing 83.5 dB;
seal 60 dB at 400 Hz. 17 x 5 1/4 x 14 1/4 in; 28.6
lb...
$1,100

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STR-AV1070 300-W A/V Receiver
4-channel AM/FM receiver. Dolby Pro Logic decoder; 3 video inputs; dual-room control link; 7-band graphic EQ with spectrum analyzer. Motorized volume; video edit; sleep timer; 30 AM/FM presets; programmable remote control. 120 W x 2 + 30 W x 3 into 8 ohms, THD 0.08%. Tuner: 50-dB quieting sens 38.3 dBf stereo; sel 60 dB at 400 Hz. 17 x 5/4 x 14 in. $450

STR-AV790. As above, 100 W x 2 + 30 x 1 (rear) into 8 ohms; 2 video inputs. $480

STR-AV770 180-W A/V Receiver
3-channel AM/FM receiver. Features surround sound processor; 2 video inputs; motorized volume. Video edit; 30 AM/FM presets; programmable remote control. 80 W x 2 + 20 x 1 (rear) into 8 ohms; THD 0.08%. Tuner: 50-dB quieting sens 38.3 dBf stereo; sel 60 dB at 400 Hz. 17 x 5/4 x 14 in. $600

ES Series

STR-GX90ES 120-W A/V Receiver
AM/FM receiver. Features subsonic filter; 2 video inputs; source-direct switch; 2 S-video terminals; mute; Dolby Pro Logic decoder with phantom and center-channel modes; remote control. 120 W x 2 into 8 ohms, THD 0.006%. Tuner: cap ratio 1.2; sel 75 dB at 400 Hz. 18 x 5/4 x 14 in. $350

STR-GX90ES. As above, 100 W x 2 into 8 ohms; 2 video inputs. 25 video terminals. 17 x 6 x 17 in. $800

STR-GX67ES 300-W A/V Receiver
5-channel AM/FM receiver. Features Dolby Pro Logic decoder; 2 video inputs; proprietary LSI chip for 2-way communication between AV components. Audio muting; remote output selector; source-direct switch; 30 AM/FM presets; motorized volume control; programmable remote control. 100 W x 2 + 50 x 1 (center) + 25 x 2 (rear); THD 0.05%. Tuner: 50-dB quieting sens 38.3 dBf stereo; cap ratio 1.2; sel 60 dB at 400 Hz. 17 x 6 x 15 in. $650

STR-GX67ES 210-W A/V Receiver
4-channel AM/FM receiver. Dolby Surround decoder; 2 video inputs. Audio muting; source-direct switch; tape monitor; 30 AM/FM presets; motorized volume control; programmable remote control. 80 W x 2 + 25 x 2 (rear); THD 0.05%. Tuner: 50-dB quieting sens 38.3 dBf stereo; cap ratio 1.2; sel 60 dB at 400 Hz. 17 x 6 x 15 in. $276.0

TEAC

AG-V1200 230-W A/V Receiver
4-channel AM/FM receiver. Dolby Surround decoder with hall and theater surround modes; surround input-level calibration; quartz-synthesized PLL tuner with 30 presets; motor-driven volume, tone, and variable loudness controls; remote control. 120 W x 2 + 30 x 2 (center, rear) into 8 ohms with 0.08% THD; FR 20-20,000 Hz ± 1 dB, THD 0.05%. Tuner: cap ratio 1.5 dB; sel 65 dB ± 400 Hz; THD 0.3% mono, 0.6% stereo at 1,000 Hz; S/N 73 dB mono, 40 dB stereo. 176 x 5/1 x 11 in. $450

AG-500 50-Wch Receiver
AM/FM receiver. Features quartz-synthesis PLL tuning; matrix surround; motor-driven master volume control; 3 inputs including phono. Bass, treble, and loudness controls; remote mute; 8 AM/16 FM station presets; wireless remote control. 50 W x 2 control into 8 ohms with 0.08% THD; FR 20-20,000 Hz ± 1 dB, THD 0.05%. Tuner: cap ratio 1.5 dB; AM 65 dB, FM 73 dB stereo, 15 dB mono. 17 x 4 1/4 x 3 in. $930

VECTOR RESEARCH

VRX-6200H 65-Wch A/V Receiver
Features matrix surround sound; 8 discrete output transistors. Pre-out/main-in jacks; video signal routing; A/V processing loop; video monitor output; CD input. Quartz-synthesis tuning; 16 station presets; mono/stereo switch, RF antenna inputs; FM auto scan; 2 tape monitors with dubbing; loudness control; parallel speaker switching; motorized rotary volume control; remote control. 17 x 4 1/4 x 3 1/2 in. $450

VRX-5200R 50-Wch A/V Receiver
Features matrix surround sound; discrete output transistors; video signal routing; video monitor out; pre-out/main-in jacks; A/V processing loop; CD input. Quartz-synthesis tuning; 20 AM/FM presets; separate FM mute and mono; AM/FM auto scan. Rotary volume control with LED; switched/unswitched AC outlets. Amp: THD 0.07%; FR 10-50,000 Hz. Tuner: 50-dB quieting sens 15 dB, 37.6 dBf stereo; cap ratio 1.3 dB; alt-ch sel 60 dB. 17 x 4 1/4 x 3 1/2 in. $570

VRX-3550 55-Wch Receiver
Features discrete output stage; midrange tone control; rear-panel input/output. $250

YAMAHA

RX-V11050 390-W A/V Receiver
5-channel AM/FM receiver. Dolby Pro Logic Circuitry with auto input balance and concert video, mono movie, rock concert, and concert hall modes; direct-PLL IF count synthesis; digital test-tone generator; switchable dual-channel center-channel outputs; subwoofer output; remote receiver; motorized rotary volume control; 30 AM/FM presets; motorized volume control; remote control with volume. 110 W x 3 (left, right, center) into 8 ohms with 0.015% THD ± 30 x 2 (rear) into 8 ohms at 1,000 Hz with 0.8% THD stereo; cap ratio 1.09 dB. $1,199

RX-V580. As above, no S-video inputs. 7 audio inputs; 3 video inputs. 80 W x 3 (left, right, center) into 8 ohms with 0.015% THD ± 25 x 2 (rear) into 8 ohms at 1,000 Hz with 0.8% THD stereo; cap ratio 1.07 dB. $759

RX-V660. As above, 65 W x 2 + 25 x 3 with 0.02% THD $699

RX-950 120-W A/V Receiver
AM/FM receiver. Features Class A amplification; direct-PLL IF-count synthesis tuning; high-gain AM loop antenna. 40 AM/FM presets; signal strength meter; continuously variable loudness control; motor-driven input selector and volume control; banana-plug compatible speaker terminals; pre-main-out terminals for center and surround channels. 40 AM/FM presets; motor-driven volume control; sleep timer; remote control with volume. 110 W x 3 (left, right, center) into 8 ohms with 0.015% THD ± 30 x 2 (rear) into 8 ohms at 1,000 Hz with 0.8% THD stereo; cap ratio 1.07 dB; $1,199

RX-750. As above, Class AB amplification; no pre-out multichannel outputs; multiroom terminals; 32 -key remote control; 3-way binding post input; 3-way binding post output; 80 W x 2 + 25 x 3 with 0.02% THD $799

RX-350 40-Wch Receiver
AM/FM receiver with direct-PLL synthesis tuning. Features high-gain AM loop antenna; auto search and manual up/down tuning; 16 AM/FM presets; signal strength meter; A/B speaker switching; CD-direct switch; dynamic bass-extension control; 40 dB continuously variable loudness control. 40 W x 2 into 8 ohms with 0.84% THD or 340 x 2 into 2 ohms $529
## Power Amplifiers

### Acoustic Research

**A-07 70-W/ch Amplifier**
Rated for 70 watts per channel into 8 ohms. Features switchable side-chain feedback tone control; MM/MC phono inputs. Remote controllable when linked to T-06/R tuner. FR 15-20,000 Hz +0, -0.3 dB; THD 0.03%; SN 100 dB; IM 0.03%; 17 x 1/2 x 8 in; 25.1 lb...

### Audio Design Associates

**MPA-500 2,000-W Amplifier**
5-channel amplifier for THX and other home-theater applications. Features RCA inputs; 5-way binding posts; LED power output meter. 400 W x 5...

**AMA-500 Amplifier**
Bridgeable stereo amplifier designed for subwoofer(s) in THX and other home-theater applications. Features parametric bass EQ; front-panel bass-level, frequency, and bandwidth controls; LED output meter...

**MPA-6 650-W Amplifier**
Features 6 channels with adjustable input including one for subwoofer; variable crossover; surround sound; 5-way output jack; RCA input; LED power indicator...

### Audio Research

**Class 150-40 Hybrid Mono Amp**
FET front end and vacuum-tube output stage. Features tube-plate circuitry, toroidal transformers; 2-ohm stability; fan cooling; 20-division LED power display. 100 W x 2 cont avg into 8 ohms from 20-20,000 Hz with 0.078 THD, 160 x 2 into 4 ohms, or 240 x 2 into 8 ohms; SN 95 dB; slew rate 15 V/µs.; 19 x 5/16 x 16 in; 37 lb...

**Class 60-40 Hybrid Amplifier**
FET front end and vacuum-tube output stage. Features auto DC-balance circuit; driver-balanced servo circuit; auto bias correction for incoming line voltage; low-noise fan; front-panel fuses. FR 12-40,000 Hz +0, -3 dB...

**Class 120 115-Hybrid Mono Amp**
FET front end and vacuum-tube output stage. Auto DC-balance circuit; driver balance servo circuit; auto bias correction for input line voltage; cross-coupled circuitry; balanced outputs. FR 10-80,000 Hz +3 dB; SN 92 dB...

**Class 240 120-W/ch Amplifier**
Direct-coupled output stage with 12 high-current multi-emitter transistors per channel. Features low-impedance capability; thermal-overload and DC protection circuitry; RCA input; RCA connectors; gold-plated binding posts. 120 W x 2 into 8 ohms or 240 x 2 into 4 ohms; input sens 1.6 V cont avg; negative feedback 7.7 dB; slew rate 50 V/µs. 19 x 5/16 x 11 in; 38 lb...

**AudioSource**

**Ampl One 60-W/ch Amplifier**
Features MOSFET circuitry; toroidal transformer, soft-clipping output circuitry to reduce distortion; dual analog power-output meters; U/R output level controls. 60 W x 2 cont avg into 8 ohms or 170 x 1 max; FR 20-20,000 Hz, THD 0.04%; 161/2 x 21/4 x 11 in; 14.3 lb...

### Arccom

**GFA-585 250-W Mono Amplifier**
20 discrete transistors in output stage. 250 W into 8 ohms or 400 W into 4 ohms; THD 0.002%; FR 20,000 Hz. Black finish...

**GFA-615 300-W Mono Amplifier**
20 discrete transistors in output stage. 300 W into 8 ohms, 450 W into 4 ohms, or 850 W into 2 ohms; SN 106 dB; dynamic headroom 1.6 dB into 4 ohms; input imp 50-700 ohms; input sensitivity 2.15 V; damping factor 1,000 into 8 ohms. Black finish...

**GFA-555II 200-W Amplifier**
1-ohm stability. Features low-negative-feedback design; constant damping factor; toroidal transformer; direct coupling. 200 W/ch into 8 ohms or 350 W/ch into 4 ohms; FR 20-20,000 Hz; THD 0.04%; IM 0.05%...

**GFA-545II 100-W Amplifier**
1-ohm stability. Features low-negative-feedback design; constant damping factor; toroidal transformer; direct coupling. 150 W/ch into 4 ohms; THD 0.04%. 17 x 5/8 x 1 1/2 in; 25 lb...

**GFA-535II 60-W Amplifier**
1-ohm stability. Features low-negative-feedback design; constant damping factor; separate power transformers for each channel; connections for 2 speaker pairs. 100 W/ch into 4 ohms; THD 0.04%. 17 x 3/4 x 1 1/4 in;

**ARAGON, BY MIODIAL DESIGNS**

**Model 4004 MK II 200-W/ch Amplifier**
Features 2 toroidal transformers; quad-array transistor, gold-plated connectors; Monster Cable output wiring; convection air cooling. SN 120 dB; damping factor 200 from 20-20,000 Hz. 19 x 6 1/4 x 14 in; 15 lb; $1,850...

**Model 2004 MK II. As above, 100 W per channel, 45 lb**...

**ARCAM**

**Delta 120 100-W/ch Amplifier**
Dual-mono configuration. Features separate power supply and toroidal transformer for each amplifier; biwired. 100 W x 2 into 8 ohms or 150 x 2 into 4 ohms; peak output current ±25 amperes...

**Omega 240 120-W/ch Amplifier**
Active feedback design. 120 W x 2 into 8 ohms; TMD 0.005%; slew rate 500 V/µs. 13 x 7 x 14 in; 27 lb...

**Delta 120 60-W/ch Amplifier**
Complementary MOSFET circuits. 60 W x 2 into 8 ohms; THD 0.03%...

**PHA-500 Amplifier**
Features separate channel for subwoofer; variable crossover; surround sound; 5-way output jack; RCA input; LED power indicator...

**PF-250 100-W Amplifier**
Features MOSFET circuitry; toroidal transformers; 2-ohm stability; fan cooling; 20-division LED power display. 100 W x 2 cont avg into 8 ohms from 20-20,000 Hz with 0.078 THD, 160 x 2 into 4 ohms, or 240 x 2 into 8 ohms; SN 95 dB; slew rate 15 V/µs. 19 x 5/16 x 16 in; 37 lb...

**ST-200 Plus 200-W/ch Amplifier**
Balanced inputs. 200 W x 2 cont avg into 8 ohms; THD 0.09%; FR 5-45,000 Hz; SN 95 dB; slew rate 12 V/µs.; dynamic headroom 1.4 dB; 17 x 6 x 17 1/4 in; 32 lb...

**ST-140 Class A 105-W Amplifier**
Features auto DC-balance circuit; driver-balance servo circuit; auto bias correction for incoming line voltage; low-noise fan; front-panel fuses. FR 12-40,000 Hz +0, -3 dB...

**B&K Components**

**Video-5 Sonata 525-W Amplifier**
5 channels for surround-sound or multroom applications. Features 5 discrete amplifiers; gold-plated input/output connectors; level controls. 105 W x 5; FR 5-45,000 Hz ±3 dB; SN 90 dB; dynamic headroom 0.9 dB; slew rate 20 V/µs; THD 0.09% at 1,000 Hz. 17 x 6 x 17 1/4 in; 40 lb...

**ST-140 Mono. As above, 150 W x 1 cont avg into 8 ohms; balanced outputs; balanced inputs**...

**BEL**

**Model 2002 100-W/ch Amplifier**
Dual-mono construction. Features 2 Class A amps per channel; independent power supply for each channel; input shutdown and status/fault indication of temperature, frequency, output, and load in each amp section; balanced outputs. 100 W x 2 cont avg into 8 ohms or 200 x 2 cont avg into 4 ohms; input imp 22 kilohms, high-level sens...

**Audio Research D240**

Each channel; input shutdown and status/fault indication of temperature, frequency, output, and load in each amp section; balanced outputs. 100 W x 2 cont avg into 8 ohms or 200 x 2 cont avg into 4 ohms; input imp 22 kilohms; high-level sens 1400 mV; gain 26 dB; bandwidth 3-250,000 Hz with input filter. 19 x 7/8 x 14 1/4 in; 52 lb...

**Model 1001 50-W/ch Amplifier**
Class A design, balanced output; temperature-stabilizing circuitry; fault-sensing system; optional balanced inputs. 50 W x 2 cont avg into 8 ohms, 100 x 2 cont avg into 4 ohms, or 200 x 2 bridged; input imp 27 kilohms; high-level sens 900 mV; gain 36 dB; bandwidth 3-250,000 Hz with input filter. 19 x 7/8 x 14 1/4 in; 31 lb...

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BERNING
EA-2101 100-W/ch Tube Amplifier
Uses triode vacuum tubes. Features regulated power supplies; 2-ohm stability; protection for brownouts and improper bias conditions; 4 output transformer windings/ch. 100 W x 2 cont avg; FR 10-60,000 Hz +0.5 dB; THD <0.01%; IMD <0.01%; slew rate 200 V/µs; power bandwidth 1-100,000 Hz; damping factor 80 at 20 Hz into 8 ohms; IMD 0.005% or 150 x 2 into 4 ohms; FR 3-85,000 Hz +0, -3 dB; THD <0.01%; IMD <0.01%; slew rate 100 V/µs; power bandwidth 1-100,000 Hz; damping factor 50 at 20 Hz into 8 ohms; input 1.25 V. 19 x 5¼ x 12 in; 45 lb $1,895

Model 2B. As Model 4B, 100 W x 2 or 400 x 1; input sens 1 V; 500-sq-in heat-sink area. 19 x 5¼ x 9 in $1,295

Model 8500T 300-W/ch Amplifier
Features speaker protection; barrier strip inputs/outputs; rear-mounted gain controls and bridging switch; +14 in input connectors. 300 W x 2 into 8 ohms or 450 x 2 into 4 ohms; FR 3-85,000 Hz +0, -3 dB; THD <0.01%; damping factor 300. 19 x 5¼ x 13½ in; 56 lb $1,299

Model 7500T 200-W/ch Amplifier
Features speaker protection; barrier strip inputs/outputs; rear-mounted gain controls and bridging switch; +14 in input connectors. 200 W x 2 into 8 ohms or 300 x 2 into 4 ohms; FR 3-85,000 Hz +0, -3 dB; THD <0.01%; damping factor 300. 19 x 3½ x 13 in; 40 lb $849

Model 6500T 100-W/ch Amplifier
Features speaker protection; barrier strip inputs/outputs; rear-mounted gain controls and bridging switch; +14 in input connectors. 100 W x 2 into 8 ohms; FR 20-20,000 Hz ±2.5 dB; THD <0.01%; sens 100 mV; input 100 kHz. 19 x 4¼ x 11 in; 14 lb $1,995

Model 500 150-W/ch Amplifier
Features 2-stage amplification, toroidal power transformer; magnetic circuit breaker/power switch; precision-stamped attenuators; XLR and +14 in input connectors; active-balanced inputs; 5-way binding posts; LED clipping indicators; signal-present indicators. 100 W x 2 into 8 ohms or 200 x 1 into 16 ohms; FR 1-85,000 Hz +3 dB, 20-20,000 Hz ±0.5 dB, THD <0.02%; damping factor 400. 19 x 3¼ x 11 in; 14 lb $999

Model 200 100-W/ch Amplifier
Features aluminum construction; toroidal power transformer; magnetic circuit breaker/power switch; precision-stamped attenuators; XLR and +14 in input connectors; active-balanced inputs; 5-way binding posts; LED clipping indicators; signal-present indicators. 100 W x 2 into 8 ohms or 200 x 1 into 16 ohms; FR 1-85,000 Hz +3 dB, 20-20,000 Hz ±0.5 dB, THD <0.02%; damping factor 400. 19 x 3¼ x 11 in; 14 lb $849

BOULDER
Boulder 500 150-W/ch Amplifier
Features 2-stage amplification, toroidal power transformer; shielded power cord; short-circuit, DC-offset, and thermal protection circuitry with indicators. Output-level controls; recessed panel controls. 150 W x 2 into 8 ohms, 250 x 2 into 8 ohms, or 500 x 1 into 8 ohms; FR 20-20,000 Hz; THD 0.005%; sens 35 V/µs stereo, 70 V/µs mono; imp 10,000 ohms; peak current 50 amperes. 17 x 5¼ x 15½ in; 51 lb $4,299

Boulder 102AE 100-W/ch Amplifier
Features 2-stage design, discrete circuitry; toroidal power transformer. Voltage and current clip indicator; gold-plated audio connectors. 100 W x 2 into 8 ohms; THD 0.005% $2,249

BRYSTON
Model 7B 500-W Mono Amplifier
Features soft-start circuitry; ground-lift switch; balanced and RCA input. 500 W cont from 20-20,000 Hz, 1,000 W 1 or 4 ohms; THD <0.005%; S/N 105 dB; slew rate 60 V/µs; IM 0.005%; 19 x 5¼ x 12 in; 45 lb $1,995

Model 4B 250-W/ch Amplifier
Class AB design with bridging switch. Features 1,500-sq-in heat-sink area; soft-start circuitry; regulated power supply to all voltage gain stages; DC sep back to line cord; LED clipping indicator. 200 W x 2 or 800 x 1 into 8 ohms; FR 20-20,000 Hz, THD 0.01%; IMD 0.01%; sens 80 V/µs; power bandwidth 1-100,000 Hz; damping factor 200 at 20 Hz into 8 ohms; input 1.25 V. 19 x 5¼ x 13½ in; 56 lb $1,895

Model 3B. As Model 4B, 100 W x 2 or 400 x 1; input sens 1 V; 500-sq-in heat-sink area. 19 x 5¼ x 9 in $1,295

Model 2B. As Model 3B, 250-sq-in heat-sink, 30 W x 2 or 200 x 1; input sens 0.75 V $750

CAMBRIDGE AUDIO
A100 110-W/ch Amplifier
Features dual-mono design; two oversized toroidal transformers coupled with four large reservoir capacitors; high-pass-filter input; banana-plug/bindng-post speaker terminals; gold-plated input terminals. THD 0.01% at 50% rated power; S/N 100 dB; input 1.1 V $2,095

Carver Silver 94 Mark II
analog meters with level selection; A/B speaker switching; input-level controls. FR 20-20,000 Hz; THD <0.1%; S/N 100 dB. 19 x 3½ x 12 in $400

CCELLO
Duett 350-W/ch Amplifier
350 W x 2 cont avg into 8 ohms. 23½ x 12 x 17½ in; 95 lb $7,500

CLASSE AUDIO
DR-10 100-W/ch Amplifier
High-current design. Sleek curved chassis with large single heat sink at rear center; regular and balanced inputs. 100 W x 2 into 8 ohms, 200 x 2 into 4 ohms, or 400 W x 1 bridged into 8 ohms; FR 20-20,000 Hz ±0.1 dB; sens 1 V; S/N 100 dB, imp 70 kilohms. Sculpted black handles. 22 x 10½ x 19½ in; 50 lb $1,995

CONRAD-JOHNSON
Evolution 2000 200-W/ch Hybrid Amp
Hybrid design tube driver with MOSFET output; zero feedback design. 125 lb $4,995

MV125 125-W/ch Amplifier
Features low-imp power supplies and polystyrene capacitors; LED bias indicators. 125 W x 2 cont avg into 8 ohms; S/N 94 dB. 19 x 9 x 10½ in; 90 lb $2,995

MVS2. As above, 45 W x 2 cont avg into 8 ohms. 40 lb $1,895

MF200 200-W/ch Amplifier
MOSFET output stage, J-FET input stage. Features low-feedback circuit design; polypropylene and polystyrene capacitors in all circuits. 200 W x 2 cont. avg; FR 20-20,000 Hz; THD <0.1% 881/2 in $900

MF80. As above, 80 W x 2 cont avg into 8 ohms. 881/2 in $700

COUNTERPOINT
SA-220 220-W/ch Hybrid Amplifier
Tube input and MOSFET output. Features 1-ohm stability; 1,000-V transformer; analog protection...
circuitry not in signal path; copper-plated chassis.  700 W x 1 bridged; FR 1.2-200,000 Hz; SN 84 dB; THD 0.02%; output imp 0.012 ohms. Black or silver finish.  19 x 6 9/16 x 19 in; 69 lb ........ $2,995

Solid-2 200-W/ch Amplifier
PET input; bipolar output; 2-ohm stability.  385 W x 2 into 4 ohms; 120-ampere peak-to-peak current capability.  19 x 6 9/16 x 19 in; 69 lb ........ $1,995

SA-100 100-W/ch Hybrid Amplifier
Tube input and MOSFET output. Features 2-ohm stability; 1,000-V transformer; copper-plated chassis. Dynamic headroom 3 dB; FR 5-100,000 Hz; SN 92 dB; THD 1%. Available in black or silver finish.  19 x 4 9/16 x 12 9/16 in; 28 lb ........ $1,395

Solid-1 100-W/ch Amplifier
Features PET input; bipolar output; 2-ohm stability.  19 x 4 9/16 x 12 9/16 in; 18 lb .......... $995

CROWN INTERNATIONAL
PSA-2 275-W/ch Amplifier
Features multimode AB/B circuitry, low-frequency protection, ground-isolation jumper, bridged-mode mode, level controls, distortion indicators, and signal-presentance indicator on front panel.

PSA-400 190-W/ch Amplifier
190 W x 2 into 8 ohms, 330 x 2 into 4 ohms, or 660 x 1 bridged into 8 ohms; FR DC-20,000 Hz = 0.1 dB; THD 0.05%; IM 0.05%; slew rate 15 V/µs; damping factor 400 from 20-1,000 Hz.  16 x 4 7/8 x 12 1/2 in ........ $1,195

PS-200 100-W/ch Amplifier
100 W x 2 into 8 ohms, 170 x 4 into 4 ohms, or 345 x 1 bridged into 8 ohms; FR DC-20,000 Hz = 0.1 dB; THD 0.05%; IM 0.05%; slew rate 16 V/µs; SN 112 dB.  19 x 7 1/4 x 14 1/4 in; 57 lb ........ $2,095

P Series
Features convection cooling, multimode AB/B circuitry, low-frequency protection, ground-isolation jumper, bridged-mode mode, level controls, distortion indicators, and signal-presentance indicator on front panel.

PS-300 190-W/ch Amplifier
300 W x 2 into 8 ohms, 600 x 4 into 4 ohms, or 900 x 1 bridged into 8 ohms; FR DC-20,000 Hz = 0.1 dB; THD 0.05%; IM 0.05%; slew rate 16 V/µs; SN 112 dB.  19 x 7 1/4 x 14 1/4 in; 75 lb .......... $3,495

D Series
Features convection cooling, V-1 limit protection, bridged-mode mono, level controls, and distortion indicators on front panel.

DC-300A II 175-W/ch Amplifier
Direct-coupled outputs.  175 W x 2 into 8 ohms, 305 x 2 into 4 ohms, or 610 x 1 bridged into 8 ohms; FR DC-20,000 Hz = 0.15 dB; THD 0.05%; IM 0.05%; slew rate 6 V/µs; damping factor 300, SN 110 dB.  19 x 5 1/4 x 8 3/4 in; 24 lb .......... $1,199

D-150A II 95-W/ch Amplifier
95 W x 2 into 8 ohms, 155 x 4 into 4 ohms, or 315 x 1 bridged into 8 ohms; FR DC-20,000 Hz = 0.15 dB; THD 0.05%; IM 0.05%; slew rate 6 V/µs; damping factor 400; SN 110 dB.  19 x 5 1/4 x 8 3/4 in; 24 lb .......... $879

DB SYSTEMS
DB-6A 40-W/ch Amplifier
Features 1-ohm stability; 12-dB/oct infrasonic filter; peak-clipping LEDs; electronic clamp.  40

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Model 9180 90-W/Ch Amplifier
Features 8 self-limiting lateral MOSFET output devices; low-noise double-differential JFET front end; double-sided through-plated glass epoxy circuit boards with jumper-less layout; large-lamination twin-core quasi-toroidal transformer; gold-plated RCA inputs; 5-way binding posts. 90 W x 2 into 8 ohms. 135 x 2 into 4 ohms, or 270 x 2 into 8 ohms; THD 0.025%; power bandwidth 0.3-116,000 Hz; SN 100 dB; damping factor 300 to 1,000 Hz and 200 to 10,000 Hz into 8 ohms: 17 x 3½ x 12½ in; 33 lb. $600
Model 9270. As Model 9180, up to 12 self-limiting lateral MOSFET output devices. 135 W x 2 into 8 ohms; 200 x 2 into 4 ohms, or 400 x 1 into 8 ohms. $3,750

Model 9130 65-W/Ch Amplifier
Features self-limiting lateral MOSFET output devices; double-sided through-plated glass epoxy circuit boards with jumper-less layout; gold-plated RCA inputs; 5-way binding posts; front-panel level controls. 65 W x 2 into 8 ohms; 150 x 2 into 4 ohms, or 300 x 2 into 2 ohms; slew rate 65 V/µs. 19 x 15½ x 7 in; $1,795

KINERGETICS
KBA-75 Platinum Series 75-W/Ch Amp Features dual-monaural construction; Class A operation; 1-kVA power supply; multiple high-power output transistors; servo-controlled DC output; low-impedance drive capability. 75 W x 2 into 8 ohms, 150 x 2 into 4 ohms, or 300 x 2 into 2 ohms; slew rate 65 V/µs. 19 x 15½ x 7 in; $1,795
KBA-505 525-W Amplifier 6-channel amplifier for use in surround-sound systems. Features 1.1-kW toroidal transformer; high-current output transistors; subwoofer level control. Compound circuitry for matching any Kinergetics subwoofer. 75 W x 5 + 150 x 1. 19 x 5½ x 17½ in; 52 lb. $1,695

KRELL
K-250 250-W/Ch Amplifier Features dc-coupled Class A circuitry; balanced and single ended inputs; self-adjusting bias; DC circuit topology; 4-way binding posts. Rear-panel connection. Front-panel peak indicators. 120 W x 2 cont avg into 8 ohms or 75 x 2 into 8 ohms; dynamic power 140 W x 2 or 520 W x 1 into 8 ohms; S/N 121 dB; THD 0.05%; distortion 0.5%. 5½ x 17¼ x 11½ in; 52 lb. $3,995

Linn LK100
Offset. 250 W x 2 into 8 ohms or 2,000 x 2 into 1 ohm. $6,200
KST-100 100-W/Ch Amplifier Features dc-coupled Class A/B circuitry; balanced and single ended input. 100 W x 2 into 8 ohms or 400 x 2 x bridged. $2,700

LINN
LK100 50-W/Ch Power Amplifier Can be used to biampify or triamplify loudspeakers. Overcurrent and overtemperature protection; internal heat sink. 50 W x 2 into 8 ohms with 0.5% distortion. $595

LUXMAN
M-117 200-W/Ch Amplifier Bridgeable amp with low-impedance drive capability. Features dual-FET input stage per channel; high-current bipolar output transistors; Duo-Beta dual feedback-loop circuitry; star circuit topology; high-energy power supply. Peak-clip circuitry; gold-plated speaker binding posts and input terminals; variable and fixed inputs. 200 W x 2 into 8 ohms. 550 W x 2 into 4 ohms, 820 x 2 into 2 ohms, or 700 x 1 bridged; THD 0.03% at rated power. SN 120 dB; slew rate 20 V/µs; damping factor 150 at 50 Hz into 8 ohms. 17½ x 6½ x 15¼ in; 52 lb. $1,250
M-111 100-W Amplifier 4-channel bridgeable design. Features voltage-driven amplification; Duo-Beta feedback; star circuit topology; 4-way binding posts. Rear-panel bridging switches; separate input level controls. 25 W x 4 cont avg into 8 ohms or 75 x 2 into 8 ohms bridged; THD 0.05%; S/N 112 dB; slew rate 12 V/µs. 17¼ x 2 x 13 in; 11 lb. $400

MARK Levinson, BY MADRIGAL
Model 23.5 200-W/Ch Amplifier Dual-monaural construction. Features filtered AC power with DC-offset corrector circuit; surge-limiting circuit; individual power supplies for each channel; toroidal transformers with independent secondary windings; triple-bypasing on main circuit board; bipolar gain stages; active differential input circuit; Class AB output stage; controlled clipping circuitry. 200 W x 2 cont avg into 8 ohms or 400 x 2 x 4 ohms from 20-20,000 Hz with 0.3% THD; input imp 50 kilohms; gain 26.8 dB. 19 x 8½ x 18 in; 105 lb. $5,900

Model 27 100-W/Ch Amplifier Dual-monaural construction. Features AC power with DC-offset corrector circuit; surge-limiting circuit; individual power supplies for each channel; toroidal transformers with independent secondary windings; dual-FET input stage per channel; high-current bipolar output transistors; Duo-Beta dual feedback-loop circuitry; star circuit topology; high-energy power supply. Peak-clip circuitry; gold-plated speaker binding posts and input terminals; variable and fixed inputs. 100 W x 2 into 8 ohms, 200 x 2 into 4 ohms, or 350 x 2 into 2 ohms; sens 141 mV; voltage gain 26 dB. 19 x 8½ x 18 in; $3,995

Model 29 50-W/Ch Amplifier Dual-monaural construction. Features AC filtering by two separate circuits to remove unwanted frequencies and reduce transformer core saturation. 50 W x 2 cont avg into 8 ohms or 200 x 1 into 8 ohms; THD 0.03%; S/N 120 dB; slew rate 12 V/µs. 17½ x 2 x 13 in; 11 lb. $400

MARANTZ
SM-80 120-W/Ch Amplifier Features direct-coupled audio path; Class A input and driver stages; Class AB output stage with high-current devices; separate left/right amplifiers and power supplies; 2-ohm load capability; banana-plug, bare-wire, or pin-type speaker connection. Front-panel peak indicators. 120 W x 2 cont avg into 8 ohms with 0.02% THD, 175 x 2 cont avg into 4 ohms with 0.04% THD, or 350 x 1 cont avg into 8 ohms; dynamic power 140 W x 2 or 520 x 1 into 8 ohms; SN 121 dB stereo; damping factor 200 into 8 ohms; power consumption 650 W into 8 ohms both channels. $699

Music Link Series
These products are designed for use with the Marantz Music Link SC-22 preamplifier and PH-22 piano preamplifier.
MA-24 30-W Mono Amplifier
Class A design; select-FET input signal amplification; high-current output transistors; high-capacity toroidal transformer mounted with resonance-reducing hand-tuned bolts; non-magnetic copper-plated alloy chassis; direct signal path, no current limiting with over-current detector. 30 W cont avg into 8 ohms with 0.01% THD or 60 W cont avg into 4 ohms with 0.1% THD; dynamic power 45 W into 8 ohms or 70 W into 4 ohms. $1,249
MA-22. As above, Class AB design; select-FET Class A input signal amplification. 50 W cont avg into 8 ohms with 0.01% THD or 95 W cont avg into 4 ohms with 1.9% THD; dynamic power 65 W into 8 ohms or 120 W into 4 ohms. $899
and mechanical hum; surge limiting circuit; 320-VA toroidal transformer in each channel; separate power supplies; signals processing through 2 Class A cascaded voltage gain stages and 3 current gain stages; cascaded differential input stage; Class AB output stage; Cacam connector or 3-pin Neutrik XLR connector input. 50 W x 2 into 8 ohms, 100 x 2 into 4 ohms, or 175 x 2 into 2 ohms; sens 141 mV; voltage gain 26 dB. 17½ x 6½ x 1¼ in: 60 lb. $2,800

**McIntosh**

**MC7500 300-W/ch Amplifier**
Features Power Guard anti-clipping circuitry; peak power output meter. Bridgeable to 600 W mono. Fr 20-20,000 Hz +0, 0.25 dB; input imp 20,000 ohms unbalanced, sin 105 dB; THD 0.005%; in 0.005%; dynamic headroom 1.9 dB; damping factor 40; input sens 1.4 or 2.5 V. Glass black-anodized aluminum front panel with black chassis. 16½ x 7¼ x 15½ in: 79 lb. $3,199

**MC7200 200-W/ch Amplifier**
Features dynamic anti-clipping circuitry; Sentry circuit to monitor output signal to prevent overload of output transistors; thermal, DC, and surge protection circuits; bridgeable to 600 W mono. Peak power output meter; meter hold control; LR gain control. Fr 20-20,000 Hz +0, 0.25 dB; THD 0.005%; sin 105 dB; in 0.005%; damping factor 200. 14½ x 5½ x 15½ in: 53 lb. $2,779

**MC7150 150-W/ch Amplifier**
Features dynamic anti-clipping circuitry. LR gain control; LR power meters with peak hold; speaker connectors for 2, 4-, and 8-ohm loads. 150 W x 2 cont avg into 2, 4, or 8 ohms from 20-20,000 Hz with 0.005% THD; FR 20-20,000 Hz +0, 0.25 dB at 1 W; damping factor 40. Glass and black-anodized aluminum front panel with black chassis. 16½ x 5¼ x 15¼ in: 38 lb. $2,245

**MC754 100-W/ch Amplifier**
Features dynamic anti-clipping circuitry; digital overload protection to prevent over 0.3% distortion; bridgeable to 200 W mono. Fr 20-20,000 Hz +0, 0.25 dB; THD 0.02%; sin 110 dB; in 0.02%; damping factor 90. $1,049

**MOD SQUAD**
McCormack DNA-1 100-W Mono Amp
Features hybrid JFET/MOSFET/bipolar circuitry; DC-servo control; Class A/AB mode; separate front-end and main power supplies; Distributed Node Current Reservoir to deliver power to each local output device; global feedback; 885-VA transformer for power supply with electrostatic shielding. Both units can be returned to factory for conversion into bridgeable pair for mono operation. 100 W into 8 ohms; FR 1-250,000 Hz; SN 90 dB; distortion 0.01%; sens 1.2 V cont avg; current output 50 amperes peak. 19 x 7 x 16 in: 55 lb. $2,959

**MOTIF**
**BY CONRAD-JOHNSON**

**MS2001 200-W/ch Amplifier**
MOSFET output stage; extensive use of large-value polysilicon capacitors. 200 W x 2 cont avg into 8 ohms; THD 1.0%; FR 20-20,000 Hz +0.1 dB; sin 100 dB; input imp 100,000 ohms. 19 x 7 x 18½ in: 63 lb. $4,395
MS1001. As above, 100 W x 2. $3,295

**MTX SOUNDCRAFTSMEN**

**Pro-Power Ten 820-W Amplifier**
MOSFET design with dual 20-segment LED clipping indicators and speaker switching for 2 speaker pairs. 205 W x 2 cont avg into 8 ohms with 0.05% THD, 300 x 2 into 4 ohms, or 450 x 2 into 2 ohms; SN 105 dB; slew rate 70 V/µs; in 0.01%. 19½ x 5½ x 11 in: 28 lb. $749

**Pro-Power Four 205-W Amplifier**
MOSFET design with dual 20-segment LED clipping indicators and speaker switching for 2 speaker pairs. 205 W x 2 cont avg into 8 ohms with 0.05% THD, 300 x 2 into 4 ohms, or 450 x 2 into 2 ohms; SN 105 dB; slew rate 40 V/µs; in 0.01%. 19½ x 5½ x 11 in: 28 lb. $749

**MUSEATEX**
Melior 100-W Amplifier
Features Class AB design; floating-charge power supply and static-fan heat sink. 100 W x 2 cont avg into 8 ohms or 180 x 2 cont avg into 4 ohms; FR 0.1-65,000 Hz; THD 0.25%; slew rate 75 V/µs. Wood veneer finish. 23 lb. $1,995

**NAD**
**Model 208 250-W/ch Amplifier**
N-channel MOSFET design bridgeable to 500 W cont avg mono. Features symmetrical balanced inputs. Fast and rack-mountable front-panel kits optional. $1,199

**Model 2400THX 100-W/ch Amplifier**
Bridgeable amplifier with power-envelope circuitry. Features soft-clipping circuit; input-level controls; normal/lub connections; for 2 speaker pairs with switching. 60 W x 2 cont avg; dynamic headroom 5.7 dB. Rack mountable. $599

**Model 2100X 60-W/ch Amplifier**
Bridgeable amplifier with power-envelope and soft-clipping circuitry; input-level controls; normal/lub connections; for 2 speaker pairs with switching. 60 W x 2 cont avg; dynamic headroom 5.3 dB. Rack mountable. $429

**NAI M**
**NAP 250 70-W/ch Amplifier**
Nap toroidal transformers; 4 regulated power supplies each rated at 40 V delivering 15 amperes; thermal protection. 70 W x 2 cont into 8 ohms. $3,295

**NAP 140 45-W/ch Amplifier**
Features dual power supply rectification; 2 smoothing capacitors for each channel; thermal protection. 45 W x 2 cont into 8 ohms; FR 5-40,000 Hz +3 dB; input imp 22 kilohms. 8 x 3 x 1¾ in. $1,395

**NAKAMICHI**
**PA-TALL 225-W/ch Amplifier**
Features Stasis topology; 2 internal amplifiers for high- and low-impedance sources; 700-W toroidal power transformer; bridge rectifiers; electrolytic filters; 18 transistors per channel; Rib Framework chassis. 225 W x 2 cont avg into 8 ohms with 0.05% THD or 340 x 2 max into 8 ohms; FR 20-20,000 Hz +0, 0.2 dB; SN 120 dB; damping factor 60; dynamic headroom 1.7 dB; power bandwidth 5-50,000 Hz into 8 ohms, 17½ x 7½ x 16½ in; 62.7 lb. $2,300
PA-SA11. As above. 150 W x 2. $1,650

**NHT**
**MA-1 80-W Mono Amplifier**
Features Class AB design, 50-, 100-, or 200-Hz selectable low-pass filter; high-pass filter; variable gain. For use as center-channel or subwoofer amp. 80 W into 8 ohms or 100 W into 4 ohms; slew rate 100 V/µs; high-level sens 100 mV variable; dynamic headroom 2 dB. $300

**ONYKO**
**Grand Integra M-508 200-W/ch Amplifier**
Dual-mono design with low-imp drive capability. Features Real-Phase transformer to eliminate current fluctuations; high-current capability; variable inputs with left/right channel-level controls. Calibrated high-speed peak-power meters. 200 W x 2 cont avg into 8 ohms; dynamic power 460 W x 2 into 4 ohms, 685 x 2 into 2 ohms, or 860 x 2 into 1 ohm; THD 0.003%; SN 120 dB; in 0.003%; damping factor 140. 11½ x 7¾ x 6½ in: 55 lb. $1,200

**Integra M-502 140-W/ch Amplifier**
Dual-mono design with low-imp drive capability. Features 4-way speaker crossover. 140 W x 2 cont avg into 8 ohms; dynamic power 290 W x 2 into 4 ohms or 425 x 2 into 2 ohms; THD 0.005%; SN 120 dB; in 0.004%; damping factor 140. 17½ x 7½ x 16¼ in; 41 lb. $650

**M-501 150-Wch Amplifier**
Features protection circuitry; connections for 2 speaker pairs. 150 W x 2 cont avg into 8 ohms; $2,995
**AMPLIFIERS**

**PIONEER**

M-91 200-W/ch Amplifier

Features dual-mono construction; finned cast-iron-enclosed transformers; honeycomb insulator feet; copper transformer plate; honeycomb heat sink; film condenser; regulated power supply; copper-fil PC board; two pairs of speaker outputs; CD-direct input with volume control. Urushi-finish front panel and rosewood-vinyl side panels. 200 W x 2 into 8 ohms; THD 0.003%; 18 x 6½ x 17 in; 60 lb

$1,400

M-72 200-W Amplifier

4 channels. Auto output selector; 3 inputs (processing front, center, and rear) for 4-channel configuration; 2 or 4 speaker outputs. Urushi-finish front panel and rosewood-vinyl-covered sides. 100 W x 2 or 50 x 4 into 8 ohms; THD 0.1%; 18 x 6½ x 16¼ in; 53.9 lb

$1,000

**PS AUDIO**

PS 100 Delta 120-W/ch Amplifier

Features dual-mono configuration; direct coupled input and output; 60 μF filter capacitors in power supply; low feedback design. 200 W x 2 into 4 ohms; THD 0.1%; slew rate 150 V/μs; 17 x 6 x 13½ in; 43 lb

$1,195

**QUAD**

Model 606 140-W/ch Amplifier

Designed with feed-forward error correction (current dumping) combining Class A and Class B operation. Features protection circuitry using sensor on AC-input side of power supply to integrate current over time and limit any current spikes. 600 VA toroidal transformer to power twin 150-W bipolar output transistors. selectable gain settings at 32, 29.5, 26 or 20 dB. 60 W x 2 cont avg into 4 ohms, 700 x 2 cont avg into 8 ohms; FR 0.1-160 kHz ±0.5 dB; THD 0.01% at 1,000 Hz, 0.03% at 20,000 Hz; 14½ W x 2 cont avg into 2 ohms; 240 x 1 cont avg into 4 ohms. FR 0.3-300,000 Hz ±0.3 dB; THD 0.25% at 1,000 Hz, 20 W; slew rate 70 V/μs; damping factor 200 from 20-20,000 Hz; input imp 600, 20,000 or 100,000 ohms. 17 x 5½ x 15 in; 48 lb

$53,100

**SONORAGRAFIE:**

**BY CONRAD JOHNSTON**

SA150 120-W/ch Amplifier

Features MOSFET output stage. 120 W x 2 into 8 ohms. 17 x 5½ x 13 in

$995

**SONY**

TA-N80ES 200-W/ch Amplifier

200 W x 2 into 8 ohms with 0.004% THD or 580 x 1 bridged into 8 ohms with 0.007% THD; IM 0.004%; slew rate 150 V/μs; damping factor 100. 18½ x 7½ x 17½ in; 53.9 lb

$1,200

TA-N55ES 110-W/ch Amplifier

110 W x 2 or 300 x 1 bridged into 8 ohms; THD 0.004%; IM 0.004%; slew rate 125 V/μs; damping factor 100. 18½ x 6 x 14½ in; 26.9 lb

$500

TA-N110 45-W/ch A/V Amplifier

Features 3 digital delay modes with variable delay times; video switching; input attenuator; 3-way input switch; 2 sets of speaker terminals. 45 W x 2 into 8 ohms; 100 x 1 bridged; FR 5-20,000 Hz ±0.3 dB; SN 105 dB; IM 0.08%. 17 x 4¼ x 10½ in; 11.7 lb

$300

**SOUNDSTREAM**

DA-1 MK1 200-W/ch Amplifier

Dual-mono design. Features fully discrete Darlington transistor circuitry; dual front-panel overload indicators. 200 W x 2 cont avg from 2-100,000 Hz; FR 20-20,000 Hz ±0.1 dB; slew rate 35 V/μs; SN 110 dB; dynamic headroom 3 dB. 17 x 5½ x 14 in; 35 lb

$1,495

**SA-100 50-W Amplifier**

Designed for multiroom systems. Features 1-ohm stability. 50 W x 2 into 4 ohms, 90 x 2 into 2 ohms.

**Jeff Rowland Model 1**

or 180 x 1 into 4 ohms. Remote speaker switching possible via optional RSS-2 remote speaker selector

$449

**SPECTRAL**

DMA-80 100-W/ch Amplifier

Features DC-coupled circuitry; 300 VA power transformers; hand built Vishay precision resis-
8x oversampling digital filter and four 20-bit D/A converters. Features digital-direct drive with unity-gain from output of D/A converters to power-amp output stage; dual-mono construction; optical and coaxial digital inputs. 115 W x 2 cont avg into 8 ohms with 0.005% THD; damping factor 110; SN 98 dB. Digital section: THD 0.005% at 1,000 Hz; SN 100 dB; FR 20-20,000 Hz ±0.3 dB. 17 x 6 3/4 x 15 1/2 in; 35 lb.

$1,150

**Technics**

SE-M100 115-W/ch Digital Amplifier

DSP-8 Preamplifier

8 inputs with digital switching. Features 5 balanced source inputs; 3 balanced tape inputs; i.e., 1% Roederstein metal-film resistors and film capacitors throughout; switchable phono-input capacitance; switchable MM/ MC phono gain; separate headphone amp; 5 line-level inputs; AC- and DC-coupled outputs; source-direct output; signal-processor loop. Tape dubbing; record selector allowing taping of one source while listening to another. FR 5-120,000 Hz ±0.5 dB; SN 95 dB; or 0.0015%. Tuners: S/160 Stasis 80-W/ch Amplifier, S/350e Stasis 150-W/ch Amplifier, SA/6e Stasis 125-W Mono Amplifier.

Features copper-plated circuit board for low noise and hum; 1% Roederstein resistors and film capacitors throughout; switchable phono-input capacitance; switchable MM/MC phono gain; separate headphone amp; 5 line-level inputs; AC- and DC-coupled outputs; source-direct output; signal-processor loop. Tape dubbing; record selector allowing taping of one source while listening to another. FR 5-120,000 Hz ±0.5 dB; SN 95 dB; or 0.0015%. Tuners: S/160 Stasis 80-W/ch Amplifier, S/350e Stasis 150-W/ch Amplifier, SA/6e Stasis 125-W Mono Amplifier.

Features copper-plated circuit board for low noise and hum; 1% Roederstein resistors and film capacitors throughout; switchable phono-input capacitance; switchable MM/MC phono gain; separate headphone amp; 5 line-level inputs; AC- and DC-coupled outputs; source-direct output; signal-processor loop. Tape dubbing; record selector allowing taping of one source while listening to another. FR 5-120,000 Hz ±0.5 dB; SN 95 dB; or 0.0015%. Tuners: S/160 Stasis 80-W/ch Amplifier, S/350e Stasis 150-W/ch Amplifier, SA/6e Stasis 125-W Mono Amplifier.

Features copper-plated circuit board for low noise and hum; 1% Roederstein resistors and film capacitors throughout; switchable phono-input capacitance; switchable MM/MC phono gain; separate headphone amp; 5 line-level inputs; AC- and DC-coupled outputs; source-direct output; signal-processor loop. Tape dubbing; record selector allowing taping of one source while listening to another. FR 5-120,000 Hz ±0.5 dB; SN 95 dB; or 0.0015%. Tuners: S/160 Stasis 80-W/ch Amplifier, S/350e Stasis 150-W/ch Amplifier, SA/6e Stasis 125-W Mono Amplifier.

