

# Stereo Review

FEBRUARY 1988 ● \$2.25

## EQUIPMENT BUYING GUIDE

CD PLAYERS, SPEAKERS,  
AMPLIFIERS, RECEIVERS,  
TURNTABLES, TUNERS

THE BEST RECORDS  
OF THE YEAR



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# "Polk Has Triumphed."

CAR STEREO REVIEW

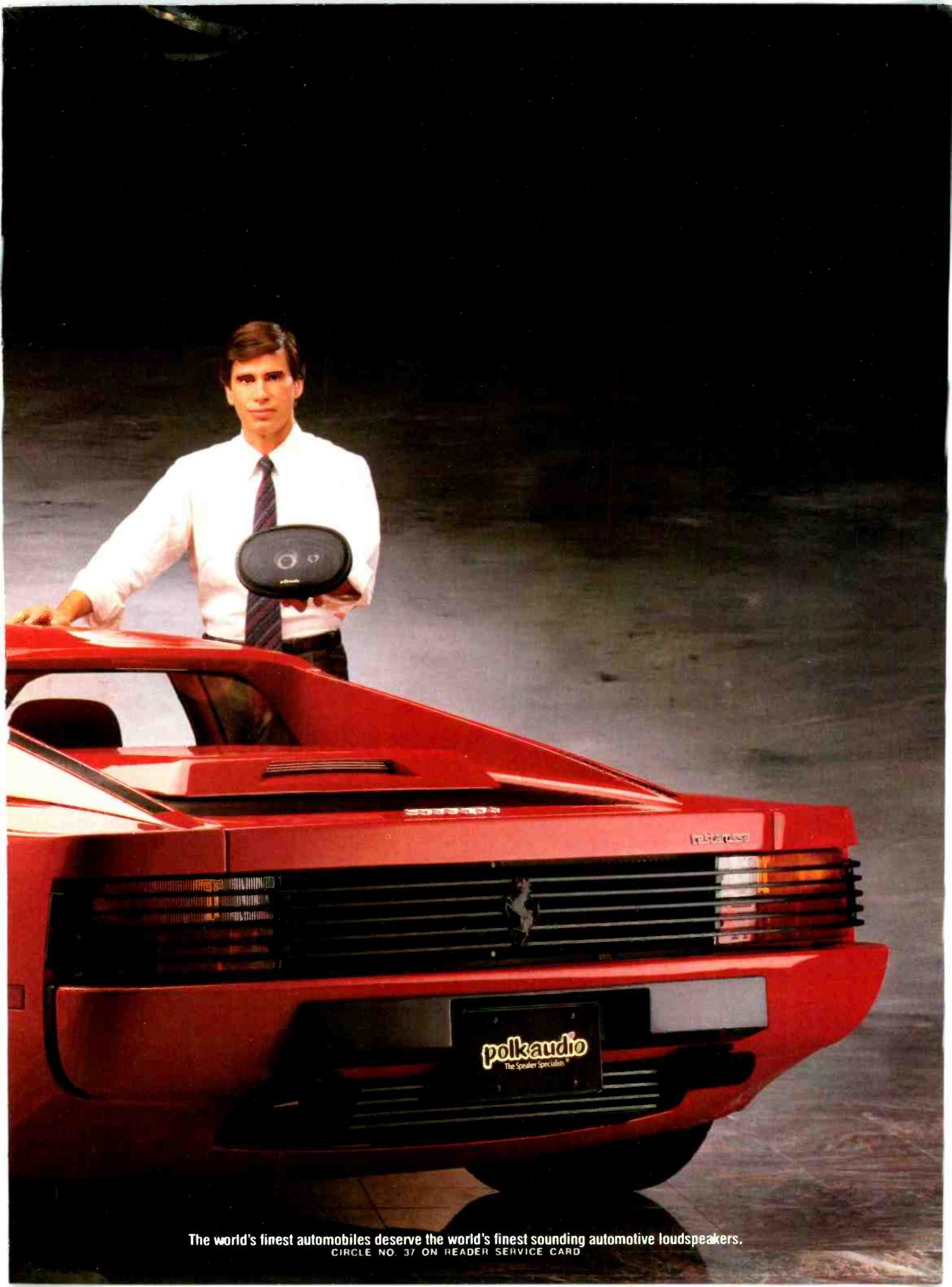
## Introducing Matthew Polk's New SDA Mobile Monitor Systems

**M**atthew Polk has a passion for perfection in the cars he drives, and the speakers he creates. His astonishing new SDA Mobile Monitor Speaker Systems combine the awesome sonic benefits of his revolutionary SDA True Stereo technology with the superior sound of his Grand Prix award winning Mobile Monitor loudspeakers. Car Stereo Review, the definitive authority on the state-of-the-art in autosound, raved, "It's like jumping into hyperspace."

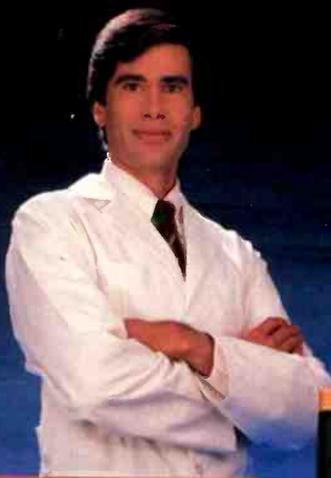


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**Matthew Polk and his extraordinary new Signature Edition SDA 1C and SDA 2B.**

# "Matthew Polk Has a Passion for Perfection!"

## Experience the Awesome Sonic Superiority of His New Signature Edition SDA 1C and SDA 2B.

**T**he genius of Matthew Polk has now brought the designer styling, advanced technology and superb sonic performance of his award winning SDA Signature Reference Systems into the new Signature Edition SDA 1C and SDA 2B.

**"They truly represent a breakthrough."** *Rolling Stone Magazine*

Polk's critically acclaimed, 5 time Audio-Video Grand Prix Award winning SDA technology is the most important fundamental advance in loudspeaker technology since stereo itself. Listeners are amazed when they hear the huge, lifelike, three-dimensional sonic image produced by Polk's SDA speakers. The nation's top audio experts agree that Polk SDA loudspeakers always sound better than conventional loudspeakers. Stereo Review said, "Spectacular... the result is always better than would be achieved by conventional speakers." High Fidelity said, "Astounding... We have yet to hear any stereo program that doesn't benefit." Now all 5 SDAs incorporate many of the 3rd generation advances in SDA technology pioneered in the Signature Edition SRS and SRS2 including full complement sub-bass drive, time-compensated phase-coherent driver alignment and bandwidth-optimized dimensional signal.

### Why SDAs Always Sound Better

Stereo Review confirmed the unqualified sonic superiority of Matthew Polk's revolutionary SDA Technology when they wrote, "These speakers *always* sounded different from conventional speakers — and in our view better — as a result of their SDA design.

Without exaggeration, the design principals embodied in the SDAs make them the world's first true stereo speakers. The basic concept of speaker design was never modified to take into account the fundamental difference between a mono and stereo signal. The fundamental and basic concept of mono is that you have one

signal (and speaker) meant to be heard by both ears at once. However, the fundamental and basic concept of stereo is that a much more lifelike three-dimensional sound is achieved by having 2 different signals, each played back through a separate speaker and each meant to be heard by only one ear apiece (L or R). So quite simply, a mono loudspeaker is designed to be heard by two ears at once while true stereo loudspeakers should each be heard by only one ear apiece (like headphones). The revolutionary Polk SDAs are the first TRUE STEREO speakers engineered to accomplish this and fully realize the astonishingly lifelike three-dimensional imaging capabilities of the stereophonic sound medium.

### "A stunning achievement"

*Australian HIFI*

Polk SDA Technology solves one of the greatest problems in stereo reproduction. When each ear hears both speakers and signals, as occurs when you use conventional (Mono) speakers to listen in stereo, full stereo separation is lost. The undesirable signal reaching each ear from the "wrong" speaker is a form of acoustic distortion called interaural crosstalk, which confuses your hearing.

### "Literally a New Dimension in the Sound"

*Stereo Review Magazine*

The Polk SDA systems eliminate interaural crosstalk distortion and maintain full, True Stereo separation, by incorporating two completely separate sets of drivers (stereo and dimensional) into each speaker cabinet. The stereo drivers radiate the normal stereo signal, while the dimensional drivers radiate a difference signal that acoustically and effectively cancels the interaural crosstalk distortion and thereby restores the stereo separation, imaging and detail lost when you listen to normal "mono" speakers. The dramatic sonic benefits are immediately audible and remarkable.

### "Mindboggling, astounding, flabbergasting"

*High Fidelity Magazine*

Words alone cannot fully describe how much more lifelike SDA TRUE STEREO reproduction is. Reviewers, critical listeners and novices alike are overwhelmed by the magnitude of the sonic improvement achieved by Polk's TRUE STEREO technology. You will hear a high sound stage which extends not only beyond the speakers, but beyond the walls of your listening room itself. The lifelike ambience revealed by the SDAs makes it sound as though you have been transported to the acoustic environment of the original sonic event. Every instrument, vocalist and sound becomes tangible, distinct, alive and firmly placed in its own natural spatial position. You will hear instruments, ambience and subtle musical nuances (normally masked by conventional speakers), revealed for your enjoyment by the SDAs. This benefit is accurately described by Julian Hirsch in Stereo Review, "... the sense of discovery experienced when playing an old favorite stereo record and hearing, quite literally, a new dimension in the sound is a most attractive bonus..." Records, CDs, tapes, video and FM all benefit equally as dramatically.

### "You owe it to yourself to audition them."

*High Fidelity Magazine*

SDAs allow you to experience the spine tingling excitement, majesty and pleasure of live music in your home. You must hear the remarkable sonic benefits of SDA technology for yourself. You too will agree with Stereo Review's dramatic conclusion: "the result is always better than would be achieved by conventional speakers... it does indeed add a new dimension to reproduced sound."

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Polk's remarkable Monitor Series Loudspeakers have received worldwide acclaim by offering state of the art technology and performance usually found only in systems which sell for many times their modest cost. (stands optional)

# "Polk Monitors Deliver Incredible Sound and Value." They Utilize the same State-of-the-Art Components As the top of the line SDAs.

**P**olk Audio was founded in 1972 by three Johns Hopkins University graduates who were dedicated audiophiles with a common dream: superior sound for everyone.

## "The affordable dream"

*Off the Record*

They believed that it was possible to design and manufacture loudspeakers of uncompromising quality which performed as well as the most expensive and exotic loudspeakers available, but in a price range affordable to virtually every music lover. The Monitors are the spectacularly successful result of their quest.

The original Monitor 7 was the first product of their efforts and it was so successful that when it was shown at the Consumer Electronics Show, dealers and experts alike could not believe its superb performance and affordable price. Audiogram Magazine said, "when we heard the Polk speakers at the CES Show we were so impressed we could not believe the prices." The entire Polk Monitor Series was designed in this tradition of incredible, state-of-the-art sound and affordable prices.

## "Vastly superior to the competition"

*Musician Magazine*

Polk Audio has worked hard over the ensuing years to maintain the Monitor Series' preeminent position as *the* standard for quality and value in the audio industry. The Monitors have been continually improved and refined as a result of Polk's never ending search for better sound quality. There have been literally thousands of improvements made to the Monitors and the result is that today, as in the past, the Polk Monitors are absolutely the best sounding loudspeakers for the money available on the market. Musician Magazine said, "If you're shopping for stereo, our advice is not to buy speakers until you've heard the Polks." You owe it to yourself.

## "The best high performance speaker value on the market."

*Off the Record*

A new generation of Polk Monitors is now available which incorporate the same high definition silver coil dome tweeter and Optimized Flux Density drivers developed for the SDAs. Polk Monitor Series loudspeakers have always had a well deserved reputation for offering state-of-the-art performance and technology usually found only in systems which sell for many times their modest cost. In fact, many knowledgeable listeners consider that outside of the SDAs, the Polk Monitors are the finest imaging conventional speakers in the world, regardless of price. They have been compared in performance with loudspeakers which sell for up to \$10,000 a pair and are absolutely the best sounding loudspeakers for the money available on the market.

## "Absolutely first rate... superior sound at a modest price"

*Stereo Review Magazine*

All the Polk Monitors regardless of price offer consistently superb construction and sonic and performance. They achieve open, boxless, three-dimensional imaging surpassed only by the SDAs. The Monitors' silky smooth frequency response assures natural, non-fatiguing, easy to listen to sound; while their instantaneous transient response results in music that is crisply reproduced with lifelike clarity and detail. In addition dynamic bass performance, ultra wide dispersion, high efficiency and high power handling are all much appreciated hallmarks of Monitor Series performance.

The consistently superb performance of the Polk Monitors is in large part due to the fact that they all utilize very similar components

and design features. However, more importantly, it is the elegant integration of concepts and components which results in the superior sonic performance and value which sets the Monitor Series apart. Audiogram magazine said, "How does Polk do it? We think it is mostly execution. They hear very well and they care." Audiogram is absolutely right. At Polk we take the same care with each and every product we build, whether it is our most or least expensive. We lavish the same lengthy amount of critical listening and tuning on every single Polk speaker because we know that having a limited budget does not necessarily indicate that you have a limited ability to appreciate true musical quality.

## "At the price they're simply a steal."

*Audiogram Magazine*

No matter what you budget is there is a superb sounding Polk speaker perfect for you. Polk's incredible sounding/affordably priced Monitor Series loudspeakers utilize the same basic components as the SDAs and begin under \$100. each. The breathtaking sonic benefits of Matthew Polk's revolutionary True Stereo SDA technology are available in 5 SDA models priced from \$395. to \$1495 ea.

## You can afford the incredible sound of Polk

The experts agree: Polk speakers sound better! There is a Polk speaker which is perfect to fulfill your sonic dreams at a price you can afford. Visit your nearest Polk dealer today and audition the remarkable Monitors and the revolutionary SDAs. You'll always be glad you bought the best.

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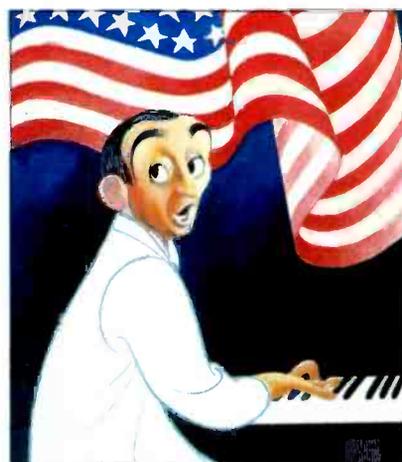
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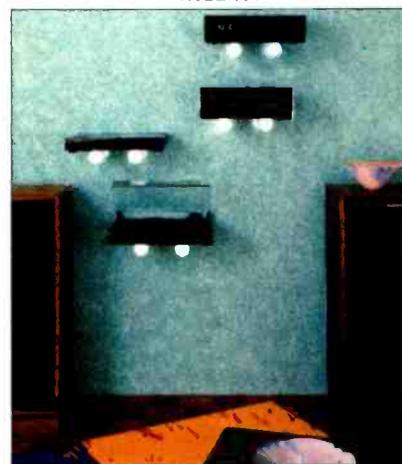
STEREO REVIEW BUYER POLL, SEE PAGE 125  
 Please fill in if you bought equipment in the past thirty days.  
 READER SERVICE INFORMATION CARD, FACING PAGE 125  
 Circle the items you want to know about.



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Cover: From top, Denon DR-M30HX cassette deck, McIntosh MA-6200 integrated amplifier (see page 119), Mitsubishi DP-311R CD player (see page 36), a/d/s/ Atelier P4 turntable (see page 131), Klipsch Chorus speakers (see page 39). Design. Sue Llewellyn; photo. Roberto Brosan; prop stylist. Catherine Ross; rug. ABC Carpets; bowls. Incorporated Gallery.

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by Christie Barter and  
William Burton

## LATIN MUSIC ON CD

Recordings from the West German company Messidor are now being distributed in the United States by Rounder. Dedicated to presenting all kinds of Latin music from folk to jazz to salsa and tango, Messidor claims the world's largest selection of Latin albums on compact disc. Recent releases include recordings by the Cuban trumpeter Arturo Sandoval, the Spanish singer Soledad Bravo, the Cuban band Irakere, and Astor Piazzolla, the leading exponent of New Tango.



## H/K OFFERS DAT IN U.S.

At the Winter Consumer Electronics Show in Las Vegas, Harman Kardon is expected to take orders for a digital audio tape deck for home use. The company promises to deliver the decks to dealers in March. The DAT unit, the Citation twenty-six, is expected to list for \$2,000.

## FORD TO HAVE DAT

The 1988 Lincoln Continental with the Ford/JBL audio system will have a new option: a digital audio tape player. Cars with the DAT deck, made by Sony, are expected to be in Ford showrooms in June. The DAT deck can be selected instead of a compact disc player.

## MUSIC ON DAT FROM DTR

Over seventy classical, pop, and jazz recordings are available on digital audio tape from Direct-to-Tape Recording, 14 Station Ave., Haddon Heights, NJ 08035. Single-length DAT's are \$29.95, doubles \$49.95.

## CBS RECORDS TO SONY

After several months of backing and filling, CBS Inc. has agreed to sell its CBS Records Group to Sony Corp. of Japan, with a closing date to be set sometime during the ear-

ly months of this year. Sony, which has existing ties with the American company through CBS/Sony, the most successful record label in Japan, thus becomes the first Japanese firm to own a major international record company. The sale includes all assets of the CBS Records Group, including manufacturing facilities in fourteen countries, three dozen wholly owned subsidiaries, six joint ventures (of which CBS/Sony is one), and the mail-order operation known as Columbia House.

## MINI CD NEWS

The latest Sony compact disc models play the new 3-inch discs without adaptors. The units range in price from \$240 to \$1,800. . . . The first Technics player designed to handle the mini CD's without an adaptor is the 18-bit SL-P770 (\$600), with four-times oversampling and four D/A converters. . . . Delos Pocket Classics, among the first mini CD's, are priced at \$3.99, Ryko's mini CD by Frank Zappa lists for \$4.98, and other mini CD's are said to be selling for as little as \$2.99.

## WORLD GUIDE TO CD'S

*CD International* is a new guide to rock, pop, and jazz CD's available in the U.S., Great Britain, West Germany, and Japan. It tells collectors what they can expect to find locally and what is available on imports. Predictably, world-class rock stars such as the Police, Fleetwood Mac, and Bruce Springsteen are well represented in all four countries. A CD by cult figure Stiv Bators is released only in West Germany. Germany and Japan alone offer pop star Milva on compact disc. *CD International* is available at book and record stores, on newsstands, or by mail from PHI-BA Project, P.O. Box 22014, Milwaukie, Oregon 97222, for \$6.95 plus \$1 postage. A classical edition is promised for next fall.

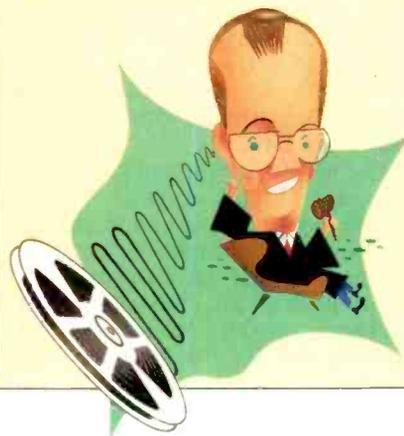
## TECH NOTES

Priced at \$12,000 a pair, Altec Lansing's new five-way powered Model 550 speakers have remote control of equalization and bal-

ance, a swiveling center, diamond-coated drivers, and 700 watts of power for each speaker. . . . At \$6,000 a pair, Magnat's Nova speaker uses three spherical drivers and two subwoofer dome drivers for a rated omnidirectional frequency response of 34 to 30,000 Hz +1, -1.5 db. . . . Zenith's new 27-inch digital TV set is the first with Bose's Acoustimass bass-loading speaker technology. The ZB2755S has two front-mounted 2½-inch "Twiddlers" for mid and high frequencies. . . . The new Mini Advent speaker is smaller than a shoebox and is priced at \$200 a pair. A matching subwoofer is \$200 extra. . . . The dbx company is adding to its Soundfield line of speakers. . . . Akai has a new line of high-end components including four CD players, four amps, two tuners, and a cassette deck. . . . Casio is planning to test market a portable DAT machine in the U.S. this April for \$1,000. . . . The David Hafner Company and its speaker division, Acoustat, are being acquired by Rockford Corp., parent company of Rockford Fosgate.

## FROM CAPITOL TO COURT

Anthony M. Kennedy, who at press time was the subject of U.S. Supreme Court confirmation proceedings, apparently served Capitol Records as a "legislative advocate" during the mid-Seventies, according to California state records. He is also reported to have lobbied successfully for a bill lifting taxes paid by record manufacturers for master tapes before joining the U.S. Circuit Court of Appeals. Will the record industry have a friend in court?



## SPEAKING MY PIECE

by Louise Boundas



Thirty

**B**IRTHDAYS. Some of us have reached the age that we would rather forget about our own—or at least we'd rather not be reminded about *which* birthdays we've got coming up. It used to be that people started feeling that way as they approached the age of thirty, but our attitudes seem to have been changing as our median age increases, as larger and larger numbers of Americans pass that watermark. The great mass of "baby boomers" are well into their thirties, and popular opinion has it that that generation is still in its vigorous youth.

We seem more likely now, as we grow older, to measure ourselves less in terms of years than in terms of accomplishment or common experience. "Life in the 30's," read an advertisement for a weekly column that caught my eye in the *New York Times* the other day. "Not an age. Not an era. But a state of mind."

Well, if that is what it is, *STEREO REVIEW* is entering it with this issue. Now we are thirty.

The first issue of the magazine, in February 1958, was called *HiFi & Music Review*. It contained ads for an Acoustic Research woofer, for a McIntosh preamplifier and an Altec Lansing amplifier, for Shure and Pickering phono cartridges, for Klipsch and JBL loudspeakers, for a

Sherwood "home music center," and for Scotch magnetic tape, but many of the advertisers' names in that magazine would be unfamiliar to audiophiles of 1988. And, although open-reel stereo tape had been around for more than a year, the stereo LP was still in the experimental stage. A columnist in that first issue noted that "Most experts agree that the stereo disc is not a replacement for tape stereo. Severe critics of the disc say that it may introduce more problems that it can solve—even to the extent of competing with color TV as a servicing headache." But the stereo disc was on its way, transistors were beginning to replace tubes in amplifiers, and committees were being formed to establish standards. "Hi-fi" was definitely growing out of its hobbyist adolescence.

And look at us now. The "Buying Guide" that starts on page 91 reflects enormous accomplishment in the home audio industry. Imagine the reaction of a 1958 audiophile if somehow he could have seen a copy of the February 1988 issue of *STEREO REVIEW* thirty years ago.

There were record reviews in that first issue of the magazine too. Ralph J. Gleason reviewed "Pat Boone [yes] Sings Irving Berlin," not very warmly, and Stanley Green was much more enthusiastic about a Capitol record of highlights from Irving Berlin's *Annie Get Your Gun* starring Mary Martin and John Raitt.

Those records are not among the ones Gary Giddins recommends in his tribute to Irving Berlin that starts on page 76, but honoring Berlin with a lifetime achievement award would have made sense to that 1958 music lover too. America will celebrate Mr. Berlin's hundredth birthday this year, his age reminding us that we are very young at thirty, his accomplishment inspiring us all to modesty. For, as Giddins points out, "To the extent that our lives are measured in song, we live in the Irving Berlin Era." From the first electric phonograph to the age of the compact disc, we have been listening to his songs, and we will surely be listening to them thirty years from now. Happy birthday, Mr. Berlin. □

## Stereo Review

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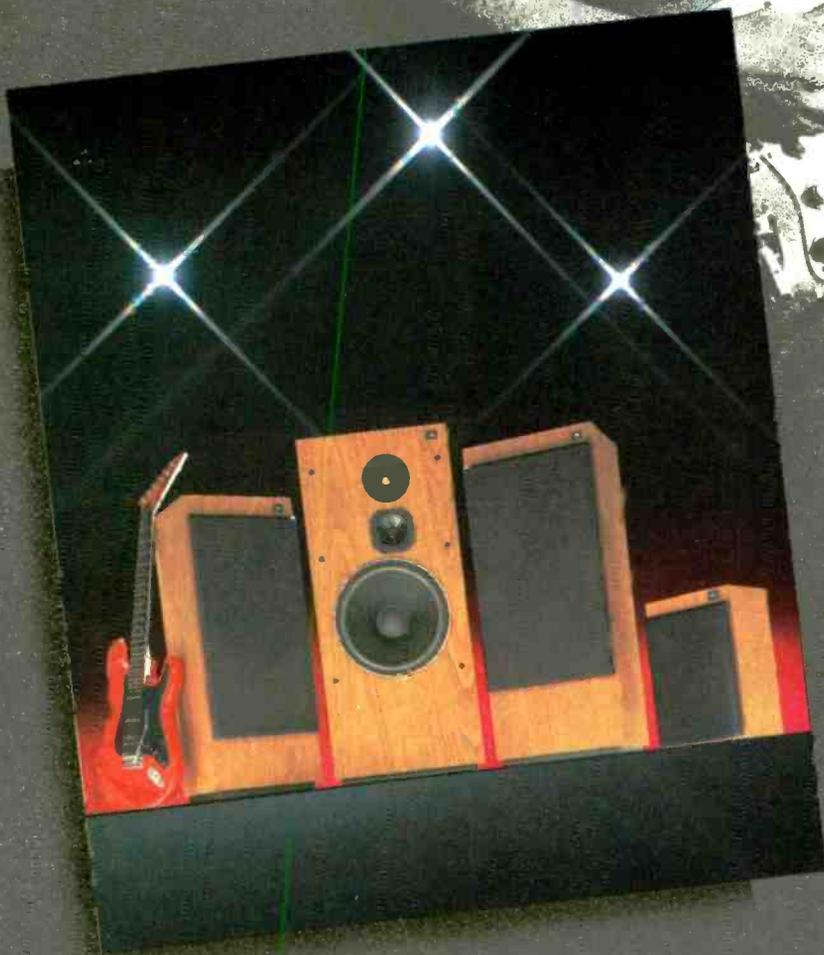
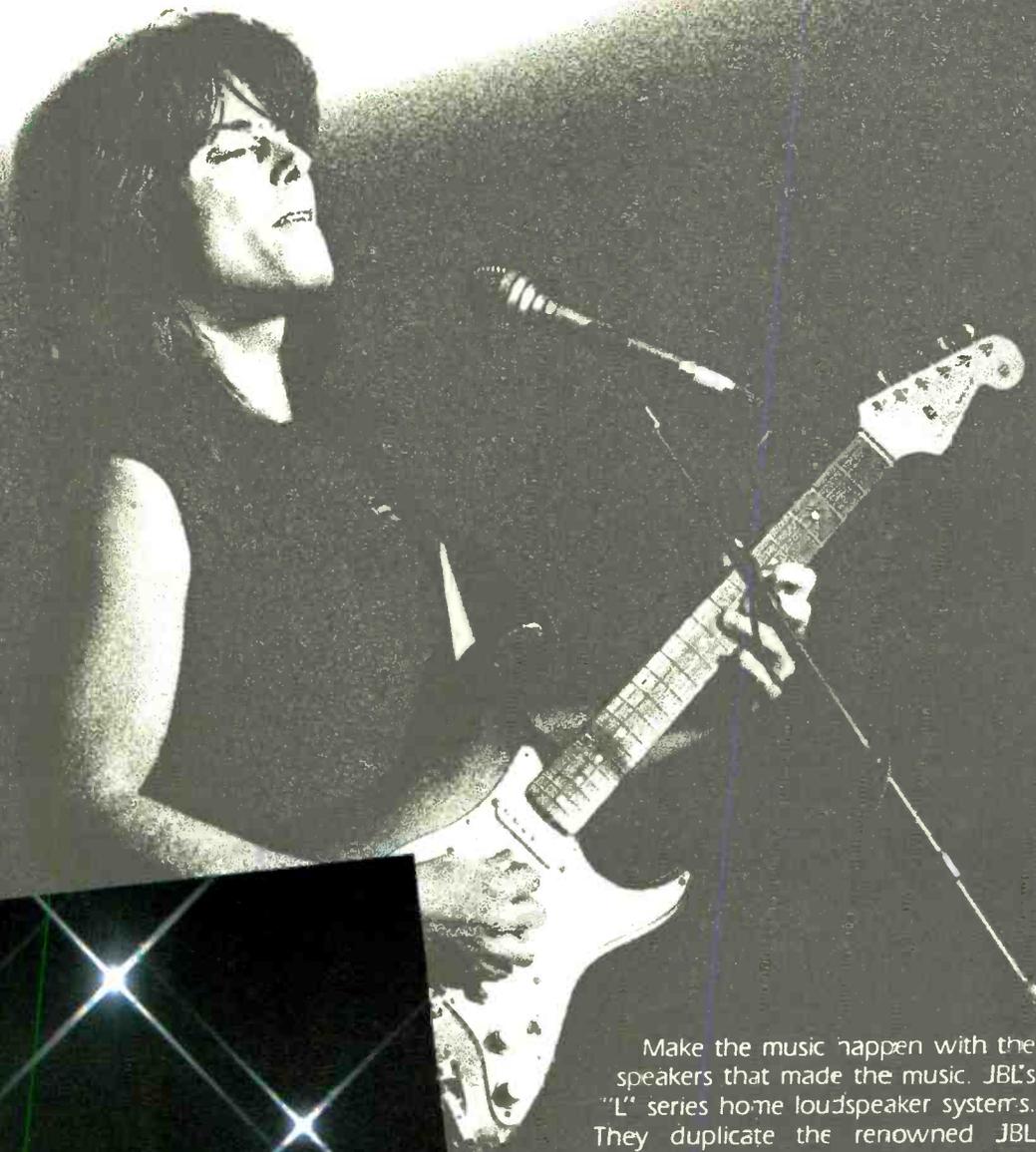


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## LETTERS

### *Misses and Hits*

I suspect that, like me, many readers newly interested in stereo subscribe to your magazine for the equipment reviews and technical articles. The music reviews, however, have introduced me to such wonderful new material—music you will *never* hear on radio where I live—that it is now the first section I turn to. But beware! The same reviewer who panned your favorite recording will be in total agreement with you the next month! For example, I totally disagree with Steve Simels's pan of Marshall Crenshaw's newest album and his positive comments on the Replacements, but his reviews of Marti Jones and the Bangles were right on! I've wasted a few dollars on unlistenable records, but I've found so much to enjoy that it was worth every penny.

GERALD L. GRIFFITH  
North Bend, OH

### *Separates for Less*

The December test report on the Hitachi MXW-80 receiver/cassette deck/CD player was thorough, but Julian

Hirsch's final comment, "I doubt that a system of equal versatility and quality could be put together from separate components for less," could be misleading. Using advertisements in STEREO REVIEW, I decided to see what could be purchased for the same price, \$799.

For \$40 less, I could buy the Akai AAV-205B receiver, the Technics SL-P320 CD player, and the Teac W-660R cassette deck. Although this system is more cumbersome than the Hitachi and does not have a remote control for the cassette deck, it does have several features that the MXW-50 does not: Dolby C, more power, surround sound, more video inputs, and so on.

JEFF WHITE  
Antioch, CA

### *Short-Weight LP's*

There is no reason why purchasers of the LP version of Michael Jackson's "Bad" should be cheated out of one song. At forty-nine minutes, the CD is not that long; the only reason for cutting out one song on the LP is to try to force people to buy the CD. I think it is fraudulent for a record company to issue a

recording under a single title and cheat purchasers of some formats out of one or more songs.

MARC RICHMAN  
Washington, DC

### *Bargain Dukes*

Just a footnote to Steve Simels's "Best of the Month" review in December of the Dukes of Stratosphere's "Psonic Psonspot": There is another version of the album on a Virgin CD called "Chips from the Chocolate Fireball (An Anthology)," which also contains the six-song EP "25 O'Clock," the Dukes' first effort.

STEVE SHUPP  
South Orange, NJ

*We erroneously listed "Psonic Psonspot" as a Geffen CD. The only CD version is Virgin's "Chips" anthology, soon to be released in the U.S.*

### *Madonna*

Alanna Nash's review in November of the *Who's That Girl* soundtrack struck a nerve. Ms. Nash's statement



## LETTERS

about Madonna's posing "for girly magazines" demonstrates her misconceptions. The pictures that *Penthouse* and *Playboy* published two years ago were taken in 1978, when Madonna innocently posed for art classes. She had no say in their publication.

MYLAN OLSON  
Spring Green, WI

### *Equal Temperament*

After reading David R. Waldman's letter in November responding to a column by Ralph Hodges on "the well-tempered scale," I feel that further clarification is in order. The tuning method referred to is properly called "equal temperament" because the ratio between the frequencies of adjacent tones is always the same. Previous tuning methods strived for "perfect" harmonic intervals, but such a goal could not be achieved in all keys simultaneously. Equal temperament strikes a balance between the ideal of perfect harmony and the practicality of equivalent intervals for all keys.

DAVID HOLLAND  
Simi Valley, CA

*Mr. Waldman's original letter did include a discussion of the reasons why the equally tempered scale was adopted, but it was cut in editing.*

### *Classical Calendar*

Thanks very much to STEREO REVIEW and William Livingstone for the "Calendar of Classical Composers" in the November issue. I've become much more interested in classical music in the last few years, especially since getting a CD player. Along with my growing desire to listen to classical music is a desire to know more about the composers, when they lived, and how they fit into the musical scheme of things.

TOM SLOCOMBE  
Columbia, MO

I must take issue with a statement by William Livingstone in his introduction to the very well-crafted "Calendar of Classical Composers." He said that recordings of such early composers as Ockeghem and Josquin des Prez would be of little interest to audiophiles except from a historical perspective. Thanks to such conductors as Christopher Hog-

wood and Trevor Pinnock and musicologists like H. C. Robbins Landon, early music has become very popular among professional musicians and amateur music lovers alike.

KEVIN SUTTON  
Nashville, TN

Glaringly omitted from your list of Modern classical composers is Morton Gould, who is a contemporary of Copland, Bernstein, and others. He was way ahead of his time and had an obvious influence on Bernstein and John Williams, for instance.

DANIEL ROIG  
Lake Forest, IL

### *Caesar Speaks*

December's "Bulletin" incorrectly identified Sid Caesar's Metropolitan Opera debut, as the Jailer in *Die Fledermaus*, as a "non-speaking" role. Indeed, this comic character relies heavily on verbal humor (some improvised) as well as sight gags. I am sure you meant "non-singing" role.

GEOFFREY S. CAHN  
Riverdale, NY

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New SA-XG is TDK's exclusive SA-X formulation—the world's quietest tape—technomioniously joined together with TDK's most sophisticated mechanism ever—the RS-II.

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## NEW PRODUCTS

### Meitner

The remote-controlled Meitner CD 3 compact disc player has a unique digital filtering system, a gyroscopically balanced drive system that uses a brass weight placed on the disc, and dual isolation between the digital and analog sections. The player uses quadruple oversampling and a Band Reject Post Injection digital filter that generates frequencies centered at 88.2 kHz, inverts them, and mixes them with the signal to cancel spurious high-frequency images. There is no analog filter. There is optical coupling between the digital filter and the digital-to-analog converter and mechanical isolation between the digital and analog sections.

The supplied remote control has a numeric keypad for access to any part of a disc. Twenty tracks can be programmed for playback in any order.



Price: \$2,195. Meitner by Muscatex Audio, Dept. SR, 3143 DeMiniac, Ville

St. Laurent, Quebec, Canada H4S 1S9.  
**Circle 120 on reader service card**



### Kenwood

The KR-V126R audio/video receiver from Kenwood features three modes of surround sound, including Dolby Surround. A built-in seven-band electronic graphic equalizer has ten preset positions, five fixed and five user programmable. The tuner section offers twenty presets for AM, FM, or cable stations, and it can be programmed to display preset stations by musical category. All of the receiver's electronic functions are shown on a large fluorescent display. The KR-V126R has three video inputs as well as inputs for two audio tape decks, a CD player, and phono (MM or MC). Its power output is rated at 125 watts per channel. A wireless remote control is included. Price: \$635. Kenwood, Dept. SR, 2201 E. Dominguez, Long Beach, CA 90810.

**Circle 121 on reader service card**

### Focus

The latest High Definition Monitors from Focus Speaker Systems are two-way, floor-standing units. They feature cabinets constructed from a unique fourteen-layer epoxy-pulp sleeve, which is rigidly braced inside, wrapped with 1/4-inch foam on the outside, and capped with solid-oak end pieces. The phase- and time-aligned drivers are in separate subenclosures to improve focusing. A large vent for the 8-inch woofer is said to control internal sound waves, and the rounded corners of the cabinet are

said to reduce time smear. Frequency response is rated as 32 to 20,000 Hz  $\pm$  2 dB, sensitivity as 89 dB sound-pressure level at 1 meter with a 1-watt input, and nominal impedance as 8 ohms. Recommended amplifier power is 30 to 200 watts per channel. An adjustable and removable spiking system can directly couple the speakers to any type of floor. Dimensions are 47 inches high and 12 inches square. Price: \$1,450 a pair. Focus Speaker Systems, Inc., Dept. SR, 1101 E. Second St., Dayton, OH 45403.