Features copper-plated circuit board for low noise and hum; 1% Roederstein resistors and film capacitors throughout; switchable phono-input capacitance; switchable MM/MC phono gain; separate headphone amp; 5 line-level inputs; AC- and DC-coupled outputs; source-direct output; signal-processor loop. Tape dubbing; record selector allowing taping of one source while listening to another. FR 5-120,000 Hz ±0.5 dB; SN 95 dB; or 0.0015%. Tuners: S/160 Stasis 80-W/ch Amplifier, S/350e Stasis 150-W/ch Amplifier, SA/6e Stasis 125-W Mono Amplifier.

Features copper-plated circuit board for low noise and hum; 1% Roederstein resistors and film capacitors throughout; switchable phono-input capacitance; switchable MM/MC phono gain; separate headphone amp; 5 line-level inputs; AC- and DC-coupled outputs; source-direct output; signal-processor loop. Tape dubbing; record selector allowing taping of one source while listening to another. FR 5-120,000 Hz ±0.5 dB; SN 95 dB; or 0.0015%. Tuners: S/160 Stasis 80-W/ch Amplifier, S/350e Stasis 150-W/ch Amplifier, SA/6e Stasis 125-W Mono Amplifier.
AUDIRE

SP-15 Hybrid Preamplifier
Design with Fet's and 3 vacuum tubes. Features second chassis with toroidal power transformer; automatic/manual muting; bypass control; absolute -diminishing circuitry; tape-to-tape dubbing. S/N 100 dB; THD 0.01%; RIAA phono deviation 20-25,000 Hz +0, -3 dB; THD 0.15%; IM 0.05%; RIAA phono overload 200 mV; SIN 80 dB MWMC. Available with balanced outputs.

Model .5B Preamplifier
Inverts polarity for phone outputs. FR 22-20,000 Hz +0, -0.05 dB; high-level sens 50 V; MM phono sens 1.25 V for 0.5 V at 1,000 Hz; MM phono overload 200 mV; SIN 80 dB MWMC. Balanced outputs optional.

CAMBRIDGE AUDIO

CT7 Preamplifier
Features toroidal power transformer; headphone amp; dual active and passive outputs; passive EQ in RIAA stage; passive tone controls with tone defeat; gold-plated MM/MC phono jacks. 5 inputs; tape loop; SIN 75 dB MC, 80 dB MM, 95 dB line; input Ps 0.5 V MC, 4.5 V MM, 300 V line.

CARVER

Carver's Sonic Hologram Generator refers to an analog ambience- and image-enhancement circuit.

C-19 Preamplifier
Features Sonic Hologram Generator; 6DB tubes; Wonder Caps; wide circuit traces; no IC's in primary signal path. Dual external processor loops; 5 inputs including MM/MC phono and CD-direct; dual tape-monitor loops with dubbing; individual LR tone controls with variable turnover; headphone jack with switchable speaker defeat; subsonic filter; switch phase. FR 1-60,000 Hz +0, -0.3 dB; THD 0.07%; MM phono sens 1.5 mV; SN 86 dB MM; 12 lb.

CT-17 Surround-Sound Preamplifier/Tuner
Combination asymmetrical charge-coupled detection AM/FM tuner and preamplifier with Sonic Hologram Generator. Preamp features Deputy Pro Logic processor with rear volume control and hall and stadium soundfields; 7 inputs including CD-direct and MM phono; simulated stereo synthesis for mono video; 3-way tone controls; dual tape monitors; high-cut filter; remote control with separate input/recorder switch and remote volume control for multimip applications; 20 AM/FM station presets with scan; stereo mono and auto/manual tuner controls. Tuner: stereo sens 20.1 dB; cap ratio 1.4 dB; AMreq 73 dB; alt-arch sel 58 dB; THD 0.02% FM; SN 79 dB. Preamp: FR 1-60,000 Hz +0.3 dB; THD 0.01%; max output 7 V; 16 lb.

C-16 Preamplifier
Features Sonic Hologram Generator; 5 inputs including MM and MC phono; dual external-processor loops; dual tape-monitor loops with dubbing; LR tone controls with variable turnover; headphone output with speaker-defeat switch. FR 1-60,000 Hz +0, -0.3 dB; THD 0.01%; max output 7 V; 6 lb.

C-7 Preamplifier/Tuner
Features asymmetrical charge-coupled FM detection circuitry; Sonic Hologram Generator; loudness EQ circuitry; 6 audio inputs; 16 AM/FM station presets with scan; stereo mono and auto/manual tuner controls; 3-band tone controls; dual tape monitors with dubbing; headphone jack. FR 20-20,000 Hz, SIN 90 dB; THD 0.01%; phono sens 1.5 V for 0.5 V at 1,000 Hz; MM phono overload 200 mV; S/N 80 dB MWMC. Balanced outputs optional.
scan; auto-scan or manual tuning; 3-level signal-strength indicator; 4 audio inputs; 2 tape inputs; dubbing; ±100 mV phono input; bass, treble, and loudness EQ; balance and motorized volume controls; headphone jack; 28-key remote control. Preamp: FR 20-20,000 Hz ±1 dB; THD 0.0% ± 10 mV; 74 dB. Tuner: IF/RF sensitivity 10.3 dB; stereo 21.3 dB; AM rejection 74 dB; PLN 1.5. 19 in X 13 in. $550

CELLO
The Palette Preamplifier
6 tone controls, external power supply; 2 tape processor loops; 4 unbalanced inputs; 2 unbalanced record outputs; 1 unbalanced and 1 balanced main output. FR 20-20,000 Hz ±2 dB; THD 0.005%, max output 9 V. $7,500

Etude Preamplifier
Passive input preamp; 4-position input selector; 58-position output attenuator; 4 RCA inputs and 1 RCA output. 9% x 3 3/8 in; 31 lb. $1,500

CLASSÉ AUDIO
DR-5 MK11 Preamplifier
Balanced input/output; regular output; phono and direct balanced input; MCM/M phono input; 3 line-level inputs; aux inputs; mute. Scalped one-piece handles. 22 x 10 1/2 in X 18 3/4 in; 29 lb. $2,295

CONRAD-JOHNSON
PV9 Tube Preamplifier
Features low-noise precision metal-film resistors; polystyrene capacitors; 2 tape loops for 2-way dubbing; 2 line-level and 1 phono input; 2 amp outputs; mute button. FR 20-20,000 Hz ±0.25 dB; SN 70 dB below 10 mV phono; 84 dB below 2.5 V line-level; THD 0.05%; IM 0.05%; gain 40 dB phono; 29 dB line; max output 25 V; phono overload 500 mV at 1 kHz. 14 x 4 3/4 x 11 1/4 in. $2,995

PV11 Tube Preamplifier
Features cathode follower outputs and solid-state voltage regulator designed for minimal AC impedance; regulated power supply; audio circuits with 1% tolerance mil-spec-deposited tin-oxide resistors and polystyrene capacitors; ±0.5 dB volume-control tracking; auto mute upon on/off; 2 tape loops for 2-way dubbing. Max output 40 V cont avg; FR 2-100,000 Hz; THD 0.5%; IM 0.5%; hum and noise; 72 dB below 10 mV input phono; 84 dB below 2.5 V output line; output imp 200 ohms. 16 x 3 3/4 x 10 in; 15 lb. $1,895

PV11L. As PV11, line stage only. $1,495

PF1 Preamplifier
All-FET design. Features distortion-canceling circuitry; polypropylene and polystyrene audio circuitry; power-supply capacitors; precision metal-film resistors; 4 line-level inputs and phono input. FR 2-25,000 Hz ± 3 dB; max output 10 V; THD 0.1%; IM 0.1%; gain 21 dB line; 40 dB phono. 19 x 3 1/4 x 12 1/2 in; 15.5 lb. $1,395

PV10 Tube Preamplifier
Features zero-feedback circuits in both line and phono stages; 2 triode amps separated by passive RIAA EQ network; 5 vacuum tubes; discrete regulated power supply with polypropylene and polystyrene capacitors; 5 line-level inputs and phono input; 1 tape loop; balance-bypass switch. THD 0.01%; hum and noise; 72 dB below 10 mV input phono, 84 dB below 2.5 V output line; output imp 500 ohms. 16 x 11 x 3 3/4 in. $995

COUNTERPOINT
SA-5000 Hybrid Preamplifier
Tube/solid-state design using tubes for major audio amplification. Features separate-chassis regulated tube power supply; absolute phase control; phono input stages with RIAA EQ; buffered output; phono input stages and switchable MM/MMC input stage. $2,500

Crown International PSL-2
Phono input. FR 4-40,000 Hz ±0.1 dB; THD 0.01%; gain 19 x 4 1/4 x 12 1/2 in; 39 lb. $3,995

Solid-8 Preamplifier
FET design. 6 line-level inputs; 2 tape inputs allowing dubbing. FR 1-50,000 Hz ±1 dB; THD 0.03%; SN 87 dB. 19 x 2 1/2 x 10 in; 14 lb. $895

CROWN INTERNATIONAL
PSL-2 Preamplifier
Features subsonic filter; loudness circuit, auto mute protect. Detented tone controls with defeat switch; balance control; overload, rumble, and signal-present indicators; tape dubbing; adjustable phono input gain. FR 10-50,000 Hz ±0.25 dB; THD 0.009% from 20-20,000 Hz; SN 103 dB; input sens 250 mV; output level 2.5 V. 19 x 13 1/4 in; 11 lb. $795

DB SYSTEMS
DB-1A/2A Preamplifier
Features separate DB-2A regulated power supply; 6-dB/oct switchable high-pass filter at 20 or 36 Hz for phono; 6-dB/oct low-pass filter at 5,000 Hz; gold-plated jacks; Alps 80-dB tracking volume control. THD ≤ 0.008% from 20-20,000 Hz; IM 0.01%; FR 10-40,000 Hz ±0.07 dB phono, 2-50,000 Hz ±0 dB line; SN 89 dB phono, 90 dB A-line; output imp 1 kilomax; output voltage 6 V into 10 kilohms/3000 pF; input sens 2 mV into 50,000 ohms/100 pF phono, 120 mV into 50 kilohms. 3-year warranty. 8% x 3 1/4 x 7 in. $495

DB-1B/2A. As DB-1A, with low-noise line-stage (¾ dB ref 1 V). Features reduced crosstalk; tight-tracking volume control. Solid-oak cabinet with hand-rubbed tung-oil finish. 12 x 3 1/2 x 7 in. $700

DB 1A/HL/DB-2A. As DB-1A, with 5 line-level inputs; no-phono input select. FR 1-25,000 Hz ±3 dB; SN 92 dB; THD 0.006%; input sens 120 mV line. 3-year warranty. $375

DENON
AVP-5000 DSP/Surround-Sound Preamp
Uses two digital IC's to perform preamp, soundfield processing, Dolby Pro Logic, and surround-sound functions. Features 2 Lambda ladder-type and 4 A1 hybrid multi-bit DA convensors driving analog volume control and preamp outputs; dual Sigma-Delta A/D converters; separate transformer and power supplies for audio and video sections; 5-subsection copper-plated chassis; 3-band parametric EQ; signal compression and expansion; 4 optical and 2 coaxial digital inputs; 1 optical digital output for DAT, 11 analog inputs; 8 preamp and 4 rec/out analog inputs; 6 video outputs/4 video inputs, composite and S-video. Adjustable delay time (0-180 ms) and reverberation in surround and soundfield modes, analog- and digital-mute mode; source conversion between composite and S-video formats; FL display; programmable remote control. $2,500

DAP-5500 Digital Preamplifier
Features digital section with 4x-oversampling filter and push-pull Super Linear DA-converter system; separate digital and analog circuitry; separate power supplies for digital and analog sections; unity-gain interface amplifier; nonresonant vibration-resistant chassis; switchable source-direct mode; 1 optical and 2 coaxial digital inputs; coaxial digital tape-monitor loop; optical isolators; digital converter jacks; Cannon-type input/output. FR 2-20,000 Hz; IM 0.5%; THD 0.009% from 20-20,000 Hz; SN 103 dB; input sens 250 mV. $1,300

DYNACO
PAS 3 Series II Tube Preamplifier
Features 7 inputs including phono; 2 tape-monitor loops. $595

DYNACO
PAS 5 Preamp: FR 20-20,000 Hz ±1 dB; THD 0.0008% from 20-20,000 Hz at 3 V out; noise -96 dB at 0.5 V in. 17 x 2 1/2 x 12 1/2 in. $990

FORTE
Model 40 Preamplifier
Features dual-channel noninverting FET circuits; matched-device transistors enhanced with discrete pure Class A biasing; glass-epoxy circuit boards; active constant-current sourcing; 2 parallel sets of outputs; external power supply; gold-plated connectors. Independent listening and record selectors; channel balance and level controls. Input imp 12,000 ohms; output imp 475 ohms; THD 0.1% from 20-20,000 Hz at 0.02 V out; noise -96 dB at 0.5 V in. 17 x 2 1/2 x 12 1/2 in. $990

HAFLER
Iris Preamplifier
All-discrete JFET signal path design. Features JFET complementary-symmetry phono stage design; MOSFET switching for 7-high level inputs; optically-actuated servo-controlled volume and balance controls; switchable external-processor loop; 2 tape loops; external-processor output; line-level output; 20-20 dB mute; wireless remote control with rotary volume/balance knobs. FR 20-20,000 Hz ±0.1 dB; THD plus noise: 0.006% MC; 0.002% MM; 0.005% line; SN relative to 0.5 V cont avg: -87 dB MM, -80 dB A MC; SN -97 dB line relative to 2 V. 17 x 3 x 8 1/2 in. $900

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AMPLIFIERS

Model 915 Preamplifier
Pure Class A all-discrete primary signal path and JFET topology. Features CMOS FETs and relay switching; high-power transformer with large filter capacitance; 6-line-level inputs including one switchable to MM/MC phono; 3 line-level outputs; 4 switched and 1 unswitched outlets; bass and treble controls; THD 0.009% MC, 0.002% MM, 0.006% line; power bandwidth 2-170,000 Hz ±6 dB; SN -80 dB MC, -87 dB MM, -100 dB A line; input imp 20,000 ohms; input sens 45 mV for 0.5 V cont avg. Black finish. 17 x 1½ x 7¾ in; 8 lb. $1,295

LUXMAN

TP-117 Dual Preamplifier/Tuner
Dual preamp sections in one chassis to provide independent source selection and volume control for two sets of components. Features RF TV modulator, separate regulated power supplies; AM/FM computerized tuner with 4-stage FM front end; signal processor loop, CD-direct input. 20 AM/FM station presets with auto-seek tuning; FM fine tuning 25-KHz steps; motor-driven volume controls with auto preset; video switching with buffer amplifiers; multifunction remote control. Amp section: FR 20-20,000 Hz ±0.5 dB; THD 0.006%; SN 86 dB phono, 96 dB line. FM tuner: 50-dB quieting sens 38 dBf stereo; cap ratio 1.5 dB; alt-ch sel 68 dB. PM tuner: SN 50 dB. 17½ x 4½ x 13 in; 11.4 lb. $1,250

TP-114 Preamplifier/Tuner
Features Duo-Beta feedback circuitry; Star circuit topology; voltage-driven amplification; fixed-level pre-out jacks; 20 Ampm/DBM presets; auto seek; preset scan autoFM/FM tuning; FM fine tuning; motor-driven volume controls; remote control compatible; remote repeater output; local/remote sensor selector; phono/aux input switching; multifunction remote control included. Preamp: FR 20-20,000 Hz ± 0.5 dB phono, 5-160,000 Hz ±3 dB line; SN 78 dB phono, 95 dB A line; THD 0.006% at 1 V output. Tuner: 50-dB quieting sens 14.8 dBf mono, 38 dBf stereo; cap ratio 1.5 dB; alt-ch sel 65 dB. $649

HARMAN KARDON

Citation 25 Preamplifier
Features discrete circuitry; high-cut filter, subsonic filter. Interactive A/V switching; tone defeat; switchable bass and treble turnover frequencies; mono switch; headphone jack; remote control. $895

HTG., BY MUSIC & SOUND IMPORTS

DCC-1 Digital A/V Preamplifier
Features 8x oversampling 18-bit DA converter; upgradable digital section; separate power supplies for analog and digital sections; 3 digital inputs; 7 line inputs. Video switching with S-video compatibility; switchable gain stage; independent source selection for listening and recording. ACC-1. As above, no digital stage. $895 Remote control for DCC-1 and ACC-1. $150

KRELL

KBL Preamplifier
Features DC-coupled Class A circuitry; external dual-mono power supplies; 2 balanced and 4 single-ended inputs; 2 tape loops; balanced and single-ended output. $4,500

KSP Preamplifier
Class A circuitry; 2 balanced and 3 single-ended inputs; 1 tape loop; balanced and single-ended output. Optional phono stage. $2,000

KPE Preamplifier
Features discrete circuitry; MM/MC phono stage; external power supply; selectable gain and phono loading. $500

LINN

LK1 Preamplifier
Microprocessor-controlled preamp with independently-adjustable input-level matching. Features keyboard lockout; all switching and level-adjustment electronics on board; MM/MC phono inputs; 4 line-level inputs; remote control. 10½ x 3 x 10½ in; 9 lb. $1,295

MARK LEVINSON,
BY MADRIGAL

Model 28 Preamplifier
Dual-mono construction. Features single custom transformer with separate windings and grounding systems; distributed power supply regulation; separate power supply; switchable gain for line and phono inputs; 8 inputs including switchable phononline input; 2 gold-plated XLR balanced inputs; 5 single-ended inputs; balanced and unbalanced main outputs; outputs for 2 tape recorders; low- and high-gain phono modules each with two gain settings. Output imp 10 ohms; line input imp 13 kilohms; phono input imp 825 ohms high-gain, 47 kilohms low-gain. Preamp: 17½ x 2½ x 10¼ in; power supply: 8½ x 2½ x 13½ in; 29 lb. $3,300

McINTOSH

C-34V A/V Preamplifier
A/V control center with compression/expansion system. Features 8 line-level inputs; phono inputs; 3 switched and 2 unswitched rear AC outlets; connections for 2 speaker pairs; record and monitor selectors; 5-band EQ. Preamp: FR 20-20,000 Hz ± 0.5 dB; THD 0.015%; SN 90 dB A phono, 100 dB line. Amp: 20 W/Ch with 0.015% THD; FR 20-20,000 Hz ±0.2 dB; THD 0.005%; SN 100 dB A. 16½ x 5½ x 13 in; 26 lb. $2,499

C-35 A/V Preamplifier
Features cascoded FET pair for input switching; 9 A/V inputs; tape-monitor switches for 2 recorders; loudness control; 5-band EQ; headphone jack; FR 20-20,000 Hz. 0.5 dB; THD 0.007%; SN 90 dB phono, 105 dB line. $1,995

Hafler Iris

loudness control; 5-band EQ, headphone jack; FR 20-20,000 Hz. +0, -0.5 dB; THD 0.007%; SN 90 dB phono, 105 dB line. $1,195

MELOS

MA-111 Preamplifier
Heavy-aluminum chassis; external toroidal power supply. FR 2-300,000 Hz ±1 dB; THD 0.07%; max gain 67 dB; line gain 27 dB. $1,195

MERIDIAN

Model 603 Digital Preamplifier
Two pieces. Provides DA conversion through 256x oversampling, D/A bitstream circuitry. Features auto sampling-rate-to-source matching (32 dB...
or 48 kHz); passive differential analog filtering; connected two-box chassis to eliminate electrical interference; digital audio and computer-control circuits and power supplies in one box. D/A converters and analog audio circuitry in other; 8 regulated power supplies; two coaxial and two optical digital inputs; three analog inputs. 64-step discrete FET electronic volume control; remote control. SN 106 dB. Black anodized finish with glass front panel and gold control keys. 12 7/8 x 4 x 12 7/8 in.

$2,500

Model 201 Preamplifier
Features 6 inputs; tape-to-tape dubbing for 2 decks; full source monitoring capabilities; 64-step volume control; user-programmable mute and volume offset between sources; MM/MC phono input; 5 line-level inputs; output level, tone, and balance controls. SN 95 dB; THD 0.002% from 20-20,000 Hz; FR 1-100,000 Hz +0, -3 dB. 17 3/4 x 2 1/2 x 11 1/4 in.

$1,150

MOD SQUAD
Deluxe Line-Drive AGT Preamplifier
Features advanced grounding topology with star-center grounding throughout; non-ferrous non-magnetic chassis; 5-line-level inputs; 2 tape loops; two main outputs wired in parallel for biamplification; switchable chassis shielding; variable output impedance. Front-panel input selector with mute position, volume, and balance controls. FR DC-200,000 Hz +0, -3 dB; THD 0.0001%; input imp 12,000 ohms; min 86 dB. 16 7/8 x 21 5/8 x 10 3/4 in.; 4 lb.

$1,090

NAD Model 1000
Features independent dual 2-way tape dubbing. FR 15-30,000 Hz; THD 0.0005% line; SIN 92 dB line. 17 3/4 x 4 1/4 x 9 1/2 in.

$2,350

NAD Model 1600 Preamplifier/Tuner
Features external processor loop; FM blend; 14 A/M/FM presets; bass EQ; 2-way tape dubbing; remote control. Rack mountable.

$399

NAD Model 1300 Preamplifier
Features Mc phono stage; external processor loop; infrasonic filter. Bass EQ; null switch; semi-parametric tone controls at 50, 100, 250, 3,000, 6,000, and 12,000 Hz with ±12 dB boost/cut; 2-way tape dubbing. Rack mountable.

$399

NAD Model 1000 Preamplifier
Features external processor loop; bass EQ; MM/MC phono stage; infrasonic filter; 2-way tape dubbing. Rack mountable.

$299

NAI N
NAI N 72 Preamplifier
Features matched and time-aligned filter; 2 tape, tape monitor, 2 phono, and 1 line inputs. Input sens: 2 mV into 47 kilohms MM; 100 mV into 470 ohms MC; output sens 0.775 V into 47 ohms; overload margin 40 dB. 11 3/4 x 3 x 8 in.

$1,395

NAI N 62 Preamplifier
Phono input accommodates different cartridges or high-level boards. Features 3 line-level inputs, mute/monitor switch. Input sens: 2 mV into 47 kilohms MM; 100 mV into 470 ohms MC; output sens 0.775 V into 47 kilohms; overload margin 40 dB. 11 3/4 x 3 x 8 in.

$925

Nakamichi
CA-7A Digital Preamplifier
Features separate digital and analog sections; isolated grounding topology; acoustical fine-tuning system; motor-driven volume control; inputs for MM and MC phono; 6 line-level inputs, 2 outputs; multiroom remote control with RS-7 remote sen-

SOR. FR 1-100,000 Hz +0, -3 dB. SN 94 dB; THD 0.002% from 20-20,000 Hz. 17 3/4 x 3 1/4 x 12 1/2 in. 15 lb

$2,750

CA-SAH Preamplifier
Features low-noise FET's; bipolar transistors; multiregulated isolated-ground power supply. Tape dubbing; gold-plated inputs and outputs; MM/MC phono input; 5 line-level inputs; output level, tone, balance controls. SN 95 dB; THD 0.002% from 20-20,000 Hz; FR 1-100,000 Hz +0, -3 dB. 17 3/4 x 2 1/2 x 11 1/4 in.

$1,150

Integra P-304 Preamplifier
Features independent magnetically shielded power supplies for each amp block; short signal-path routing; subsonic feedback loop to cancel DC components; signal-in-phase filters to reduce common-mode noise. Defeatable tone controls; switchable Contra-Bass control; high-cut sloping filter position on treble control; 8 inputs including MM/MC phono and 2 front-panel jacks for portable components; dual record-output selectors. FR 0.8-170,000 Hz +0, -3 dB. THD 0.0005% line; SN 91 dB line. Wood side panels included. 18 3/4 x 4 1/2 x 12 1/4 in. 19 lb.

$660

Sor. FR 1-100,000 Hz +0, -3 dB. SN 94 dB; THD 0.002% from 20-20,000 Hz. 17 3/4 x 3 1/4 x 12 1/2 in. 15 lb.

$2,750

P-301 Preamplifier
Features selective-tone control; 7 audio and 2 video inputs; video dubbing; source-direct switch; multiroom capability. FR 5-30,000 Hz ±1 dB; THD 0.009% line; SN 92 dB MM. 17 3/4 x 4 1/2 x 12 1/4 in. 9 lb.

$270

PARASOUND
C/PT1000R Preamplifier/Tuner
Class A Fet design. Features gold-plated jacks; 2 line-level outputs; variable loudness contour; mono switches; 16 A/M/FM presets; remote control. FR 5-80,000 Hz; THD 0.004%; SN 92 dB. 17 3/4 x 4 1/10 x 17 in.

$550

P/FET-9001I Preamplifier
Class A discrete Fet design. Features electrical logic switching; polypropylene capacitors; regulated power supply; gold-plated jacks; muting relay; variable loudness contour; 3 AC outlets; mono switch; 2 tape monitors. FR 5-80,000 Hz ±0.5 dB; THD 0.005%; IM 0.005%; SN 80 dB phon. 104 db line. 17 3/4 x 3 10 in.; 1 lb.

$425

P/HP-750 Preamplifier
Features CMOS switching for inputs; variable loudness contour, high- and low-pass filters; tape dubbing. FR 5-65,000 Hz; THD 0.006%; IM 0.006%; SN 92 db phon. over 200 mV. 17 3/4 x 3 1/10 x 12 in.; 10 lb.

$299

Philips
AV1001 Digital A/V Preamplifier
Features Dolby Pro Logic decoder, digital sound processor with bitstream D/A converter, 3 center-
channel modes; preset rear-channel delay time of 20 μs; control adjustments for 5 hall sizes; adjustable reverberation time; adjustable left and right rear-delay time; surround-channel low-pass and high-pass filter; test-tone generator; S-video inputs/outputs; 9 audio inputs; 5 composite video inputs; video outputs; A/V recording outputs. Master switching matrix with display; 52-key universal programmable remote control..

**Quad**

The following models feature tilt control to provide flat, increasing, or decreasing FR slopes in 7 steps of 1 dB each and 5 dB bass boost with rolloffs at 50 and 200 Hz.

**Quad 66 Preamplifier**

Features 7 analog inputs and tone controls; two steps of high-frequency filtering with rolloffs at 5,000 and 7,000 Hz; remote control with volume knob. FR 20-20,000 Hz ±0.5 dB phono, 20-20,000 Hz ± 0.2 dB line; THD 0.05%; SN 75 dB phono, 99 dB line. 12 3/4 x 3 3/16 x 10 in $1,500

**Quad 34 Preamplifier**

4 line-level inputs; 3 switchable filters; bass lift and step. Distortion 0.5%; residual noise ~105 dB A with volume at midrange; FR ± 0.5 dB phono, ± 0.3 dB line. $895

**Revox**

B240S Preamplifier

Microprocessor-controlled design with individually programmable input settings for MM/MC phono and 5-line level inputs. Dual bus structure allows listening to one source while recording another; balanced and unbalanced outputs; programmable power on and max volume; multi-room capability. THD 0.006%. 18 3/4 x 6 1/4 x 14 1/4 in. 14.4 lb. $2,200

**Rotel**

RTC950AX Preamplifier/Tuner

Features low-noise line stages; phono input; remote control. Amp section: FR 20-20,000 Hz ± 2 dB phono. 4-100,000 Hz ± 0, -3 dB line; THD 0.004% line; SN 80 dB phono, 100 dB line. FM tuner: 50-DB quieting setting 37.2 db stereo, SN 75 dB stereo, cap ratio 1:1 db, all-in sel 70 DB. Stereo sep 48 dB at 1,000 Hz. 17% x 3 1/4 x 11 1/2 in. 9 lb. $499

RC980BX Preamplifier

Features high-quality toroidal power transformer; high-grade op amps; specially-selected filter capacitors; separate supply regulators for each channel; MM/MC phono stage with passive high-frequency and active low-frequency EQ. FR 20-20,000 Hz ±0.2 dB phono; THD 0.004%; SN 70 dB MC, 85 dB MM, 100 dB line. 17% x 2 1/2 x 12 1/2 in. 9 lb. $499

**Jeff Rowland**

Consonance Preamplifier

Features microprocessor-controlled volume and switching; 5 unbalanced line inputs and 1 phono input; 7.5-16.4 dB selectable line gain; 42-60 dB selectable phono gain; balanced and unbalanced output. User-stored level setting for all inputs. FL display; remote control. Line section: FR 0.08-200,000 Hz ±0.3 dB; THD 0.012%; input imp 600, 10,000, or 100 kilohms; output imp 300 or 600 ohms. Phono section: FR 0.15-200,000 Hz ±0.3 dB; THD 0.004%. 15% x 2 1/2 x 13 1/2 in. 14 lb. $3,700

**Sonografe, by Conrad Johnson**

SC22 FET Preamplifier

All-FET design with matched-FET polypropylene and polystyrene capacitors for all audio circuits.

Features discrete power-supply regulation; 6 line-level inputs. FR 5-100,000 Hz ± 0.5 dB, max output 10 V; THD 0.1%; IM 0.1%; phono overload 150 mV, 17 x 1 12/16 x 2 1/4 in. $695

SC22P. Phono stage for above with discrete FET regulated power supply $1,189

**Sony**

TA-E1000ESD Digital Preamplifier

Features digital section with tape over-sampling, dual 18-bit/164 converter (front) and 4x over-sampling, 16-bit/DA converter (rear); S-video input and output; optical and coaxial input. FR 10-20,000 Hz; THD 0.004% analog, 0.003% digital; SN phono 84 dB (A-network, front/rear ch). 18 1/2 x 6 x 14 1/4 in. 17.7 lb. $1,000

**Sumo**

Athena II Preamplifier

Fully-complementary Class A discrete line stage. Features all 1% metal-film resistors; polystyrene bypass capacitors; high-voltage separate L/R power supplies; gold-plated input/output jacks. Separate record mode select functions; laser-trimmed volume potentiometer; CD-direct switch; tape monitor. FR 0.2-300,000 Hz, ± 3 dB; THD 0.005% at 3 V cont avg, SN 100 dB line with 3 V cont output. $679

**Superphon**

Revelation II Preamplifier

Class A design with MOS/FET current sourcing. Features fully discrete phono stage with JFET input; 10 zener-diode power regulators; adjust-
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**INTEGRATED AMPLIFIERS**

**ACOUSTIC RESEARCH**

AR A-07 75-W/ch Integrated Amplifier
Features: 2-channel power supplies; switchable feedback tone controls; MM/MC phono input. 110 W x 2 into 4 ohms; FR 15-20,000 Hz; THD 0.03% $500

AR A-03 30-W/ch Integrated Amplifier
40 W x 2 into 4 ohms; FR 15-20,000 Hz; THD 0.005% $300

**ARCAM**

Delta 90.2 70-W/ch Integrated Amplifier
Features: toroidal power transformer; aluminum casing; 3 inputs including MM/MC phono; 2 tape inputs; independent monitor and rec controls; mono switch; headphone output. 70 W x 2 into 8 ohms; THD 0.03% at 1,000 Hz. $739

Alpha2 30-W/ch Integrated Amplifier
Features: toroidal power transformer; aluminum chassis; 3 inputs including MM/MC phono; tape inputs; full monitoring; headphone output. 30 W x 2 into 8 ohms; FR 20-20,000 Hz; THD 0.02% at 1,000 Hz. Charcoal finish. 17 x 3/4 x 11 in; 18 lb $799

**AUDIO BY VAN ALSTINE**

Omega 90-W/ch Integrated Amplifier
Includes Van Alstine Omega hybrid preamplifier circuitry. Features 300 W/RMS custom hybrid amp modules with active-powered feedback; full complementary power MOSFET output circuits; toroidal power transformer; high-current preamp sections; phono, CD, tuner, and delay; 2 channel inputs, 2 stereo inputs, 4 digital input; 2 speaker inputs; remote control. 110 W x 2 into 8 ohms; $1,499

**BY MUSIC HALL**

P50 60-W/ch Integrated Amplifier
Features 8-bit 8xoversampling digital filter and dual D/A converters, auto-sampling-frequency switching; 4 digital (coaxial and optical) audio inputs and 4 video inputs; 5 audio rec outputs; 2 video rec outputs; 12-position rec-out selector; allows simultaneous recording on 2 VCRs; 40 dB continuously variable loudness control; MM/MC phono switch; bass, treble, and midrange with frequency turnover controls and defeat; subsonic filter; 2 remote-controlled outputs. Includes 33-key RS-system remote control. Black finish $449

**DENON**

P70 60-W/ch Integrated Amplifier
Features: toroidal transformers with tuned reservoir capacitors; passive tone controls with bypass circuit; discrete headphone amp; gold MM and MC phono inputs; 3 line-level inputs; tape monitor loop; banana-plug/binding-post speaker terminals. THD 0.01% at 50% rated power; $68 dB MC, 80 dB MM; 100 dB line; sens 0.5 mV MC, 4.3 mV MM, 300 mV line; $600

P50. As above, 60 W/ch $500

**CREEK AUDIO, BY MUSIC HALL**

Model 6060 60-W/ch Integrated Amplifier
Features: 2 tape loops; 4 inputs including MM and MC phono; 2 digital inputs; switchable delay loop; line-level output; tape loop and 3 inputs including phono; MC switch; tone controls. 40 W x 2 into 8 ohms $600

Model 4040S3. As above, 30 W/ch no MC switch or tone controls. $500

**CAMBRIDGE AUDIO**

AVC-3020 300-W A/V Integrated Amp
6-channel amplifier with 6 discrete-component amps for 2 front, 2 center, and 2 rear speakers. Features Dolby Pro Logic decoder and Dolby Time Link digital delay circuitry; 4 Dolby modes; hall, simulated, live, synthetic, and spectarea surround modes; adjustable 0–130 ms digital delay, dialogue-enhancing EQ, 24-character by 10-line display and FL alphanumeric front-panel display for control and set-up information; nonvolatile memory for preferred control settings; separate A/N input and record-output selectors for dubbing; 5 video/S–video inputs; 3 video/S–video outputs; 9 audio inputs; 9 audio outputs; auto input balance; videodisc–direct switch for 20–MHz bandwidth; 60-key Denon Integral System remote control with 5 keys each programmable to send string of 15 commands. 80 W x 2 + 35 x 4 into 8 ohms $1,000

AVC-1000 210-W A/V Integrated Amplifier
6-channel amplifier with 6 amps for 2 front, 2 center, and 2 rear speakers. Features Dolby Pro Logic decoder with digital delay; bridging capability; 4 Dolby modes; hall, simulated, and live surround modes; switchable dialogue-enhancing circuitry; 50–40 ms digital delay; 20-bit MOSFET input; 9–line display and LCD alphanumeric display for control and set-up information; 4 S–video inputs; 3 S–video outputs; 5 video inputs; 3 video outputs; 10 audio inputs; 8 audio outputs; mono subwoofer output; 4–channel rec-out selector to combine video and audio sources for dubbing; programmable 62-key Denon Integral System remote control. 55 W x 2 + 25 x 4 or 55 x 4 into 8 ohms $700

PM-A980R 90-Wch Integrated Amplifier
Features Class A circuitry, relay-type input switching; straight-line circuit layout; pure-current power supply. Motor-driven volume control; separate input and rec-out selectors; remote control with speaker switching. $500
HARMAN KARDON
The following feature discrete components in signal path, MM/mmc phono inputs, and selectable power supply voltage unless otherwise noted.

HK6900 170-W/5m Integrated Amplifier
Features electronic front-panel switches that control analog switches at rear inputs to create short signal paths; phase-correct loudness. A/V switching; 2-way dubbing; VCR/tape monitors; remote control; tone defeat; high-capacity filters; preamp-out jacks. SN 80 dB phono, 98 dB line; slew rate 280 V/µs; damping factor 70; negative feedback 12 dB; high-current capability = 90 amperes. $999

HK6600 90-W/8m Integrated Amplifier
Features phase-correct loudness; 2-way dubbing; rec-1 center) + 60 x 2 (rear) cont avg into 8 ohms; composite to S-video conversion; programmable remote control. 80 W x 2 cont avg into 8 ohms from 20-20,000 Hz or 90 x 2 (front left, right) + 45 x 2 (center) + 45 x 2 (rear) cont avg into 8 ohms; FR 5,800,000 Hz ± 0, -3 dB; SN 96 dB line; THD 0.016% into 8 ohms; $1,200

HK6500 70-W/5m Integrated Amplifier
Features phase-correct loudness. Mono switch; 2 tape monitors; signal processor loop; subsonic filter; S/N 80 dB phono, 98 dB line; slew rate 90 V/µs; damping factor 65; negative feedback 20 dB; high-current capability = 40 amperes. $499

HITACHI
HA-V5EX 200-W A/V Integrated Amplifier
4-channel amplifier. Dolby Pro Logic decoder; 6 surround modes; 6 A/V and 3 audio inputs. 50 W x 4 into 6 ohms; FR 20-20,000 Hz. $750

JVC
AX-V1050T 400-W A/V Integrated Amp
5 channels. Features Dolby Pro Logic decoder with normal, wide, and phantom center-channel modes; symphony-hall, recital-hall, church, jazz club, pavilion, and stadium digital ambience settings; 5 Dynamic Super-A power amps designed for club, pavilion, and stadium digital ambience sets and variable parameters; Dolby Pro Logic decoder; 16 -bit digital delay; Dolby 3 Stereo; Dolby Time Link digital delay system; normal, wide, and phantom surround modes; 4 S-video inputs; 3 S-video outputs; auto input balance; 6 A/V inputs; MM phono input; switching for 2 speaker pairs; connections for dual center-channel speakers; subwoofer output. 5 surround memories; on-screen display, bass and treble controls; programmable remote control. 80 W x 2 cont avg into 8 ohms from 20-20,000 Hz with 0.2% THD or 70 x 2 (front left, right) + 70 x 2 (center) + 18 x 2 (rear) cont avg into 8 ohms with 0.08% THD; FR 5-100,000 Hz ± 0, -3 dB; SN 78 dB MM, 100 dB line. 17% x 6% x 16½ in; 30 lb. $899

KENWOOD
KA-V9500 360-W A/V Integrated Amplifier
6 channels. Features DSP with 10 soundfield presets and variable parameters; Dolby Pro Logic decoder; 16-bit digital delay; Dolby 3 Stereo; normal, wide, and phantom surround modes; dual power transformers; amp-stabilizing circuit; digital parametric EQ; auto input balance; 6 S-video inputs and outputs; 6 A/V inputs; connections for dual center-channel speakers; subwoofer output. Digital bass and treble controls; 5 system preset memories; S/video to composite video dubbing and monitoring; on-screen display; motor driven volume control; programmable remote control. 80 W x 2 cont avg into 8 ohms from 20-20,000 Hz + 30 x 3 at 1,000 Hz (center, rear) cont avg into 8 ohms with 0.1% THD; SN 72 dB MC, 86 dB MM, 96 dB line. Gold finish. $699

PM-80 100-W/8m Integrated Amplifier
Switchable Class A/B operation modes. Features selected discrete topology; high-capacity power supplies; discrete output transistors; relay-controlled speaker selection; dedicated signal-processor loop; source-direct switching; record output selector allowing taping of one source while listening to another; 9 gold-plated inputs with MMC phono input and 3 tape-monitoring features.

MISSON
Cyrus II 60-W/ch Integrated Amplifier
Features high peak current delivery; nonmagnetic, bi-polypropylene and polyurethane capacitors; separate record-play for all inputs; balance control for all inputs; 5 line-level inputs; MMC/MC phono input; headphone jack. FR 20-20,000 Hz; THD 0.003% at 1,000 Hz into 8 ohms; SN 83 dB; slew rate 10 V/µs; damping factor 100. Matte black or Nextel gray finish. 8% x 3 x 13½ in; 16 lb. $899

NAD
Model 3400 100-W/ch Integrated Amplifier
Bridgeable stereo amplifier with power-envelope and soft-clipping circuitries. Normal/lab inputs; preamp-out/main-in loop; semiparametric tone controls; bass EQ; remote control. 100 W x 2 cont avg; dynamic headroom 5.7 dB. Rack mountable. $799

NAIIM
NAIT 2 18-W/ch Integrated Amplifier
Features 4 inputs including MM/mmc phono; tape monitor/mute function; bypassable amp section. Input sens 2.5 mV phono, 75 mV line; tape output level 75 mV into 1,000 ohms. 10½ x 3 x 8 in. $895

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KENWOOD
KA-V7500 316-W A/V Integrated Amplifier
6 channels. Features DSP with 6 soundfield presets; Dolby Pro Logic decoder; Dolby 3 Stereo; Dolby Time Link digital delay system; normal, wide, and phantom surround modes; 4 S-video inputs; 3 S-video outputs; auto input balance; 6 A/V inputs; MM phono input; switching for 2 speaker pairs; connections for dual center-channel speakers; subwoofer output. 5 surround memories; on-screen display; bass and treble controls; programmable remote control. 80 W x 2 cont avg into 8 ohms from 20-20,000 Hz with 0.2% THD or 70 x 2 (front left, right) + 70 x 2 (center) + 18 x 2 (rear) cont avg into 8 ohms with 0.08% THD; FR 5-100,000 Hz ± 0, -3 dB; SN 78 dB MM, 100 dB line. 17% x 6% x 16½ in; 30 lb. $1,499

KENWOOD KA-V9500
Kenwood KA-V9500
Tor loops; banana-plug speaker connectors. 100 W x 2 cont avg into 8 ohms from 20-20,000 Hz with 0.008% THD, 140 x 2 cont avg into 4 ohms from 20-20,000 Hz with 0.03% THD in Class AB mode, or 25 x 2 into 8 ohms in Class A mode; dynamic power 340 x 2 into 2 ohms; SN 72 dB MC, 86 dB MM, 96 dB line. Gold finish with die-cast alloy side panels. $699

PM-80 100-W/8m Integrated Amplifier
Switchable Class A/B operation modes. Features selected discrete topology; high-capacity power supplies; discrete output transistors; relay-controlled speaker selection; dedicated signal-processor loop; source-direct switching; record output selector allowing taping of one source while listening to another; 9 gold-plated inputs with MMC phono input and 3 tape-monitoring features.
NIKKO
NA 150 100-W/ch Integrated Amplifier
Class AB output operation. 100 W x 2 cont avg into 8 ohms or 144 x 2 cont avg into 4 ohms; THD 0.05%; slew rate 5 V/µs, sens 170 mV line; 2.5 mV phono; power bandwidth 5-41,000 Hz; dynamic headroom 2 dB; input imp 47 kilohms; phono/S/N 81 dB. $249

ONKYO
A-SV810PRO 325-W A/V Integrated Amp
5 channels with Dolby Pro Logic decoder. Features 5 amplifiers with discrete outputs; dual power transformers; 8-mode DSP with 10 soundfield presets; adjustable digital delay; 6 video inputs including 5 S-video inputs; 10 audio inputs; 6 video including 3 S-video outputs; 5 audio outputs; pre-out/subwoofer terminals. FL display; RI-system remote control. 75 W x 2 or 85 x 3 (front left, right, center) + 35 x 2 (rear) ... $1,100

A-8800 100-W/ch Digital Integrated Amp
Features dual 18-bit linear D/A converters; 8x-oversampling digital filter; discrete output section; high-speed switching power supply; optical and coaxial digital inputs; 10 audio inputs; pre-out/main-in terminals. 100 W x 2 cont avg into 8 ohms or 310 x 2 into 2 ohms; FR 20-20,000 Hz; THD 0.008%; S/N 107 dB line; IM 0.005%. $850

A-807 80-W/ch Integrated Amplifier
Features discrete power supplies and transformers; dual-shielded block construction with 2-panel chassis base; motorized volume control and input selector; 4-way speaker terminals; remote control. 80 W x 2 into 8 ohms or 210 x 2 into 2 ohms. $530

A-RV401 100-W/ch Integrated Amplifier
Features discrete output stage; 7 audio and 2 video inputs; video dubbing, 4-mode speaker selector, source-direct signal routing; FL display; R1-system remote control. $400

PHILIPS
FA-80 100-W/ch Integrated Amplifier
Features linear-drive power supply; Class A mode with 20 W x 2 output; source-direct switching with auto tone defeat; 11 inputs including 3 video, signal processor, and MM/MC phono. $599

FA-50 70-W/ch Integrated Amplifier
Features linear-drive power supply; DC and short-circuit protection. Source-direct switching with auto tone defeat. $399

PIONEER
Elite A-71 120-W/ch Integrated Amplifier
Direct Connection II and Non-Switching Circuit type III. Features line-direct switch; nonresonant frame chassis, insulators, and heat sink; clean ground technology; 7 inputs. Urushi-finish front panel and rosewood-finish vinyl-covered side panels. 120 W x 2 into 8 ohms with 0.003% THD. 18 x 6½ x 17½ in. $1,100

VSA-1000 290-W A/V Integrated Amplifier
5 channels. Features Dolby Pro Logic processor with digital delay and Dolby Surround, stadium, simulated stereo, and studio modes; two S-video input/outputs; 2 video monitor outputs with 1 S-video terminal; pre-out/power-in for front, rear, and center; 7 video and 6 audio inputs; video signal selector; video adapter loop; 3-position acoustic memory; on-screen display; programmable remote control. 100 W x 2 into 8 ohms with 0.005% THD + 30 x 3 (rear and center) into 8 ohms with 0.08% THD. ... $1,050

Elite A-51 100-W/ch Integrated Amplifier
Features Super Linear Circuit; Direct Connection II; anti-resonance honeycomb design; clean ground; direct switch; low-imp drive capability; high-gain phono EQ; gold-plated phono and CD inputs; 8 inputs; muting; loudness contour; record selector; AB speaker switching. ... $850

PROTON
AM-656 60-W/ch Integrated Amplifier
Features Apex Aural Excitor to enhance high-frequency performance; motorized volume control; tone bypass; mono/stereo switch; preamp-output; headphone output. Optional AH-681 remote control. 60 W x 2 into 8 ohms; FR 20-20,000 Hz ±0.3 dB; THD 0.02%; IM 0.01%; damping factor 50; dynamic headroom 6 dB; crossover 75 kHz at 1,000 Hz; SN 95 dB A line. 18½ x 3½ x 15½ in. 29 lb. $700

AM-455 50-W/ch Integrated Amplifier
Features premamp-out; loudness switch; AB speaker switching. $250

REVOLIT
H5 100-W/ch Integrated Amplifier
Features independent listening and recording source selection; 5 inputs including mc phono, independent premamp/power amp. Record bus also functions as independent selector bus for multimode systems. Remote control optional. 100 W x 2 into 8 ohms. $2,490

Yamaha DSP-A1000
Features independent listening and recording sound selection; 5 inputs including mc phono, independent premamp/power amp. Remote bus also functions as independent selector bus for multimode systems. Remote control optional. 100 W x 2 into 8 ohms. $2,490

SAN SU
AU-X911DG 100-W/ch Integrated Amp
Features 1-bit DA converter; independent circuitry for left and right amplifiers; separate digital and analog transformers. Digital-direct and source-direct operation; record selector; 5 pairs of gold-plated analog inputs; 4 pairs of gold-plated digital inputs; subsonic filter; loudness; AB speaker switching. 100 W x 2 cont avg into 8 ohms; FR 10-20,000 Hz; THD 0.005%. 17 x 6½ x 17% in; 40 lb. $1,300

AU-X611AV 210-W A/V Integrated Amp
4 channels. Features 6 surround-sound modes and four surround memories. 5 audio and 4 video inputs; monitor output; video processor terminals. 70 W x 2 into 8 ohms (front) + 35 x 2 (rear); FR 5-100,000 Hz; S/N 110 dB. 17 x 6½ x 17½ in: 32 lb. $1,000

AU-X301i 65-W/ch Integrated Amplifier
Features low-impedance drive capability, stabilized ground circuit; record selector; subsonic filter; MM/MMC phono input. 65 W x 2 cont avg into 8 ohms; FR 20-20,000 Hz; THD 0.005%; S/N 65 dB MC, 80 dB MM, 105 dB line. Matte-black finish. 17 x 5½ x 12½ in; 21 lb. $400

SONY
TA-AV650 240-W A/V Integrated Amplifier
Features complementary design; discrete outputs; 5 video inputs/outputs; S-video connectors. Audio muting; record-output selector; 2 tape monitor loops; motorized volume/programmable remote control. 70 W x 3 (left, right, center) + 15 x 2 (rear) into 8 ohms; FR 10-100,000 Hz ± 0, -3 dB line; THD 0.03%; SN 92 dB phono. 18½ x 6½ x 17½ in; 37½ lb. $1,000

TECHNICS
SU-V660 90-W/ch Integrated Amplifier
Features Class AA circuitry; heavy-duty power supply; large aluminum heat sinks; active servo power supply; MM/MMC cartridge input; 6-position multiple input facilities; AB speaker terminals. Power amp direct input, tone-defeat, loudness, and stereo/mono switches. 90 W x 2 cont avg into 8 ohms with 0.007% THD; damping factor 80. Preamp section: FR 30-15,000 Hz ± 0.8 dB phono, 20-20,000 Hz ± 0, -0.2 dB line; SN 72 dB MC, 76 dB SCM, 80 dB line. $400

YAMAHA
DSP-A1000 340-W A/V Integrated Amp
7-channel amplifier/processor. Features Dolby Pro Logic with auto input balance; 12 DSP programs (23 modes); TV-theater and concert/voice modes; 35-mm and 70-mm theater modes; 5-band equalizer; four digital inputs; subwoofer output with low-pass filter; front-panel aux inputs with S-video terminal; digital test-tone generator for DSP and Dolby Pro Logic 80 W x 3 into 8 ohms with 0.015% THD (left, center, right) + 25 x 4 into 8 ohms with 0.05% THD (effects) ... $1,499

DSP-E1000. As above, no main amplifiers. 5 channels. $999

DSP-E200 75-W A/V Integrated Amplifier
3 channels. Features Dolby Pro Logic; DSP with 4 modes. 25 W x 3 with 0.08% THD. $499

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### Compact Disc Players

#### Acoustic Research
**CD-07 CD Player**
- 1-bit DA converters. Includes RC-05 wireless remote control. FR 20-20,000 Hz ±0.5 dB; THD 0.005%; SN 100 dB; ch sep 100 dB. 17 x 3½ x 13 in; 13.2 lb
- $499

#### Adcom
**GCD-575 CD Player**
- 4x oversampling, dual 16-bit DA converters. Selectable analog frequency/phase-contouring circuitry; 3-beam laser pickup; fixed and variable outputs. 3-in-CD compatibility; 24-track programming; disc, track, program, or sequence/phrase repeat modes; audible fast scan and fast forward; remote control. FR 5-20,000 Hz +0.1, -0.5 dB; SN 105 dB; THD 0.0025%; ch sep 95 dB. Black. 17 x 3½ x 11¾ in; 12 lb
- $600

#### Ariston
**GCD-575**
- As above, except with white front panel.
- $650

#### Audio by Van Alstine
**Omega CD Player**
- 4x oversampling, dual 16-bit DA converters. Features swinging-arm laser scanning assembly; digital and analog outputs. Track replay/stop; headphone jack; 3-in-CD compatibility; remote control. FR 2-20,000 Hz; SN 100 dB; THD 0.0025%. 12½ x 3¼ x 11¼ in...
- $799

#### Bang & Olufsen
**Continuous Music Module CD Changer**
- 4x oversampling, dual 16-bit DA converters. Features custom hybrid output stages and film-coupling capacitors; filter drivers with 200 V/µs slew rate; exact channel phase-gain tracking. 20-track programming; repeat; random play; time/track displays; 3-speed music search with costing; 3-in CD compatibility; index selection and direct track access from remote control. 16½ x 4¼ x 11¼ in;
- $495

#### California Audio Labs
**Aria Mk III Hybrid CD Player**
- 8x oversampling, 18-bit hand-trimmed DA converters with hybrid analog output stage. Features laser pickup with precision-ground optical lenses, 6DJH vacuum tubes, FET, and bipolar transistor in analog stage; spring suspension transport; separate power transformers for electronic/mechanical, analog, and digital circuitry; 22 separate regulated local power supplies; remote control. FR 10-20,000 Hz +0, -1.8 dB; SN 98 dB at 1,000 Hz; THD 0.005%
- $525

#### Carver
**MD/V-500 Beer**
- 8x oversampling, 18-bit hand-trimmed DA converter. Features 24-bit digital filter, 5 separate regulated power supplies, FET input; custom clock module; EMI filter; plug-in digital output for coaxial or optical applications; 28-function remote control. FR 5-22,000 Hz +0, -0.3 dB; dynamic range 105 dB; SN 90 dB; THD 0.005% at 1,000 Hz; ch sep 91 dB
- $795

#### Cambridge Audio
**CD4 CD Player**
- Phillips Bristow 1-bit DA converter. Features 24-bit digital filter with 4-pole Butterworth filter; coaxial and optical digital outputs. FR 10-20,000 Hz ±0.1 dB; THD 0.004% at 1,000 Hz; SN 96 dB
- $600

#### Camus Audio
**CD-3400 6-Disc CD Changer**
- Carvers, dual 16-bit DA converters. Features 3-beam laser pickup; fixed line outputs; headphone jack; direct track access; 32-track programming; track, disc, and program repeat; elapsed disc/track time display. FR 20-20,000 Hz ±0.5 dB; THD 0.005%; SN 96 dB. 13 lb...
- $250

#### CD-3300R CD Player
- Carvers, dual 16-bit DA converters. Features music calendar; direct-track access; 3-in CD compatibility; random play; remote control. FR 20-20,000 Hz; SN 100 dB; THD 0.004%. 17 x 3¼ x 12 in; 9 lb
- $200

#### Denon
**DCD-3500RG CD Player**
- 8x oversampling, four 20-bit Lambda-type DA converters. Features 2-bit digital filter with ½-sample delay; 4 MSB linearity adjustments per converter; optical isolation between digital and analog stages; optical and coaxial digital outputs. 20-track programming; repeat; random play; volume control; remote volume control; direct track access; index mode; time search; 3-way repeat; auto space; auto edit; timer play; music-calendar display. CD-3500RG CD Player...
- $1,500

#### DCD-3560 CD Player
- 8x oversampling, four 20-bit Lambda-type DA converters. Features 2-bit digital filter with ½-sample delay; 4 MSB linearity adjustments per converter; optical isolation between digital and analog stages; optical and coaxial digital outputs. 20-track programming; repeat; random play; volume control; remote volume control; direct track access; index mode; time search; 3-way repeat; auto space; auto edit. FR 20-20,000 Hz ±0.2 dB; SN 120 dB; dynamic range 100 dB; THD 0.0015%; ch sep 110 dB. Champagne-gold finish, wood panels...
- $3,000

#### LA-3000 Combi-Player
- 8x oversampling, 20-bit Lambda digital type DA converters. Plays CD's and videodiscs. Features CX NR; 20-track programming; auto space and edit; random play; on-screen display; composite video, S-video, and audio output. Audio: FR 5-20,000 Hz ±0.3 dB, 20-20,000 Hz analog; SN 109 dB, 70 dB analog with CX; dynamic range 100 dB; ch sep 103 dB; THD 0.003%. Video: hor res 425 lines; SN 47 dB...
- $5,100

#### SDA-350 5-Disc CD Changer
- 1-bit DA converter. Features sound-enhancement EQ circuitry. Random access; calendar display; remote control. 19 x ½ x 16 in...
- $400

#### Creek Audio
**CD60 CD Player**
- 4x oversampling, 16-bit DA converter. Features dual power supplies, linear phase response, low-noise output stage; coaxial digital output; fixed line-level output; phase invert. 16-track programming; 3-mode repeat; defeatable display; remote control. FR 20-20,000 Hz; SN 110 dB; THD 0.005%
- $1,195

#### Denon
**DCD-3500RG CD Player**
- 8x oversampling, four 20-bit Lambda-type DA converters. Bihit-8th Anniversary Reference Class Player features 4 MSB linearity adjustments per converter; 20-bit digital filter; linear-crystal OFC analog filters; separate power transformers, power supplies, and optically-isolated circuitry for digital and analog sections; Jack-Coax feet, 4-layer bottom plate, and dual-construction chassis; switchable optical/coaxial digital outputs; balanced analog outputs. Motor-driven remote volume control; direct-track access; 20-track programming; index and time search; 3-way repeat; auto space; auto edit; 8-digit FI display with music calendar; headphone jack with level control; 3-in-CD compatibility; remote control; Denon IS-System control compatibility. FR 2-20,000 Hz ±0.2 dB; SN 120 dB; dynamic range 100 dB; THD 0.0015%; ch sep 110 dB. Champagne-gold finish, wood panels...
- $3,000

#### DCD-3560 CD Player
- 8x oversampling, four 20-bit Lambda-type DA converters. Features 2-bit digital filter with ½-sample delay; 4 MSB linearity adjustments per converter; optical isolation between digital and analog stages; optical and coaxial digital outputs. 20-track programming; random play; remote volume control; direct track access; index mode; time search; 3-way repeat; auto space; auto edit; timer play; music-calendar display. CD-3560 CD Player...
- $1,500

#### SDA-490 Tube CD Player
- 1-bit DA converter. Features sound-enhancement EQ circuitry; analog tube output stage; optical and coaxial digital outputs. 24-track and index programming; random play; volume control. 19 x 3½ x 10½ in;
- $700

#### SD/A-450 5-Disc CD Player
- 1-bit DA converter. Features sound-enhancement EQ circuitry. Random access; calendar display; remote control. 19 x ½ x 16 in;
- $520

#### SD/A-490 Tube CD Player
- 1-bit DA converter. Features sound-enhancement EQ circuitry; analog tube output stage; optical and coaxial digital outputs. 24-track and index programming; random play; volume control. 19 x 3½ x 10½ in;
- $700

#### SD/A-500 Combi-Player
- 8x oversampling, dual 18-bit DA converters. Plays 3- and 5-in CD's and 8- and 12-in videodiscs. PCM audio; direct digital output. 16 track/chapter programming; multispeed scan, skip search, freeze, and frame-by-frame; on-screen display; multifunction remote control. 19 x 3½ x 10½ in; 8 lb
- $570

#### SD/A-450 Tube CD Player
- 1-bit DA converter. Features sound-enhancement EQ circuitry; analog tube output stage; optical and coaxial digital outputs. 24-track and index programming; random play; 4-way repeat; auto fade; A/B-side time edit; remote with motorized volume control. 19 x 3½ x 11¼ in; 9 lb
- $500

#### SD/A-450 5-Disc CD Player
- 1-bit DA converter. Features sound-enhancement EQ circuitry. Random access; calendar display; remote control. 19 x ½ x 16 in;
- $520
There's something more powerful than what we see.

It's the music we hear.
The World Of The Compact Disc

Remember vinyl? If you were collecting music before 1982, you probably do. The 33 1/3 rpm Long Playing record, introduced in 1948, long reigned supreme as the king of home audio. But by the late 1970's, the LP was showing signs of age. And in 1982—a decade ago—the music business and the audio industry entered an entirely new world. The world of music that is the Compact Disc.

The Compact Disc was based upon the brilliance of digital audio, a then-new method of recording music with unprecedented fidelity. In a single stroke, digital technology overturned many previously-accepted limitations in high-fidelity reproduction. But bringing a digital audio disc format to the music lovers of the world would require more than just technology. It required an internationally-accepted standard.

A Worldwide Agreement.

The essential step toward standardization took place in June, 1980. That’s when Sony Corporation and N. V. Philips formally announced a new digital audio disc format.

Thanks to Philips work in optical laser discs, the new system would be virtually impervious to wear, dust, fingerprints and scratches. Thanks to Sony expertise in 16-bit digital coding and digital error correction, the new format would have a quality of sound unlike any other.

From this joint effort, the new format began to take shape: about 4 1/4 inches in diameter...over 74 minutes of music...44.1 kHz sampling rate...16-bit linear PCM audio. The resulting system soon won favor around the world, becoming the international standard we know today as the Digital Audio Compact Disc.

Over 90% of all the Compact Disc titles ever made were mastered on Sony PCM-1600 Series Digital Mastering Systems.
Making CD A Reality.

Bringing the Compact Disc out of the laboratory and into the living room required a monumental effort. It entailed new ways to record and master music. New technology to press discs. New machines to play them back. And Sony was there every step of the way. By October, 1982, digital audio discs were finally ready to come home. The world of music hasn't been the same since.

TEN YEARS AND MORE THAN A BILLION DISCS LATER, PEOPLE STILL ENJOY THE WORLD'S FIRST COMPACT DISC: BILLY JOEL'S 52ND STREET.
A World Of Music and Sound.

When Sony introduced the Compact Disc back in 1982, it was with tremendous feelings of pride, anticipation and excitement. Ten years later, it appears that the excitement was contagious. People everywhere have taken the Compact Disc into their homes, their cars—even outdoors. Americans alone have bought nearly 40 million CD players and over one billion Compact Discs.

But sales figures alone can't do justice to the full impact of CD. Its unprecedented fidelity has transformed the way we hear music. Which in turn has transformed the way musicians compose, record, and release their life's work. For music lovers, this just might be the biggest thrill of all.
The world's first portable compact disc player, the Sony D-5 Discman® unit, brought the CD into an even wider range of lifestyles.

The CD revolution took another happy turn with Sony's creation of the carousel CD changer.

In the music business, the compact disc has gone from being a footnote to the number one format in dollar volume.

"You think he sounded better than his compact disc? Well, no, I wouldn't go that far...."

The compact disc isn't just for the music of today, it's also for rediscovering the music of yesterday through historic reissues and boxed sets.

"[CD is] the greatest thing that's ever happened to recorded music... it really is a marvel. I was listening to my own remastered 1966 version of Verdi's Falstaff the other day in my car's CD system, and the sound was so extraordinary that when I arrived home, I couldn't turn off the engine, I just sat there till the end. And this was an almost twenty-five-year-old recording!"

—Leonard Bernstein
A World Of Innovation.

An undeniable part of CD's success is the fact that it has been a consistent, universally compatible format. Think of it: any standard Compact Disc will play on any standard CD player—anywhere in the world. But while the fundamental format has not changed, the technology around that format is constantly moving forward. In fact, few products have seen such intense technological refinement in so short a time as the CD player.

Building A Better CD Player.

While some manufacturers claimed that the first generation CD players had already achieved "perfect sound," Sony believed otherwise. And Sony engineers immediately rose to the challenge of refining the CD player. The resulting stream of advances has had one dramatic effect: even staunch audiophiles—some of whom originally greeted the CD with hostility—have now embraced the CD format.

Taking The CD In New Directions.

With its durability and sound quality, the Compact Disc has won the hearts of music lovers. With its capacity to store over 6 billion bits of digital data, the Compact Disc has stimulated interest in disciplines far afield from music. New extensions of the Compact Disc format are creating exciting new possibilities.

CD+G, CD-I And More.

In the world of computing, CD is just coming into its own as a medium for high-density data retrieval. Thousands of CD-ROM (Read-Only Memory) titles are giving the computer user on-line access to vast quantities of information.

Another new concept is Sony's Data Discman™ system. Extremely small and consummately portable, the Data Discman brings you fast

SONY'S CD PLAYER REFINEMENTS INCLUDED UNILINEAR CLOCK CIRCUITRY, PLUS THE FIRST 8X OVERSAMPLING FILTER AND 18-BIT CONVERTERS. WE ALSO CREATED DIGITAL SYNC CIRCUITRY, ONE-BIT PULSE CONVERTERS, AND THE LINEAR MOTOR LASER TRANSPORT SHOWN. THE TRANSPORT WAS THE FIRST TO CUT TRACK ACCESS TIME TO UNDER ONE SECOND.

WITH SYSTEMS LIKE THE LASER LIBRARY, SONY IS IN THE FOREFRONT OF MAKING CD-ROM AVAILABLE AND AFFORDABLE.

COMPARED TO USING CONVENTIONAL REFERENCE BOOKS, THE DATA DISCMAN SYSTEM IS RASTER, EASIER, AND MORE VERSATILE.
and easy access to encyclopedias, travel guides, baseball stats, medical reference and languages. There's also Compact Disc + Graphics (CD + G), for music with the added attraction of still frame graphics and lyrics. And the new Compact Disc-Interactive (CD-I) format, which combines sound, pictures, text and action in a way that involves you as never before. And coming soon is the Photo CD, your own family photo album on Compact Disc!

As you can see, the Compact Disc hasn't simply revolutionized the world of music. It's creating a whole new world of playback possibilities.

SONY THE WORLD'S FIRST CD PLAYER WITH OUTBOARD D/A CONVERTER. AND WE TOOK THE CONCEPT TO A NEW LEVEL OF REFINEMENT WITH THE AWARD-WINNING CDP-R1/DAS-R1 SYSTEM.
The World Is Turning To Compact Disc.

In less than a decade, the Compact Disc has more than earned its amazing popularity. But while the number of converts continues to grow, some voices might suggest that the Compact Disc has settled into maturity. Don't believe a word of it. Even after ten years, the Compact Disc remains the unchallenged champion of digital sound quality—unsurpassed by any other prerecorded music format. And for durability, convenience and versatility, nothing else comes close. It's no wonder that Compact Disc continues to spark more innovation than anything else in the digital audio world.

And as the Leader in Digital Audio™, Sony is about to introduce a new generation of home, car, and portable Compact Disc players that achieve entirely new levels of performance and value. So, if you don't own CD's, there's never been a better time to join the revolution and discover the incredible sound of Compact Disc for yourself. After all, it's what the whole world is turning to.

*LEONARD BERNSTEIN QUOTE FROM ROLLING STONE NO. 592, NOVEMBER 29, 1990, FROM AN INTERVIEW BY JONATHAN COTT. QUOTED WITH PERMISSION.

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DIRECT TRACK ACCESS; 3-WAY REPEAT; AUTO SPACE; AUTO EDIT; TIMER PLAY; MUSIC-CALNDAR DISPLAY; 3-IN-CD COMPATIBILITY; REMOTE CONTROL; DENON IS-SYSTEM COMPATIBILITY. FR 2-20,000 Hz ±0.2 dB; SN 116 dB; dynamic range 100 dB; THD 0.0018%; ch sep 110 dB at 1,000 Hz ...... $750

LA-2000 Combi-Player
8x oversampling, 20-bit Lambda ladder-type D/A converters. Plays CDs' and videodiscs. Features CX VR, 20-track programming, audio space and edit; random play; on-screen display; composite-video and audio outputs. Audio: FR 5-20,000 Hz ±0.5 dB, 20-20,000 Hz analog; SN 106 dB, 70 dB analog with CX, dynamic range 97 dB, ch sep 98 dB; THD 0.004%. Video: horizon 425 lines; SN 47 dB ...... $700

CD Changers
The following changers feature a bi-directional retracting-tray carousel design which allows 4 discs to be changed while one is playing.

DCM-520 5-Disc CD Changer
8x oversampling, dual Lambda ladder-type D/A converters, 5-disc carousel. Features coaxial digital input/output, volume-level memory for up to 100 discs; 20-track programming for each disc; 5-way repeat; 3-mode random playback, motor-driven volume control; FL status display; 3-in-CD compatibility; remote control; Denon IS-system compatibility. FR 2-20,000 Hz ±0.2 dB; SN 110 dB; dynamic range 98 dB; THD 0.003%; ch sep 102 dB ...... $500

DCM-420 5-Disc CD Changer
8x oversampling, dual 18-bit D/A converters, 5-disc carousel. Features coaxial digital output; volume-level memory for up to 100 discs; 20-track programming for each disc; 5-way repeat; 3-mode random playback, motor-driven volume control; FL status display; remote control; Denon DCM-520
15-system compatibility. FR 2-20,000 Hz ±0.2 dB; SN 106 dB; dynamic range 96 dB; THD 0.006%; ch sep 98 dB ...... $300

DUAL CD-5150RC CD Player
4x oversampling, dual 16-bit D/A converters. Features motor-driven disc loading; digital output. Audible 3-speed forward/reverse scan; 20-track programming; disctrack repeat; random play; 3-in-CD compatibility; headphone jack; 10-key remote control with direct-track access. FR 20-20,000 Hz ±1 dB, SN 100 dB; dynamic range 95 dB. Black anodized finish ...... $555

CD-1070RC CD Player
8x oversampling, dual 18-bit D/A converters. Features motor-driven disc loading; 3-beam laser pickup. 16-track programming; random play; auto space; track/disc/program repeat; 3-in-CD compatibility; remote control with direct-track access. FR 20-20,000 Hz ±0.7 dB, SN 103 dB; dynamic range 96 dB. Black finish ........ $345

FISHER
DAC-145 5-Disc CD Changer/Turntable
8x oversampling, dual 16-bit D/A converters, 5-disc top-loading carousel CD changer combined with semiautomatic turntable. Features 18-bit filter, 3-function remote control; 32-track programming; disc loading during play; 3-in-CD compatibility; random play; intro scan; repeat play. FR 20-20,000 Hz ±0.5 dB; THD 0.07% at 1,000; dynamic range 90 dB; SN 90 dB; ch sep 80 dB; 17% x 5½ x 13¼ in; 12 lb ...... $400
DAC-143. As above. No turntable ........ $330

AD-743 CD Player
8x oversampling, dual 16-bit D/A converters. Features 18-bit digital filter; 16-track programming; 2-mode repeat; 2-speed scan/search; 16-function remote control. FR 2-20,000 Hz ±0.5 dB; SN 105 dB; ch sep 95 dB; THD 0.03% at 1,000 Hz. 17½ x 3½ x 1½ in; 6.8 lb ...... $250

DAC-7200 5-Disc CD Changer
Dual 1-bit D/A converters, 5-disc carousel. Features front-loading drawer; 32-track programming; random and repeat play; intro scan; 3-way program edit, 3-in-CD compatibility; FL display, wireless remote control. FR 2-20,000 Hz ±0.5 dB; SN 90 dB; dynamic range 90 dB; ch sep 80 dB; distortion 0.07% ...... $200

HAMAN KARDON
HD76001 CD Player
1-bit PWM D/A converter. Features separate power supplies for display, transport, analog, and digital sections; 3-bit laser pickup; optical and coaxial digital input/output; gold-plated fixed and variable analog outputs. 30-track programming; index search; A/B repeat, audible 2-speed cue/review, headphone jack; remote control .......... $679

TL8500 5-Disc CD Changer
3D bit stream, 1-bit D/A converter, 5-disc carousel. Discrete analog output stage; 4 separate power supplies; 4-point suspension system; linear-drive transport. Duplicate programming controls on top and bottom; wireless remote control .......... $549

HD7450 CD Player
1-bit PWM D/A converter. Features separate power supplies for display, transport, analog, and digital sections; 3-bit laser pickup; 32-track program. Audible 2-speed cue/review; remote control .......... $599

HD7440 CD Player
4x oversampling, dual 18-bit D/A converters. Features direct coupling from D/A converter to audio output jacks; 3-beam laser pickup. 36-track programming; audible 2-speed cue/review; remote control .......... $599

HITACHI
VIP RX6EX Combi-Player
8x oversampling, digital video changer. Plays CDs' and videodiscs. Multifunction remote control. Video: horizon 425 lines ...... $699

DAC-705W 12-Disc CD Changer
Two 6-disc magazines. Features ability to change one magazine while other plays; 32-track programming; direct, random, scan/rewrite play; skip/manual search; real-time track play; programmable timer, resume play/standby; remote control with volume; clock. Dynamic range 95 dB; THD 0.004%. Rosewood end caps .......... $550

DAC501 5-Disc CD Changer
8x oversampling 5-disc carousel. 32-track programming; one/all-disc random play; CD-to-tape auto edit .......... $300

DA8200SW CD Player
Features 3-beam laser pickup; 24-programming random play; 4-way repeat; FL display; remote control. Rosewood end caps .......... $280

JVC
All CD players and changers (except XL-R304TN) feature auto edit to organize CD tracks to fit a specified tape length, and 32-track 1-disc random-access programming.

XLT505TN CD Player
Dual 1-bit D/A converters. Features 4th-order noise shaping with 64x oversampling; K2 interface to eliminate signal ripple and jitter; independently suspended pickup-drive assembly; 3-beam laser pickup with 3-point suspension; separate power supply for digital circuitry; separate digital and analog circuitry; optical and coaxial digital outputs; headphone output with volume control. Index play; skip and search; 4 repeat modes; motor-driven volume control; Compu Link system compatibility; remote control. FR 2-20,000 Hz; THD 0.0014%; SN 114 dB; ch sep 110 dB at 1,000 Hz; 17½ x 4½ x 13 in; 17 lb .... $800

XL-G512NBK CD + G Player
4x oversampling. Dual 18-bit D/A converters. Plays CD + G (graphics) discs. Features noise shaping; select for 15 graphic data channels; 3-beam laser pickup with 3-point suspension; separate stabilizing champer; NTSC signal format; S-video, composite-video, and MIDI outputs; intro scan; 3-way repeat; remote control. FR 2-20,000 Hz; SN 100 dB; THD 0.004% at 1,000 Hz; dynamic range 96 dB at 1,000 Hz; ch sep 90 dB at 1,000 Hz; dynamic range 99 dB at 1,000 Hz; dynamic range 99 dB at 1,000 Hz; graphics resolution 288 x 192 pixels. 17½ x 4 x 11½ in; 9 lb ...... $550

XL-M705TN 7-Disc CD Changer
Dual 1-bit D/A converters, 6-disc magazine plus auto-loading single tray. Features 4th-order noise shaping, 3-beam laser pickup with 3-point suspension; optical digital output; headphone output with volume control. Programmed edit; index play; auto/manual search; continue, program, delete-program, and underwater-program random-play modes; 10-character magazine/disco title memory; 4 repeat modes; delete-program mode; front-loading drawer. Features dual coupling from D/A converter to audio output. 3-mode random, scan/rewind play; 4-speed repeat; FL display; DDRP system to establish optimum recording level for compatible JVC cassette decks; 3-in-CD and Compu Link system compatibility; remote control. FR 2-20,000 Hz; THD 0.0016%; SN 111 dB; ch sep 94 dB at 1,000 Hz; dynamic range 99 db at 1,000 Hz; 17½ x 4½ x 12½ in; 12 lb ...... $480

XL-R304TN 5-Disc CD Changer
Dual 1-bit D/A converters, 5-disc carousel. Features 4th-order noise shaping; 3-beam laser pickup with 3-point suspension; ability to change...
4 discs while one is playing. Auto/manual search; continuous program, and smart random play; 2 repeat modes; FL display; 3- and 5-in CD's and 8- and 12-in video discs. Features 8-bit digital time-base corrector; optical digital output; random play, intro scan, theater audio mode; 20-track programmable; program edit; selectable on-screen superimpose; inner-track search with auto lock; 11 direct-access keys; wireless remote. Audio: 4-20,000 Hz; SD, SF 105 dB; dynamic range 98 dB; THD 0.007%; at 1,000 Hz; ch sep 90 dB at 1,000 Hz. Video: SD 49 dB; 17/4 x 5/4 x 14/16 in; 22 lb $599

DP-M7730 7-Disc CD Changer
1-bit D/A converter, 5-disc magazine plus single drawer. Features noise shaping; 20-track programming; timer play; random play; 42-megabyte memory capacity supporting 8 characters per name, 6 discs per magazine, and 20 tracks per program per magazine; 20-key direct track access; 3- and 5-in CD compatibility; 4-mode time display; remote control with LCD and 10-key direct access... $379

DP-R4430 5-Disc CD Changer
1-bit D/A converter, 5-disc carousel. Features 2nd-order noise shaping; 20-track programming; 4-mode time display; 20-track music calendar; random play; 3- and 5-in CD compatibility; gold-plated headphone jack with level control; remote control... $299

DP-5030 CD Player
1-bit D/A converter. Features file memory to store programming sequences for 80 CD's with auto program recall upon disc insertion; program edit; 20-track programming; 20-key direct track access; 4-mode time display; timer play; random play; 5-bit (function wireless remote control); 3-in-CD compatibility; optical digital output... $299

LUXMAN
The following components are compatible with Luxman's integrated-system remote control and carry a 5-year parts-and-labor warranty.

D-105U Tube CD Player
8 oversampling, dual 18-bit D/A converters. Features twin-triode vacuum-tube amplification in analog output stages; Duo-Beta dual feedback loop; high-mass magnetic disc clamp; 3-beam laser pickup; metal chassis and component shielding; optical and coaxial digital outputs. 32-track programming; random play; stereo edit; out for CD taping; auto scan/pause; timer/power-off memory; 9-key remote control. FR 5-20,000 Hz = 0 dB; THD 0.005%; SN 105 dB; dynamic range 92 dB; ch sep at 1,000 Hz = 90 dB; 17/4 x 5/4 x 13/16 in; 18.7 lb $1,200

DC-114 7-Disc CD Changer
8x oversampling, dual 18-bit D/A converters, 6-disc magazine and single-disc tray. Features 3-beam laser pickup; high-mass magnetic disc changer; all-metal housing and chassis; dual mounting system; Duo-Beta dual feedback loop; Star circuit topology. 24-track programming; random play; timer play; multifunction remote control. FR 5-20,000 Hz = 0.5 dB; SN 104 dB; THD 0.005%; ch sep 95 dB at 1,000 Hz. 17/4 x 4/3 x 13/16 in; 15.1 lb $800

MAGNAVOX
CDV-305 CD Combo-Player
4x oversampling, dual 18-bit D/A converters. Plays 3- and 5-in CD's and 8- and 12-in video discs. Features 3-bit digital memory capacity; supporting... $1,695

CDC552 5-Disc CD Changer
4x oversampling, dual 16-bit D/A converters. Features 3-beam laser pickup; Duo-Beta dual feedback loop; high-mass magnetic disc changer; metal chassis and component shielding; coaxial digital output; 32-track programming; random play; auto scan/pause; timer play; remote control. FR 5-20,000 Hz = 0.5 dB; THD 0.005%; SN 106 dB; dynamic range 96 dB; ch sep at 1,000 Hz = 100 dB; 17/4 x 3/4 x 12/14 in... $350

CDC552 5-Disc CD Changer
4x oversampling, dual 16-bit D/A converters. Features 3-beam laser pickup; Duo-Beta dual feedback loop; high-mass magnetic disc changer; metal chassis and component shielding; coaxial digital output; 32-track programming; random play; auto scan/pause; timer play; remote control. FR 5-20,000 Hz = 0.5 dB; THD 0.005%; SN 106 dB; dynamic range 96 dB; ch sep at 1,000 Hz = 100 dB; 17/4 x 3/4 x 12/14 in... $350

CD-M502 CD Player
4x oversampling, dual 16-bit D/A converters. Features random play; 20-track programming; intro scan; 3- and 5-in CD compatibility; 15-key wireless remote control. 16 x 4 x 11 in $180

MARSAN
CD-11 Mk II CD Player
1-bit DPM D/A converter. Features 3rd-order noise shaping; professional all-alloy Radialinear floating die-cast single-beam laser pickup mounted on magnetically-actuated swing arm; variable analog output level via motorized potentiometer; optical and coaxial digital outputs; fixed outputs. Favorite-track memory; automatic track scan; 20-track programming; 1-button synchronized recording with select Marantz cassette decks via remote jacks. FR 2-20,000 Hz = 0.5 dB; SN 100 dB; ch sep 90 dB; THD 0.002%. Gold finish with matching die-cast alloy side panels... $699

MELOS
CD-T Bit-stream CD Player
4x oversampling, dual 16-bit D/A converters. 18-bit digital range; anti-jamming motorized front-loading tray; digital output; headphone jack with volume control. Direct programming from short scan of each track; 3-speed search; damaged disc/mute error correction indicator; remote control. FR 20-20,000 Hz + 0.2 dB; THD 0.078%; SN 90 dB; output 3 V cont. HD; output imp 100 ohms... $1,995

MERIDIAN
Model 208 CD Player/Preamplifier
Dual PDM bit-stream D/A converters. Features passive differential analog filters, high-stability master clock, high-speed tracking servo, computer-grade 4-layer circuit boards; two-box construction separating transport and electronics; analog preamp with 3 inputs and 64-step volume control; two optical digital outputs; coaxial digital output; analog input convertible to phono preamp with optional MM/MC board. LED display, lighted control keys; remote control. FR 20-20,000 Hz; SN 106 dB; THD 0.004%; Matte-black finish with glass front. 12 x 4 x 12 in... $5,950

Model 206 CD Player
2-piece design with 4x oversampling, 16-bit D/A converters. Features physical and electrical iso-
S-video output: coaxial and optical digital output. 20-track programming; calendar display; intro scan; chapter/track search; auto programming edit... $899

M-C4030 5-Disc CD Changer
4x oversampling, dual 18-bit D/A converters, 5-disc magazine. Features 20-track programming; intro scan; index search; random play; 3-in-CD compatibility; headphone jack, remote control... $499

M-C2050 CD Player
Four 1-bit DAC converters. 3-in-CD compatibility; coaxial and optical digital outputs; headphone jack. 20-track programming; calendar display; audible scan; intro scan; random play; remote control... $349

MOD SQUAD
Prism II CD Player
4x oversampling. Philips 16-bit digital processing. Digital data and clock lines timed for current synchronization and minimal jitter; fast-setting current-summing amplifier stage; proprietary zero-feedback regulators for analog section and for DAC-converter voltage reference; direct-coupled circuitry; DC servo amplifier; digital time-domain alignment; fixed and variable line outputs; coaxial digital outputs. 20-track random programming; 4-reverse modes; remote control: FR 0.1-20,000 Hz ±0.05 dB; S/N -110 dB; THD 0.02%. 11 lb... $1,895

MUSEATEX
Melior CD Deck CD Player
Features front-loading CD transport incorporating Philips swing-arm laser servo, aluminum drive, and custom suspension; C-Lock jitter-elimination circuitry; optical and coaxial digital outputs, programming capabilities via proprietary software. 5-year warranty (1 year on drive). 16 lb... $1,750

NAD
Model 5000 CD Player
1-bit MASH DAC converter. Features separate regulated power supplies for analog and digital sections; dynamic-range circuit, 10-key direct-track access and programming; remote control with volume adjustment... $499

Model 5060 6-Disc CD Changer
4x oversampling, 16-bit DAC converter, 6-disc magazine. Features all-disc random play, 32-track programming; intro scan, serial digital output; remote control with volume... $549

Model 5425 CD Player
1-bit MASH DAC converter. Features full programmability; low-imp output; remote control... $299

NAKAMICHI
CD Player-4 CD Player
8x oversampling, 18-bit DAC converter. Features linear-phase 3rd-order Bessel-type analog filtering; regulated power supply; isolated ground topology; floating disc-drive mechanism. 3-in-independent programmability; memory play; repeat play; system remote terminal; digital output terminal; headphone output with level control; wireless remote control. FR 5-20,000 Hz ±0.5 dB; SN 100 dB; THD 0.003%; ch sep 95 dB. 17 x 4 x 12½ in; 11 lb... $349

CD Changers
The following changers feature Nakamich's MusicBank system, a fixed internal mechanism that accepts 6 discs and includes a single-disc tray.

CDPlayer1 7-Disc CD Changer
20-bit DAC converters. Features fully-discrete 3rd-order linear-phase Bessel analog filters; high-frequency circuitry displaying the frequency response of discs... $3,950

NAD Model 5000
rigidity 2-layer steel chassis; acoustic stabilizer reinforcement plate; coaxial digital output. FR 5-20,000 Hz ±0.5 dB; dynamic range 100 dB; SN 105 dB; THD 0.0025% at 1,000 Hz... $2,000

CDPlayer2 7-Disc CD Changer
8x oversampling, 20-bit DAC converter. Features disc stabilizer, linear-phase 3rd-order Bessel-type analog filtering; digital de-emphasis; regulated power supply; isolated ground topology; floating disc drive. 3-in-CD compatibility; 50-track programming; random play; synchro recording; disc scan; repeat play; system remote terminal; adjustable output level; digital output; disc calendar; headphone output with level control; wireless remote control. FR 5-20,000 Hz ±0.5 dB; SN ratio 105 dB; THD 0.0025%; ch sep 98 dB. 17 x 4 x 14½ in; 12 lb... $799

CDPlayer3 7-Disc CD Changer
8x oversampling, 18-bit DAC converter. Features disc stabilizer; linear-phase 3rd-order Bessel-type analog filtering; digital de-emphasis; regulated power supply; isolated ground topology; floating disc-drive mechanism. 3-in-CD compatibility; 50-track programming; random play; disc scan; repeat play; system remote terminal; disc calendar; headphone output with level control; wireless remote control. FR 5-20,000 Hz ±0.5 dB; SN ratio 103 dB; THD 0.003%; ch sep 97 dB. 17 x 4 x 14½ in; 12 lb... $599

NIKKO
NCD 2500R 5-Disc CD Changer
8x oversampling, 20-bit DAC converter, 5-disc cartridge. Fixed line outputs; 32-track programming; headphone jack, remote control. FR 4-20,000 Hz; SN 95 dB; THD 0.007%. 13.3 lb... $259

NCD 910R CD Player
4x oversampling, 16-bit DAC converter. Fixed line inputs; 20-track programming; remote control; headphone jack. FR 20-20,000 Hz ±3 dB; SN 95 dB; THD 0.07%. 7.3 lb... $169

NSM
CD 3101-AC 100-Disc CD Changer
Bitstream DAC converters. Requires PC or CD 3101-H (listed below). Features RS-232 computer interface allowing control of 16 changer modules from single serial port; coaxial and optical digital outputs; analog output. FR 20-20,000 Hz ±0.1 dB; SN 102 dB; THD 0.0015... $3,800

CD 3101-H CD Player
Bitstream DAC converters. Features controls for CD 3101-AC changer including storage and recall of playlists; coaxial digital outputs; analog output. random play. FR 20-20,000 Hz ±0.1 dB; SN 102 dB; THD 0.0015... $500

System 3101. Includes CD 3101-H and CD 3101-AC... $3,995

ONKYO
The following components are compatible with Onkyo's RI integrated-system remote control.

Integra DX-708 CD Player
Dual 1-bit DAC converters. Features optical coupling, separate transformers for digital and analog circuits; copper-plated chassis; center-mounted aluminum die-cast disc tray; complimentary distortion canceler; optical digital output. Memory reverse; auto fade; 5-mode repeat; 2-node random play and high-speed scan... $750

DX-C510 6-Disc CD Changer
8x oversampling, dual 18-bit DAC converters with MSB calibration, 6-disc magazine plus single-disc tray. Features optical coupling; random playback, 3-beam laser pickup. Program memory for 340 discs; headphone jack with level control; fluorescent display... $450

DX-714 CD Player
Dual 1-bit DAC converters. Features optical digital output; music file program memory for up to 341 discs; CD synchro start; 20-track programming; 4-mode repeat; random play; 10-key direct access; 3-mode display; headphone jack with volume control; 28-key remote control... $350

DX-201 5-Disc CD Changer
4x oversampling, dual 1-bit DAC converters, 5-disc cartridge. CD synchro start; 36-track programming; 5-mode repeat; random play; aluminum front panel, 3-mode display; headphone jack with volume control; 27-key remote control... $300

DX-702 CD Player
Dual 1-bit DAC converters. Features optical digital output; CD synchro start; 20-track programming; 4-mode repeat; random play; 10-key direct access; 3-mode display; headphone jack with volume control; 26-key remote control... $230

OPTIMUS
BY RADIO SHACK

SCT-50 CD/Cassette Player
4x oversampling, dual 16-bit DAC converters. 16-tracks programming; repeat; 1-touch synchro dubbing. Cassette features Dolby B, NR, Dolby HX Pro; auto reverse. CD: FR 20-20,000 Hz ±0.5% dB; SN 95 dB; THD 0.002% at 1,000 Hz; dynamic range 95 dB. Cassette: FR 40-17,000 Hz ±3 dB; SN 59 dB no NR, 69 dB Dolby B; THD 1.5% 171/2 x 5 x 10% in... $300

CD-6200 5-Disc CD Changer
8x oversampling, dual 18-bit DAC converters; 5-disc magazine: 32-track programming; random play; intro scan; auto search; 5-way repeat; headphone jack with volume control; 3-in-CD com...
COMPACT DISC PLAYERS

**CD-1760 CD Player**
8x oversampling, dual 18-bit D/A converters. 32-track programming; random play; repeat; auto search; 3-in-CD compatibility; headphone jack; remote control. FR 20-20,000 Hz ±0.5 dB; SN 105 dB; THD 0.008% at 1,000 Hz; dynamic range 98 dB. 17 x 5 1/4 x 14 1/4 in. $250

**PARASOUND**
SL-PC364 5 Disc CD Changer
1-bit MASH DA converter. Features high-speed linear-access system; 3-in-CD compatibility. 32-track programming; auto program edit; random and repeat play; bidirectional rotation for rapid disc access. FR 2-20,000 Hz ±1 dB; SN 100 dB. 17 x 4 1/4 x 15 in. $600

**PHILIPS**
CDV-600 CD Combi-Player
1-bit bitstream DA converter. Plays 3- and 5-in-CD's and 8- and 12-in videodiscs. Audio: record edit; 5-mode repeat; random play; 20-channel track/track programming; auto music scan; two-speed scan. Video: CX noise reduction; jog-and-shuttle control from remote; digital-frame memory with freeze, strobe, and picture recall. S-video output; optical digital output; 50-key wireless remote control. Audio: FR 2-20,000 Hz ±0.5 dB; SN 100 dB; dynamic range 97 dB; THD 0.002% at 1,000 Hz. Video: hor res 425 lines; SN 49 dB. 17 x 4 1/4 x 16 in. $1,200

**Pioneer Elite CLD-95**
THD 0.0019%. Video: hor res 425 lines; SN 48 dB. 16 5/8 x 5 9/16 in. $700

**CDV-400 Combi-Player**
4x oversampling, dual 16-bit DA converters. Plays CD's and 8- and 12-in videodiscs. Features CX noise reduction; record edit feature; favorite-track selection; 5-mode repeat; 20-channel/track programming; auto music scan; two-speed scan; random play; S-video output; coaxial digital output; wireless remote control. Audio: FR 3-20,000 Hz ±0.5 dB; SN 98 dB; dynamic range 94 dB; THD 0.003% at 1,000 Hz. Video: hor res 425 lines. SN 48 dB. 16 5/8 x 5 9/16 in. $599

**Model B75 7-Disc CD Changer**
4x oversampling, 16-bit DA converter. 6-disc magazine plus single-disc tray. Features aluminum front; metal chassis. 40-track programming with calendar-type display; favorite-track selection; random play; AB repeat; scan play; remote volume control; headphone jack with volume control; remote control with LCD. $499

**CD-40 CD Player**
4x oversampling, 16-bit DA converters. CDM 4 Radialinear composite laser mechanism; high-impact polystyrene chassis. 24-key remote control; 20-track programming; track skip; AB repeat; 3-in-CD compatibility. $279

**PIONEER**
CLD-3090 Combi-Player
Dual 1-bit DA converters. Features digital time-base corrector to reduce jitter; dual-side play. 3 sound-scan modes; S-video output; optical digital output; 2 A/V outputs. TV/monitor output; defeatable FL display; jog-and-shuttle control on remote and front panel; 24-channel/track programming; auto program edit for CD-to-cassette recording; CD-deck synchro recording with select Pioneer cassette decks; peak-level search; last-picture memory; digital output; 20-track time/track search; intro track/ chapter scan; remote control. Audio: FR 3-20,000 Hz ±0.3 dB; SN 115 dB; dynamic range 99 dB; ch sep 105 dB; THD 0.002%. Video: hor res 425 lines. SN 50 dB. 16 5/8 x 5 9/16 in. $1,200

**CLD-M90 Combi-Player**
1-bit DA converter, 5-disc tray. Features simultaneous loading of 5 CDs and one videodisc; videodisc player with removable CD's; auto output-level matching for 5 CD's; defeatable video circuitry; 2 audio and 2 video outputs; TV/monitor output; RF adapter out; auto program edit for CD-deck recording; one-disc, all-disc, and all-channel random play; random and repeat modes; 10-key direct-track/channel access; separate power transformers for analog and digital circuits; Class A/FET buffer amp; discrete push-pull power supply; brushless spindle motor; copper-plated chassis; digital output. Audio: FR 3-20,000 Hz ±0.3 dB; SN 112 dB; dynamic range 99 dB; ch sep 105 dB; THD 0.002%. Video: hor res 425 lines; SN 49 dB. 17 x 4 1/4 x 16 in. $1,029

**Pioneer Elite CLD-95**
As above, no single-disc loader or multi-memory. $380

**EDITION**
CLD-95 Combi-Player
8x oversampling, 20-bit DA converters. Features dual-side play; digital time-base corrector to reduce jitter; separate AV circuits; brushless motor; S-video output; optical digital output; 2 A/V outputs. Random play; auto program edit; 8-bit digital picture memory; one-shot memory; remote control with jog and shuttle. $2,000

**PD-75 CD Player**
Dual 1-bit DA converters. Features Stable Platter Mechanism design to reduce disc vibration and wobble; separate power transformers for analog and digital circuits; Class A FET buffer amp; discrete push-pull power supply; brushless spindle motor; copper-plated chassis; optical digital output. Peak-level search; auto program edit to minimize unused space on cassette when dubbing; time-fade edit; auto digital level controller; digital fader; disc memory for programmed/deleted tracks and music type for up to 20 magazines; memory hold for programmed tracks and levels; 2-mode random play, all-disc 40-track programming; magazine highlight scan; delete and timer play; 7-mode repeat; 10-key direct-track access; headphone jack with volume control; remote control. FR 20-20,000 Hz ±0.5 dB; SN 106 dB. 16 5/8 x 5 1/4 x 10 1/2 in. $400

**PD-M650 6-Disc CD Changer**
1-bit DA converter, 6-disc magazine, and single-disc magazine. Features display programming guide; CD-deck synchro recording; time-fade edit; auto digital level controller; digital fader; disc memory for programmed/deleted tracks and music type for up to 20 magazines; memory hold for programmed tracks and levels; 2-mode random play, all-disc 40-track programming; magazine highlight scan; delete and timer play; 7-mode repeat; 10-key direct-track access; headphone jack with volume control; remote control. FR 2-20,000 Hz ±0.5 dB; SN 106 dB. 16 5/8 x 5 1/4 x 10 1/2 in. $400

**PD-M740**
As above, no single-disc loader or multi-memory. $380

**CDV-400 Combi-Player**
4x oversampling, dual 16-bit DA converters. Plays CD's and 8- and 12-in videodiscs. Features CX noise reduction; record edit feature; favorite-track selection; 5-mode repeat; 20-channel/track programming; auto music scan; two-speed scan; random play; S-video output; coaxial digital output; wireless remote control. Audio: FR 3-20,000 Hz ±0.5 dB; SN 98 dB; dynamic range 94 dB; THD 0.003% at 1,000 Hz. Video: hor res 425 lines. SN 48 dB. 16 5/8 x 5 9/16 in. $599

**PD-TM1 18-Disc CD Changer**
1-bit DA converter, three 6-disc magazines, and single-disc magazine. Features auto digital level controller; CD-deck synchro recording; time-fade edit; digital fader; memory hold; auto power-on/off and eject; 2-mode random play; all-disc 48-track programming; magazine highlight scan; delete and timer play; 7-mode repeat; 10-key direct-track access; headphone jack with volume control; remote control. FR 2-20,000 Hz; SN 102 dB. 16 5/8 x 7 13 in. $15 db. $510

**PD-7700 CD Player**
1-bit DA converter. Features stable platter design, optical digital output; CD-deck synchro recording; digital level control; auto program edit to minimize unused space on cassette when dubbing; time-fade edit; delete play; 20-key direct-track access; peak-level search; memory hold for programmed tracks and output level upon shut-off; preprogramming of up to 8 operations; high-light scan; 3-mode random play; 6-mode repeat; 24-track programming; FL display with 20-track memory/counter, motor-driven digital level control; timer play; headphone jack with volume control; remote control with 20-key pad. FR 2-20,000 Hz ±0.5 dB; SN 106 dB. 16 5/8 x 5 1/4 x 10 in. $91

**PD-M6650 6-Disc CD Changer**
1-bit DA converter, 6-disc magazine, and single-disc magazine. Features display programming guide; CD-deck synchro recording; time-fade edit; auto digital level controller; digital fader; disc memory for programmed/deleted tracks and music type for up to 20 magazines; memory hold for programmed tracks and levels; 2-mode random play, all-disc 40-track programming; magazine highlight scan; delete and timer play; 7-mode repeat; 10-key direct-track access; headphone jack with volume control; remote control. FR 2-20,000 Hz ±0.5 dB; SN 106 dB. 16 5/8 x 5 1/4 x 13 in. $540

**DF-408**
As above, no single-disc loader or multi-memory. $380

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CD831 CD Player
4x oversampling, dual DA converters. Features high-speed linear motor access system; 20-track programming; edit guide; FL display with music calendar; skip; search; repeat; 3-in-CD and remote control compatibility. FR 2-20,000 Hz ± 1 dB; SN 96 dB. 14 x 3/4 x 11 in; 7.3 lb. $1,800

REVOX H2 CD Player
Dual 1-bit DA converters. Auto selection of 50- or 15-μs de-emphasis; digital output; remote-control compatibility. THD 0.005%; SN 100 dB; 18% x 4% x 14 in; 16.5 lb. $1,990

CD-X617 CD Player
Eight 1-bit MASH DA converters. Features center-tray design. 24-track programming, 4-mode repeat; program search; timer play; headphone output with level control; 27-key remote control. FR 4-20,000 Hz; SN 110 dB; THD 0.002%; dynamic range 98 dB. 17 x 5 x 15 in; 9 lb. $500

CD-X211 CD Player
Four 1-bit MASH DA converters. Features magnetic clamping in transport; springs and rubber-cushioning pickup assembly support; single-lens laser; coaxial digital output. 20-track programming; output-level guide; 2-way repeat; program search; timer play; headphone output with level control; 27-key remote control. FR 4-20,000 Hz; SN 100 dB; THD 0.005%. 16% x 3% x 12% in; 8.8 lb. $300

CD-3100M 5-Disc CD Changer
4x oversampling, dual DA converters, 5-disc carousel. Features 32-track programming; 5-way repeat play; program search; 22-key remote control. 16% x 3% x 14 in; 10.9 lb. $300

CD-2700 CD Player
Four 1-bit MASH DA converters. Features magnetic clamping in transport; springs and rubber-cushioning pickup assembly support; single-lens laser, 16-track programming; 3-mode repeat; program search; 2-speed manual search; 10-key remote control. Black. 16% x 3% x 10% in; 8.1 lb. $200