**Circle 122 on reader service card**



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*Stereo Review,  
Julian Hirsch, April, 1987*

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virtual invisibility. ”**

*The New York Times,  
Hans Fantel, Sunday, April 5, 1987*

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**CIRCLE NO. 24 ON READER SERVICE CARD**



**Horowitz In Moscow** The historic return! Music by Scarlatti, Mozart, Rachmaninov, Liszt, Chopin, Scriabin, Schumann, others. DG DIGITAL 125264

**Handel, Water Music** The English Concert/Pinnock. "Quite the best performance...now on the market."—Gramophone Archiv DIGITAL 115306

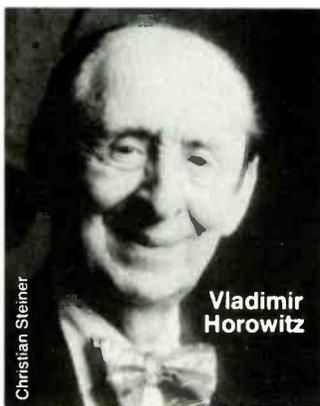
**Holst, The Planets** Montreal Symphony Orchestra/Dutoit. "[A] stunning performance...The best available on both LP and CD."—Gramophone London DIGITAL 115448

**Andrew Lloyd Webber, Variations; more** Julian Lloyd Webber, cello. London Philharmonic Orchestra/Maazel. Philips DIGITAL 115473

**Dvořák, Symphony No. 9 (New World)** Chicago Symphony Orchestra/Solti. "The playing is superlatively good."—Gramophone London DIGITAL 115166



Sir Georg Solti



Christian Steiner

Vladimir Horowitz

**Handel, Messiah (Highlights)** Musica Sacra/Westenburg. *Hallelujah Chorus, I Know That My Redeemer Liveth*, more. RCA DIGITAL 153586

**James Galway & The Chieftains: In Ireland** *Danny Boy; When You And I Were Young, Maggie; Down By The Sally Gardens*; more. RCA DIGITAL 124344

**Ravel, Daphnis et Chloé (Complete)** Montreal Symphony/Dutoit. "An absolute dream performance."—Stereo Review London DIGITAL 115520

**Mozart, Clarinet & Oboe Concertos** Pay, basset clarinet; Piguet, oboe. Academy of Ancient Music/Hogwood. L'Oiseau-Lyre DIGITAL 115523

**Brahms, Cello Sonatas** Yo-Yo Ma, cello; Emanuel Ax, piano. "Distinguished...handsomely recorded."—Stereo Review RCA DIGITAL 154044

**Richard Stoltzman: Begin Sweet World** Title song, *Amazing Grace, Clouds, Abide With Me/Blue Monk*, more. RCA DIGITAL 150414

**Mozart, Requiem** Leipzig Radio Choir; Dresden State Orchestra/Schreier. "Exceptionally satisfying."—High Fidelity Philips DIGITAL 115039

**Rimsky-Korsakov, Scheherazade** Vienna Philharmonic/Previn. "A fresh and spacious reading."—Gramophone Philips DIGITAL 115415

**Pops In Love** The Boston Pops/Williams. *Clair de lune, Gymnopédies Nos. 1 & 2, Albinoni Adagio, Fantasia On Greensleeves, Pachelbel Canon*, more. Philips DIGITAL 125230

**Galway & Yamashita: Italian Serenade** Flute & guitar works by Paganini, Cimarosa, Giuliani, Rcsini & Bazzini. RCA DIGITAL 173824

**Horowitz In London** Recorded live! Schumann, Kinderscenen; Chopin, *Polonaise-Fantaisie & Ballade No. 1*; more. RCA DIGITAL 162507

**Mozart, The Piano Quartets** Beaux Arts Trio; Bruno Giuranna, viola. "Absolutely indispensable."—Stereo Review Philips DIGITAL 115271

**Wagner, Orchestral Highlights From The Ring** Vienna Philharmonic/Solti. *Ride Of The Valkyries*, more. London DIGITAL 115426

**The Canadian Brass: High, Bright, Light & Clear** Air On The G String, Masterpiece Theatre Theme, others. RCA DIGITAL 144529

**Pops In Space** John Williams leads The Boston Pops in music from Star Wars, *Close Encounters, Superman*, more. Philips DIGITAL 105392

**Pachelbel, Canon in D** Also includes other works by Pachelbel & Fasch. Maurice Andre, trumpet; Pailard Chamber Orchestra. RCA 133877

**Gershwin, Rhapsody In Blue; An American In Paris; Concerto** Pittsburgh Symphony/Previn (pianist & conductor). Philips DIGITAL 115437

**Vivaldi, The Four Seasons** The English Concert/Pinnock. "The finest recording of [it] I've heard."—High Fidelity Archiv DIGITAL 115356

**Sousa, Stars & Stripes Forever** Phillip Jones Ensemble. Plus *Semper Fidelis*, *Washington Post*, more. London DIGITAL 115051



James Galway

**Michael Feinstein: Remember** Irving Berlin standards include title song, *Alexander's Ragtime Band, Puttin' On The Ritz*, more. Elektra 153947

**Tchaikovsky, Symphony No. 6 (Pathétique)** Chicago Symphony Orchestra/Levine. "A sound that dazzles and sings."—Milwaukee Journal RCA DIGITAL 153939

**Teresa Stratas Sings Kurt Weill** *Havana-Lied, Foolish Heart, Lonely House, Surabaya-Johnny, One Life To Live*, more. Nonesuch 124748

**Rudolf Serkin: Mozart, Piano Concertos Nos. 12 & 20** "He makes every phrase glow with life."—Stereo Review DG DIGITAL 115062

**Rossini, Overtures** Orpheus Chamber Orchestra. *The Barber Of Seville, The Turk In Italy, Tancredi*, 5 others. DG DIGITAL 115527

**Gregorian Chant** Schola of the Hofburgkapelle, Vienna. 10 Propers from *Graduale Romanum*; more. Philips DIGITAL 115434

**Alicia de Larrocha: Falla, Nights In The Gardens Of Spain** Plus rhapsodies by Albéniz & Turina. London DIGITAL 115410

**Tomita: The Mind Of The Universe (Live At Linz, 1984)** *Ode To Joy, Also Sprach Zarathustra* (opening), more. RCA 173829



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**Mozart, Posthorn Serenade; 2 Marches** Academy of St. Martin-in-the-Fields/Marriner. "Gracious, warm musicmaking."—*The New York Times* Philips DIGITAL 115151

**Pavarotti: Anniversary** *Che gelida manina, E lucevan le stelle, Vesti la giubba, Cielo e mar, Addio alla madre*, 11 more. London 115344

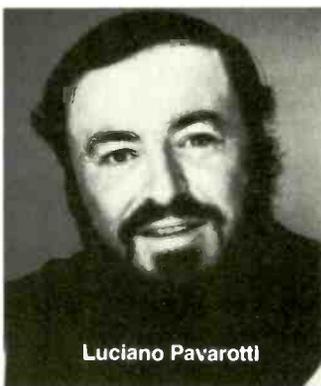
**Bach, Goldberg Variations** Trevor Pinnock, harpsichord. "This is a definitive performance."—*Stereo Review Archiv* 105318

**Kathleen Battle: Salzburg Recital** With James Levine, piano. Purcell, Mozart, Strauss, Handel, Fauré, & more. DG DIGITAL 115292

**Mendelssohn, A Midsummer Night's Dream** Ambrosia Singers. Philharmonia Orchestra/Marriner. Philips DIGITAL 115546

**Artur Rubinstein: Chopin, 14 Waltzes** "[His] playing is relaxed, assured, and wonderfully controlled."—*American Record Guide* RCA 101987

**Kiri te Kanawa: Blue Skies** With Nelson Riddle: Title song, *Speak Low, How High The Moon, So In Love*, 8 more. London DIGITAL 115035



Luciano Pavarotti

**Strike Up The Band—The Canadian Brass Plays George Gershwin** Title song, *The Man I Love, Porgy & Bess Suite, 3 Preludes*, more. RCA DIGITAL 160640

**The King And I** Yul Brynner, Constance Towers & revival cast. *Getting To Know You, Hello Young Lovers, Shall We Dance*, more. RCA 123742

**Tchaikovsky, Symphony No. 4** Chicago Symphony Orchestra/Solti. "Eminently successful: powerful, fluent and virtuosic."—*Ovation* London DIGITAL 125038

**Mozart, Symphonies Nos. 40 & 41 (Jupiter)** James Levine conducts the Chicago Symphony Orchestra. RCA DIGITAL 104810

**Beethoven, Symphony No. 3 in E-Flat (Eroica)** Academy of Ancient Music/Hogwood. L'Oiseau-Lyre DIGITAL 115535

**Rubinstein Plays Rachmaninoff** Piano Concerto No. 2 & Rhapsody On A Theme Of Paganini. RCA 170232

**Debussy, La Mer; Nocturnes** Boston Symphony Orchestra/Davis. "The BSO is in tip-top form throughout."—*Ovation* Philips DIGITAL 115068

**Bach, Organ Works** Daniel Chorzempa plays the Toccata & Fugue in D Minor; the Prelude, Largo & Fugue in C; more. Philips DIGITAL 115193

**Plácido Domingo Sings Tangos** *Mi Buenos Aires Querido, Alma de Bohemio, Nostalgias, El Día Que Me Quieras*, 6 more. DG 105302

**Kiri te Kanawa: Ave Maria** *Jesu, Joy Of Man's Desiring; Let The Bright Seraphim; O Divine Redeemer*; more. Philips DIGITAL 115213

**Perlman: Mozart, Violin Concertos Nos. 3 & 5** Vienna Philharmonic/Levine. "Radiantly sumptuous."—*High Fidelity* DG DIGITAL 115146

**Barry Douglas: Tchaikovsky, Piano Concerto No. 1** London Symphony Orchestra/Slatkin. *Ovation's* Debut Recording Artist Of The Year! RCA DIGITAL 164293

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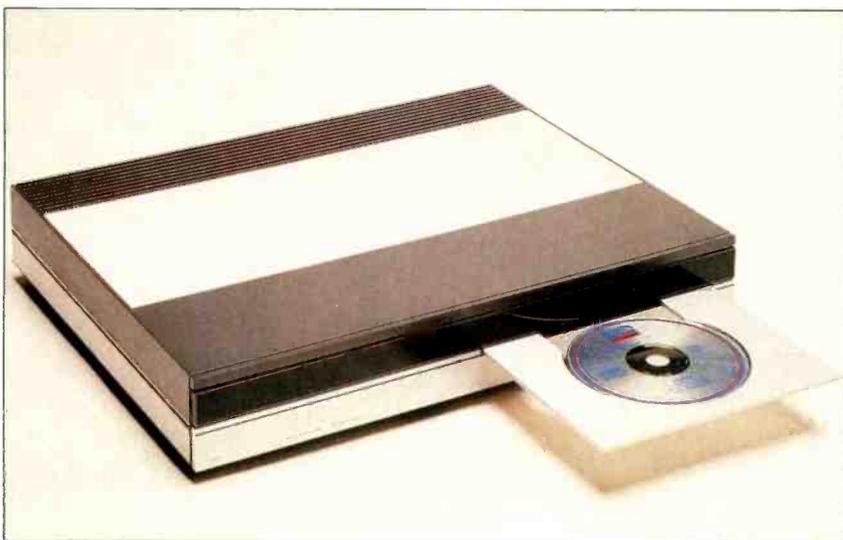
XATF2

BF

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## NEW PRODUCTS



### Bang & Olufsen

Bang & Olufsen's Beogram CD 5500 compact disc player, designed to be operated as part of B&O's Beosystem 5500, incorporates separate 16-bit, quadruple-oversampling circuitry for each stereo channel as well as analog filters. Rated signal-to-noise ratio is 110 dB (A-weighted). An added-time display function facilitates recording discs onto cassette tapes. Using the Beosystem master control, CD tracks can be selected directly, or listeners can command the player

to scan a disc, playing the first 16 seconds of every track. Three-speed forward and reverse search are also available. Without the Beosystem control, the CD 5500 can be used to play an entire disc from beginning to end. Frequency response is rated as 3 to 20,000 Hz  $\pm 0.3$  dB, dynamic range as greater than 96 dB. Dimensions are 16½ x 3 x 12¾ inches, and weight is about 14 pounds. Price: \$999. Bang & Olufsen, Dept. SR, 1150 Feehanville Dr., Mount Prospect, IL 60056.

**Circle 123 on reader service card**



### Soundcraftsmen

The Soundcraftsmen Pro-Control Four preamplifier (shown with the matching T6200 tuner) uses C-MOS digital-control electronic switching, which is said to allow all signal paths to be optimally located near the input/output jacks mounted on the circuit boards. The integration of buffered inputs with C-MOS and proprietary circuitry is said to eliminate the distortion and signal degradation caused by some electronic switching techniques.

The preamplifier can handle up to

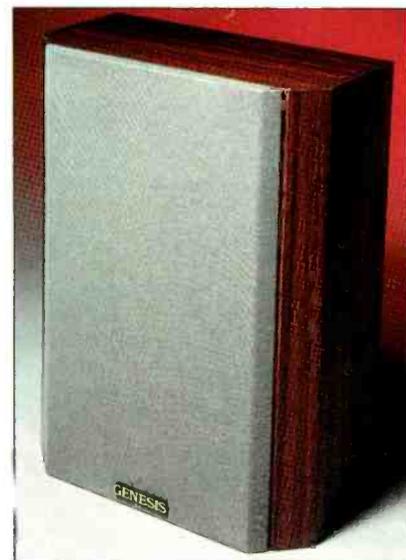
eight inputs and outputs. The sources selected for line or tape output, or both, are indicated by sequentially selected LED's. It is possible to select electronically inverted line outputs for tripling the power by bridging. Two additional input/output loops are provided for external processing of either line or tape signals. A DIRECT mode, which eliminates all signal processing and unnecessary signal paths, is said to utilize the full capabilities of CD players. Price: \$699. Soundcraftsmen, Dept. SR, 2200 S. Ritchey, Santa Ana, CA 92705.

**Circle 124 on reader service card**

### Genesis

The Genesis Model 7 Series 2 compact two-way speaker has a 6½-inch polypropylene woofer with a large, 20-ounce magnet. The woofer has a natural rolloff at 3,500 Hz, and the speaker's very flat rated response is achieved with a simple crossover circuit. The tweeter is an 0.8-inch polycarbonate dome. Recommended amplifier power is 10 to 60 watts. The cabinet measures 16 x 12 x 5 inches and has an oak-grain vinyl finish. Price: \$199 a pair. Genesis, Dept. SR, 225 Heritage Ave., Portsmouth, NH 03801.

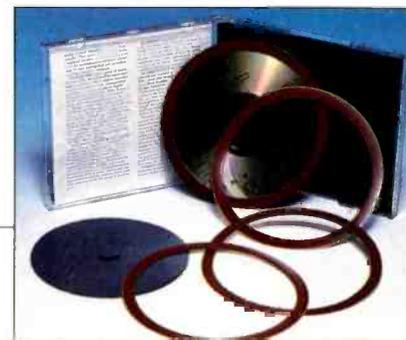
**Circle 125 on reader service card**



### Scosche

Scosche's compact disc rings are designed to fit most CD players. The dense, pliable, heat-resistant vinyl ring acts as a balancing weight around the perimeter of a disc, improving playback stability by reducing rotational flutter and absorbing spurious vibrations. The rings attach permanently to CDs and are installed with a centering device. Price: \$19.95 to \$29.95 a package. Scosche, Dept. SR, 67 W. Easy St., Unit 124, Simi Valley, CA 93065.

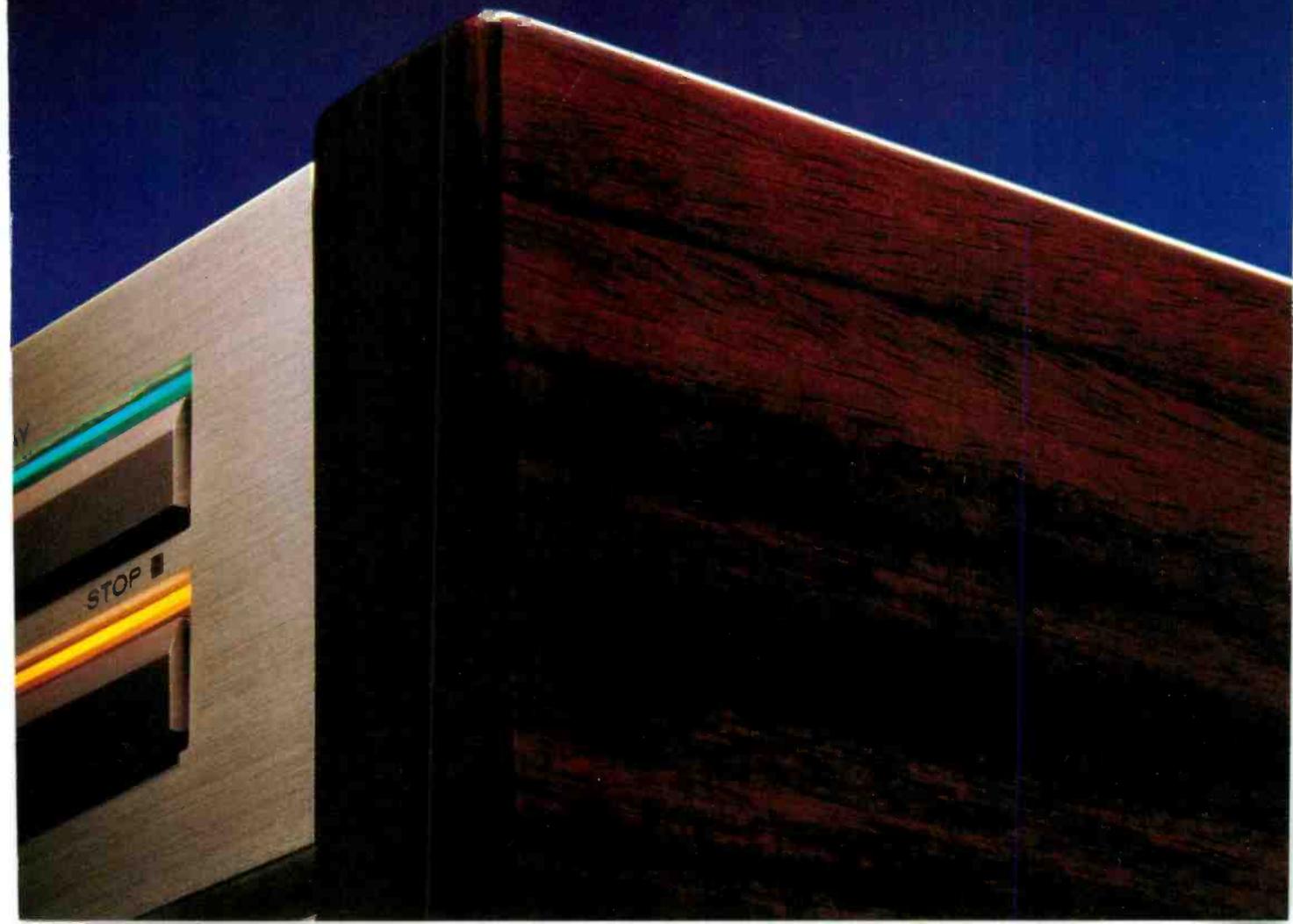
**Circle 126 on reader service card**



m a r a n t z

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S e r i e s



January 1988

Dear Stereo Review Reader,

If you're like us, you are reading this magazine to find out about new and exciting equipment. And you're probably reading it from cover to cover.

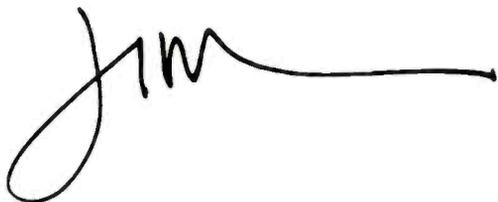
We've just returned from the Consumer Electronics Show, where the home entertainment industry first shows its most exciting products, and we thought you'd like a preview of what's coming from Marantz.

At the show we introduced our state-of-the-art 94 Series, which you'll read about over the next few pages, and two other important product lines — Century Series and Programmable Remote Controls.

Fifteen components comprise the Century Series, including integrated amplifiers, tuners, CD players, cassette decks, and turntables — plus several stylish new speakers. Century represents an excellent balance of price and performance — a unique opportunity for the audiophile.

The easy to use RC20 Programmable Remote Control learns the commands from your audio system, TV and VCR remotes. After you try this device, you'll wonder how you ever juggled your collection of remote controls.

Thanks for your support over the years. We hope that 1988 is exciting for your eyes and ears!

A handwritten signature in black ink, appearing to read "Jim", with a long horizontal flourish extending to the right.

Jim Twerdahl  
President

In the nineteen fifties when stereo was just beginning to establish itself, the undisputed ultimate in high fidelity componentry consisted of Marantz audio separates. In the world of high performance audio, Marantz was Rolls Royce and Ferrari rolled into one — artistry in stainless steel, incomparable sonics, painstaking hand craftsmanship, and legendary reliability. Marantz components soon became collectible classics, and their enduring appeal owed as much to their far reaching technical innovations as to their elegance in visual design.



Like fine musical instruments, 94 Series components are a means to an end. Music.

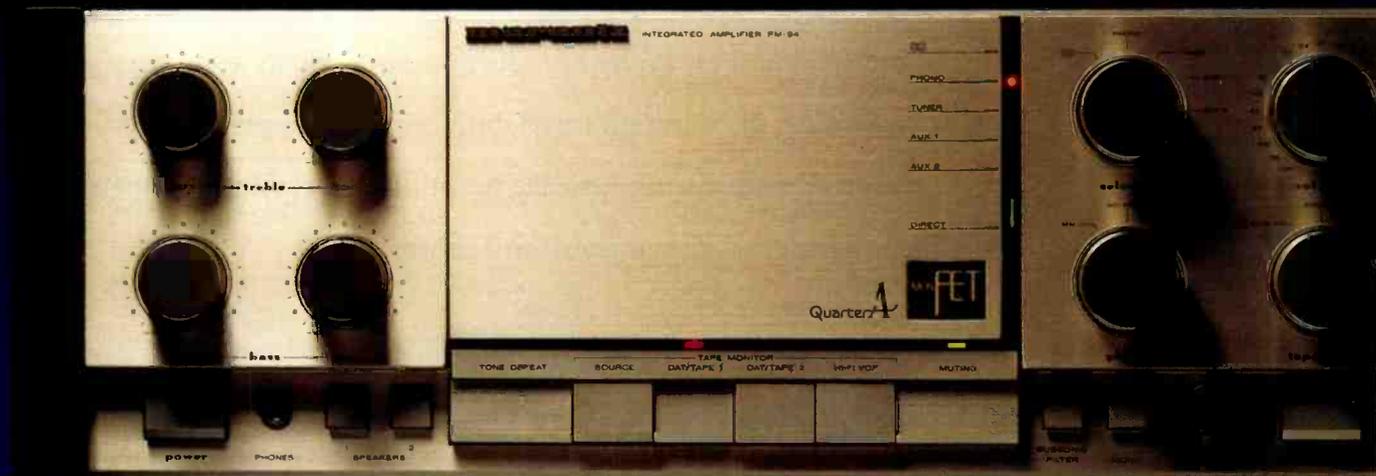
When we conceived our 94 Series of perfectionist components we strove to maintain that Marantz legacy of innovation, and we made each one of these limited production components a showcase for demonstrating the most advanced thinking in audio playback technology. We also made them physically beautiful and absolutely impeccable in the quality of their finish and construction.

The 94 Series currently includes integrated amplifiers in two power ranges, a compact disc player, a DAT (digital audio tape) tape recorder, and a component digital-to-analog converter. In combination these components make a striking visual statement and provide an unparalleled combination of musical accuracy and system versatility.

I n t e g r a t e d   A m p l i f i e r s



P M - 9 4 B



P M - 9 4 G

### **The PM-94 and PM-84D Integrated Amplifiers**

An integrated amplifier is the cornerstone of an audio system, providing a connecting point for all other components in the system, and supplying the electrical power to drive the loudspeakers.

As a power source, an amplifier must add or subtract nothing from the music signal. It must handle variations in the input impedance of a loudspeaker system with absolute composure, and it must meet demands for peak power with no audible signs of distress. Above all, it must have no sound or character of its own. A truly high performance amplifier will involve you in the musical performance by revealing even the subtlest details in today's high accuracy recordings.

The PM-94 and PM-84D attain their measure of excellence in audio amplification through intelligent design, advanced construction techniques, and the use of the finest internal parts.

### **Marantz Power Supplies — The Source of Musical Fidelity**

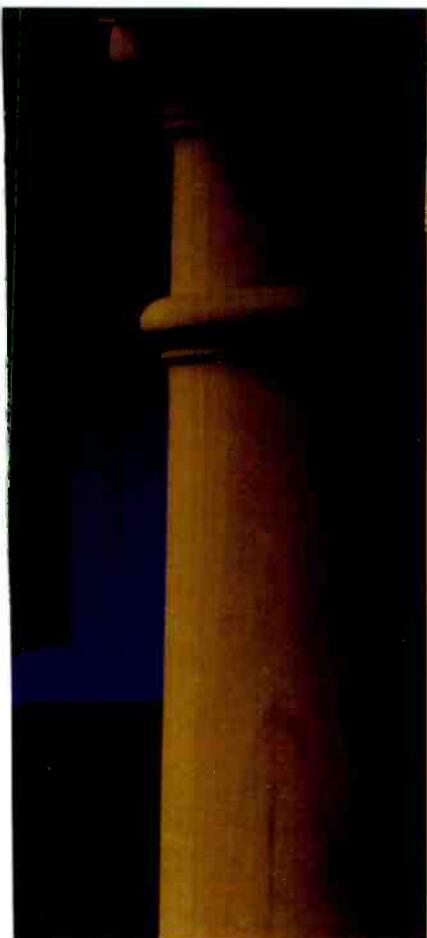
The heart of any amplifier is its power supply, the reservoir of electrical energy from which the amplifier's signal circuitry draws to boost signal level. It is no exaggeration to say that proper engineering of the power supply is critical to the sound of the amplifier.

The PM-94 and PM-84D power supplies are designed to provide clean, smooth, noiseless reserves of current under all playback conditions, and to reject external electrical disturbances such as electro-motive energy from the loudspeakers and powerline voltage fluctuations. Such power supply stabilization is vitally important in musical reproduction because it allows signal circuits to operate with the greatest linearity. This results in superior bass definition and a sense of completely un-stressed musical dynamics in the rendering of drums, piano, and other percussive instruments.

These amplifiers actually house four separate power supplies on one chassis. Each channel is equipped with one supply for the low level voltage amplifying circuitry, and another supply for the power output stage. Each supply is powered by a separate winding from the oversized toroidal power transformer, and each has its own dedicated, large capacity filter capacitor for storing energy. These multiple high current supplies permit the 94 Series amplifiers to supply increasing power into low impedance loads, provide for a high immunity to hum, and virtually eliminate crosstalk (the condition where signals from one circuit leak into another circuit through a single power supply feeding them both).

Marantz 94 Series power supplies also feature an AVSS (Automatic Voltage Shift Supply) circuit that instantaneously adjusts power supply voltages to meet signal demands. AVSS, when utilized in power supplies with such massive electrical storage capabilities, endows the amplifier with enormous headroom for responding to musical peaks, while at the same time increasing electrical efficiency and minimizing heat generation.

Such overengineering of the 94 Series power supplies gives these amplifiers a remarkable sense of clarity. Musical details seem more in focus, and even the most dynamic compact discs are reproduced with a notable lack of stress.



### **Quarter A Operation for Warm, Musical Reproduction**

Both the PM-94 and the PM-84D boast pure class A operation up to one quarter of their rated outputs. Class A operation involves sending a high idling current through the output transistors at all times. This keeps their internal temperatures stable, and prevents transistors from switching on and off during playback and generating notch distortion in the process. Class A operation permits a transistor to track a signal more accurately than in typical class AB operation, resulting in extremely smooth, natural sounding musical reproduction, with a notable lack of edginess or harshness even at very loud playback levels.

We have found that by operating our amplifiers in class A mode up to a quarter of their rated outputs, the full sonic benefits of class A are obtained without the necessity of brute force engineering strategies. (Pure class A operation up to full rated power would require great bulk and weight.) And in Quarter A, the transistors change to AB mode only at high signal levels (where distortion is effectively masked), so the amplifier is essentially class A in operation.

### **Perfection in Every Detail**

The PM-94 and PM-84D are constructed with meticulously selected circuit components to ensure consistent operation over many years and to provide the most refined sonics available. Special Cerafine capacitors have been manufactured for these amplifiers by the Elna Corporation, and other circuit elements, including transistors, resistors and even internal wiring have been chosen only after the most exhaustive listening comparisons. The internal chassis of both amplifiers are heavily plated with high purity copper to provide a low impedance grounding plane and high immunity to low level electrical noise. Special oxygen-free copper wiring is used for all critical signal handling connections.

### **Superior Flexibility and User Convenience**

The 94 Series amplifiers are designed to provide maximum flexibility and convenience as well as no compromise sonic performance. Separate bass and treble controls are provided for both channels, and each has inputs for up to seven signal sources, including hi-fi video and the new DAT (digital audio tape) decks. For absolute lowest noise and distortion, both the compact disc and phono inputs may be routed directly to the amplifying circuits, bypassing the tape dubbing and tone control circuitry.

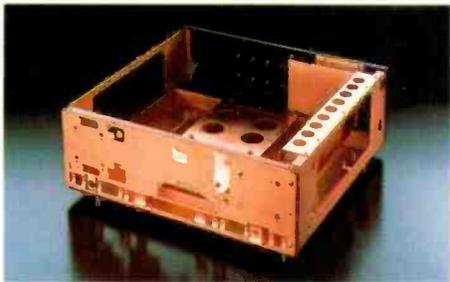
Three separate phono cartridge input levels are provided, and a high quality transformer is included in the PM-94 for moving coil cartridges. Both amplifiers have outputs for two speaker systems, and both are capable of driving two pairs of speakers simultaneously.

The PM-94 is available in satin black with oak side panels or in rose gold with rosewood panels.





P M - 8 4 D



Copper plating the entire chassis provides a high immunity to low level electrical noise.

C o m p a c t   D i s c   P l a y e r s



C D - 9 4 G



C D - 9 4 B

### **CD-94 Compact Disc Player**

The compact disc medium offers extremely impressive specifications in terms of dynamic range, absence of noise and distortion, and general musical fidelity. But extracting all of the information encoded on a disc requires a thoroughly engineered and exactly constructed player.

#### **Precise Mechanical Construction**

Performance engineering begins with the mechanical transport system that spins the disc and operates the laser. Since the audio track is only two microns wide, even the smallest unwanted movement of the disc will adversely affect playback.

Disc stability is ensured by the CD-94's high quality motors and anti-resonance chassis construction. The transport mechanism is provided with an elastic suspension system that isolates the spinning disc from external shocks and airborne vibrations, while the outer chassis improves isolation still further by means of a heavy resonance-suppressing aluminum top-plate and specially damped, cast metal heatsinks. A magnetic clamp holds the disc firmly in place during playback and all mechanical parts are fabricated from die cast aluminum for mechanical reliability and the last measure of acoustical isolation.

All of this mechanical sophistication has a definite purpose — the extraction of every bit of musical information contained in the signal track. When this is successfully picked up and conveyed into the analog circuits of the player, the unique tonal qualities of various instruments and voices will be clearly defined, even in densely orchestrated passages.

#### **Advanced Digital Circuitry for Superior Digital Sound**

The CD-94 uses the latest and most sophisticated decoding and output filtering circuitry to interpret the digital information on the disc. It is a true sixteen bit, four times oversampling design.

Sixteen bits of information represents the full 96dB of dynamic range on a compact disc — in other words, all of the information that relates to every sound on a recording. Many compact disc players only decode fourteen of those sixteen bits, resulting in reduced clarity and loss of subtle musical details.

Four times oversampling is a means of moving up the frequency of the digital pulse train or "clock" frequency which carries the audio information. The pulse train itself is only a code for conveying this information, and the digital pulses must be removed in the decoding process. Speeding up the "clock" allows the digital pulses to be removed more easily without contaminating the music signal.

The CD-94 uses two filters to remove high frequency energy unrelated to the music signal. The first is a digital filter that performs mathematical analyses of the signal in the digital domain and subtracts false data representing unwanted high frequency content. The second filter is a gentle analog filter that removes the actual clock frequency of the oversampled digital signal. Neither filter imparts significant phase shift to the audio signal and all of the information on a recording relating to the placement of performers is preserved.

#### **Favorite Track Selection**

The CD-94 provides for extreme flexibility in programming. The unique FTS (favorite track selection) feature allows you to permanently program up to 1600 track selections. This enables you to store indefinitely, in any order, your favorite tracks from hundreds of separate discs.

#### **Absolute Signal Integrity**

The CD-94 shares the same sophisticated power supply engineering as the 94 Series amplifiers. A large toroidal transformer and large capacity filter capacitors are employed. Separate power supplies are allotted to the transport, front panel display, digital circuitry, and finally to the analog output circuitry. The separate supplies greatly reduce the "gritty" sound quality that results from electrical interference among the separate circuits.

For ultimate fidelity and freedom from residual noise, the CD-94 includes a pair of digital outputs, one electrical and the other involving a fiber optical connection and a laser transmitted signal.

The CD-94 is available in black satin finish with oak side panels, or rose gold with rosewood sidepanels, and includes a full function remote control. We believe that no other compact disc player has been made with such absolute attention to detail.

D i g i t a l   A u d i o   T a p e   R e c o r d e r s



D T - 9 4



D T - 8 4

### **DT-94/84**

DAT (digital audio tape) is the newest and most accurate recordable audio format available to the consumer, and the Marantz DT-94 and DT-84 represent the vanguard of this technology. Like the other components in the 94 Series, these recorders are built to the highest standards and incorporate the most sophisticated mechanical and electronic subsystems. For the first time, the home recordist has access to a studio quality medium.

### **A Medium for the Perfectionist**

DAT bears a strong family resemblance to the professional multi-track rotary head digital tape recorders that have been used in recording studios for many years. The technology is similar to that utilized in compact discs, but instead of physical depressions on a disc, DAT uses magnetized sections of recording tape to represent the digital pulses.

The pulses themselves constitute an intricate code that represents intensity measurements of individual sound waves. Each wave cycle in the enormous succession of sound waves comprising a musical performance is assigned a number in the digital code, and the numbers are stored on the recording tape just as numbers are recorded on a computer's magnetic hard or floppy disc.

Because the data on the tape is numeric rather than a direct analog audio signal, tape hiss, tape distortion, and even slight variations in tape speed cannot contaminate the sound. During playback, signals are created by a digital-to-analog converter reading the numbers on the tape and selecting corresponding signal voltage intensities. The result is a pure representation of the musical waveform as it appeared at the input.

### **Sophisticated Digital Circuitry**

The basic specifications of DAT are similar to those of the compact disc, but the DT-94/84 goes beyond standard specifications in its performance. These recorders use dual 16 bit oversampling D/A converters, a 96 pole digital filter, and a 3 pole minimum phase, anti-aliasing output filter. True 16 bit A/D (analog-to-digital) converters are used in the record section.

### **Unparalleled Fidelity and Versatility**

Sixteen bit resolution, and its resulting 96dB of dynamic range, virtually eliminates background noise and permits you to record the most explosive musical crescendi without fear of overload or distortion. You can make perfect copies of prized old phonograph records or reel-to-reel tapes, you can make live recordings comparable to those made with digital mastering tape recorders, and you can make virtually perfect recordings from modern vinyl records and compact discs.

The convenient DAT cassette is a little over half the size of a standard analog cassette, yet it can hold two hours of continuous music. It can store so much information because of its advanced metal tape formulation and a high effective tape speed, or "writing-speed," of over nine feet per second — a speed made possible by the rapidly spinning head.

The DT-94/84 will record a live microphone feed at a sampling rate of 48kHz, the same frequency used in professional recording. It will also permit perfect dubs of a tape made on another consumer DAT machine — a direct digital data stream can be transmitted from one machine to another via a standard electrical connection or a fiber optical digital port.

### **Convenience and Programmability**

With DAT, individual tracks are much easier to access than on conventional tape decks, and the DT-94 can execute complex programming commands. DAT requires no bias adjustments, no azimuth calibration, no setting of recording level during direct digital recording, and tape type can be disregarded since all DAT cassettes use essentially the same tape formulation.

With the introduction of the DT-94/84, the music lover finally possesses a recording medium that performs to the standards of the digital age, while incorporating the styling and remote control functions expected in an advanced consumer component. These are simply the most impressive recording devices ever offered to the public.



C D A - 9 4 B

C D A - 9 4 G



### The CDA-94 Digital-to-Analog Converter

The CDA-94 is a component digital-to-analog converter — a device intended purely for the converting of the digitized data on a compact disc into an analog music signal that can be routed to an audio amplifier. All compact disc players include D/A converters as part of their decoding electronics, but making this circuitry separate has several advantages. First, the circuits are protected with the greatest possible electrical shielding; and second, they are provided with a degree of power supply capacity and stability impossible to achieve in a conventional CD player where all circuits share a common chassis and a common ground.

The Marantz CDA-94 also shares the same general circuit topology as the integral D/A converter in the CD-94, but it has selectable digital clock frequencies of 44.1kHz, 48kHz, and 32kHz, permitting the decod-

ing of compact discs, DAT (digital audio tape), and digital satellite radio broadcasts respectively. (Digital satellite audio transmissions have been approved in Japan and in some European nations.) The correct clock frequency is selected automatically so you never have to worry about matching the source to the appropriate frequency.

This component D/A converter uses the same advanced four times oversampling digital filter D/A conversion technology featured in the CD-94. But here the safeguarding of signal integrity is taken even further by the provision of separate circuit boards, separate power supplies, and even separate power transformers for the digital input section, the D/A converters themselves, and finally for the analog output amplifiers.

The CDA-94 will mate only with CD players such as the CD-94 that have direct digital outputs. It will accept either electrical or fiber optical inputs, and is equipped with line level outputs for linkage with preamplifiers, integrated amplifiers, and signal processors. Output connectors

include both standard RCA jacks and balanced line connectors.

An absolute phase inverter is also provided, which can reverse the positive and negative halves of the wave cycles comprising the audio signal. Phase is often reversed during the recording process, and restoring correct absolute phase can bring about a real improvement in stereo imaging.

When used with top quality loudspeakers and amplification, the CDA-94 will bring about subtle but significant improvements in depth and spaciousness and will provide a superior rendering of the soundstage.

The CDA-94 has a nonresonant aluminum chassis anodized in either satin black or rose gold. Black finish comes with oak side panels, and gold with rosewood.

# Specifications

## PM-94

Power Output per Channel	
FTC 4 ohms (20Hz-20kHz)	200 watts
FTC 8 ohms (20Hz-20kHz)	140 watts
Total Harmonic Distortion at Rated Power	
4 ohms	0.03%
8 ohms	0.02%
I.M. at Rated Power	
4 ohms	0.005%
8 ohms	0.006%
IHF Dynamic Power	
4 ohms	300 watts
8 ohms	180 watts
Damping Factor	200
Slew Rate	70 V/ $\mu$ s
Frequency Response (+1 dB)	101Hz-200kHz
Signal-to-noise Ratio, (A weighted) at 1 W Output	97dB
Dimensions H x W x D	6 1/2" x 18 1/8" x 17"
Weight	51 lbs

## PM-84C

Power Output per Channel	
FTC 4 ohms (20Hz-20kHz)	125 watts
FTC 8 ohms (20Hz-20kHz)	105 watts
Total Harmonic Distortion at Rated Power	
4 ohms	0.06%
8 ohms	0.03%
I.M. at Rated Power	
4 ohms	0.06%
8 ohms	0.03%
IHF Dynamic Power	
4 ohms	210 watts
8 ohms	130 watts
Damping Factor	110
Slew Rate	30 V/ $\mu$ s
Frequency Response ( $\pm$ 2 dB)	101Hz-100kHz
Signal-to-noise Ratio, (A weighted) at 1 W Output	90dB
Dimensions H x W x D	6 1/2" x 18 1/8" x 17"
Weight	40 lbs

## CD-94

Frequency Response	41Hz-20kHz $\pm$ 0.5dB
Dynamic Range	Greater than 96dB
Signal-to-noise Ratio	96dB
Total Harmonic Distortion (incl. noise)	0.003% (1kHz)
D/A Conversion	16 bit 4 times oversampling
Dimensions H x W x D	4 1/8" x 18 1/8" x 13 1/8"
Weight	28 lbs



## CDA-94

Frequency Response (with a 44.1 kHz input signal)	2Hz-20kHz $\pm$ 0.1dB
Signal-to-noise Ratio	More than 101dB
Dynamic Range	More than 96dB
Channel Separation	More than 90db
Total Harmonic Distortion	0.003% (at 1kHz)
Headphone Output Terminal	Output level @ 8 ohms, 14 mW (THD: 0.1%)
Dimensions H x W x D	4 1/8" x 18 1/8" x 13 1/8"
Weight	25 lbs



## DT-94/84

Frequency Response	2Hz-22kHz $\pm$ 0.5dB
S/N	93dB
Dynamic Range	95dB playback 90dB record/playback
Harmonic Distortion	0.003%
Separation	90dB
Wow/Flutter	$\pm$ 0.001%
Input:	Analog + Digital Optical
Output:	Analog + Digital Optical
Dimensions H x W x D	4 1/8" x 18 1/8" x 13 1/8"
Weight	25 lbs



Note: Pre-recorded digital audio tapes and compact discs cannot be copied directly via the digital ports. Both are recorded at a 44.1kHz sampling frequency, and no consumer DAT machine copies digital data at that frequency.

However, existing consumer DAT machines can accept the analog output signal from either a CD player or a DAT recorder and make a virtually perfect recording from it. DAT pictures are of prototypes and specifications are preliminary.

The 94 Series of components offers a level of performance and workmanship that will establish them as classics in their own right — worthy heirs to the great Marantz tradition of the past. Because they were designed by engineers who are also music lovers, they will provide you with a depth of musical experience that is simply unobtainable with lesser componentry. The proof is in the listening.

**marantz**  
H I G H F I D E L I T Y

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CIRCLE NO. 57 ON READER SERVICE CARD

Printed in U.S.A.

by Ian G. Masters



## Grounding Components

**Q** I have recently experienced serious hum problems with my audio system, which I attribute to inadequate grounding. I have run a separate ground wire to the mounting screw of a nearby AC outlet, and this has improved things to some extent. But to prevent such problems, why don't audio manufacturers use three-wire grounded line cords on their equipment?

KIRK SOLDNER  
Roseville, MN

**A** Some do, particularly makers of high-power amplifiers. But as a rule, grounding a system at too many points runs the risk of making hum problems more troublesome than they would otherwise be.

Although we think of "ground" as an absolute, with an electrical potential of zero, that is rarely the case in practice. Those elements of an audio component that are supposed to be at ground potential—the chassis and things connected directly to it—will normally only be close to the ideal ground level, and the difference between "system ground" and real ground may vary from component to component. What's more, the same thing happens in your home's electrical system. The nominal ground may have slightly different residual electrical potentials at different locations. This is even possible with different outlets in the same room.

When any of these variable "grounds" are connected together, their differences allow current to flow between them. Since our houses are loaded with energy radiated by their electrical systems, 60-cycle hum is what is primarily picked up by these unintentional circuits (called "ground loops"), although the signals of nearby radio transmitters can creep in as well. Normally, one component is grounded to the next by the shielding on the audio cables between them, so if a 60-Hz signal is being carried—and radiated—by the shield itself because of such differences in potential, it will be picked up by the signal-carrying center conductor and then be amplified by the later stages of the system.