SANYO CPMS15 5-Disc CD Changer
8x oversampling, dual 16-bit DA converters, 5-disc carousel. Features 18-bit digital filter; 32-track programming; time counter; intro scan; random play; 21-function remote control. FR 20-20,000 Hz +0, -1 dB; SN 98 dB; ch sep 80 dB at 1,000 Hz. Charcoal-gray finish with dust cover. 16% x 3% x 15% in; 8.6 lb. $200

CP791 CD Player
8x oversampling, dual 16-bit DA converters. Features 18-bit digital filter; LCD display; 24-track programming; time counter. FR 20-20,000 Hz +0, -1 dB; SN 96 dB; ch sep 80 dB at 1,000 Hz. Charcoal-gray finish. 17% x 3% x 10% in; 6.6 lb. $100

SHARP MVD-2000 Combi-Player
4x oversampling. Plays CD's and videodiscs. Features 20-track auto programmable music selector with music schedule; auto program editing; repeat play; intro scan; front-panel direct access keypad; 36-key remote control. $600

DX-C1800 6-Disc CD Changer
4x oversampling, 16-bit DA converter, 6-disc magazine. Features 3-beam laser pickup. 32-track programming; program search; 2-mode repeat play; random play; continuous play; multifunction LCD remote control. FR 20-20,000 Hz; SN 95 dB at 1,000 Hz; dynamic range 90 dB at 1,000 Hz. 17 x 4% x 12% in; 10 lb. $290

DX-200 CD Player
2x oversampling, 16-bit DA converter. Features 3-beam laser pickup. 20-track programming; program search; auto program locate; repeat; multi-function LCD remote control with music schedule; auto program editing; program search; timer play; headphone output. 16% x 3% x 14% in; 7.7 lb. $200

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function LCD; digital time counter. FR 2-20,000 Hz; SN 95 dB at 1,000 Hz; dynamic range 90 dB at 1,000 Hz. 17 x 3 1/2 x 9 3/4 in; 6 lb. $130

DX-R250. As above, with 19-key remote control. $170

SHERWOOD

CDC-3010R 5-Disc CD Changer

8x oversampling, dual 18-bit D/A converters, 5-disc drawer-type carousel. Features multiregulated power supply; 3-beam laser pickup; 32-track programming; disc intro; random, repeat and timer play; music-calendar display; gold-plated headphone jack with volume control; wireless remote control; Sherwood Digi-Link system remote-control compatibility. FR 20-20,000 Hz ± 0.5 dB; SN 103 dB; dynamic range 95 dB; ch sep 100 dB. 17 x 4 3/4 x 15 in; 9 lb. $225

CD-3010R CD Player

8x oversampling, dual 18-bit D/A converters. Features multiregulated power supply; 3-beam laser pickup; 20-track programming; random and repeat; seek/track; intro scan; auto space; music calendar display; gold-plated headphone jack with volume control; wireless remote control; Sherwood Digi-Link system remote-control compatibility. FR 20-20,000 Hz ± 0.5 dB; SN 103 dB; dynamic range 95 dB; ch sep 100 dB. 17 x 3 1/2 x 9 in. $180

SONOGRAFIE, BY CONRAD JOHNSON

S222 CD Player

Bitstream D/A converter. Features discrete FET audio circuits and power supplies. Track/index cueing; scan; repeat; track-number and elapsed time displays; wireless remote control. 18 x 3 1/2 x 12 in; 8.5 lb. $895

SONY

MDP-333 Combi-Player

8x oversampling, dual 18-bit D/A converters. Plays 3- and 5-inch CDs and 8- and 12-inch videos. Features comb filter, CAV/CLV-disc compatibility; auto videodisc-spindle engagement upon slot button press to prevent warping; optical digital output; S-video output; headphone output with level control. Audio: music sensor; auto pause/step; 6 repeat modes; intro scan. Video: dual-mode scan with shuttle; 10x/30x forward/reverse scan for CAV discs; 11-speed fast/slow play; still-frame, and frame-by-frame for CAV discs; frame/time search; auto chapter sensor; 20-track/chapter programming; 10-key direct track/chapter access; custom track/chapter indexing; remote control. Includes AV connecting cords and RF adapter. Audio: FR 4-20,000 Hz ± 0.2 dB; SN 112 dB; THD 0.002% at 1,000 Hz; ch sep 110 dB. Video: hor res 425 lines; SN 48 dB. 17 x 4 1/2 x 15 1/4 in; 16.8 lb. $650

CDP-C910 10-Disc CD Changer

1-bit D/A converter, 10-disc magazine. Features 45-bit digital filter; noise shaping; servo stabilizer circuit; optical digital output. 184-bit CDP Music filter. Features 24-bit digital filter; multistage digital output; variable XLR line output. 184-bit Custom File memory; 32-track programming; 6 repeat modes; fader and random play; index search; variable line output; remote control. FR 2-20,000 Hz ± 0.3 dB; SN 100 dB; distortion 0.005%. 17 x 4 1/4 x 15 in. $700

CDP-C715 5-Disc CD Changer

1-bit D/A converter. 5-disc carousel. Features digital signal processing with 7 soundfield presets; noise shaping; servo stabilizer; optical digital output; variable line output. 184-bit Custom File memory; 10-key direct access on unit; 20-key direct access on remote; 32-track programming; multiscan, time, and program edit modes; 7 repeat modes; random play; music calendar; peak-level search; headphone jack with volume control; remote control. FR 2-20,000 Hz ± 0.3 dB; SN 110 dB; distortion 0.0035%. 17 x 4 1/2 x 15 1/4 in. 14.5 lb. $470

CDP-C6015. As above, 5 DSP soundfield presets, no Custom File memory. FR 2-20,000 Hz ± 0.5 dB; SN 100 dB; distortion 0.004%. 13.2 lb. $380

CDP-C415. As CDP-615, no DSP. FR 2-20,000 Hz ± 0.5 dB; SN 100 dB; distortion 0.0055%. 17 x 4 1/4 x 15 3/4 in. $330

CDP-991 CD Player

Dual 1-bit D/A converters per channel. Features noise shaping; servo stabilizer; aluminum front panel construction; optical digital output; vari able line output. 185-bit Custom File memory for track selection and volume setting; 24-track programming; 20-key direct-track access from remote or player; index search; auto space; 8-mode repeat; random/delete play; peak-level search; fader with adjustable fade time; 20-track music calendar; defeatable display; headphone jack with volume; remote control. FR 2-20,000 Hz ± 0.3 dB; SN 113 dB; distortion 0.0025%. 17 x 4 1/2 x 13 1/4 in. $101

Sherwood CD-3010R

Features 18-bit digital filter; noise shaping; servo stabilizer circuit; multiregulated power supply; optical digital output; remote variable line output; serial chain capability; gold-plated line outputs. 184-bit Custom File memory; 3-way custom edit; peak-level search; fader; disc track direct access; 32-track programming; 7-way repeat; random play with delete; 20-track music calendar; multifunction remote control. Simulated-wood side panels. 17 1/4 x 5 x 15 1/4 in. 20.8 lb. $700

CDP-C909ES 10-Disc CD Changer

Eight 1-bit D/A converters, 10-disc magazine. Features 16-bit digital filter; noise shaping; servo stabilizer circuit; multiregulated power supply; direct digital sync anti-jitter circuit; optical digital output; remote variable line-level output. 32-track programming; disc track direct access; peak-level search; fader; 7-way repeat; random play with delete; 20-track music calendar display; 3-way custom edit; multifunction remote control. 17 x 5 x 15 1/4 in; 13.3 lb $380

CDP-C67ES 5-Disc CD Changer

1-bit D/A converter, 5-disc carousel. Features DSP for reverb and EQ with independent effect level for both; 45-bit digital filter; 3rd-order noise shaping; servo stabilizer circuit; multiregulated power supply; optical digital output; remote variable line-level output. 184-bit Custom File memory; 32-track programming; disc track direct access; peak-level search; remote control. FR 2-20,000 ± 0.2 dB; SN 100 dB. 24 lb. $1,995

SOTA

Vanguard CD Player

Dual bit-stream D/A converters. Coaxial and optical digital outputs; fixed and variable output; line input. 30-track programming; repeat track/disc; headphone output with level control; remote control. FR 20-20,000 ± 0.2 dB; SN 100 dB. 24 lb. $1,700

SYLVANIA

CD1532 3-Disc CD Changer

4x oversampling, dual 16-bit D/A converters. 5-disc carousel. Features ability to change nonplaying discs while one is playing; 30-track programming; random play; 3-speed cue/review; 15-key wireless remote control. FR 2-20,000 Hz ± 0.5 dB; SN 100 dB; dynamic range 90 dB; THD 0.015% at 1,000 Hz; im 76 dB. 16 1/2 x 4 1/4 x 15 in. $300

CD1502 CD Player

16-bit D/A converter. Piv- otal laser scanning assembly; 20-track programming; random play; 3-speed cue/review; headphone jack; 15-key remote control. FR 2-20,000 ± 0.3 dB; SN 117 dB; distortion 0.0017%. 18 1/2 x 5 x 14 1/4 in; 37.5 lb. $900

CDP-X222ES. As above, no line drive; single laser two-motor multiregulated power supply. SN 115 dB; distortion 0.0025%. 17 x 4 1/2 x 13 1/4 in. 13.7 lb. $400

CDP-C87ES 5-Disc CD Changer

1-bit D/A converter, 5-disc carousel. Features DSP for reverb and EQ with independent effect level for both; 45-bit digital filter; 3rd-order noise shaping; servo stabilizer circuit; multiregulated power supply; optical digital output; remote variable line-level output; gold-plated line-level outputs; serial chain capability. 184-bit Custom File memory; 3-way custom edit; peak-level search; fader; disc track direct access; 32-track programming; 7-way repeat; random play with delete; 20-track music calendar; multifunction remote control. 17 1/4 x 5 x 15 1/4 in; 20.8 lb. $700

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TEAC

AD-3 CD/Cassette Player

4x oversampling, dual D/A converters. CD player features 3-bit laser pickup; 16-track programming; 3-mode repeat; wireless remote control. Cassette deck features reverse/reverse playback; Dolby HX Pro; Dolby B NR; sync dubbing; timer rec/play. CD section: FR 2-20,000 Hz ±0.3 dB; THD 0.002%; ch sep 100 dB; 17% x 4% x 11% in; 9.5 lb...

$310

CD-P3000  CD Player

1-bit MASH D/A converter. Features 20-track programming; multifunction remote control. FR 1-20,000 Hz ±0.5% dB; SN 105 dB; THD 0.002%; ch sep 100 dB; 17% x 4% x 11% in; 9.5 lb...

$310

PD-D7000 5-Disc CD Changer

8x oversampling, dual 16-bit D/A converters, 5-disc carousel. Features optical 3-beam laser pickup; center-mounted tray; ability to change CD during playback. 32-track programming; remote control. FR 20-20,000 Hz ±2 dB; SN 100 dB; THD 0.05%; 17% x 4 x 13 in...

$300

TECHNICS

SL-P1300 CD Player

Four 1-bit MASH D/A converters. Separate digital and analog power supplies; high-speed linear motor access system; optical and coaxial digital outputs; phone line output. Auto cue; A/B repeat; ±8% pitch control; 2-speed search dial; audible pause; rocker switch for mixing; cueing by CD time code; balanced outputs; skip keys; 2-speed audible search; track, disc, and program repeat; headphone jack with level control; ear cue; remote control. 16½ x 6½ x 14½ in...

$1,000

SP-P9900 CD Player

Eight 1-bit MASH D/A converters. Features digital-servo laser-pickup system; Class AA analog audio stages; linear motor transport; independent power-supply transformers for analog and digital sections; optical digital output. Function-management system for assigning functions to special keys; peak-level search; time fade; auto space; synchro edit with selective Technics cassette decks; random play; auto cue; headphone jack with volume; 44-key remote control with 20-key direct access and line-level output control. FR 2-20,000 Hz ±0.3 dB; THD 0.0022% at 1,000 Hz, 0 dB; SN 111 dB; dynamic range 98 dB. 15 x 5½ x 13½ in; 14 lb...

$500

SL-P7000 CD Player

Four 1-bit MASH D/A converters. Features digital-servo laser-pickup system; linear motor transport; optical digital output. Function-management system for assigning functions to special keys. Peak-level search; time fade; auto space; synchro editing with selective Technics cassette decks; random play; auto cue; headphone jack with volume; 44-key remote control with 20-key direct access and line-level output control. FR 2-20,000 Hz ±0.3 dB; THD 0.00022% at 1,000 Hz, 0 dB; SN 111 dB; dynamic range 98 dB. 17 x 5½ x 13½ in; 12 lb...

$340

SL-PD807 5-Disc CD Changer

Four 1-bit MASH D/A converters, 5-disc drawer-type carousel. Features digital-servo laser-pickup system; sequential play and repeat; ability to change front disc without interrupting play; direct disc access; one/all-disc random play; spiral play and random play (variations on standard random play); 32-track random-access programming; 4 repeat modes; 24-key wireless remote control with numeric keypad for direct track access. FR 2-20,000 Hz ±1 dB; THD 0.007% at 1,000 Hz, 0 dB; SN 102 dB; dynamic range 92 dB. 17 x 4½ x 14½ in; 15 lb...

$280

SL-PC505 5-Disc CD Changer

Four 1-bit MASH D/A converters, 5-disc top-loading carousel. Features digital-servo laser-pickup system; linear motor transport; dual-directional turntable. Sequential play and repeat; ability to change any nonplaying disc without interrupting playback; direct disc access: all-disc random play; 32-track programming; 4 repeat modes; synchro edit with select Technics cassette decks; remote-control capability with select Technics receivers. FR 2-20,000 Hz ±1 dB; THD 0.009% at 1,000 Hz, 0 dB; SN 100 dB; dynamic range 92 dB. 17 x 4½ x 14½ in; 10 lb...

$220

SL-PG300 CD Player

Four 1-bit MASH D/A converters. Features peak-level search; time fade; random play; auto cue; 20-track programming; headphone jack with volume; 30-key remote control with 10-key direct access. FR 2-20,000 Hz ±1 dB; THD 0.004%; ch sep 90 dB; dynamic range 95 dB. 17 x 3½ x 12 in; 10 lb...

$520

YAMAHA

CDX-410R CD Player

8x oversampling, dual 18-bit D/A converters. Features 3-in-CD compatibility; 4-mode repeat; remote control. FR 20-20,000 Hz ±0.5 dB; SN 100 dB; THD 0.004%; ch sep 90 dB; dynamic range 95 dB. 17 x 3½ x 12 in; 10 lb...

$260

VECTOR RESEARCH

VCD-410R CD Player

Four 1-bit D/A converters. Features 2nd-order noise shaping; Class A amplifiers; independent power transformers for analog and digital sections; anti-vibration feet; fixed/variable analog output; optical and coaxial digital outputs. Motor-driven volume control; program file for 10 selections on each of 100 discs; 10-key direct access; 5-repeat modes; random play; 25-track programming; index search; calendar display; 4-mode time display; headphone jack with motor-driven levels; RS-system-compatible remote control. FR 4-20,000 Hz; s/N 97 dB....

$299

YAMAHA

CDX-1050 CD Player

Four 1-bit D/A converters. Features 2nd-order noise shaping; Class A amplifiers; independent power transformers for analog and digital sections; anti-vibration feet; fixed/variable analog output; optical and coaxial digital outputs. Motor-driven volume control; program file for 10 selections on each of 100 discs; 10-key direct access; 5-repeat modes; random play; 25-track programming; index search; calendar display; 4-mode time display; headphone jack with motor-driven levels; RS-system-compatible remote control. FR 4-20,000 Hz; s/N 97 dB....

$299

CDX-1550 CD Player

Four 1-bit D/A converters. Features 2nd-order noise shaping; digital servo system; coaxial digital output. Motor-driven volume control; 10-key direct access; 3-mode tape edit; 4-mode repeat; random play; 25-track programming; 3-mode music search; index search; calendar display; 4-mode time display; headphone jack with motor-driven levels; RS-system-compatible remote control with volume. SN 106 dB; dynamic range 100 dB...

$299

CDX-450 CD Player

1-bit D/A converters for 8 least-significant bits and 10-bit ladder-type D/A converters for 8 most-significant bits. Features noise shaping; microcomputer-controlled 2-way servo system; variable analog output. Headphone jack; digital volume control; index search; 25-track programming; 4-repeat modes; random play; normal, mute, and skip modes; wireless remote control with 10-key direct access, and volume and headphone-level controls; RS-system remote-control compatibility. SN 105 dB; dynamic range 98 dB. 17⅜ x 3⅞ x 10⅞ in...

$249

ZE NITH

LDP510 Combi-Player

Plays 3 and 5-in CD's and 8- and 12-in videodiscs. Headphone jack; remote control. Audio: 20-track on-screen programming, edit display. Video: instantaneous access; skip search; scan; picture search; repeat. Audio: 1-20 channels; 4650Hz. Video: hor res 425 lines; SN 47 dB. 16⅜ x 5⅞ x 16½ in...

$649
A COUSTIC RESEARCH
T-06/6 AM/FM Tuner
Built-in infrared receiver can be linked to A-07 amplifier and/or RD-06 cassette deck. FM section: 50-DB quieting sines 14.6 dB mono, 37.2 dB stereo; AM rej 60 dB; cap ratio 1.5 dB; SN 78 dB mono, 73 dB stereo (at 65 DB A-weight); FR 30-15,000 Hz ±1.0 dB; sep 45 dB. AM section: SN 50 dB; 17 kHz x 3/4 x 10% in; 13 lb. $400
T-06. As above, but without the remote-control facilities. $330

ADCOM
GFT-5511 AM/FM Tuner
Quartz-referenced digital-synthesis tuning with 8 AM/FM presets. Buffered output stages using Class-A amplifier. 1% Roederstein metal-film resistors and metal-film capacitors. Auto up/down scan; FL digital display; 5-LCD signal-strength display; switchable high-blend circuit; mono/mute switch. THD 0.1% at 1,000 Hz; 50-DB quieting sens 36 dB; SN 78 dB stereo; FR 30-15,000 Hz ±3 dB; cap ratio 1.7 dB; AM suppression 70 dB. $350

ARCAM
Delta 80 AM/FM Tuner
Analog tuner with 6 AM/FM presets. Features flywheel-assisted rotary knob; 3-color FM tuning indicator and logarithmically-scaled signal-strength meter; AFC and mono switches; digital frequency display. FM tuner: sens 1.4 µV; SN 70 dB stereo; cap ratio 1.5. AM tuner: SN 50 dB. Black. 17 x 2.5 x 10% in. $699

AUDIO BY VAN ALSTINE
Transcendence Series Two AM/FM Tuner
Features discrete semiconductor audio circuits; isolated active output stages with Class A current-sourced predrivers and LH002CN hybrid ceramic IF filters, and MPX filtering; noise-blanking circuit. Bidirectional seek/scan; signal-strength meter; defeatable muting; stereo/mono switch; gold-plated output jacks; 10-yr lithium-battery memory backup. $349

AUDIO DESIGN ASSOCIATES
MT-3000 AM/FM Tuner
Designed as 3 independent tuner modules, one AM and two FM, with 10 station presets per module for multiroom applications. Modules are interchangeable and upgradeable for future shortwave, cable, and digital modules. Features digital-synthesis tuning with auto analog phase frequency detector; pulse inputs for remote control of each module and additional input to access all 3 modules and presets; stereo dynamic noise; 1-RF input per module; 1-line-level output per module and for all-module access. 4-character title for each preset; mute; 120- or 220-V operation. 50-DB quieting sens 34 dB stereo; cap ratio 1.4; AM rej 54 dB; alt-ch sel 80 dB; ch sep 50 dB at 1,000 Hz; SN 69 dB stereo; FR 30-50,000 Hz ±0.5 dB; THD 0.09% at 1,000 Hz stereo. 19 x 3.6 x 11 in; 8 lb. $2,500

AUDIOPHILE SOURCE
Tnr-One AM/FM Tuner
Quartz-PLL tuner with 20-station memory presets. Sens 50-DB quieting sines 12.6 dB mono, 28.2 dB stereo; cap ratio 1.2; FR 30-15,000 Hz; AF 0.1% at 1,000 Hz; wide ir 80 dB, narrow ir 75 dB. AM section: FR 85-5,000 Hz ±1.5; -3 dB wide ir; SN 33 dB. $330

TU-460 AM/FM Tuner
Quartz-lock digital tuner with 30 station presets. Features last-station memory; auto scan tuning; manual step tuning; RF-attenuator switching. FM section: 50-DB quieting sens 15.3 dB mono, 38.5 dB stereo; SN 82 dB mono, 78 dB stereo; cap ratio 1.5; sep 45 dB at 1,000 Hz. $240

HAFNER
Iris FM Tuner
Digital-synthesis PLL tuner with 5 presets. Features 3 dual-gate-MOSFET isolation; 5 tuned front-end circuits; triple-tuned RF stage; IF stage with 4 ceramic filters. Selectable muting; auto search; digital display; remote operation with Iris preamp. 50-DB quieting sens 17.2 dB mono, 37.2 dB stereo; THD 0.1% at 1,000 Hz stereo; cap ratio 1.5 dB; alt-ch sep 60 dB; SN 72 dB mono, 68 dB stereo. 17 x 3 x 8½ in; 9 lb. $450

SEI130 AM/FM Tuner
Digital-synthesis PLL tuner with 6 AM/12 FM presets. Features Delco Electronics signal-detection circuitry; AM section with 4-varactor diode tuner; FM tuner with dual-gate MOSFET RF amplifier, 2 ceramic IF filters, and MPX filtering; noise-blanking circuit. Bidirectional seek/scan; selectable muting; stereo/mono switch; gold-plated output jacks; 10-yr lithium-battery memory backup. $349

HARMAN KARDON
Citation Twenty-Three AM/FM Tuner
Digital-synthesis quartz-locking design with 16 AM/FM station presets. High-selectivity (Hi Q) circuit; mono and mute buttons; LCD display; analog fine tuning; remote control. FM section (with Hi Q): 50-DB quieting sines 40.4 dB stereo; AM rej 70 dB; cap ratio 1.75 dB; adj-ch sel 30 dB; alt-ch sep 75 dB; SN 75 dB stereo; stereo sep 35 dB at 1,000 Hz. $699

TU-9600 AM/FM Tuner
24 AM/FM presets. Features digital fine tuning; 2 antenna inputs; PM stereo pilot and subcarrier noise reduction; high-blend circuit; remote control. Black or champagne finish. $429

TU-9200 AM/FM Tuner
Digital-synthesis quartz-locking design with 16 AM/FM station presets. Hi-blend circuit; seek and manual up/down tuning; rear-panel remote jack. $229

JVC
FX-1100BK AM/FM Tuner
PLL tuner with 40 AM/FM presets. Features micro-

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processor-controlled LED front-end, IF, and multiplex decoder stages; optical separation of analog and digital sections; dual-gate MOSFET front end; 2 antenna inputs. Switchable wide/narrow IF bandwidths; preset scan with bypass; programmable memory for 8 unattended timed broadcasts; dB-referenced signal-strength indicator; recording-level-calibration signal generator; Compu Link system compatibility. FM tuner: 50-Db quieting sens 38.1 dB stereo; AM rej 65 dB; cap ratio 1.2 dB; sel 25 dB wide, 75 dB narrow; stereo sep 60 dB wide at 1,000 Hz; FR 20-15,000 Hz ±0.3 -- 0.5 dB; SN 88 dB stereo at 85 dB; THD 0.009% mono, 0.02% stereo wide at 1,000 Hz; 17.1 x 4 x 11.1 in; 8 lb $470

KENWOOD
KT-5020 AM/FM Tuner
Quartz-synthesis design with 20 station presets. Features Direct Linear Loop Detector circuit; pincap power supply; controlled tuning system; Flex-on printed circuit board; selectable wide/narrow FM IF bandwidth; FL display; system remote-control compatibility. 10 lb $269

MARANTZ
ST-50 AM/FM Tuner
Digital-synthesis tuner with 30 AM/FM station presets. Features 4-gang FM front end with dual-MOSFET's; linear phase IF filters; wide/narrow IF switching; pilot-tone canceller; 2-week memory backup. Auto/manual scan, 18-key front-panel direct access; FL display; remote-control jacks for compatibility with other Marantz components. FR 20-15,000 Hz ± 0.5 dB; 50-Db quieting sens 16.2 dB mono; 37 dB stereo; usable sens 10.8 dB; alt-ch sel 35 dB wide; 75 dB narrow; THD 1,000 Hz stereo; 0.08% wide, 0.4% narrow, SN 82 dB at 1,000 Hz stereo; cap ratio 1 dB; stereo sep 55 dB at 1,000 Hz. Gold finish with die-cast alloy side panels $295

MCEINTOSH
MR-7083 AM/FM Tuner
Features 8 AM/FM presets; PLL multiplex decoder; spatial audio processor; signal-strength-activated noise-suppression; low-imp loopstick antenna; scan/manual tuning; auto center channel AM station tuning. 50-Db quieting sens mono 15 dBf mono, 37 dB stereo; usable sens 11.25 dBf; AM rej 78 dB; cap ratio 1.5 dB, alt-ch sel 70 dB; FR 20-15,000 Hz ± 0.1 dB; sep 50 dB. 16 x 5 x 13 in; 15.5 lb $1,699

MTX SOUND CRAFTSMEN
Pro-Tuner Four AM/FM Tuner
Digital quartz PLL tuner with 16 station presets. Features active high-blend filter; 5-digit display; audio scan tuning. 19-in rack-mount front panel. IFH sens 1.6 µV; SN 75 dB; distortion 0.08%. 19 x 27 x 12 in $379

MUSEATEX
Melior FM Tuner
Digital-synthesis tuner with 99 station presets. Features 2 antenna/cable inputs; PLL loop detector; IF demodulation; LCD interface. Manual fine tuning; strongest-station memory; stereo/mono and IF bandwidth selection; remote control. 5-year warranty. 14 lb $995

MUSEATEX Melior

NAD
Model 4225 AM/FM Tuner 14 random AM/FM presets. Features IF filters; switchable blend circuit. SN 75 dB $249

NAMICHI
ST-7 AM/FM Tuner
Digital-synthesis tuner with 16 station tuners. Features Schott noise reduction; PLL circuitry; RF output-level controls; 5-segment signal/multipath meter. FM usable sens 10 dB mono; 17 dB stereo; 50-Db quieting sens 14 dBf mono, 28 dBf stereo; THD 0.06% mono, 0.08% stereo at 1,000 Hz; SN 76 dB stereo, 80 dB mon; FR 20-15,000 Hz ± 1 dB; cap ratio 1.9 dB; sep 55 dB at 1,000 Hz; AM rej 60 dB; alt-ch sel 60 dB. 17.1 x 23/11 in; 10.5 lb $849

NIKKO
NT 150 AM/FM Tuner
Digital-synthesis FM design with 24 station presets. IHF sens 11.2 dBf mono; signal strength 28 dBf stereo, 47 dBf stereo; cap ratio 2 dB wide; AM rej 55 dB; alt-ch sel 60 dB wide; sep 38 dB at 1,000 Hz; THD 0.4% mono, 0.6% stereo at 1,000 Hz with 100% modulation; SN 15 dB mono, 36 dB stereo. 6 lb $129

ONYKO
Grand Integra T-10 FM Tuner
20 station presets. Features auto/manual A/B antenna, local/distance, wide/narrow/S/Narrow IF bandwidth, high-blend, and stereo/mono switching; chassis damping; dual antenna inputs. Battery-free memory backup; preset scan; FM fine tuning, timer preset programming; RIS-system remote control. Wood side panels $850

Integra T-9090II FM Tuner
Dual-mode PLL tuning with 20 station presets. Features sonic filter; auto/manual A/B antenna, local/distance, wide/narrow/S/Narrow IF bandwidth, high-blend, and stereo/mono switching; power-supply filter; dual antenna inputs. Preset scan; auto preset store; multifunction digital display; digital signal-strength readout; timer preset programming, adjustable output level; FM fine tuning; remote control. 50-Db quieting sens 37.2 dB stereo; cap ratio 1.0 dB; SN 85 dB stereo; stereo sep 55 dB at 1,000 Hz. Wood side panels. 18 4 x 4 x 15/1 in $1,950

Integra T-407 FM Tuner
4-station presets. 3-mode proprietary auto precision reception system with manual override; 5-varactor/MOSFET RF section; front-end design reducing IM; Isohex power supply. 8-category classified scan; random-access tuning; FM fine tuning in 25- or 50-kHz steps; built-in AM loop antenna; 6-digit frequency display; RIS-system remote-control compatibility. 10 lb $450

PARASOUND
T/D-260 II AM/FM Tuner
Quartz-referenced PLL digital-synthesis tuner with 8 AM/8 FM presets. Features regulated power supply; scan/manual tuning; mono switch. 50-Db quieting sens 37.7 dBf; alt-ch sel 66 dB; THD 0.05% mono, 0.1% stereo; FR 20-15,000 Hz ± 0.5 dB; cap ratio 1.2 dB; 17.4 x 2 1/4 x 9 1/4 in $295

PHILIPS
FT-50 FM Tuner
Features 4-gang FM front end with dual-gate MOSFET design and selectable IF bandwidth. 30 presets; manual and auto scan; direct-access tuning with 10 front-panel keys $259

PIONEER
Elite F-93 AM/FM Tuner
Digital Direct Decoder type IV tuner with 40 AM/FM presets. Features spectrum simulated stereo; MPX NR (auto/mono); IF band switch; rotary tuning; direct access; 100-kHz step FM and 10-kHz step AM variable fine tuning; digital signal meter; RF attenuator; auto search level; preset scan; variable/ixed output; random preset; antiresonance honeycomb design. Urushi Finish $900

Elite F-51 AM/FM Tuner
Digital Direct Decoder type IV tuner with 36 AM/FM presets. Features spectrum simulated stereo; MPX NR (auto/mono); IF band switch; rotary tuning; direct access; 100-kHz step FM and 10-kHz step AM variable fine tuning; digital signal meter; RF attenuator; auto search level; preset scan; variable/ixed output; random preset; antiresonance honeycomb design. Urushi Finish $900

PROTON
AT-670 AM/FM Tuner
Quartz-PLL tuner with 9 AM/18 FM presets. Features Schott II circuitry with NR; 5-gang GASPEP RF amp. Variable output level; mono/stereo switch; wide/narrow IF bandwidth switching; automatic/ternal rotary tuning. Remote controllable, FM section: 50-Db quieting sens 3.2 µV mono, 30 µV stereo; cap ratio 1.0 dB at 45 dB; AM rej 65 dB; SN 83 dB mono, 74 DBA stereo at 65 dB; stereo sep 45 dB at 1,000 Hz. AM section: sel 50 dB; SN 45 dB at 10 mV; 18% x 4% x 15% in $400

AT-470 AM/FM Tuner
8 AM/FM presets; mono switch $220

QUAD
Model 66 FM Tuner
Designed for use with Quad 66 preamplifier. Features control from Infrared 66 control panel; auto search in 25- or 50-kHz steps; LCD with frequency, signal strength, mono/stereo, and preset. 5-year warranty. 14 lb $995
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CRUTCHFIELD

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**ARISTON**

**Icon II Semiomatic Turntable**
- Belt-drive. Features remote power supply; fitted acoustic mat; 4 isolating feet; full spring suspension; 33 1/3- and 45-rpm play speeds; W&F 0.08% rumble 75 dB. Black finish.
- $450

**Q-Deck Mk II Semiomatic Turntable**
- Belt-drive. Features remote power supply; anti-static mat; 4 isolating feet; 33 1/3- and 45-rpm play speeds; W&F 0.08% rumble 75 dB.
- $369

**BANG & OLUFSEN**

**Beogram 4500 Automatic Turntable**
- Integrates with Beosystem 4500 for full remote control. Features built-in phonon preamp; 3-point leaf-spring suspension; tangential tracking. Accepts B&O MMC-1 cartridges. W&F 0.06%; rumble 80 DB DIN-weighted. White finish.
- $450

**Beogram 9500 Turntable**
- Integrates with Beosystem 6500. W&F 0.03% w rms; speed deviation ±0.2%; rumble 80 DB DIN-weighted. White finish.
- $500

**Beogram TX-2 Automatic Turntable**
- Tangential-tracking belt-drive turntable. Features fixed headshell; 33 1/3- and 45-rpm play speeds; recommended tracking force 1.5 g. W&F 0.03% DIN; rumble - 80 DB 16/3 x 3 x 12/3 in; 11.6 lb.
- $400

**BEYERDINNIG**

**CS-7505 Semiomatic Turntable**
- Belt drive. Features microprocessor-controlled quartz drive mechanism; aluminum tonearm. 33 1/3-, 45-, and 78-rpm play speeds; W&F 0.014% DIN. Cartridge not included.
- $1,195

**CS-50548 Semiomatic Turntable**
- Belt drive. Features tonearm support mounted on gimbals; vibration-damped aluminum platter with antiresonance mat; solid wood cone; viscosity-damped cueing control; detachable headshell. 33 1/3- and 45-rpm play speeds; W&F 0.035%. Cartridge not included.
- $520

**CS-450G Semiomatic Turntable**
- Belt drive. Features dynamically-balanced gimbal-mounted tonearm; DC motor with electronic speed control; floating subchassis; vibration-damped aluminum platter with antiresonance mat; solid wood cone; viscosity-damped cueing control; detachable headshell. 33 1/3- and 45-rpm play speeds; W&F 0.004%. Optional gold or silver finish on all metal parts. Cartridge not included.
- $375

**CARRERA**

**LT-120 Automatic Turntable**
- Belt-drive. Features linear tonearm. 33 1/3- and 45-rpm play speeds; W&F 0.05% rumble 69 dB; recommended tracking force 1.25 g. 33 1/3- and 45-rpm play speeds; W&F 0.03% DIN; rumble - 80 DB 16/3 x 3 x 12/3 in; 11.6 lb.
- $170

**CT-1155 Semiomatic Turntable**
- Belt-drive. Features pivoted tonearm; P-mount cartridge. 33 1/3- and 45-rpm play speeds; W&F 0.07% rumble 65 dB.
- $100

**DENON**

**The following Denon turntables are microprocessor controlled and employ a Dynamic Servo Tracer tonearm.**

**DP-59L Semiomatic Turntable**
- Direct-drive with wood base. Features base isolation; 5.5 lb platter; high-torque AC motor; 9.9% pitch control in 0.1% steps. W&F 0.006%; SN 82 dB; speed accuracy 0.002%.
- $695

**DP-47F Automatic Turntable**
- Direct-drive with thick wood base. Features flat-twin design. W&F 0.01%; SN 78 DB; speed accuracy 0.002%.
- $450

**DP-23F Automatic Turntable**
- W&F 0.02%; SN 75 DB.
- $275

**DP-7F Automatic Turntable**
- P-mount design. W & F 0.018%; SN 75 DB; speed accuracy 0.01% Black finish.
- $200

**DUAL**

**Golden-1 Semiomatic Turntable**
- Features 24-karat gold-plated metal components; gyroscopic gimbal tonearm with low-mass track.
- $499

### Linear Velocity Turntables

**JVC**

**AL-A155TN Semiomatic Turntable**
- Belt drive. Features low-mass statically balanced straight tonearm with low-center-of-gravity support; DC servo motor; die-cast aluminum platter; up-front arm cueing control; plug-in cartridge connectors. W&F 0.04%; SN 65 DB; effective length 220 mm; overhang 15 mm; applicable tracking force 1.25 g. Cartridge not included. 1 7/8 x 4 1/4 x 14 3/4 in; 7 lb.
- $100

**LINN**

**LP12/Lingo Turntable**
- Separate direct-coupled power supply. Features low noise oscillators; separate drive for both motor phases; isolated power supply. 33 1/3- and 45-rpm play speeds.
- $2,740

**LP12/Vilhulla Manual Turntable**
- Belt drive. Features 24-pole synchronous motor; 12-in zinc-aluminum alloy die-caster with felt mat; hardened tool-steel spindle; adjustable 3-point spring suspension subchassis; heavy-gauge stainless-steel base plate; solid hardwood base; optional 45-rpm adaptor. W&F 0.04% w rms; rumble - 60 dB; speed accuracy ± 0.04%. 1 7/8 x 5 1/2 x 14 in.
- $1,545

**Basic Turntable**
- Two-speed version.
- $95

**NUMARK**

**TT1600 Manual Turntable**
- Direct-drive. Features quartz synthesis and phase-lock-loop circuit; remote starting; digital speed display; 33 1/3- and 45-rpm play speeds. 17 5/8 x 5 1/4 in; 26 lb.
- $709

**ONYKO**

**CP-1500F Automatic Turntable**
- Direct-drive quartz-carbovite design with 2 speeds. Features straight tonearm; triple-stage isolation system; die-cast aluminum platter. R1-system remote-control compatible.
- $280

**CP-1200A Semiomatic Turntable**
- Belt-drive quartz-carbovite design with triple-stage isolation system and die-cast aluminum platter. Smoked dust cover.
- $130

**OPTIMUS, BY RADIO SHACK**

**LAB-2250 Automatic Turntable**
- Belt drive. Features linear-tracking tonearm; aluminum die-caster platter; power failure protection; elliptical diamond stylus. Cue button; 2 speeds. W&F 0.1%; SN 55 DB; effective tonearm length 132 mm; FR 20-20,000 Hz; tracking force 2-3 g. 1 4/4 x 3/4 x 13/4 in; 8.6 lb.
- $150

**LAB-460 Automatic Turntable**
- Belt drive. Features aluminum die-cast platter; straight-pipe tonearm; dual-magnet cartridge; diamond stylus; 2 speeds. W&F 0.1%; SN ratio 55 dB.
- $475

**STEREO REVIEW FEBRUARY 1992**

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<table>
<thead>
<tr>
<th>Model</th>
<th>Features</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>REVOLVER BY MUSIC HALL</strong></td>
<td></td>
<td></td>
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<tr>
<td>Revolver Turntable</td>
<td>Split-plinth belt-drive design. Features medium-density fiberboard platter with self-damping material; AC synchronous motor with 2-speed stepped pulley, ethylene propylene drive belt, 3 molded nonadjustable feet. Includes grip clamp; starmat; lubricating oil; Revolver tonearm. Rosewood or redwood high-gloss finish.</td>
<td>$670</td>
</tr>
<tr>
<td>Revolver Rebel Turntable</td>
<td>Includes tonearm and Goldring Elan cartridge. Blue-marble or black-satin finish.</td>
<td>$449</td>
</tr>
<tr>
<td><strong>REVOX</strong></td>
<td></td>
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<tr>
<td>H9 Direct Drive Turntable</td>
<td>Tangential-tracking design featuring Linatrack tonearm. Features ±9.9% pitch adjustment in 0.01% increments; compatibility with H8, H208, and H210 remotes. Tracking force 0.8-2 g; tangential tracking error 0.5%. 17% x 5% x 15%; 20.1 lb</td>
<td>$2,890</td>
</tr>
<tr>
<td><strong>ORACLE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The following turntables do not include tonearms.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delphi MK IV Manual Turntable</td>
<td>Belt-drive. 33⅓- and 45-rpm play speeds; variable speed control; adjustable spring-suspension; record-coupling system. Includes stroboscopic disc. Black piano finish. 19¾ x 14 in; 19 lb.</td>
<td>$1,195</td>
</tr>
<tr>
<td>Alexandria Mark IV Manual Turntable</td>
<td>Belt-drive. 33⅓- and 45-rpm play speeds; variable speed control; adjustable spring-suspension; record-coupling system. Includes stroboscopic disc. White piano finish. 14 x 19 x 15 lb.</td>
<td>$950</td>
</tr>
<tr>
<td>PIONEER</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elite PL-90 Automatic Turntable</td>
<td>Direct-drive. Features coreless quartz-PLL DC servomotor with stable hanging rotor; straight tonearm made of aluminum and ceramics; 14-in platter. 33⅓- and 45-rpm play speeds; W&amp;R 0.018%; 23⅓ x 8 x 17 in.</td>
<td>$1,100</td>
</tr>
<tr>
<td>PL-600 Automatic Turntable</td>
<td>Belt-drive. Features DC servomotor with stable hanging rotor; statically-balanced straight tonearm. Features 3-layer MDF base construction; vertical tracking and azimuth controls; suspension system and antistatic dust-isolation mat. Includes platter pivot point turning at its center of gravity, a brushless DC motor; Rumble 60 dB at 1,000 Hz; W&amp;R 0.064% w rms. 7¾ x 20⅛ x 16⅛ in; 44 lb.</td>
<td>$1,100</td>
</tr>
<tr>
<td><strong>REALISTIC, BY RADIO SHACK</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LAB-340 SemiAutomatic Turntable</td>
<td>Belt-drive. Features straight tonearm, dual-moving-magnet cartridge; die-cast aluminum platter; 0.6-mil diamond stylus; W&amp;R 0.15%; tracking error ± 3°. 17 x 5⅝ x 14 in.</td>
<td>$1,100</td>
</tr>
<tr>
<td><strong>REVOLVER, BY MUSIC HALL</strong></td>
<td></td>
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</tr>
<tr>
<td>Revolver Turntable</td>
<td>Direct-drive design with gimbal-suspended tonearm. Features quartz crystal; brushless DC motor; aluminum die-cast cabinet; antiresonant viscoelastic base. ±8% quartz-locked pitch control; quick start/stop; pop-up stylus light; tonearm height adjustment. 33⅓- and 45-rpm play speeds; W&amp;R 0.025%.</td>
<td>$600</td>
</tr>
<tr>
<td><strong>SANSUI</strong></td>
<td></td>
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</tr>
<tr>
<td>P-1100 SemiAutomatic Turntable</td>
<td>Belt-drive design with P-mount cartridge; aluminum platter; cueing control. SN 72 dB 16⅝ x 3⅛ in; 8.8 lb.</td>
<td>$100</td>
</tr>
<tr>
<td><strong>SOTA</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The following turntables are upgradeable, run at 33⅓ and 45 rpm, and are belt driven. Each features a 1-piece 11.2 lb cast platter in a unified suspension system, a platter pivot point turning at its center of gravity, and a brushless DC motor; Rumble 60 dB at 1,000 Hz; W&amp;R 0.064% rms. 7¾ x 20¼ x 16¼ in; 44 lb.</td>
<td>$1,100</td>
<td></td>
</tr>
<tr>
<td>Cosmos Turntable</td>
<td>Features 1-piece sub-assembly where platter, motor, and armboard function as single entity; rigid multilayer-lamine arm-support block connected structurally with platter block; Fountainhead cabinet for turntable and pump/power supply; dust cover. Pump unit: 20 lb. High-gloss piano black. White/grey matrix and white.</td>
<td>$4,000</td>
</tr>
<tr>
<td>Nova Turntable</td>
<td>Features Cosmos vacuum platter mat; integrated pump/electronic flywheel power supply to provide control over power-line impurities; composite multi-layer-constrasted-mode armboard; reflex clamp; zirconia bearing. Includes dust cover. Pump unit: 10 lb. Brazilian rosewood and Macasar ebony.</td>
<td>$2,700</td>
</tr>
<tr>
<td>Star Turntable</td>
<td>Features self-sensing vacuum record-clamping system and antistatic dust-isolation mat. Includes dust cover. Pump unit: 10 lb. Brazilian rosewood and Macasar ebony.</td>
<td>$2,700</td>
</tr>
<tr>
<td><strong>TECHNICS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SL-1200MKII Manual Turntable</td>
<td>Direct-drive design with gimbal-suspended tonearm. Features quartz crystal; brushless DC motor; aluminum die-cast cabinet; antiresonant viscoelastic base. ±8% quartz-locked pitch control; quick start/stop; pop-up stylus light; tonearm height adjustment. 33⅓- and 45-rpm play speeds; W&amp;R 0.025%.</td>
<td>$600</td>
</tr>
<tr>
<td>SL-QD33 Automatic Turntable</td>
<td>Direct-drive 2-motor design. Features P-mount cartridge; PLL quartz clock, low-speed DC brushless motor. End-of-disc detection; pivoting arm; strobe; front-panel electronic soft-touch controls. 33⅓- and 45-rpm play speeds; W&amp;R 0.012%; rumble - 78 dB; effective tonearm mass 7.5 g, le. They feature gimbal suspension, antiskate control, 0.12-in effective tonearm length, and tracking error &lt;0.18% (&lt;0.45%).</td>
<td>$1,100</td>
</tr>
<tr>
<td><strong>SOTAS, BY BLR ELECTRONICS</strong></td>
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</tr>
<tr>
<td>SOTA Turntable</td>
<td>Features suspension system and antistatic dust-isolation mat. Includes platter pivot point turning at its center of gravity, a brushless DC motor; Rumble 60 dB at 1,000 Hz; W&amp;R 0.064% rms. 7¾ x 20¼ x 16¼ in; 44 lb.</td>
<td>$1,100</td>
</tr>
<tr>
<td>Cosmos Turntable</td>
<td>Features 1-piece sub-assembly where platter, motor, and armboard function as single entity; rigid multilayer-lamine arm-support block connected structurally with platter block; Fountainhead cabinet for turntable and pump/power supply; dust cover. Pump unit: 20 lb. High-gloss piano black. White/grey matrix and white.</td>
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<td>$600</td>
</tr>
<tr>
<td>SL-QD33 Automatic Turntable</td>
<td>Direct-drive 2-motor design. Features P-mount cartridge; quartz lock; ultra-low-speed brushless DC motor for platter drive; pivoting arm; end-of-disc detection; soft-touch front-panel controls; strobe. Remote-control compatible with select Technics receivers. 33⅓- and 45-rpm play speeds; W&amp;R 0.012%; rumble - 78 dB; effective tonearm mass 7.5 g, length 230 mm; max tracking error ± 2°. 17 x 4½ x 14¼ in; 10 lb.</td>
<td>$2,200</td>
</tr>
<tr>
<td><strong>WELL TEMPERED LABS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Well Tempered Classic Turntable</td>
<td>Belt-drive design with 0-clearance-bearing fluid-damped arm. Features 3-layer MDF base construction; vertical tracking and azimuth controls; isolated damped motor assembly. Fountainhead base.</td>
<td>$2,875</td>
</tr>
<tr>
<td>The Well Tempered Record Player</td>
<td>Belt-drive design with 0-clearance-bearing fluid-damped arm. Features 3-layer MDF base construction; vertical tracking, antiskate, and azimuth controls; isolated damped motor assembly. Glossy finish.</td>
<td>$1,195</td>
</tr>
</tbody>
</table>
ACOUSTIC RESEARCH

M6 3-Way Speaker

Acoustic-suspension design with two 8-in paper cone woofers, one 5-in long-throw midrange, and one 1-in ferrofluid-cooled aluminum dome tweeter. Power handling 20-200 W; FR 42-20,000 Hz +0, -3 dB; crossover points 30 and 4,300 Hz; imp 4 ohms. Gray suede, white gloss, or vintage finish. 91/2 x 36 x 15 in; 42 lb ea.

$380/pr

TWS 610-B 3-Way Speaker

Acoustic-suspension design with 12-in woofer, 61/2-in midrange, and 1/4-in titanium-liquid-cooled dome tweeter. Tetra-Helix tweeter mounting plate and acoustic lens. Power handling 20-125 W; FR 46-40,000 Hz +0, -3 dB; sens 90 dB SPL/W/m; imp 4-8 ohms; crossovers 700 and 5,000 Hz. 141/2 x 32 x 131/8 in; 57 lb ea.

$600/pr

TWS 410-B 3-Way Bookshelf Speaker

Acoustic-suspension design with 8-in woofer, 61/2-in midrange, and 1/4-in polymer tweeter. Features Tetra-Helix tweeter mounting plate and acoustic lens. Power handling 20-125 W; FR 46-40,000 Hz +0, -3 dB; sens 90 dB SPL/W/m; imp 4-8 ohms; crossovers 700 and 5,000 Hz. 121/8 x 24 x 111/4 in; 30.5 lb ea.

$600/pr

M4 3-Way Speaker

Acoustic-suspension design with 6-in polypropylene woofer, 6-in paper cone midrange, and 1/4-in ferrofluid-cooled dome tweeter. Power handling 20-150 W; FR 50-20,000 Hz +0, -3 dB; sens 88 dB SPL/W/m; imp 4 ohms; crossover points 100 and 3,600 Hz; imp 4 ohms. Charcoal-gray vinyl finish. 71/4 x 281/2 x 15 in; 26.5 lb ea.

$599/pr

TWS 210-A 2-Way Bookshelf Speaker

Acoustic-suspension design with 8-in woofer and 1/4-in polymer tweeter. Tetra-Helix tweeter mounting plate and acoustic lens. Power handling 10-100 W; FR 54-40,000 Hz +0, -3 dB; sens 87 dB white noise; imp 4-ohms; crossover point 5,000 Hz; imp 4 ohms. Charcoal-gray vinyl finish. 7/16 x 17 x 21/4 in.

$600/2sys

A/D/S/ M20 3-Way Speaker

Two 8-in polymer woofers, one 6-in polymer midrange, and 1-in polymer dome tweeter. Features butyl rubber surrounds and OFC voice coils. Auto solid-state protection; multiway binding posts; dual-tuned band-pass design. Biwired. Power handling 20-220 W; FR 23-22,000 Hz +3 dB; sens 91 dB SPL/W/m; nom 4 ohms; crossovers 24 dB/octave at 200 and 2,500 Hz. Rosewood or matte black finish with mesh-steel grille. 101/8 x 1/4 x 16 in; 88 lb.

$599/pr

SAT6 2-Way Speaker

6-in woofer and 1-in polypropylene dome tweeter. Features 4th-order Linkwitz-Riley crossover network; isolated floating-baffle design. Power handling 150 W cont; FR 23-22,000 Hz; crossover at 2,000 Hz, 24 dB-per-octave slopes; imp 4 ohms. Walnut-veneer and black finish. 71/2 x 9 in.

$580/pr

L400e 2-Way Speaker

Acoustic-suspension design with 7-in Stifflite woofer and 1-in copolymer tweeter. Features aluminum enclosure (black-textured urethane with convex-steel grille). Power handling 100 W.

$800/pr

ACOUSTAT

Spectra 6600 Electrostatic Speaker

Six-way stereo system with Symmetric Pair Electrically Curved Transducer (SPECTRA). Features mirror-image arrays with full-range line-source sector, adjacent sectors for mid/low frequencies, and panel for low bass; solid wood with brass electrostatic inlay. Power handling 100 W; nom 4 ohms. Dark oak and black, beige, charcoal gray, or light gray grille. Optional wood finishes. 34 x 9 x 17 in.

$6,000/pr

Spectra 2200.

Spectra 2200.

As above, 2 electrostatic elements. 23 x 66 x 14 in.

$5,200/pr

ADVENT

New Vision Series Model 350 2-Way Speaker

6-in/6-in aluminum-coil woofer and 1-in ferrofluid-filled soft-dome tweeter. Power handling 125-500 W cont; FR 41-23,000 Hz +3 dB; sens 89 dB sm/W; imp 6 ohms; crossover point 3,000 Hz; THD 1% above 80 Hz at 1 W, 1.5% above 100 Hz at 10 W; resonance 50 Hz ±3 Hz. Oiled solid pecan wood finish. 9 x 37 x 12 in.

$550/pr

Advent Lawrence 2-Way Speaker

Dual 61/2-in woofers and one 1-in ferrofluid-filled parabolic soft-dome tweeter. Power handling 125 W cont; sens 90 dB W/m; nom 6 ohms; crossover point 3,000 Hz; THD 1% above 80 Hz at 1 W, 1.5% above 100 Hz at 10 W; resonance 50 Hz ±3 Hz. Oiled pecan wood frame with black finish grille. Baffle and trim plate. 12 x 81/2 in.

$399/pr

Mini-Advent Subwoofer II/Satellite System

Features 2 Mini-Advent speakers and bass module with two 51/4-in aluminum-coil woofers and 1/4-in polycarbonate ferrofluid-filled hard dome tweeter. Power handling 40 W cont; FR 110-21,000 Hz ±3 dB; sens 91 dB W/m; imp 6 ohms; satellite crossover point 4,500 Hz; THD 1.5% above 200 W at 1 W. Black-textured vinyl over fiberboard. 151/2 x 13 x 181/2 in; 10 lb.

$290

Advent Baby II 2-Way Bookshelf Speaker

6-in aluminum-coil woofer and 1/4-in polycarbonate ferrofluid-filled hard dome tweeter. Power handling 50 W cont; FR 60-21,000 Hz ±3 dB; sens 89 dB W/m; imp 6 ohms; crossover point 4,500 Hz; THD 1.25% above 100 W at 1 W; resonance 79 Hz ±5 Hz. Cabinet with oiled solid-wood top and black textured-vinyl over fiberboard. 11 x 161/2 x 61/4 in; 13 lb.

$250/pr

ALLISON

IC-10 3-Way Speaker

Triangular-shaped acoustic-suspension tower with two 8-in push-pull woofers, two 31/4-in convex midranges, and two 1-in convex tweeters. Features adjustable radiation pattern options; separate biamping inputs for woofers, midranges.

$380/pr

Acoustic Research M-1

Features adjustable radiation pattern options; separate biamping inputs for woofers, midranges.

$380/pr

Model 3000c 2-Way In-Wall Speaker

51/4-in copolymer woofer and 1-in copolymer-dome tweeter in minimum diffusion-baffle enclosure. Power handling 100 W cont; FR 50-20,000 Hz ±3 dB; sens 92 dB SPL/W/m; crossover point 2,500 Hz; imp 4 ohms. 81/2 x 10 x 5 in; 1.8 lb ea.

$380/pr

Subwoofer Systems

SW 5 Power Subwoofer

12-in subwoofer with active crossover network and dedicated 350-W amp. Linkwitz-Riley crossover with adjustable crossover points; output level control. 1,000 ea.

$1,000 ea

SUB6 Subwoofer

61/2-in dual-voice-coil woofer in dual-tuned band-pass enclosure. Features passive high-low-pass crossover. Compatible with L200e speaker. Available in black or white finish. 19 x 81/2 x 8 in.

$295 ea

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### ALTEC LANSING

**Model 510 3-Way Speaker**

Acoustic-suspension design with two 10-in carbon-fiber woofers and 1-1/2-in convex tweeter. Power handling 100 W; crossover 120 or 29-250 Hz ± 3 dB; sens 87 dB; imp 4 ohms. Oak, walnut, or black finish. 48 x 21 x 12 in; 73 lb. $550/pr

**Model 515 3-Way Speaker**

Acoustic-suspension design with 10-in woofer, 31/4-in dome midrange, and 1-in dome tweeter. Power handling 100 W nom, 200 W max; FR 28-11,000 Hz ± 3 dB; sens 92 dB. Black or walnut wood-grain vinyl. 11 x 20 x 10 1/4 in; 22 lb. $660/pr

**Model 115 2-Way Speaker**

Acoustic-suspension design with one 8-in woofer and 1-in convex tweeter. Power handling 150 W; crossover point 2,000 Hz; sens 87 dB SPL/W/m; imp 6 ohms. Oak, walnut, or black vinyl finish. 11 x 13 x 11 1/8 in. $460/pr

### APOGEE

**Duetta Signature 2-Way Ribbon Speaker**

Midsize ribbon design with trapezoidal woofer ribbon and midrange/tweeter ribbon. Features internal crossover. Power handling 200 W cont avg; FR 30-20,000 Hz; sens 100 dB SPL/W/m; imp 4 ohms. Anthracite, taupé, or custom finishes. 26 x 58 x 3 in, 11 1/2 lb ea. $4,395/pr

**Stage 2-Way Ribbon Speaker**

Trapezoidal woofer ribbon and midrange/tweeter ribbon. Features internal crossover. Power handling 150 W cont avg; FR 35-20,000 Hz; sens 107 dB SPL/W/m; imp 3 ohms. Anthracite with basswood or mahogany trim, taupé with mahogany trim. 26 x 36 x 2 in; 60 lb ea. $2,395/pr

**Centaur 2-Way Ribbon Speaker**

Hybrid design featuring 8-in long-throw polypropylene woofer and dipole midrange/tweeter ribbon in acoustic-suspension enclosure. Power handling 150 W cont avg; FR 38-20,000 Hz; sens 107 dB SPL/W/m; imp 5 ohms. Black grille with agate or walnut fascia. 15 x 46 x 11 in; 65 lb ea. $1,595/pr

### ATLANTIC TECHNOLOGY

**Pattern 200 Surround Sub/Sat System**

Subwoofer with dual 8-in long-throw woofers, 5 satellites each with two 3-in drivers, 6-channel 120-W amplifier, and Dolby Pro Logic decoder. Features 4 attached pivoting dual-enclosure satellites; 1 dual-enclosure center-channel satellite; biamplification for subwoofer and satellites; magnetic shielding; wireless remote control; theater compensation for bright soundtracks; 30-ms digital delay; dynamic EQ/limiter to protect subwoofer and enhance bass at low levels; 1 high- and 3 line-level inputs with auto source selection; test signal for center- and surround-channel balancing; individual volume for subwoofer, center, and surround channels; master volume control. FR 38-20,000 Hz ± 3 dB. $1,200/sys

**Pattern 100 Powered Sub/Sat System**

Vented subwoofer with dual 6-1/2-in woofers. 2 satellites each with two 3-in drivers, and 60-W amplifier. Features rotating dual-enclosure satellites; biamplification for subwoofer and satellites; magnetic shielding; satellite mounting brackets; amplifier features dynamic EQ/limiter to protect subwoofer and enhance bass at low levels; 1 high-level and 3 line-level inputs with auto source selection, dual-mode connectors for RCA and minigang inputs; ± 6 dB bass control. FR 38-20,000 Hz ± 3 dB. $479/sys

**Atlantic Technology Pattern 100**

- 80 dB SPL/W/m; imp 8 ohms; crossover point 150 Hz. Matte-black or gloss-white finish. 15¼ x 12 x 18 in; 27 lb. $250 ea
- With LS Two/A satellite speakers $450/sys

### AVID

**Model 2322 CF 3-Way Speaker**

Bass-reflex design with 10-in polypropylene woofer, 4¾-in integral-edge cone midrange, and 1-in soft-dome tweeter. Ferrofluid-cooled voice coils in tweeter and midrange. Power handling 150 W cont; FR 40-20,000 Hz ± 3 dB; sens 90 dB SPL/W/m; imp 8 ohms. Wood composite with matte-black finish and metal grille. 5¼ x 13¾ x 9¾ in; 8 lb. $100 ea

**AX 5 3-Way Speaker**

10- and 5-in woofers and 1-in dome tweeter. FR 29-22,000 Hz ± 2 dB; sens 87 dB; imp 4 ohms; crossover points 180 and 3,000 Hz. Dark, natural, or black oak finish with black knit grille. 12 x 36 x 12 in; 80 lb/pr. $1,699/pr

**AX Subwoofer**

Two 10-in woofers and active crossover. FR 29-120 to 29-250 Hz ± 3 dB; sens 87 dB; imp 4 ohms; selectable crossover points 120 and 250 Hz. Dark, natural, or black oak finish with black knit grille. 15 x 33 x 16 in; 80 lb ea. $1,099 ea
AX 2.2 Way Speaker
Tuned-port design with 5-in woofer and 1-in dome tweeter. FR 40-22,000 Hz ± 2 dB; sens 89 dB; imp 6 ohms; crossover point 3,200 Hz. Dark, natural, or black oak finish with black knit grille. 10 x 24 x 10 in; 50 lb/pr. $569/pr

AX 1.5 2-Way Bookshelf Speaker
Tuned-port design with 6½-in woofer and ¾-in dome tweeter. FR 50-22,000 Hz ± 2 dB; sens 89 dB; imp 6 ohms; crossover point 3,500 Hz. Dark, natural, or black oak finish with black knit grille. 8 x 15 x 8 in; 30 lb/pr. $299/pr

B & W
Matrix 801 Series 2 3-Way Speaker
One 12-in plywood woofer, one 5½-in Kevlar midrange, and one 1-in metal-dome tweeter. Features 6th-order Butterworth-vented design; electronic bass-attenuation filter. Power handling 600 W; FR 20-20,000 Hz ± 2 dB; sens 87 dB; imp 8 ohms; crossover points 380 and 3,000 Hz. Walnut, black-ash, rosewood, or white-veneer finish. 17 x 3½ x 22 in; 119 lb. $5,900/pr

Matrix 804 3-Way Speaker
Bass-reflex design with one 6½-in Cobex-cone woofer, one 6½-in Kevlar cone bass/midrange, and one 1-in ferrofluid-cooled metal-dome tweeter. Features bass-attenuation filter. Power handling 50-200 W; FR 31.5-20,000 Hz ± 2 dB; sens 89 dB SPL/W/m; imp 8 ohms. Black-ash, oak, rosewood, or walnut veneer. 6½ x 39 1/4 x 22 in; $2,200/pr

CM2 Matrix Mini 3-Way Speaker
Two 5½-in woofers, one 5-in Kevlar cone midrange, and one 1-in metal-dome tweeter. Features 4th-order Butterworth-vented system consisting of CM1 and subwoofer section; matrix enclosure design; overload protection circuit. Power handling 50-200 W; FR 48-20,000 Hz ± 1.5 dB; sens 85 dB SPL/W/m; imp 4 ohms; crossover point 150 Hz. Column finished in black, white, Nextel gray, or walnut. 6½ x 39½ x 8½ in; 43 lb. $1,750/pr

CM1 2-Way Bookshelf Speaker
Acoustic-suspension design with 5-in Kevlar woofer and 1-in metal-dome tweeter. Features matrix construction. Power handling 50-120 W; FR 90-20,000 Hz ± 1.5 dB; sens 85 dB SPL/W/m; imp 8 ohms. White/black semi-gloss or gray-matte Nextel finish. 6½ x 9½ x 9½ in. $800/pr

DM 310 2-Way Speaker
4th-order bass-reflex design with 7¼-in woofer and 1-in metal-dome tweeter. Biwireable and biampifiable. Power handling 25-100 W; FR 70-20,000 Hz ± 2 dB; sens 90 dB SPL/W/m; imp 8 ohms; crossover 2,500 Hz. Anthracite, black ash, or walnut finish. 10 x 18½ x 8¼ in. $500/pr

CWM 8 2-Way In-Wall Speaker
Acoustic-suspension design with one 8¼-in polypropylene woofer and one 1-in metal-dome tweeter. Power handling 20-100 W; FR 35-20,000 Hz; sens 90 dB SPL/W/m; imp 8 ohms. 10¼ x 14¼ x 3½ in. $400/pr

BANG & OLUFSEN
Beolab 3000 Powerful Wall Speaker
Bass-reflex design with 55-W amp in each cabinet. 5-in woofer and 1-in dome tweeter. Features auto bass-level switching; auto turn-on/off with B&O Benlink system; digital display of source, volume, and recording status. Power handling 45 W cont; FR 75-20,000 Hz; sens 87 dB SPL/W/m; crossover point 3,500 Hz; imp 8 ohms. Amplifier: FR 20-20,000 Hz, THD 0.1%; 97 dB. Finished in brushed stainless steel with blue or gray grille cloth. 17½ x 21¼ x 3 in; 20 lb ea. $1,700/pr

Beovox 3000 2-Way Speaker
Bass-reflex design with one 5-in woofer and 1-in dome tweeter. Power handling 45 W cont; imp 8 ohms; FR 75-20,000 Hz; sens 87 dB SPL/W/m; crossover point 3,500 Hz; THD 1% from 250-6,000 Hz. Available in blue and gray: 15 x 17½ x 3 in; 11½ lb. $750/pr

B & O
Model 901 Classic. As above. Walnut-veneer cabinet. $2,200/pr

Acoutumass 5 Series II Sub/Satellite System
Compact modular system with Acoustimass bass module and 2 magnetically-shielded direct/re- reflecting cube satellite speakers. Each cube features 2 separate enclosures adjustable for direct or reflecting configuration. Bass module features two ¾-in drivers. Auto protection circuitry. Power handling 100 W cont. Optional wall/ceiling mount brackets. Black or arctic white finish. 5-year warranty. Cube: 7½ x 4 x 19 in, $33, 6½ x 4 x 11½ in. $759/sys

Model 401 2-Way Speaker
Column-type direct/reflecting enclosure with two 6-in woofers and 2-in magnetic liquid-cooled tweeter. Features stereo space array design; thermal protection circuit. Power handling 100 W cont avg; nom imp 4 ohms. Walnut- or black-vinyl finish. 5-year warranty. 10 x 20 x 10 in; 3½ lb ea. $599/pr

Model 6.2 2-Way Bookshelf Speaker
Direct/reflecting design with 8-in woofer and two 3-in tweeters. Features dual-chamber-sub-ported bass design; active cross-over network circuit; handling 100 W cont; imp 4 ohms. Hardwood-veneer with teak finish. 5-year warranty. 10 x 20 x 9½ in; 19½ lb ea. $599/pr

Model 301 Series II Bookshelf Speaker
Ported direct/reflecting two-way design with 8-in woofer and two 3-in tweeters. Features dual-frequency crossover; tweeter-protection circuit. Power handling 75 W cont avg; imp 8 ohms. Walnut-grain or black-vinyl finish. 5-year warranty. 10½ x 17 x 9½ in; 18½ lb ea. $399/pr

Model 4.2 2-Way Bookshelf Speaker System
Direct/reflecting design with 8-in woofer and 2½-in coaxial-mounted tweeter. Features dual-chamber bass system with slot-port design; auto tweeter protection circuit. Power handling 75 W cont avg; imp 8 ohms. Teak-vinyl finish. 5-year warranty. 9½ x 18 x 10 in; 15 lb ea. $399/pr

RoomMate Powered Speaker
Bass-reflex bookshelf design with 4½-in magnetically-shielded full-range driver. Designed for use with computers, musical keyboards, CD players, VCR's, and TV's. Features helical voice-coil; electronic amplification and active EQ system; dual-tuned ports; 6-ft. RCA cable; volume control; mono 4-connector. Platinum finish. 6 x 9 x 6 in; 11½ lb. $339/pr

BOSTON ACOUSTICS
T1030 3-Way Speaker
Acoustic-suspension design with two 8-in copolymer woofers, one 6½-in copolymer midrange in subwoofer, and one 1-in CPT 5 ferrofluid-cooled tweeter. Power handling 15-150 W cont avg: FR 40-20,000 Hz ± 2 dB; sens 90 dB SPL/W/m; imp 8 ohms; crossover points 250 and 2,500 Hz. Tall slender enclosure with walnut veneer and tapered grille. 10¾ x 42½ x 12½ in. $1,200/pr. Black vinyl. $1,000/pr

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Boston T6 Subwoofer/Satellite System
6-piece system with 5 satellites, including one for center-channel, and PV12 PowerVent bass module. Each satellite features one 4-in copolymer woofer/midrange, one 3/4-in dome tweeter, and two 6½-in subwoofers. Power handling 15-100 W; FR 46-20,000 Hz ± 3 dB; imp 8 ohms; crossover points 130 and 3,500 Hz. White or black-ash vinyl veneer. Satellite: 8 x 4½ x 4½ in; 4 lb ea. Bass module: 13½ x 7½ x 16½ in; 17 lb .... $900/sys

SubSat Six Subwoofer/Satellite System
Three-piece system with compact subwoofer with 2 drivers in sealed and vented chambers and 2 satellites each with one 4-in midrange and one 3/4-in ferrofluid-cooled tweeter. Power handling 15-90 W; FR 45-20,000 Hz ± 3 dB; imp 8 ohms; crossover points 130 and 3,500 Hz. Black or white-ash vinyl with black grilles. Satellite: 8 x 4½ x 4½ in; 4 lb ea. Bass module: 13½ x 7½ x 16½ in; 17 lb .... $900/sys

HD7 2-Way Speaker
7-in copolymer woofer and 3/4-in ferrofluid-cooled dome tweeter. Available in woodgrain and black-ash vinyl with black grille. 9 x 14 x 7 in .... $200/pr
HD5. As above, 5½-in copolymer woofer. 6½ x 9½ in .... $150/pr

Model 404V Full-Range Speaker
Two 4-in drivers in magnetically shielded cabinet. Power handling 5-30 W; FR 100-17,000 Hz ± 3 dB; sens 90 dB SPL/W/m; imp 8 ohms. Black-ash vinyl with black grilles. 5½ x 17 x 6½ in .... $150 ea

CAMBER
Camber 4.5ti 2-Way Speaker
Bass-reflex design with two 6½-in woofers and 3¼-in titanium-dome tweeter. Biwirable. Power handling 200 W cont; FR 40-23,000 Hz ± 2 dB; sens 90 dB SPL/W/m; imp 8 ohms. 8 x 3½ x 11½ in; 55 lb ea .... $899/pr

Camber L59 2-Way Speaker
Acoustic-suspension design with two 6½-in woofers and 4½-in ferrofluid-damped titanium dome tweeter. Power handling 250 W cont; FR 38-22,000 Hz ± 3 dB; sens 91 dB SPL/W/m; imp 8 ohms. 11 x 6½ x 11½ in; 32 lb ea .... $429/pr

Camber 2.0ti 2-Way Speaker
Bass-reflex design with 6½-in woofer and 4½-in titanium-dome tweeter. Biwirable. Power handling 125 W cont; FR 55-20,000 Hz ± 2 dB; sens 90 dB SPL/W/m; imp 8 ohms. 8 x 12 x 9 in; 12 lb ea .... $269/pr

Camber L5-SUB Subwoofer
Bass-reflex design with 8½-in poly woofer. Features phase matching for use with LS-1AV speakers (list below). Power handling 100 W cont; FR 25-250 Hz ± 4 dB; sens 89 dB SPL/W/m; imp 8 ohms. 8 x 2½ x 12½ in; 33 lb ...... $499/pr

HD5. As above, 5½-in woofer. 6½ x 9½ x 7½ in .... $150/pr

CANTON
Ergo 120 4-Way Speaker
Bass-reflex design with 10-in woofers, one 6½-in midbass, one cone midrange, and one 1-in aluminum/manganese dome tweeter. FR 18-30,000 Hz; imp 4 ohms; sens 94 dB SPL/W/m; crossover points 300, 3,500, and 7,000 Hz. Black and white-ash, matte-mahogany, oak, or walnut finish. 13 x 5 x 17½ in; 110 lb ea .... $5,000/pr
Ergo 80. As above, one 6½-in woofer and one 4-in midbass. FR 22-30,000 Hz; sens 92 dB SPL/W/m; crossover points 300 and 3,500 Hz. 9 x 37 x 11½ in; 42 lb .... $2,000/pr

Karek 980 3-Way Bookshelf Speaker
Bass-reflex design with 12-in woofer, 4½-in cone midrange, and 1-in aluminum/manganese dome tweeter. FR 20-30,000 Hz; imp 4 ohms; sens 94 DB SPL/W/m; crossover points 400 and 4,000 Hz. Oak, walnut, mahogany, white, or black finish. 14 x 26 x 13½ in; 46 lb .... $2,000/pr

PLUS E Subwoofer
Acoustic-suspension design with 12-in woofer. FR 18-120 Hz; imp 4 ohms; crossover point 120 Hz; sens 91 dB SPL/W/m. Oak, mahogany, walnut, black, and white finishes. 14 x 22 x 14 in; 60 lb ea .... $1,000 ea

Footnote 600 3-Way Speaker
Bass-reflex design with 9-in woofer, 3½-in fabric dome midrange, and 1½-in fabric dome tweeter. Power handling 130 W cont; imp 4 ohms; FR 3½-26,000 Hz. Black finish and grille. 10½ x 3½ x 11 in .... $995/pr

Karek 920 2-Way Bookshelf Speaker
Bass-reflex design with 8-in woofer and 1½-in aluminum/manganese dome tweeter. Power handling 130 W cont; imp 4 ohms; FR 3½-26,000 Hz. Black finish and grille. 10½ x 3½ x 11 in .... $995/pr

GL300 F 2-Way Speaker
Acoustically tuned for wall mounting. Long-throw 6½-in cone woofer and 1½-in fabric dome tweeter. Power handling 60 W cont; FR 48-30,000 Hz; imp 4 ohms; crossover point 1,700 Hz; sens 87.3 dB SPL/W/m. Permaflex spring clamps; 5-m connecting cable; removable grille. 8½ x 13½ x 3½ in; 8 lb .... $500/pr
In-Wall 6 2-Way Speaker
6-in woofer and 3½-in aluminum/magnesium-dome tweeter. FR 45-22,000 Hz; imp 8 ohms; sens 89 dB SPL/W/m; crossover point 2,500 Hz. White, brass or chrome grille. 7 x 3 x 7 in; 5 lb ea. $450/pr

CARVER
The Amazing Loudspeaker, Silver Edition 15½-in-thick planar design with 40-in full-range ribbon driver and integral subwoofer section consisting of 3 long-throw 12-in cone woofers. Power handling 600 W; FR 23-40,000 Hz +0, -3 dB; sens 95 dB W/m; imp 4 ohms; crossovers 12 dB/oct at 250 and 5,000 Hz. Scuff-resistant woodgrain vinyl. 15 x 34 x 15 in; 64 lb ea. $410 ea

SW-12 Subwoofer
Vented design with 12-in floor-facing woofer on die-cast aluminum frame with 7-lb magnet. Power handling 5-125 W; sens 92 dB W/m. Woodgrain vinyl finish. 13½ x 25½ x 16½ in; 48 lb. $320 ea

L-9 2-Way Speaker
10-in molded-fiber woofer and 1-in polycarbonate dome tweeter. Features self-resetting tweeter protection. Power handling 100 W cont avg; FR 40-20,000 Hz +3 dB; sens 93 dB W/m, imp 8 ohms. Rosewood vinyl finish with removable grille. 22 x 13 x 11½ in. $220 ea

CELESTION

CElestion 600 Si 2-Way Speaker
6½-in Coaxex woofer and cooper-dome tweeter. Features acoram sealed enclosure with aluminum honeycomb construction and figure-8 brace. Biwirable. Dark-gray Nextel finish. $1,999/pr

CElestion 100 2-Way Speaker
6½-in Coaxex woofer with double surround and 1¼-in aluminum dome tweeter. Features figure-8 bracing. Biwirable. Mahogany finish. $1,299/pr Walnut or black oak finish. $1,199/pr

CElestion SL-6 Si 2-Way Speaker
6½-in Coaxex woofer and 1¼-in aluminum dome tweeter. Features figure-8 bracing in bass cabinet. Walnut or black ash finish. $899/pr

CElestion 11 3-Way Bookshelf Speaker
Vented design with 6-in woofer, 4½-in midrange, and 1-in tweeter. FR 48-20,000 Hz +2 dB; sens 100 dB W/m; imp 4 ohms. Walnut veneer finish with black grille. $799 ea

CElestion 5 2-Way Bookshelf Speaker
6-in felted fiber woofer and 1-in pure-titanium dome tweeter in sealed enclosure. Black-ash or oak finish. $399/pr

CElestion 3. As above, 5-in woofer. $279/pr

CERWIN-VEGA

Q-1 2-Way Speaker
10-in woofer and 1-in polyfoam diaphragm tweeter. Power handling 400 W max; FR 30-20,000 Hz ±2 dB; sens 100 dB W/m; imp 4 ohms. Walnut veneer finish with black grille. $799 ea

DX-9 3-Way Speaker
Bass-reflex design with 15-in woofer, 6½-in cone midrange, and 1-in dome tweeter. Features push terminals; self-resetting tweeter protection. Power handling 5-400 W cont avg; FR 30-20,000 Hz ±3 dB; sens 102 dB W/m; imp 4 ohms; crossovers 12 dB/oct at 250 and 5,000 Hz. Scuff-resistant woodgrain vinyl. 18 x 36 x 18 in; 85 lb ea. $555 ea

AT-15 3-Way Speaker
Bass-reflex design with 15-in woofer, two 5-in midranges, and dome tweeter. Power handling 5-400 W; sens 102 dB SPL/W/m; imp 4 ohms. 19 x 36½ x 18½ in; 85 lb. $540 ea

DX-7 3-Way Speaker
Bass-reflex design with 12-in woofer, 6½-in cone midrange, and 1-in dome tweeter. Features push terminals; self-resetting tweeter protection. Power handling 5-255 W cont avg; FR 34-20,000 Hz ±3 dB; sens 98 dB W/m; imp 4 ohms; crossovers 12 dB/oct at 250 and 5,000 Hz. Scuff-resistant woodgrain vinyl. 15 x 34 x 15 in; 64 lb ea. $410 ea

DAHLQUIST

DQ-28 3-Way Speaker
Vertical decoupled phase array design with 8-in Kevlar/paper-cone woofer, 4-in polypropylene cone midrange, and 1½-in metal-alloy dome tweeter. Features 2nd-order Dahlquist/3rd-order hybrid vented aligned. Min power handling 30 W; sens 91 dB SPL/W/m; imp 6 ohms; crossover point 2,400 Hz. Oak or black finish. 8 x 17 x 11½ in. $1,199/pr

DQ-8 2-Way Speaker
Vertical decoupled phase array design with 8-in woofer and 1-in aligned-fiber tweeter. Features Dahlquist vented aligned. Min power handling 30 W; sens 90 dB SPL/W/m; crossover point 2,000 Hz, system bandwidth ±6 dB at 40 and 20,000 Hz; imp 8 ohms. $1,350/pr

DQ-6c 2-Way Bass Speaker
2nd-order vented bass alignment with 6½-in Kevlar/paper woofer and 1½-in metal-alloy dome tweeter. Features Lo-Q tuned-port bass enclosure. Power handling 150 W; FR 60-20,000 Hz ±1.5 dB; sens 91 dB W/m; crossover point 2,000 Hz; nom imp 6 ohms. $600/pr

DEFINITIVE TECHNOLOGY

BP20 2-Way Speaker
Bipolar system featuring symmetrically concentric driver arrays on front and rear baffles. Two 1-in aperiodic dome tweeters and four 6¼-in mineral-filled polymer woofers. Features computer-modeled transmission-line tuning. $1,340/pr

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One 6% -in mineral -filled polymer woofer and one ferrofluid-cooled soft-dome tweeter. Acoustic-suspension design with down-firing 10 -in midrange and four 3 -in electrostatic tweeters. Electrostatic hybrid design with 51/4 -in woofer/Denessen Class B 2-Way Speaker

DRAINCOFL
FL-525 2-Way In-Wall Speaker 5%-in polypropylene woofer and 1-in soft-dome tweeter with high-pass filter. Features water-proof diaphragms. Power handling 70 W; FR 68-20,000 Hz; sens 90 dB SPL/W/m; imp 8 ohms; crossover point 300 Hz. Flash-mounted hardware includes rosewood or black for new construction. Matte-white grilles and trim... $250/pr

Amazing Bass Subwoofer
Magnetically shielded tuned-port design with 8-in dual-voice-coil subwoofer. Power handling 100 W max; FR 20-150,000 Hz = 3 dB; sens 90 dB SPL/W/m; imp 8 ohms; crossover point 150 Hz. Black-matte finish. Five-year limited warranty. 13 x 16 x 8 1/4 in; 15 lb... $150 ea

A20 Type II 2-Way Bookshelf Speaker Tuned-port design with 6%-in woofer and 1%-in ferrofluid-cooled titanium dome tweeter. Power handling 125 W max; FR 68-20,000 Hz = 3 dB; sens 91 dB SPL/W/m; imp 8 ohms; crossover point 6,300 Hz. Black oak, medium oak, or vinyl finish; black, gray, and brown grille. 5-year limited warranty. 9 x 16 1/2 x 9 1/2 in; 20 lb... $120 ea

DYNACOFL
Sentry 100A 2-Way Speaker Vented design with 8%-in direct-radiated woofer and dome tweeter. Features 4th-order Butterworth tuning; 12-dB/oct passive crossover; treble control. Power handling 30 W cont avg; FR 45-18,000 Hz = 3 dB; sens 91 SPL/W/m; imp 6 ohms; crossover point 2,000 Hz. Optional mounting brackets. Scratch-resistant matte-black vinyl finish; steel-reinforced gray-cloth grille. 12 x 17 1/2 x 11 1/2 in; 28 lb... $334

S-40 2-Way Speaker Vented design with 5%-in polypropylene woofer and 1-in ferrofluid-cooled soft-dome tweeter. Features protection circuit; flexible tinsel-lead wiring. Power handling 160 W cont avg; FR 85-20,000 Hz = 3 dB; sens 85 SPL/W/m; imp 4 ohms; crossover point 3,500 Hz. Optional mounting brackets. Available in black or white. 7 x 9 1/4 x 5 3/4 in; 5 7/8 lb ea... $280

ENERGY FL
Model 22.3 3-Way Speaker Front-vented design with spherex front baffle supporting two 6%-in woofers and one 1%-in dual-hyperdome tweeter. Biampifiable; adjustable spiked feet. Power handling 150 W cont avg; FR 23-23,000 Hz; sens 87 SPL/W/m; imp 6 ohms. Walnut or black-ash veneer finish with black cloth grille. 10 x 16 x 12 in; 27 lb ea... $2,000/pr

Model 22.1 2-Way Bookshelf Speaker Front-vented design with spherex baffle. 6%-in quadcentric woofer, and 1%-in dual-hyperdome tweeter. Biampifiable. Power handling 110 W cont avg; FR 40-23,000 Hz; sensitivity 85 dB SPL/W/m; imp 6 ohms. Walnut or black-ash finish. 10 x 16 x 12 in; 21 lb... $1,000/pr

Model 4.1 e 2-Way Speaker Front-vented design featuring 7-in quadcentric woofer and 1-in tweeter. Power handling 100 W cont avg; FR 35-20,000 Hz = 3 dB; sens 87 SPL/W/m; imp 6 ohms. Walnut or black-ash finish. 10 x 24 x 12 in... $750/pr

Energy Satellite Speaker Designed for surround-sound systems. 2-way acoustic-suspension design with 4%-in spherex cone woofer and 1%-in dome tweeter. Magnetic shielding; sculpted spherex baffle. Power handling 125 W cont avg; FR 140-22,000 Hz = 3 dB; sens 84 SPL/W/m; crossover 2,500 Hz; imp 6 ohms. 5 x 8 x 5 in; 5 lb ea... $349/pr

Energy Subwoofer Designed for surround-sound systems. 6th-order band-pass vented enclosure with 6%-in woofer. Features magnetic shielding. Power handling 125 W cont avg; FR 40-140 Hz = 3 dB; sens 84 dB SPL/W/m; crossover point 140 Hz; min imp 4 ohms. Black-ash vinyl veneer with black cloth grille. 8 x 12 x 14 in; 18 lb ea... $349/pr

Energy Center Channel Designed for surround-sound systems. Dual-vent design with two 4%-in woofers and one 1%-in polycarbonate flared-dome tweeter. Features magnetic shielding; sloped-baffle mounting. Power handling 100 W cont; FR 60-22,000 Hz = 3 dB; sens 86 SPL/W/m; crossover point 2,500 Hz; min imp 8 ohms. Black-ash vinyl veneer with black cloth grille. 6 x 20 x 8 in... $169 ea

EPI
Model 120 Series 3 3-Way Speaker 8-in woofer, 5-in midrange, dome tweeter. Power handling 120 W cont avg; imp 8 ohms; sens 91 dB SPL/W/m. Black grille with textured black enclosu-re. 30-in high, 11-in wide... $400/pr
Model 110 Series 2 2-Way On-Wall Speaker
For on-wall mounting. 6½-in woofer. Power handling 60 W cont avg; imp 8 ohms; sens 89.5 dB SPL/W/m. Neutral gray grille; white or rose grille optional. Includes mounting hardware. 14 x 22 x 4½ in. $280/pr

ES S

AMT-Monitor 2-Way Speaker
12-in-cone passive radiator, 12-in cone woofer, and Heil air-motion transformer tweeter with mylar diaphragm. Power handling 35-400 W cont avg; FR 28-23,000 Hz ± 3 dB; black 91 dB SPL/W/m; imp 6 ohms. Oiled walnut or black walnut finish. 18½ x 41 x 12 in; 82 lb ea. .......... $1,298/pr

PS-1222 2-Way Speaker
12-in woofer, 4-in midrange with hi-temp voice coil, rear-mounted passive radiator, and Heil air-motion transformer tweeter. Power handling 10-200 W cont avg; FR 28-23,000 Hz ± 1 dB; sens 93 dB SPL/W/m; imp 6 ohms. High-gloss black finish. 14 x 33 x 14 in; 66 lb ea. .......... $718/pr

PS-922 2-Way Bookshelf Speaker
8-in woofer, rear-mounted 6-in passive radiator, and Heil air-motion transformer tweeter-midrange. Power handling 5-125 W cont avg; FR 38-23,000 Hz ± 1 dB; sens 91 SPL/W/m; imp 6 ohms. Power handling 25-100 W cont avg; FR 32-20,000 Hz ± 3 dB; sens 89 dB SPL/W/m; imp 4 ohms. 19 x 52 x 14 in; 120 lb ea. .......... $3,900/pr

FOSGATE-AUDIONICS

MC 220 Home-Theater Speaker System
Left, center, and right speakers, each featuring 2nd-order crossover with dual midbass/midrange drivers and dual tweeters. Designed to improve dialogue reproduction and stereo imaging. For use with FS200 subwoofer via an active cross-over or THX-certified processor/controller. FR 60-22,000 Hz ± 3 dB, 200-20,000 Hz ± 1 dB; sens 91 dB SPL/W/m; imp 4 ohms. 10½ x 24 x 14 in; 40 lb. .......... $4,800/sys

Genesis Servo 12 and Servo 10
Vented design with 6½-in polypropylene woofer and composite tweeter with 2-in cone and 1½-in dome. Series filter crossover. Walnut or black ash. 8 x 13½ x 8 in. .......... $1,500/pr

Beta IV 2-Way Bookshelf Speaker
Vented design with 6½-in polypropylene woofer and composite tweeter with 2-in cone and 1½-in dome. Series filter crossover. Walnut or black ash. 8 x 13½ x 8 in. .......... $498/pr

FISHER

STV-910 2-Way Speaker
Bass-reflex design with 8-in polypropylene woofer and ferrofluid-dome tweeter. Features autorotate circuit breaker; low-diffraction curved cabinet design with offset grille. Power handling 50 W cont; FR 50-20,000 Hz; sens 88 dB SPL/W/m; imp 8 ohms. 15½ lb ea. .......... $200 ea

FOCUS

Model .7 High-Definition 2-Way Speaker
Contoured-port design with 8-in woofer and 1-in dome tweeter. Features computer-matched time alignment; epoxy pulp; internally braced cabinet. Power handling 30-150 W cont avg; FR 37-19,000 Hz ± 2 dB; nom imp 8 ohms; sens 90 dB SPL/W/m. 12 x 28 x 12 x 17 lb. .......... $880/pr

Model .5 High-Definition 2-Way Speaker
Bookshelf design with 8-in woofer and 1-in dome tweeter in epoxy pulp cabinet. Power handling 30-150 W cont avg; FR 45-20,000 Hz ± 3 dB; nom imp 8 ohms; min imp 4.8 ohms; sens 90 dB SPL/W/m. 12 x 19 x 12 x 27 lb. .......... $600/pr

FOSSATE-AUDIONICS

MG 220 Home-Theater Speaker System
Left, center, and right speakers, each featuring 2nd-order crossover with dual midbass/midrange drivers and dual tweeters. Designed to improve dialogue reproduction and stereo imaging. For use with FS200 subwoofer via an active cross-over circuit breaker; low-diffraction curved cabinet design with offset grille. Power handling 30-125 W cont avg; FR 30-16,000 Hz ± 3 dB; sens 91 dB SPL/W/m; imp 6 ohms. Oiled walnut or black walnut finish. 18½ x 33 x 14½ in; 60 lb ea. .......... $1,295/pr

Q/4 2-Way Speaker
Vented design with 8-in polypropylene woofer and 1-in dome tweeter. Multilayer damping. Power handling 25-100 W cont; FR 37-20,000 Hz ± 3 dB; imp 8 ohms; sens 89 dB. Walnut or black-ash vinyl. 10½ x 20 x 9 in. .......... $498/pr

GENESIS

Genesis III 3-Way Speaker
Two 8-in woofers, two 3-in dome midranges, and one 1-in planar ribbon tweeter. Features level controls for tweeter and each midrange. Min power 100 W; FR 35-34,000 Hz ± 2 dB; sens 89 dB SPL/W/m; imp 4 ohms. 19 x 52 x 14 in; 120 lb ea. .......... $3,900/pr

IM 8300 3-Way Speaker
8-in woofer, 3-in dome midrange, and 1-in planar ribbon tweeter. Features midrange and tweeter level controls. Min power 100 W; FR 84-34,000 Hz ± 2 dB; sens 87 dB SPL/W/m; nom imp 4 ohms. Piano-black finish with knit grille. 23 x 14; 75 lb. .......... $1,795/pr

IM 8200. As above, no midrange. FR 52-34,000 Hz ± 2 dB; sens 86 dB SPL/W/m. 23 x 14; 60 lb. .......... $1,295/pr

IM 5200. As IM 8200, 5¼-in woofer. Min power 60 W. FR 77-34,000 Hz ± 2 dB; sens 85 dB SPL/W/m. 14 x 11½; 40 lb. .......... $895/pr

Servo 12 Powered Subwoofer
12-in driver. FR 22-160 Hz ± 3 dB; imp 100,000 ohms; Piano-black finish. 75 lb. .......... $1,695

Servo 10. As above, 10-in driver. FR 32-160,000 Hz ± 3 dB. 50 lb. .......... $895

GOODMANs OF ENGLAND

Model 440 3-Way Speaker
Bass-reflex design with 12½-in woofer, 4-in midrange, and 1-in tweeter. Mid- and high-frequency adjustment. Imp 4-8 ohms; power handling 175 W cont; sens 98 dB SPL/W/m; Black-vinyl finish. 15½ x 35½ x 15½ in. .......... $999 ea

Model 110 2-Way Speaker
Bass-reflex design with 8¼-in woofer and 1-in tweeter. Imp 4-8 ohms; power handling 100 W cont; sens 98 dB SPL/W/m; FR 60-20,000 Hz. Black-vinyl finish. 20½ x 10½ x 11½ in. .......... $499 ea

Maxim 2 3-Way Speaker
Bass-reflex design with 5-in woofer, midrange, and 1½-in tweeter. Imp 8 ohms; power handling 75 W cont; sens 86 dB SPL/W/m; FR 65-20,000 Hz. Available in white or black vinyl finish. 6¼ x 10½ x 8½ in. .......... $259 ea

B-Max Subwoofer
Two 6¼-in woofers. Features ¼ Wave Resonator enclosure. Imp 2 x 8 ohms; power handling 100 W x 2 cont; sens 90 dB; FR 30-150 Hz. 18 x 24 x 9 in. .......... $249 ea

HARTLEY

The Reference Tower 2-Way Speaker
6½-in thermoplastic woofers and four 1-inch dome tweeters. Power handling 5-300 W cont avg; crossover point 3,600 Hz; imp 4 ohms at 100 Hz. 5 ohms at 1,000 Hz; FR 24-25,000 Hz. Wood cabinet with removable knit grille. 44 ½ x 17½ x 18 in. .......... $1,500/pr

STEREO REVIEW FEBRUARY 1992 99
SW-24 Subwoofer

Infinite-baffle enclosure. Power handling 25-300 W cont avg; imp 5 ohms; FR 16 Hz ± 3 dB 36 x 50/4 x 22 in; 250 lb $1,495 ea

HOME THEATER PRODUCTS

Model 5350S Surround Speaker System

Two 3-way front speakers each with one 12-in woofer, one 5-in midrange, and one 4-in high-frequency driver plus two 2-way effects speakers each with one 5-in high-frequency driver and one piezo horn. Features ferrofluid-cooled tweeters and front-speaker midrange; attenuators for high-frequency drivers, front-speaker midrange, and effects-speaker horn; 3/4-in front-speaker port. Front speaker: power handling 70 W cont avg; FR 50-18,000 Hz ± 4 dB; crossover points 1,000 and 8,000 Hz. Effects speaker: FR 3,000-40,000 Hz; System nom imp 8 ohms. Front speaker: 15 x 27 x 12 3/4 in; 31 lb. Effects speaker: 15 x 5 5/16 x 12 in; 5 lb $628/sys

Model 62 2-Way Surround Speaker

Designed for rear channel in surround-sound system. 61/2-in woofer and 3-in high-frequency driver. Power handling 25 W cont avg; nom 8 ohms; crossover point 3,000 Hz; FR 70-18,000 Hz; W x H x D 8 1/2 x 12 x 8 in; 11 lb $224/pr

HUGHES

Orb-2 2-Way Speaker

4-in fiber woofer and 1/4-in silk tweeter. Features patented wide-dispersion baffle for 180° lateral dispersion; magnetic shielding. FR 70-22,000 Hz ± 3 dB; sens 89 dB W/m; nom imp 4 ohms; crossover point 3,000 Hz. Black or white finish. 6 1/2 x 10 3/4 x 9 1/2 in $399/pr Orb-1. As above, 1/2-in polycarbonate tweeter. FR 55-22,000 Hz ± 3 dB; sens 88 dB W/m; crossover point 4,500 Hz. Black finish $299/pr

Baser-1 Subwoofer

8-in fiber woofer. Features patented Acoustic Piston Chamber to synchronize drivers. FR 30-80; sens 89 dB W/m; nom imp 4 ohms. Black or white finish. 8 1/2 x 15 x 2 1/4 in $379 ea

ICON ACOUTICS

Icon Parsec 3-Way Speaker

10-in graphite-impregnated woofer, 61/2-in polypropylene midrange, and 1-in metal-dome tweeter. Features crossovers with polypropylene and polysyrene capacitors; AudioQuest internal wiring; 2 pairs of gold-plated biwirable 5-way binding posts. Power handling 50-350 W cont avg; FR 25-22,000 Hz ± 3 dB; sens 87 dB SPL/W/m; imp 8 ohms; crossover points 350 Hz and 1,500 Hz. Available in braced cabinets with walnut, oak, or black-oak veneer finishes. Optional carpet spikes. 12 x 47 x 16 in; 95 lb ea $1,795/pr

Icon Lumen 2-Way Bookshelf Speaker

61/2-in polypropylene woofer and 1-in metal-dome tweeter. Features crossovers with polypropylene and polysyrene capacitors; AudioQuest internal wiring; 2 pairs of gold-plated biwirable 5-way binding posts. Power handling 20-150 W cont avg; FR 55-22,000 Hz ± 3 dB; sens 87 dB SPL/W/m; imp 8 ohms; crossover point 1,500 Hz. Walnut, oak, or black-oak veneer finish. 9 1/2 x 18 x 10 1/2 in; 26 lb ea $795/pr

INFINITY

IRS Beta 5-Way Speaker

Includes (per side) four servo-controlled 12-in woofers, each with polypropylene/graphite injection-molded cones; 2 upper bass/midrange planar push-pull drivers that act as dipole; low-mass EMT transducer with neodymium magnets for upper midrange; low mass/neodymium EMT's from IRS V (in dipole configuration) for lower treble; SEMIT (smaller aperture EMIT) which extends response beyond 44 kHz; Monster Cable Internal wiring. The system operates in bi-amp mode and includes IRS V servo control unit; active and passive crossover control. Power handling 75 W/30 Hz; FR 25-44,000 Hz ± 2 dB; sens 87 dB SPL/W/m; imp 4 ohms; crossover points 70, 700, 4,000, and 8,000 Hz. Santos finish; black cloth grille. Woofer module: 16 3/4 x 64 7/16 x 14 7/16 in; base footprint 18 x 17 in; 483 lb $11,950/sys

SW-10 Servo Subwoofer

Ported design with 10-in driver and level control. FR 40-260 Hz ± 3 dB, crossover point 50-200 Hz. Black vinyl finish with black cloth grille. 13-in cube; 34 lb ea $650 ea

Reference Series

Renaissance 90 4-Way Speaker

10-in dual-voice-coil woofer, 6-in midbass coupler, planar midrange, and planar tweeter. Power range 75-400 W cont avg; FR 27-45,000 Hz ± 3 dB; sens 87 dB SPL/W/m; nom imp 4 ohms; crossover points 200, 600, and 3,000 Hz. Black high-gloss finish. 17 1/2 x 4 9/16 x 12 in $3,800/pr With oak or limited-edition finish $3,200/pr

Renaissance 80 3-Way Speaker

8-in dual-voice-coil woofer, planar midrange, and planar tweeter. Power range 75-350 W cont avg; FR 35-45,000 Hz ± 3 dB; sens 87 dB SPL/W/m; nom imp 4 ohms; crossover points 550 and 3,000 Hz. Black high-gloss finish. 15 x 41 1/4 x 11 1/4 in $2,600/pr With oak or limited-edition finish $2,000/pr

Kappa Series

7 Kappa 3-Way Speaker

12-in woofer, 3-in dome midrange, and EMIT k tweeter. Monster Cable Internal wiring. Power handling 40 W cont avg min; FR 37-45,000 Hz; sens 88 dB SPL/W/m; imp 4 ohms; crossover points 800 and 4,500 Hz. 17 x 37 1/16 x 12 in; 138 lb per pair $1,298/pr

Modulus System

Modulus Powered Subwoofer

12-in graphite woofer; 200-W servo-driven amp. Separate subwoofer control box includes variable low-frequency cutoff; 2-position rumble filter; low-frequency-level control; absolute phase switch; active high-pass satellite control. FR 22-200 Hz ± 3 dB; 30 finish with black grille. 18 x 19 x 18 in; $2,000

Modulus 2-Way Bookshelf Speaker

Sealed design with 5-in graphite woofer and EMIT tweeter. Features tweeter control; wall bracket/self-damping isolation mounting plate. Power handling 23 W min; FR 82-45,000 Hz ± 3 dB; sens 90 dB SPL/W/m; imp 6 ohms; crossover 4,000 Hz. Wall/pedestal mount. Optional lacquer finish; black grille. 7 x 12 x 11 in $1,000/pr

Reference Series

Reference Six 4-Way Speaker

Sealed-box design with 6- and 10-in woofers, 5-in cone midrange, and EMIT R tweeter. Power handling 35 W min; FR 35-40,000 Hz ± 3 dB; sens 90 dB SPL/W/m; imp 6 ohms; crossovers 200, 1,500, and 4,000 Hz. Black or oak vinyl finish with black cloth grille. 13 x 40 x 14 in; $500/pr

Reference Four 3-Way Speaker

Sealed-box design with 8-in woofer, 5-in cone midrange, and EMIT R tweeter. Power handling 25 W min; FR 44-40,000 Hz ± 3 dB; sens 90 dB SPL/W/m; imp 6 ohms; crossovers 400 and 4,000 Hz. Black or oak vinyl finish with black cloth grille. 11 x 31 x 10 in; 82 lb pr $600/pr

Reference Two 2-Way Speaker

Sealed-box design with 8-in woofer and 1-in dome tweeter. Power handling 15 W min; FR 50-25,000 Hz ± 3 dB; sens 90 dB SPL/W/m; imp 6 ohms; crossover point 3,000 Hz. Vinyl finish with black cloth grille. 12 x 21 x 12 in; 68 lb pr $550/pr

SM Series

SM 102 2-Way Speaker

Ported design with 10-in woofer and 1-in dome tweeter. Power handling 10 W min; FR 65-25,000 Hz ± 3 dB; sens 100 dB SPL/W/m; imp 8 ohms; crossover point 3,000 Hz. Vinyl finish with black grille. 12 x 21 x 12 in; 68 lb pr $550/pr

SM 62 2-Way Surround-Sound Speaker

Ported design with 61/2-in polypropylene woofer and 1/4-in dome tweeter. Power handling 10-100 W; FR 78-25,000 Hz ± 3 dB; sens 94 dB SPL/W/m; imp 8 ohms; crossover point 5,000 Hz. Black, walnut, or rosewood vinyl finish with black cloth grille. 8 x 13 3/4 x 13 3/4 in; 26 lb pr $278/pr

Environmental Reference Standard Series

ERS 800 2-Way In-Wall Speaker

8-in graphite woofer and EMIT k tweeter; tweeter control. Power handling 20 W min; FR 45-45,000 Hz; sens 89 dB SPL/W/m; imp 4 ohms; crossover point 3,500 Hz. Beige ABS finish with metal grille. 11 x 16 x 4 in; 17 lb pr $552/pr

ERS 400 In-Wall Speaker

Glass-finished ABS baffle. Power handling 30 W cont avg; FR 90-15,000 Hz; sens 85 dB SPL/W/m, nom imp 4 ohms. Steel-mesh grille. 6 1/4-in-square mounting space. Baffle: 7 x 7 x 2 1/4 in $160/pr

Infinitesimal Series

Infinitesimal Micro Sub/Sat System

Bass module with 8-in dual voice-coil subwoofer; satellite with 3 1/4-in cone midrange and 3/4-in dome
Our Speakers Are So Sensitive, You Can Hear The Subtleties Of People Who Communicate With Their Hands.