Using three-wire power cords would connect each component in a system individually to "house ground," increasing the possibility of ground loops and therefore of audible hum.

## Double Erasure

**Q** When I rerecord cassettes, I always run them through my recorder once with no input to erase them fully before recording new material. Does this have any advantage over erasing and recording in a single pass?

RICHARD THOMPSON  
Little Rock, AR

**A** It shouldn't, if your deck is functioning properly. Recording a signal on tape is a matter of imposing a regular magnetic pattern on the particles that make up the oxide coating; erasing simply scrambles the pattern. The playback head regards random magnetization as an absence of signal. All tape recorders are designed so that one pass by the erase head is enough to remove all magnetic regularity. A second erasure will not make the pattern "more random."

If you find, however, that you need a second pass to achieve complete erasure, there may be a mismatch between your deck and the tapes you are using. Different types of tape have different requirements for complete erasure. Chrome or chrome-equivalent tapes require a stronger erase field than do normal ferric-oxide tapes, and metal tapes require an even stronger one. Make sure that your deck is able to handle the type of tape you are using and that any tape-type selector switches are in the proper position.

If all is well on that score, the tape might be making poor contact with the erase head. This is usually caused by contamination by dirt or oxide buildup, and it can usually be cured by a thorough cleaning of the heads and tape guides. If cleaning doesn't remedy the

situation, there may be an electronic malfunction in the erase-head circuitry, in which case the deck will have to be repaired professionally.

## Video Narration

**Q** As a longtime resident of Hawaii, I often record scenic local TV programs on my VCR, and sometimes I copy them for mainland relatives. I would like to add commentary to the tape copies. I am told this can be done easily, but I don't know how. Can you offer any suggestions?

ALAN GRAVES  
Honolulu, HI

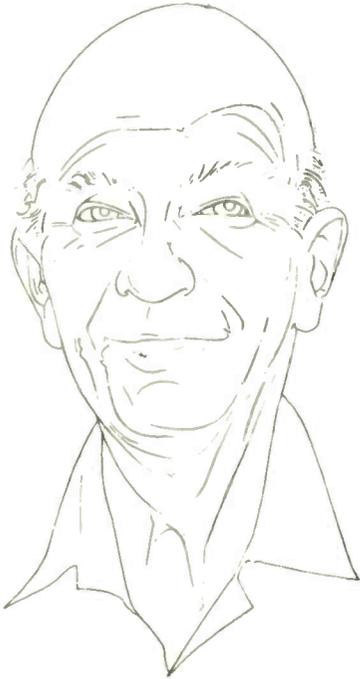
**A** The most straightforward method is to use a simple microphone mixer (Radio Shack offers several at very reasonable prices). Connect your playback VCR's AUDIO-OUT jack to one of the mixer's high-level inputs, your microphone to a low-level input, and the output to the AUDIO-IN jack of your copying VCR. Then simply make your commentary as you copy. You will probably have to make one or two dry runs to establish the proper balance between the original soundtrack and your commentary, and you may have to recopy some tapes, or parts of them, if you stumble over your words, but you'll get better in time.

Alternatively, you could use the "audio dub" feature included on many VCR's. This allows you to insert your comments wherever you choose in either the original or (preferably) the duplicate version of your recording. The major drawback of this procedure is that the original soundtrack is lost in those sections.

If one of your recorders features hi-fi sound, it is possible to leave the original sound intact on the hi-fi track and record your commentary on the conventional linear sound channel. Most hi-fi machines allow the two to be blended during playback. If your mainland relatives have hi-fi machines, you could add the commentary to their copy, and this would give them the option of excluding your remarks and just listening to the original. It would probably be preferable in this case, however, to add your narration to the original so that you can control the mix on the duplicate tape (you can always change or erase your additions to the original tape afterward).

*If you have a question about hi-fi, send it to Q&A, Stereo Review, 1515 Broadway, New York, NY 10036. Sorry, but only questions chosen for publication can be answered.*

by Julian Hirsch



## System Compatibility Problems

**I**N the early years of component hi-fi, there was little difficulty in mating different products, even when they weren't the same brand. Most loudspeakers had a rated impedance of 8 or 16 ohms (4-ohm speakers were rare—the original AR-1 of 1954 was one of the first I can recall using). Vacuum-tube amplifiers used output transformers that matched the high impedance of their power stages to any load impedance that was likely to be encountered, and even a severe mismatch was unlikely to cause any problems.

Lower speaker impedances are common nowadays because they make more effective use of an amplifier's maximum power-output capabilities. Since output transformers are no longer used, the power output is inversely proportional to the load impedance (up to the maximum capabilities of the amplifier). The impedance of most speakers varies widely with frequency and may become highly reactive (inductive or capacitive) at certain

frequencies, which can cause distortion or stability problems with certain amplifiers. Amplifier stability has been greatly improved in recent years, however, and most speakers are easy to drive with almost any amplifier, assuming that its power output is consistent with the speaker's sensitivity.

Although there still are no official standards governing the voltage levels of the signal in different parts of the system—with the notable exception of compact disc players, whose standard output is 2 volts  $\pm$  5 percent—there is a rough consensus among manufacturers that makes almost all amplifiers compatible from the standpoint of level matching. So-called "high-level" signal sources such as a tuner, tape deck, or preamplifier can generally deliver at least 1 or 2 volts, and most are capable of a considerably higher undistorted output. Almost any power amplifier can be driven to its full rated output with no more than 1.5 volts of signal (the EIA's standard amplifier tests are based on a 0.5-volt reference level). There are no real compatibility problems in this part of the system.

One of the few components whose performance is directly affected by its load is the moving-magnet phono cartridge. Over the years there have been cartridges designed for loads of 10,000, 22,000, or 47,000 ohms as well as for load-capacitance values ranging from less than 100 picofarads (pF) to as high as 500 pF. Today, 47,000 ohms is the universal load standard, although capacitance remains an undefined parameter. Some preamplifiers provide selectable capacitance values for their phono inputs, but the high-frequency response of most cartridges varies only slightly

over a capacitance range of 100 to 300 pF or more, making this a moot consideration in terms of system compatibility.

It would seem that standardization, even of a *de facto* nature, has effectively eliminated the risks of combining audio components from different manufacturers in a single system. Or so I had believed until digital audio appeared on the scene.

In order for a digital component, such as the compact disc player, to function *at all*, exacting standards must be applied to every detail of its operation and to the software used with it (the CD's). Such standards were established early in the development of the CD format, principally by Sony and Philips, the format's co-developers. All indications were that any CD manufactured to those standards would play satisfactorily, with the full quality for which the system was designed, on any player designed according to the same standards.

That was the situation that existed until very recently. While occasionally a CD would fail to play properly on a certain player, for a variety of reasons, it was necessary for Philips to make special test records with deliberate defects of calibrated magnitude in order to test the error-correction capability of CD players.

Then came digital audio tape (DAT), and with it the first indication that all was not as perfect as it seemed in the digital-audio world. When I tested two early DAT recorders for the July 1987 issue of *STEREO REVIEW*, I found that a recording made on the JVC XD-Z1100 using a 32-kHz sampling rate would not play back on the Sony DTC-1000ES, although it too was designed for playback in the 32-kHz mode. At the time, this phenomenon had to be assigned to the category of unexplained effects, of which there are quite a few in the audio world. Furthermore, both DAT decks were very new, little information was available on them, and I was unfamiliar with their idiosyncrasies.

Currently a number of high-end CD players are equipped with digital output jacks, and sometimes with

### Tested This Month

*Mitsubishi DP-311R*  
*Compact Disc Player*  
*Klipsch Chorus Speaker*  
*Luxman R-115 Receiver*  
*Kyocera DA-310cx*  
*Compact Disc Player*

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optical-fiber outputs as well, in addition to the usual analog audio outputs. These digital outputs are intended to make the players usable with other components having their own digital-to-analog (D/A) converters, allowing the program signal to be moved from one component to another in digital form and converted to analog form as close as possible to the power amplifier and speakers. Presumably, this would eliminate or reduce any degradation of quality or signal-to-noise ratio before the signal reaches the analog portions of the system.

Several integrated amplifiers having their own D/A circuits have been introduced, and more can be expected. It is implied, and often stated as a fact, that these external digital circuits are of the highest currently available quality, for otherwise they would hardly be able to provide a worthwhile improvement in listening quality over those of the CD player itself.

We recently tested one of these products, the Sony TA-E77ESD control amplifier. Although our conventional tests of its analog circuit performance confirmed the ex-

cellence of its design, testing its D/A converters required a signal of known quality from a digital source. The most convenient source at hand was a CD player, the Sansui CD-X901, that had the necessary digital output and was in addition an excellent component in its own right. The signal itself was a sweeping frequency tone from a test CD, spanning the full audio range. To our surprise, when this digital signal was supplied to the Sony preamplifier, the resulting audio output was clearly lacking in high frequencies, yet the response of the CD-X901 alone from the same disc was as good as that of any CD player in our experience. What went wrong?

To isolate the source of the problem, we repeated this test using two other suitably equipped CD players, a Sony CDP-705ESD and a Yamaha CDX-1100. Both worked perfectly well with the Sony TA-A77ESD amplifier, although its response flatness and channel balance were not quite as ideal as those of either CD player. A Sony representative suggested that the initial compatibility problem might have arisen because of a departure by Sansui from the

Sony/Philips digital-interface standard. Apparently a CD player can do a fine job of playing compact discs yet be unable to supply a proper signal to an external D/A converter if the standard has not been followed exactly. That seems like a reasonable, though somewhat disturbing, explanation of the effects that we had observed.

Combined with our earlier experience with the DAT recorders, this digital-output compatibility problem makes me wonder about the supposed near-perfection of digital signal transfer and processing, at least as it applies to home music systems using components of different manufacture. It is still early in the game, but I for one would hesitate to invest in such a system at this time without a firm guarantee that it would perform as expected. The safest solution would be to use a one-brand system, but that flies in the face of one of the major advantages of component hi-fi—the ability to mix and match components to suit your own budget and taste. It seems that with digital components you can mix, but not necessarily match! □



## MITSUBISHI DP-311R COMPACT DISC PLAYER

*Julian Hirsch, Hirsch-Houck Laboratories*

**T**HE DP-311R, the top of Mitsubishi's new line of CD players, features an unusual physical construction as well as advanced circuit design. It is probably the most compact CD player designed for home rather than portable use, yet it offers virtually all of the operating conveniences found in any current model as well as some unique features.

The DP-311R gives new meaning to the term "low profile." Its height of less than 2 $\frac{3}{8}$  inches, including the  $\frac{3}{8}$ -inch protrusion of its massive supporting feet, is close to the minimum possible for a front-loading player with a motor-driven drawer. It is 16 $\frac{3}{4}$  inches wide and 13 inches deep and it weighs 14 pounds. The

main operating controls are conventional soft-touch pushbuttons for two-speed fast search in both directions with audible sound, track skip in both directions, stop/clear, play/pause, and disc-drawer open/close. Above them are smaller buttons for programming a selected playback sequence and for repeating a disc, track, programmed sequence, or defined phrase. There is also a button marked PHASE. According to Mitsubishi, some CD's are mastered with the channels out of phase, and pressing the PHASE button on the DP-113R player reverses the phase of one channel, restoring the correct phase relation (as determined by listening).

Small buttons at the top of the

panel provide direct access to any track on a disc and are used to program playback of up to thirty-six selections in any order. The fluorescent display window contains the now-standard "music calendar" matrix, which shows all the track numbers (up to a maximum of twenty) when a disc is loaded, extinguishing them one by one as the tracks are played. In programmed operation, only the numbers of the selected tracks appear in this display. Other indications include the current track and index number, total number of tracks programmed, and elapsed time of the current track. A button above the window switches the display to show the remaining time on the disc and the position of the current track in the programmed sequence. Pressing the button again extinguishes the entire display, and a third press restores the initial display information. According to Mitsubishi, the option of switching off the display is provided to eliminate even the minute

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## TEST REPORTS

amount of noise contributed by its operation.

The circuit configuration of the DP-113R includes quadruple-oversampling digital filters, analog filters, and a separate digital-to-analog (D/A) converter for each channel. Separate power supplies are used for the digital, analog, and servo circuits. To minimize interference between the three-spot laser pickup's output and the digital-preamplifier stages, the preamplifier circuits are built into the pickup itself. The disc-drive's tracking mechanism uses a linear motor and a floating suspension to minimize the effects of external vibrations.

Mechanical rigidity and immunity to vibration effects were key goals in the design of the DP-113R. It is constructed on a die-cast base, and thick metal partitions separate the four basic sections: the drive mechanism, digital circuits, analog circuits, and power supplies. The player is supported at each corner by an antivibration column that measures 1½ inches in diameter. In addition, the top of the player is stiff-

ened (and possibly damped) by two large plastic panels that are rigidly screwed to its metal cover.

The wireless remote control supplied with the DP-113R duplicates all of its front-panel controls except the power switch. It also provides buttons for index selection and for checking or clearing a programmed sequence.

The performance specifications of most CD players are very much alike, but a few of the DP-113R's specs surpass those of many other machines. Specifically, its frequency response is rated as 4 to 20,000 Hz  $\pm 0.3$  dB, dynamic range as better than 96 dB, signal-to-noise ratio (S/N) as greater than 105 dB, and 1,000-Hz channel separation as better than 100 dB. Price: \$740. Mitsubishi, Dept. SR, 5757 Plaza Dr., Cypress, CA 90630.

### Lab Tests

The output into a standard EIA load (10,000 ohms in parallel with a 1,000-picofarad capacitance) from the 0-dB level of a test disc was 2.08 volts, with a channel imbalance of

0.25 dB. The A-weighted S/N was a very good 106 dB, and the dynamic range was 96 dB, both confirming the manufacturer's ratings. The channel separation of 125 dB at 100 Hz decreased to 110 dB at 1,000 Hz and 83 dB at 20,000 Hz. The low-level nonlinearity of the D/A converters was not significant, measuring  $-0.7$  dB at a  $-80$ -dB level,  $-3.3$  dB at  $-90$  dB, and  $-4.4$  dB at  $-100$  dB. The interchannel phase shift was the lowest we have ever measured from a CD player, 0 degrees from 1,000 to 20,000 Hz and a mere 4 degrees at 100 Hz. The extremely flat frequency response required the most expanded scale of our plotter to show its variations, which were within  $\pm 0.05$ ,  $-0$  dB from 20 to 20,000 Hz.

The linear servomotor of the DP-113R slewed the pickup from Track 1 to Track 15 of the Philips TS4 test disc in about 1 second, matching the fastest players we have used in the past. Its cueing was exact even when there was no silent interval between the tracks, and it had no difficulty tracking the largest defects on the Philips TS5A test disc. Finally, the player withstood hard raps and slaps on almost any part of its exterior without mistracking, earning an A grade overall and a B+ directly over the disc mechanism, where hard blows did cause some mistracking. No amount of shock administered to the thin metal shelf on which it rested had the slightest effect on its performance.

### Comments

It is not easy to maintain a high pitch of enthusiasm after testing dozens of largely excellent CD players, most of which look and sound like clones of some master player. This is not to denigrate today's CD players, which are superb performers and certainly among the best values in component hi-fi. But even the players that depart from the norm seem to provide few surprises these days.

The Mitsubishi DP-113R was one of those rare examples of a different approach to design and packaging that really makes sense and produces verifiable performance advantages. Upon opening its carton, I thought it was just another small,

### FEATURES

- Die-cast chassis with internal bracing to minimize transmission of vibration, top cover stiffened with plastic panels
- Vibration-isolating mounting feet
- Quadruple-oversampling digital filtering
- Programming for up to thirty-six tracks in any order
- Keypad for programming and direct access to any track
- Direct access to any indexed portion of a disc with remote control
- Track skipping and fast search, with audible sound, in either direction
- Repeat of single track, entire disc, programmed sequence, or any selected portion of disc
- Display of current track and index numbers and elapsed time in track or remaining time on disc and track position in programmed sequence
- Switch to turn off display to minimize noise
- Music Calendar to show numbers of unplayed tracks on disc or in program (up to twenty)
- PHASE button to reverse phase of one channel, brings channels into phase on incorrectly mastered discs

### LABORATORY MEASUREMENTS

**Maximum output level:** 2.08 volts  
**Total harmonic distortion at 1,000 Hz:** 0.006% referred to 0 dB, 0.002% referred to  $-10$  dB, 0.012% referred to  $-20$  dB  
**Signal-to-noise ratio (A-weighted):** 106 dB  
**Channel separation:** 110 dB at 1,000 Hz, 83 dB at 20,000 Hz  
**Frequency response:**  $\pm 0.05$ ,  $-0$  dB from 20 to 20,000 Hz

**Dynamic range:** 96 dB  
**Maximum phase shift (from 100 to 20,000 Hz):** 4 degrees at 100 Hz  
**Cueing time:** 1 second  
**Cueing accuracy:** A  
**Impact resistance:** top, A (B+ over disc); sides, A  
**Defect tracking:** tracked maximum defect levels on Philips TS5A test disc

## TEST REPORTS

inexpensive player, but picking it up disabused me of that notion (as did its price tag). It is one of the most solid-feeling audio components I have examined, with none of the hollowness or flimsiness typical of similar products. In fact, it feels as though it were machined out of a solid block of metal, and its weight seems out of proportion to its size.

Some other CD players also feature rugged mechanical construction, but they tend to be quite large and are not always as rigid and resonance-free as might be expected. The DP-113R is rigid and free of resonance, qualities that contribute to the way it ignores severe mechanical impacts, to say nothing of vibration. I suspect that its low profile (you could lose it under a newspaper) also has a lot to do with this characteristic.

Otherwise, the player matched or surpassed all but one of its rather impressive specifications. The only exception was its distortion level, 0.0045 percent THD + noise instead of 0.002 percent—a totally trivial difference. The display did not give us that "Ginza at night" feeling, nor did it contribute detectably to the player's noise level, which was lower than that of most others. Although the PHASE switch did not disclose any case of recorded phase reversal on the discs we played, it might come in handy if you have a large collection of CD's.

Did the DP-113R sound any different from other CD players? Not in any tests we were able to make. Was it different in any genuine, substantive respect? Definitely! Opening and closing the disc drawer and cueing up any part of a disc took place in total silence, and so rapidly that we were rarely aware of any delay. The DP-113R was as unobtrusive mechanically as it was visually and physically.

The combination of external simplicity and internal integrity that this CD player offers is rare but fortunately not extinct among consumer products that sell for less than stratospheric prices. There is little of value that could have been added to the DP-113R, and unless you need some feature it lacks, it would be hard to find a better CD player.

**Circle 140 on reader service card**



### KLIPSCH CHORUS SPEAKER SYSTEM

*Julian Hirsch, Hirsch-Houck Laboratories*

**T**HE Klipsch Chorus three-way speaker system is based on a 15-inch woofer, with a 3-inch voice coil and a 6-pound magnet, operating in a ported enclosure. The middle and high frequencies are radiated by horn-loaded compression drivers. The mouth dimensions of the mid-range horn are 10¼ x 3¼ inches, and the treble horn's mouth measures 4⅝ x 2 inches. The drivers are vertically aligned on the center line of the speaker board, with the woofer at the approximate center of the panel and the horns directly above it. The two ports, each 4 inches in diameter, are located at the bottom of the speaker board. The crossover frequencies are 650 and 7,000 Hz. The system's frequency response is rated as 45 to 20,000 Hz ± 3 dB and down 10 dB at 36 Hz.

The wood-veneered wooden cabinet measures 39½ inches high, 18½ inches wide, and 16 inches deep, including its black grille, which is

retained by Velcro fasteners. It weighs 89 pounds. Nominal impedance is 8 ohms. Price: \$1,490 per pair in walnut or oak veneer. Other finishes are available at extra cost. Klipsch, Dept. SR, P.O. Box 688, Hope, AR 71801.

#### *Lab Tests*

We placed the Klipsch Chorus speakers about 1 foot from the back wall and about 10 feet apart for testing and listening. The room-response measurement, averaging the outputs of both the left and right speakers and correcting the range above 10,000 Hz for known room-absorption properties, was generally quite uniform from about 50 to 20,000 Hz, although the curve had a pronounced peak and dip of ± 4.5 dB between 200 and 500 Hz and a smaller peak of about 4 dB at 1,500 Hz. The output rose smoothly by about 5 dB between 6,000 and 20,000 Hz. The output in the woofer range, from 50 to 200 Hz, was

## TEST REPORTS

remarkably flat, within about  $\pm 1.5$  dB between those limits.

A close-miked woofer measurement, made separately at the ports and the cone, produced a response curve that varied only about 1 dB overall from 50 to 150 Hz. It became somewhat ragged from 150 to 800 Hz and fell steeply above 800 Hz. Below 50 Hz, the output fell off at 12 dB per octave. Combining this curve with the room response yielded a composite frequency-response curve whose maximum variation from 35 to 20,000 Hz was only  $\pm 5$  dB, most of which was in the peak and dip between 200 and 500 Hz. This effect appeared only in the room-response measurements, suggesting that it was the result of a floor reflection rather than an intrinsic property of the system.

The Chorus, true to its Klipsch heritage, is a highly efficient loudspeaker. Driven by 2.83 volts of pink noise, it produced a sound-pressure level (SPL) of 96 dB at 1 meter. Although this did not quite match the speaker's 101-dB rating, it was one of the most sensitive speakers we have yet measured. We make bass-distortion measurements with a drive signal equivalent to a 90-dB SPL, which in this case was 1.41 volts. The Chorus's bass distortion was very low, about 0.5 percent or less from 100 Hz down to 50 Hz, increasing to 1.7 percent at 35 Hz and only 8.3 percent at 20 Hz.

The speaker's impedance varied widely, from a minimum of 4 ohms at 140 Hz to a maximum of 70 ohms at 2,100 Hz. There were smaller peaks of 40 ohms at 26 Hz and 28 ohms at 75 Hz, and there was a dip to 5 ohms at 52 Hz. By conventional rating methods, it is a 4-ohm speaker, although its impedance is well above that value over most of the audio range. In view of this, its 8-ohm rating seems reasonable.

The Klipsch Chorus was able to absorb huge short-term power inputs without significant distortion or damage. With a single-cycle input, followed by 128 off cycles, the amplifier clipped before the speaker's acoustic output showed any sign of distress. At 100 Hz, the output power at clipping was 1,150 watts into 6 ohms, at 1,000 Hz it was 500 watts into 15 ohms, and at

10,000 Hz it was 1,030 watts into 7 ohms. These measurements suggest that the Chorus can deliver peak acoustic outputs of as much as 125 dB (per channel) over most of the audio frequency range!

Quasi-anechoic response measurements with the FFT analysis system showed a considerable number of (mostly) minor up and down output fluctuations across the audio band. There was a narrow notch at about 5,000 or 6,000 Hz that was probably a crossover-interference effect between the midrange and high-frequency horn radiators. The horizontal-directivity measurements, on-axis and 45 degrees off the system's forward axis, showed that the overall level changed by 6 to 8 dB at frequencies above approximately 600 Hz, but there was little change in the actual frequency response.

The group-delay measurement showed that while each driver had a relatively constant delay (linear phase shift) within its operating range, the signals emitted from each of them traveled a different distance to the listener. There was a delay of about 0.6 millisecond between each of the drivers' outputs (the woofer's output lagged behind that of the midrange by 0.6 ms, and the midrange lagged the tweeter by a like amount), corresponding to a path-length difference of about 7 inches. Although the audible effects of such delays are debatable, they have been virtually eliminated from most other direct-radiating speaker systems.

### Comments

Apart from its physical size, the Klipsch Chorus is also a large speaker in a sonic sense. It is unlikely to "choke up" on high-level transients that could drive other speakers into distortion, or at least compression. Our pulse-power tests provided convincing evidence that any amplifier likely to be used in a home music system will "run out of steam" well before this speaker has reached its limits of acoustic output. Given its high sensitivity, however, it is unlikely that most people would be able to remain in the same room with a pair of these speakers pumping out a 125-dB-plus sound level!

Sheer volume aside, what about the sound *quality* of the Chorus? It was very different from the "laid-back" sound of most direct-radiator speakers, with a definite prominence or forward character in the midrange and a strong, bright top end. Some kinds of music thrive on this; others do not.

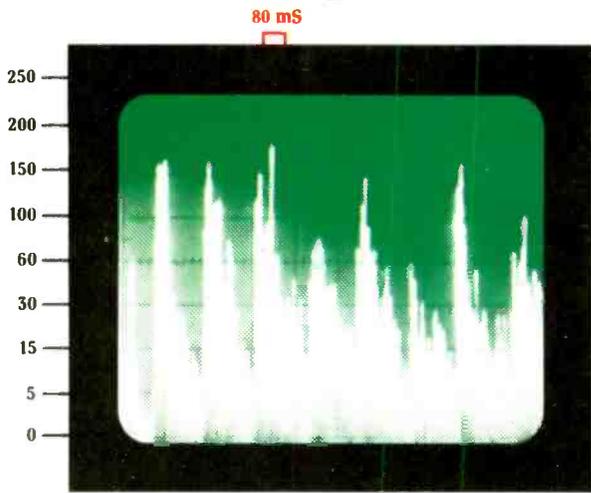
I listened to a variety of music with these speakers, making frequent A/B comparisons with other speakers with which I am familiar and comfortable. In our 15 x 20-foot room, the dynamic capabilities of the Chorus were difficult to appreciate—the speakers can be overpowering in a small room—but they always sounded clean and listenable. Somewhat surprisingly, they were completely without the upper-bass coloration that mars most speakers' reproduction of the male voice. Playing random noise, however, such as interstation FM tuner hiss, clearly revealed a slight midrange coloration and strong treble output that were consistent with our measured response variations. Some of these characteristics might not be present in another room.

Although the low bass output of this speaker drops off below 60 Hz, it is amply present for another octave. It may not always sound as though the low bass is there, but that is probably because the distortion level is so low. A 30-Hz tone with less than 2 percent distortion is not as audible as many people think (a bit of 60-Hz harmonic mixed in with it can sound louder than the fundamental). Also, the system's strong treble output can sometimes make it sound a little top-heavy.

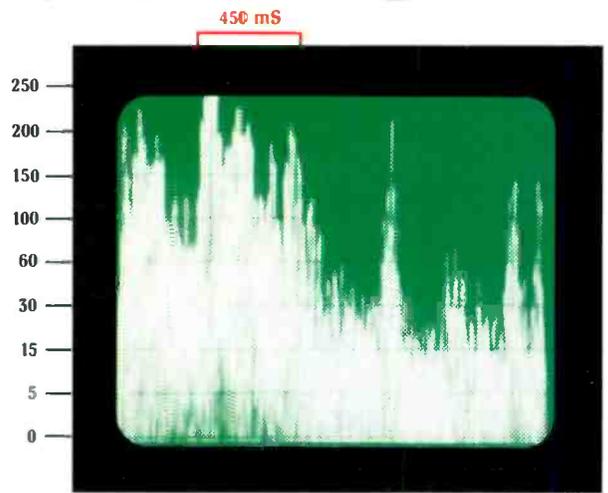
In the final analysis, a speaker should be chosen, if possible, on the basis of *your own* listening preference. I can say, however, that the Klipsch Chorus is a highly efficient system with tremendous dynamic capabilities and a strong, extended treble response. It has a forward, slightly bright sound and a notable absence of upper-bass coloration. It is large, heavy, and highly visible in rooms of average size or smaller. But after you have been listening to it for a while, other speakers tend to sound rather dull and subdued in comparison.

**Circle 141 on reader service card**

# PHOTOGRAPHS OF NOTE.



Genesis, "No Reply At All"



Chopin, Polonaise

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## TEST REPORTS



JOOK L. LUNG

### LUXMAN R-115 RECEIVER

*Julian Hirsch, Hirsch-Houck Laboratories*

**L**UXMAN'S new R-115 stereo FM/AM receiver offers an exceptional combination of high performance and functional, easy-to-use controls. It incorporates circuit and construction features of other Luxman products, including a Duo-Beta amplifier with separate wide-band and DC feedback paths and the STAR circuit layout, which minimizes signal-path lengths and is claimed to eliminate undesirable coupling between stages and through common ground paths.

The audio inputs of the receiver can be connected to a CD player, a

turntable, and two tape decks, with dubbing from Tape 2 to Tape 1 and full monitoring facilities. The R-115 also has some video switching capabilities. It can control recording and playback for one VCR and playback from a second VCR or a videodisc player (VDP), routing the audio signals through the audio system and the video to a TV set or monitor.

The internal signal sources of the R-115 are its digital-synthesis AM and FM tuners. For installations where the FM band is supplied by a cable system, the normal 200-kHz tuning steps of the FM tuner can be changed to 25 kHz by an internal

switch. The tuner has twenty preset memories in two banks of ten; each preset is assignable to an AM or an FM channel.

The FM tuner features a new front end using dual-gate MOSFET's and five-gang varactor tuning for its pre-selector stages, which accounts for its exceptional image-rejection rating of 100 dB. The intermediate-frequency (IF) section uses selected ceramic filters for improved group-delay characteristics and has a narrow-band reception mode in which an extra filter section is switched into the circuit. An auto-blend system reduces noise on weak stereo signals by narrowing the channel separation to 8 dB at 10,000 Hz.

The preamplifier section has two sets of output jacks, which can be used to drive additional amplifiers in multiple-room systems or to re-

## TEST REPORTS

cord a signal after it has been modified by the tone controls or an external processor. The signal-processor

in/out jacks are normally joined by a nearby slide switch on the rear apron. Input selectors are soft-touch

pushbuttons that display a lighted bar when activated. An unusual feature is the separate CD STRAIGHT button, which connects a CD player's outputs to the receiver's amplifier section directly, bypassing the tone and balance controls, loudness compensation, and subsonic filter.

Small buttons select the subsonic filter and loudness compensation or bypass the tone controls. Others select the FM tuner's mono, stereo, or muting modes and wide or narrow IF bandwidth, control the auto-seek FM tuning, and program the preset assignments. Larger, square buttons control the tape-dubbing connections, the two sets of speaker outputs, and power switching.

The display window shows the tuner's selected frequency and band (even while one of the other inputs is in use), preset number, and operating conditions. It also contains a signal-strength indication and the sensor for the infrared remote control supplied with the receiver. Below it are the ten preset buttons and a large, center-pivoted rocker switch that moves the tuned frequency up or down the band. The tone and balance controls use small knobs with center detents, and the large volume-control knob contains a red LED as an index pointer.

The dual power amplifiers can deliver high currents. Although rated for only 70 watts continuous output into 8 ohms (from 20 to 20,000 Hz with no more than 0.03 percent total harmonic distortion), they are also rated to drive 2-ohm loads at up to 270 watts per channel for short periods. The large power transformer and filter capacitance give the receiver a 3-dB dynamic headroom over its rated power output into 8 ohms.

The rear apron contains the audio and video input and output jacks, a 75-ohm coaxial connector for the FM antenna, and binding-post terminals for the supplied removable wire-loop AM antenna. A 300- to 75-ohm matching transformer is provided for use with 300-ohm FM antennas. The heavy, insulated binding posts for the two sets of speaker outputs accept the stripped ends of the speaker wires. Two of the three AC outlets are switched.

### FEATURES

- Rated for 70 watts per channel continuous output into 8 ohms, dynamic output up to 270 watts into 2 ohms
- Signal-controlled switches increase output-stage supply voltages by 60% for 30-millisecond intervals when output power reaches 80 watts
- Audio and video inputs for two video sources, recording output to one VCR, video output to monitor
- Audio inputs for phono (MM), CD player, two tape decks
- Dubbing connection from Tape 2 to Tape 1
- CD STRAIGHT switch can bypass all tone and filter circuits
- Subsonic filter
- Loudness compensation
- Bass and treble tone controls with bypass switch
- FM section has five-gang varactor front end for high selectivity
- Twenty preset station memories
- FM tuning intervals switchable from 200 to 25 kHz for use with cable systems
- Switchable wide or narrow IF bandwidth for FM
- Auto-seek (scan) tuning or single-channel stepping
- Memory scan plays all preset channels for 5 seconds each
- Display window for tuner frequency, operating conditions, and signal strength
- Front-panel headphone jack
- Can drive one or two pairs of speakers, selected by front-panel buttons
- Two pairs of preamplifier outputs
- Switchable rear input/output jacks for external signal processor
- Wireless remote control
- Sockets to connect other Luxman components for remote control
- 75-ohm coaxial FM antenna input, with 300- to 75-ohm transformer
- Detachable, pivoting AM wire-loop antenna
- Three AC outlets, two switched

### LABORATORY MEASUREMENTS

- Tuner Section** (all figures for FM only except frequency response)
  - Usable sensitivity** (mono): 10.8 dBf (0.95 mV in 75 ohms)
  - 50-dB quieting sensitivity:** mono, 14 dBf (1.4  $\mu$ V into 75 ohms); stereo, 36 dBf (17.4  $\mu$ V into 75 ohms)
  - Signal-to-noise ratio** at 65 dBf: mono, 82.3 dB; stereo, 75.7 dB
  - Harmonic distortion** (THD + noise) at 65 dBf: mono, 0.047%; stereo, 0.075%
  - Capture ratio** at 65 dBf: 1 dB
  - AM rejection** at 65 dBf: 68 dB
  - Image rejection:** 138 dB
  - Selectivity:** alternate-channel, 71 dB (wide IF), 82 dB (narrow IF); adjacent-channel, 5.5 dB (wide), 11 dB (narrow)
  - Stereo threshold:** 31 dBf (9.8  $\mu$ V into 75 ohms)
  - 19-kHz pilot-carrier leakage:** -66 dB
  - Hum:** -71.5 dB
  - Stereo channel separation** at 100, 1,000, and 10,000 Hz: 51, 65, and 44.5 dB
  - Frequency response:** FM, 30 to 15,000 Hz  $\pm$ 0.6, -0.1 dB; AM, -6 dB at 20 and 3,000 Hz
- Amplifier Section**
  - 1,000-Hz output power at clipping:** 105 watts into 8 ohms, 148 watts into 4 ohms, 210 watts into 2 ohms
  - Clipping headroom** (relative to rated output): 1.77 dB (8 ohms)
  - Dynamic power output:** 170 watts into 8 ohms, 275 watts into 4 ohms, 350 watts into 2 ohms
  - Dynamic headroom:** 3.85 dB (8 ohms)
  - Harmonic distortion** (THD + noise) at 1,000 Hz into 8 ohms: 1 watt, 0.02%; 10 watts, 0.008%; 70 watts, 0.0128%
  - Maximum distortion** (20 to 20,000 Hz into 8 ohms): 0.019% at 70 watts (20,000 Hz)
  - Sensitivity** (for a 1-watt output into 8 ohms): CD, 18 mV; phono, 0.3 mV
  - Phono-input overload:** 136 to 170 mV
  - A-weighted noise** (referred to a 1-watt output): CD, -77 dB; phono, -76 dB
  - Phono-input impedance:** 47,000 ohms in parallel with 175 pF
  - RIAA equalization error:** +0.2, -0.1 dB from 20 to 20,000 Hz
  - Tone-control range:** 100 Hz,  $\pm$ 10 dB; 10,000 Hz,  $\pm$ 9 dB

# MAGNA

## One Great Smoke



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LITES: 9 mg. "tar", 0.6 mg. nicotine.

BOX: 14 mg. "tar", 1.0 mg. nicotine, av. per cigarette by FTC method.

SURGEON GENERAL'S WARNING: Cigarette  
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## TEST REPORTS

The R-115's supplied remote control is actually a Luxman system control. Half of its buttons operate the receiver itself—switching its power, selecting the input source, and adjusting the volume. The volume-control potentiometer is motor driven when operated remotely, and as the knob turns its red LED index shows the setting. The other buttons on the remote can control the basic functions of a compatible Luxman turntable, CD player, and cassette deck. DIN jacks in the rear of the receiver accept connections from these components for remote control, and there are also connections for an external remote sensor and other system accessories.

The attractively styled Luxman R-115 is finished in black with clear, legible white markings and red LED indicators. It measures 17 $\frac{1}{4}$  inches wide, 16 $\frac{3}{4}$  inches deep and 5 $\frac{1}{2}$  inches high, and it weighs 25 $\frac{1}{2}$  pounds. Price: \$750. Luxman, Dept. SR, 19145 Gramercy Place, Torrance, CA 90501.

### Lab Tests

The R-115's power output at clipping into 8-ohm loads at 1,000 Hz was 105 watts per channel, well above its 70-watt rating. Into 4 ohms, the output was 148 watts, and into 2 ohms it was a potent 210 watts. The dynamic power output during a 20-millisecond tone burst was 170 watts into 8 ohms, 275 watts into 4 ohms, and 350 watts into 2 ohms. The 8-ohm clipping and dynamic headrooms were 1.77 and 3.85 dB, respectively.

The 1,000-Hz amplifier distortion

was 0.01 percent or less up to the clipping point into 8- or 4-ohm loads and only slightly higher into 2 ohms. The distortion varied only slightly with power across the audio range, measuring between 0.006 and 0.02 percent from 20 to 20,000 Hz at power levels from 7 to 70 watts. The slew factor exceeded our measurement limit of 25.

The tone controls had a maximum range of about  $\pm 12$  dB in the bass and  $\pm 10$  dB in the treble. The loudness compensation was moderate, boosting the output by 8 and 6 dB, respectively, at the low- and high-frequency extremes. The subsonic filter appeared to have a 6-dB-per-octave slope, reducing the response by 2.5 dB at 20 Hz. The RIAA phono equalization was extremely accurate, varying only  $+0.2$ ,  $-0.1$  dB from 20 to 20,000 Hz. The phono-input impedance was 47,000 ohms in parallel with a 175-picofarad capacitance.

The sensitivity for a reference output of 1 watt was 18 millivolts (mV) at the CD input and 0.3 mV at the phono input. The respective A-weighted noise levels were  $-77$  and  $-76$  dB referred to a 1-watt output. The phono preamplifier overloaded with inputs from 170 mV at low and middle frequencies to 136 mV at 20,000 Hz.

As good as the amplifier section was, the FM tuner of the R-115 provided the major surprises of our test. It was very sensitive (10.8-dBf mono usable sensitivity and 14-dBf 50-dB quieting sensitivity) and had low distortion (about 0.05 percent in mono and 0.08 percent in stereo).

The frequency response was exceptionally flat, and the channel-separation readings were among the best we have measured, reaching 65 dB at 1,000 Hz. The 1-dB capture ratio was excellent, and the image rejection, 138 dB, was among the best we have encountered. The narrow-IF operating mode for FM provided good selectivity without any significant increase in distortion, which remained under 0.08 percent in both mono and stereo. Even the AM tuner was one of the better-sounding ones we have tested, with a frequency response down 6 dB at 20 and 3,000 Hz and a relatively low noise level.

### Comments

The Luxman R-115, which falls in the middle of the company's current receiver lineup, is one of those too-rare products that looks good, feels good, and sounds good. Obviously, a lot of thought went into its design, and the result is a component that is thoroughly enjoyable to use and to listen to.

Most receivers in the middle and high price ranges have tuner sections that are quite good but present no challenge to a top-rank separate tuner. The FM section of the R-115, however, can hold its own with some of the best component tuners. It displayed superior capture ratio and image rejection, and we were also impressed with some nonspecified characteristics that emerged in our tests, including its symmetrical IF response and tuning calibration that was accurate enough not to require detuning our signal generator for optimum performance.

The power-amplifier section of the R-115 exemplifies what appears to be a long-overdue trend toward high dynamic headroom in receivers. The weight, size, and cost of this receiver are consistent with those of a good 70-watt amplifier, but its actual power capability with real-world program signals and speakers is far greater.

The Luxman R-115, though not inexpensive, delivers good value for the money. It is also one of the few receivers that can hold its own with separate components anywhere near its price level.