Music, quite simply, is a mood-altering substance. With that in mind, we've built our DX loudspeakers on the belief that the more you hear, the more you'll feel.

Consequently, our DX midrange is designed to achieve such natural presence and clarity, you'll feel every stretch and strum in a guitar solo.

Perhaps it's because of our midrange voice coil, in which we've used an aluminum "former" to dissipate heat. Or the free-edge surround that ingeniously damps cone movement. Then again, maybe it's our distortion-free crossover network. The combined result is a loudspeaker with the highest power handling and widest dynamic range of anything you might hear in the demo room. Of course, the DX also has something else you won't hear in other loudspeakers.

Cerwin-Vega bass. Which for over 35 years has been the ultimate mover and shaker in audio.

In fact, the DX-9 takes bass response all the way down to an earth-shaking 25Hz. All of which is encouragement to drop by a Cerwin-Vega dealer and listen closely to our DX loudspeakers. And see how a totally instrumental piece of music can actually speak to you.

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CIRCLE NO. 36 ON READER SERVICE CARD
tweeter. Power handling 10 W min; FR 50-22,000 Hz ±3 dB; sens 87 dB SPL/W/m; imp 6 ohms; crossover points 150 and 5,000 Hz. Dark-gray finish with metal grille. Satellite: 8 x 5 x 5 in; bass module: 7 x 20 x 11; 35 lb sys ... $520/sys

CONCERT V 3-Way Speaker

Bass-reflex design with 6½-in polypropylene woofer, 6½-in midrange, and 1-in super-alloy dome tweeter. Features overload protection. Biwirable. Power handling 110 W; sens 88 dB SPL/W/m; FR 30-32,000 Hz ±3 dB; crossover points 2,500 and 5,000 Hz; imp 6 ohms. Light-walnut, mahogany, or black-ash finish. 14 x 3½ x 11 in; 42 lb ... $649 ea

CONCERT II 2-Way Bookshelf Speaker

Bass-reflex design with 6½-in polypropylene woofer and 1-in super-alloy dome tweeter. Features overload protection. Biwirable. Power handling 80 W; sens 88 dB SPL/W/m; FR 40-20,000 Hz ±3 dB; crossover point 2,000 Hz; imp 8 ohms. Light walnut, mahogany, or black-ash finish. 9½ x 16 x 10 in; 20 lb ... $399 ea

CL-30A 3-Way Speaker

Bass-reflex design with 8-in woofer, 4-in midrange, and 1-in dome tweeter. Power handling 120 W; crossover points 2,500 and 5,000 Hz; FR 35-20,000 Hz; sens 92.5 dB; imp 8 ohms. Black or white. 10½ x 33½ x 10¼ in $299 ea

Subwoofer Series

SW-300 Subwoofer

Adjusted bass-reflex design with two 8-in subwoofers in push-pull configuration. 24-karat gold-plated screw terminals; bass-level control. Power handling 100 W; FR 30-200 Hz; sens 90 dB SPL/W/m; imp 8 ohms; crossover point 200 Hz. Black or white finish. 8½ x 13½ x 18 in; 30 lb ... $399 ea

SAT-300 2-Way Bookshelf Speaker

4-in polypropylene woofer and 3½-in polypropylene dome tweeter. Features round baffle edges; 24-karat gold-plated screw terminals. Power handling 50 W; FR 80-20,000 Hz; sens 90 dB SPL/W/m; imp 8 ohms; crossover point 3,500 Hz. Black or white finish. 5½ x 8 x 3½ in; 3 lb ... $129 ea

SW-300 System. Two SAT-300 satellites and one SW-300 subwoofer. Available in black or white finish ... $699/sys

SW-110 Subwoofer

Modified bass-reflex design with two 6½-in woofers in push-pull configuration. Power handling 100 W; FR 35-200 Hz; sens 90 dB SPL/W/m; crossover point 200 Hz; imp 8 ohms. Black or white finish. 13½ x 7½ x 18 in; 29 lb ... $349 ea

S-100 2-Way Bookshelf Speaker

4-in woofer and 2-in dome tweeter. Power handling 50 W; FR 80-20,000 Hz; crossover point 4,500 Hz; imp 8 ohms. Black or white finish; mounting kit included. 5½ x 7½ x 3½ in ... $99 ea

SW-100 System. Two S-100 satellites and one SW-100 subwoofer. Black or white finish ... $499/sys

Lifestyle Series

Atmosphere 2-Way Speaker

Bass-reflex design with 5½-in woofer and 1-in dome tweeter. Features overload protection, standard low-voltage halogen light with UL-approved transformer and separate on/off switch. Includes special wall bracket allowing 360° rotation. Power handling 60 W; FR 40-20,000 Hz; sens 88 dB; imp 8 ohms; crossover 3,000 Hz. Black or white finish. 14½ x 10½ x 7 in ... $399 ea

Art 2-Way On-Wall Speaker

Flat-panel bass-reflex design with 5½-in woofer and 1-in impregnated textile dome tweeter. Features computer-optimized 2nd-order crossover network; heavy-duty coils, non-loss condensers; one-piece front baffle; stiff internal bracing. Power handling 60 W; FR 40-20,000 Hz; sens 88 dB SPL/W/m; imp 8 ohms; crossover point 3,000 Hz. Designed to be hung on wall for surround-sound applications; includes support beam for floor standing. Black or white lacquer finish. 15½ x 13½ x 3½ in; 11 lb ... $249 ea

Converta 2-Way Speaker

Disheled wall-mount/hanging design with 4-in woofer and 2-in tweeter. Includes wall/table fittings and baffle joint allowing rotation. Power handling 50 W; FR 80-20,000 Hz; sens 90 dB SPL/W/m; imp 8 ohms; crossover point 2,500 Hz. Black, white-steel, pink, mint green, or vapor finish. 4½ lb ... $199 ea

JANIS 3a Powered Subwoofer

12-in slot-loaded subwoofer. Amp features bass-level control; cont variable woofer phase. Amp: 50 W cont avg into 8 ohms; Trip 0.05% at 20 Hz and 50 W; S/N 90 dB at 50 W. Woofer module: FR 30-100 Hz; 1½ in; sens 85 dB SPL/W/m; crossover point over 100 Hz; imp 8 ohms. Various wood-veneer finishes with wood grille; prices vary. Woofer module: 18 x 18 x 18 in. Amp: 14 x 3½ x 9 in. 87 lb total ... $950-$1,25/sys

JBL

Model 250 Ti 4-Way Speaker

14-in woofer, 8-in lower midrange, 5½-in polypropylene midrange, and 1-in titanium-diaphragm tweeter. Biwirable and biaxial. Power handling 400 W cont avg; imp 8 ohms; crossover points 400, 1,000 and 2,500 Hz; sens 90 dB SPL/W/m. Black-lacquer finish. 22½ x 52 x 14½ in; 126 lb. Limited edition ... $2,499

HP520 3-Way Speaker

Dual 8-in woofer in hand-pass enclosure, front-mounted 5½-in midrange, and 1-in tweeter on neocore-treated baffle. 7-sided tower-shaped enclosures. Power handling 20-200 W; nom imp 4 ohms. Black wood-veneer finish with black glass top and grille. 14½ x 39 x 12½ in ... $795 ea

Pro 150 3-Way Speaker

Dual 8-in woofers, 5½-in midrange, and 1-in tweeter. Power handling 10-140 W; nom imp 4 ohms. Walnut wood-grain finish with charcoal grille. 13 x 38½ x 12½ in ... $450 ea

Pro 330 3-Way Bookshelf Speaker

8-in woofer, 5½-in midrange, and 1-in tweeter. Power handling 50-150 W; nom imp 8 ohms. Walnut wood-grain finish with charcoal grille. 10½ x 21½ x 10½ in ... $225 ea

S-4 2-Way In-Wall Speaker

6½-in polymer-laminate woofer and 1-in titanium-dome tweeter. Includes mounting frame and hardware. Power handling 120 W, imp 4 ohms; sens 88 dB SPL/W/m; FR 125-22,000 Hz; 8½ x 12 x 3¾ in; 16 lb ... $298/pr

JENSEN

Model 3152 3-Way Speaker

Bass-reflex design with 15-in woofer, 5-in cone
WE MAKE SOUND LOOK GREAT PERIOD.

Introducing Period loudspeakers. Designed and engineered to provide exciting audio solutions for discriminating tastes. • Featuring angled front baffles for lifelike imaging • Acoustically damped midrange chambers allowing seamless transitions between mineral-filled polypropylene woofers and titanium dome tweeters • This combination plus painstakingly designed crossover networks provide superior definition and greater frequency response • All models feature striking majestic oak and slate gray finishes • We make your sound look great. Period.

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midrange, and 3-inch ferrofluid-filled cone tweeter. Power handling 80 W cont avg; sens 94 dB SPL/W/m; FR 33-21,000 Hz; imp 8 ohms. Hickory finish. 18½ x 32 x 1½ in; 35.5 lb ea. $400/pr

Model 3080 2-Way Speaker
Floor-standing bass-reflex design with 8-inch dual woofers and 3-inch ferrofluid-filled cone tweeter. Power handling 60 W cont avg; sens 91 dB SPL/W/m; FR 43-21,000 Hz; imp 6-8 ohms. Hickory finish. 10½ x 38½ x 13 in. $360/pr

K E F

Model 105/3 4-Way Speaker
Uni-Q upper-midrange/tweeter driver with ¾-inch soft-dome tweeter at apex of 6½-inch upper-midrange driver cone, two 8-inch midrange drivers, two 8-inch woofers in coupled-cavity configuration with 6½-inch outport. Features force-canceling rod joining woofers to eliminate enclosure vibrations; conjugate load-matching network for work uniform impedance; separate input terminals for biampping/bi-wiring. Power handling 300 W cont; FR 49-20,000 Hz ±2.5 dB; sens 93 dB SPL; 92 dB SPL/W/m; imp 4 ohms. Genuine walnut or black-ash veneer finish. 11 x 43½ x 16 in; 93 lb ea. $53,900/pr

Model 104/2 3-Way Speaker
Vertically aligned 8-inch cone woofers in coupled cavity, two 4½-inch midranges, and one 1-inch ferrofluid-cooled cone tweeter. Features conjugate load-matching network for uniform work impedance; separate input terminals for biampping/bi-wiring. Power handling 200 W max; FR 35-20,000 Hz ±2 dB; sens 92 dB SPL/W/m; imp 4 ohms. Walnut, rosewood, or black ash. $2,400/pr

Model 101/2 2-Way Bookshelf Speaker
Uni-Q driver with 6½-inch polypropylene cone woofer in sealed enclosure and 1½-inch soft-dome tweeter. Features bass enclosure with boundary-assisted alignment for flat response with against-the-wall placement. Power handling 150 W cont; FR 50-20,000 Hz ±2.5 dB; sens 92 dB SPL/W/m; imp 4 ohms. Walnut or black-ash veneer finish. $800/pr

KB 80 2-Way Speaker
8-inch woofer with 1¾-inch coil, 8-inch passive radiator, and 1½-inch fluid-cooled polymer-dome tweeter. Power handling 10-125 W; FR 48-20,000 Hz ±3 dB; sens 89 dB; nom imp 8 ohms. 10¾ x 28½ x 9¼ in; 26 lb. $799/pr

KLH

Cinema 3 Subwoofer/Satellite System
3-way system with two 6½-inch polymer-voice-coil woofers, 4½-inch polypropylene cone woofers, and 1-inch ferrofluid-cooled dome tweeter. Power handling 5-200 W; FR 45-20,000 Hz ±3 dB; nom imp 6 ohms. Black-oak vinyl satellite and black vinyl bass module. Satellite: 5¼ x 9 x 5¼ in. Bass module: 8¼ x 14 x 9½ in. $399/sys

Accord Series

Model 382 2-Way Speaker
Two 8-inch polypropylene-cone woofers and one 1-inch ferrofluid-cooled dome tweeter. Features magnetic shielding. Power handling 5-150 W; FR 34-20,000 Hz; sens 89 dB; imp 4 ohms. Oak-grain vinyl finish. 11¼ x 28½ x 11¼ in. $600/pr

Model 21 2-Way Speaker
Two 6½-inch polypropylene cone woofers and one 1-inch ferrofluid-cooled dome tweeter. Features magnetic shielding. Power handling 5-120 W; FR 50-20,000 Hz; sens 88 dB; imp 4 ohms. Oak-grain vinyl finish. 9 x 21½ x 9½ in. $340

Heritage Series

Model 802 2-Way Speaker
8-inch polypropylene woofer and 3-inch tweeter. Features magnetic shielding. Power handling 5-180 W; FR 40-22,000 Hz; sens 90 dB; imp 8 ohms; crossover point 2,800 Hz. 11¾ x 19½ x 11¼ in. $398/pr

Model T312D 3-Way Speaker
12-inch polymer woofer, 12-inch polymer passive radiator, 5¾-inch midrange, and 1-inch soft dome tweeter. Power handling 5-325 W; FR 20-22,000 Hz; sens 91 dB; imp 8 ohms; crossover points 900 and 2,800 Hz. 15¼ x 43 x 10 in. $1,299

KLIPSCH

Klipschorn 3-Way Speaker
Horn-loaded design featuring K-33-E woofer, K-55-M midrange, and K-77-M tweeter. Power handling 100 W cont avg; FR 40-80,000 Hz; sens 90 dB; imp 8 ohms; crossover points 900 and 2,800 Hz. 100-30,000 Hz; sens 84 dB/W/m; nom imp 8 ohms. 4½ x 8½ x 5½ in. $1,500

Linn

Kaiser 3-Way Speaker
Tower design with 5-inch woofers and 1½-inch tweeter. Woofers operate at different resonance and crossover points. Triamplifiable and triwired. $1,995/pr

KLH Accord 382

Koss

KCS/350 2-Way Speaker
Tuned-port design with two 6½-inch polypropylene woofers and one 1-inch soft dome tweeter. Features molded-baffle system. FR 55-22,000 Hz; sens 92 dB/W/m; nom imp 4 ohms. Black-ash vinyl cabinet. 9¼ x 36 x 9¼ in. $600 ea

KCS/150 2-Way Speaker
Tuned-port design with 6½-inch polypropylene woofers and 1-inch soft-dome tweeter. Features molded-baffle system. FR 60-20,000 Hz; sens 86 dB/W/m; nom imp 4 ohms. Black-ash vinyl cabinet. 8¼ x 15 x 8 in. $350 ea

Magnepan

Magneplanar Type-I-Va 3-Way Speaker
Combination planar-magnetic and ribbon speaker with 1,254-sq-in planar magnetic bass section, 168-sq-in planar magnetic midrange section, and 4½ x 55-inch ribbon tweeter. Power handling 300 W max; FR 30-48,000 Hz; sens 87 dB/W/m; imp 4 ohms bass, 3 ohms midrange/tweeter; crossover points 400 and 3,000 Hz. Off-white, black, or brown panel with oak trim. 260 lb per pair. $3,800/pr

MG 2.6/R 2-Way Speaker
Combination planar-magnetic and ribbon speaker featuring 609-sq-in bass section and 1¼-inch 40-
**M & K**

**MX-1000C Subwoofer/Center-Channel System**

Center-channel system with two 5-in polypropylene midranges, three 1-in soft-dome tweeters and powered subwoofer with two 12-in drivers. Designed for surround-sound systems. Features independent level control for bass; upper roll-off frequency control.

$1,795/sys

**V-100 Powered Subwoofer**

Features 200 W cont power amp to drive 12-in dual voice-coil subwoofer. Externally mounted filter adjustment. FR 20-125 Hz. Walnut, oak, or black-oak finish.

$1,295 ea

**Satellite 1B 2-Way Speaker**

Acoustic-suspension design with two 5-in polypropylene woofers and two 1-in soft-dome tweeters. Features selector for 36 tonal balances; midrange/treble character switches. Power range 7 1/4 - 400 W; impedance 4 ohms. Walnut-oak or black-oak finish with black grille. 7 1/2 x 7 3/4 in; 19 lb.

$795/pr

**S-1B TV.** As above, magnetically shielded. Walnut, oak, or black-oak finish.

$895/pr

**V-90 Powered Subwoofer**

Acoustic-suspension design with 12-in dual-voice-coil driver and 90-W integral power amp. Features independent level control; adjustable (50 to 125 Hz) low-pass filter. 90 W cont; FR 25-125 Hz ± 3 dB. Available in walnut, oak, or black-oak finishes. 16 x 18 1/4 x 15 1/4 in.

$575/pr

**Satellite 3B 2-Way Speaker**

Acoustic-suspension design with 5-in polypropylene woofer and 1-in soft-dome tweeter. Features selector for 8 tonal balances; midrange/treble character switches. Power range 7-1/4 - 150 W; impedance 4 ohms. Walnut, black or white finish with black grille. 8 x 7 3/4 x 7 1/2 in; 10 lb.

$425/pr

**SX-7 2-Way Bookshelf Speaker**

Acoustic-suspension design with 4-in paper-cone midrange, 3/4-in soft-dome tweeter. Features cast-aluminum box with perforated metal grille; circuit-breaker protection. FR 100-20,000 Hz ± 3 dB; power range 10-100 watts; sensitivity 87 dB SPL/W/m; imp 4 ohms. Black finish. 4 1/2 x 7 x 4 1/2 in; 6 lb.

$527/pr

**MB Quart 490MCS**

line-source format; arc-free diaphragm. Power handling 150 W cont; FR 50-22,000 Hz ± 2 dB; sens 85 dB SPL/W/m; imp 6 ohms. Variety of finishes. 26 x 48 x 2 in; 75 lb ea.

$3,500/pr

**MB QUART**

**Quart 690MC2 2-Way Speaker**

Tower design with 8-in woofer and 1-in titanium dome tweeter. Power handling 100 W cont; FR 35-32,000 Hz. Oak, walnut, black or white lacquer, pine, cherry, granite, marble, raw oak, and high-gloss black or white finishes. 10 1/2 x 33 1/2 x 16 in; 39 lb.

$1,500/pr

**Quart 490MC2 2-Way Bookshelf Speaker**

8-in woofer and 1-in titanium dome tweeter. Power handling 90 W cont; FR 37-32,000 Hz. Oak, walnut, black or white lacquer, pine, cherry, or raw oak finishes. 11 x 17 3/4 x 11 1/2 in; 22 lb.

$585/pr

**Quart 290 2-Way Bookshelf Speaker**

8-in woofer and 1-in titanium dome tweeter. Power handling 90 W cont; FR 40-32,000 Hz. Oak, walnut, black or white lacquer, pine, cherry, or raw oak finishes. 11 x 17 1/2 x 11 in.

$569/pr

**Quart 90M 2-Way In-Wall Speaker**

8-in woofer and 1-in titanium dome tweeter. Power handling 100 W cont; FR 46-32,000 Hz. White finish. 10 1/2 x 12 x 3 1/2 in.

$599/pr

**McINTOSH**

**XR-250 3-Way Speaker**

Two 10-in woofers, 5-in midrange, and 1-in dome tweeter. Solid-state current protectors for system and tweeter. Power handling 300 W peak; FR 20-20,000 Hz; sens 84 dB SPL/W/m; imp 8 ohms; crossover points 450 and 1,300 Hz. Oak, walnut, or black-lacquered hardwood finish. 14 x 47 1/4 x 12 in; 79.5 lb.

$1,499 ea

**XR-230 3-Way Speaker**

10-in woofer, 5-in midrange, and 1-in dome tweeter. Solid-state current-sensor protection system and tweeter. Power handling 300 W max; FR 20-20,000 Hz; sens 86 dB SPL/W/m; imp 8 ohms; crossover point 1,300 Hz. Oak, walnut, or black-lacquered hardwood finish. 13 x 40 1/2 x 11 1/2 in; 56.6 lb.

$750 ea

**WS-200 2-Way In-Wall Speaker**

6-in woofer and 1-in horn-loaded tweeter. Solid-state current protectors for system and tweeter; 3rd-order crossover with 18-dB/oct slope. Power handling 80 W peak; FR 60-20,000 Hz; sens 86 dB SPL/W/m; imp 8 ohms; crossover point 1,300 Hz. Hardware for new or existing construction available. White grille. 8 1/4 x 13 3/4 in.

$649/pr

**MEMOREX, BY MEMTEK**

**TS-5 Subwoofer/Satellite System**

Obelisk-shaped subwoofer with two 5 1/2-in and two 6-in drivers and satellites each with two 4-in midranges driven by 150-W power amplifiers and dual 6-in tweeters with dual 4-in diaphragms for front and rear-firing tweeters. Power handling 10 W min; sens 91 dB SPL/W/m, imp 8 ohms; crossover points 300 and 6,000 Hz. Black lacquer finish with knit grille.

$650/sys

**TRC-905 Speaker**

Acoustic-suspension design with 8-in woofer, 5-in polymer reinforced-cone midrange, and 1 1/4-in polycarbonate dome tweeter. Power handling 10 W min; FR 40-20,000 Hz; sens 91 dB SPL/W/m; imp 8 ohms; crossover points 700 and 4,400 Hz. Ebony walnut finish with black knit grille. 9 1/4 x 3 x 13 3/4 in; 27.3 lb ea.

$499/pr

**M-4100 2-Way Speaker**

Acoustic-suspension design with 8-in woofer and 2-in cone tweeter. Power handling 10 W min; FR 55-20,000 Hz; sens 90 dB SPL/W/m; imp 8 ohms; crossover point 3,200 Hz. Oak finish with black grille. 10 x 9 1/4 x 2 3/4 in.

$279/pr

**TRC-505 Speaker**

Acoustic-suspension design with 6 1/2-in woofer and 3 1/2-in midrange and 1 1/2-in polycarbonate dome tweeter. Power handling 10 W min; FR 70-20,000 Hz; sens 88 dB SPL/W/m; imp 8 ohms; crossover point 3,400 Hz. Ebony walnut finish with black knit grille. 7 1/2 x 10 x 10 1/2 in; 12.5 lb ea.

$259/pr

**MERIDIAN**

**D600 Powered Speaker System**

Tri-amplified vented-box design with digital processor featuring 4x-oversampling digital filter and 16-bit D/A converter. 6 1/2-in woofer, 6 1/2-in mid-bass, and 1-in metal-dome tweeter. 2 analog, 2 digital, and 1 digital/optical input. Display with CD track number and FM tuner information when connected to 200 Series components. Includes wireless remote control with frequency-shaping control. 70 W x 3; FR 36-20,000 Hz; sens 110 dB.
SPEAKERS

MIRAGE

Mireg M3 3-Way Speaker
Bipolar radiator design with 10-in polyflex-treated carbon-filled polypropylene woofer, two 4½-in trilaminated carbon-filled polypropylene cone midranges (1 front, 1 rear), and two ½-in cloth-dome tweeters (1 front, 1 rear). Biwirable and biampliable. Power handling 125 W cont; FR 25-22,000 Hz ± 2 dB; sens 87.5 dB SPL/W/m; crossover point 400 and 2,000 Hz; max 6 ohms; 19 x 53 x 9 in; 130 lb ea $1,000/pr

Mireg M7 3-Way Speaker
Bipolar radiator design with 1-front radiating 8-in injection-molded polypropylene cone woofer with rubber surround, rear-radiating 5-in midrange, and 1-front radiating 1-in pure-titanium tweeter with cloth suspension. Biwirable and biampliable. Power handling 125 W cont; FR 35-22,000 Hz ± 3 dB; sens 88 dB SPL/W/m; nom imp 6 ohms; crossover points 500 and 2,000 Hz; 14 x 45 x 7 in; 80 lb ea $1,100/pr

Model 760 2-Way Speakers
Bass-reflex design with two 8-in carbon-filled polypropylene woofers with stitched butyl surround and one 1½-in ferrofluid-cooled soft-dome tweeter. Power handling 200 W cont; FR 20-20,000 Hz ± 3 dB; sens 89 dB SPL/W/m; imp 6 ohms; crossover point 4,300 Hz; 21 lb ea. $429/pr

Mireg M-790 3-Way Speaker
Bipolar-radiator design with 8-in vented 8-in injection-molded polypropylene cone woofer with rubber surround, rear-radiating 5-in midrange, and 1-in titanium tweeter with cloth suspension. Biwirable and biampliable. Power handling 150 W cont; FR 38-22,000 Hz ± 3 dB; sens 87.5 dB SPL/W/m; nom imp 6 ohms; crossover points 500 and 2,000 Hz. 10 x 39 x 11 in; 60 lb ea $900/pr

Model 460 2-Way Bookshelf Speaker
Bass-reflex design with 8-in carbon-filled polypropylene woofer with stitched butyl surround and 1½-in ferrofluid-cooled soft-dome tweeter. Power handling 100 W cont; FR 35-30,000 Hz ± 3 dB; imp 8 ohms; sens 89 dB SPL/W/m; black-ash vinyl veneer finish. 10 x 25 x 11 in; 32 lb $600/pr

Mireg M-290 2-Way Speaker
Front-mounted design with 6½-in injection-molded polypropylene woofer with rubber surround and 1½-in pure-titanium tweeter with cloth suspension. Power handling 100 W cont; FR 45-22,000 Hz; nom imp 6 ohms. Black-ash vinyl veneer finish with gray grille. 9 x 16 x 9 in $450/pr

Mireg M-2 Way Speaker
Designed for use as center-channel speaker in home theater systems. Dual front-mounted design with two 4½-in woofers and one ½-in polycarbonate flared-dome tweeter. Features magnetic shielding and angled enclosure. Power handling 100 W cont; FR 40-20,000 Hz; sens 86 dB SPL/W/m; nom imp 8 ohms; crossover point 2,500 Hz. Black-ash vinyl-veneer finish with slate-gray grille cloth. 6 x 20 x 8 in; 15 lb $170 ea

MISSION

Mission 765 2-Way Speaker
Two 8-in polypropylene woofers and one 1½-in ferrofluid-cooled elliptical-dome tweeter. Features 2-way woofer voice coils; 1½-in MDF critically-braced viscoelastically-damped cabinet. Biwirable and biampliable. Power handling 250 W cont; FR 35-20,000 Hz ± 3 dB; imp 4 ohms; sens 93 dB SPL/W/m; crossover point 2,500 Hz. Natural walnut and black-ash wood veneers. 37½ x 10½ x 13½ in; 110 lb ea. $1,499/pr

Cyrus 782 2-Way Speaker
Bass-reflex design with 2½-in mineral-loaded polymer woofers and 1½-in ferrofluid-cooled fabric-dome tweeter. Features 1½-in plastic baffle board. Biwirable and biampliable. Power handling 150 W cont; FR 49-20,000 Hz ± 3 dB; sens 91.5 dB SPL; max spl 109 dB; nom 4 ohms; crossover point 3,200 Hz. Natural walnut, black-ash, Nextel gray and rosewood veneers. 9½ x 19½ x 13½ in; 30.8 lb $779/pr

Mission 762 2-Way Bookshelf Speaker
Bass-reflex design with 8-in Plastiflex plastic woofer and 1½-in ferrofluid-cooled fabric-dome tweeter. Features 1½-in viscoelastically damped transverse-folded cabinet, flared-tuned port; inverted drive-unit geometry; 5-way binding posts. Power handling 125 W cont; FR 50-20,000 Hz ± 3 dB; sens 93.5 dB SPL/W/m; max spl 106 dB; nom 8 ohms; crossover point 4,300 Hz. Simulated wood cabinet and black-ash and veneers. 9½ x 19½ x 11½ in; 21 lb ea. $429/pr

Monitor Audio

Classic 40 2-Way Speaker
Bass-reflex design featuring 6½-in woofers and one 1½-in metal-dome tweeter. Features polypropylene injection-molded woofer cones and surrounds; ferrofluid tweeter damping and cooling; Politec protection system. Power handling 250 W cont; FR 45-25,000 Hz ± 3 dB; sens 87 dB SPL/W/m; imp 8 ohms; crossover point 5,000 Hz. Available in walnut, mahogany, or black-ash finish. 5-year warranty. 8½ x 31½ x 11 in; 37½ lb $1,450/pr

Classic 20 2-Way Speaker
Bass-reflex design featuring 6½-in woofer and 1½-in metal-dome tweeter. Features polypropylene injection-molded woofer cone and surround; ferrofluid tweeter damping and cooling; Politec protection system. Power handling 100 W cont; FR 50-20,000 Hz; sens 78 dB/W/m; imp 8 ohms; crossover 4,000 Hz. Walnut, mahogany, or black-ash finish. 5-year warranty. 8½ x 14½ x 10½ in; 17½ lb $950/pr

MOREL

Encore Satellite/Subwoofer System
Subwoofer with dual 9-in woofers in push-pull configuration and satellites each with one 6½-in woofer and one 1½-in dome tweeter. Satellite: power handling 120 W cont; FR 90-22,000 Hz. Subwoofer: power handling 150 W cont; FR 30-90 Hz; crossover point 90 Hz. Matte-black subwoofer finish; black-lacquer satellite finish. Subwoofer: 12 x 20 x 14 in; 32 lb. Satellite: 7 x 11 x 9 in; 16 lb $990/sys

MPL-501 3-Way Speaker
9-in woofer, 3½-in dome midrange, and 1½-in dome tweeter. Power handling 20-180 W; FR 35-25,000 Hz ± 3 dB; imp 8 ohms; sens 90 dB SPL/W/m. Walnut or black wool veneer finish. 7 x 11½ x 12½ in; 32 lb $895/pr

MPL-203 2-Way Speaker
Linear-phase design with 6½-in woofer and 1½-in ferrofluid-cooled soft-dome tweeter. Features sealed cabinet; double woofer magnet; 3-in woofer voice coil. Power handling 150 W cont; FR 45-28,000 Hz ± 3 dB; sens 90 dB SPL/W/m. Walnut or black wood veneer finish. 8 x 16 x 9½ in; 18 lb $640/pr

CR-7 2-Way Bookshelf Speaker
Acoustic-suspension design with 6½-in treated paper-pure cone woofer and 1½-in soft-dome tweeter. Features metal driver grilles; asymmetrical cabinet design. Power handling 200-200 W cont; FR 70-25,000 Hz ± 3 dB; sens 90 dB SPL/W/m; imp 4-8 ohms. Available in mirrored pairs. Black finish. 4 x 11 x 7½ in; 10 lb ea $498/pr

MTX

DS 1010 3-Way Speaker
Bass-reflex design with two 10-in woofers, 5½-in ferrofluid-cooled midrange, and 1½-in soft-dome tweeter. Power handling 200 W cont; FR 34-22,000 Hz; sens 94 dB SPL/W/m; imp 4 ohms. 14 x 37½ x 14½ in $575/pr
We’ve spiked the punch.

Klipsch speakers have always had a singular impact on listeners fortunate enough to own them. Now the unique Klipsch sound and legendary craftsmanship are available in new sizes and designs. Witness the Klipsch kg 5.2 and kg 4.2 speakers. Both feature our new Tractrix™ tweeter horn which helps create an even more crisp and lifelike sound. In addition, both speakers have a unique spike and foot combination for better bass coupling with any floor surface. Or enjoy the Klipsch kg SW Passive Subwoofer that delivers exceptional low frequency reproduction. Ask for a demonstration of the kg series at your authorized Klipsch dealer today. Your eyes may not believe they’re from Klipsch. But there’s no fooling your ears.
Speakers

**American Acoustics D Series**

- D550E 4-Way Speaker
  - Power handling: 120 W cont.; FR 43-22,000 Hz; sens 93 dB SPL/W/m; imp 4 ohms.
  - 15% x 27 x 10 in.
- **D550E 2-Way Bookshelf Speaker**
  - Vented design with 8-in polymer woofer and 1-in soft-dome tweeter. Features ferrofluid tweeter cooling and damping.
  - Power handling: 45 W cont.; FR 60-22,000 Hz; sens 94.5 dB SPL/W/m; imp 4 ohms.
  - 11% x 23 x 9 in.

**AAL Series**

- **AAL 223 4-Way Speaker**
  - Vented design with two 12-in fiber-cone woofers, 5-in ferrofluid-cooled midrange, and round horn-loaded quartz tweeter.
  - Power handling: 300 W cont.; FR 38-22,000 Hz; sens 93 dB SPL/W/m; imp 4 ohms.
  - 16 x 39% x 15 in.
- **AAL 62 2-Way Bookshelf Speaker**
  - Vented design with 6½-in fiber-cone woofer and 3¼-in round horn-loaded tweeter.
  - Power handling: 38 W cont.; FR 90-20,000 Hz; sens 90 dB SPL/W/m; imp 4 ohms.
  - 9% x 12½ x 7½ in.

**MUSEATEX**

- **Melior One Speaker**
  - Dipolar planar design incorporating point-source technology.
  - Power: 40-200 W; FR 45-20,000 Hz ±3 dB; sens 86 dB; imp 4 ohms.
  - Mahogany or black wood finish with black grille. 45 lb ea.
  - $2,300/pr
- **Melior Two Speaker**
  - Dipolar planar design incorporating point-source technology.
  - Power: 40-150 W; FR 50-20,000 Hz ±3 dB; sens 84 dB; imp 4 ohms.
  - Mahogany or black wood finish with black grille. 38 lb ea.
  - $1,750/pr
- **Melior Powered Subwoofer**
  - Sealed design with downward firing 15-in cone woofer powered by 200-W amplifier. Features feedback system. 27-400 Hz ±3 dB. Black wood finish. 20 x 20 x 23 in.
  - $1,500 ea

**NAI M**

- **NASBL 2-Way Speaker**
  - 8-in woofer and 1¼-in dome tweeter. Features external detachable crossover; decoupled tweeter.
  - Power handling: 75 W; FR 30-20,000 Hz ±3 dB; sens 88 dB SPL/W/m; imp 6 ohms.
  - Black-ash or walnut finish with stand. 10½ x 34½ x 10½ in.
  - $3,045/pr

**NEAR**

- **Symphony No. 1 CS-4000 M 3-Way Speaker**
  - Infinite-baffle design with 2 woofers, one 6½-in midrange, and 8-in two-tweeters in array. Power handling: 250 W max.; imp 8 ohms; crossover points 400 and 2,500 Hz. Classic styling. 26¼ x 44½ x 15½ in.
  - $4,400/pr
- **Mutek M7**
  - Features angled baffle. FR 50-25,000 Hz ±3 db; nom imp 8 ohms; sens 86 dB SPL/W/m. Black, white, or oak finish. 7 x 16¼ x 10 in, 15 lb.
  - $500/pr

**NILES**

- **Model 300 2-Way In-Wall Speaker**
  - 8-in polypropylene woofer and 1-in soft-dome tweeter. Features butyl woofer surround; treated-fabric dust cap; 2-position tweeter-level control.
  - Power handling: 5½ W; FR 55-20,000 Hz ±3 dB; sens 87 dB SPL/W/m; imp 8 ohms; crossover point 4,000 Hz. Pearl-white finish with cloth or metal grille. 10 x 14 x 4 in, 12 lb/pr.
  - $650/pr
- **Model 100 2-Way In-Wall Speaker**
  - Power handling: 5½ W; FR 55-20,000 Hz ±3 dB; sens 87 dB SPL/W/m; imp 8 ohms; crossover point 4,000 Hz. Pearl-white finish with cloth or metal grille. Brackets for new construction or retrofit. 9 x 12 x 3½ in, 6½ lb/pr.
  - $560/pr

**NORMAL LABORATORIES**

- **Model 635 3-Way Speaker**
  - Three 10-in cone woofers, 5½-in cone midrange, and 1-in dome tweeter. Power handling: 600 W max; FR 25-20,000 Hz; sens 95 dB SPL/W/m; imp 8 ohms. 16¼ x 49 x 11 in, 155 lb.
  - $900 ea
- **Model 435 3-Way Speaker**
  - Two 10-in cone woofers, 5½-in cone midrange, and 1-in dome tweeter. Power handling: 500 W max; FR 30-20,000 Hz; sens 94 dB SPL/W/m; imp 8 ohms. 15 x 40 x 9½ in, 112 lb.
  - $550 ea
- **Model 235 3-Way Speaker**
  - 10-in cone woofer, 5½-in cone midrange, and 1-in dome tweeter. Power handling: 250 W max; FR 38-20,000 Hz; sens 91 dB SPL/W/m; imp 8 ohms. 12 x 23 x 9½ in, 60 lb.
  - $300 ea

**ODEON**

- **Point Three 2-Way Speaker**
  - Bass-reflex design with 6½-in polypropylene woofer and 1-in dome tweeter. Features damping and enclosures; truncated-pyramid shape; in-fin backboard construction.
  - Power handling: 10-120 W; FR 58-40,000 Hz ± 3 dB; sens 87 dB SPL/W/m; imp 8 ohms; crossover point 2,000 Hz. Zolatone finish. 19 x 36 x 6½ in; 36 lb ea.
  - $799/pr
Point/Zero Five Subwoofer/Satellite System
Subwoofer module with two 5½-in polypropylene woofers and two acoustic-suspension satellites with two 4-in polypropylene midranges and two ½-in dome tweeters. Each satellite features truncated-pyramid shape; ¼-in and ¾-in fiberboard construction. Power handling 10-150 W; FR 39-24,000 Hz ± 3 dB; sens 86 dB SPL/W/m; nom imp 8 ohms; satellite crossover point 7,000 Hz. Zola tone-finish. Subwoofer: 7½ x 9 x 4½ in. Satellite: 7 x 14½ x 14½ in. 20 lb/sys...$599/sys.

OHM
XO Series
4X0 Inverted-Cone Speaker
Four 4-in inverted-cone speakers. Power handling 100 W; FR 32-20,000 Hz ±4 dB; imp 8 ohms. 11½ x 11¼ x 11½ in. Banana plugs wire up to 12 gauge wire. Standard finish cherry. Available in rosewood, black, or white lacquer. Specifications: 3½-in cone woofers and 1½-in dome tweeters. Power handling 100 W; FR 32-20,000 Hz ±4 dB; imp 8 ohms. 11½ x 11¼ x 11½ in. $1,150/pr.

2X0 Inverted-Cone Speaker
Bass-reflex design with coherent-line source inverted-cone driver. Features sub-woofer activator; protection circuits; design doubles as TV stand. Paintable bone-white enamel finish 8 x 12 x 8½ in. $369/pr.

Full Room Stereo Series
FRS 9 2-Way Speaker
8-in woofer, rear-mounted 12-in passive radiator, and corner-mounted tweeter. Features sub-woofer activator; protection circuits; 5-way binding posts. Power handling 225 W max; FR 36-20,000 Hz ± 4 dB; imp 8 ohms. Finished in oak-vinyl veneer. 11¼ x 35½ x 11½ in...$880/pr.

FRS 5 2-Way Bookshelf Speaker
6-in woofer and corner-mounted tweeter. Features protection circuits; sub-woofer activator; 5-way binding posts. Power handling 125 W max; FR 48-20,000 Hz ± 4 dB; imp 8 ohms. Finished in oak-vinyl veneer. 11¼ x 11¼ x 11½ in...$480/pr.

Sound Cylinders Series
Pro 250 Sound Cylinder Speaker
Coherent-line source driver in lead-lined cylinder. Monster Cable wiring. Power handling 250 W (cont); FR 35-20,000 Hz; sens 91 dB; imp 8 ohms. 45% in high, 11½ in across...$1,400/pr.

Pro 150. As Pro 250, power handling 150 W cont; FR 42-20,000 Hz; sens 91 dB; imp 8 ohms. 34½% in high, 11½ in across...$850/pr.

Coherent Audio Monitors Series
CAM 42 SBA 2-Way Bookshelf Speaker
8-in polypropylene woofer, 12-in passive radiator, and 1-in polypropylene dome tweeter. Features sub-woofer activator. Power handling 300 W; FR 39-20,000 Hz ± 4 dB; sens 90 dB SPL/W/m; imp 8 ohms. Oak or black vinyl finish. 14½ x 26½ x 11 in...$680/pr.

CAM 16 SBA 2-Way Bookshelf Speaker
Vented design with 6½-in woofer and rotatable tweeter. Features bevelled cabinet; frameless grilles. Power handling 125 W; FR 46-20,000 Hz ± 4 dB; sens 89 dB; imp 8 ohms. Brushed bronze vinyl. 9 x 17¼ x 11½ in...$400/pr.

Ohm Theater Series
SBC-48 Subwoofer/Center-Channel System
Two 10-in dual-voice coil woofers and 1-in center-channel tweeter. Features Ohm Theater Matrix to derive center channel from L/R stereo channel inputs; design doubles as TV stand. Acoustically transparent black fabric grille and heavy wooden side-panels covered with black textured vinyl. 18 x 48 x 12 in...$650.

SAT-2 2-Way Satellite Speaker
Phase-aligned design with 5½-in woofers and ferrofluid-cooled ¼-in tweeters. Stealth black finish. 7½ in high...$400/pr.

SB-1 Subwoofer. 10-in dual-voice-coil woofer. 12½ x 20¾ x 7½ in...$300.

Optimus, by Radio Shack
Mach Three 3-Way Speaker
Tuned-port design with ferrofluid-cooled midrange and tweeter horns. Midrange and tweeter level controls; spring terminals. Power handling 160 W; FR 70-25,000 Hz; sens 95 dB SPL/W/m; imp 8 ohms. Walnut finish with removable cloth grille. 13 x 17½ x 30 in...$299 ea.

Optimus-1050 3-Way Speaker
Bass-reflex design with 15-in woofer, 5-in midrange, and 3-in ferrofluid-cooled tweeter. Features spring terminals. Power handling 100 W; FR 60-20,000 Hz; sens 90 dB SPL/W/m; imp 8 ohms. Oiled walnut finish with removable cloth grille. 11½ x 29¼ x 17½ in; 44 lb...$400/pr.

PARADIGM
Monitor Series
Studio Monitor 3-Way Speaker
Two 8-in mineral-filled polypropylene cone woofers and one 1-in aluminum-dome tweeter. Features patented sub-bass activator. Power handling 25-250 W; FR 34-20,000 ±2 dB; sens 94 dB sPUW/m. Walnut or black-ash vinyl finish. 20½ x 10 x 11½ in. $369/pr.

McMill Performance Series
I 1seMkII 2-Way Speaker
Two 8-in mineral-filled polypropylene cone woofers and one 1-in aluminum-dome tweeter. Kaption woofer voice-coil former; ferrofluid tweeter cooling and damping; phase-corrected 3rd-order crossover. Power handling 15-150 W; FR 30-20,000 Hz ± 2 dB; sens 90 dB SPL/W/m. Walnut or black-ash vinyl finish. 10½ x 25 x 13½ in; 38 lb...$569/pr.

5se 2-Way Speaker
8-in copolymer polypropylene cone woofer and 1-in polyimide-dome tweeter. Features Kaption woofer voice-coil former; ferrofluid tweeter cooling and damping; phase-corrected 2nd-order crossover. Power handling 15-100 W; FR 38-20,000 Hz ± 2 dB; sens 90 dB SPL/W/m. Walnut or black-ash vinyl finish. 20½ x 10 x 11½ in...$369/pr.

AMS-200 2-Way In-Wall Speaker
One-piece main housing/woofer chassis made from high-pressure die-cast aluminum containing 6-in mineral-filled copolymer polypropylene cone woofer and 1-in treated textile-dome tweeter. Features aluminum/Nomex woofer voice-coil former; ferrofluid tweeter cooling and damping; phase-corrected 3rd-order crossover. Power handling 15-80 W; FR 70-20,000 Hz ± 2.5 dB; sens 88 dB SPL/W/m. Includes aluminum mounting bracket for both retrofit and new-home installation. Paintable bone-white enamel finish 8 x 12 x 3¼; 8 lb...$369/pr.

PARASOUND
AR-380 2-Way Outdoor Speaker
Air-suspension design with 5½-in carbon-fiber-reinforced polypropylene woofer and 1-in dome tweeter. Features die-cast enclosure; weather-resistant parts. Power handling 10-80 W cont; FR 48-20,000 Hz ± 3 dB; sens 88 dB SPL/W/m. Includes aluminum mounting bracket for both retrofit and new-home installation. Paintable bone-white enamel finish 8 x 12 x 3¼; 8 lb...$369/pr.

PERIOD
All models feature mineral-filled polypropylene cones with rubber surrounds. Available in oak or gray finish.
Model 96013 3-Way Speaker
Two 8½-in cone woofers, one 5½-in cone midrange, and one 1½-inch titanium-dome tweeter. Features acoustically damped midrange chamber. 9½ x 50 x 12½ in...$299 ea.

Model 96012 2-Way Speaker
Two 6½-in cone woofers flank one 1-inch titanium-dome tweeter. 9½ x 36 x 12¼ in...$249 ea.

Model 96011 2-Way Speaker
5½-in cone woofer and ½-inch tweeter. 13 x 8 x 8½ in...$179/pr.

PHASE TECHNOLOGY
PC Series
PC-8.5 3-Way Speaker
Unicell acoustic treatment with 10-in solid-piston woofer, 5½-in solid-piston midrange, and 1-in soft-dome tweeter. Power handling 80 W; FR 35-20,000 Hz ± 2 dB; sens 89 dB SPL/W/m. Dark-oak, walnut, or black finish. 13 x 39½ x 11½ in; 90 lb ea...$1,200/pr.