Circle 142 on reader service card



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"The MSP 300 is a strikingly smooth, sweet-sounding speaker....it just plain sounds good!"  
*Stereo Review*

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*High Fidelity*

"Only a bat, dog or cat would be likely to detect its (the MSP 300's) upper limits." *Stereo Review*

"Light and rigid...the 'soft' metal alloy (of the MSP tweeter) provides internal damping to absorb and dissipate extraneous resonances." *Ovation*

"Distortion is quite low, averaging about 1/4 percent over the working frequency range..... There were no measurements significantly above 1 percent down into the deep bass, which is very unusual." *High Fidelity*

"The close packing of the ribbon wire enables the Magnat drivers to have about 40 percent more copper in their magnetic gaps than drivers made with conventional round wire."  
*Stereo Review*

"In both depth and width of the perceived musical arena, these speakers are hard to localize. They tend to produce consistent sonic images beyond their positions and to the rear — a rarity." *AudioVideo*

"The sense of immediacy and presence is particularly exciting in vocal and chamber music...." *High Fidelity*

"...a sonic experience that utterly belies the modest-looking source." *Ovation*

"Even at this huge power input (900 watts), we did not experience the usual "flat-top" waveform and harsh rasping sounds that signal woofer over-driving." *Stereo Review*



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JOCK LEUNG

## KYOCERA DA-310CX COMPACT DISC PLAYER

*Julian Hirsch, Hirsch-Houck Laboratories*

**T**HE styling of the Kyocera DA-310cx CD player complements that of other Kyocera components. The front panel, of black glass and satin-finish silver metal, has large black-plastic keys for its operating controls. Contrasting white markings make it one of the more legible control panels we have seen on a home audio component. The top of the metal cabinet is finished in charcoal gray, and it has walnut-grain wood side plates.

The DA-310cx has a triple-beam laser tracking system, a double-oversampling D/A (digital-to-analog) converter, and a combination of digital and third-order analog filters. Kyocera uses ceramic chassis spacers to isolate the laser transport and circuit boards from external vibration as well as ceramic guide

shafts for the laser transport. High-quality parts are used throughout the player, including gold-plated output jacks.

The basic controls of the DA-310cx are similar to those of most other CD players, but their size and clear markings make it an exceptionally easy product to use. Although the transport controls are grouped closely at the right side of the panel, they are marked so plainly that one's finger goes directly to the desired button without need of peering or groping.

The largest control by far is the  $1\frac{3}{4} \times 1\frac{1}{8}$ -inch play key, located next to the disc-drawer open/close button, which is less than half its size. Two rows of much smaller buttons (about  $\frac{1}{2} \times \frac{3}{4}$  inch) control the pause, stop, and forward and reverse track-skip and fast-search

functions. There is a single fast-search speed, and the program is not audible during search.

The remaining, less-often-used controls, in a row below the primary controls, are narrow ( $\frac{3}{16} \times \frac{7}{8}$ -inch) push buttons whose functions are identified on the glass panel above them. Two of them are used to memorize up to sixteen tracks for playback in any sequence or to clear or change the memorized sequence, and another activates the repeat function, which can be applied to one track, the entire disc, or the programmed sequence. The TIME REMAINING button switches the display to show only the time remaining on the current track. After a few seconds, the display returns to its normal state.

The display, which occupies a smaller portion of the panel than on most CD players (about  $\frac{1}{2} \times 2$  inches), normally shows only the number of the current track and its elapsed playing time. The  $\frac{3}{8}$ -inch-high white fluorescent numerals are highly legible. Small symbols appear in the window to indicate the activation of the memory and re-

## TEST REPORTS

peat functions. The word "Open" appears when the disc drawer is opened, changing to "Close" as it shuts, and followed by "Focus" as the disc is initialized. In a couple of seconds this is replaced by the total number of tracks and total playing time of the disc.

A headphone jack and its volume-control knob are located at the lower right of the panel, and the power button is at the lower left, near the motorized disc drawer. The DA-310cx is supplied with a full-function wireless remote control. It is more compact than most such devices, probably because it was designed to control only this unit. The Kyocera DA-310cx measures 18 $\frac{1}{8}$  inches wide, 12 $\frac{1}{8}$  inches deep, and 3 $\frac{1}{16}$  inches high, and it weighs about 10 $\frac{1}{2}$  pounds. Price: \$350. Kyocera Electronics, Inc., Dept. SR, 100 Randolph Rd., CN 6700, Somerset, NJ 08873-1284.

### Lab Tests

Terminated in an EIA standard load of 10,000 ohms in parallel with a 1,000-picofarad capacitor, the DA-310cx's output from a 1,000-Hz, 0-dB recorded test signal measured 1.96 volts. The channel imbalance was only 0.09 dB. The distortion at 1,000 Hz was 0.0048 percent at a 0-dB level, increasing to 0.0145 per-

cent at -10 dB. A measurement of only the harmonic-distortion components (excluding noise) produced readings of 0.003 percent at 0 dB and 0.002 percent at -10 dB. The frequency response was within  $\pm 0.5$  dB from 20 to 20,000 Hz; the variations took the form of a slight dip and a slight peak at about 9,000 and 17,000 Hz, respectively.

The signal-to-noise ratio, 94 dB, equaled the manufacturer's rating, and the dynamic range, 100 dB, surpassed the rated 95 dB. The linearity of the D/A converters at low levels was relatively good for a moderate-priced player, with errors of less than 1 dB down to a -80-dB level and a -3-dB error at -90 and -100 dB. Channel separation, though quite adequate, was not outstanding, decreasing from its maximum of 90 dB at 100 Hz to 62.5 dB at 20,000 Hz. The interchannel phase shift was in the range of 2 to 4 degrees at low and middle frequencies, rising to a maximum of 40 degrees at 20,000 Hz. This result is consistent with the double-oversampling system used in the DA-310cx, which has a multiplexed D/A converter that is shared by the two channels.

The laser transport slewed between tracks at an acceptable speed, though the 5 seconds it took to trav-

el from Track 1 to Track 15 of the Philips TS4 test disc was longer than that of many other current CD players (3 seconds is more typical, and the best take no more than 1 second). The cueing was accurate, however, and few people are in such a hurry that a couple of seconds will make a difference.

The DA-310cx played through the largest calibrated defects on the Philips TS5A test disc with no audible mistracking, and its good performance in our "finger-tapping" shock tests suggests that Kyocera's efforts to isolate its internal parts from external vibration were successful. Mistracking could be induced only by a definite slap on the top of the player (over the disc drawer) or by a blow with the fist on one of the side plates. We made no measurements through the headphone jack, but we listened to the player with medium-impedance AKG K340 headphones. The available volume was quite good, though unlikely to present a hazard to the wearer's hearing.

### Comments

The Kyocera DA-310cx is a fine CD player by every objective criterion we can apply to it. Although channel separation is not one of its more outstanding characteristics, only the most jaded audiophile could criticize a separation of "only" 60 to 90 dB through the entire audio range! No LP record and its pickup has ever done half as well.

Much more significant, we think, is the excellent "human engineering" that has gone into the design of the DA-310cx. It is easy to use—the functions of the controls are obvious in all significant respects—and it is certainly a handsome component, one that no one would wish to hide. No ordinary handling shocks will cause it to mistrack. It sounded excellent, and, in fact, it played some discs that have given us trouble with at least one high-priced player. Unless your listening requirements include access to indexed portions of a disc, which the DA-310cx does not provide, you could hardly ask for more, especially at the price.

**Circle 143 on reader service card**

### FEATURES

- Double oversampling
- Digital and analog filtering
- Single 16-bit D/A converter multiplexed between channels
- Programming for up to sixteen tracks in any order
- Track skipping and fast search in either direction with audio muted during search
- Repeat of any track, entire disc, or programmed sequence
- Initial display of total tracks and playing time, changes to current track number and elapsed time in track; display switchable to remaining time on disc
- Wireless remote control for all front-panel functions except power
- Can be used with Kyocera RC-101 remote-control center

### LABORATORY MEASUREMENTS

**Maximum output level:** 1.96 volts  
**Total harmonic distortion at 1,000 Hz:** 0.0048% referred to 0 dB, 0.0145% referred to -10 dB, 0.046% referred to -20 dB  
**Signal-to-noise ratio (A-weighted):** 94 dB  
**Dynamic range:** 100 dB  
**Channel separation:** 86 dB at 1,000 Hz, 62.5 dB at 20,000 Hz

**Maximum phase shift (from 20 to 20,000 Hz):** 40 degrees at 20,000 Hz  
**Cueing time:** 5 seconds  
**Cueing accuracy:** A  
**Impact resistance:** top, B; sides, B+  
**Defect tracking:** tracked maximum-level defects on Philips TS5 test disc

ELITE HI-FI COMPONENTS

HI-FI COMPONENTS

# PIONEER ELITE SERIES — A NEW CLASS OF AUDIO AND VIDEO COMPONENTS





CIRCLE NO. 70 ON READER SERVICE CARD



## REFERENCE AMPLIFIERS

### C-90

#### Reference Control Amplifier

We've given the C-90 a twin-mono amp construction which features separate power supplies and chassis layouts for the left and right channels. This elaborate construction shuts out mutual interference between channels, thus dramatically reducing intermodulation distortion. There's also an independent power supply that uses an exclusive transformer for video circuits, displays, relays, microcomputers and electronic switches.

We've also isolated the circuits in the C-90 from the external world because we know that a preamplifier is as susceptible to external disturbances and vibration as any other component. Preamps handle very delicate signals measured in microvolts and millivolts. When subjected to vibration, parts vibrate in sympathy, resulting in a type of distortion called "microphonics." Though subtle, this effect is discernable, especially with the tremendously wide dynamic range possible with digital programs. So we constructed feet from polycarbonate (for optimum shock absorbing response), anchored circuit boards to the chassis with rubber dampers, used flexible copper screws to cushion shocks, and employed a massive solid-aluminum volume control knob.

In order to retain higher purity and integrity, we shortened signal paths as much as possible through the use of relays, electronic switches and other means of electronic control wherever applicable. This has resulted in a drastic reduction of signal loss and deterioration (noise, distortion, crosstalk, etc.).

To boost the delicate signals from moving-coil cartridges, Pioneer's exclusive "hybrid" booster combines a quality transformer and an optimum-gain phono equalizer. With one-half the normal number of turns of coil, the transformer's thicker wire reduces DC resistance and stray wire capacitance for better high-frequency response. The reduced gain in the transformer is compensated for by an equalizer specially designed for low-noise performance. All this ensures that our "hybrid" booster provides a flat response from lows to highs and well-damped sound, making your "analog" records sound better than ever.

Pioneer's policy of using only quality parts is expressed throughout the amplifier, from circuit boards to wiring, from capacitors to semiconductors. Copper plating is used for the chassis and screws, for instance, to reduce subtle magnetic distortion.

In addition to high-quality sound, the C-90 also provides tremendous convenience: it connects, switches and controls six video components — two play-only units (LD players, TV tuners, etc.), three record/playback VCRs, and one processor unit. Besides, it provides two monitor outputs, and a 5-pin RF converter output that accepts an optional RF modulator (JA-RF5) for connecting a conventional TV. Using the sharpness, detail and noise reduction controls, you can even enhance the video as you watch or dub.

And for added convenience, the C-90 comes with a remote control that lets you control volume and input selection, as well as handle other Pioneer audio/video equipment with the "SR" mark. Adding a touch of class to the amplifier is an aluminum front panel finished with a lacquer-like shine.



### M-90

#### Reference Power Amplifier

NON SWITCHING AMP\*

The demand for a reliable and high-output power amplifier has never been greater now with the wide dynamic range made possible by the Compact Disc. The M-90 Reference Power Amplifier was designed especially for this digital age.

Speaker systems can have rated impedances of, say, 6 or 8 ohms, but when they play music with wide dynamic variations, the actual impedance can go much lower, especially at low frequencies. With dynamic digital sound, an amplifier must be equipped with a power supply that performs reliably even under the heaviest load. And that's why we've created the M-90: its power supply features two outsize transformers, large electrolytic capacitors (for a total capacitance of 48,000 $\mu$ F) and four bridged rectifier circuits with fast-recovery diodes. And in the power amplifier, 16 high-power transistors (8 per channel) are used in an elaborate "four-in-parallel" configuration.

What this means is that the M-90 is ready to deliver a **continuous average power output of 200 watts\*per channel, min., at 8 ohms from 20Hz to 20,000Hz with no more than 0.003% total harmonic distortion.** What's even more amazing is its dynamic power: 300 watts at 8 ohms, 550 watts at 4 ohms and 800 watts at 2 ohms (with EIA dynamic test signal).

We also have made signal paths as short as possible to ensure signal integrity. The volume control for CD input is located on the front panel, of course, but actual level adjustment is performed by a potentiometer located behind the input terminals and linked by a long shaft.

In addition to the input for a control amp, the M-90 has an input, with volume control, for direct connection of a Compact Disc player to allow you to enjoy purer-than-ever digital sound. Another line-level direct input is also provided that permits you to add other digital equipment in the future. The M-90 also has an output to allow you to return the signals to the preamp for equalization or recording on a tape deck.

We used our exclusive Non-Switching Circuit Type II for the power output stage, thus ending switching distortion. And we have elaborated on this design to reduce distortion further across a wide power output range. Thermal distortion is also drastically reduced by stabilizing the idling current supplied to power transistors from the moment power is turned on. Moreover, we've reduced non-linear distortion of power transistors to 1/30 that of our class-B amps.

To ensure quality sound, we used quality parts, such as gold-plated in/output jacks, OFC (Oxygen-Free Copper) wiring, and 70 $\mu$ m-thick copper-plated circuit boards. To reduce magnetic distortion, the entire chassis is copper-plated, and so are screws used throughout.

Sophisticated craftsmanship is evident from the exterior: the power amp's aluminum panel front glows with a traditional lacquer-like luster. The front panel also contains large fluorescent power output indicators.

\*Measured pursuant to the Federal Trade Commission's Trade Regulation Rule on Power Output Claims for Amplifiers.

PIONEER

1-91

FM 100.5 MHz 24ch

STEREO

REPEAT

MEMORY

PRESET

SEARCH

SKIP

STOP

POWER

OFF

ON

MEMORY

SEARCH

SKIP

STOP

POWER

## REFERENCE DIGITAL AMPLIFIER AND TUNER

### A-91D

NON SWITCHING AMP\*

#### Reference Digital Non-Switching Integrated Amplifier

Here's an amazing amplifier that's ready for digital reproduction: the A-91D. It even comes with a digital circuit for Compact Discs.

With the A-91D, program signals go through the shortest direct path from circuit to circuit, to minimize chances of noise pickup and to maintain musical purity. We've made this possible by having actual switching and control occur near circuits or input terminals. A "LINE DIRECT" switch lets you further trim the signal route; it runs the input selector direct to the power amp, bypassing all intervening circuits (except volume control) physically as well as electrically. It lets you enjoy unusually clear and clean reproduction from any program source.

Subtle vibrations can cause subtle sound degradation by microscopically moving parts and devices. So we've shut them out using a non-resonating frame chassis, insulators and a heat sink, all with a honeycomb construction. They also add to the rigidity of the entire chassis. Using separate circuit blocks contributes to clarity by keeping interference to a minimum.

Our new Non-Switching Circuit Type III features excellent low-impedance driving capability combined with low distortion. Our exclusive power-amp design offers more advantages. One, it puts an end to switching distortion to add clarity to the sound you hear. Two, it fully stabilizes idling current, so that distortion due to thermal fluctuation is reduced to zero. Three, distortion created by power transistors is reduced to 1/50th the original value. Four, load variations are suppressed, and dynamic response is improved when large currents are drawn at low impedances, thanks to separation of the voltage- and current-amplifying stages.

The A-91D is designed to drive low impedances of 6 or even 4 ohms with low distortion over a wide frequency range. Backing it up are two high-capacity power transformers. They are contained in finned die-cast iron cases, filled with a damping agent, which dissipate heat to prevent the increased resistance and impedance that high temperatures can cause. They are also solid and non-resonating, and magnetically shielded to prevent magnetic radiation from affecting delicate signals.

In the A-91D, we've extended the digital advantages by including independent digital conversion circuitry. There are two glitch-free D/A (Digital-to-Analog) converters (one for each channel), a digital filter which uses four times the normal sampling frequency (176.4kHz), and an analog low-pass filter built from quality discrete parts. Use the A-91D with a CD player with digital output such as the Pioneer PD-M90X, and you'll get digital sound in its purest form. There are six digital inputs and three digital outputs, of which two inputs and one output have optical interfaces to permit electrical isolation. An Optical Transfer Distortion Canceller is added to eliminate jitter for accurate optical transmission.

The A-91D delivers a **continuous average power output of 120 watts\* per channel, min., at 8 ohms, from 20Hz to 20,000Hz with no more than 0.003% total harmonic distortion.**

\*Measured pursuant to the Federal Trade Commission's Trade Regulation Rule on Power Output Claims for Amplifiers.

### F-91

#### Reference Digital Synthesizer Tuner

We've pushed the level of FM sound quality to record highs with the addition of two Pioneer exclusives to the F-91.

The first is the ARTS (Active Real-Time Tracing System) included in the IF section of the tuner. With some tuners, especially expensive ones, you have the choice of using a narrow or wide IF bandwidth. The first lets you avoid interference, but you have to settle for an increase in distortion. The second provides lower distortion and better sound, but interference may get in the way. Pioneer ARTS — it's simply the best of both worlds: its IF filter *actively* follows the desired signal while rejecting interference. Now you can enjoy both the low distortion of a wide bandpass *and* the high selectivity of a narrow bandpass. Sensitivity is improved, too.

The second Pioneer feature is the Digital Direct Decoder Type III. It takes the output from the ARTS IF circuitry and converts it into digital form before directly turning it into stereo analog signals. Thanks to digital operation, our DDD Type III is less prone to signal degradation. Moreover, in the Type III, we've simplified the circuitry using a new PLL detector, which has reduced noise even further.

Improvements extend to other circuits of the tuner as well. The front end, for instance, features an ID MOS FET to improve reception. Indeed, the front end is as highly sensitive and selective as an elaborate 4-ganged tuning capacitor.

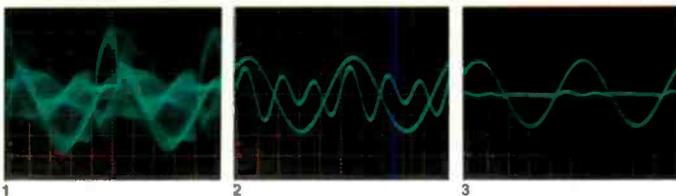
The F-91, like our amps and CD players, is designed based on our anti-vibration concept to damp harmful resonance and vibration for improved sound. We've turned circuits into modules and filled them with epoxy resin. And we've added honeycomb ribs to the chassis and used large insulators to shut out external vibration.

Then, of course, there are a wealth of features designed to improve convenience. You can preset up to 24 FM and AM stations in any combination. Up to three different stations can be programmed so that, when controlled by an optional timer, they are tuned in sequence — a convenient way to make unattended recording.

More features for convenience are an auto tuning mode, selectable muting level, recording level calibrator, and a fluorescent display.

#### Pioneer ARTS (Active Real-Time Tracing System)

A conventional wideband filter permits low-distortion reception but suffers when undesirable signals interfere (Photo 1). An alternate narrowband filter may cut interference, but can add distortion because of the limited bandwidth (Photo 2). Photo 3 shows the response of the F-91 with ARTS. As you can see, it delivers a low-distortion signal even when there's interference. The Pioneer ARTS simply combines the low-distortion performance of a wide bandwidth and the high selectivity of a narrow bandwidth.





## REFERENCE MULTI-PLAY COMPACT DISC PLAYER

### PD-M90X

#### Six-disc multi-play convenience

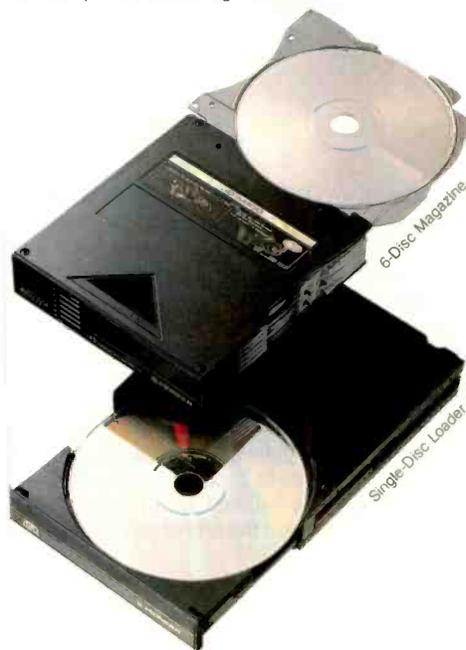
Class and convenience happily coexist in the PD-M90X, which combines classical elegance with computer-age features.

Our top-of-the-line multi-play CD player, the PD-M90X lets you enjoy beautiful, dynamic digital sound for hours and hours, uninterrupted. It accepts up to six CDs mounted inside a special magazine and plays the discs just the way you want them played. You can play each song on all six discs one by one, or jump to the song or disc you want instantly, using DISC NUMBER and TRACK NUMBER buttons provided both on the remote control and on the unit itself. For added convenience, you can also select up to 32 tracks from the six discs and program them for playback in any order! A single-disc loader is also standard for single-play convenience.

#### Remote control with "one-touch" program loading

The PD-M90X comes provided with a full-function "SR" remote control. It offers three extra conveniences: a numeric keypad, a multi-function LCD (Liquid Crystal Display) panel and the MPSS\* (Magazine Program Selection System). The keypad gives you instant access to any track, a feature you'll also find useful when programming tracks. The LCD panel serves as a guide to programming, letting you preset tracks and the order away from the player while referring to labels of the discs.

The Magazine Program Selection System permits you to store up to 80 programmed "steps" (songs and pauses) from eight six-disc magazines. Using MPSS, you are saved from reprogramming tracks each time you mount a magazine: all you have to do is press the memory button for that specific magazine and the "transfer" button. The programmed songs are then automatically "loaded" from the remote into the player. Now loading programmed tracks has become as simple as touching a button.



#### 4-way repeat, random play, fluorescent panel and other conveniences

The PD-M90X offers four-way repeat, including a single track, a single disc, all six discs and programmed tracks. The random play feature lets you leave track selection up to the player — touch the RANDOM PLAY button, and a built-in microcomputer randomly selects the songs for you from among the six loaded discs, without repeating tracks! \*\* Or, press this key in the programmed play mode, and the computer randomly selects songs from among those programmed. Programmable pauses, 2-speed manual search, track search, and timer start function with options of normal and random play — these are other conveniences of our multi-play CD player.

A multi-function 7-digit fluorescent display is provided to show you the operating status of the player. It shows the elapsed time and remaining time of a track in play, as well as the remaining time of an entire disc. In addition, the display shows the accumulated total time each time you program a track. A graphic indicator shows which disc is being played at any moment.

#### Anti-vibration concept

When it comes to hi-tech features for better digital sound, the PD-M90X has plenty. To damp vibration and resonance, which can cause muddy sound, we use a copper-plated honeycomb chassis; a Disc Stabilizer to firmly clamp the rotating disc, and large aluminum-ringed insulators made of vibration-absorbing polycarbonate.

#### Oversampling digital filter

An oversampling digital filter using twice the normal sampling frequency — 88.2kHz — ensures low noise and minimal phase distortion for extra clarity and razor-sharp sound definition.

#### Digital level control

A digital level control lets you attenuate the playback level from the remote. Since it adjusts the signal while still in digital form, our digital volume control adds a minimum of noise and distortion.

#### Digital output

There is a digital output for connection to an outboard DAC (Digital-to-Analog Converter) unit or an amplifier featuring a built-in DAC like the Pioneer A-91D, so that you'll enjoy better yet, purer yet digital sound.

\* MPSS is a trademark of Pioneer Electronic Corporation.

\*\* Some tracks may repeat when a disc contains more than 100 tracks.

Note: The PD-M90X comes with both a 6-disc magazine and a single-disc loader. Additional magazines (JD-M100) are available as options.



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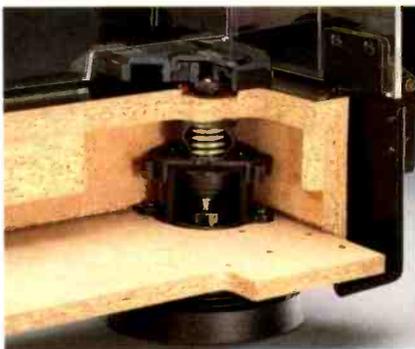
## REFERENCE QUARTZ-PLL DIRECT-DRIVE TURNTABLE

### PL-90

Think of it as the most advanced form in turntable technology. The PL-90 is designed to let you enjoy the maximum dynamic range and low distortion that today's best analog recordings can deliver.

To get the best performance out of today's sophisticated phono cartridges, we've fashioned its straight tone arm out of light yet rigid alumina-ceramics. Then we've fitted on it a Pioneer DRA (Dynamic Resonance Absorber), a combination of a viscous damper and weight, to eliminate resonance.

To ensure that your records are played with extremely low noise and wow and flutter, we use a coreless direct-drive DC-servo motor controlled



by a precise quartz-PLL servo system to provide cog-free and ripple-free smooth torque generation. The motor is fitted with a Stable Hanging Rotor to improve stability. The platter is large (14-3/16 inches across), heavy (7 lbs. 4 oz.) and has a high moment of inertia (655 kilograms per square centimeter), to smooth out rotation.

The important tone arm and motor are fully insulated from external influences through a Double Insulation System that shuts out vibration in both horizontal and vertical planes. The cabinet is made of high-density material to suppress resonance.

Ease of use is enhanced with the addition of automatic arm lift-up at the end of record play.




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## DIGITAL STANDARD SPEAKER SYSTEMS

### DSS-E10/DSS-E6

Here's a pair of speaker systems specifically designed to serve as standards for accurate digital reproduction. A number of Pioneer exclusive designs has contributed to the making of our reference speaker systems.

One is the LDMC (Linear-Drive Magnetic Circuit) in the woofer. It creates a uniform magnetic field over a wide range within the voice coil gap. As a result, the voice coil is driven by the same uniform force, whether it is being pushed far outward to create very loud sounds, or is hardly moving to produce the faintest notes. The LDMC makes the sound you hear refreshingly transparent, powerful and exceptionally lifelike.

Our woofers also feature the EBD (Electronic Bass Drive). This design uses two voice coils wound on the bobbin, one on top of the other. Driven by two frequency-divided voice coils, the woofer pro-

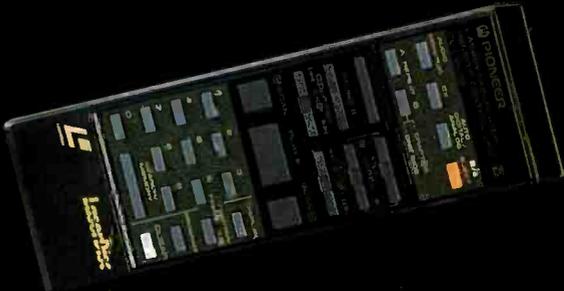
duces double the amount of usable bass sound, extending the low-frequency response substantially.

Our DRS (Dynamic Response Suspension) improves the linearity of the damper and surround of the woofer, so that the driver responds accurately to a wide range of inputs from the loudest to softest sounds. This adds to a wider dynamic range.

The diaphragm of the woofer is made of Pioneer's PG or Polymer Graphite\* that's light and firm. It combines low distortion, smooth response and low coloration. The midranges are made of hard boron to improve sensitivity and assure natural response. Tweeters are lightweight and responsive beryllium ribbons combining better transient response and low distortion.

*\*Polymer Graphite is a trademark of Pioneer Electronic Corporation.*





LaserDisc

4 TRUSS OVER SAMPLED DIGITAL FILTER FROM DAC  
CONSTANT SPEED MOTOR TLY BEARS  
DIGITAL MIRROR

*Reference Laserdisc player*



OPEN/CLOSE

PLAY

CH SYSTEM

VIDEO

ALC/O

ML S/B

CRISTAL

CHAPTER 0 TIME 0:00

FOOTAGE

PAUSE

REVERSE

FAST FORWARD

STOP

CHAP. SKIP

PAUSE

POWER

PIONEER

LASERDISC PLAYER LD-S1

REVERSE

FAST FORWARD

STOP

RCAN

RCAN

LAST MEMORY

## REFERENCE LD PLAYER

### LD-S1

#### The best in picture and sound

Here's the finest LD player available to consumers anywhere in the world. Designed and engineered specifically for the videophile with an ear for excellent sound. Take a look at some of the LD-S1's standout specifications: 420-line horizontal resolution, 48dB video signal-to-noise ratio, 105dB audio signal-to-noise ratio and 97dB audio dynamic range.

#### Full-floating drive system

Subjected to vibration, the pickup of an LD player can cause jitter, patchy colors and streaks in solid colors. And vibrating PC boards can muddy the sound. So we've isolated the motor disc drive from the rest of the chassis, to reduce the amount of vibration passed from the motor to other parts of the player. The result is a drastic reduction of jitter and streaks. Specifically: Our new Dynamic Pressure Bearing has lessened the load applied to the metal bearing. As the shaft starts to rotate, liquid silicone collects under the shaft, cushioning it and supporting it to prevent direct contact with the bearing. Transmission of motor vibration is lessened and friction reduced for smoother motor rotation.

Our magnetic disc clamber uses a powerful magnet to hold the disc. The moment a disc is in place, the clamber arm is removed from the clamber, thus ending the transmission of the motor vibration to other parts of the player.

#### Accu-Focus System

The tracking beams reflected from the disc are added by the quadrant photodetector inside the pickup assembly. But there is a slight phase difference between the outputs from leading and trailing beams. In the LD-S1, however, the outputs from the leading beam are delayed so that they can be added to those from the trailing beam in time. This reduces distortion and improves frequency response, especially the highs, of the RF output. Both audio and video benefit.

#### 4X oversampling digital filter and twin D/A converters

We've incorporated a digital filter using a sampling frequency 4 times higher than that used in conventional filters. Working with an analog low-pass filter, it reduces phase delay as well as distortion. To eliminate phase difference between channels, we use two independent glitch-free D/A (Digital-to-Analog) converters. LDs with digital sound have never sounded better.

#### Digital memory

Eight-bit digital memory brings you versatile and clean special effects — the LD-S1 is the first player ever to be equipped with this innovative feature. You can freeze and store a picture in memory for viewing anytime. You can enjoy still and multi-speed play even from CLV (Extended-Play) discs, not to mention CAV (Standard-Play) discs. You'll also enjoy "strobe motion" and still with sound, two exciting new additions. Pictures are exceptionally stable and free of noise. Scanned pictures are also free of noise bars.

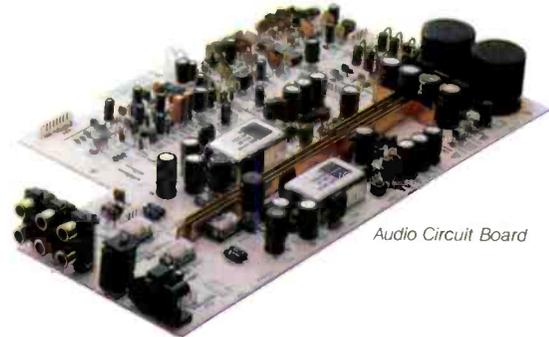
#### Elaborate power supply and quality parts

The LD-S1's power supply is elaborate, using two transformers, one for servo and digital circuits, and another for audio and video circuits. And to shut out interference between audio and video circuits, each has a separate power supply (independent coil windings on the transformer) and is laid out so that it is separated from the other. Quality parts are used for improved sound and picture, including a 1mm-thick OFC (Oxygen-Free Copper) ground bus plate, gold-plated terminals, copper-plated chassis, and OFC AC power cable.

#### Superb operating conveniences

The LD-S1 is equipped with a number of features to make operations superbly easy. Any part of a disc can be accessed in one-half the normal time of conventional players. A large fluorescent panel serves as your guide to operation. A new addition is the "Last Memory" feature: press the "LAST MEMORY" button before shutting off the power, and at the next viewing play resumes with a scene a few seconds back from where you left off. The front panel has all the controls you need for operation. And the remote control is ergonomically designed for ease of use.

Available functions include Still/Step, Dual-Speed Scan, Frame/Time Search, Chapter Search, 9-Step Multi-Speed Play, 4-Mode Repeat, Chapter-Skip Search and Chapter Program. Other features include on-screen display, picture tone control, two video outputs, I/O port for computer interface, gold-plated headphone output, and an SR terminal.



Audio Circuit Board



Full-Floating Drive System



# SPECIFICATIONS

## C-90

### AUDIO SECTION

Rated Output:	8V (20 — 20,000Hz, 10k ohms, T.H.D. 0.001%)
Input Sensitivity/Impedance	
PHONO (MM):	2.5mV/50k ohms
PHONO (MC):	0.25mV/40 ohms or 0.125mV/3 ohms
CD, TUNER, AUX, TAPE:	150mV/50k ohms
Output Level/Impedance	
PRE OUT:	1V/600 ohms
TAPE REC:	150mV/1k ohms
Total Harmonic Distortion:	0.002% (20 — 20,000Hz, 10k ohms, output 1V)
Intermodulation Distortion:	0.002% (output 1V)
(50Hz: 7,000Hz = 4:1, 8 ohms)	
Frequency Response	
PHONO (RIAA Equalization):	20 — 20,000Hz ±0.2dB
CD, TUNER, AUX, TAPE:	20 — 20,000Hz 0dB, —1dB
Tone Control	
BASS:	±9dB (100Hz)
TREBLE:	±9dB (10kHz)
Muting:	—20dB
Signal-to-Noise Ratio (IHF, A-network)	
PHONO:	96dB (MM), 86dB (MC)
CD, TUNER, AUX, TAPE:	109dB

### VIDEO SECTION

Input Sensitivity/Impedance	
VDP, VCR, TV Tuner, Adaptor:	1Vp-p/75 ohms
Output Level/Impedance	
Monitor, Adaptor, REC Monitor:	1Vp-p/75 ohms
Frequency Range:	10Hz — 10MHz 0dB, —3dB

### MISCELLANEOUS

Power Requirements:	120V 60Hz
Power Consumption:	40W
Dimensions (W x H x D):	18 x 4-1/16 x 15-1/16 inches
(without package)	457 x 125 x 405 mm
Weight (without package):	21 lbs. 6 oz./9.7kg

## M-90

### POWER AMPLIFIER SECTION

**Continuous average power output of 200 watts\* per channel, min., at 8 ohms, from 20Hz to 20,000Hz with no more than 0.003% total harmonic distortion.**

Total Harmonic Distortion:	0.003% (20 — 20,000Hz, 8 ohms, continuous rated power output)
Intermodulation Distortion:	0.002% (continuous rated power output)
(50Hz: 7,000Hz = 4:1, 8 ohms)	
Input Sensitivity/Impedance	
CONTROL AMP:	1V/50k ohms (fixed)
CD DIRECT, LINE DIRECT:	1V/50k ohms (variable)
Output	
SPEAKERS:	A, B, A+B, OFF
HEADPHONES:	Low impedance
Frequency Response (CD):	20 — 20,000Hz 0dB, —0.1dB
Signal-to-Noise Ratio:	125dB (IHF, A-network)
<b>MISCELLANEOUS</b>	
Power Requirements:	120V 60Hz
Power Consumption:	430W (UL)
Dimensions (W x H x D):	18 x 6-1/16 x 16-15/16 inches
(without package)	457 x 154 x 430 mm
Weight (without package):	49 lbs. 13 oz./22.6kg

## A-91D

### AMPLIFIER SECTION

**Continuous average power output of 120 watts\* per channel, min., at 8 ohms from 20Hz to 20,000Hz with no more than 0.003% total harmonic distortion**

Total Harmonic Distortion:	0.003% (20 — 20,000Hz, 8 ohms, continuous rated power output)
Input Sensitivity/Impedance	
PHONO (MM):	2.5mV/50k ohms
PHONO (MC):	0.25mV/40 ohms
CD, TUNER, AUX, TAPE:	150mV/50k ohms
PHONO Overload Level (1kHz)	
MM/MC:	200mV/20mV (T.H.D. 0.008%)
Output Level/Impedance	
TAPE REC:	150mV/0.8k ohms
SPEAKERS:	A, B, A+B, OFF
HEADPHONES:	Low impedance
Frequency Response	
PHONO (RIAA Equalization)	
MM:	20 — 20,000Hz ±0.2dB
MC:	20 — 20,000Hz ±0.3dB
CD, TUNER, AUX, TAPE:	1 — 150,000Hz 0dB, —3dB
Tone Control	
BASS:	±8dB (100Hz)
TREBLE:	±8dB (10kHz)
Filter (Subsonic):	17Hz (—12dB/oct.)
Loudness Contour:	+5dB (100Hz), +3dB (10kHz)
(Volume at —40dB position)	
Signal-to-Noise Ratio (IHF, short-circuited A-network)	
PHONO (MM/MC):	95dB/83dB
CD, TUNER, AUX, TAPE:	109dB
<b>MISCELLANEOUS</b>	
Power Requirements:	120V 60Hz
Power Consumption:	670W (UL)
Dimensions (W x H x D):	18 x 6-13/16 x 18-11/16 inches
(without package)	457 x 173 x 475 mm
Weight (without package):	65 lbs. 15 oz./29.9kg

## F-91

### FM TUNER SECTION

Usable Sensitivity (mono):	9.8dBf (0.85μV, 75 ohms)
50dB Quieting Sensitivity	
Mono:	12.8dBf (1.2μV, 75 ohms)
Stereo:	34.8dBf (15μV, 75 ohms)
Signal-to-Noise Ratio	
Mono/Stereo (IHF):	95dB/87dB
Distortion (at 80dBf)	
100Hz (mono/stereo):	0.015%/0.02%
1kHz (mono/stereo):	0.009%/0.02%
6kHz (mono/stereo):	0.02%/0.07%
Frequency Response:	20 — 15,000Hz +0.2dB, —0.8dB
Capture Ratio:	8dB
Alternate Channel Selectivity	85dB (400kHz)
Spurious Response Ratio:	80dB
Image Response Ratio:	70dB
IF Response Ratio:	100dB
AM Suppression Ratio:	70dB
Subcarrier Product Ratio:	60dB
Muting Threshold:	25.2dBf (5μV, 75 ohms)
Stereo Separation	
1kHz:	65dB
20 — 10,000Hz:	55dB
Antenna Input:	75 ohms unbalanced

### AM TUNER SECTION

Sensitivity	
IHF, Loop Antenna:	150μV/m
Selectivity:	18dB
Signal-to-Noise Ratio:	50dB
Image Response Ratio:	40dB
IF Response Ratio:	60dB
Antenna:	Loop antenna

### AUDIO SECTION

Output (Level/Impedance)	
FM (100% Mod, Fixed):	650mV/900 ohms
AM (30% Mod, Fixed):	150mV/900 ohms

### MISCELLANEOUS

Power Requirements:	120V 60Hz
Power Consumption:	25W
Dimensions (W x H x D):	18 x 3-5/16 x 12-7/16 inches
(without package)	457 x 84 x 316 mm
Weight (without package):	11 lbs. 7 oz./5.2kg

\*Measured pursuant to the Federal Trade Commission's Trade Regulation Rule on Power Output Claims for Amplifiers.

**PD-M90X**

System:	Compact disc digital audio system
Frequency Response:	4 — 20,000Hz $\pm$ 0.5dB
Signal-to-Noise Ratio (EIAJ):	100dB
Dynamic Range (EIAJ):	96dB
Channel Separation (EIAJ):	93dB
Wow and Flutter (EIAJ):	Unmeasurable ( $\pm$ 0.001%, weighted peak)
Distortion (EIAJ):	0.0035%
Output Voltage (EIAJ):	2V $\pm$ 0.5V
Power Requirements:	120V 60Hz
Power Consumption:	23W
Dimensions (W x H x D):	18 x 4-1/8 x 12-3/8 inches
(without package)	457 x 104 x 315 mm
Weight (without package):	15 lbs./6.8kg

**PL-90****MOTOR AND TURNTABLE**

Drive System:	Direct Drive
Motor:	Coreless, Quartz-PLL DC-servo motor with Stable Hanging Rotor™
Turntable Platter:	14-3/16 inches (36cm)
Inertial Mass:	655kg/cm <sup>2</sup>
Speed:	33-1/3 and 45 rpm
Wow and Flutter (WRMS):	0.018% (0.008%*)
Signal-to-Noise Ratio:	85dB (DIN B)

**tone arm**

Type:	Statically balanced, alumina-ceramics straight tone arm with DRA
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Effective Arm Length:	11-1/8 inches (282mm)
Overhang:	9/16 inch (13.5mm)
Usable Cartridge Weight:	2.4g — 12g

**MISCELLANEOUS**

Power Requirements:	120V 60Hz
Power Consumption:	14W
Dimensions (W x H x D):	23-7/16 x 8-7/16 x 17-1/16 inches
(without package)	596 x 215 x 434 mm
Weight (without package):	38 lbs. 2 oz./17.3kg

\*Measured directly from FG output.

**DSS-E10**

Enclosure:	Bass-reflex bookshelf type
Unit Layout:	Symmetrical
Speakers:	
Woofer:	12-inch (30cm) PG™ cone type
Midrange:	4-3/4-inch (12cm) boron cone type
Tweeter:	Beryllium ribbon type
Impedance:	6 ohms
Frequency Range:	30 — 50,000Hz
Sensitivity:	91dB/W (1m)
Maximum Music Power:	240W
Rated Power:	80W
Crossover Frequencies:	650Hz (Low/Mid) 4,000Hz (Mid/High)
Dimensions (W x H x D):	15-3/8 x 26-3/4 x 13-7/8 inches
(without package)	390 x 680 x 353 mm
Weight (without package):	57 lbs. 5 oz./26kg

**DSS-E6**

Enclosure:	Bass-reflex bookshelf type
Unit Layout:	Symmetrical
Speakers:	
Woofer:	8-inch (20cm) PG™ cone type
Midrange:	2-1/2-inch (6.6cm) boron cone type
Tweeter:	Beryllium ribbon type
Impedance:	6 ohms
Frequency Range:	40 — 50,000Hz
Sensitivity:	90dB/W (1m)
Maximum Music Power:	120W
Rated Power:	40W
Crossover Frequencies:	1,000Hz (Low/Mid) 5,000Hz (Mid/High)
Dimensions (W x H x D):	10-5/8 x 18-1/2 x 9-9/16 inches
(without package)	270 x 470 x 243 mm
Weight (without package):	23 lbs. 2 oz./10.5kg

**LD-S1**

<b>TYPE:</b>	LaserVision videodisc system
<b>OUTPUTS</b>	
VHF Output (NTSC)	
Channel:	Channel 3 or 4 (switchable)
Terminal:	F-type jack (75 ohms, unbalanced)
Video Output	
Output Level:	1Vp-p (75 ohms, sync. negative)
Output Terminals:	RCA jack (75 ohms, unbalanced)
Audio Output	
Channels:	Discrete 2 channels (1/L, 2/R, 1/L+2/R, switchable)
Output Level:	Digital sound: 200mV rms (1kHz, -20dB) Analog sound: 200mV rms (1kHz, 40%) RCA jacks
Output Terminals:	
<b>DIGITAL AUDIO CHARACTERISTICS</b>	
Frequency Response:	4 — 20,000Hz (+0.5dB)
Signal-to-Noise Ratio:	105dB
Dynamic Range:	97dB
Channel Separation:	100dB
Total Harmonic Distortion:	0.0035%
<b>ANALOG AUDIO CHARACTERISTICS</b>	
Frequency Response:	20 — 20,000Hz
Signal-to-Noise Ratio:	70dB (CX on)
Dynamic Range:	70dB (CX on)
<b>MISCELLANEOUS</b>	
Power Requirements:	120V 60Hz
Power Consumption:	55W
Dimensions (W x H x D):	18 x 5-3/8 x 18-7/16 inches
(without package)	457 x 136 x 468 mm
Weight (without package):	36 lbs. 15 oz./16.8kg

**LaserDisc™**

LaserDisc is a trademark of Pioneer Electronic Corporation.



The LaserVision mark certifies compatibility with other laser optical video products bearing the mark.



This mark indicates the compatibility for the Pioneer system remote control.

Note: Specifications and design subject to modification without notice.

CIRCLE NO. 70 ON READER SERVICE CARD



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*Stereo Review's*  
**RECORD OF THE YEAR**  
**AWARDS**

FOR 1987

**T**HE twelve recordings the editors and critics of STEREO REVIEW have voted the best of 1987 are announced in the following pages, as are the two dozen runners-up we have selected for Honorable Mention. Added to these Record of the Year Awards are six video awards and two special awards—one recognizing the enduring value of the Gershwin legacy and the other the new life given the recordings of the Beatles on compact disc. As before, we have picked all the winners on the basis of musical interest, quality of performance, and technical superiority.

The American songwriter Irving Berlin, who will be one hundred years old in May, is the recipient of STEREO REVIEW's 1988 Mabel Mercer Award for outstanding contributions to the quality of American musical life. Berlin's career is the subject of an article by Gary Giddins beginning on page 76.

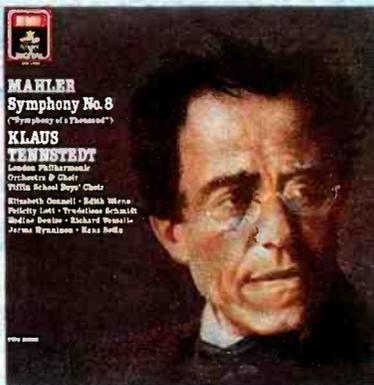
This lifetime achievement award, first presented to Mabel Mercer in 1975, was renamed for the British-born cabaret singer shortly before she died in 1984. It was presented that year to Frank Sinatra. Subsequent recipients were Isaac Stern in 1985, Ray Charles in 1986, and André Previn in 1987. —Christie Barter

*Illustrated By Sara Schwartz*

RECORDS OF THE YEAR



**SUZANNE VEGA:** *Solitude Standing*. A.M. "Eloquent, gut-wrenching music that lets you see the world around you a little more clearly."



**MAHLER:** *Symphony No. 8* (London Philharmonic Choir and Orchestra, Klaus Tennstedt conducting). ANGEL. "A poetic reading of the most telling impact."



**KATHLEEN BATTLE:** *Salzburg Recital* (with James Levine). DEUTSCHE GRAMMOPHON. "A radiant and joyous experience."



**MOZART:** *Violin Concertos Nos. 3 and 5* (Cho-Liang Lin; English Chamber Orchestra, Raymond Leppard conducting). CBS. "Outstanding for the refreshing quality of the music making."



**U2:** *The Joshua Tree*. ISLAND. "Reminds us of what rock can accomplish when it aspires to be more than just entertainment."



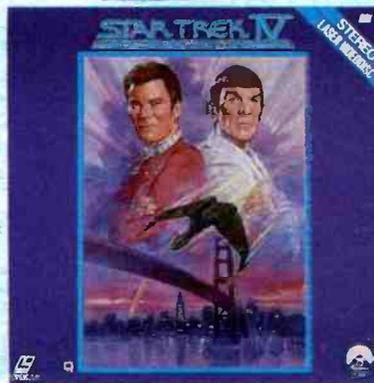
**RICHARD STRAUSS:** *Ariadne auf Naxos* (Anna Tomowa-Sintow, Kathleen Battle, Gary Lakes, others; James Levine conducting). DEUTSCHE GRAMMOPHON. "A glorious performance of a very special piece."



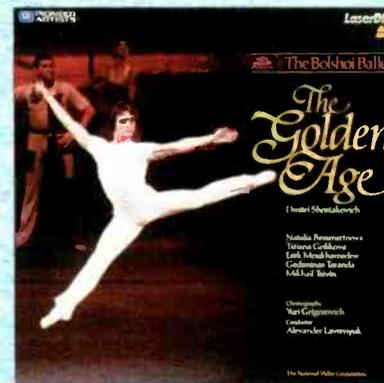
VIDEO AWARDS



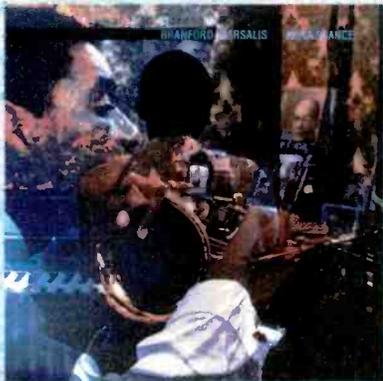
**ALABAMA:** *Greatest Video Hits*. PIONEER ARTISTS (disc). "Bound to delight current fans and win over new ones."



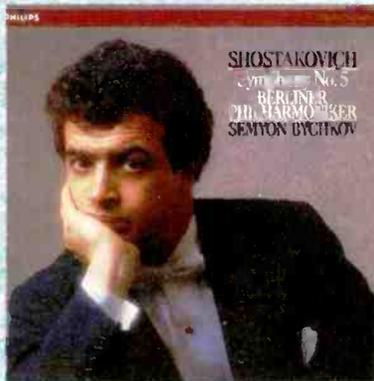
**STAR TREK IV—The Voyage Home**. PARAMOUNT (tape and disc). "A particular delight you don't have to be a Trekkie to love."



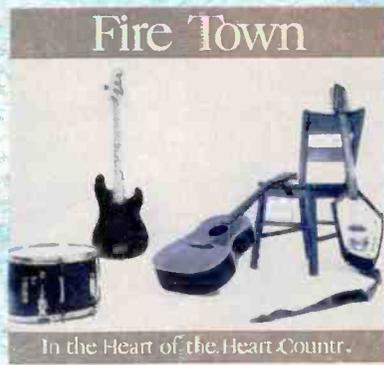
**THE BOLSHOI BALLET:** *Shostakovich's "The Golden Age"*. HOME VISION (tape) and PIONEER ARTISTS (disc). "Stunning performance of a wonderful work."



**BRANFORD MARSALIS:** *Renaissance*. COLUMBIA. "An impressive set by one of the brightest young stars on the jazz scene today."



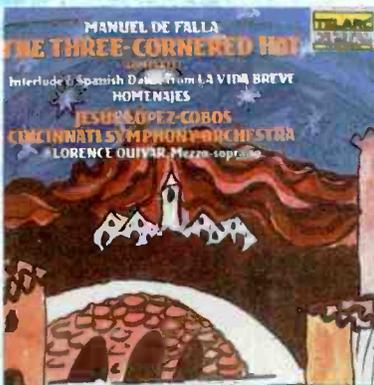
**SHOSTAKOVICH:** *Symphony No. 5* (Berlin Philharmonic, Semyon Bychkov conducting). PHILIPS. "The recording debut of a profound and insightful musical mind."



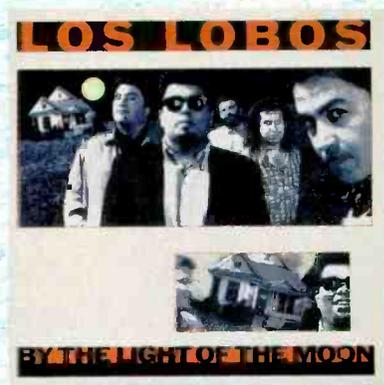
**FIRE TOWN:** *In the Heart of the Heart Country*. ATLANTIC. "More intelligence, craftsmanship, and genuine feeling than in almost any record in a good long time."



**ROSANNE CASH:** *King's Record Shop*. COLUMBIA. "A stunning, back-to-basics mix of traditional and progressive country, ballad, and biting rock."



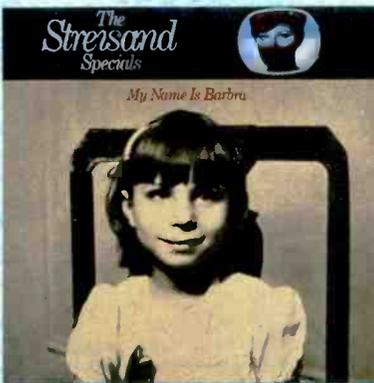
**FALLA:** *The Three-Cornered Hat; Homenajes; La vida breve, excerpts* (Florence Quivar; Cincinnati Symphony, Jesús López-Cobos conducting). TELARC. "A stunning orchestral showcase."



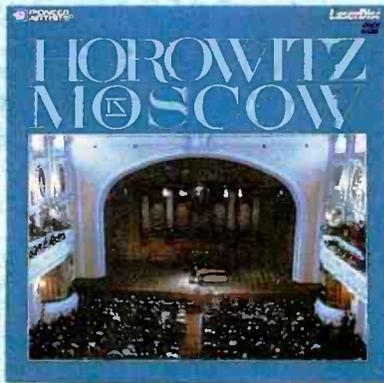
**LOS LOBOS:** *By the Light of the Moon*. SLASH/WARNER BROS. "Rock-the-house-down blues and just-for-fun pop—music that seems destined to last."



**THE BEATLES:** *Help!* CRITERION (disc). "One of the all-time knockouts of a score, digitally reworked as a stereo soundtrack."

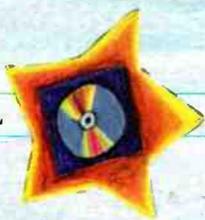


**BARBRA STREISAND:** *My Name Is Barbra*. CBS/FOX (tape and disc). "First special by the superstar-to-be, a television triumph."



**VLADIMIR HOROWITZ:** *Horowitz in Moscow*. MGM/UA (tape) and PIONEER ARTISTS (disc). "A remarkable documentary."

SPECIAL AWARDS

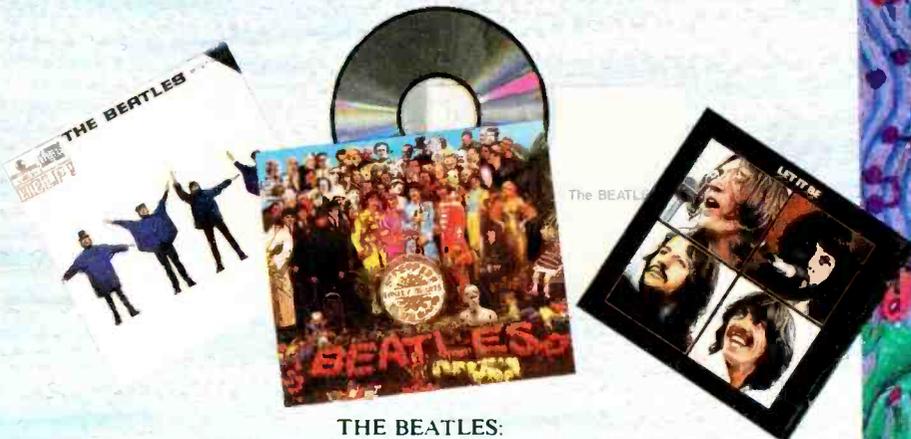


A Year For Geršwin



**THE BIRTH OF RHAPSODY IN BLUE:** Paul Whiteman's Historic Aeolian Hall Concert of 1924 (Ivan Davis, Dick Hyman; Maurice Peress conducting). MUSICMASTERS. "A sparkling restoration by an orchestra of crackerjack musicians."

Digital Beatles



**THE BEATLES:** Please Please Me. With the Beatles. A Hard Day's Night. Beatles for Sale. Help! Rubber Soul. Revolver. Sgt. Pepper's Lonely Hearts Club Band. Abbey Road. The White Album. Magical Mystery Tour. CAPITOL. "Rockers with a raw power on CD that they never had before."



HONORABLE MENTIONS

**BEETHOVEN:** *Piano Concerto No. 4: Variations in C Minor* (Claudio Arrau; Dresden State Orchestra, Colin Davis cond.). PHILIPS.

**BEETHOVEN:** *Symphony No. 3, "Eroica"* (Academy of Ancient Music, Christopher Hogwood cond.). L'OISEAU-LYRE.

**BRAHMS:** *Quartet for Piano and Strings in G Minor* (Murray Perahia; members of the Amadeus Quartet). CBS.

**BRAHMS:** *Serenade in D Major* (St. Louis Symphony, Leonard Slatkin cond.). RCA.

**ROBERT CRAY:** *Strong Persuader*. MERCURY.

**THE dB's:** *The Sound of Music*. I.R.S.

**STEVE EARLE:** *Exit Zero*. MCA.

**FLEETWOOD MAC:** *Tango in the Night*. WARNER BROS.

**ROY HARRIS:** *Symphony No. 3*.  
**WILLIAM SCHUMAN:** *Symphony*

*No. 3* (New York Philharmonic, Leonard Bernstein cond.). DEUTSCHE GRAMMOPHON.

**MICHAEL JACKSON:** *Bad*. EPIC.

**LULLY:** *Atys* (Guillemette Laurens, Agnès Mellon, Guy de Mey; Les Arts Florissants, William Christie cond.). HARMONIA MUNDI FRANCE.

**MAHLER:** *Symphony No. 7* (Frankfurt Radio Symphony, Elisha Inbal cond.). DENON.

**SUSANNAH MCCORKLE:** *Dream*. PAUSA.

**MESSIAEN:** *Quartet for the End of Time*. **BARTÓK:** *Contrasts* (Chamber Music Northwest). DELOS.

**LIZA MINNELLI:** *At Carnegie Hall*. TELARC.

**MOZART:** *The Abduction from the Seraglio* (Edita Gruberova, Kathleen Battle, Gösta Winbergh, Heinz Zednik, Martti Talvela; Vienna Philharmonic, Georg Solti cond.). LONDON.

**MOZART:** *Fantasia in D Minor*.  
**CHOPIN:** *Two Nocturnes*. **DEBUSSY:** *Children's Corner*. **BEETHOVEN:** *Piano Sonata No. 2* (Mieczyslaw Horszowski). NONESUCH.

**DOLLY PARTON, LINDA RONSTADT, EMMYLOU HARRIS:** *Trio*. WARNER BROS.

**TOM PETTY:** *Let Me Up (I've Had Enough)*. MCA.

**PROKOFIEV:** *Piano Sonata No. 7*.  
**RAVEL:** *Miroirs*. **STRAVINSKY:** *Three Movements from "Petrushka"* (Alexander Toradze). ANGEL.

**RANDY TRAVIS:** *Always and Forever*. WARNER BROS.

**THE SILENCERS:** *Letter from St. Paul*. RCA.

**BRUCE SPRINGSTEEN:** *Tunnel of Love*. COLUMBIA.

**VERDI:** *La forza del destino* (Mirella Freni, Plácido Domingo, Giorgio Zancanaro; Orchestra of La Scala, Milan, Riccardo Muti cond.). ANGEL.

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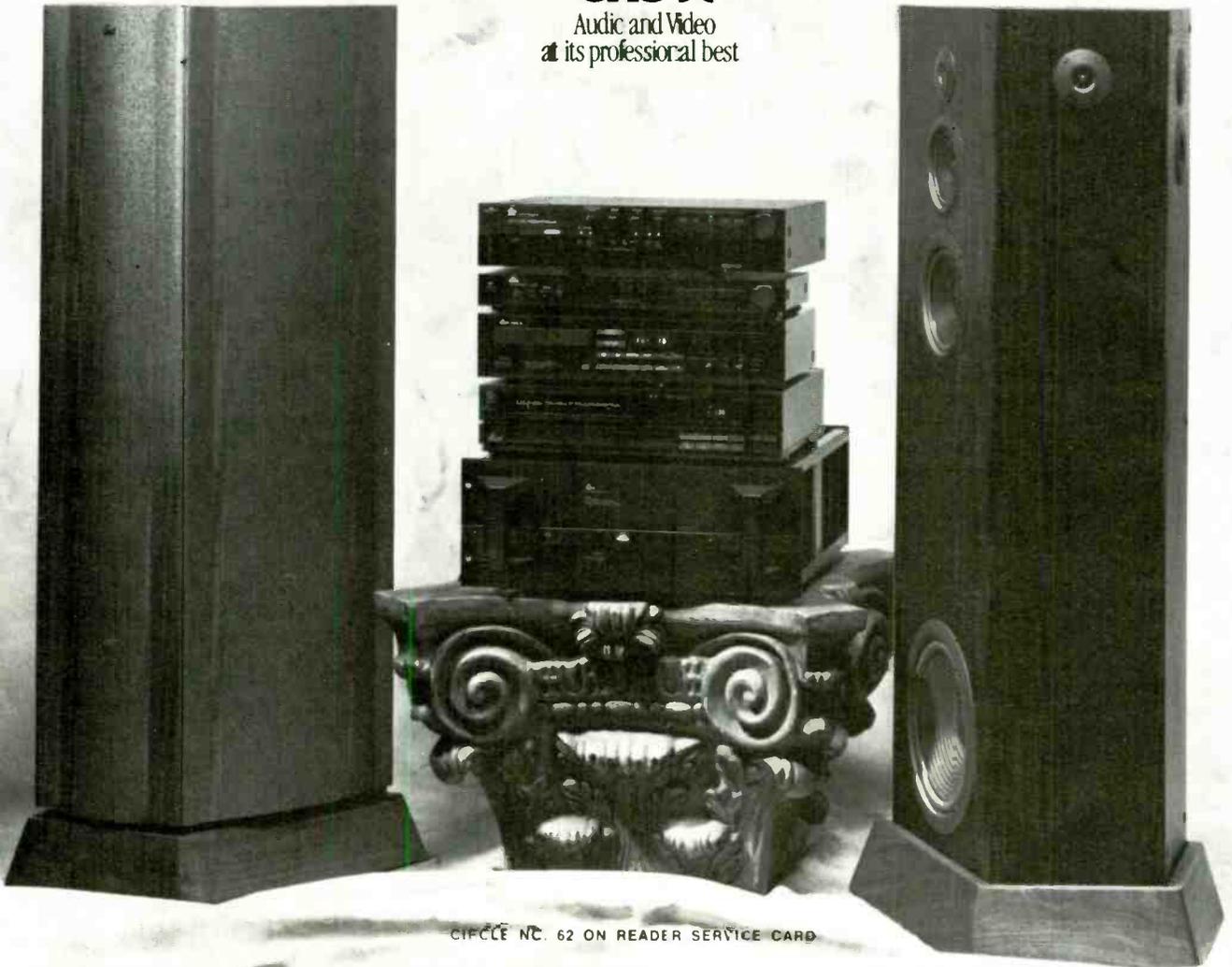
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Anthony Cordesman

**stereophile**

vol. 8, no. 4



**ADCOM GFA-555  
POWER AMPLIFIER  
HIGH POWER, HIGH CURRENT**

# “...it rivals any transistor power amplifier in its power class that I have heard—including high-powered receivers or amps with trick power supplies—at any price”

## The complete review:

### A BEST-BUY BREAKTHROUGH OR THE START OF A NEW WAVE?

I am reluctant to call any given transistor power amp a “best buy” or breakthrough. From my talks with designers and other audiophiles, it is clear that the state of the art in power amplifiers is about to change. From where I stand, the Adcom GFA-555 is the first sample of this new wave. It is so clearly superior to past amplifiers in the low- to mid-priced range—not to mention most amplifiers two to three times its price—that I can unhesitatingly recommend it for even the most demanding high end system.

The GFA-555 does everything well, and most things exceptionally well. It provides superb, well-controlled bass with far better speaker load tolerance than most amps. Its midrange and treble are remarkably low in coloration. There is no hint of hardness, and none of the loss of inner detail common to transistor amplifiers.

### “The Adcom’s soundstage is sufficiently superior that even those who claim all power amplifiers sound alike might hear the difference.”

With the exception of the Krells, I have never heard a more detailed, natural, and extended upper four octaves in a transistor amp. The Adcom may even be a legitimate rival to the Krell; it’s brighter and more dynamic, and somewhat more open. And, like the Krell, it gives the impression, on really good material, that the amplifier simply isn’t there, on really good material. Nor is the Adcom romantic or sweet, like New York Audio’s new Moscodes. Rather, it offers natural upper octave detail that the latter miss. Other amplifiers have similar upper octave performance, but I unhesitatingly recommend the Adcom over the very stiff competition from Tandberg and Threshold.

The Adcoms’ soundstage is sufficiently superior that even those who claim all power amplifiers sound alike might hear the difference. It comes very close to the better tube power amplifiers in providing detailed, stable, realistic imaging with natural depth. It is not an Audio Research D-250, but is extraordinarily holographic—I suspect almost embarrassingly so. This kind of soundstage has previously cost at least \$2000.

I am also highly impressed with this amplifier’s dynamics. Once again, it is not going to survive a one-on-one with the Audio Research D-250 or Conrad Johnson Premier Fives, but it rivals any transistor power amplifier in its power class that I have heard—including high-powered receivers or amps with trick power supplies—at any price. It provides these dynamics into virtually any load without bloat, restriction of sound, or change in timbre. For all the nonsense published by most manufacturers about driving complex loads, this amplifier actually delivers.

The Adcom does not lose sweetness and detail as its power goes up. I am normally leery of transistor amplifiers rated much above 100 watts; they too often blur detail and harmonic information, and this sonic price tag is far more costly than the added power is worth. This does not happen with the Adcom unless the distortion lights are blinking, and they only blink when the amp is delivering well over its rated 200 watts per channel (8 ohms) or 325 watts (4 ohms). By comparison, once-outstanding high power amplifiers like the Hafler DH-500 now sound annoyingly veiled.

With a minor dealer modification, you can even drive 1 ohm loads like the Scintilla. I can’t measure whether the Adcom delivers its rated 800 watts per channel into 2 ohms, or 20 amps peak, but I can tell you that it does a superb job of driving this superb speaker. Anything in its price range (or even close) generally changes timbre and degenerates when driving the Scintilla at 1 ohm.

### “For all the nonsense published by most manufacturers about driving complex loads, this amplifier actually delivers.”

I’m going to have to say a few words about its technology before I give Adcom a swelled head. You’ll be happy to note that the manufacturer claims for the GFA-555 a simple gain path, a 700 watt toroidal transformer, a well-regulated high current power supply, new ultra-stable bias circuitry, direct coupling, no current limiting, and no output inductor. More substantively, its harmonic shape mixes suitable yinyang while avoiding the curse of pyramidology. This, of course, means that it weighs 34 pounds, has simple rack-mount black styling, pilot lights, warning lights (to indicate distortion levels above 1%), and measures exactly 7 $\frac{1}{16}$ ” by 12 $\frac{1}{4}$ ” by 19”.

More pragmatically, the technical specifications are significant in that they represent reasonable bandwidth (4-150,000 Hz), damping (150-200), gain (27 dB), and noise (-106 dB). Of these, only the noise specification is outstanding. No attempt is made to beat distortion records: .09% THD at rated power into 8 ohms, and .25% into 4. I have heard so many power amplifiers with infinitely (well, an order of magnitude) better specifications sound so much worse; this may be the amplifier whose sound could convince *Stereo Review*, *High Fidelity*, etc. that their present measurements are virtually worthless.

I suspect that the Adcom is going to force many designers in the \$1000-1500 range to either make radical improvements in their products over the next six months, or look at the possibility of retiring from competition. This is a “must” amplifier to audition before you spring for anything close in

### “I suspect that the Adcom is going to force many designers in the \$1000-1500 range to either make radical improvements in their products... or look at the possibility of retiring from competition.”

price. If the Adcom is simply the first of a whole wave of good amplifiers, it will help revitalize the high end for the average audiophile, and force most manufacturers into more reasonable pricing. Now, Adcom, if you can only come up with a preamp as good!

AHC

# ADCOM®

11 Elkins Road, East Brunswick, NJ 08816 U.S.A.  
Distributed in Canada by: PRO ACOUSTICS INC.  
Pointe Claire, Quebec 49R4X5

#### Manufacturer’s note: Approximate retail prices listed in order of mention in review:

Adcom GFA-555	\$ 700
Krell	2300-7500
N.Y. Audio Moscode	900-1600
Tandberg	1000-2000
Threshold	1490-3150
Audio Research D-250 (MK II)	6000
Conrad Johnson Premier 5 (pair)	6000
“high powered receivers”	?
“amps with trick power supplies”	?
Hafler DH-500	850

# IRVING BERLIN

## *Recipient of the 1988 Mabel Mercer Award*

**I**RVING BERLIN—the name radiates pleasure, recollection, and anticipation. We know what's coming: first, a catalog of songs so diverse and durable that it strains credulity to ascribe them to one soul; then, the most often told yet jealously guarded rags-to-riches saga in American entertainment. As long ago as 1915, the year D. W. Griffith premiered *Birth of a Nation*, a columnist writing in *Music and Theater Gossip* proposed Berlin as the ideal subject for a six-reeler. Imagine—a bio of the world's most famous songwriter told in silent images. The columnist had been motivated by the recent opening of Berlin's first revue, *Watch Your Step*, often cited as having the first Broadway score written entirely by one writer. At the close of an evening that presented Vernon and Irene Castle dancing to *The Syncopated Rag*, an uncommonly ambitious number (seventeen pages of music) called *Opera Burlesque*, and a new kind of song, *Play a Simple Melody*, in which two melodies and two sets of lyrics were counterposed, the audience cheered, "Composer! Composer! Composer!" Berlin, who has wisely refused Hollywood's many importunities to film his life, was not yet twenty-six. He was just getting his feet wet.

The recipient of STEREO REVIEW's 1988 Mabel Mercer Award is celebrating his one-hundredth birthday in May, a blessing on all of us who need to know that giants still walk the earth, and a reproof to the numberless show-biz entities who made their swag and disappeared into the vapors of nostalgia. Berlin is with us always. He lives, reportedly alert and crusty as ever, with his wife of sixty-two years in a ritzy neighborhood on New York's Upper East Side, just a few miles north of the area, once so famously poor and congested, in which he was raised and where, as a singing waiter, he introduced his first songs to the discerning trade at the café-brothels that proliferated below Union Square. There he helped to establish the popular song in all its variety and set ground rules that governed American entertainment—its business as well as its style—for half a century.

To the extent that our lives are measured in song, we live in the Irving Berlin Era. The evidence was more comprehensive in the decades before rock, when we embraced his music with the earnest felicity of a people finding its best instincts, hopes, and illusions expressed

in song. An indication of how little songwriting changed between the Teens and the mid-Fifties can be adduced by the fact that *Play a Simple Melody* achieved its ultimate success as a million-selling record (by Bing and Gary Crosby) thirty-six years after *Watch Your Step*. Yet even the most benighted members of a generation raised on Top-40 radio and MTV, unacquainted with the very idea of "standards," deafened to the seductions of Kern, Porter, Arlen, and Gershwin, can't help but know Berlin songs, if only the most sentimental and patriotic of them. They're part of the turf. Like the anthems of Stephen Foster written before the Civil War, they seem as immemorial as folk songs. Can it be that one man collects royalties on so much of our national birthright—from *White Christmas* and *Easter Parade* to *There's No Business Like Show Business* and *Blue Skies*, from *Always* and *The Girl That I Marry* to *God Bless America* and *Alexander's Ragtime Band*?

Well, not quite. Scratch *Alexander's Ragtime Band*, the song with which Berlin and American popular music first conquered the world. Berlin, who fought long and hard to help establish the American Society of Composers, Authors and Publishers (ASCAP) and a fair system of payments to composers, who mastered every aspect of the business of plugging and publishing his work, who has gleaned royalties from the time when sheet music and player pianos meant big bucks to the age when phonographs, movies, radio, and television meant much bigger bucks, has been foiled by a copyright law that grants only seventy-five years of protection to songs composed before 1978. (Today's songs are protected for the life of the composer plus fifty years.) *Alexander's Ragtime Band* has passed into the public domain, along with dozens of other early Berlin songs—*Everybody's Doing It Now*, *When I Lost You*, *Dance of the Grizzly Bear*, *That Society Bear*, *When the Midnight Choo-Choo Leaves for Alabam*, *Snookey Ookums*—that are no longer as well known. There is piquant irony in witnessing the nationalization of a man so often referred to as a national institution. After all, the unique nature of Berlin's genius has been to crystallize not once or twice but repeatedly the emotional and historical evolution of the country to which he was brought in steerage ninety-six years ago.

*by Gary Giddins*



HASELWOOD



Like many impoverished Russian Jews, Berlin's family decided to sell its possessions and journey from Temun in Siberia to the Baltic coast where ships were bound for America in the aftermath of a Cossack pogrom. The youngest of eight children, Israel Baline was born, on May 11, 1888, to Cantor Moses Baline and his wife, Leah. Twenty years later when Berlin's idol George M. Cohan paid him tribute, he got a laugh with the line, "Irving Berlin is a Jewboy who named himself after an English actor and a German city." Everyone present probably knew the true story of how a printer mistakenly changed Baline to Berlin in setting the type for his first song, in 1907: *Marie from Sunny Italy* by I. Berlin. The young man, presented with a liberating initial, renamed himself Irving because he thought Israel too pretentious. By then he had seen much of show business from the bottom up.

Berlin was eight when his father, with whom he had sung in synagogue, died; his brothers and sisters were working in sweatshops, and now he too worked, selling papers after school. He began hanging around Bowery beer houses, and his mother was mortified when he announced his ambition to become a singing waiter. One can only imagine the mixture of daring, ambition, and tenacity that propelled him, at age fourteen, to leave home and school, to sleep in basements and hallways, spending his days in search of places to sing. He had no musical background other than the synagogue, and his voice was high and reedy, though he could project it well enough. For a while he accompanied a blind street singer, then went solo. The popular songwriter Harry von Tilzer got him a job reprising songs from the balcony of Tony Pastor's Music Hall on 14th Street. At eighteen, he finally got his singing-waiter job at a joint in Chinatown called Pelham's Café; after hours, he taught himself to pick out tunes on the black keys of the piano and wrote parody lyrics of songs by Cohan and Von Tilzer. *Marie from Sunny Italy*, which earned him a total of thirty-seven cents, showed anything but a natural talent: The man who later chafed at a song that rhymed "apples" and "Minneapolis" (he told biographer Michael Freedland that he would have made it, "God didn't make little green apples and we don't pray in churches and chapels") attempted to make do with "queen"/"mandolin" and "beauty"/"suit me."

TILL, within two years he was scoring minor hits, writing lyrics to music by Ted Snyder as well as his own, and finding unknown but talented people to sing them. *Next to Your Mother, Who Do You Love?* was introduced at a Coney Island café by Eddie Cantor; *Sadie Salome Go Home*, a Yiddish dialect song, was the first comedy number ever performed by a burlesque singer named Fanny Brice. People paid attention when he altered Mendelssohn's *Spring Song* with syncopation and produced *That Mesmerizing Mendelssohn Tune*. When Cantor added *My Wife's Gone to the Country (Hoorah!)* to his vaudeville act and a record was made by Arthur Carter, it sold 600,000 copies of sheet music, earning Berlin \$12,000 and a commission for new lyrics (he wrote a hundred additional verses) from the *New York Evening Journal*. He moved his family to a larger apartment.

From this point, despite a series of tragedies and even an occasional period of writer's block, Berlin's career appears to have rolled along with the speed and certainty of a locomotive. From 1910 until 1954, nearly every year meant the birth of important Berlin songs: songs



Berlin, Judy Garland, and Fred Astaire on the set of *Easter Parade*

Ethel Merman in the hit musical *Call Me Madam*

Allyn McLerie in the title role of *Miss Liberty*



that raced around the world like ambassadors of the American temperament; songs that accelerated and in some instances engendered the careers of singers, dancers, and musicians; songs that became part of the fiber of their native land. One thinks of the parallel impact Louis Armstrong was to have on jazz. The differences between them are more interesting than they are genuinely instructive—one black, ebullient, true to the aesthetic of improvisation, and unwilling to be bothered by the necessities of business; the other Jewish, reclusive, a stickler for detail, and obsessed with promotion. More impressive are the similarities. It's one thing to mouth the platitudes of the American Dream and quite another to contemplate in the cold light of day the unvarnished truth that the two most influential figures in American music were set on their way with backgrounds of unimaginable poverty and minimal education, and that, fueled by genius and an utterly furious work ethic that left little time for self-congratulation, let alone complacency, they managed to shake the world.

**I**N 1910, Berlin sang two of his songs in a show in Boston, while the great vaudeville star Nora Bayes introduced three more in her show. Fanny Brice won a coveted position with Ziegfeld's Follies and asked Berlin for material. His *The Dance of the Grizzly Bear* and *Goodbye Becky Cohen* made her a star. In subsequent years he would write several show stoppers for the Ziegfeld Follies, including *Woodman, Woodman, Spare That Tree* and *Ephraim Played upon the Piano* for the brilliant comic Bert Williams, *You'd Be Surprised* for Eddie Cantor (Cantor's only million-selling record), and the most sublime of chorus-line themes, *A Pretty Girl Is Like a Melody*. But in the meantime he'd also written a two-step without a lyric that was, in Berlin's words, "a dead failure" that lay unpublished for six months. Berlin described what happened next in one of the several interviews he gave in and around 1915:

One day a social organization, the Friars, got up a club show and asked me to sing a song in it. I hastily wrote a lyric, silly in the matters of common sense, and sang it—*Alexander's Ragtime Band*—at the performance. It turned out to be what the vaudevillians call 'a riot,' both here and in Europe. No one was more flabbergasted than I was at the smashing hit it made. I humbly began to study my own song, asking myself, 'Why? Why?' And I got an answer. The melody . . . started the heels and shoulders of all America and a good section of Europe to rocking. . . Its opening words, emphasized by immediate repetition—"Come on and hear! Come on and hear!"—were an *invitation* to 'come,' to join in, and to 'hear' the singer and his song. And that idea of *inviting* every receptive auditor within shouting distance to become a part of the happy ruction—an idea pounded in again and again throughout the song in various ways—was the secret of the song's tremendous success.

That's probably as good an explanation as any. Yet, even after seventy-seven years, it's difficult to fathom why what is essentially an unsyncopated march, ingeniously made though it is, should have had so ecumenical and international an impact in 1911. From the moment Emma ("I'm not pretty, but I'm good to my family") Carus, a deep-voiced ragtime singer, introduced it in Chicago, it was a popular sensation. Within weeks Al Jolson started singing it with Dockstader's Minstrels, and Helen Vincent and Sophie Tucker installed it on the vaudeville circuit. It wasn't a rag, though Berlin was promptly dubbed "the rag king" and



*Fred Astaire starred in the 1935 movie Top Hat, for which Berlin wrote his greatest film score.*

*Ethel Merman as she appeared in 1946 in Berlin's greatest Broadway musical, Annie Get Your Gun*



*The drag ball in the stage version of This Is the Army*

*Berlin himself played in the movie version of This Is the Army.*





An Olympian get-together in 1931: Jerome Kern, Richard Rodgers, Irving Berlin, and Gene Autry

Opening the Music Box theater in 1921: producer Sam H. Harris, Berlin, and New York City Mayor Jimmy Walker

was besieged for more of the same. It was, as cultural critic Gilbert Seldes noted, a “crystallization” of a hustling new spirit dawning in the new world, ready for export. Within a few years the celebrated black bandleader James Reese Europe would team up with Vernon and Irene Castle to popularize the Turkey Trot and other dances considered salacious for the time; in 1919, Will Marion Cook took his Southern Syncopators Orchestra (featuring Sidney Bechet) to Europe for a real taste of Afro-American music. But *Alexander's Ragtime Band* paved the way. It wasn't ragtime, but it was authentic Americana, and it did the trick.

Berlin was now famous enough to attract offers from Europe, and he agreed in 1913 to a vaudeville tour of England. The tour was a triumph, but it followed on the heels of tragedy.

The previous year Berlin had married twenty-year-old Dorothy Goetz, and they honeymooned in Cuba during an outbreak of typhoid. Two weeks later she died of it. Berlin managed to express his grief in a song utterly unlike anything he'd written before, *When I Lost You*. Though no longer sung, it was probably as important to his development as a songwriter as the so-called rags. It was his first ballad of lost love, and, given its tremendous and unexpected popularity—more than two million copies sold (Cohan called it “the prettiest song I've ever heard in my life”)—it is a milestone in the genre.

Jerome Kern's *They Didn't Believe Me*, written in 1914, has been cited as the first truly modern ballad. Yet it was Berlin who was to write the largest number of successful and enduring love songs of the Twenties, several of them tied to his widely publicized courtship of the telegraph heiress Ellin Mackay, who finally married him against her father's wishes in 1926. Grace Moore, who sang many of the songs in the Music Box Revue, said she felt like a singing telegram carrying Berlin's laments to Ellin. In the Twenties, his ballads and waltzes included *What'll I Do?*, *All Alone*, *All By Myself*, *Remember*, *Always*, *The Song Is Ended*, and *How About Me?* At the same time, he turned out rhythm hits as well as songs that encapsulated the talents of specific performers—*Heat Wave* for Ethel Waters, *Puttin' On the Ritz* for Harry Richman, *Shaking the Blues Away* for Ruth Etting, *Blue Skies* for Belle Baker, *Let Me Sing and I'm Happy* for Jolson, and many others.

Yet, back in 1912, he was still known as the ragtime

man, and if the world was dancing to his rhythms, there were any number of critics who disparaged what they construed as American vulgarity. The same sensibility that would later dismiss jazz as whorehouse music looked askance at Berlin's suspicious popularity. Since Berlin could play the piano only in F-sharp (he used a transposing piano to shift keys, as Cohan and other self-taught songwriters did) and required arrangers to help him prepare his scores (he would dictate his harmonies through trial and error), derogatory rumors abounded: Berlin had a black man in Harlem turning out his songs; Berlin had a staff of three slaves, and so on.