PC-80 2-Way Speaker
Unicell acoustic treatment with 6½-in solid-piston woofer and 1-in soft-dome tweeter. Power...
PC-90 Subwoofer
Acoustic-suspension design with 10-in dual-voice-coil cone driver. Power handling 25-150 W; FR 27-100 Hz; sens 88 dB, 6 ohms; 16/5 x 20 x 20 in; 35 lb ea... $560/pr

PC-40 Mk II 2-Way Bookshelf Speaker
Acoustic-suspension phase-coherent speaker with 5¼-in solid-piston woofer and 1-in soft-dome tweeter. Accepts banana plugs. Power range 15-80 W; FR 70-20,000 Hz; ±3 dB; sens 89 dB SPL/W/m; imp 4 ohms; Walnut, stained-oak, or light-oak finish. 6 1/2 x 9 1/4 x 5 1/4 in; 10 lb ea... $550 ea

ES Series
Model 730-ES 2-Way Speaker
Tower speaker with 10-in bass/midrange driver, 5¼-in cone midrange, and 1-in ferrofluid-cooled soft-dome tweeter. Features asymmetrically mounted tweeter and midrange. Power handling 120 W; FR 36-20,000 Hz; ±3 dB; sens 93 dB SPL/W/m; nom 8 ohms, crossovers 250 and 3,000 Hz. Black-ash or dark-oak vinyl. 12¾ x 34 x 10 in... $380/pr

Model 235-ES Subwoofer/Satellite System
Subwoofer with two 6½-in woofers and 2 satellites each with one 5¼-in woofer and one 2½-in tweeter. Features spring-loaded terminals. Power handling 10-75 W/eh, crossover points 150 and 3,000 Hz, FR 45-20,000 Hz; ±3 dB; sens 88.5 dB at 4 ohms. Black finish. Subwoofer: 8 x 15 x 18 in; 25 lb. Satellite: 6½ x 9¾ x 5 in; 6.5 lb... $630/pr

Model 435-ES 2-Way Bookshelf Speaker
8-in bass/midrange and 1-in ferrofluid-cooled soft-dome tweeter. Features asymmetrically mounted tweeter and midrange. Power handling 80 W; FR 45-20,000 Hz; ±3 dB; sens 92 dB SPL/W/m; 8 ohms; crossover point 2,500 Hz. Black-ash or dark-oak vinyl, 12¾ x 22½ x 10¾ in... $399/ea

CI Series
CI-80 2-Way In-Wall Speaker
Dual 6¾-in solid-wood woofers and 1-in soft-dome tweeter with Uncell acoustic treatment. Features auto-resetting thermal breakers; gold 5-way binding posts; screened woofer baskets; 5-year warranty. Power handling 15-100 W; FR 38-20,000 Hz; imp 8 ohms... $740/pr

CI-40 IV 2-Way In-Wall Speaker
5¼-in solid-piston woofer and 1-in soft-dome tweeter. Features auto-resetting thermal breakers; 5-way binding posts; screened woofer baskets; 5-year warranty. Power handling 15-80 W; FR 55-20,000 Hz; imp 4 ohms... $400/pr

CI-SUB II In-Wall Subwoofer
6 x 9-in damped felt-cone woofer. Power handling 25-100 W; FR 20-90 Hz; imp 4 ohms... $275 ea

PHILIPS
FB-825 3-Way Speaker
Two 8-in soft-coated woofers, 5½-in soft-coated midrange, and Isophase planar ribbon tweeter. Features rounded edge cabinet with two separate woofer enclosures; MDF acoustic-damping baffle with solid-wood edge trim; power-overload protection; banana-plug-compatible input connectors. Power handling 250 W cont. Dark-walnut foil finish... $800/pr

FB-815 3-Way Speaker
Two 8-in soft-coated woofers, one 4-in soft-coated midrange, and one 6-in Supronyl soft-dome tweeter with ferrofluid damping and cooling. Rounded-edge cabinet; power-overload protection, banana-plug-compatible input connectors. Power handling 150 W cont. Dark-walnut foil finish... $500/pr

FB-690 3-Way Speaker
Bass-reflex design with 7-in soft-coated woofer, 7-in soft-coated midrange, and 1-in polygrid-dome tweeter. Power handling 90 W cont; FR 28-20,000 Hz; sens 88 dB SPL/W/m; 6 ohms; crossover points 1,300 and 4,000 Hz. Dark-walnut foil finish. 11¾ x 26 x 10 in; 25 lb... $300/pr

Pinnacle
PN 8+ 2-Way Bookshelf Speaker
8-in polypropylene woofer and 1-in polymer-dome tweeter. Power handling 10-125 W cont, 375 W peak; FR 30-21,000 Hz; sens 90 dB SPL/W/m; imp 8 ohms; crossover points 1,000 and 6,000 Hz. Black-oak veneer with solid-oak trim. 11½ x 19¾ x 11¼ in; 35 lb/pr... $460/pr

PN70 3-Way Bookshelf Speaker
4th-order vented design with 6½-in treated-cellulose woofer, 4-in treated cone midrange, and 1-in metal-dome tweeter. Features rubber woofer surround; midrange surrounds; ferrofluid tweeter cooling; parabolic-dish tweeter faceplate. Power handling 10-100 W cont avg, 300 W max; FR 38-21,000 Hz; imp 8 ohms; sens 93 dB SPL/W/m; crossover points 1,400 and 7,000 Hz. 10¾ x 19 x 10 in; 36 lb per pair... $390/pr

PN60 2-Way Bookshelf Speaker
4th-order vented design with 6½-in treated-cellulose fiber woofer and 1-in metal-dome tweeter. Features rubber woofer surround; ferrofluid tweeter cooling; parabolic-dish tweeter faceplate. Power handling 10-85 W cont avg, 250 W max; FR 45-21,000 Hz; imp 8 ohms; sens 87 dB SPL/W/m; crossover point 2,000 Hz. 17½ x 10½ x 10 in; 34 lb/pr... $290/pr

PN50 2-Way Center-Channel Speaker
4th-order vented design with 5¼-in mineral-filled polycone woofer and 1-in metal-dome tweeter. Designed for surround-sound center-channel use. Features magnetic shielding; ferrofluid tweeter cooling; parabolic-dish tweeter faceplate; flush-right driver alignment for optimum shielding when placed on TV. Power handling 10-70 W cont avg, 200 W max; FR 45-21,000 Hz; imp 8 ohms; sens 87 dB SPL/W/m; crossover point 2,500 Hz. Black cabinet with rubber feet. 14¾ x 7¼ x 6½ in; 9 lb... $125 ea

Polk Audio SRS 3.1TL
W max; FR 20-40,000 Hz; sens 88 dB; imp 6 ohms; crossovers 800 and 4,000 Hz. Oak-grain vinyl. 12¾ x 40½ x 14½ in; 70.5 lb ea... $500 ea

S-T100 2-Way Speaker
Bass-reflex design with two 7-in woofers and one 3½-in ceramic-carbon dome tweeter. Power handling 150 W max; FR 30-40,000 Hz; sens 88 dB SPL/W/m; imp 6 ohms; crossover point 2,000 Hz. Oak-grain vinyl finish. Optional speaker stands. 10¼ x 22½ x 12½ in; 30.9 lb/pr... $500/pr

S-W1000 Powered Subwoofer
12-in subwoofer in magnetically shielded cabinet. Features subwoofer/center-channel amp with selectable crossover and level controls. Subwoofer: 70 W into 6 ohms from 20-140 Hz with 5% THD. Center-channel only: 25 W into 6 ohms from 20-20,000 Hz with 1% THD. Black finish with black melamine finish on top broad. 19½ x 21 x 17½ in; 46.3 lb... $500 ea

Polo Audio
SRS 3.1TL Signature Reference Speaker
3-way design with 15-in planar sub-bass radiator, six 6½-in trilaminate polymer midbass drivers, and three SL3000 1-in trilaminate polymer dome tweeters. Features proprietary Stereo Dimension Array technology for improved imaging. Power handling 750 W cont; FR 30-25,000 Hz; ±3 dB; 8 ohms. Oiled-oak or walnut finish. 20½ x 55 x 13½ in; 155 lb... $2,500/pr

SRS 3.1TL Signature Reference Speaker
3-way design with tower design with one 12-in planar sub-bass radiator, five 6½-in trilaminate-
What Stereo Review Has To Say About Ensemble II.

"Cambridge SoundWorks, in the few years since its entry into the ranks of high-fidelity speaker manufacturers, has earned a reputation for above-average sound quality at below-average prices. It was also one of the first audio manufacturers to market its products directly from the factory to the customer with a thirty-day full-refund return privilege. Cambridge SoundWorks products come with all necessary hardware and ample connecting cables (additional lengths are available at no charge if needed) and there is a toll-free number to use if problems or questions arise.

"Cambridge SoundWorks speakers are designed by Henry Kloss, a co-founder of Acoustic Research and KLH and founder of Advent and Kloss Video. His expertise in speaker design has typically been applied to providing the best sound for the price, and Kloss designs include many loudspeaker classics...

"The sound of the Cambridge SoundWorks Ensemble II was notably smooth and balanced, without any obvious emphasis or lack in any part of the audio range. In fact, there was nothing in its sound that suggested the size of its components. It could be played as loud as a reasonable listener might wish without giving a clue to its three-piece configuration or its low price.

"No one expects a $400 speaker system to fully match the sound of one costing several times as much, but it is a fact that not all expensive speakers produce a sound quality commensurate with their price tags. The Ensemble II, however, like its companions in the Cambridge SoundWorks lineup, performs so far beyond its price and size class that it can be compared only with much larger speakers at substantially higher prices... The Ensemble II is appropriately cheaper than its competitors, yet in our opinion it can hold its own against any of them in overall performance. It represents an outstanding value for the average person looking for a good music system at an affordable price."

Stereo Review November, 1991
Architectural
8 1/2 x 17 x 10 in; 171 lb
Power handling 100 W; sent 90 dB; imp 8 ohms. Black or natural oak finish. 43 x 12 1/2 x 15 1/2 in; 77 lb
$2,000/pr

RTA 1.5TL Monitor 3-Way Speaker
Real-Time-Array design with two 10-in sub-bass radiators, four 6 1/2-in tri-laminate-polymer mid-bass drivers, and one SL3000 1-in tri-laminate-polymer/metal-dome tweeter. Power handling 250 W cont; FR 30-20,000 Hz; sens 87 dB SPL/W/m. Paintable white finish. 6 1/4 x 11 x 12 3/4 in; 17 lb
$1,400/pr

RGA 1.1 TL Monitor 3-Way Speaker
Real-Time-Array design with two SL3000 tri-laminate-polymer mid-bass drivers and a 1-in silver-coil polymer-dome tweeter. Power handling 150 W cont; FR 43-20,000 Hz; sens 89 dB SPL/W/m. Black or brown finish. 11 1/2 x 15 1/2 x 13 3/4 in; 21 lb
$550/pr

AB-800 2-Way In-Wall Speaker
Two 8 1/2-in tri-laminate polymer mid-bass drivers and a 1-in silver-coil polymer-dome tweeter. Power handling 150 W cont; FR 43-20,000 Hz; 3 dB; sens 91 dB; imp 6 ohms. Off-white finish. 6 1/2 x 15 x 3 1/4 in; 21 lb
$250/pr

AB-500 2-Way In-Wall Speaker
5-in tri-laminate polymer mid-driver and 1/4-in polymer-dome tweeter. Power handling 10-100 W; FR 56-20,000 Hz; sens 89 dB SPL/W/m. Paintable white finish. 6 1/2 x 9 x 3 1/2 in; 6 lb
$170/pr

AB-600 2-Way In-Wall Speaker
5-in tri-laminate polymer mid-driver and 1/2-in poly-carbonate tweeter. Power handling 10 W min; FR 67-20,000 Hz; sens 89 dB SPL/W/m; imp 8 ohms. Black or white finish with matching grill grille. 11 1/2 x 6 x 6 1/2 in
$170/pr

RTA 112 Satellite: 6 1/2 x 4 x 3 1/4 in. 45 lb
Imp 8 ohms; FR 40-20,000 Hz; sens 89 dB spl/W/m.
Power handling 150 W cont; FR 43-20,000 Hz; 3 dB; sens 89 dB SPL/w/m. Walnut, teak, or black. 12 x 25 x 12 in; 40 lb ea...
$300/pr

ROCKUSTICS
Rocker speakers are designed for outdoor use. They feature stone-like waterproof enclosures.

Soundwave 2-Way Speaker
6-in long-throw poly cone woofer and 1-in ferro-fluid-cooled tweeter mounted coaxially. Power handling 50 W; FR 70-20,000 Hz; ±5 dB; imp 4 ohms; sens 89 dB SPL/W/m.
$200/pr

Punk Rock 2-Way Speaker
5 1/4-in long-throw poly cone woofer and 2-in ferro-fluid-cooled tweeter coaxially mounted. Power handling 50 W; FR 70-20,000 Hz; ±5 dB; imp 4 ohms; sens 92 dB SPL/W/m.
$300/pr

ROGERS
Studio 1a 2-Way Speaker
Features aluminum-dome tweeter and biwirable crossover. Power handling 220 W; FR 45-20,000 Hz ± 3 dB; sens 89 dB SPL/W/m. Walnut, teak, or black. 12 x 25 x 12 in; 40 lb ea...
$1,600/pr

LS3/5a 2-Way Bookshelf Speaker
Power handling 75 W; FR 70-20,000 Hz; ± 3 dB; sens 82.5 dB SPL/W/m; imp 11 ohms. Walnut,
LS2 1/2 2-Way Bookshelf Speaker
Power handling 100 W; FR 60-20,000 Hz ± 2 dB; sens 87 dB SPL/SW/m; 8 ohms. Black/walnut vinyl. 15 x 10 x 8 in; 24 lb ea. $550/pr

R S L
Compression Guide Series
CG-8 2-Way Speaker
Dual 8-in woofers and 1½-in tweeter. Power handling 60 W; FR 32-22,000 Hz ± 2.5 dB; sens 92 dB SPL/SW/m; 4 ohms; crossover point 3,000 Hz. 10 x 37 x 11¼ in; netic shielding. Power handling 30-100 W; FR 50-22,000 Hz; sens 93 dB SPL/SW/m.

CG-6 2-Way Speaker
Dual 6½-in woofer and 1½-in tweeter. Power handling 20-150 W; FR 50-22,000 Hz ± 2.5 dB; sens 91 dB SPL/SW/m; 4 ohms; crossover point 3,000 Hz. 7½ x 35 x 10¼ in; 40 lb ea. $399 ea

Monitor Series
 features carbon-filled polypropylene woofers and midranges, circuit breaker tweeter protection with auto reset, Monster Cable wiring, and gold-plated 5-way binding posts.

Model 4200a 3-Way Speaker
Dual 8-in woofers, 4½-in midrange, and 2½x ½-in ribbon tweeter. Power handling 25-200 W; FR 35-25,000 Hz ± 3 dB; sens 92 dB SPL/SW/m; 4 ohms; crossover points 650 and 4,000 Hz. Wedge tower cabinet covered with black cloth and carpet with oiled-oak top and bottom caps; includes carpet spikes and non-marring nylon feet. 42 x 10½ x 12 in; 55 lb ea. $499

Model 3800a 3-Way Speaker
12-in woofer, 4½-in midrange, and 1-in soft-dome tweeter. Features heavily-braced tuned port enclosure; midrange and tweeter level controls. Power handling 15-300 W; FR 32-22,000 Hz ± 3 dB, sens 93 dB SPL/SW/m; 8 ohms; crossover points 800 and 4,000 Hz. Oiled oak finish. 27 x 15 x 11¼ in; 44 lb ea. $299

BS-8" 2-Way Speaker
Two 8-in carbon/polypropylene woofers and one 1½-in polypropylene-dome tweeter. Features magnetic shielding. Power handling 30-100 W; FR 50-18,000 Hz ± 2.5 dB; sens 91 dB SPL/SW/m; 4 ohms; crossover point 3,000 Hz. 10 x 37 x 11¼ in; 42 lb ea. $199 ea

SANSUI
SP-XSU 3-Way Speaker
6½-in woofer, 4½-in carbon-filled polypropylene midbass with butyl rubber surround and aluminum die-cast frame, and 1-in liquid-cooled tweeter. Features rounded baffle edges, gold-plated 5-way binding posts. Power handling 75 W cont; FR 45-23,000 Hz ± 3 dB; sens 88 dB SPL/SW/m; 8 ohms; crossover points 350 and 7,000 Hz. Oak or black finish. 11½ x 37½ x 11½ in. $480/pr

SW-57.7U Subwoofer/Satellite System
Bass module with two 6½-in woofers and two acoustic-suspension satellites each with one 3½-in polypropylene midrange and one ½-in soft-dome tweeter. Power handling 60 W cont; imp 6 ohms; FR 55-22,000 Hz; sens 88 dB SPL/SW/m; crossover points 200 and 6,000 Hz. Black textured subwoofer finish and oak or black wood-grain satel-
Type K-II 2-Way Bookshelf Speaker
Acoustic-suspension design with 8-in polypropylene woofer and 1½-in ferrofluid-cooled soft-dome tweeter. Features hand-adjusted crossover values; dual inputs allowing biwiring or biamplifying. Power handling 100 W; FR 70-20,000 Hz ± 2 dB; sens 90 dB SPL/Wm; nom imp 8 ohms; crossover point 2,700 Hz. Oak, dark oak, walnut, or black veneer finish. 11 x 18 x 9 in; 26 lb each. $465/pr K-II-v. As above, shielded. $540 ea

SONANCE
Sonance 45 2-Way In-Wall Speaker
Infinite-baffle design with 8-in polypropylene woofer and 1-in soft-dome tweeter. Features woofer with butyl-rubber surround, cast frame, and treated-fabric dust cap; tweeter with acoustic chamber and pole piece; 4th-order crossover at 2,700 Hz with 24 dB/oct slope. Power handling 100 W; FR 35-22,000 Hz ± 2dB; sens 90 dB; imp 8 ohms. Available in white ABS with cloth or metal grille. 12 x 16 x 3½ in; 12 lb. $695/pr

AIS 500 2-Way In-Wall Speaker
Angled infinite-baffle design with 4-in polypropylene woofer and 1½-in polypropylene ferrofluid tweeter on 21° lower angle and 3½-in polypropylene full-range driver on 45° upper angle. Features 6 dB/octave low-pass 12 dB/octave high-pass crossover. Power handling 75 W; FR 60-20,000 Hz ± 5 dB; sens 89 dB SPL/Wm; nom imp 6 ohms; crossover point 3,200 Hz. Waterproof version available. 12 x 16 x 3¼ in. $499/pr

PSW2 In-Wall Subwoofer
Infinite-baffle design with 8-inch dual-voice-coil driver. Features crossover with 3-position level control. Power handling 25-75 W; FR 30-125 ± 3 dB; sens 87 dB SPL/Wm; nom imp 6 ohms; crossover point 125 Hz. White with cloth or metal grilles. 12 x 16 x 3½ in; 14 lb. $460 ea

Sonance 114 2-Way In-Wall Speaker
Infinite-baffle design with 6½-in polypropylene woofer and 1-in soft-dome tweeter. Features woofer with treated-urethane surround and protective screens on basket; 2-position tweeter level control; 12 db/oct crossover at 3,000 Hz. Power range 75 W; FR 45-20,000 Hz ± 2 dB; sens 89 dB; imp 8 ohms. Available in white ABS with cloth or metal grille. 9 x 12 x 3¼ in. $399/pr

MB20 2-Way Indoor/Outdoor Speaker
Acoustic-suspension design with 6½-in polypropylene woofer and 1-in poly-carbonate-dome tweeter. Features urethane-woofer edge; weather resistance. Power handling 75 W; FR 65-20,000 Hz ± 3 dB; sens 89 dB SPL/Wm; nom imp 8 ohms. White or black nail-hanging bracket, cloth or stainless-steel grilles; white/black ABS plastic enclosure. 13 x 8¼ x 8½ in. $399/pr

Sonance 112 2-Way In-Wall Speaker
Infinite-baffle design with 6½-in polypropylene woofer and 1-in ferrofluid-damped polycarbonate tweeter. Features woofer with treated-urethane surround and protective screens on basket. Power handling 50 W; FR 55-20,000 Hz ± 3 dB; sens 90 dB; imp 8 ohms; crossover point 3,200 Hz. Available in white ABS with cloth or metal grille. 9 x 12 x 3¼ in; 8 lb. $265/pr

SPEAKERLAB
Dynastat Hybrid Electrostatic Speaker
Electrostatic hybrid design with 10½-in woofer and 48 x 10-in tweeter. Min power handling 50 W; FR 28-22,000 Hz; sens 88 dB SPL/Wm; nom imp 8 ohms; crossover point 150 Hz. Walnut or black finish. 17 x 72 x 3 in; 75 lb. $2,500/pr

ST4 3-Way Speaker
Band-pass enclosure with 8-in woofer, 5-in cone midrange, and ¾-in aluminum-dome tweeter. Min power 40 W; FR 25-20,000 Hz; sens 89 dB SPL/Wm; crossover points 150 and 3,000 Hz; nom imp 8 ohms. Oiled-oak finish with black knit grille. 10 x 37 x 12 in. $749/pr

Auriele RD50 Speaker
5 x 50% in planar dipole transducer. Min power 30 W; FR 145-18,500 Hz; sens 87 dB; crossover point 150 Hz; nom imp 4 ohms. Satin-black enamel finish. 1½ x 4½ x 5½ in; 22 lb. $499 ea

DAS/SW Subwoofer
Bass-reflex design with 6½-in woofer, 3-in dome midrange, and 1-inch metal-dome tweeter. Min power 10 W; FR 42-21,000 Hz; sens 91 dB SPL/Wm; crossover points 800 and 5,000 Hz; nom imp 8 ohms. Oiled-oak finish with black knit grille. 8 x 21 x 10. 40 lb. $398/pr

Angelus 2-Way Speaker
Mirror-imaged system with 8-inch plastic-cone mid/bass driver and 1-inch soft-dome tweeter. Features computer-optimized crossover; adjustable carpet spikes. Power handling 50-200 W; FR 35-17,500 Hz ± 3 dB; 90-15,000 Hz ± 1.5 dB; nom imp 8 ohms; crossover point 3,000 Hz. Walnut or oak finish. 21 x 46 x 10½ in. $239/pr

SPICA
Angelus 2-Way Speaker
Mirror-imaged system with 8-inch plastic-cone mid/bass driver and 1-inch soft-dome tweeter. Features computer-optimized crossover; adjustable carpet spikes. Power handling 50-200 W; FR 35-17,500 Hz ± 3 dB; 90-15,000 Hz ± 1.5 dB; nom imp 8 ohms; crossover point 3,000 Hz. Walnut or oak finish. 21 x 46 x 10½ in. $239/pr

SC-30 2-Way Bookshelf Speaker
8-inch woofer and ½-in polypropylene-cone tweeter in 1-cubic-foot sealed enclosure. Features computer-optimized 3rd-order crossover network; Straight Wire internal wiring; 5-way binding posts. Power handling 50-200 W; FR 35-33,000 Hz. Walnut or black finish. 17 x 3 x 11¼ in; 28 lb ea. $399
Build your audio/video system on a solid bass.

Velodyne subwoofers are already known as the finest in the world. Now, the same revolutionary patented technology is available in an exciting new design.

Introducing "The Foundation Series"

The new Servo F-1000, Servo F-1200, and Servo F-1500: Designed with style and elegance to fit every need.

The clean, undistorted bass of a Velodyne subwoofer provides the solid foundation on which to build a superb sound system. By reducing the rigorous demands of low bass from your main speakers, your system will have increased dynamic range and clarity that you never thought possible.

Each unit in The Foundation Series is completely self-contained with amplifier and adjustable cross-over, and upholds our commitment to quality: As long as there are people who appreciate perfection, Velodyne will continue to produce it.

Velodyne

The Bottom Line In Bass

Velodyne Acoustics, Inc.
1070 Commercial St., Suite 101 San Jose, CA 95112 408/436-7270 800/VELODYNE
In Canada: Positive Marketing 416/671-8990
In Europe: Boffi Audio Rack Hi-Fi 39-02/331-04266
### Speakers

**Synthesis, by Conrad-Johnson**

**LM 310 3-Way Speaker**
10-in woofer, 7-in midrange, and 1-in dome tweeter. FR 25-20,000 Hz ± 2 dB; Power handling 200 W cont; sens 91 dB; CR 24-20,000 Hz; imp 8 ohms. Light- or dark-oak cabinet with rounded hardwood edges. $2,595/pr

**LM 210 2-Way Speaker**
Ported design with 6-in polypropylene woofer and 1-in dome tweeter. Power handling 80 W; FR 46-20,000 Hz ± 2 dB; sens 90 dB; imp 8 ohms. Light- or dark-oak cabinet with rounded edges. 13\(\frac{1}{2}\) x 45\(\frac{1}{4}\) x 14\(\frac{1}{4}\) in; 70 lb ea. $3,250/pr

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**Tannoy**

**Model 615 3-Way Speaker**
8-in woofer, 8-in dual-concentric midrange/tweeter, and 8-in passive cone. Features 1st-order low-pass crossover, gold-plated biwiring terminals. Power handling 300 W max; FR 45-30,000 Hz ± 3 dB; sens 91 dB; nom imp 6 ohms; min imp 4 ohms; crossover points 400 and 2,500 Hz; recommended power 10-170 W. Black ash or walnut: 12\(\frac{1}{8}\) x 38 x 8\(\frac{1}{2}\) in; 46 lb. $1,195/pr

**Model 611 3-Way Speaker**
Scaled-box design with 8-in woofer and 8-in dual-concentric midrange/tweeter. Features 1st-order low-pass low-pass crossover, gold-plated biwiring terminals. Power handling 225 W max; FR 45-30,000 Hz ± 3 dB; sens 91 dB; nom imp 6 ohms; min imp 4 ohms; crossover points 400 and 2,500 Hz; recommended power 10-150 W. Black ash or walnut: 12\(\frac{1}{8}\) x 27\(\frac{1}{4}\) x 8\(\frac{1}{8}\) in; 33 lb. $799/pr

**Model 607 2-Way Bookshelf Speaker**
Ported design with 8-in woofer and 1-in dome tweeter. Features 1st-order high-pass crossover, biwiring terminals. Power handling 175 W max; FR 50-30,000 Hz ± 3 dB; sens 88 dB; nom imp 8 ohms; min imp 6 ohms; crossover point 3,000 Hz; recommended power 10-100 W. 12\(\frac{1}{8}\) x 19\(\frac{1}{8}\) x 8\(\frac{1}{8}\) in; 20 lb. $499/pr

**Model 603. As above, 5-in woofer. Power handling 120 W max; FR 60-30,000 Hz ± 3 dB; sens 86 dB; nom imp 8 ohms; min imp 4 ohms; crossover point 3,500 Hz; recommended power 10-70 W. 8\(\frac{1}{8}\) x 13 x 5 in; 9 lb. $279/pr

**Tara Labs**

**Time Passage Model 2 3-Way Speaker**
Dual-part cabinet design with 2 6\(\frac{1}{2}\)-in midwoofers and horn-loaded dome tweeter in top enclosure, two 6\(\frac{1}{2}\)-in woofers in apericlone configuration in bottom; isolated chamber for each driver, externally mounted triwirable 2nd-order crossover. Tara Labs Quantum Series wiring; gold binding posts. Marble-laminated cabinet with spiked feet. Power handling 250-250 W; sens 92 dB; FR 10 x 22 x 54 in. $2,850/pr

**SDL**

**Studio 3 2-Way Speaker**
Transmission-line bass design with 2 8-in Co- bex-cone woofers and one 1-in magnesium-alloy dome tweeter. Biampifiable and biwirable. Min power 30 W; FR 24-20,000 Hz; sens 87 dB SPL/W/m; crossover points 3,000 Hz; imp 8 ohms. Walnut or black-oak veneer finish. 12 x 37 x 16 in; 59 lb ea. $2,595/pr

**Studio 2. As above, FR 24-20,000 Hz. 11 x 37 x 16 in; 48 lb ea. $1,995/pr

**Studio 1. As Studio 2, 6\(\frac{1}{2}\)-inch Cobex woofer. FR 25-20,000 Hz; sens 86 dB SPL/W/m; 9 x 28 x 13 in; 40 lb ea. $1,495/pr

**Studio O.5 2-Way Speaker**
Transmission-line bass design with 5\(\frac{1}{2}\)-in Cobex woofer and 1-in magnesium-alloy dome tweeter. Features Kaplan voice-coil former and phase plug. Biampifiable and biwirable. Power handling 100 W cont; FR 30-20,000 Hz; sens 85 dB; crossover point 3,000 Hz; imp 6 ohms. Black woodgrain finish. 8 x 24 x 12 in. $995/pr

**Technics**

**SB-CX700 3-Way Speaker**
12-in midwoofer, 13-in passive radiator, 4-in midrange, and 1-in mica dome tweeter. Features rigid nondiffractive cabinet; vertical in-line speaker alignment; tweeter attenuator; auto-re-set thermal relay protection for tweeter. Power handling 200 W; sens 90 dB SPL/m; FR 25-20,000 Hz ±2 dB; power handling 75 W; FR 125-20,000 Hz ± 3 dB; sens 91 dB; imp 8 ohms. $2,279/pr

**CS 5 Coherent Source 5-Way Speaker**
Three 8-in woofers, one 5-in midrange, 2-in upper-midrange metal-dome drivers, and tweeter. Utilizes sloping baffle and electronic correction to achieve proper time alignment. Features synthesized 1st-order acoustic crossover system; 3-dimensional marble/polymer baffle; aluminum Kevlar or Kevlar/foam sandwich driver diaphragms. Power handling 160 W; FR 52-22,000 Hz at -10 dB; sens 87 dB SPL/W/m; imp 8 ohms; crossover point 3,000 Hz. Woodgrain-style finish. 8\(\frac{1}{8}\) x 15 x 8 in; 12 lb. $2,660/pr

**CS 2.2 Coherent Source 3-Way Speaker**
Sloping-baffle design with double-diaphragm cone woofer and metal-dome tweeter. Features magnet system woofer with heavy copper rings to reduce bass distortion, short-coil long-gap tweeter design for low distortion. Bandwidth 33-29,000 Hz + 0, -3 dB; FR 35-20,000 Hz ± 2 dB; sens 86 dB; imp 4 ohms. Amberwood or black-gloss finish. 12 x 42 x 13 in. $2,250/pr

**CS 1.2 Coherent Source 2-Way Speaker**
Sloping-baffle design with polypropylene woofer and metal-dome tweeter. Features internal bracing. Power handling 150 W cont; FR 52-18,000 Hz ± 2 dB; sens 87 dB SPL/W/m; imp 4 ohms. Amberwood or black-gloss finish with sculpted speaker grille. 11 x 37 x 11 in; 47 lb ea. $1,250/pr

**3A Audio Design**

**M3 3-Way Speaker**
Woven-carbon-fiber woofer cone with vitrified surround and soft-dome tweeter with back chamber. Power handling 120 W cont; FR 30-25,000 Hz; sens 92 dB; imp 8 ohms. $1,999 ea

**TR-100 Satellite/Subwoofer System**
8-in woofer, 4-in polypropylene midrange, and dome tweeter. Power handling 100 W/ch; FR 40-25,000 Hz. $1,299/sys

**Allegretto 2-Way Speaker**
Hyperexponential double-coated 8-in woofer and soft-dome tweeter. Medite front panel. Power handling 90 W; FR 45-25,000 Hz ± 3 dB; sens 92 dB; imp 8 ohms. $799/pr

**Andante 2-Way Speaker**
Polypropylene woofer and soft-dome tweeter. Power handling 60 W cont; FR 50-25,000 Hz ± 4 dB on axis, 50-20,000 Hz ± 4 dB at 30° off axis; sens 90 dB, distortion 0.5% at 94 dB; imp 4 ohms. Medite front panel. $599/pr

**Triad**

**System 7 Satellite/Powered-Woofer System**
Base module with 10\(\frac{1}{4}\)-in polypropylene cone woofer and 1\(\frac{1}{2}\)-W amplifier satellites with 1\(\frac{1}{4}\)-in fabric-dome tweeter and 5\(\frac{1}{4}\)-in polypropylene-cone midrange. Satellites: power handling 100 W cont; FR 110-20,000 Hz ± 2 dB; nom imp 8 ohms; crossover point 2,400 Hz; sens 90 dB SPL/W/m. Woofer: FR 28-90 Hz ± 3 dB. Black, white, and galaxy textured enamel finishes. Satellites: 5\(\frac{1}{4}\) x 10 x 5\(\frac{1}{8}\). Woofer: 13 x 13 x 1 in. $1,050/sys

**System 3 Satellite/Subwoofer System**
Base module with 8-in dual-voice-coil woofer and satellites with 4-in coated paper cone midrange and 7-in mylar-dome tweeter. Satellites: power handling 75 W; FR 125-20,000 Hz ± 3 dB; nom imp 8 ohms; crossover point 3,900 Hz; sens 87 dB SPL/W/m. Woofer: FR 43-105 Hz ± 3 dB; nom imp 4 ohms/ch; sens 87 dB SPL/W/m; power handling 75 W. Black, white, and galaxy-textured enamel finishes. Satellites: 5\(\frac{1}{4}\) x 8\(\frac{1}{4}\) x 5 in. Woofer: 12 x 16 x 12 in. $500

**Vandersteen**

**Model 3 3-Way Speaker**
10-in acoustic coupler, 8-in polycone woofer, 4\(\frac{1}{2}\)-in polycone midrange with ferrofluid cooling, and 1-in critically damped metal-alloy dual-chamber dome tweeter with ferrofluid cooling. Fast Fouri-
### Model 2GI 3-Way Speaker
- 10-in fiber acoustic coupler, 8-in polycone woofer, 4-in polypropylene midrange with ferrofluid cooling, and 4-in critically damped metal-foil dual-channel dome tweeter with ferrofluid cooling.
- Fast Fourier Transform analysis used during assembly.
- Biwirable. Power handling 140-160 W.
- FR 28-29,125 Hz; sens 95 dB SPL/Wm; min amp power 20 Wch.
- Crossover points 80, 400, 12,000 Hz; nom imp 4 ohms.
- Oiled-walnut finish; black knit grille.
- Price: $1,195/pr

### Model 1B 2-Way Speaker
- Rear slot-loading design with 8-in polycone woofer and 1-in dual-channel polymer dome tweeter.
- Features 4th-order filter; Fast Fourier Transform analysis used during all stages of assembly.
- Power handling 20-100 W; FR 38-20,000 Hz; sens 90 dB SPL/Wm; imp 6.8 ohms.
- Crossover point 2,800 Hz; 12 x 36 x 10 in; 50 lb...
- Price: $650/pr

### VESPER RESEARCH
**VSP-230 Subwoofer/Satellite System**
- Subwoofer with 8-in driver and 2 satellites each with one 3/4-in shielded midrange and one rotatable 2½-in tweeter.
- Subwoofer: power handling 25-125 W; imp 6 ohms; sens 90 dB SPL/Wm; FR 28-150 Hz; crossover handling 15.75 W.
- Subwoofer: 5½ x 20¼ x 12¼ in; 15.3 lb.
- Satellites: power handling 15-75 W; FR 28-29,125 Hz ±3 dB; crossover point 85 Hz.
- Price: $795/pr

### VELODYNE
**ULD-18 Powered Subwoofer**
- Servo-controlled long-throw 18-in driver with ⅛-in peak-to-peak linear travel, 400-W amp with level control.
- FR 15-85 Hz; 3 dB; crossover 85 Hz.
- Walnut, oak, or black finish. Cabinet: 23 x 3½ x 22 in. Amplifier: 3½ x 17 x 11 in...
- Price: $2,750 ea

### V-1500 Powered Subwoofer
- Features 3-in voice coil; 96-oz magnet; resin/fiber cone; passive high-pass crossover at 85 Hz with 6-ĐB/1Oct slope; active low-pass crossover adjustable between 40-100 Hz.
- Black vinyl woodgrain finish.
- 20-in cube; 79 lb...
- Price: $1,395 ea

### WAVESOUND
**SE 890 In-Wall Subwoofer**
- 8-in coated-paper cone driver with dual voice coils.
- Power handling 50-100 W; FR 50-500 Hz; sens 90 dB SPL/Wm; imp 8 ohms; crossover point 120 Hz.
- 10½ x 15¼ x 3½ in...
- Price: $80/pr

### VORTEX
**Vortex Series Subwoofer/Satellite System**
- Hybrid transmission-line design with 8-in mineral-filled double-throw cone plastic driver in separate triple-chamber multivented enclosure, 4-in damped plastic cone midrange and 1-in aluminum-dome tweeter mounted in minimum baffle with butyl rubber edge in MDF double-chamber enclosure.
- Computer-designed Linkwitz-Riley crossover, gold-plated binding posts. Biampifiable and biwirable.
- FR 27-25,000 Hz; sens 90 dB SPL/Wm.
- Woofer module: 8½ x 11 in; 69 lb.
- Midrange-tweeter module: 14 x 18 x 11 in; 68 lb/pr.
- Price: $2,500/pr

### VMP BY ITONE
**Super Tower/R 5-Way Speaker**
- Multiband bass design with two 15-in woofers, one 12-in woofer, two 5-in cone midranges, two 2-in ribbon tweeters, and two 1-in dome tweeters.
- Separate level controls for midrange and tweeter.
- Power handling 25-500 W; FR 65-25,000 Hz; nom imp 4 ohms; crossover point 1,500 Hz; 15 x 8 x 10 in; 26 lb...
- Price: $1,600/pr

### WHARFEDALE
**Coleridge C Class 2-Way Speaker**
- Infinite-baffle design with 8-in mineral-filled polypropylene woofer and 1-in ceramic-dome tweeter in alloy housing.
- Features cast-aluminum chassis, sandwich-mounted bass unit, down-firing flange reflex port, gold-plated power terminals.
- Power handling 30 W cont; FR 45-25,000 Hz; sens 89 dB SPL/Wm; nom 8 ohm. Black-ash and wood veneers with black-knit grille.
- 10 x 18 in; 30 lb...
- Price: $1,575/pr

### MODEL 515 C Class 2-Way Speaker
- Acoustic-suspension enclosure with 8-in woofer and 1-in ceramic dome tweeter. Power handling 100 W cont; FR 42-40,000 Hz; ±3 dB;
- $375/pr

### MODEL 410 2-Way Speaker
- Ported design with 6½-in woofer and 1-in metal-dome tweeter. Power handling 20 W cont; FR 45-25,000 Hz; sens 90 dB SPL/Wm; crossover point 3,500 Hz. Black-vinyl finish with black-knit grille. 9 x 13½ x 8 in; 26.7 lb...
- Price: $375/pr

### DELTA 50.2 2-Way Speaker
- Vented design with 8-in woofer and 4½-in polycarbonate cone in separate sealed box with cast aluminum back plate.
- Power handling 20 W cont; FR 45-25,000 Hz; sens 90 dB SPL/Wm; crossover point 5,000 Hz. Black-oak vinyl finish with black-knit grille.
- 10 x 18 x 8 in; 20.5 lb/pr...
- Price: $335/pr

### DIAMOND IV
- Ported design with 4½-in woofer and 4½-in metal-dome tweeter. Power handling 20 W cont; FR 50-25,000 Hz; sens 86 dB; nom imp 8 ohms; crossover 3,500 Hz; FR 7½ x 10½ x 7½ in...
- Price: $300/pr

### YAMAHA
**YSTS-100 Powered Subwoofer**
- Two 7-in cone woofers. Features line-input and speaker-input connections, magnetic shielding, continuously variable high-cut filter. Amplifier: 70 W into 5 ohms; FR 21-180 Hz. Black...
- Price: $429 ea

### WSX 10 2-Way In-Wall Speaker
- 6½-in woofer and 1-in tweeter. Nom input power: 80 W; dynamic input power 160 W; FR 50-25,000 Hz; sens 89 dB SPL/Wm; imp 6 ohms. Antique-white finish with paintable grille and frame. 8¼ x 12½ x 3½ in...
- Price: $500/pr

### NS-AB20 2-Way Bookshelf Speaker
- 8-in polycarbonate woofer and 1-in microlcell dome tweeter. Power handling 140 W cont avg; imp 6 ohms; sens 90 dB SPL/Wm; FR 50-22,000 Hz ± 3 dB. Solid-oak and veneer finish...
- Price: $180 ea

### NS-385 2-Way Rear Speaker
- Acoustic-suspension design with 4½-in long-throw woofer and 2-in cone tweeter. Includes mounting bracket and speaker wire. Power handling 30 W; imp 4 ohms; sens 91 dB SPL/Wm. Black finish. 9 x 9 x 3½ in; 4 lb...
- Price: $80/pr
Stereo Review’s critics choose the BEST RECORDINGS OF THE MONTH outstanding current releases

Thursday in the Park With Paul

Paul Simon looked like a pale shadow of himself at the turn of the Eighties with “One Trick Pony,” only to rise from his own ashes with “Graceland” and “The Rhythm of the Saints.” “Graceland,” especially, with its charming melding of bicultural rhythms and Tin Pan Alley familiarity, restored Simon’s reputation, showing him to be not only aging gracefully but still growing as an artist, maybe even becoming a visionary. The new two-disc set of his much-publicized live concert in New York’s Central Park one Thursday last August is as much a celebration of that as it is a musical event.

Simon and his eighteen back-up musicians—many of whom appeared on his “Graceland” tours—offer stylish and often majestic renditions of his songs, from the Simon and Garfunkel “Sound of Silence” era onward. A couple of the older songs, especially “Kodachrome,” come off as less spirited than in their original recordings. But there’s such a joie de vivre about the rest of the program, including other older songs like Me and Julio Down by the School Yard and Loves Me Like a Rock, that it hardly matters.

Simon is in friendly, silky, and occasionally wimpy choirboy voice, and his r-&#62;global band, with its odd yet cheerful synthesis of sound, is always fascinating even if a little incongruous.

What a girl who calls herself a “human trampoline” and Elvis Presley’s Graceland have in common, I’m not really sure. But when Simon hits his stride, he can suspend logic and sweet-talk even bitter enemies into joyful union. From start to finish, this is an exemplary set, and it’s one of the clearest and best-engineered live recordings in recent memory.

Alanna Nash

Paul Simon: Concert in the Park. Paul Simon (vocals, guitar); Michael Brecker (saxophone, EWI); Ray Phiri, John Selowane (guitar); other musicians. The Obvious Child; The Boy in the Bubble; She Moves On; Kodachrome; Born at the Right Time; Train in the Distance; Me and Julio Down by the School Yard; I Know What I Know; The Cool, Cool River; Bridge over Troubled Water; Proof; The Coast; Graceland; You Can Call Me Al; Still Crazy After All These Years; Loves Me Like a Rock; Diamonds on the Soles of Her Shoes; Hearts and Bones; Late in the Evening; America; The Boxer; Cecilia; The Sound of Silence. WARNER BROS. © 26737-2 two CD’s (118 min), © two cassettes 26737-4.

Barenboim Upholds Chicago’s Strauss Tradition

The Chicago Symphony Orchestra’s founder, Theodore Thomas, was a friend of Richard Strauss’s father, and Thomas and the CSO gave the U.S. premieres of several of Strauss’s tone poems. Naturally, when Strauss made his first visit to America, in 1904, the Chicago was one of the orchestras he conducted, and the Strauss tradition continued under all of Thomas’s successors as music director, most notably Fritz Reiner and Georg Solti. There could hardly be more appropriate repertory than Strauss for Daniel Barenboim to record as a symbol of continuity as he succeeds Solti on the Chicago podium and launches the great orchestra’s second century.

The new Erato release of Don Qui

xote and Don Juan with Barenboim

and Solti also matters of admiring the orchestra and the vividness with which Erato has recorded it. These are downright glorious performances of both works.

When Strauss came to America in

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1904 he had the twenty-seven-year-old Pablo Casals as soloist in his New York performance of *Don Quixote*, but in many of his subsequent performances he used the respective orchestras' principal cellists, as Barenboim does in this recording and as André Previn did in his recent Telarc recording with the Vienna Philharmonic. The Previn version, also one of the best, comes into direct competition with Barenboim's because it, too, has *Don Juan* for its coupling. Chicago's John Sharp is more than a match for his Viennese colleague, Franz Bartolomey, who plays splendidly but with somewhat less flexibility than Sharp in both color and expressiveness. Barenboim's experience in the opera house was surely an advantage, too, in realizing this wordless but nonetheless graphic drama. Every one of the variations is fully and enchantingly characterized, without the slightest hint of archness or excess, and with an exceptional sense of continuity from one episode to the next. Few performances of this work, recorded or otherwise, have realized it so fully in terms of musical drama—and even fewer in terms of the humanity at its core.

The other Chicago soloists—Charles Pikler, viola, and Samuel Magad, the concertmaster—do the team proud, as indeed every element of this remarkable ensemble does, not least the magnificent horns and Ray Still's oboe in the blazing *Don Juan*. There are other first-rate recordings of both works (including treasurable ones by the same orchestra under Reiner), and there will be others still. Right now, though, there is none more satisfying than Barenboim's.

Richard Freed


Matthew Sweet’s Good-as-It- Gets Pop

Of all the cult records of the Seventies, none stands taller than Big Star’s “Radio City,” considered by many to be the Great Lost American Pop Album. What the first Velvet Underground album was to the Sixties—a record that didn’t sell many copies but led everyone who bought it to form a band (so the story goes)—“Radio City” was to the next decade. Matthew Sweet’s newly released third album, “Girlfriend,” is a sterling example of how the influence of “Radio City” continues to the present day. “Girlfriend” is not only positively inspired by “Radio City” but arguably equal to it.

What makes both records so magical is that their pop is pristine without being polished to the point of unreality. Amid a flock of nicely composed songs there’s room for spontaneity, small mistakes, and self-expression. There’s also a healthy reverence for the purity of the guitars-and-drums tradition from the Beatles onward, and
Tchaikovsky symphony exhibits a does Rostropovich let his forces have its course; only at the final outburst eyed, tight-lipped sorrow for most of lamentoso finale comes across as dry-
from the hysteria heard in some other is a true Russian quickstep and free
ed middle section. The march -scherzo rent of melancholy in the pedal -point-
tory coda of the opening movement is clutching in its urgency. The valedic-
from start to finish, yet it
fine-grainedintensity. The
ersons plaints in "Plastic Ono Band." The next eleven songs make up an uninterrupted streak of good-as-it-gets pop. It’s hard to know where to start dispensing praise: I’ve Been Waiting, with its rainbow of rich harmonies and jubilant twelve-string guitar; You Don’t Love Me, whose crying pedal steel and rustic bounce bring to mind the Neil Young of “Har
death”, the two girl’s-name songs, Winona (as in Ryder) and Evangeline, respectively importuning and irreverent. The title track is worth cranking up, too, evolving into a hot jam in which guitarist Quine pitches a quirky fit. It all neatly segues, by way of a drum bridge, into the gorgeous, ruminate looking at the Sun. Sweet closes the CD with three tracks left over from his last album, including the uncharacteristically splenetic Does She Talk? and one of rock’s more effective antiwar songs, Holy War: "...I’m not in for killing another man/Defending my Holy Land/As if there’s a God who would understand.”
If it gets a fair and public hearing, "Girlfriend" might finally seduce America into noticing one of its most talents pop musicians. If not, we may just have another cult masterpiece on our hands. Parke Puterbaugh

MATTHEW SWEET: Girlfriend. Mat-

thee. I’d been Waiting; Girl Friend; Look-
ing at the Sun; Winona; Evangeline; Day for Night; Thought I Knew You; You Don’t Love Me; I Wanted to Tell You; Don’t Go, Your Sweet Voice; Does She Talk?; Holy War, Nothing Lasts. Zoo © 72445-
11015-2 (62 min), © 72445-110152-4.

Rostropovich’s Triumphant Homecoming

MSTISLAV ROSTROPOVICH’S new "Return to Russia” album, re-
corded at concerts on Febru-
ary 13 and 14, 1990, in the Great Hall of the Moscow Conservatory, not only con-
veys the passionate sense of occasion by way of stormy and well-deserved applause. It offers superb music-
making throughout a program ranging from the somber “Pathétique” Sym-
phony of Tchaikovsky to an insouci-
ant Gershwin number to a rousing rendition of John Len-
non’s plaints in “Plastic Ono Band.” The encores are a study in light and shade: Shostakovich’s witty orches-
tration of a Strauss polka, heartfelt string playing in “Aase’s Death” from Grieg’s Peer Gynt, a light-as-a feather run-through of Paganini’s challenging Moto Perpetuo, a properly savage treatment of “Tybalt’s Death” from Prokofiev’s Romeo and Juliet, a de-
lightfully stylish treatment of Gersh-
winn’s Walking the Dog, and then the Sousa. When the audience spontane-
ously claps along to this American march, it brings home in no uncertain terms the end of the Cold War. It is all wonderfully exhilarating and moving, and despite the inevitable hazards of live concert recording, the sound is handsome. David Hall

etuo. Prokofiev: Romeo and Juliet, Ty-
balt’s Death. Gershwin (arr. Kostelan-
SPACE AGE SPEAKER

Datawave's Breakthrough Design For Wireless Speakers Revolutionizes the Home Entertainment Industry.

TECHNOLOGICAL BREAKTHROUGH
At the 1990 Consumer Electronics Show the convention floor was buzzing with the news of Datawave's WS7 Wireless Speaker System. This product has been touted in a number of electronics magazines as one of the most exciting new products of the 90's. The heart of Datawave's breakthrough design is a patented FM technology which broadcasts music wirelessly from a small transmitter to satellite speakers. The transmitter, about the size of a paperback book, broadcasts music from virtually any sound source to a receiver built into the speaker — no speaker wires are needed!

Imagine being able to listen to music anywhere in your home or even outdoors without having to run miles of speaker wire. You can listen to any component of your stereo system (CD's, albums, cassettes, reel-to-reel, AM/FM stereo, etc) throughout your home. These speakers have their own transmitter built into the speaker cabinet, with its full range 4 inch driver mounted at the top, providing a 360 degree surround sound pattern. In addition, the speakers operate on two selectable frequencies, insuring static-free transmission throughout your home. The speakers are self-powered, with a 150 foot range through walls, providing total coverage in even the largest homes!

These state-of-the-art speakers simply tap into the signal your stereo already generates through a simple connection to any audio output or headphone jack. Since they are self-amplified they will work with any stereo system regardless of its wattage — they cannot be blown out! You can broadcast both left and right channels to utilize one speaker in a room. You can also use two transmitters with two speakers to get full stereo separation. The choice is yours, you can configure your wireless speakers to meet your needs.

STATE-OF-THE-ART DESIGN
The Datawave Speaker system is of the highest quality design. The speaker is mounted in a bookshelf-size, acoustically constructed cabinet providing a convenient design for placement in any room.

The 8.5 x 4.5 x 4.5 inch cabinet, with its full range 4 inch driver mounted at the top, provides a 360 degree surround sound pattern. In addition, the speakers operate on two selectable frequencies, insuring static-free transmission throughout your home. The speakers are self-powered, with a 150 foot range through walls, providing total coverage in even the largest homes!