**I**N an interview Berlin gave the *New York Herald* in 1912 was bannered with the news that he had made \$100,000 in just three years of songwriting. Berlin, the reporter sniffed, “has ‘ragged’ more money from the public's unsentimental pockets than possibly all the writers of real poetry since the days of Thomas Chatterton put together.” While musing over Berlin's betters, he decried the probability that “decrepit pianos will jingle [his music] from the banks of the Saskatchewan to the shores of the Yukon; from the shacks at Panama to the remoter homes of Brooklyn and New Jersey . . .” The writer concluded with comments on “boosting,” an early form of payola: “To have a song introduced by a popular Broadway star may require quite a payment to the idol of the footlights.”

Actually, the stars were beating a path to Berlin's door. Yet, Berlin was always willing to admit that songwriting was business. In the same interview he explained, “Success depends on the trick of putting in what we call ‘the punch’—that's a swinging melody or a sudden twist which will make an impression on the public mind.” Ah, but will such songs live? “I think so. At least they'll live ten years—that's long enough for me.”

In 1915, Berlin collaborated with Justus Dickenson on an article for *The Green Book* magazine, “Words and Music (How They Are Written),” in which he expounded at length on his craft. Some songs were written in white heat, but most required “torments and tortures.” He continued: “So many of my songs are written under pressure that I can't trust to what is called inspiration. I have an expensive publishing and selling organization almost wholly dependent upon me for a product.” He attributed his success to the fact that he wrote



Berlin rehearsed stars Alice Faye, Tyrone Power, and Don Ameche for their roles in the film Alexander's Ragtime Band.

George Gershwin was one of Berlin's most prominent admirers.

words as well as music, as though that were simply the sensible thing to do: "I sacrifice one for the other. If I have a melody I want to use, I plug away at the lyrics until I make them fit the best parts of my music, and vice versa." His primary concern, he said, was phrasing: " 'Easy to sing, easy to say, easy to remember and applicable to everyday events' is a good rule for phrasing."

Melodies, he suggested, should go up on an open vowel (A, I, O), because "going up on a closed vowel [E, U] makes enunciation difficult." Nothing is more emblematic of Berlin's influence on the modern song than his belief in short verses and long choruses, the opposite of the nineteenth-century style. He had been warned that *Alexander's Ragtime Band* wouldn't succeed because the chorus was too long, but he argued that short choruses "don't carry enough sustained interest." "I know rhythm," he said. "Therein is one of the great qualities, for rhythm is a big part of any one-octave song. It's the swing. When I get the swing, songs come easy."

Five years later, in 1920, in an interview for *The American Magazine*, he gave his "nine rules for writing popular songs." Briefly paraphrased, they are 1) The melody must be in the range of the average voice; 2) The title must be strong and effectively planted in the song; 3) The song must be "sexless," or suitable to performers of both sexes; 4) It should have "heart interest"; 5) It must be "original in idea, words, and music"; 6) "Stick to nature—not nature in a visionary, abstract way, but nature as demonstrated in homely, concrete, everyday manifestations"; 7) A lyric should be "euphonious"—lots of "open vowels"; 8) Keep it "perfectly simple"; 9) "The song writer must look upon his work as a business, that is, to make a success of it, he must work and work, and then WORK."

By then he was a certified living legend. In 1918, the year Bartók wrote *Bluebeard's Castle* and Stravinsky *A Soldier's Tale*, Berlin was inducted into the Army and conceived the idea for a show called *Yip! Yip! Yaphank!* featuring 350 doughboys. The highlights were his songs *Mandy* and *Oh, How I Hate to Get Up in the Morning*, which had its genesis in his lifelong insomnia. "There's a song called *The Star-Spangled Banner*, which is a pretty big song hit, too; but my answer to the question in the opening line of the national anthem is a loud 'No!' I can't 'see' anything 'by the dawn's early light.' My song about hating to 'get up in the mo-o-o-rning' was a protest

written from the heart out, absolutely without the slightest thought that it would ever earn a cent." (Another song intended for the show was withdrawn for being too much of a flag-waver; it lay in Berlin's files until 1938, when Kate Smith asked him for a song to sing on her Armistice Day radio show. He dug out *God Bless America* and, refusing to capitalize on his patriotism, assigned all future royalties to the Boy Scouts, Girl Scouts, and Campfire Girls.) In 1919, when Berlin opened his own publishing house, Irving Berlin Week was celebrated across the nation. Yet Berlin's greatest work was still ahead of him.

In 1921, Berlin and producer Sam H. Harris opened the Music Box, the only theater ever built in New York to feature the music of a particular composer. Berlin wrote four annual revues and introduced *Say It with Music*, *Everybody Step*, *Pack Up Your Sins* (another superb contrapuntal song), and *The Schoolhouse Blues*. Strangely, some of his best songs of the period—the ballads for Ellin Mackay and *Lazy*—were not written for the Music Box and had to be interpolated into the shows when they became hits. In 1925, he wrote the score for *The Cocoanuts*, starring the Marx Brothers. In 1927, he became the only composer to score an entire edition of the Ziegfeld Follies, and he also found time to knock off *Russian Lullabye*, *The Song Is Ended*, and *Blue Skies*, which quickly made its way to Hollywood and the first musical film, *The Jazz Singer*, starring Al Jolson.

OR Jolson's fourth and most interesting film, *Mammy*, which attempted to re-create the world of the minstrel show, Berlin wrote *Let Me Sing and I'm Happy*, a song that summed up a fading generation in entertainment as efficiently as *There's No Business Like Show Business* would eventually embrace the larger aesthetic. The ballad *To My Mammy* from the same film had a forgettable melody but a lyric that Berlin would make memorable two years later: "How much does she love me?/I'll tell you no lies./How deep is the ocean?/How high is the sky?" For Broadway, in *Face the Music* and *As Thousands Cheer*, he wrote *Soft Lights and Sweet Music*, *Let's Have Another Cup of Coffee*, *Easter Parade*, *Supper Time*, *Heat Wave*, and *Not for All the Rice in China*. Two of his most sophisticated ballads, *How Deep Is the Ocean?* and *Say It Isn't So*, were resurrected in 1932 from forgotten material.

Photos: courtesy Roy Hemming (left), ASCAP (right)



Berlin wrote the greatest of his film scores in 1935, for the Fred Astaire and Ginger Rogers vehicle *Top Hat*, producing five instant classics: *Isn't This a Lovely Day*, *No Strings*, *Top Hat*, *White Tie and Tails*, *The Piccolino*, and, most exquisite of all, *Cheek to Cheek*, which is equally daring in melody and words. His score for *Follow the Fleet* is almost as strong, including *Let's Face the Music and Dance*, *I'd Rather Lead a Band*, *I'm Putting All My Eggs in One Basket*, and that incomparable siren call to free spirits, *Let Yourself Go*. By the late Thirties, Berlin had become one of the most consistently creative and prolific of lyricists, second perhaps only to Lorenz Hart and rivaled only by the other words-and-music man, Cole Porter.

**S**TILL, that aspect of his gift has often been overshadowed by the diversity of his melodies and his penchant for unusual song forms. In a 1938 interview in the *New York Times*, he said, "The words of a song are all-important, for the melodies linger on, but it is the words that give the song freshness and life." In an interview that same month in the *New York Journal American*, he demonstrated how he wrote songs at his "trick" piano. "I'm a little like a poet who can write verses that people like, but who can't parse the sentences in his poems. Well, he isn't worried. Any high school kid can parse." He played and sang *Alexander's Ragtime Band*, using his lever to make the key change from verse to chorus. Asked what the second key was, he said "Damnfknow," and called one of his assistants in to find out. "You see, a songwriter who's a musician is something comparatively new," he explained. "Of course there were men like Jerome Kern and Victor Herbert, but they were few and far between."

Berlin continued to have his triumphs, including *Holiday Inn*, *Easter Parade*, and *White Christmas* in the movies and *This Is the Army*, *Miss Liberty*, and *Call Me Madam* on stage. Yet, even by such lofty standards, one work stands out above the rest, most nearly personifying his elusive virtuosity. *Annie Get Your Gun* (1946) is built on an ingenious premise that located the birth of American entertainment in the Wild West shows of the American *fin de siècle*. The book, based on the romance of sharpshooters Annie Oakley and Frank Butler, might seem a slim peg on which to hang such a genesis, but the setting is a natural, marrying quintessential Americana with genuine spectacle.

Berlin, who had already turned down a request from the Bernard Shaw estate to adapt *Pygmalion*, hesitated only briefly before accepting the assignment, originally intended for Jerome Kern, who had just died, though it would not bill his name above the title (a spot reserved for the show's producers, Rodgers and Hammerstein). He argued that he couldn't write hillbilly music. Yet who else but Berlin could so handily tackle the basic commonsensical, vulgar, pragmatic comic-drama of people who ain't got education but are blessed with a God-given gift to do what comes naturally? Who better than Berlin to enlarge upon the theme of feminist spunk, or to dramatize the whole business of show business, with all of its bursting grandiosity?

The success of Rodgers and Hammerstein in the Forties helped bring about the end of the revue musicals that had been Berlin's stock in trade and restore coherent musical dramas of the sort that made *Show Boat* an enduring classic of the Twenties. Berlin accepted the challenge with extraordinary vigor; there isn't a melody or lyric in *Annie Get Your Gun* that doesn't boast something unusual and memorable. With Ethel Merman at her outlandishly brassy best, the show was a model of Tin Pan Alley craftiness, rich with the juices of veteran showpeople, an unembarrassed pageant by and about self-made entertainers.

In Kern's hands, *Annie* might have been a classier act, with love songs approaching the operatic and a show-stopping inquiry into the vicissitudes of trouping. One cannot imagine Kern writing *Anything You Can Do* (perhaps the best of Berlin's many comic songs) or *There's No Business Like Show Business*, or his lyricist Dorothy Fields creating verses anywhere near as sassy as Berlin's. Indeed, no other songwriter capable of writing those songs could also be expected to come up with such purebred ballads as *They Say It's Wonderful* and *I Got Lost in His Arms*, or the waltz *The Girl That I Marry*, or those remarkably sunny soliloquies *You Can't Get a Man with a Gun* and *I Got the Sun in the Morning*, or the loony pseudo-folk song *Doin' What Comes Naturally*, filled with native wisdom.

*Annie* is all shameless pretense, greasepaint, and costume. Berlin underscores the point boldly, brazenly, brilliantly with the score's most inspired coup, that peremptory volley of deconstruction, *There's No Business Like Show Business*—an entr'acte that he almost pulled from the show. Here, for once, a songwriter tells the truth about the people on stage and those in the audience: Those good, straight, responsible people—"the butcher, the baker, the grocer, the clerk"—are jealous because they never get applause; the applause junkies on stage don't get much else. Irving Berlin managed to get many millions of dollars and a Medal of Freedom. But in the magical frame of *Annie Get Your Gun*, you get the feeling that things like that don't really count, and that makes you applaud all the harder.

Toward the close of an open letter to Berlin, published in *Town and Country* in 1954, Bing Crosby wrote, "Many times I have come to the studio, apathetic, dispirited, unhappy with my work, and after five minutes listening to you demonstrate a song in your something less than adequate demifalsetto, your arms waving and your eyes sparkling, I am back in action again. The material is always good, I know, but it's your enthusiasm that's so infectious and I've just got to go along with you,

not only on your birthday, but every day." That same infectiousness, as communicated in the material itself, led the composer John Alden Carpenter to write in the Twenties, "I am strongly inclined to believe that the musical historian of the year 2000 A.D. will find the birthday of American music and that of Irving Berlin to have been the same." It continues to keep us attentive in the Eighties, as it will for generations to come. The truly great songwriters never die, they just fade into the public domain. □

(Discography on page 86)

Bing Crosby and Irving Berlin



# Magnificent Reception.

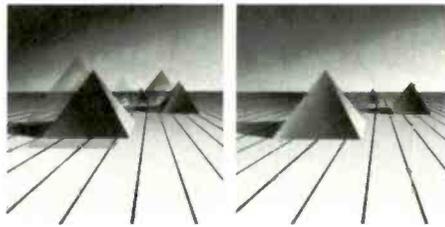
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## Berlin on Record



**LOUIS ARMSTRONG.** A marvelous Berlin interpreter, Armstrong recorded at least seven standards (including a version of *Marie* with the Mills Brothers, for Decca in the Thirties), which may crop up on MCA, as well as four duets with Ella Fitzgerald (two each on VERVE © 825 373-2 and © 825 374-2) and a robust *Top Hat, White Tie and Tails* (VERVE © 823 446-2).

**FRED ASTAIRE:** *The Irving Berlin Songbook* (VERVE 829 172-1, © 829 172-4, © 829 172-2). "He's as good as any of them—as good as Jolson or Crosby or Sinatra," Berlin said of Astaire. "I wrote the songs with him in mind." Here the great man is accompanied by an all-star jazz ensemble for ten Berlin film songs. Every lyric is clear as crystal.

**TONY BENNETT:** *Berlin* (COLUMBIA FC 44029). His best album in years has twelve songs imaginatively performed with just a trio plus guest soloists Dizzy Gillespie, Dexter Gordon, and George Benson.

**JOE BUSHKIN:** *Fifty Irving Berlin Hit Tunes* (CAPITOL). The fleet pianist offered the longest single-album medley ever in this 1956 survey, backed with a big orchestra. Long out of print, it's ripe for rerelease.

**ROSEMARY CLOONEY:** *Sings the Music of Irving Berlin* (CONCORD JAZZ CJ-255, © CJ-255-C, © CCD-4255). Ten expert readings with a fine jazz ensemble. When Clooney does Volume Two, and she should, perhaps she'll revive *Love You Didn't Do Right by Me*, with which she nearly stole the show in the film *White Christmas*.

**BING CROSBY.** Certainly the best-known Berlin troubadour, yet there's no collection. You will have to hunt through reissues of Crosby's mighty Decca (now MCA) catalog.

**ELLA FITZGERALD:** *The Irving Berlin Songbook, Vols. 1 and 2* (VERVE © 829 534-2 and 829 535-2). Thirty-two songs by the First Lady. Words fail me.

**BILLIE HOLIDAY.** Her early performances of *This Year's Kisses* and *I've Got My Love to Keep Me Warm* (Columbia) are classic, but don't miss the seven Berlin ballads spread throughout her Verve recordings.

**BROOKS KERR:** *Salutes Irving Berlin* (BLUEWAIL 1002). The live setting and some of the readings are awkward, but Kerr did his homework, and many of the thirty-two numbers are welcome obscurities, such as *Marie from Sunny Italy*, *Yiddische Eyes*, and *Woodman, Woodman, Spare That Tree*.

**T**HIRTY or so of Irving Berlin's songs are widely sung and played, and you can choose between many versions. But Berlin is credited with nearly 1,500 published songs (and is said to have written as many more that remain unpublished). A surprising percentage stand up for their charm and energy, especially from the early period, and it's a shame that contemporary performers haven't looked beyond the accepted classics. Several artists have recorded enough Berlin tunes for albums, but as they are divided among different record labels, you have to look for them individually. Some of the recordings I recommend here have been deleted from the catalog, but you never know what will return. Incidentally, Berlin recorded one tune, *Oh! How That German Could Dance*, in 1910; apparently it's been out of print for seventy-eight years.

—Gary Giddins

**JOAN MORRIS AND WILLIAM BOLCOM:** *The Girl on the Magazine Cover* (RCA AGL1-3704). Berlin wrote songs for the common voice, which would seem to leave Morris out in the cold. But her nearly operatic approach is better than most, and her *Pack Up Your Sins* is first-rate.

**FRANK SINATRA.** What an album could be compiled from his more than twenty-five Berlin recordings, most of them on Columbia ("The Voice") and Reprise. Of the latter, the best are "Ring-a-Ding-Ding" and "All Alone" which has a rare modern version of *When I Lost You*.

**SARAH VAUGHAN AND BILLY ECKSTINE:** *The Irving Berlin Songbook* (included in MERCURY © 826 327-2). This sublime 1957 collaboration produced nine highly creative duets and two Eckstine solos, including the rarely heard *All of My Life*.

**ANNIE GET YOUR GUN** (MCA MCA-37092E, © MCAC-37092E). Ray Middleton matches lungs with Ethel Merman and gets wiped out, but nobody cares. Berlin's masterpiece, originally produced in 1946, is due for a full-scale revival.

**CALL ME MADAM** (MCA MCA-1532E, © MCAC-1532E). Ethel Merman heads the original Broadway cast of 1950. The frequently clever score boasts two ingenious numbers: *It's a Lovely Day Today* and *You're Just in Love*.

**IRVING BERLIN—THERE'S NO BUSINESS LIKE SHOW BUSINESS** (BOOK OF THE MONTH CLUB, Camp Hill, PA 17010). You don't have to be a member to order this through the mail, and it's the best anthology of Berlin to date: five records, fifty-two songs, sung by Lee Wiley, Eddie Cantor, Bing Crosby, Ethel Waters, Harry Richman, the Boswells, Louis Armstrong, Al Jolson (the hilarious *I've Got My Captain Working for Me Now*), and on and on and on.

**THIS IS THE ARMY** (COLUMBIA SPECIAL PRODUCTS X 14877). Eight numbers from a show chiefly of historical interest, though Berlin sings *Oh How I Hate to Get Up in the Morning* and Corporal Earl Oxford does his best by *I Left My Heart at the Stage Door Canteen*. Side two of the record is given over to Harold Rome's *Call Me Mister*.

**THE VINTAGE IRVING BERLIN** (NEW WORLD NW 238). The composer sings his wake-up song alongside vintage performances by Van and Schenk, Grace Moore, Ruth Etting, Jolson, Clifton Webb, Ginger Rogers, and more.

Other gems worth hunting down, many of them instrumentals, are Sony Rollins, *There's No Business Like Show Business* (Prestige); Bessie Smith, *Alexander's Ragtime Band* (Columbia); Coleman Hawkins, *Say It Isn't So* (RCA) and *How Deep Is the Ocean?* (Dr. Jazz); Art Tatum, *Isn't It a Lovely Day?* (Pablo); Dinah Washington, *Say It Isn't So*, *Blue Skies*, *The Song Is Ended*, and *I've Got My Love to Keep Me Warm* (Mercury); Ray Charles, *Alexander's Ragtime Band* and *What'll I Do* (Atlantic); Fats Domino, *Easter Parade* (Imperial); Roy Eldridge, *The Song Is Ended* (Verve); Thelonious Monk, *Just One Way to Say I Love You* (Columbia); Pee Wee Russell, *How About Me?* (Impulse); and Ethel Waters, *Supper Time*, *Waiting at the End of the Road*, and *Harlem on My Mind* (Columbia).



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# SYSTEMS



*A systematic approach to music, comedy, and other performing arts*

*by William Burton*

**A** STAND-UP comic who has opened for Ray Charles and Kool and the Gang as well as an actor who has done commercials for Budweiser and Levis, Rondell Sheridan has an audio/video entertainment center that shows his fascination with the performing arts. (He has a separate system just to record live music, and he plans to get a one-piece Bang & Olufsen system for the upper floor of his Manhattan duplex.)

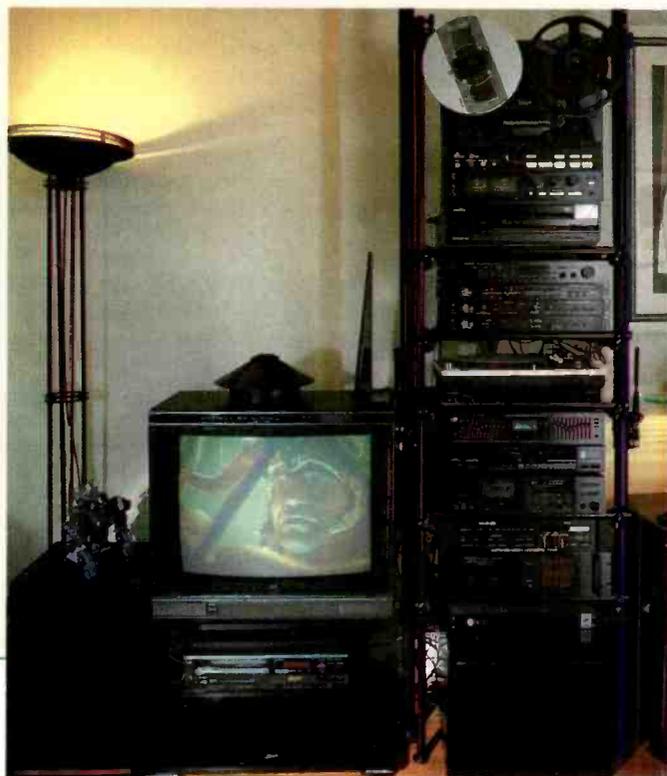
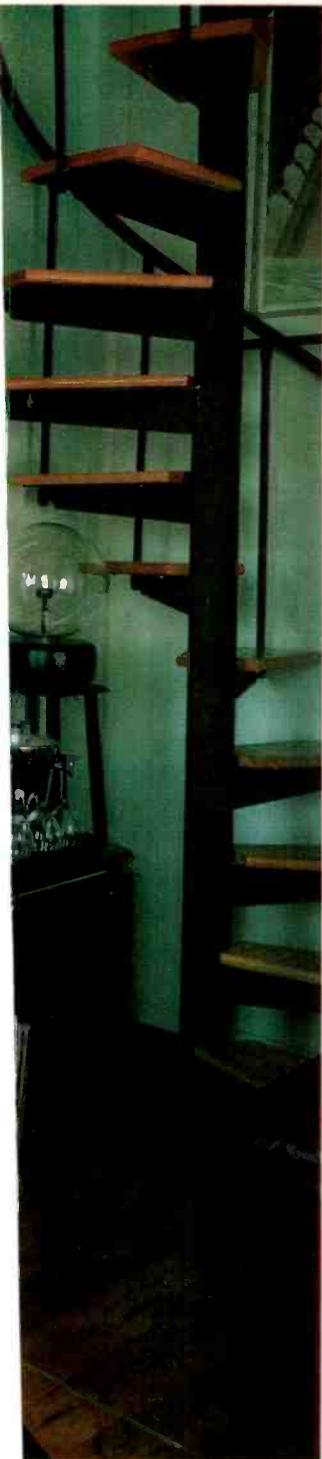
The main system has a complete complement of source components in a Pipedreams equipment rack, made by Band Inc. of New Jersey. When Sheridan discovered the rack in an audio store's front window, he saw that it would be perfect for his system. "It's more than a rack," he said. "It's a piece of furniture. Everything really fit; it's a central part of the apartment."

The Pipedreams rack holds, from top to bottom, a Teac X-2000R open-reel tape deck, a Pioneer CLD-909 LaserDisc/CD player, a Nikko Beta 50 preamplifier, a dbx 400X program-route selector, a dbx 1BX III dynamic-range expander, a dbx 224X noise-reduction unit, a Technics SL-

1200 Mk II turntable with a Pickering TLE cartridge, a BSR EQ3000 equalizer, a Kenwood DP-1100B CD player, a Yamaha K600 cassette deck, an SAE T-101 tuner, and a Nikko Alpha 230 power amplifier. A Yamaha NSW2 subwoofer sits underneath the rack with a Perma Power Sockets Plus power strip on top of it.

Tascam CM-10 speakers are under the robot gorilla at the left of the system and by the staircase at right. The 26-inch NEC receiver/monitor has an NEC 951U VHS VCR below it and a Parsec 7403 FM antenna on top.

Sheridan has about seventy movies on video, ranging from *Blade Runner* to *Children of a Lesser God*. He uses the Teac tape deck to record certain kinds of music. "I made my own tape of songs that have a *Miami Vice* kind of feel—Pat Metheny, Bryan Ferry, Phil Collins, and so on," he said. He bought the Teac because of a test report in *STEREO REVIEW*. His LP's are mostly comedy records by Bill Cosby, George Carlin, and others. Providing music, comedy, and videos in high style, Rondell Sheridan's system would surely please Ray Charles, Lenny Bruce, and even Sonny Crockett. □



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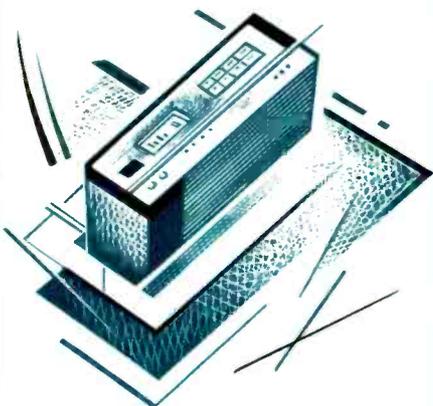
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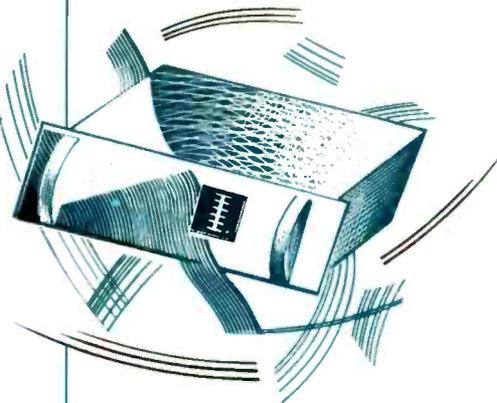
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# 1988

## EQUIPMENT BUYING GUIDE

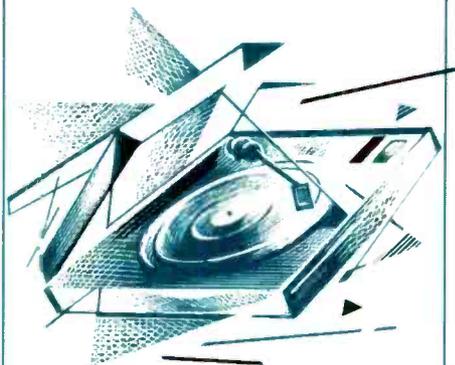
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The listings on the following pages indicate the features, specifications, and prices of hundreds of products. They should provide a helpful starting point for your shopping, but do not neglect other sources of information. Listen as much as possible, push all the buttons, and learn all you can about the components you are considering.

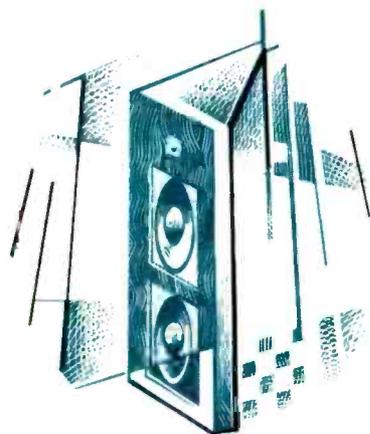
New components are introduced every month, and many have more specifications than they have controls. Our listings are necessarily selective, concentrating on the main categories of home audio components from companies whose products are widely distributed. If a particular model does not appear, do not take that as a reflection on its quality. Upcoming issues will contain listings for cassette decks, blank tape, and hi-fi VCR's.

All the information here, including the suggested retail prices, was provided by the manufacturers. Actual prices are set by each retailer and are subject to change because of economic conditions and marketing strategies.

For more information about any product, contact an authorized dealer or the manufacturer. Addresses for manufacturers are on pages 172-173.



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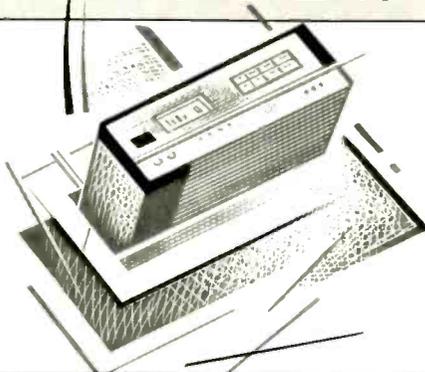


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# RECEIVERS



## ACOUSTIC RESEARCH

### AR X-10 AM/FM Stereo Receiver

Receiver with infrared remote to control power, volume, tuning, input selection, and AR CD player functions. Features audio and video dubbing; close-tolerance metal-film resistors and film capacitors for phono preamp; concealed bass, midrange, treble, balance, tone-defeat, loudness, filter, tape, FM/AM, memory, and speaker-switching controls; 8 AM/8 FM station presets; gold-plated phono inputs. Inputs for MM phono; MC phono; tape; AUX; CD player; video sound source; VCR 1; VCR 2. Amp section: 100 continuous average W/ch from 20-20,000 Hz into 8 ohms with less than 0.03% THD. 130 W into 4 ohms; dynamic headroom 2 dB; 200-ms dynamic power 150 W; 40-ampere current capability. FM section: 50-dB quieting sens stereo 25  $\mu$ V (33.2 dBf); FM S/N (at 65 dBf) 75 dB stereo, 80 dB mono; THD stereo 0.3%; capture ratio 1.0 dB; AM rej 60 dB; alt-ch sel 75 dB. 17" w x 4.33" h x 14.5" d ..... \$800



Acoustic Research AR X-10

### AR X-06 AM/FM Stereo Receiver

Receiver with infrared remote to control power, volume, tuning, input selection, and AR CD player functions. Features audio and video dubbing; close-tolerance metal-film resistors and film capacitors for phono preamp; concealed bass, midrange, treble, balance, loudness, mono, tape, VCR, tuning, and speaker-switching controls; 8 AM/8 FM station presets; gold-plated phono inputs. Inputs for MM phono; MC phono; tape; AUX; CD player; video sound source; VCR 1; VCR 2. Amp section: 60 W/ch from 20-20,000 Hz into 8 ohms with less than 0.03% THD. 80 W into 4 ohms; dynamic headroom 2 dB. 17" w x 3.25" h x 15.5" d ..... \$600

## A/D/S/

### R4 Remote-Controllable 70-W/ch Receiver

Alphanumeric display on front panel indicating input source or received radio station. Digital-synthesized tuner with 30 memory presets for AM or FM stations; optional wireless remote control (which also controls other a/d/s/ components); digital volume and tone controls; RS-232 port allows control through personal computer; capable of multi-room remote control. Amp section: 70 W/ch into 8/4 ohms; dynamic headroom 2 dB. Tuner section: 1HF sens 26 dBf stereo; signal strength for 50-dB quieting

35 dBf stereo. 17.5" w x 2.8" h x 14.8" d; 23 lb ..... \$1,100

## AKAI

### AA-V405-B 100-W/ch A/V Receiver

With wireless remote control; surround-sound decoding; 7-band EQ; 16 AM/FM presets; video and RF inputs/outputs; comprehensive LCD. Inputs for MM phono; tape; aux; CD player; video sound source; VCR 1; VCR 2; VDP; RF. Amp section: 100 W/ch into 8 ohms. FM section: 50-dB quieting sens stereo 37.2 dBf; max S/N with 65 dBf A-wtd stereo 65 dB; capture ratio 1.5 dB. 17" w x 4" h x 13.5" d; 16.2 lb ..... \$589

### AA-V305-B 80-W/ch A/V Receiver

Wireless remote control; surround-sound decoding; 5-band EQ; 16 AM/FM presets; video and RF inputs/outputs; comprehensive LCD. Inputs for MM phono; tape; aux; CD player; video sound source; VCR 1; VCR 2; VDP; RF. Amp section: 80 W/ch into 8 ohms. FM section: 50-dB quieting sens stereo 37.2 dBf; max S/N with 65 dBf A-wtd stereo 65 dB; capture ratio 1.5 dB. 17" w x 4" h x 13.5" d ..... \$499

### AA-V205-B 60-W/ch A/V Receiver

Wireless remote control; surround-sound decoding; 5-band EQ; 16 AM/FM presets; video and RF inputs/outputs; comprehensive LCD. Inputs for MM phono; tape; aux; CD player; video sound source; VCR 1; VCR 2; VDP; RF. Amp section: 60 W/ch into 8 ohms. FM section: 50-dB quieting sens stereo 37.2 dBf; capture ratio 1.5 dB. 17.3" w x 4" h x 13.5" d; 16.2 lb ..... \$399



B&O Beomaster 3300

## BANG & OLUFSEN

### Beomaster 5500 50-W/ch AM/FM Receiver

Includes Master Control Panel remote control and handheld infrared remote; presets for 20 AM and FM stations; Auto Power Handling Control compression; double-acting auto gain control in FM; volume, bass, treble, and balance controlled from knob on MCP remote; works with other Beosystem 5500 components for multi-room remote control; direct selection of any FM or AM station by frequency; station search; silver and black finish. Power output 50 W/ch into 8 ohms; dynamic headroom 1.5 dB; 50-dB quieting sens 40 dBf; capture ratio 1.7 dB. 16.5" w x 3" h x 12.75" d; 19.2 lb ..... \$1,950

### Beomaster 3300 25-W/ch AM/FM Receiver

Works with other Beosystem 3300 components for multi-room remote control; sensi-touch capacitance controls; volume controlled from wireless remote; 4 FM, 1 AM presets; auto power with source selection; bass (max +9, -14 dB at 40 Hz), treble (max +9, -14 dB at 12,500 Hz), balance controls; loudness switch; programmable volume level; auto compression to prevent overload; mounts on wall with accessory brackets; headphone jack; drives 2 pairs of speakers. 25 W/ch into 8 ohms; 50-dB quieting sens 43 dBf stereo. 24.5" w x 2.75" h x 10" d; 15.4 lb ..... \$799

## CARVER

### 200-W/ch AM/FM Receiver 2000

With Magnetic Field Amp. Sonic Holography, and special FM NR. Features AM stereo; MC cartridge preamp; remote control. Inputs for MM phono, MC phono, tape, AUX, extra AUX, CD player, video sound source. Amp section: 200 W/ch into 8 ohms; dynamic headroom 0.2 dB. FM section: alternate-ch sel 58 dB; adjacent-ch sel 40 dB; 50-dB quieting sens stereo 5  $\mu$ V; sep 40 dB at 1,000 Hz; capture ratio 1.0 dB. AM section: sens 250  $\mu$ V ..... \$1,595

### 150-W/ch AVR100 Audio/Video Receiver

Magnetic Field Amplifier; 6 AM/6 FM presets; Asymmetrical Charge-Coupled FM Detector; Sonic Holography; bass control boosts or cuts 100 Hz max 8 dB; treble boosts or cuts 10,000 Hz max 8 dB; 4 video inputs, 3 video outputs, with switching and dubbing; antenna/cable switching; surround-sound processor with 50 W; 20-function remote. 150 W/ch. Tuner section: FM sens 1HF 2.0  $\mu$ V; FM 50-dB quieting sens 4.5  $\mu$ V mono or stereo; capture ratio 1.5 dB; AM distortion at 2  $\mu$ V 0.6% ..... \$1,199

### 150-W/ch AM/FM Receiver 150

Designed for noise-free stereo FM and adequate power for CD's. PLL fully digital-synthesized AM/FM stereo tuner section; Magnetic Field Amp; Asymmetrical Charge-Coupled FM Detector; phono input; video/digital audio input; aux input; 2 tape inputs; 6 station presets; mono switch; bass, mid, treble controls; balance control; switches for tone defeat, speaker selection, tape monitoring, tape dubbing, FM muting, AM noise filter, loudness contour. 150 W/ch into 8 ohms. FM section (stereo, 75 ohms, with Charge-Coupled Detector engaged); usable sens 16.3 dBf (1.78  $\mu$ V); 50-dB quieting sens 23.5 dBf (4.0  $\mu$ V) ..... \$799

## DENON

### DRA-95VR Receiver

Features remote control; 85 W/ch; nonnegative feedback; pure current supply; simulcast; simulated stereo; audio external processing loop; re-

# RECEIVERS

mate video input switching; 16-station random preset tuning; variable loudness; MC input; 2 A/V in and 1 A/V out plus monitor out. Side panels standard ..... \$650

## DRA-75VR Receiver

Features remote control; 65 W/ch; non-switching Class A amp; simulcast; audio external processing loop; 16-station random preset tuning; variable loudness; MC input; 2 A/V in and 1 A/V out plus monitor out; electronic input switching ..... \$500

## DRA-55V Receiver

Features 55 W/ch; nonswitching Class A amp; 16-station random preset tuning; variable loudness; 2 A/V inputs and 1 monitor output; electronic input switching; last-channel memory; auto seek ..... \$400

## DRA-35V Receiver

Features 40 W/ch; 16-station preset tuning; auto seek; variable loudness control; last-channel memory; nonswitching Class A amp; A/V in/out; electronic input switching ..... \$320

## DRA-25 AM/FM Receiver

Stereo receiver features straight amplification design; CD direct switch; variable loudness EQ; liquid heat-cooled sink; high-linearity phono stage; 16-station random preset memory; microprocessor assisted tuning system; Ft. display; auto-scan; up/down manual tuning; last-channel-tuned memory. 30 W/ch min rms into 8 ohms from 20-20,000 Hz with no more than 0.05% THD; FM 50 dB quieting sens 23  $\mu$ V (stereo); capture ratio 1.5 dB; AM suppression 50 dB ..... \$280



Denon DRA-951R

## FISHER

### RS-620 AM/FM Receiver

100 W/ch receiver with infrared wireless remote control. Features quartz-PLL digital tuning; 24 station presets; 5-band graphic equalizer; A/B speaker switching; headphone jack; inputs for phono, CD, video/AUX, tape 1, and tape 2. 100 W/ch into 8 ohms from 20-20,000 Hz with no more than 0.5% THD ..... \$400

### RS-610 AM/FM Receiver

50 W/ch receiver with infrared wireless remote control. Features quartz-PLL digital tuning; 24 station presets; 5-band graphic equalizer; A/B speaker switching; headphone jack; inputs for phono, CD, video/aux, tape 1, and tape 2. 100 W/ch into 8 ohms from 20-20,000 Hz with no more than 0.5% THD ..... \$300

## HARMAN KARDON

### HK 795i 70-W/ch AM/FM Receiver

AM/FM-stereo receiver with digital synthesized quartz-locked tuning and high current power amplifier section with reactive load capability. Features DC driven digital display; tape out selector; dual RIAA EQ circuitry. Inputs for MM phono, phono 2, tape. Amp section: 70 W/ch into 8 ohms. FM section: 50-dB quieting sens stereo 1.65  $\mu$ V (14.6 dBf); max S/N with 65 dB

(1,000  $\mu$ V), A-wid stereo 75 dB ..... \$750

### HK495i 45-W/ch AM/FM Receiver

AM/FM-stereo receiver with digital synthesized quartz-locked tuner. Features reactive load and high instantaneous current capability, low negative feedback; ultrawide bandwidth. Inputs for MM phono, tape, CD player. Amp section: 45 W/ch into 8 ohms. FM section: alt-ch sel 65 dB; 50-dB quieting sens mono 1.65  $\mu$ V (15.6 dBf), max S/N, A-wid stereo 75 dB; sep 50 dB at 1,000 Hz; capture ratio 1.2 dB ..... \$435

### HK395i 30-W/ch AM/FM Receiver

AM/FM-stereo receiver with digital synthesized quartz-locked tuner. Features reactive load and high instantaneous current capability, low negative feedback. Inputs for MM phono, 2 tape monitors, CD player. Amp section: 30 W/ch into 8 ohms. FM section: alt-ch sel 65 dB; 50-dB quieting sens mono 1.65  $\mu$ V (15.6 dBf), max S/N, A-wid, stereo 75 dB; sep 50 dB at 1,000 Hz; capture ratio 1.2 dB. AM section: sens 15  $\mu$ V ..... \$325

### HK385i 30-W/ch AM/FM Receiver

AM/FM-stereo receiver with reactive load and high instantaneous current capability. Features ultrawide bandwidth; low negative feedback; discrete circuitry. Inputs for MM phono, tape, CD player. Amp section: 30 W/ch into 8 ohms. FM section: alt-ch sel 60 dB; 50-dB quieting sens mono 1.9  $\mu$ V (16.8 dBf), max S/N, A-wid, stereo 74 dB; sep 45 dB at 1,000 Hz; capture ratio 1.5 dB. AM section: sens 15  $\mu$ V ..... \$275

## HITACHI

### HTA50AVSW 50-W/ch AM/FM Receiver

Quartz digital-synthesized tuner section; 20 AM/FM presets; unified infrared remote control; surround-sound control system; audio inputs for phono, CD, tape; video inputs for TV, VCR, videodisc player; electronic volume and balance controls; 5-band graphic equalizer; rosewood end caps. 50 W/ch into 8 ohms from 20-20,000 Hz with no more than 0.05% THD ..... \$500

## JVC

### RX950VBK Audio/Video Receiver

Receiver with unified wireless remote control to operate receiver plus selected JVC Compu-Link components. Features MOL LCD remote control; Dynamic Super A, Gm Driver; computer-controlled digital-synthesis tuning; 16 AM/16 FM station presets; auto memory; preset scan; dB signal-strength indicator; variable stop level; auto QSC; electronic 7-band equalizer with 5 user-programmable and 5 preset EQ curves; spectrum analyzer display; high-gain phono EQ for MM/MC cartridges; sleep timer; 3 video inputs; 2-way dubbing; sound selector; acoustic expander; built-in CATV module for music source from CATV; preamp output. Power output: 120 W/ch into 8 ohms from 20-20,000 Hz with no more than 0.007% THD ..... \$800

### RX9VBK Audio/Video Receiver

Receiver with unified wireless remote control to operate receiver plus selected JVC Compu-Link components. Features Dynamic Super A, Gm Driver; computer-controlled digital-synthesis tuning; 16 AM/16 FM station presets; auto memory; preset scan; dB signal-strength indicator; variable stop level; auto QSC; electronic 7-band equalizer with 5 user-programmable and 5 preset EQ curves; spectrum analyzer display; high-gain phono EQ for MM/MC cartridges; sleep timer; 3 video inputs; 2-way dubbing; sound selector; acoustic expander; built-in CATV module

for music source from CATV. Power output: 120 W/ch into 8 ohms from 20-20,000 Hz with no more than 0.007% THD ..... \$720

### RX8VBK Audio/Video Receiver

Receiver with unified wireless remote control to operate receiver plus selected JVC Compu-Link components. Features Dynamic Super A, Gm Driver; computer-controlled digital-synthesis tuning; 16 AM/16 FM station presets; auto memory; preset scan; dB signal-strength indicator; variable stop level; auto QSC; electronic 7-band equalizer with 5 user-programmable and 5 preset EQ curves; spectrum analyzer display. 100 W/ch into 8 ohms from 20-20,000 Hz with no more than 0.007% THD ..... \$600

### RX550VBK Audio/Video Receiver

Receiver with unified wireless remote control to operate receiver plus selected JVC Compu-Link components. Features Dynamic Super A, Gm Driver; computer-controlled digital-synthesis tuning; 16 AM/16 FM station presets; auto memory; preset scan; electronic 7-band equalizer with 5 user-programmable and 5 preset EQ curves; sleep timer; 3 video inputs; sound selector; acoustic expander; optional CATV antenna control unit. 60 W/ch into 8 ohms from 20-20,000 Hz ..... \$475

### RX450VBK Audio/Video Receiver

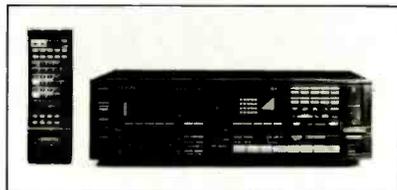
Receiver with unified wireless remote control to operate receiver plus selected JVC Compu-Link components. Features Dynamic Super A, Gm Driver; computer-controlled digital-synthesis tuning; 16 AM/16 FM station presets; auto memory; preset scan; 7-band graphic equalizer; sleep timer; acoustic expander; optional CATV antenna control unit. Power output: 50 W/ch into 8 ohms from 20-20,000 Hz with no more than 0.03% THD ..... \$350

### RX250VBK Audio/Video Receiver

Receiver with unified wireless remote control to operate receiver plus selected JVC Compu-Link components. Features Dynamic Super A, Gm Driver; digital-synthesis tuning; 16 AM/16 FM station presets; auto memory; preset scan; bass and treble controls; sleep timer; acoustic expander; optional CATV antenna control unit. Power output: 35 W/ch into 8 ohms from 40-20,000 Hz with no more than 0.08% THD ..... \$260

### RX150BK AM/FM Receiver

Features digital synthesis tuning; 8 AM/8 FM station presets; auto loudness contour; connections for 2 pairs of speakers; FM mode/muting switch. 25 W/ch into 8 ohms from 40-20,000 Hz with no more than 0.5% THD ..... \$185



Kenwood KR-V86R

## KENWOOD

### KR-V126R Audio/Video Receiver

A/V receiver with unified full remote control and surround-sound decoder. Features high-capacity VIR power amplifier; 3 video connections and dubbing with audio injection; Dolby Surround and theater/stadium effects; 20-station name preset system (SNPS) for

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FM/AM/CATV; music-select system presets stations into 5 categories; preset scan with music calendar; 7-band electronic graphic equalizer with 10 presets and presence control; 7-band spectrum analyzer; video through-dubbing (VCR 2 to 1, 3 to 1); auto memory entry for FM; 10-key direct frequency input (main/remote); equalizer recording switch; MM/MC cartridge selector; speaker A/B selector; 5 W/ch rear speaker amplifier. 125 W/ch min rms, both channels driven at 8 ohms from 20-20,000 Hz with no more than 0.008% THD; S/N phono MM/MC 82/63 dB, CD, AUX, tape 100 dB, video 90 dB; FM 50 dB quieting sens 14.2 dBf (mono), 37.2 dBf (stereo); FM S/N 74 dB (stereo) at 65 dBf; FM sep 50 dB at 1,000 Hz; sel 55 dB at 400 Hz; capture ratio 1.0 dB. 16.56" w x 5.25" h x 14.5" d ..... \$650

## KR-V106R Audio/Video Receiver

A/V receiver with unified remote control and surround-sound system. 100 W/ch min rms, both channels driven at 8 ohms from 20-20,000 Hz with no more than 0.008% THD; S/N phono 82 dB, CD, AUX, tape 100 dB, video 90 dB; FM 50 dB quieting sens 14.2 dBf (mono), 37.2 dBf (stereo); FM S/N 74 dB (stereo) at 65 dBf; FM sep 50 dB at 1,000 Hz; sel 55 dB at 400 Hz; capture ratio 1.0 dB. 16.56" w x 5.25" h x 14.5" d; 22.3 lb ..... \$560

## KR-V86R Audio/Video Receiver

A/V receiver with unified remote control. Features high-capacity VIR power amp; 3 video connections and dubbing with audio injection; 20-station name preset system (SNPS) for FM/AM/CATV; music-select system presets stations into 5 categories; preset scan with music calendar; 7-band electronic graphic equalizer with 10 presets and presence control; video through-dubbing. 80 W/ch min rms, both channels driven at 8 ohms from 20-20,000 Hz with no more than 0.008% THD; S/N phono 73 dB, CD, AUX, tape 100 dB, video 90 dB; FM 50 dB quieting sens 14.2 dBf (mono), 37.2 dBf (stereo); FM S/N 74 dB (stereo) at 65 dBf; FM sep 50 dB at 1,000 Hz; selectivity 55 dB at 400 Hz; capture ratio 1.0 dB ..... \$460

## KR-V76R Audio Video Receiver

A/V receiver with unified full remote control. Features 3 video connections and dubbing with audio injection; 12-station name preset system for FM/AM; 24-station preset memory without SNPS. 70 W/ch min rms, both channels driven at 8 ohms from 20-20,000 Hz with no more than 0.03% THD; S/N phono 73 dB, CD, AUX, tape 100 dB, video 90 dB; FM 50 dB quieting sens 14.2 dBf (mono), 37.2 dBf (stereo); FM S/N 72 dB (stereo) at 65 dBf ..... \$350

## KR-A56R AM/FM Receiver

Receiver with full-function infrared remote control. Features auto function selector; quartz-PLL tuning; 20 FM/AM presets; preset scan; 10-key direct frequency input (remote); 2 video sound inputs; 5-band graphic equalizer; equalizer recording switch; two tape inputs with monitor; muting; electronic input selectors; fluorescent multi-display; speaker A/B selector; headphone jack. 55 W/ch min rms, both channels driven at 8 ohms from 20-20,000 Hz with no more than 0.08% THD; S/N phono 73 dB, CD, AUX, tape 100 dB; FM 50 dB quieting sens 17.2 dBf (mono), 38.2 dBf (stereo). 16.56" w x 4.31" h x 9" d; 11.7 lb ..... \$295

## KR-A46 AM/FM Receiver

Features auto function selector system; quartz-PLL tuning; 16 FM/AM presets; preset scan; bass and treble controls; loudness control; electronic

input selectors; fluorescent multi-display; speaker A/B selector; headphone jack. 40 W/ch min rms, both channels driven at 8 ohms from 20-20,000 Hz with no more than 0.09% THD; S/N phono 72 dB, CD, AUX, tape 95 dB; FM 50 dB quieting sens 17.2 dBf (mono), 38.2 dBf (stereo); FM S/N 72 dB (stereo) at 65 dBf; FM sep 40 dB at 1,000 Hz; sel 53 dB at 400 Hz; capture ratio 1.2 dB. 16.56" w x 4.31" h x 9.31" d; 10.1 lb. \$205

## KYOCERA

### R-861 Tuner/Amplifier

Features 100 W/ch (continuous rms, both channels driven into 8 ohms, from 20-20,000 Hz, with no more than 0.02% THD); 3-band parametric EQ for tonal adjustment; switchable MM/MC phono preamp; preamp out/main amp in jacks; subsonic filter; quartz-frequency synthesis tuning with high-speed 2,500 Hz comparator for low noise; switchable IF bandwidth; defeatable bass/treble controls; Dolby FM de-emphasis switch; 7 AM and 7 FM presets; high-blend feature. FM S/N 76 dB stereo, 82 dB mono; slew rate 50 V/μsec; rise time 1.0 μsec; S/N (IHF-A) phono MC 74 dB, phono MM 85 dB, high-level inputs 100 dB ..... \$1,200

### R-661 Tuner/Amplifier

Features 70 W/ch (continuous rms, both channels driven into 8 ohms, from 20-20,000 Hz, with no more than 0.02% THD); defeatable bass and treble controls for exacting tonal adjustment; switchable MM/MC phono preamp; preamp out/main amp in jacks; subsonic filter; quartz-frequency synthesis tuning with high-speed 2,500 Hz comparator for low noise; switchable IF bandwidth; 7 AM and 7 FM presets; high-blend feature. FM S/N 74 dB stereo, 80 dB mono; slew rate 50 V/μsec; rise time 1.0 μsec; S/N (IHF-A) phono MC 64 dB, phono MM 82 dB, high-level inputs 100 dB ..... \$900

### R-461 Tuner/Amplifier

Inputs for MM phono, 2 tape, 2 AUX, CD player. Amp section: 50 continuous average W/ch from 20-20,000 Hz with no more than 0.02% THD into 8 ohms; dynamic headroom 2.1 dB; IHF IMD 0.02%; FR 30-15,000 Hz ± 1 dB. FM section: alt-ch sel 55 dB; 50-dB quieting sens mono 17 dBf (50 dB), stereo 37.2 dBf (50 dB); max S/N, A-wtd, mono 77 dB, stereo 72 dB; THD mono 0.08%, stereo 0.12%; sep 48 dB at 1,000 Hz; capture ratio 1.2 dB. AM section: loop sensitivity 300 μV. 18.12" x 4.31" x 12.12" ..... \$650



Luxman R-117

## LUXMAN

### R-117 160-W/Ch AM/FM Receiver

Receiver with full-function system remote control including video and video sound switching. Features low-impedance drive capability; CD straight mode; FET differential phono input; 5 gang varactors, dual gate MOSFET's; pre-out/main-in. Power output 160 W/ch from 20-20,000 Hz with <0.03% THD; IMD <0.03% (35 W/8 ohms); S/N 88 dB (MM), 70 dB (MC), 98 dB (CD, tape, A/V); FM sens (stereo) 36 dBf; FM S/N (stereo) 75 dB; FM THD (stereo) <0.1% ..... \$1,200  
**R-115.** Similar to above with 75 W/ch ..... \$750  
**R-113.** Similar to above with 35 W/ch; THD <0.08%. No remote control ..... \$400

## MARANTZ

### TA 170AV Remote-Control Receiver

Receiver with 16-preset digital tuning; 5-band graphic equalizer; electronic volume; VCR to VCR dubbing; power meter. Inputs for MM phono, tape, CD player. Amp section: 165 continuous average W/ch 20-20,000 Hz with no more than 0.05% THD into 8 ohms; FR 10-35,000 Hz ± 1 dB. FM section: alternate-ch sel 50 dB; 50-dB quieting sens, mono 15 dBf, stereo 37 dBf; max S/N, A-wtd, mono 76 dB, stereo 68 dB; THD mono 0.15%, stereo 0.3%; sep 42 dB at 1,000 Hz; capture ratio 1 dB. 16.5" w x 7.25" h x 13" d; 34 lb ..... \$650

### TA 135AV Remote-Control Receiver

Receiver with 16-preset digital tuning; 5-band graphic equalizer; electronic volume; VCR to VCR dubbing; power meters; inputs for MM phono, tape, CD player. Amp section: 130 continuous average W/ch 20-20,000 Hz with no more than 0.05% THD into 8 ohms; 50-dB quieting sens, mono 16 dBf, stereo 38 dBf; other specs similar to TA 170's (above). 16.5" w x 7.25" h x 13" d; 30 lb ..... \$570

### TA 100 Remote-Control Receiver

AM/FM receiver with 16 presets; 5 band EQ; inputs for MM, phono, tape, CD, 2 video sources, VCR-to-VCR dubbing. 100 W/ch; 0.1% THD; 11.8 dBf IHF sens; 5.88" h x 16.63" w x 12.63" d; 23.7 lb ..... \$500

### TA 60 Remote-Control Receiver

Receiver with 24-preset digital tuning, 7-band graphic equalizer. Inputs for MM phono; tape; compact disc player; video sound source. Amp section: 60 continuous average W/ch from 20-20,000 Hz with less than 0.1% THD into 8 ohms. FM section: 50-dB quieting sens, stereo 39.2 dBf; max S/N with 65 dBf (1,000 μV), A-wtd stereo 68 dB; THD, stereo 0.3%; capture ratio 1.2 dB; alt-ch sel 50 dB. 16.5" w x 7.25" h x 10.25" d; 17.2 lb ..... \$350

### SR-560 Stereo Receiver

Features 16 preset digital tuning; 7-band EQ; inputs for MM phono, tape, CD, 2 video; VCR to VCR dubbing. 45 W/ch; 0.3% THD; 11.2 dBf IHF sens. 3.63" h x 16.5" w x 10" d; 11.9 lb ..... \$250

### SR-360 Stereo Receiver

Features 5-band equalizer; 16 presets; inputs for MM phono, tape, CD, 25 W/ch; 0.3% THD. 3.63" h x 16.5" w x 10" d; 9.7 lb ..... \$200

## McINTOSH

### MAC 4200 Receiver

Stereo AM/FM receiver with 100 W/ch into 4 ohms, 75 W/ch into 8 ohms. 54 lb ..... \$2,890

## NAD

### 7600 Monitor Series AM/FM Receiver

Features wireless remote control; Power Envelope circuitry; Close Tracking Soft Clipping; bridgeable; high-current output stage; MC preamp; Bass EQ; turnover frequency for bass control switchable to 50, 120, or 250 Hz; turnover frequency for treble control switchable to 3, 6, or 12 kHz; wide/narrow IF modes; speaker imp selector; headphone jack. Continuous power output 150 W/ch (21.7 dBW); IHF dynamic headroom 4 dB; IHF dynamic power 400 W (26 dBW) into 8 ohms, 600 W (28 dBW) into 4 ohms, 800 W (29 dBW) into 2 ohms; THD 0.03% 20-20,000 Hz ..... \$1,498

# RECEIVERS

## 7175 PE AM/FM Receiver

Features Power Envelope circuitry; inputs for MM phono, MC phono, tape; aux. CD player, video sound source; speaker imp matching; Bass EQ; Close Tracking Soft Clipping; headphone jack. 75 continuous average W/ch from 20-20,000 Hz into 8 ohms with less than 0.03% THD; dynamic headroom 6 dB. 16.5" w x 4.25" h x 15" d; 20 lb, 4 oz ..... \$798

## 7250 PE AM/FM Receiver

Features Power Envelope circuitry; inputs for MM phono, aux, CD player, video sound source; low-noise phono preamp section; high-current output stage; speaker imp matching; headphone jack. 50 continuous average W/ch from 20-20,000 Hz into 8 ohms with less than 0.03% THD; dynamic headroom 6 dB. 16.5" w x 4.25" h x 15" d; 20 lb, 6 oz ..... \$598

## 7240 PE AM/FM Receiver

Features knobs for speakers, bass, treble, CD/phono/tuner/video switching, balance, and volume, buttons for power, Bass EQ, infrasonic filter, mono, FM noise reduction, tape monitor, low level, loudness, presets, tuner band, search, and tuning; Power Envelope circuitry; speaker imp selector; Soft Clipping circuit; imp selector; high-current output stage; low-noise phono preamp section; headphone jack. 40 W/ch; dynamic headroom 6 dB; dynamic power 160 W/ch into 8 ohms, 200 W/ch into 4 or 2 ohms; 50 dB stereo quieting <20  $\mu$ V; max stereo quieting <80 dB; peak current up to 25 amperes ..... \$478

## 7220 PE AM/FM Receiver

Receiver with knobs for bass, treble, balance, and volume, buttons for power, extra speakers, tape monitor, CD/video/phono/AM/FM source switching, mono, loudness, presets, and tuning; digital tuning; 5 presets for AM and FM; search tuning; Power Envelope circuitry; high-current output stage; speaker imp matching; Soft Clipping circuit; infrasonic and ultrasonic filtering; headphone jack. 20 W/ch; dynamic power >55 W/ch into 8 ohms, >75 W/ch into 4 ohms, and 85 W/ch into 2 ohms; IHF dynamic headroom 4.4 dB; maximum peak current output 15 amperes ..... \$298



Nakamichi SR-4A

## NAKAMICHI

### SR-4A AM/FM Stereo Receiver

Stereo receiver with Stasis power amp, multi-regulated power supply, extensive video switching. Inputs for MM phono, MC phono, tape, CD player, video sound source; VCR/video disc. 60 continuous average W/ch from 20-20,000 Hz with no more than 0.1% THD into 8 ohms; dynamic headroom 1.3 dB; 200-ms dynamic power 80 W. FM 50-dB quieting sens stereo 37.5 dBf; S/N 74 dB at 65 dBf; THD stereo 0.07%; capture ratio 1.5 dB; AM rejection 60 dB; alt-ch sel 60 dB. 16.94" w x 3.94" h x 19.56" d; 22 lb, 4 oz ..... \$895

## SR-3A AM/FM Stereo Receiver

Stereo receiver with Stasis power amp, multi-regulated power supply, defeatable subsonic filter. Inputs for MM phono, MC phono, tape, CD player, video sound source; 2 video sources. 45 continuous average W/ch from 20-20,000 Hz with no more than 0.1% THD into 8 ohms; dynamic headroom 1.5 dB; 200-ms dynamic power 64 W. FM 50-dB quieting sens stereo 37.5 dBf; S/N 74 dB at 65 dBf; THD stereo 0.07%; capture ratio 2 dB; AM rej 60 dB; alt-ch sel 55 dB. 16.94" w x 3.94" h x 14.56" d ..... \$650

## SR-2A AM/FM Stereo Receiver

Stereo receiver with Stasis power amp, multi-regulated power supply. Inputs for MM phono, tape, CD player. 30 continuous average W/ch from 20-20,000 Hz with no more than 0.1% THD into 8 ohms; dynamic headroom 1.7 dB; 200-ms dynamic power 45 watts. FM 50-dB quieting sens stereo 37.5 dBf; S/N 74 dB at 65 dBf; THD stereo 0.07%; capture ratio 2 dB; AM rejection 60 dB; alt-ch sel 55 dB. 16.94" w x 3.94" h x 14.56" d; 16 lb, 9 oz ..... \$449



NEC AVR-1000

## NEC

### AVR-1000 Audio/Video Receiver

AM/FM receiver with Dolby and matrix surround-sound processors. Features unified remote control with LCD readout that can operate other NEC audio and video components; four power amps (one for each front and rear ch); quartz-PLL digital-synthesis tuning; 16 AM/FM presets; preset scan; FM mute; selectable wide/narrow IF bandwidth; 3 volume level/channel balance presets; computer-controlled volume and input selection; audio mute; master volume control; front/rear volume control; front-left, front-right, rear-left, and rear-right volume controls; rear and front bass/treble controls. Inputs for phono, CD player, tape deck, AUX, TV, and VCR. Tuner section: FM usable sens 10.8 dBf (0.95  $\mu$ V); FM S/N 74 dB stereo. Amp section: 100 W/ch into 8 ohms from 20-20,000 Hz with 0.02% THD (front), 50 W/ch into 8 ohms (rear). 16.94" w x 5.5" h x 16.94" d; 35 lb ..... \$869

**AVR-700.** Similar to AVR-1000 except has 70 W/ch into 8 ohms from 20-20,000 Hz with 0.02% THD (front), 35 W/ch into 8 ohms (rear). 16.94" w x 5.5" h x 16.94" d ..... \$649

### R-510 Audio/Video Receiver

Remote-controlled AM/FM receiver with 16 AM/FM presets. 50 W/ch ..... \$499

## Nikko R-25



## NIKKO

### AVR-65 Audio/Video Receiver

Remote-controlled AM/FM, UHF, CATV stereo receiver with MTS/SAP decoder and 139-channel tuning. Features quartz-locked tuner; 2 video inputs/outputs; 10 AM/10 FM presets. 65 W/ch into 8 ohms with 0.05% THD; FR 20-20,000 Hz; S/N 65 dB ..... \$900

### NR-1050R Audio/Video Receiver

Remote-controlled receiver with 100 W/ch; 2 tape inputs; 20 presets; bi-directional dubbing; L/R mic; 4-band graphic EQ ..... \$700

**NR-850R.** Same as above with 65 W/ch ..... \$500

**NR-750.** Same as above with 48 W/ch ..... \$300

**NR-650.** Same as above with 38 W/ch ..... \$260

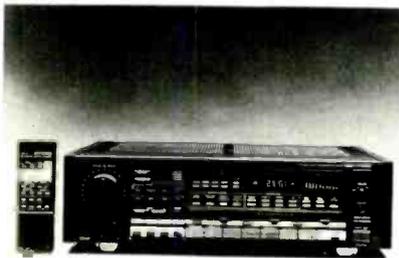
### R-25 AM/FM Receiver

2 tape monitor inputs; phono input; CD input; subsonic filter. 25 W/ch rms with 0.05% THD; FM usable sens 15 dBf; S/N 120 dB ..... \$200

## ONKYO

### TX-SV7 Audio/Video Receiver

AM/FM receiver with RV-AV7M universal remote control to operate receiver plus other components. Features MTS decoder for stereo broadcasts; surround-sound processor with Dolby matrix, and hall surround sound; simulated stereo; 12 AM/FM presets; FM mute; outputs for 4 speakers; bass, treble, and balance controls. Inputs for CD player, phono; VDP, VCR, tape 1, and tape 2. 100 W/ch, 75 W/ch (front) and 25 W/ch (rear) in surround mode ..... \$1,000



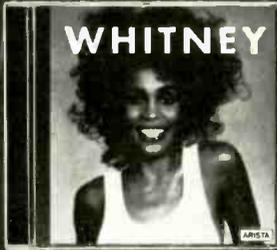
Onkyo TX-108

### Integra TX-108 AM/FM Receiver

Computer-controlled AM/FM receiver with full-function wireless remote control that also operates some Onkyo turntables, tape decks, and CD players. Automatic precision reception system controls stereo/mono, local/DX, high-blend on/off, and NR on/off functions. 100 continuous average W/ch from 20-20,000 Hz into 8 ohms with <0.02% THD. FM section: 50-dB quieting sens 40  $\mu$ V (37.2 dBf) stereo; capture ratio 1.3 dB; alt-ch sel 70 dB. 18.88" w x 5.88" h x 18.12" d; 33 lb ..... \$850

### Integra TX-88 AM/FM Receiver

Computer-controlled AM/FM receiver with full-function wireless remote control that also operates selected Onkyo turntables, tape decks, and CD players. Automatic precision reception system controls stereo/mono, local/DX, high-blend on/off, and NR on/off functions. Features real-phase power supply; dynamic bass expander; simulated stereo; preset memory scan; motorized volume control; FM/video simulcast capability. Inputs for MM phono; tape; tape 2; CD



356154. Whitney Houston—Whitney



359521. The Cars—Door To Door



357657. Beethoven: Piano Concerto No. 5



361675. Sting—... Nothing Like The Sun



U2—THE JOSHUA TREE

# A Sound Investment



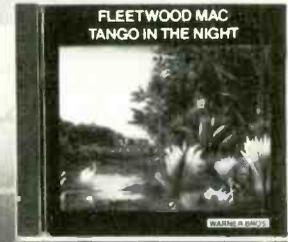
360016. Spyro Gyra—Stories Without Words



362343. Stevie Wonder—Characters



362228. George Michael—Faith



354902. Fleetwood Mac—Tange In The Night

363465. Dolly Parton—Rainbow. (Columbia)

362483. Orig. Soundtrack—Hail! Hail! Rock n' Roll. (MCA)

362236. Tony Bennett—Bennett/Berlin. (Columbia)

362210. Earth, Wind & Fire—Touch The World. (Columbia)

362129. Belinda Carlisle—Heaven On Earth. (MCA)

361543. Kitaro—The Light Of The Spirit. (Geffen)

361279. World's Greatest Overtures—Strauss, Suppe, more. (Digital—Pro-Arte)

361147. Rodgers And Hammerstein's Carousel. Barbara Cook, Samuel Ramey. (Digital—MCA Classics)

360974. Squeeze—Babylon And On. (A&M)

360149. Echo & The Bunnymen. (Sire)

360107. Billy Idol—Vital Idol. (Chrysalis)

359976. Bodeans—Outside Looking In. (Reprise/Slash)

359901. Mick Jagger—Primitive Cool. (Columbia)

359612. Elton John's Greatest Hits, Vol. III 1979-1987. (Geffen)

359208. Laverboy—Wildside. (Columbia)

359075. Aerosmith—"Permanent Vacation." (Geffen)

359018. Pat Metheny Group—Still Life (Talking). (Geffen)

358937. Handel: Music For The Royal Fireworks—Yehudi Menuhin, Royal Philharmonic Orchestra. (Digital—MCA Classics/RPO)

358663. The Art of Alfred Brendel Vol. I. (Vanguard)

358507. Who's That Girl—Orig. Soundtrack. (Sire)

358127. Kronos Quartet—White Man Sleeps. Volans, Ives; Bartok; etc. (Digital—Nonesuch)

357939. Original Soundtrack—"La Bamba". (Slash/Warner Bros.)

357889. Copland: Billy The Kid; Appalachian Spring; etc.—Bernstein, NY Phil. (Digitally Remastered—CBS Masterworks)

357871. Tchaikovsky: Waltzes—S. Comissiona and Houston Symphony (Digital—Pro Arte)

357145. Richard Goode Plays Brahms Piano Pieces, Op. 76 & 119/ Fantasies Op. 116. (Digital—Nonesuch)

357087. Sammy Hagar. (Geffen)

357350. The Duke Ellington Orchestra—Digital Duke. (Digital—GRP)

357145. Richard Goode Plays Brahms Piano Pieces, Op. 76 & 119/ Fantasies Op. 116. (Digital—Nonesuch)

357087. Grateful Dead—In The Dark. (Arista)

356741. Boch: Preludes And Fugues For Organ, Vol. I. (Digital—Newport Classic)

356667. Heart—Bad Animals. (Capitol)

356576. John Adams: The Chairman Dances—DeWaar, San Fran. Sym. (Digital—Nonesuch)

356501. Benson/Klugh—Collaboration. (Warner Bros.)

356287. Suzanne Vega—Solitude Standing. (A&M)

356279. Gloria Estefan And Miami Sound Machine—Let It Loose. (Epic)

355834. David Bowie—Never Let Me Down. (Epic/America)

355776. Stravinsky: The Firebird (1910 version); Song Of The Nightingale—Boulez, New York Phil. (Digitally Remastered—CBS Masterworks)

355529. Philip Glass—Dance Pieces. (Digital—CBS)

355362. Whitesnake. (Geffen)

355156. Vladimir Horowitz Plays Favorite Chopin (Digitally Remastered—CBS Masterworks)

355115-395111. Prince—Sign 'O' The Times. (Paisley Park)

354985. Billie Holiday—From The Original Decca Masters. (Digitally Remastered—MCA)

354951. Mozart: Flute Quartets—Rosirovich, Rampal, Siern, Accardo (Digital—CBS Masterworks)

354829. Lisa—Lisa And Cult Jam With Full Force—Spanish Fly. (Columbia)

353946. Bryan Adams—Into The Fire. (A&M)

353789. Sly & The Family Stone's Greatest Hits. (Epic)

353771. Bolling/Rampal: Suite #2 for Flute & Jazz Piano Trio (Digital—CBS)

352534. Holst: The Planets—A. Davis, Toronto Symp. (Digital—Angel)

351122. Europe—The Final Countdown. (Epic)

350793-390799. Aretha Franklin—30 Greatest Hits. (Atlantic)

350140. Pretenders—Get Close. (Sire)

349985. Johnny Mathis/Henry Mancini—The Hollywood Musicals (Columbia)

349571. Boston—Third Stage (MCA)

349373. Beethoven: Symphony No. 9 (Choral) Bernstein, NY Phil. (Digitally Remastered—CBS Masterworks)

348987-398982. Linda Ronstadt—"Round Midnight" (Asylum)

348979. Tina Turner—Break Every Rule (Capitol)

348649. Pachelbel Canon & Other Digital Delights—Toronto Chamber Orch. (Digital—Fanfare)

348458. Dvorak: Cello Concerto—Yo-Yo Ma; Maazel, Berlin Philhar. (Digital—CBS Masterworks)

348318. The Police—Every Breath You Take—The Singles (A&M)

348110. Buddy Holly—From The Original Master Tapes. (Digitally Remastered—MCA)

## Rock Classics from the 60's and 70's

358887. Grateful Dead—Workingman's Dead. (Warner Bros.)

358358. Joe Cocker—Classics. (A&M)

357616-397612. The Best Of The Doors. (Digitally Remastered—Elektra)

357277. The Who—Who's Next. (MCA)

353102. Jimi Hendrix—Are You Experienced? (Reprise)

351957. Yes—Fragile. (Arista)

350652. Rolling Stones—Exile On Main St. (Rolling Stones Rec.)

345157. Jethro Tull—Aqualung. (Chrysalis)

341073. Steely Dan—A Decade of Steely Dan. (MCA)

327742. The Best Of Kansas. (CBS Assoc.)

308049. Creedence Clearwater Revival Featuring John Fogerty/Chronicle. 20 greatest hits. (Fantasy)

293597. Led Zeppelin—Houses Of The Holy. (Atlantic)

292243. Jackson Browne—The Pretender (Asylum)

291864-391862. Original Soundtrack—Woodstock. (Atlantic)

291526. Emerson, Lake & Palmer—Brain Salad Surgery. (Atlantic)

291484. Deep Purple—Machine Head. (Warner Bros.)

291278. The Doobie Brothers—Best of the Doobies. (Warner Bros.)

291021. Supertramp—Breakfast In America. (A&M)

290171. The Steve Miller Band—Greatest Hits 1974-78. (Capitol)

287003. Eagle's Greatest Hits 1971-1975 (Asylum)

286914. Fleetwood Mac—Rumours (Warner Bros.)

286740. Linda Ronstadt's Greatest Hits. (Asylum)

279133. Meat Loaf—Bat Out Of Hell. (Epic)

269209. Boston—Boston. (Epic)

260638. Chicago's Greatest Hits. (Columbia)

257279. Bruce Springsteen—Born to Run (Columbia)

244459. Santana's Greatest Hits (Columbia)

231670. Janis Joplin's Greatest Hits (Columbia)

214650. Blood, Sweat & Tears Greatest Hits (Columbia)

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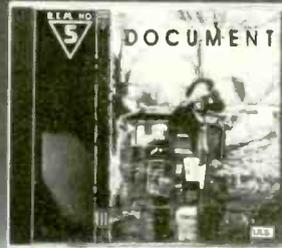
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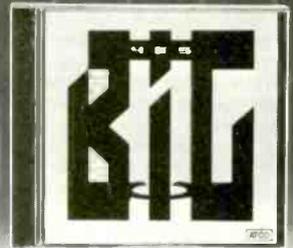
362152. Robbie Robertson



360115. Bruce Springsteen—Tunnel Of Love



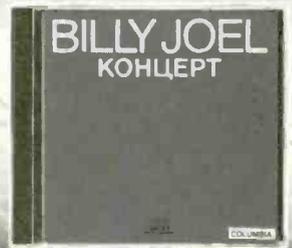
36139. R.E.M.—Document



361170. Yes—Big Generator



362948. Wynton Marsalis—Carnaval



361972. Billy Joel—KOHLEPT (In Concert)

347955. Huey Lewis & The News—Fore! (Chrysalis)

346957. Steve Winwood—Back In The High Life. (Island)

346643. Andreas Vollenweider—Down To The Moon. (CBS)

346544. Kenny G—Duotones. (Arista)

346536. The Monkees—Then & Now... The Best Of The Monkees (Arista)

346478. Madonna—True Blue. (Sire)  
345777. Peter Gabriel—So. (Geffen)  
345751. Paul Simon—Graceland. (Warner Bros.)

344721. Lionel Richie—Dancing On the Ceiling. (Motown)

344622. Anita Baker—Rapture. (Elektra)

343582. Van Halen—5150. (Warner Bros.)

343319. Janet Jackson—Control (A&M)

342097. Barbra Streisand—The Broadway Album. (Columbia)

338905. Diana Ross & The Supremes—20 Greatest Hits. (Motown)

336396-396390. Billy Joel's Greatest Hits, Vol. 1 & 2. (Columbia)

336222. Dire Straits—Brothers In Arms. (Warner Bros.)

334391. Whitney Houston. (Arista)

326629. Bruce Springsteen—Born In The U.S.A. (Columbia)

323899. The Best Of The Alan Parson's Project. (Arista)

321380. Barbra Streisand's Greatest Hits, Vol. II (Columbia)

319996-399998. Motown's 25 #1 Hits From 25 Years. (Motown)

319541. Elton John—Greatest Hits. (MCA)

318089. Michael Jackson—Thriller (Epic)

318055. Foreigner—Foreigner Records

317149. Don Fogelberg—Greatest Hits (Full Moon/Epic)

314997-394999. Stevie Wonder's Original Musicarium I. (Tamilia)

138586. Bob Dylan's Greatest Hits (Columbia)

269605. Loggins & Messina—The Best Of Friends. (Columbia)

246868. Jim Croce—Photographs And Memories—His Greatest Hits. (Sajal)

219477. Simon & Garfunkel's Greatest Hits. (Columbia)

209973. Cat Stevens—Teaser And The Firecat. (A&M)

354100. Crowded House. (Capitol)

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824/588

# RECEIVERS

player; video sound source; VCR; VDP. Amp section: 80 continuous average W/ch from 20-20,000 Hz into 8 ohms with <0.025% THD. FM section: 50-dB quieting sens 40  $\mu$ V (37.2 dBf) stereo; capture ratio 1.5 dB; alt-ch sel 70 dB. 17.75" w x 5.88" h x 18.12" d; 26 lb ..... \$680

## TX-RV47 AM/FM Receiver

Audio/video receiver with full-function wireless remote control that also operates selected Onkyo turntables, tape decks, and CD players. Features matrix surround-sound system for theater surround sound from movie sound tracks with 4-speaker systems; dynamic bass expander; stereo-image expander; stereo synthesizer; preset memory scan; FM/video simulcast capability. 55 continuous average W/ch from 20-20,000 Hz into 8 ohms with <0.08% THD. FM 50-dB quieting sens 40  $\mu$ V (37.2 dBf) stereo ..... \$500

## TX-84 AM/FM Receiver

Remote-controlled AM/FM receiver with computer-controlled automatic precision reception system to control the stereo/mono, local/DX, high-blend on/off, and NR on/off functions. Features dynamic bass expander; stereo image expander; simulated stereo; audio/video dubbing; selective tone control; discrete output stage. Inputs for VCR 1/VDP, VCR 2, tape 1, tape 2, MM phono, and CD player. Amp section: 60 W/ch min rms into 8 ohms from 20-20,000 Hz with no more than 0.04% THD; FR 20-30,000 Hz  $\pm$  1 dB. FM section: usable sens 17.2 dBf (4  $\mu$ V) stereo; 50-dB quieting sens 37.2 dBf (40  $\mu$ V) stereo; capture ratio 1.5 dB. 17.12" w x 4.38" h x 13.5" d; 18.8 lb ..... \$450

**TX-84(M)**. Same as TX-84 except includes RC-AVIM universal remote control ..... \$530

## TX-82 AM/FM Receiver

Remote-controlled AM/FM receiver with computer-controlled automatic precision reception system to control the stereo/mono, local/DX, and high-blend on/off functions. Features simulated stereo; audio/video dubbing; selective tone control; discrete output stage. Inputs for VCR 1/VDP, VCR 2, tape 1, tape 2, MM phono, and CD player. Amp section: 45 W/ch min rms into 8 ohms from 20-20,000 Hz with no more than 0.08% THD; FR 20-30,000 Hz  $\pm$  1 dB. FM section: usable sens 17.2 dBf (4  $\mu$ V) stereo. 17.12" w x 4.38" h x 13.5" d; 16.5 lb ..... \$350

**TX-82(M)**. Same as TX-82 except includes RC-AVIM universal remote control ..... \$430

## TX-80 AM/FM Receiver

Remote-controlled AM/FM receiver with computer-controlled automatic precision reception system to control the stereo/mono and local/DX functions. Features electronic feather-touch input selectors; direct tone controls; 16 AM/FM presets. Amp section: 33 W/ch min rms into 8 ohms from 20-20,000 Hz with no more than 0.3% THD; FR 20-30,000 Hz  $\pm$  1 dB ..... \$230

## PARASOUND

### DR65 65-W/ch AM/FM Receiver

Quartz-synthesizer tuning; full-function wireless remote; electronic input switching and volume control; 6 AM/FM presets; T-10 discrete output transistors; discrete phono preamp; separate phono output selector; subsonic filter; preamp output jacks; auto/manual tuning; variable loudness; 5-LED tuning meters. 65 W/ch into 8 ohms; dynamic headroom 2 dB. FM section: alt-ch sel 68 dB; quieting sens mono 15.3 dBf, stereo 39.2 dBf; max S/N, A-wid mono 80 dB, stereo 77 dB; sep 44 dB at 1,000 Hz; 17.25" w x 3.33" h x 11.5" d; 23 lb ..... \$495

## DR40 40-W/ch AM/FM Receiver

Quartz-synthesizer tuning; variable loudness; infrasonic filter; discrete output transistors; 5 presets; detented controls; relay protection with 2-color LED's; 5-LED signal-strength meter; separate preamp output jacks. Inputs for MM phono, tape, CD, video sound source. Amp section: 40 W/ch into 8 ohms. 17.25" x 3.25" x 11" ..... \$325

## DR25 25-W/ch AM/FM Receiver

Digital frequency readout. Inputs for MM phono, tape, CD, video sound source. Amp section: 25 W/ch 20-20,000 Hz into 8 ohms; dynamic headroom 2 dB. 17.5" w x 3.25" h x 11" d; 16 lb ..... \$240



Pioneer VSX-5000

## PIONEER

### VSX-5000 Audio/Video Receiver

Features unified remote control to operate all Pioneer SR components; nonswitching-amp (Type II); low-imp drive capability; 3 video inputs with stereo audio; 2-way video dubbing and simultaneous recording; video enhancer with split screen; built-in 4-mode surround-sound processor with Dolby; video noise filter; dynamic expander; quartz-PLL digital-synthesis tuner with 20 random presets; 2 RF inputs (standard FM and cable FM); direct-access tuning; 3-position tone controls; separate audio and video switching; audio tape dubbing; front-panel LCD readout; selectable FM display (frequency or call letters). 100 continuous average W/ch into 8 ohms from 20-20,000 Hz with no more than 0.005% THD in stereo mode, 70 W/ch with 0.007% THD in surround mode. 4.88" h x 16.56" w x 15.12" d ..... \$570

### VSX-4000 Audio/Video Receiver

Features unified remote control to operate Pioneer SR components; 3 video inputs with stereo audio; 2-way video dubbing and simultaneous recording; video enhancer with split screen; speaker-matrix surround-sound processor; video noise filter; nonswitching Type-II amp; low-imp drive capability; quartz-PLL digital-synthesis tuner with 20 presets; direct-access tuning; simulated stereo; 3-position tone controls; separate audio and video switching; audio tape dubbing; front-panel LCD readout; selectable FM display (frequency or call letters). 60 continuous average W/ch into 8 ohms from 20-20,000 Hz with no more than 0.005% THD. 4.88" h x 16.56" w x 15.12" d ..... \$430