These wireless speakers are totally portable, as they operate on 4 C-batteries, which will power the speakers for about three months. They can also operate with an AC adaptor. The speakers have an amazing built-in amplifier, so you can switch them on and off and control the volume independently at each speaker. Best of all, the speakers sound great, with deep, rich bass.

ENJOY MUSIC ANYWHERE
These wireless speakers are totally portable, as they operate on 4 C-batteries, which will power the speakers for about three months. They can also operate with an AC adaptor. The speakers have an amazing built-in detection circuit which will automatically cut off the speakers around your home if you turn off the stereo. Enjoy music on your patio, by the pool, in the bedroom, bathroom or while working in the garage. You can operate as many speakers as you like on one transmitter, without the trouble of running wire endlessly throughout your home. Place one or more speakers in a room, or put a speaker in every room of the house. The possibilities are endless for you to fill your home with music.

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So take advantage of Datawave's amazing new wireless technology surrounding you with music throughout your home. Your order will be shipped within 72 hours via UPS direct to you. For fastest service order by phone and use your VISA, MC, AMEX or DISC card. Please mention promotional code SR1100.

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RISK-FREE TECHNOLOGY
We think you will be amazed by these technological marvels and back them up with a risk-free 30-day trial offer. The offer is simple — try these speakers for 30 days and if they are not everything we say they are return them to us for a full refund, including shipping and handling charges. Plus, these speakers carry a full 90-day manufacturer's warranty. There is no reason that you can't begin to enjoy music anywhere in your home if you take us up on our risk-free offer.

EXCLUSIVE MANUFACTURER'S OFFER
For a limited time we are offering the Datawave WS7 speakers directly to consumers. The Datawave wireless speakers with transmitter will carry a list price of $139 when they become available in stores, but to introduce this breakthrough product to the public we are offering a special promotional price. You can order the Datawave WS7 with transmitter for $99 ($6 S&H) and, if you order more than one speaker, additional speakers are just $69 ($6 S&H). So act now and save!

WIRELESS HEADPHONE BONUS
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Performance: Pure product
Recording: Good

It’s not that Bryan Adams isn’t a nice guy, it’s the formulaic nature of his rock and the willing-to-please mush of his ballads that rankles. There’s scarcely an original idea in this new album, from the Stones-like “cowbell rock” of Is Your Momma Gonna Miss You to the Rod Stewartish bluster of Hey Honey, I’m Packin’ You In, reminiscent of Hot Legs and Stay with Me without improving on either. Adams keeps all his ducks in a row when it comes to pleasing radio-program directors and MTV. His canny commercial instincts and knack for hooking mainstream rock fans is beyond dispute, but in “Waking Up The Neighbours” he lapses into mediocrity. Vanishing, for instance, starts out promisingly but devolves into a grinding chant whose lyrics would be appropriate to “Spinal Tap II”: “If it takes all night/ To get you to fall in love...” Imagine more than an hour of such stuff. That’s what aspirins are made for. P.P.

THE BAD EXAMPLES: Bad Is Beautiful. The Bad Examples (vocals and instrumentalists); other musicians. Not Dead Yet; Statue by the Phone; Promises in the Dark; Faces in Picasso’s Notebook; and ten others. WATERDOG © WD 9101 (48 min), © WD 9101.

Performance: Winning
Recording: Good

An interesting album, like love, is where you find it, and these days that’s often on a small independent label. Case in point: the Waterdog Records debut of the Bad Examples, a youngish, Chicago-based rock-and-roll outfit with the traditional lineup of two guitars, bass, and drums and a stylistic range extending from blues-based rave-ups (Rubber Cement Man) to Squeeze-style pop rock (Ashes In My Heart).

What the Examples are doing obviously isn’t blindly original, but what raises them above the level of a superior bar band is frontman Ralph Covert, as authentic a rock-and-roll natural as you are likely to hear any time soon. Covert writes like a dream—terrific tunes with funny, intelligent, occasionally even heartbreaking lyrics about life as it is actually lived by normal human beings rather than rock stars—and he sings in a classic ravaged-but-sweet (that is, real) rock voice that gets under your skin about 2 minutes into the disc. Imagine a less dissolute Alex Chilton at the top of his form, and you’ll have an idea what a grand and glorious lineage. And any band that can rock Mick Jagger’s long-lost Memo from Turner (from the Performance soundtrack) more sinuously than the original has gone from students to masters of the genre. Nearly every song here offers something of substance worth gnawing on, and Dramarama’s eagerness and energy are infectious. If you liked groups like Mott the Hoople and Cheap Trick at their peaks, give “Vinyl” a spin. You won’t be disappointed. P.P.

DRAMARAMA: Vinyl. Dramarama (vocals and instrumentalists); Mick Taylor (guitar); other musicians. Until the Next Time; Haven’t Got a Clue; What Are We Gonna Do?; Classic Rob; Memo from Turner; and six others. CHAMELEON © 61242-2 (51 min), © 61242-4.

Performance: Sizzling
Recording: Very good

Dramarama likes the Seventies, and they bring ‘em back alive in an album that bristles with big guitars, earnest in-your-face vocals, and a pinch of glam-rock swagger. “Vinyl” is recorded cleanly, with precisely separated instruments and a close-miked sound that’ll flatten you with its presence. There’s nothing to hide, because the band has chops to burn and John Easdale’s songs stand on their own two feet. Some of them are more infectious than type-A flu, notably the barnstorming opener. Until the Next Time, a tuneful blitzkrieg of guitars in overdrive and breathless vocals, and In Quiet Rooms, whose one-note vocal and reverberant guitars come from Tom Petty by way of the Byrds—a grand and glorious lineage. And any band that can rock Mick Jagger’s long-lost Memo from Turner (from the Performance soundtrack) more sinuously than the original has gone from students to masters of the genre. Nearly every song here offers something of substance worth gnawing on, and Dramarama’s eagerness and energy are infectious. If you liked groups like Mott the Hoople and Cheap Trick at their peaks, give “Vinyl” a spin. You won’t be disappointed. P.P.

HAMMER: Too Legit to Quit. Hammer (vocals); vocal and instrumental accompaniment. This Is the Way We Roll; Brothers Hang On; Too Legit to Quit; Living in a World Like This; Tell Me (Why Can’t We Live Together); and eight others (twelve others on cassette). CAPITOL © CDP 98151-2 (71 min), © C4-98151.

Performance: Newly sophisticated
Recording: Excellent

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I'M YOUR FAN: The Songs of Leonard Cohen.
R.E.M. : First We Take Manhattan.
Ian McCulloch: Hey That's No Way to Say Goodbye.
Pixies: I Can't Forget.
That Petrol Emotion: Stories of the Street.
Lilac Time: Bird on the Wire.

Performance: Wonderful Recording: Fine

Tribute albums generally make for diverting entertainment, but only rarely do the multiple perspectives enlarge one's view of an artist to the point where they become crucial listening. "I'm Your Fan" is that happy exception, an album whose performances are consistently enlightening and deeply felt. The song-to-song flow is nothing short of a miracle, proving that the avalanche of "alternative" artists enlisted to contribute really do owe a creative debt to Leonard Cohen, the low-voiced poet whose intermittent recordings have been cherished by discriminating pop-culture literati since the late Sixties. Cohen's material is particularly tailor-made for the romantic fatalism and urbane bohemianism of the late-model outcasts assembled here. In a way, "I'm Your Fan" could pass for an album of early Velvet Underground outtakes: wry, literate, mournful, dashingly electric yet somewhat fragile, and decidedly European in temperament.

Cohen has been widely celebrated as a lyricist, but the grace and detail of his music have not always been equally lauded. Copies of his last album, "Please Don't Hurt Em," the rapper has dropped the "M.C." from his name and sampling from his bag of audio tricks. Obviously bothered by those who accused him of riding the coattails of Rick James, whose Super Freak (Part I) supplied the devastating hook for the mega-hit U Can't Touch This, Hammer has come up with his own music this time. (All but Brothers Hang On, which takes its main riff from the Temptations' Papa Was a Rollin' Stone, are originals co-written by Hammer.) He's also brought a new sophistication to the sound of his rap, working overtime to jam as many sounds into each cut as he can. At times you can hear him doing the main rap as well as a softer counter-rap, along with back-up singers, choirs, full horn sections, and even, in one cut, a flute solo.

As before, Hammer's primary concerns are social justice and self-help, with a little boasting tossed in. The overall musical and political effect isn't that far from latter-day Marvin Gaye, particularly because of the sweet-voiced men who croon over many of the raps. "Too Legit to Quit" may sound a little old-fashioned for those hip-hop fans who like their music on the cutting edge, but for musical sweat equity no one else can touch this.

R.G.
So Long Marianne (James). He can be a wickedly funny writer—check out Don't Go Home with Your Head-0n (David McComb and Adam Peters) and Tower of Song (in two versions, one by Robert Forster and one by Nick Cave and the Bad Seeds). And certain of his songs readily lend themselves to rock-band treatments, like R.E.M.'s corrosive version of First We Take Manhattan and the Pixies' fibrillating electric drone in I Can't Forget. "I'm Your Fan" is a triumph that goes far beyond tributing, bringing the words and music of Leonard Cohen into the Nineties with electricity and passion.

MICHAEL JACKSON: Dangerous. Michael Jackson (vocals); other musicians. Jam; Why You Wanna Trip on Me; In the Closet; She Drives Me Wild; Remember the Time; Can't Let Her Get Away; Heal the World; Will You Be There; and six others. Epic © EK 45400 (77 min), © ET 45400.

Performance: Forced
Recording: Good

Time and pop music wait for no man—not even Michael Jackson. A lot has happened in the r- & b-world since he got "Bad" in 1987. Rap has gone mainstream in a major way and, along the way, spawned New Jack Swing. Of course, Jackson knows that, so to bring himself hip-hopping into the Nineties he hired Teddy Riley, the New Jack Swingest producer around. "Dangerous" includes seven Riley-Jackson collaborations, all of which go heavy on the rhythms and light on the melodies. Of these, only Jam, In the Closet, and the title cut manage to be more than catchy grooves—even Michael Jackson cannot sing a melody that doesn't exist. When his soaring falsetto whips into the liberally sultry "Gonna Move," you can feel the sweet power of New Jack Swing, but for the most part it feels like his talents have been grafted onto the newer style.

Other songs sound much more natural, mainly because they're close relatives of earlier Jackson songs. Heal the World recycles the sentiment, as well as a line or two, of We Are the World, and the luxurious funk-pop of Who Is It would have been right at home in "Bad" or "Thriller." Two gospel-heavy numbers, Will You Be There and Keep the Faith, have moments of genuine feeling, but they seem out of place alongside the eight songs that he has, sometimes naively, sometimes raunchily, with romance and sex. This confusion of attitudes reinforces the impression that "Dangerous" is the result of obsessive calculations—a reflection of what Jackson thinks we want rather than what he feels. Even though the album has strong moments, like the hit Black or White, on the whole it seems forced.

THE KINKS: Did Ya. The Kinks (vocals and instrumentalists). Did Ya; Gotta Move; Days; New World; Look Through Any Doorway. Columbia © 44K 74050 (18 min).

Performance: Exciting
Recording: Fine

If memory serves, this latest effort by the Kinks—the third or fourth greatest rock- and-roll band of all time—is their first EP since the mid-Sixties. More to the point, it's also the most interesting thing they've released in what seems like ages. It's not quite top-shelf Kinks, perhaps, but at least every note sounds like the work of a band excited about making music. And, believe it or not, the standout track is by Dave (I!) Davies, who hadn't written a memorable song since 1970; his new Look Through Any Doorway is an ingratiating bit of melancholia in a style splitting the difference between the Kinks' original crunch-guitar and folk-rock modes. Meanwhile, big brother Ray Davies weighs in with a remake of his obscure-in-America early-Seventies hit Days, improving on the original sonically and emotionally. He also belts out a concert version of one of the group's best early rave-ups, Gotta Move, that's the hottest live Kinks track ever to appear commercially. Earlier, the title song finds him in a political mood, which doesn't stop him from crafting one of his cutest music-hall rockers (complete with Sunny Afternoon harmonies), and even his throwaway dance track New World grabs your attention and holds it.

All in all, then, "Did Ya" is a very pleasant surprise. If the band's next full-length album displays the level of energy and inspiration on display here, then 1992 could be a better year than anybody around my house anticipated.

S.S.

PIXIES: Trompe le Monde. Pixies (vocals and instrumentalists); other musicians. Trompe le Monde; Planet of Sound; Alec Eiffel; The Sad Punk; Head On; U-Mass; Palace of Brine; and eight others. Elektra © 61118-2 (39 min), © 61118-4.

Performance: Erratic
Recording: Good

The Pixies can be fun, but they can also be work. Take the song U-Mass in this new album, for example. You have to listen to lead vocalist Black Francis meander through various oblique ruminations about the obvious effects of college life—kids stop being kids, they develop political thoughts, and they work out their sexuality—before he begins to screech "It's educational" over and over and over. It's a wonderfully ob sesive punch line to a tedious, murky joke. Listening to "Trompe le Monde" is pretty much just like that: crisp moments of rage, wit, and metaphysics connected by murky imagery and scrambled syntax. Sometimes the slashing guitars and charging rhythm section make the bumpy moments worth the effort, but often they don't.

R.G.

(Continued on page 132)
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Warren Zevon

The new album "Mr. Bad Example" deserves to restore Warren Zevon's popularity to the level of his early career peak, "Excitable Boy" in the late Seventies. It's got a cabaret of quirky characters equal to that album's rogue's gallery—everything from greedy scoundrels to square-peg misfits. Zevon relates their tales with the dry, brittle wit of someone who's seen it all, yet he stops short of condescension. There's the crack-addled character in Angel Dressed in Black who's wondering why his punkette girl friend hasn't come home but is too stupefied and comfy to go out looking for her. The title song is a slyly jive about a globe-trotting reprobate who's run down every scam in the book to turn a profit. Zevon's jaunty keyboards help give the song the antic dry, brittle wit of someone who's seen it all, yet he stops short of condescension. There's the crack-addled character in Angel Dressed in Black who's wondering why his punkette girl friend hasn't come home but is too stupefied and comfy to go out looking for her. The title song is a slyly jive about a globe-trotting reprobate who's run down every scam in the book to turn a profit. Zevon's jaunty keyboards help give the song the antic dry, brittle wit of someone who's seen it all, yet he stops short of condescension. There's the crack-addled character in Angel Dressed in Black who's wondering why his punkette girl friend hasn't come home but is too stupefied and comfy to go out looking for her. The title song is a slyly jive about a globe-trotting reprobate who's run down every scam in the book to turn a profit. Zevon's jaunty keyboards help give the song the antic dry, brittle wit of someone who's seen it all, yet he stops short of condescension. There's the crack-addled character in Angel Dressed in Black who's wondering why his punkette girl friend hasn't come home but is too stupefied and comfy to go out looking for her. The title song is a slyly jive about a globe-trotting reprobate who's run down every scam in the book to turn a profit. Zevon's jaunty keyboards help give the song the antic dry, brittle wit of someone who's seen it all, yet he stops short of condescension. There's the crack-addled character in Angel Dressed in Black who's wondering why his punkette girl friend hasn't come home but is too stupefied and comfy to go out looking for her. The title song is a slyly jive about a globe-trotting reprobate who's run down every scam in the book to turn a profit. Zevon's jaunty keyboards help give the song the antic dry, brittle wit of someone who's seen it all, yet he stops short of condescension. There's the crack-addled character in Angel Dressed in Black who's wondering why his punkette girl friend hasn't come home but is too stupefied and comfy to go out looking for her. The title song is a slyly jive about a globe-trotting reprobate who's run down every scam in the book to turn a profit. Zevon's jaunty keyboards help give the song the antic dry, brittle wit of someone who's seen it all, yet he stops short of condescension. There's the crack-addled character in Angel Dressed in Black who's wondering why his punkette girl friend hasn't come home but is too stupefied and comfy to go out looking for her. The title song is a slyly jive about a globe-trotting reprobate who's run down every scam in the book to turn a profit. Zevon's jaunty keyboards help give the song the antic dry, brittle wit of someone who's seen it all, yet he stops short of condescension. There's the crack-addled character in Angel Dressed in Black who's wondering why his punkette girl friend hasn't come home but is too stupefied and comfy to go out looking for her. The title song is a slyly jive about a globe-trotting reprobate who's run down every scam in the book to turn a profit. Zevon's jaunty keyboards help give the song the antic dry, brittle wit of someone who's seen it all, yet he stops short of condescension. There's the crack-addled character in Angel Dressed in Black who's wondering why his punkette girl friend hasn't come home but is too stupefied and comfy to go out looking for her. The title song is a slyly jive about a globe-trotting reprobate who's run down every scam in the book to turn a profit. Zevon's jaunty keyboards help give the song the antic dry, brittle wit of someone who's seen it all, yet he stops short of condescension. There's the crack-addled character in Angel Dressed in Black who's wondering why his punkette girl friend hasn't come home but is too stupefied and comfy to go out looking for her. The title song is a slyly jive about a globe-trotting reprobate who's run down every scam in the book to turn a profit. Zevon's jaunty keyboards help give the song the anti...
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essential musical force because Chuck D has both a fiercely moral view of society and a compelling way of phrasing it. His voice cannot be ignored. R.G.

KEITH RICHARDS AND THE X-PENSIVE WINOS: Live at the Hollywood Palladium December 15, 1988. Keith Richards (guitar, vocals); Sarah Dash (vocals); other musicians. Take It So Hard; How I Wish; Stood You Up; Too Rude; Make No Mistake; Time Is on My Side; and seven others. VIRGIN © 91808-2 (64 min), © 91808-4.

Performance: Ragged but right
Recording: Good

This live memento of the 1988 tour by Keith Richards and the X-pensive Winos (in support of his "Talk Is Cheap" album) proves which Rolling Stone is the true repository of the rock-and-roll spirit. As a frontman, Richards doesn't satisfy set it is, from a modest rock-and-roll master who, you'll recall, didn't really want to make a solo album in the first place. Hats off, Keef. P.P.

PAUL SIMON: Concert in the Park (see Best of the Month, page 121)

MATTHEW SWEET: Girlfriend (see Best of the Month, page 122)


Performance: Inspired
Recording: Very good

Since 1967, Elton John and Bernie Taupin have sat in two rooms miles apart and turned out some of the most popular melodies and lyrics in rock-and-roll. As tribute to that collaboration, sixteen groups and artists have recorded their favorite songs by the duo. The album not only holds up as terrific entertainment but in several cases makes the material come alive in a new way. Kate Bush's version of Rocket Man, for instance, uses her ethereal, otherworldly whisper to bring out the loneliness and fear an astronaut in space might readily experience. The Who's Saturday Night's Alright (for Fighting) sounds much more menacing and believable, and less campy, than John's, if just as jumpy. And Joe Cocker's exquisite, tortured vocal in Sorry Seems to Be the Hardest Word reveals the depth of Taupin's writing. Some of the singers are perfect matches to the material—Oleta Adams in the gospel-tinged Don't Let the Sun Go Down on Me; Tina Turner in the Bitch Is Back—though Hall and Oates doing Philadelphia Freedom probably sounded better as an idea than it sounds on disc. Rod Stewart and Bruce Hornsby don't manage to illuminate Your Song and Madman Across the Water, respectively, any more than John did, but the lyrics may be just too obscure. More often than not, though, "Two Rooms" is surprisingly stirring and involving—and enormous good fun. A.N.

U2: Achtung Baby. U2 (vocals and instruments). Zoo Station; Even Better Than the Real Thing; One; Until the End of the World; Who's Gonna Ride Your Wild Horses; So Cruel; and six others. ISLAND © 314-510 347-2 (55 min), © 314-510 347-4.

Performance: Who?
Recording: Poor

No, your stereo isn't broken, nor did the record company accidentally slip the long-awaited CD version of Lou Reed's "Metal Machine Music" (with bonus tracks!) into the wrong jewel box. That distorted noise cracking out of your speakers is U2's five-years-in-the-making new album, the perplexingly titled "Achtung Baby." In its murky experimentalism and casually desperate attempts at plumbing for the unexpected, this is the sound of a band on the run. While some might laud its daring, I say that it's simply not very good.

The first minute of the opener, Zoo Station, will have you on the phone to the hi-fi repair shop. The Edge executes snaky, slalom-run guitar riffs and is answered by hyperdistorted bass splats. Bono's heavily treated vocals sound like he's shouting through a cardboard paper-towel tube. It's hard to decipher what he's singing—or to want to make the effort. This is U2 reflected off a funhouse mirror, playing around with sounds and disfiguring songs out of a reckless desire to deconstruct their music. While oblique strategies and spontaneous creation might serve some artists well, it makes U2 sound indifferent at best and incompetent at worst.

Moments of "Joshua Tree"-style yearning peep through the surreal scrim, as in Tryin' to Throw Your Arms Around the World, but they are faint, second-hand echoes drowned out by the histrionic context. That the band may be pushing toward something new and worthwhile is suggested by the r- &- b inflected chants and kinetic rhythm guitar of Mysterious Ways and Even Better Than the Real Thing, but for the most part "Achtung Baby" is a bomb that misses its target from a band whose sense of itself has been ruptured by a suffocating fame. Let's hope it's a temporary condition. P.P.

Jazz

BILLIE HOLIDAY: The Legacy, 1933-1958. Billie Holiday (vocals); Roy Eldridge, Bunny Berigan, others (trumpet); Vic Dickenson, Orbie Green (trombone); Lester Young, Ben Webster; Chu Berry, Artie Shaw, Benny Goodman, others (reeds); Teddy Wilson, Kenny Kersey, Claude Thornhill (piano); Milt Hinton, John Kirby (bass); Cozy Cole, Kenny Clarke, Jo Jones, J. C. Heard (drums); other musicians. Your Mother's Son-in-Law; What a Little Moonlight Can Do; Billie's Blues; Suddie Tale; Miss Brown to You; I Wished on the Moon; Why Was I Born?; Moanin' Low; Easy Living; They Can't Take That Away from Me; Trav'lin All Alone; He's Funny That Way; My Man; Jeepers Creepers; and fifty-six others. COLUMBIA/LEGACY © C3T 47724 three cassettes. C3T 47724 three cassettes.

BILLIE HOLIDAY: The Original Decca Recordings, 1944-1950. Billie Holiday (vocals); vocal and instrumental accompaniment. Easy Living; Solitude; WEEP No More; My Man; Them There Eyes two
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The Pop Boxes

S o many boxes, so little time (and money). The success of 1990's multidisc/cassette Led Zeppelin and Robert Johnson packages has inspired a bumper crop of new boxed sets devoted to artists all over the pop spectrum. These compilations—all containing three or four albums' worth of music—aren't for beginners. If you're merely curious about the musicians, you're better off with a greatest-hits or best-of album if you can find one. True fans, however, will probably buy these sets no matter what. And now, without further remastering, here are the boxes of winter 1991-1992.  

AEROSMITH: Pandora's Box.  
Devotees of these strutting hard rockers will cherish the 1966 track by lead yowler Steven Tyler, and they'll dote on the snippets of Aerosmith jams that later turned into full-fledged songs. But compared with the group's kick-butt classics, the previously unheard material in "Pandora's Box" seems like a bargain-basement clearance, with a few real finds among a lot of dross. (Columbia, 3 CD's or cassettes; 52 tracks, 22 previously unreleased)

JEFF BECK: Beckology.  
This survey touches all the right bases, from Beck's early group the Tridents to his original deification with the Yardbirds to the bands he led in the Seventies. The early work is astonishing. Beck shows explosive technique and enough imagination for several careers. Later on, however, he descends into flashy, less satisfying rock-jazz fusion. (Epic, 3 CD's or cassettes; 55 tracks, 5 previously unreleased)

CARPENTERS: From the Top.  
Do you really want to hear this glossy duo singing a commercial for Japanese soda pop? Or Karen Carpenter covering Paul Simon's Still Crazy After All These Years? Sure, you've got all the Top 10 chartbusters here, but only seven of their sixteen lesser hits. "From the Top" is a curious tribute. (A&M, 4 CD's or cassettes; 67 tracks, 20 previously unreleased)

RAY CHARLES: The Birth of Soul.  
Brother Ray's fusion of blues, r-&-b, gospel, and jazz in the Fifties laid the foundation for soul music, but this is the first decent collection of his formative work to come along for quite a while. "The Birth of Soul" is a must for anyone who wants to understand the history of black pop. (Atlantic, 3 CD's or cassettes; 53 tracks)

CHICAGO: Group Portrait.  
Yes, they're the most successful pop horn band ever, but as time lurched on, Chicago became less jazzy and more gooey. If you liked them both early and late, then maybe you really do want "Group Portrait" instead of one of their previous greatest-hits albums. (Columbia, 4 CD's or cassettes; 73 tracks, 1 previously unreleased)

THE CLASH: On Broadway.  
A respectful retrospective for these surely iconoclasts? Seems incongruous, but here we have the unified field theory of the Clash, putting tracks that were replaced on American versions of their albums back in their proper chronological order. "On Broadway," shows how powerful and entertaining their politicized pop really was. (Epic, 3 CD's or cassettes; 63 tracks, 8 previously unreleased)

THE PATSY CLINE COLLECTION.  
You may think that 4 hours and 25 minutes of Patsy Cline is a lot. You're right. But this remarkably strong set showcases what may be the all-time greatest voice in country music—capable of growling sass as well as throbbing tenderness. (MCA, 4 CD's or cassettes; 104 tracks, 10 previously unreleased)

CROSBY, STILLS & NASH: CSN.  
Beginning with the point where David Crosby, Stephen Stills, and Graham Nash first began to work as a trio, "CSN" traces their subsequent music both together and apart. The set includes their solo and duo songs as well as Crosby, Stills, Nash, and Young tunes. Unfortunately, because C, S, and N have become less compelling over the years, "CSN" goes from wonderful (the first two volumes) to a real snooze (the last two). (Atlantic, 4 CD's or cassettes; 77 tracks, 25 previously unreleased)

ANTOINE "FATS" DOMINO: They Call Me the Fat Man.  
With a career as big as the man himself, it's a wonder that they could fit this retrospective onto only four discs. Fats Domino had thirty-nine Top 10 r-&-b hits and eleven Top 10 pop hits during the Fifties, and this set has them all. Even better, the first volume shows Domino working through a variety of New Orleans influences before settling into his trademark easy-rolling style. (EMI, 4 CD's or cassettes; 100 tracks, 1 previously unreleased)

HOWLIN' WOLF: The Chess Box.  
Oo-ooo-ooh! Here's another terrific box from the Chess vaults, this one devoted to gravel-voiced Chicago blues great Howlin' Wolf. Unlike nearly every other box on this list, this one doesn't waste a track. Blues people (and everybody else) should put down this magazine and head to the store right now.
THE ESSENTIAL KING CRIMSON:
Frame by Frame.
King Crimson made its uncompromising art through a variety of personnel changes. All the lineups included Robert Fripp, who painstakingly compiled this box. Including an entire volume of live performances may not have been the commercial thing to do, but it must have made aesthetic sense to Fripp. (Editions EG/Caroline, 4 CDS or cassettes; 45 tracks, 9 previously unreleased)

LYNYRD SKYNYRD:
The Lynyrd Skynyrd catalog is a mite picked over by now, but "Lynyrd Skynyrd" manages to unearth some real treasures, including a demo of Free Bird and a blistering three-guitar remake of Jimmie Rogers' T for Texas. (MCA, 3 CD's or cassettes; 47 tracks, 15 previously unreleased)

THE MONKEES:
Listen to the Band.
Some of this is darned cute, but "Listen to the Band" just goes on... and on... and on... (Rhino, 4 CD's or cassettes; 80 tracks, 15 previously unreleased)

BARBRA STREISAND:
Just for the Record... .
Compiled by Streisand herself, this set lists all of her awards and even includes stuff like the audio from an Oscar acceptance speech, which gives it the appearance of a vanity project. But it does provide a sumptuous overview of her crystalline pop talents (though she's skipped over most of her rockish efforts). This year, people who like Streisand are the luckiest people in the world. (Columbia, 4 CD's or cassettes; 90 tracks, 67 previously unreleased)

PHIL SPECTOR:
Producer Phil Spector brought his larger-than-life pop orchestrations to a variety of singers, from the Crystals to Ike and Tina Turner to the Righteous Brothers, and now his orgiastic approach to sonics has been documented for posterity. Included in this set is the best pop Christmas album of all time, Spector's (Columbia, 4 CD's or cassettes; 73 tracks, 12 previously unreleased)

T. REX:
The Essential Collection.
Glam-rock lovers will eat this up, but hey, how "essential" can this package be if it doesn't have the single most essential T. Rex song, Bang a Gong (Get It On)? (Relativity, 3 CD's or cassettes; 40 tracks, 8 previously unreleased)
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BACH: Brandenburg Concertos Nos. 1-6 (BWV 1046-1051). Marieke Blankstijn (violin); Thierry Fischer (flute); Douglas Boyd (oboe); Mark Bennett (trumpet); Ian Watson (harpsichord); Chamber Orchestra of Europe. Deutsche Grammophon ® 431 660-2 two discs (95 min).

Performance: Exuberant
Recording: Lively

In its ten years of existence, the Chamber Orchestra of Europe has challenged a lot of traditional European assumptions, crossing borders to recruit young musicians, often performing without a conductor or music director, and depending on ticket sales, recording contracts, and corporate sponsorship rather than government support. The latest in the ensemble's current, and quite successful, series on Deutsche Grammophon shows the best side of its fresh approach—and also a few problems.

These recordings of the "Brandenburg" Concertos—made in Ferrara, Italy, and Aldeburgh, England—have a lot of vitality, even exuberance. But they show real character in only one place: Ian Watson's cheeky harpsichord solo in No. 5. For the rest, this is consensus playing—the best of its kind, but almost too breezy and easygoing. Do I hear someone argue that this music was not originally conducted? True enough, but eighteenth-century music was performed by ensembles that played and rehearsed together endlessly, year in and year out, usually under the composer's own direction and nearly always in a very stable and known tradition. These are not such performances, nor do they evoke true eighteenth-century practice. They are lively, contemporary, pan-European readings and recordings that give pleasure but do not penetrate very deeply beneath the surface.

E.S.

BARBER: Ballade (see GERSHWIN)


Performance: Good
Recording: Very good

This most terse of the late Bruckner symphonies fares better with Jesús López-Cobos and the Cincinnati Symphony than did the Seventh in their early 1990 recording. The playing is more polished, and there is a steadier flow to the music as a whole. Particularly felicitous is the steady maintenance throughout the first movement of the rhythmical figure that opens the score and subtly dominates the entire work (I would have wished, however, for a more pointed final chord). The slow movement emerges here as darkly poignant, if not quite as eloquent as in Günter Wand's 1988 live recording from Hamburg. The bluff scherzo comes off very well indeed, notably in the trio section with its bucolic horn fanfares. The finale, with its nervous brass interjections and episodes of relentless forward movement, is convincingly set forth, and the whole production benefits from recorded sound that is both full-bodied and effective in its imaging.

D.H.

COPLAND: El Sálón México; Piano Blues No. 3 (see GERSHWIN)


Performance: Radiant
Recording: Excellent

Fauré's Requiem is one of the best examples of his music: at once intellectual and deeply felt, melodically inventive, economical of expression, and supremely elegant. Written piecemeal over a number of years and incorporating various occasional compositions, it was first performed as an entity in 1894. Fauré said that it was composed to express his feelings about death as a deliverance and a hope for happiness. Every bar of music sustains his intent; only the "Libera me", evoking the Day of Judgment, interrupts the overall serenity, and then only briefly. The final "In paradisum" approaches the sublime.

The performance here is, indeed, radiant—imbued with purity of tone, precision of phrasing, exactness of execution, and, most important, conviction on the part of all concerned. The timbres of Gáele Le Roy and François Le Roux are exactly right, and their unaffected delivery of the "Pie Jéru" and "Libera me," respectively, are singularly affecting. The chorus sings in exemplary fashion, and the orchestra likewise contributes a superior performance under the obviously dedicated direction of Emmanuel Krivine.

The orchestral filler pieces are also well done. The Cantique de Jean Racine, written when Fauré was eighteen, already bears his signature, and the Masques et Bergamasques, a delightful little suite, is played with stylish grace. Warmly recommended.

R.A.

Peter Jablonski


Performance: Stunning soloist
Recording: Very good

This is a very Russian Romantic performance of Gershwin's very American Concerto in F. Peter Jablonski is a brilliant young pianist, but the performance seems overly dominated by whatever Rachmaninoffs Vladimir Ashkenazy can find in the score. They are there, of course. But, alas, the music's rhythmic edge is lost in the shuffle.

That these choices are not Jablonski's can be inferred from his brilliant performance of the solos in the concerto. But things are even clearer in the solo piano music, especially the stunning performance of Leonard Bernstein's transcription of Copland's El Sálón México. This hair-raising arrangement, a completely fresh and dynamic look at familiar music, deserves to be better known. As set forth here, it has even more thrust and excitement than the orchestral original.

The Copland piano blues, the Gershwin preludes, and the Barber ballade (the only nonjazzy piece) fare equally well. Jablonski's talent is not purely in his steel fingers; he has a very engaging
Harnoncourt's Beethoven

Nikolaus Harnoncourt always has a surprise or two for us, but never one simply calculated to be different for the sake of difference. In his new Teldec set of the Beethoven symphonies there is as much that is comfortable and reassuring as there is that is startling. With his own ensemble, the Concentus Musicus Wien. Harnoncourt was the most influential pioneer of the original-instruments and authenticity movement in performing Baroque and early Classical music; yet when he got around to recording Mozart and Haydn symphonies he didn't use original instruments, or even a chamber orchestra, but conducted the Amsterdam Concertgebouw Orchestra. His Beethoven cycle is with the Chamber Orchestra of Europe, and the only concession to period instruments is the use of natural trumpets, which Harnoncourt says he chose both for their symbolic effect and for the practical consideration that they can "blare out" in Beethoven's numerous fanfare passages without overriding the orchestra the way modern trumpets do.

The Chamber Orchestra of Europe was a happy choice. This wonderful aggregation of young players responds with a rare but consistent blend of enthusiasm, brilliance, and resiliency, making for the most effective and appropriate kind of envelopment. The performances were recorded live at concerts in Graz in the summers of 1990 and 1991. There is no noticeable coughing, and no distracting applause.

Harnoncourt, whom I had never heard in Beethoven before, strikes me as more strongly and consistently persuasive in this music than in anything else I have heard from him. Just about everything—every choice of tempo, every shaping of a phrase, every balance between voices—seems uncontrivedly right.

A few specific observations: Repeats are taken, and they are made to seem indispensable to the design of the respective works. The First Symphony is an enticing beginning: pointed, brisk, elegant, yet affectionate. Only in the concluding gestures for the winds might I have wished for a little more character. The Second is sheer enchantment from first note to last, one of the set's special glories. The opening of the "Eroica" is a little matter-of-fact, but once launched it is clearly an outstanding account of the work, with unlabored grandeur in the Funeral March, an especially brilliant scherzo, and exceptional momentum throughout (though the horns that make the scherzo so brilliant might have opened up a bit more in the finale). The Fourth is fiery yet elegant; I can imagine some listeners finding the slow movement a little unyielding, but the underlying vitality makes for a fine sense of flow. The approach in No. 5 is no-nonsense but certainly not uninvolved: There is a fine dramatic tension, generated from the inside rather than laid on at surface level, with an unerring sense of proportion. The "Pastoral" is surprisingly leisurely—and downright radiant, truly lovely without a hint of coyness. The Seventh, too, is taken broadly, but with verve; the natural trumpets tell, and so do the horns. Humor takes care of itself in a neat, deadpan way in the crisp, pointed Symphony No. 8.

The Ninth is a true culmination, with superb momentum and textures. I could have wished for a tad more force from the men of the chorus in the "Seid umschlungen" episode, but the only real disappointments were the solo singers. Both of the women are undistinguished, and the tenor, Rudolf Schasching, lost me with his starry-eyed breathlessness. There is little else to fault, though, and a great deal to celebrate. Robert Holl is a model of dignity, vitality, and conviction in his recitative, and Peter Richards certainly deserves the printed credit for his horn solos.

Teldec has come through with exemplary recordings whose clarity splendidly points up the clarity of the performances themselves as well as their warmth and color. Those who feel there is no compelling reason to buy a "integral" set of the Beethoven symphonies owe it to themselves to hear this one.

Richard Freed

BEETHOVEN: Symphonies Nos. 1-9. Charlotte Margiono (soprano); Birgit Remmert (contralto); Rudolf Schasching (tenor); Robert Holl (bass); Arnold Schoenberg Chor; Chamber Orchestra of Europe, Nikolaus Harnoncourt cond. TELDEC © 2292-46452-2 five CD's (358 min).


Performance: Con amore
Recording: Very good

Howard Hanson composed his Fourth Symphony in 1943, as a Requiem for his father. It marks a sharp departure from the uninhibited, even melodramatic, emotionality of his Second and Third Symphonies. The music is intense and to the point, orchestrated with a master hand, and telling in its impact, with a highly effective use of passing dissonance, especially in the finale. Gerard Schwarz stresses the work's broadly lyrical element, but without in any way impairing the pulse and rhythmic vitality of the music. The same is true of his readings of the Serenade and Pastoral for solo winds plus strings, both recorded in New York with fine work from the principals.

Hanson's setting of the funeral scene from Beowulf is a remarkable achievement for a composer under thirty. The choral writing is relatively uncomplicated but highly effective, and the orchestral treatment would befit a movie epic. The composer's 1959 Mercury recording is a mite tauter than Schwarz's, with an acoustic to match. But the Seattle chorus is stronger than Hanson's was, and the new recording enhances the score with its effective depth imaging, as in the trumpet fanfares preceding the entry of the chorus.

The opera Merry Mount, after a Hawthorne tale, has never been a favorite of mine, and much of what I don't like about it can be heard in the four-movement orchestral suite. The music has all of the kitsch of the Second Symphony but little of the robust romanticism from which that work takes its name. Still, the performance here is a fine one, and the sonatas are resplendent, as they are throughout the CD.

D.H.

MOZART: Piano Concertos No. 21, in C Major (K. 467), and No. 27, in B-flat Major (K. 595). Murray Perahia (piano); Chamber Orchestra of Europe, Perahia cond. SONY CLASSICAL © SK 46485 (57 min).

Performance: Elegant
Recording: Too close

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about twenty-five years ago Daniel Barenboim began recording all the Mozart piano concertos for Angel/EMI, and another fifteen years later Murray Perahia began his similar cycle for what was then Columbia Records. Both pianists conducted the English Chamber Orchestra from the keyboard, and both cycles were fairly distinguished. Now, for the same house, since renamed Sony Classical, Perahia has remade Nos. 21 and 27 with the Chamber Orchestra of Europe, and Barenboim has remade the last eight concertos with the Berlin Philharmonic in a four-disc set for Teldec.

The orchestral contribution strikes me as a little more interesting in both new packages than in the earlier ones. In Perahia’s case this may be owing to his additional years of experience, not merely as a conductor but in the dual role, and the Chamber Orchestra of Europe responds with stylistic animation. Perahia’s tempos are well chosen—it is especially refreshing to hear the much abused andante of the C Major without its bathetic encrustations; it has an elegant pulse here, as everything does in both concertos.

The recording itself, however, lets the performances down. While it is in other respects crisp and well balanced, the piano, in its very close focus, tends to be overreverberant, suggesting at times the organ-tuned Sarastro, tremendous in his hectic activity. An unbroken momentum binds each act into a coherent and fluid whole, and his overall view is now mellower and wiser. At only one juncture—between movements—does the old drummer emerge, making the scene fast and charmless.

The production rests, in part, on young and unfamiliar singers. Tenor Uwe Heilmann is a manly, firm-toned Tamino who sings with an unaffected, graceful lyricism. Without challenging such formidable recorded predecessors as Gundula Janowitz, Lucia Popp, or Evelyn Lear, Ruth Ziesak brings warmth and tonal purity to Pamina’s music. Michael Kraus is a hearty, vital Papageno in the idiomatic Viennese tradition, managing to rein in a slightly unfocused voice of Wagnerian potential.

Among the singers of international renown, Kurt Moll renders his familiar organ-toned Sarastro, tremendous in his first aria, merely very good in the second. Sumi Jo sings the fiendish music of the Queen of the Night purely and accurately, though not for a moment does she suggest an intimidating character. Andreas Schmidt is a smooth and dignified Speaker, and Heinz Zednik’s Monostatos is short on voice but long on expertise. London’s technical production realizes the various sound effects with unexaggerated realism. A generous amount of dialogue has been retained, yet the opera is captured on only two discs. Even in a crowded field, this new set should hold its own.

These two rarely heard violin concertos require an interpreter with a thoroughly adult technique but a certain unjudged openness that many performers lose when they reach maturity. The twenty-year-old Israeli-American violinist Gil Shaham is at just the right age for the music’s fearsome combination of steep technical demands, romantic posturing, and almost naive thematic simplicity. Though Shaham hasn’t a particularly individual tone quality or style—perhaps an unfair expectation of a young musician—he is far more than merely a flashy technician. He seems incapable of doing anything in the least bit unmusical, from the lushness of his tone to the lyrical sweep of his phrasing.

There’s a wonderful excitement in Shaham’s music-making here—it’s so infectious that he makes you like the music even if you don’t admire it. He gives a special lift to the slow movement of the Saint-Saëns and a slight air of mystery to the adagio of the Paganini; he even carries off the Paganini’s rustic, folk-like finale. Giuseppe Sinopoli is a surprising-sounding accompanist in this repertoire, and the engineering allows Shaham to be heard clearly.

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Von Otter, Hendricks, Te Kanawa: stars of *Der Rosenkavalier*

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Performance: Somewhat low-energy Recording: Spacious to a fault

This latest recording of Shostakovich's masterpiece and moving Tenth Symphony lacks both the bitter bleakness of Herbert von Karajan's two recordings for Deutsche Grammophon and the passion brought to the score by Leonard Slatkin and the Saint Louis Symphony on RCA. Claus Peter Flor favors a slower than usual tempo for the *Moderato* opening movement, but thanks to the fine Concertgebouw string section, the pacing does not become oppressive. The satanic *scherzo* goes with great precision but not with the ferocity it truly needs. The rest fares somewhat better. The mandatory horn calls in the third movement come off to great effect, and the first-chair oboe makes the slow introduction to the finale a deeply moving experience.

Perhaps the impression of somewhat low energy in this reading stems from the longish reverberation period of the Concertgebouw itself, which tends to diffuse the impact of the great climaxes in this recording. **D.H.**

**R. STRAUSS**:

"**Der Rosenkavalier**, Op. 59. Kiri Te Kanawa (soprano), Marschallin; Kurt Rydl (bass), Baron Ochs; Anne Sofie von Otter (mezzo-soprano), Octavian; Barbara Hendricks (soprano), Sophie; others. Staatsopernchor Dresden; Dresden Kreuzchor; Staatskapelle Dresden, Bernard Haitink cond. EMI/ANGL® 54259-2 three CD's (205 min).

Performance: Aristocratic Recording: Airy

With its patrician cast of singers, the tradition-steeped Dresden State Orchestra, and the ever-dignified Bernard Haitink, this is a blue-blooded *Der Rosenkavalier* if ever there was one, both for better and for worse. A good deal of the fun in this dry, bittersweet comedy about illicit love affairs and arranged marriages in the Viennese aristocracy is the spectacle of the bewigged characters making asses of each other and themselves. Part of that fun is lost here, perhaps in the interest of bringing out the work's purely musical aspects. As a result, the repartee sometimes fails to sparkle, especially in the case of Baron Ochs; Kurt Rydl presents such a lyrical characterization of this normally crass character that you'd think he was worried about offending someone.

The culprit is not Haitink, who has had plenty of four moments in his long career, but none here. He responds to the score in a surprisingly animated manner, especially in the finely etched, humorously filled passages Strauss wrote to underscore the libretto's detailed stage directions. Haitink is so alert to Strauss's word and scene painting that in the Marschallin's monologue about the ravages of time, for example, you can almost hear the sand in the hourglass.

Aided by the resonant acoustics of Dresden's Lukaskirche, Haitink achieves moments of coloristic brilliance in the third act that surpass all of the great previous recordings.

For the most part, Anne Sofie von Otter's playful, ardent, intelligent Octavian is an answer to an opera lover's prayers. Barbara Hendricks as a fine Sophie, her fast vibrato seeming to mirror the anxious expectancy of her character. As the Marschallin, Kiri Te Kanawa uses the increasingly darker colors of her voice to great effect, but she sometimes seems reserved to the point of blandness. At other moments, however, as in the first act when she answers Octavian's proclamations of love, her vocal coloring is profoundly expressive and precise.

This version may not displace the classical *Rosenkavalier* recordings—Herbert von Karajan's on EMI/Angel and Georg Solti's on London—but it provides enough fresh insights to make it indispensable for lovers of this opera. **D.P.S.**

**STRAVINSKY**: Petrushka (1911 version); *Scènes de Ballet*. Berlin Philharmonic Orchestra, Bernard Haitink cond. PHILIPS ® 422 415-2 (52 min).

Performance: Splendid Petrushka Recording: Excellent

Bernard Haitink's new *Petrushka* is not merely "satisfying" but highly competitive. Leonard Bernstein's *Petrushka* with the Israel Philharmonic on Deutsche Grammophon is also coupled with Stravinsky's *Scènes de Ballet*, but Bernstein used the 1947 score for *Petrushka*, while Haitink conducts the somewhat more richly colored 1911 original. That strikes me as a definite advantage; the superb playing of the Berlin Philharmonic and Philips's vivid, beautifully balanced recording are strong factors, too, in making this one of the most attractive *Petrushkas* available now. In *Scènes de Ballet*, however, Bernstein has the edge, if only a slight one. **R.F.**

**TCHAIKOVSKY**: Symphony No. 6, Op. 74 (see Best of the Month, page 123)
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**February**
A Polarized Convention

The ninety-first convention of the Audio Engineering Society has come and gone, with some hints of changes in direction. After several years of seeming to move closer to home-audio concerns and philosophies, the pros appear to be drifting apart again. Pretty much and philosophies, the pros appear to many audio engineers. It does matter very much, according to a growing number of impressively credentialed dissenters.

The pro-polarity position is straightforward enough. With correct overall polarity, when the microphone diaphragm in the recording studio moves inward in response to a compression pulse, the speaker cone in the listening room moves outward to produce a compression pulse. When the opposite occurs, as it will with inverted polarity, there is a conceptually obvious distortion. But is it a perceptually obvious distortion?

Because many amplifiers and other components invert phase (somewhat arbitrarily, as a rule—the designs just work out that way), it is reasonable to suspect that fully half the audio systems in the nation disagree in polarity with the other half, although we do not hear half the system owners complaining about it. (It is even possible for sources within a system, such as a CD player and a tape deck, to have outputs of opposite polarity.) On the other hand, some highly credible authorities have suggested that the subtle differences many audiophiles insist they hear between amplifiers and CD players could well have their origins in undiscovered or ignored polarity differences.

The convention explored the full scope of polarity opinions well enough. Basically on the nay side were James Kaiser and Gary Hedden, recording engineers from Nashville. They pointed out that musicians tend to dislike it when the microphones they are performing into and the head-phones they are listening to themselves through are out of phase (and no wonder!), but they confessed that they had as yet been unable to hear polarity changes in simple playback situations, even with material recorded and selected to reveal them. Solidly in the yea camp, Clark Johnsen, a Boston retailer, argued that polarity is pervasively audible, that listeners can be taught to detect it, and that once detection is learned it can never be unlearned. (Enhanced articulation of speech and many instruments, increased impact and crispness, and greater “timbral beauty and bloom” are said to be the signatures of proper polarity.) Johnsen provided a helpful paper chase through the polarity literature, and he described a procedure that he employs to demonstrate his assertions.

The academic case was made by Professors Richard Greiner and Douglas E. Melton from the University of Wisconsin, and it was backed up by the results of numerous large- and small-scale listening tests, not all of which were conclusive. Nevertheless, the researchers did conclude that polarity is not audible most of the time, but it is audible often enough to make it worth our attention. Typically, when audible, polarity switches were evidenced by changes in perceived timbre and pitch, with the pitch change sometimes seeming the dominant one.

It has long been assumed that polarity changes are likely to be most audible with asymmetric waveforms—namely, waveforms that, when they are viewed on an oscilloscope, consistently exhibit more energy on one side of the horizontal axis than on the other. (Many wind instruments, including the human larynx, are examples of asymmetric waveform producers.) Greiner and Melton, however, found that their listeners were marginally better able to detect polarity changes on fundamentally symmetrical waveforms, such as those produced by piano and acoustic guitar. Some rethinking of polarity consequences may be in order here.

Puzzling over all of this led to some experiments of my own. I lack space for details, but I can report that polarity detection, even when you design waveforms to be maximally revealing, can be a tough call. Tougher still is determining the fundamental polarity of recordings you buy, if they have any at all (multimike techniques rarely respect consistent polarity). But there is now a powerful tool to help us: digital analysis. This can establish the polarity patterns of recordings at any time during or after their manufacture, even when the session producer and engineer paid no attention to the matter at all. Such analysis, together with the growing number of listeners who say they hear polarity effects, may mean that polarity’s time has finally come.
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