### VSX-3000 Audio/Video Receiver

Features unified remote control to operate Pioneer SR components; 3 video inputs with 2-way dubbing and simultaneous recording; 5-band graphic EQ; video signal selector for separate audio/video switching; quartz-PLL synthesis

tuning with 20 presets; auto and manual search; surround-sound processor with simulated stereo; multi-function FL display; connections for 2 pairs of speakers; VCR noise filter; audio adaptor loop; electronic volume control; programmable 24-hr digital time and clock display; anti-resonance construction with copper-plated screws. 60 continuous average W/ch into 8 ohms. 4.75" h x 16.56" w x 12.62" d ..... \$350

### VSX-2000 Audio/Video Receiver

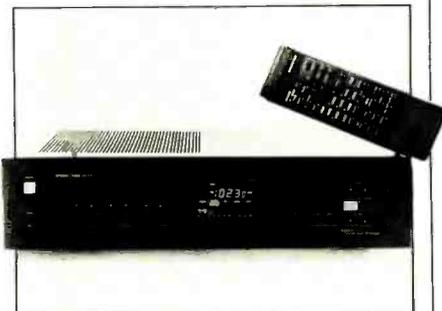
Features unified remote control to operate Pioneer SR components; 2 video inputs; 5-band graphic EQ; video signal selector for separate audio/video switching; quartz-PLL synthesis tuner with 20 presets; auto and manual search; multi-function FL display; simulated stereo; connections for 2 pairs of speakers; electronic volume control; programmable 24-hr digital time and clock display; anti-resonance construction with copper-plated screws. 50 continuous average W/ch into 8 ohms from 20-20,000 Hz with no more than 0.1% THD. 4.75" h x 19.56" w x 12.62" d ..... \$300

### SX-1600 AM/FM Receiver

Features 5-band graphic EQ; quartz-PLL synthesis tuner with 20 presets; auto and manual search; connections for 2 pairs of speakers; simulated stereo; anti-resonance construction. 50 continuous average W/ch into 8 ohms from 20-20,000 Hz with <0.3% THD. 3.88" h x 16.56" w x 8.69" d ..... \$240

### SX-1100 AM/FM Receiver

Features 5-band graphic EQ; quartz-PLL synthesis tuner with 20 presets; auto and manual search; connections for 2 pairs of speakers; anti-resonance construction. 25 continuous average W/ch into 8 ohms from 40-20,000 Hz. 3.88" h x 16.56" w x 8.69" d ..... \$200



Proton AV-300

## PROTON

### D940 AM/FM Receiver

Receiver with Dynamic Power on Demand circuitry and Schotz NR. Features high dynamic power capabilities (rating 8/4/2 ohms to 160/280/380 W/ch); 4-gang FM front end; 2-gang AM front end; selectable phono section for MM and MC phono; speaker EQ; separate low-noise MC amp; active volume control; infrasonic filter. Inputs for MM, MC phono; phono 2; tape; AUX; extra AUX; CD; video sound source. Amp section: 40 continuous average W/ch from 20-20,000 Hz with less than 0.02% THD into 8 ohms; dynamic headroom 6 dB; IHF IMD 0.008%; FR 20-20,000 Hz  $\pm$  0.2 dB. FM section: alt-ch sel 55 dB; adj-ch sel 90 dB; 50-dB quieting sens 33.2 dBf stereo; S/N 70 dB stereo; THD stereo 0.2%; sep 45 dB at 1,000 Hz; capture ratio 1.5 dB. 16.5" w x 4" h x 10.12" d; 20 lb ..... \$449

# RECEIVERS

## AV-300 AM/FM Receiver

Digitally synthesized stereo receiver. Features Schotz PLL detector. Inputs for MM phono, tape, AUX, video sound source. Remote control optional. 30 continuous average W/ch from 20-20,000 Hz with <0.02% THD into 8 ohms; includes Dynamic Power on Demand which boosts dynamic power to 120 W (8 ohms) with 6 dB dynamic headroom; IHF IMD 0.015%; FR 17-35,000 Hz  $\pm 1$  dB. FM section: 50-dB quieting sens. stereo, 2.8  $\mu$ V; max S/N, A-wid, stereo 70 dB; THD stereo 0.2%; sep 50 dB at 1,000 Hz; capture ratio 1.5 dB. AM section: sens 300  $\mu$ V/m. 20 lb; 16.5" w x 3.75" h x 9.75" d ..... \$399

## RCA

### MSR250 Audio/Video Receiver

Dimensia A/V receiver with unified remote control and on-screen status indication when used with Dimensia monitor. Features 5-band graphic equalizer; automatic input selection; remote control volume, mute, direct access and station scan, and power; SystemLink cabling; simultaneous recording and playback; auto status indication; auto switching; electronic volume control; output protection; preset turn-on volume; fluorescent display; muting; quartz-PLL synthesis tuning; auto stereo/mono switching; preset channel scanning; signal processing loop; 4 AC convenience outlets. Amp section: 50 W/ch into 8 ohms, both channels driven, from 20-20,000 Hz with no more than 0.08% THD; S/N 85 dB; EQ center frequencies at 63, 250, 1,000, 4,000, and 16,000 Hz; EQ range  $\pm 10$  dB. Tuner section: FM sens 12.2 dBf; S/N 73 dB; sel 60 dB; sep 40 dB at 1,000 Hz; capture ratio 1.5 dB; FM FR 30-15,000. .... \$429

## REALISTIC

### AV-900 FM/AM/TV A/V Receiver

Receives VHF TV broadcasts (decodes MTS stereo and SAP), UHF broadcasts, cable-TV channels; 140-channel TV tuner; wireless remote control (needs 2 AAA batteries); video signal processing and dubbing; digital-synthesized tuner; stores 4 pairs of cable/FM channels; RF output on channel 3 or 4; baseband output for monitors. Inputs for phono, tape, CD player, two VCR's, surround-sound decoder. 35 W/ch into 8 ohms .... \$600

### STA-2700 Remote-Controlled Receiver

Quartz tuning; 6 AM and 6 FM presets; search tuning; digital frequency display; 5-part LED signal-strength meter; 2-part dual output power meters; 2-way tape dubbing and 2-deck monitoring; loudness control; MPX blend; FM muting; high filter; infrasonic filter; function LED's; overload and overheating protection. Remote requires 2 AA batteries. 100 W/ch into 8 ohms ..... \$500

### STA-2280 60-W/ch AM/FM Receiver

AM/FM-stereo receiver with 6 AM and 6 FM presets and IMX stereo expander to extend sound stage and improve imaging precision. Drives 2 pairs of speakers; headphone jack; 2 AC outlets. Inputs for MM phono; tape; 2; aux; CD player. Amp section: 60 W/ch into 8 ohms. 98 W into 4 ohms. FM section: 50-dB quieting sens stereo 40  $\mu$ V (32 dBf); max stereo S/N 70 dB with 65 dBf (1,000  $\mu$ V) A-wid; capture ratio 1 dB; AM rej 50 dB; alt-ch sel 70 dB ..... \$400

### STA-116 30-W/ch AM/FM Receiver

6 AM/6 FM presets; 300-/75-ohm FM and AM antennas; quartz digital tuning; feather-touch

manual or auto tuning; 5-LED signal-strength meter; loudness control; subsonic filter. Inputs for MM phono; tape; aux; CD player. Amp section: 30 W/ch into 8 ohms. FM section: 50-dB quieting sens stereo 39.8  $\mu$ V (32 dBf); max S/N with 65 dBf (1,000  $\mu$ V) A-wid stereo 60 dB; capture ratio 1.5 dB; AM rej 50 dB; alt-ch sel 50 dB ..... \$260

### STA-125 22-W/ch AM/FM Receiver

Quartz digital tuning; search up or down; feather-touch controls; 6 AM/6 FM presets; FM muting; 5-LED signal-strength meter; loudness control. Inputs for MM phono; tape; aux; CD player. Amp section: 22 W/ch into 8 ohms. FM section: capture ratio 2 dB; AM rej 45 dB; alt-ch sel 50 dB ..... \$220

### STA-460 22-W/ch AM/FM Receiver

PLL tuning; loudness button; FM muting; drives 2 pairs of speakers; stereo/mono switch; bass, treble, volume, balance controls; overheating and overload protection. Inputs for MM phono; tape; aux; CD player. Amp section: 22 W/ch into 8 ohms. FM section: capture ratio 3 dB; alt-ch sel 50 dB ..... \$180

### STA-19 5-W/ch Personal Receiver

Inputs for FM, AM, phono, tape. Features Auto-Magic fine tuning; jack for mini headphones; jack for mini cassette players; special EQ switch; loudness control. Walnut vinyl over metal case. 5 W/ch into 8 ohms; S/N 70 dB phono, 72 aux; IHF sens 22.3 dBf; sep 35 dB ..... \$120

## REVOX

### B285 AM/FM Receiver

AM/FM stereo receiver with two microprocessors for control of input sensitivities, output levels, and operating functions. Features alphanumeric multi-mode LCD display; 29 AM or FM presets; level and reception mode (mono/stereo, blend) separately programmable for each preset station; programmable volume limit; -20 dB button; subsonic filter; loudness contour; programmable output levels for A and B speaker pairs; comprehensive speaker protection circuits; serial data bus for external control devices; wireless infrared remote control (transmitter optional). Inputs for phono, tape, CD player, tape 2. Amp section: 70 continuous average W/ch 20-20,000 Hz with no more than 0.03% THD into 8 ohms; dynamic headroom 2.5 dB; FR 20-20,000 Hz  $\pm 0.3$  dB. FM section: alternate-ch sel 96 dB; adjacent-ch sel 16 dB; 50-dB quieting sens, mono 1.6  $\mu$ V (15.2 dBf), stereo 19  $\mu$ V (36.8 dBf); max S/N, A-wid, mono 84 dB, stereo 80 dB; THD mono 0.15%, stereo 0.3%; sep 43 dB at 1,000 Hz; capture ratio 2 dB. AM section: FR 120-3,000 Hz  $\pm 6$  dB; sens 36  $\mu$ V. 17.75" w x 6" h x 13.06" d; 33 lb ..... \$2,500

## ROTEL

### RX 875 AM/FM Receiver

70 W/ch bridgeable to 180 W mono AM/FM receiver. Digital tuning with 8 AM and 8 FM presets; THD 0.03%; IMD 0.05%; S/N (stereo) 75 dB. Inputs for video ..... \$599

**RX 855.** Similar to above but with only 7 FM and 7 AM presets and 50 W/ch ..... \$499

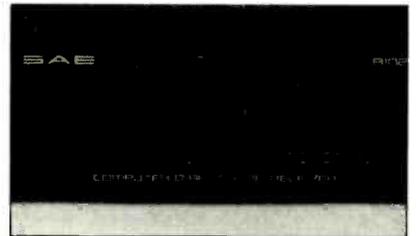
### RX850 AM/FM Receiver

Stereo receiver with quartz-synthesizer tuning and 8 AM/8 FM presets. Inputs for phono, tape, CD player, video sound source. Amp section: 30 continuous average W/ch 20-20,000 Hz into 8 ohms with no more than 0.05% THD; IHF IMD 0.05%; FR (phono) 20-15,000 Hz  $\pm 0.3$  dB; FR

(tape, CD, video) 10-45,000 Hz  $\pm 0.5$ , -3 dB. FM section: alternate-ch sel 60 dB; 50-dB quieting sens, mono 4  $\mu$ V (17.2 dBf), stereo 60  $\mu$ V (40.7 dBf); S/N mono 82 dB, stereo 77 dB; THD, mono 0.15%, stereo 0.4%; sep 43 dB at 1,000 Hz; capture ratio 1.5 dB. AM section: sens 250  $\mu$ V/m. 17" w x 3.88" h x 15" d ..... \$329

### RX830 AM/FM Receiver

Stereo receiver with LED dial pointer. Inputs for phono, tape, CD player, video sound source. Amp section: 20 continuous average W/ch from 20-20,000 Hz THD into 8 ohms with no more than 0.08%; IHF IMD 0.08%; FR (phono) 20-15,000 Hz  $\pm 0.3$  dB. FR (tape, CD, video) 10-38,000 Hz  $\pm 1$ , -3 dB. FM section: alt-ch sel 65 dB; 50-dB quieting sens, mono 4  $\mu$ V (17.2 dBf), stereo 60  $\mu$ V (40.7 dBf); S/N, mono 70 dB, stereo 65 dB; THD, mono 0.3%, stereo 0.5%; sep 38 dB at 1,000 Hz; capture ratio 2.0 dB. AM section: sens 300  $\mu$ V/m. 17" w x 3.88" h x 13" d; 12.7 lb ..... \$219

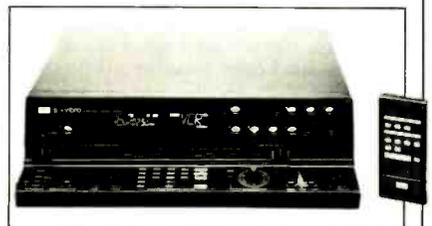


SAE R102

## SAE

### R102 Stereo Receiver

AM/FM stereo receiver utilizes computer to eliminate dependency between front-panel layout and audio circuits. 50 W/ch at 0.025% THD. All controls grouped by function. Features alphanumeric and digital readouts for input functions, tone, volume, balance settings, frequency and tuner memories; 3 digital tone memories; tuner memory scan; phono power amp; high-current main power amp ..... \$499



Sansui S-XV1000

## SANSUI

### S-X1200 AM/FM Stereo Receiver

AM/FM receiver with random presetting of 16 FM and AM stations. Features channel call and preset scan; connections for two VCR's with bidirectional dubbing; sound attacker to add sonic impact to video image; LED power meters; processor terminals: hi-blend; variable loudness control. Amp section: 120 continuous average W/ch 20-20,000 Hz with no more than 0.015% THD into 8 ohms; FR 10-70,000 Hz  $\pm 1$ , -3 dB. FM section: 50-dB quieting sens 10.8 dBf mono; 17.31" w x 5.34" h x 17.12" d; black; 30 lb \$1,000 X900. Similar to S-X1200 except 80 W/ch into 8 ohms from 20-20,000 Hz with no more than 0.02% THD ..... \$750

# RECEIVERS

## S-XV1000 Audio/Video Receiver

Audio/video receiver with video signal processing; connections for 3 VCR's; remote control; surround-sound processor with multi-dimension, theatre, and hall effects (adjustable volume for rear channels); 16 AM/FM presets; subharmonic synthesizer for bass enhancement; audio and video fader controls; joystick color balance. Inputs: MM phono, phono 2, tape, AUX, CD, video sound source. Amp section: 80 continuous average W/ch from 20-20,000 Hz with less than 0.01% THD into 8 ohms for front channels, 8 W/ch for rear; FR 10-100,000 Hz  $\pm$  3 dB. FM section: max S/N ratio, A-wtd, mono 76 dB. 16.94" w x 5.25" h x 16.56" d; 20 lb ..... \$650

## S-X700 AM/FM Stereo Receiver

Features quartz-PLL tuning; 16 presets; connections for 2 pairs of speakers; variable loudness control; high-blend switch. Inputs for MM phono; tape; CD player; video sound source. Amp section: 43 continuous average W/ch from 20-20,000 Hz into 8 ohms with no more than 0.08% THD. FM section: 50-dB quieting sens. stereo 50 dBf; max S/N with 65 dBf, stereo 70 dB. 16.94" w x 4.5" h x 14.25" d; 18 lb ..... \$325  
S-X500. Similar to S-X700 except no high-blend switch. 30 W/ch with <0.2% THD ..... \$295



Scott STA1510

## SCOTT

### STA1510 Integrated Amp With Tuner

Separate integrated amp and tuner sold together; wireless remote control; 7-band graphic equalizer; LED power meters; digital station readout; gold-plated input jacks. Inputs for MM phono, tape, CD/DAT, video sound source. Amp: 150 W/ch into 8 ohms. FM tuner: 50 dB quieting sens stereo 10  $\mu$ V (25 dBf) ..... \$550  
STA1010. As above except 110 W/ch ..... \$450

### RS50 Remote-Controlled Receiver

Includes 7-band graphic equalizer; electronic volume control; power meter. Inputs for MM phono, tape, CD/DAT, video sound source. Amp section: 50 W/ch into 8 ohms. FM section: usable sens 5  $\mu$ V (19.2 dBf) ..... \$250

### RS30 AM/FM Stereo Receiver

Quartz digital-synthesizer tuning section; power output meter; high filter; presets for 8 AM and 8 FM stations. Inputs for MM phono; tape; CD/DAT. Amp section: 25 W/ch into 8 ohms. FM section: usable sens 5  $\mu$ V (19.2 dBf) ..... \$150

## SHARP

### SA-CD800 CDver Receiver/CD Player

AM/FM stereo receiver with 6-disc (5+1) CD changer mechanism; 3-beam laser; random play; 32-track programming; continuous and repeat play; auto program search; FL multi display; 7-band graphic EQ with spectrum analyzer; audio and video function selectors; inputs for video 1, video 2, CD, phono, tape, and tuner;

muting speaker selector (A/B/A+B); 12 AM/12 FM presets. CD section: FR 5-20 kHz; S/N 93 dB; THD 0.005%. Amp section: 110 W/ch rms into 8 ohms with 0.9% THD. 17" w x 6" h x 15.69" d; 28 lb ..... \$900

## SA-X50AV Audio/Video Receiver

Receiver with multiple audio/video inputs and outputs. Features PLL-synthesis tuner; auto scan tuning; 12 presets; 5-band graphic equalizer; video-enhancer circuit; surround sound. Inputs for tape, CD, video sound source, video 1, video 2. Amp section: 50 continuous average W/ch from 40-20,000 Hz into 8 ohms <0.5% THD. 17" w x 3.88" h x 10.5" d ..... \$250

## SA-X35 AM/FM Receiver

Features quartz digital-synthesis tuner; 5-band graphic equalizer; auto scan tuning; loudness switch; A, B, A+B speaker selector; 6 AM/6 FM presets. Inputs for MM phono, tape, CD player. Amp section: 35 continuous average W/ch 20-20,000 Hz with no more than 0.5% THD into 8 ohms; 1HF IMD 0.15%; FR 15-35,000 Hz  $\pm$  3 dB. FM section: adjacent-ch sel 56 dB; max S/N 68 dB stereo; THD 0.3% stereo; sep 32 dB at 1,000 Hz. Black or silver. 17" w x 3.69" h x 10.5" d; 10 lb ..... \$200

## SHERWOOD

### S-2770RCP AM/FM Receiver

Digital-synthesized AM/FM-stereo receiver with digitally controlled 7-band EQ and LED spectrum analyzer. Features 4 EQ memories; 16 station presets; video dubbing; infrared remote control; surround sound; front-panel 2-ch-audio VCR input; MOSFET input stage. Inputs for tape, CD player; video sound source; VCR; VCR 2; VDP (audio only). Amp section: 74 continuous average W/ch from 20-20,000 Hz with less than 0.3% THD into 8 ohms. FM section: 50-dB quieting sens stereo 35  $\mu$ V (36.1 dBf); THD stereo 0.15%; capture ratio 1.5 dB; AM rejection 55 dB ..... \$430

### S-2750CP AM/FM Receiver

AM/FM-stereo receiver with 5-band graphic EQ. Features 16 station presets; surround sound; MOSFET input stage; synthetic stereo mode for mono source material; auto-scan tuning; quartz-PLL digital-synthesized tuning. Inputs for tape, aux; CD player; video sound source. Amp section: 55 continuous average W/ch from 20-20,000 Hz with less than 0.2% THD into 8 ohms. FM section: 50-dB quieting sens stereo 50  $\mu$ V (39.2 dBf); THD stereo 0.5%; capture ratio 2 dB; AM rejection 50 dB; alt-ch sel 65 dB. 17.36" w x 4.62" h x 9.25" d; 15 lb ..... \$250

### S-2730CP AM/FM Receiver

AM/FM-stereo receiver with quartz-PLL digital-synthesized tuning. Features 16 station presets; auto scan; surround sound; MOSFET input stage. Inputs for tape; aux; CD player; video sound source. Amp section: 35 continuous average W/ch from 20-20,000 Hz with less than 0.2% THD into 8 ohms. FM section: 50-dB quieting sens stereo 50  $\mu$ V (39.2 dBf); THD stereo 0.5%; capture ratio 2 dB; AM rejection 50 dB; alt-ch sel 65. 17.36" w x 4.62" h x 9.25" d ..... \$200

## SONY

### STR-AV950 Audio/Video Receiver

Remote-controlled AM/FM receiver with inputs for MC/MM phono, tape 1 & 2, CD player, TV tuner, 2 video sources (1 front panel). Features ASP programmable bass and treble acoustic memory; surround sound; CATV antenna; frequency-synthesis microprocessor-controlled

tuning; 10 AM/FM presets; direct-access tuning; balance and muting controls; headphone jack; A-B speaker switching; direct comparator circuit; station spectrum display; current-mirror amp driver stage; legato linear output stage; DC-servo design. Amp section: 115 continuous W/ch into 8 ohms from 20-20,000 Hz with no more than 0.006% THD; FR 5-90,000 Hz +0, -1 dB. Tuner section: 50-dB quieting sens 38.3 dBf (45  $\mu$ V) stereo; S/N 76 dB stereo; alt-ch sel 65 dB narrow, 30 dB wide. 17" w x 5.12" h x 13.62" d; 21 lb ..... \$750

### STR-AV850 Audio/Video Receiver

Remote-controlled AM/FM receiver with inputs for MM phono, tape 1 & 2, CD player, TV tuner, 2 video sources (1 front panel). Features ASP programmable bass and treble acoustic memory; surround sound; CATV antenna; frequency-synthesis microprocessor-controlled tuning; 10 AM/FM presets; direct-access tuning; balance and muting controls; headphone jack; A-B speaker switching; direct comparator circuit; station spectrum display; current-mirror amp driver stage; legato linear output stage. Amp section: 80 continuous W/ch into 8 ohms from 20-20,000 Hz with no more than 0.006% THD; FR 5-90,000 Hz +0, -1 dB. Tuner section: 50-dB quieting sens 38.3 dBf (45  $\mu$ V) stereo; S/N 76 dB stereo; alt-ch sel 65 dB narrow, 30 dB wide. 17" w x 5.12" h x 13.62" d; 18 lb ..... \$600

### STR-AV650 Audio/Video Receiver

Remote-controlled AM/FM receiver with inputs for MM phono, tape 1 & 2, CD player, TV tuner, 2 video sources (1 front panel). Features ASP programmable bass and treble acoustic memory; surround sound; CATV antenna; frequency-synthesis; 10 AM/FM presets; direct-access tuning; balance and muting controls; headphone jack; A-B speaker switching; direct comparator circuit; current-mirror amp driver stage. Amp section: 65 continuous W/ch into 8 ohms from 20-20,000 Hz with no more than 0.008% THD; FR 5-90,000 Hz +0, -1 dB. Tuner section: 50-dB quieting sens 38.3 dBf (45  $\mu$ V) stereo; S/N 74 dB stereo; alt-ch sel 60 dB narrow. 17" w x 5.12" h x 11.25" d; 16 lb ..... \$500

### STR-AV550 Audio/Video Receiver

Remote-controlled AM/FM receiver with inputs for MM phono, tape 1 & 2, CD player, 2 video sources (1 front panel). Features ASP programmable bass and treble acoustic memory; surround sound; frequency-synthesis; 10 AM/FM presets; direct-access tuning; balance and muting controls; headphone jack; A-B speaker switching; direct comparator circuit; current-mirror amp driver stage. Amp section: 55 continuous W/ch into 8 ohms from 20-20,000 Hz with no more than 0.03% THD; FR 10-70,000 Hz +0, -1 dB. Tuner section: 50-dB quieting sens 38.3 dBf (45  $\mu$ V) stereo; S/N 74 dB stereo; alt-ch sel 60 dB narrow. 17" w x 5.12" h x 11.25" d; 15 lb ..... \$370

### STR-AV450 AM/FM Receiver

Remote-controlled AM/FM receiver with inputs for MM phono, tape deck, CD player, 1 video source. Features ASP programmable bass and treble acoustic memory; quartz frequency-synthesis tuning; 10 AM/FM presets; direct-access tuning; auto sweep tuning; preset scan; balance and muting controls; headphone jack; A-B speaker switching; direct comparator circuitry; separate power supplies. Amp section: 35 continuous W/ch into 8 ohms from 20-20,000 Hz with no more than 0.8% THD; FR 10-70,000 Hz +0, -1 dB. Tuner section: 50-dB quieting sens

# RECEIVERS

38.3 dBf (45  $\mu$ V) stereo; S/N 70 dB stereo; alt-ch sel 60 dB narrow. 17" w x 4.25" h x 11.38" d; 11 lb ..... \$300

## STR-AV250 AM/FM Receiver

Features inputs for MM phono, tape deck, CD player, 1 video source; quartz frequency-synthesis tuning; 10 AM/FM presets; direct-access tuning; auto sweep tuning; preset scan; balance and loudness controls; headphone jack; A-B speaker switching; separate power supplies. Amp section: 35 continuous W/ch into 8 ohms from 20-20,000 Hz with no more than 0.8% THD; FR 10-70,000 Hz  $\pm 0$ ,  $-1$  dB. Tuner section: 50-dB quieting sens 38.3 dBf (45  $\mu$ V) stereo; S/N 70 dB stereo; alt-ch sel 60 dB ..... \$200

## TANDBERG

### TPR 3080A Programmable Receiver

Remote-controllable AM/FM receiver with zero-feedback design. Features high current circuitry; digital tuning; 26 presets; separate program and record source selectors. Inputs for MM and MC phono, CD, DAT, video, and tape. 80 W/ch into 8 ohms. 100 W/ch into 4. Rosewood side panels. Remote control optional; 17.13" w x 5.25" h x 13.75" d; 26.4 lb ..... \$1,995



Tandberg TPR 3080A

## TECHNICS

### SA-R510 AM/FM Receiver

Features 56-key wireless remote control that operates receiver and other Technics components; 7-band graphic equalizer/analyzer (max 12 dB boost or cut); memory for 4 EQ curves; front-panel video input jacks; drives 2 pairs of speakers; quartz digital tuning section; 24 station presets called with keypad; 2-color fluorescent display; loudness; 9-part power meters. Inputs for 2 VCR's, CD player, turntable, tape deck. 100 W/ch; FM sens 11.2 dBf; FM sel 65 dB; 50-dB quieting sens stereo 40.2 dBf ..... \$750

**SA-R410.** Similar to above except 40-key remote ..... \$600

**SA-R310.** Similar to above except 55 W/ch; 5-band equalizer/analyzer ..... \$400

**SA-R210.** Similar to above except 40 W/ch 3-band equalizer; 30-key remote ..... \$300

### SA-290 AM/FM Stereo Receiver

Features quartz-synthesizer digital tuning, soft-touch controls, slim design. Black finish. Inputs for MM phono; tape; CD player. Amp section: 50 continuous average W/ch from 20-20,000 Hz with  $<0.3\%$  THD; dynamic headroom 1.2 dB. FM section: 50-dB quieting sens stereo 56  $\mu$ V (40.2 dBf); max S/N with 65 dBf (1,000  $\mu$ V) A-wtd stereo 71 dB; THD stereo 0.3%; capture ratio 1 dB; AM rejection 50 dB; alt-ch sel 65 dB. 16.94" w x 3.89" h x 9.56" d; 11.7 lb ..... \$245

**SA-2029.** As above in silver ..... \$225



Technics SA-R510

### SA-180 AM/FM Receiver

Features quartz digital tuning section; 16 station presets; auto scan; 3-LED signal-strength display; drives main and remote speakers; loudness; headphone jack; electronic protection. Inputs for tape deck, CD player, turntable. 35 W/ch; FM sens 11.2 dBf; FM sel 65 dB. .... \$200

### SA-130 AM/FM Stereo Receiver

Features built-in loudness compensation, low-distortion tone controls. Inputs for MM phono; tape; CD player. Amp section: 35 continuous average W/ch from 40-20,000 Hz with  $<0.5\%$  THD; dynamic headroom 1 dB. FM section: 50-dB quieting sens stereo 45  $\mu$ V (38.3 dBf); max S/N with 65 dBf (1,000  $\mu$ V) A-wtd stereo 70 dB; THD stereo 0.3%; capture ratio 1 dB; AM rejection 50 dB; alt-ch sel 60 dB. 16.94" w x 3.89" h x 10.8 lb ..... \$165

## VECTOR RESEARCH

### VRX-9200R Audio/Video Receiver

120-W/ch A/V receiver with full-function remote control. Features motorized rotary volume control; built-in Dolby Surround; pre-out/main-in jacks; video signal routing; A/V processing loop; video monitor output; dedicated CD input; quartz-synthesis tuning; 20 station presets; preset scan; mono/stereo switch; A/B RF antenna inputs; FM autoscans; 2 tape monitors with dubbing in either direction; MC head amp; high and subsonic filters; parallel speaker switching; surround level, front/rear balance control ..... \$750

### VRX-8200R Audio/Video Receiver

110-W/ch A/V receiver with full-function remote control. Features motorized rotary volume control; built-in matrix surround; pre-out/main-in jacks; video signal routing; A/V processing loop; video monitor output; dedicated CD input; quartz-synthesis tuning; 20 station presets; preset scan; mono/stereo switch; A/B RF antenna inputs; FM autoscans; 2 tape monitors with dubbing in either direction; MC head amp; high and subsonic filters; parallel speaker switching ..... \$600

### VRX-7200R Audio/Video Receiver

65-W/ch A/V receiver with full-function remote control. Features motorized rotary volume control; built-in matrix surround; pre-out/main-in jacks; video signal routing; A/V processing loop; video monitor output; dedicated CD input; quartz-synthesis tuning; 16 station presets; mono/stereo switch; A/B RF antenna inputs; FM autoscans; 2 tape monitors with dubbing; MC head amp; loudness contour; parallel speaker switching ..... \$450

### VRX-4200 Audio/Video Receiver

65-W/ch A/V receiver with built-in matrix surround. Features pre-out/main-in jacks; video

signal routing; video monitor output; dedicated CD input; quartz-synthesis tuning; 16 station presets; mono/stereo switch; A/B RF antenna inputs; FM autoscans; 2 tape monitors with dubbing; MC head amp; loudness; parallel speaker switching ..... \$350

### VRX-3500 Receiver

Discrete output amp section; synthesized tuner. Inputs for MM phono; tape; aux; CD; video sound source. 40 continuous average W/ch from 20-20,000 Hz with less than 0.08% THD into 4 ohms; dynamic headroom 2.5 dB; IHF IMD 0.08%. 17" w x 3" h x 12" d ..... \$250

### VR-2300 Receiver

25-W/ch receiver features A/B speaker switching; analog flywheel tuning; loudness contour; headphone jack; tape monitor. Inputs for CD and MM phono ..... \$150

## YAMAHA

### RX-1100U Audio/Video Receiver

AM/FM receiver with RS integrated system remote control. Features digital tuner; absolute linear amplification; high dynamic power; low-impedance drive capability; 16-station random-access preset tuning; digital fine tuning; continuously variable loudness control; dual tape monitor inputs; pre-main coupling terminals; three video source inputs; video and audio record out selectors; video enhancer with level and detail control; switching for three pairs of speakers; LED indicator on volume knob. 125 W/ch min rms into 8 ohms from 20-20,000 Hz with less than 0.015% THD. Black ..... \$949

### RX-900U Audio/Video Receiver

AM/FM receiver with RS integrated system remote control. Features digital tuner; absolute linear amplification; high dynamic power; low-impedance drive capability; 16-station random access preset tuning; digital fine tuning; continuously variable loudness control; pre-main coupling terminals; three video source inputs; video and audio record out selectors; video enhancer with level and detail control; switching for two pairs of speakers. 85 W/ch min rms into 8 ohms from 20-20,000 Hz with less than 0.015% THD. Black finish; 29 lb ..... \$699

### RX-700U Audio/Video Receiver

AM/FM receiver with RS integrated system remote control. Features digital tuner; high dynamic power; low-impedance drive capability; 16-station random access preset tuning; continuously variable loudness control; two video source inputs; video and audio record out selectors; video enhancer with level control. 65 W/ch min rms into 8 ohms from 20-20,000 Hz with less than 0.015% THD. Black; 17 lb ..... \$549

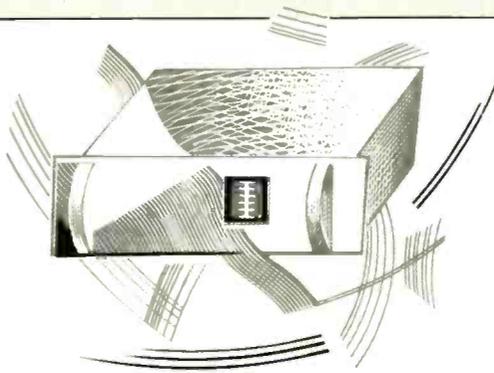
### RX-500U AM/FM Receiver

AM/FM receiver with wireless remote control. Features digital tuner; high dynamic power; low-imp drive capability; continuously variable loudness control; switching for two pairs of speakers. 50 W/ch min rms into 8 ohms from 20-20,000 Hz with less than 0.015% THD. Black; 15 lb ..... \$379

### RX-300U AM/FM Receiver

Features digital tuner; high dynamic power; low-imp drive capability; 16-station random access preset tuning; 10-segment signal-strength meter; tape monitor selector; dynamic bass extension control; continuously variable loudness. 37 W/ch min rms into 8 ohms from 20-20,000 Hz with less than 0.015% THD. Black ..... \$269

# AMPLIFIERS



## POWER AMPLIFIERS

### ACCUPHASE BY MADRIGAL P-600 Stereo Power Amplifier

7 parallel push-pull output stages with MOSFET pre-driver incorporating push-pull circuitry in all stages; digital peak-power display; bridge connection switch; 1-dB-per-step input-level control. Drives 2-ohm speaker with guaranteed output of 700 W/ch. 300 W/ch into 8 ohms; 1,000 W into 8 ohms bridged; damping factor 300 IHF 50 Hz; s/N <125 dB IHF-A; rated input 2 V; 18.94" x 9.19" x 18.75" ..... \$6,725

### M-100 Monophonic Power Amplifier

MOSFET driver stage; digital peak-power display; heavy-duty octo-parallel push-pull output stage; cascode bootstrap, push-pull differential amp input section; DC servo-controlled direct-coupled input stage; series regulator regulated power supply; 1-dB stepping precision attenuator; low filter with 10, 17, 30, or 50 Hz cutoff; phase-inverting switch; provision for ventilation fan. Guaranteed specs: power output 800 W into 4 ohms, 500 W into 8 ohms, 250 W into 16 ohms, all min rms; damping factor 300; s/N 130 dB; 91.4 lb ..... \$5,750

### ACOUSTIC RESEARCH

#### AR P-10 Power Amplifier

Power amp with massive transient (IHF dynamic) power capability of 1,200 W/ch into 2 ohms, 800 W into 4 ohms, and 400 into 8 ohms. 150 continuous average W/ch from 20-20,000 Hz into 8 ohms with no >0.3% THD. 200 W into 4 ohms; 200-ms dynamic power 300 W; dynamic headroom 4.3 dB; s/N 95 dB; slew rate 30 V/ $\mu$ s; IMD 0.03%. 17" x 4.33" x 14.5" ..... \$800

### ADA (AUDIO DESIGN ASSOC.)

#### PF-300 Power Amplifier

MOSFET power amplifier capable of driving 1/2-ohm loads continuously. Front-panel power switches, indicators, and fuses; dual-mono design with independent toroidal transformers; fan cooled; 200 W/ch from 20-20,000 Hz with no >0.05% THD into 8 ohms; 300 W into 4 ohms; slew rate 10 V/ $\mu$ sec; IMD 0.08%; 48 lb; 19" w x 7" h x 15.5" d ..... \$3,995

#### PT-200 Power Amplifier

Dual-mono power amp capable of driving 1-ohm loads. Features 44-segment triangular LED output meters with peak indication; front-panel power switches, indicators, fuses; stepped attenuator gain controls; soft-clipping circuit; dual toroidal power transformers; fan cooled; standard EIA rack-mountable. 60 continuous average W/ch from 20-20,000 Hz with no >0.06% THD into 8 ohms; 110 watts into 4 ohms; s/N

102 dB; slew rate 12 V/ $\mu$ sec; IMD 0.15%. 28 lb; 19" w x 3.5" h x 16.88" d ..... \$2,195

### ADCOM

#### GFA-555 Power Amplifier

High-current amp able to drive 1-ohm loads with no current limiting and low feedback. Bridgeable for mono operation. 200 W/ch into 8 ohms; 350 W/ch into 4 ohms with <0.09% THD and <0.05% IMD; constant damping factor >100 20-20,000 Hz ..... \$700

#### GFA-545 Power Amplifier

High-current amp able to drive low-imp. including 1-ohm loads. Features low-negative-feedback design; constant damping factor; toroidal transformer; no current limiting except for fuses; instantaneous distortion alert with distortion products higher than 1% at speaker outputs; direct-coupled design. 100 continuous average W/ch from 20-20,000 Hz into 8 ohms with no >0.09% THD. 150 W/ch into 4 ohms; IMD 0.008%. 17" x 5.5" x 12.5" ..... \$480

### A/D/S/

#### PA4 High-Current 150-W/ch Power Amp

Designed for wide bandwidth and high current; all discrete transistors; polypropylene capacitors; metal-film resistors; 10 bipolar output devices per ch; open-loop bandwidth of <100 MHz to avoid rate limiting and provide stability with complex loads; toroidal transformers for low noise and high current; drives 2 pairs of speakers; power and speakers switched from a/d/s/ CC4 control center or R4 receiver; bridgeable; clipping LED's. 150 W/ch into 4 or 8 ohms; 250 W into 1 ch. 17.5" w x 2.8" h x 14.8" d; 27 lb ..... \$999

### AUDIO DYNAMICS

#### B200 Configurable Power Amplifier

Configurable 2-/3-/4-channel power amplifier with individual left/rear, left/front, right/rear, and right/front volume controls and speaker on/off switches. Features oversized power display with front/rear display switches; direct input. Power output into 2 channels: 260 W/ch into 8 ohms, 300 W/ch into 4 ohms. Power output into 4 channels: 90 W/ch into 8 ohms, 120 W/ch into 4 ohms; FR 20-20,000 Hz  $\pm$ 0.25 dB ..... \$999

### AUDIO RESEARCH

#### M300 Mono 300-W Power Amplifier

Hybrid design with field-effect transistors (for front end) and vacuum tubes (in output stage); cross-coupled circuit; front-panel replaceable line and screen voltage fuses with LED indicators; 2 integral low-noise cooling fans (switchable high or low); standby switch for warmup or interruptions; auto muting for silent shutdown; gold-plated inputs connect ground before hot;

output taps for 1, 2, 4, or 8 ohms; front and rear handles. 300 minimum continuous W from 16-25,000 Hz with 0.051% THD into 8 ohms; power at clipping 330 W; FR 10-60,000 Hz -3 dB; s/N 90 dB; slew rate 25 V/ $\mu$ sec; 19" w x 10.5" h x 16" deep; 110 lb ..... \$6,990

#### M100 100-W/ch Mono Tube Power Amplifier

Basic power amp with auto servo DC balance, front-panel bias adjustment and indication. 100 continuous average W/ch from 20-20,000 Hz with no >1% THD into 8 ohms; FR 2-60,000 Hz +0/-3 dB; s/N 90 dB; dynamic headroom <1 dB; slew rate 15 V/ $\mu$ sec; IMD 0.2%; input sens 0.7 V rms for 100 W. 19" w x 7" h x 18.3" d; 53 lb ..... \$2,495

#### D120 120-W/ch Solid-State Power Amplifier

High-Definition solid-state stereo power amp with Analog Module technology, unique linear output circuit. Stable under any load. Features internal bridging switch for mono operation; power supply fuse on front panel; fuse-failure LED indicator. Output power 120 W/ch into 8 ohms, 10-20,000 Hz at <0.25% THD; FR 1.2-75,000 Hz  $\pm$ 1 dB; power bandwidth 0.6-100,000 Hz -3 dB; input sens/imp 1.5 V rms/60k ohms; THD <0.004% at 1,000 Hz, 1 W; IMD <0.035% at rated power; slew rate 40 V/ $\mu$ sec; rise time 2  $\mu$ sec; damping factor 300, 10-20,000 Hz; power consumption 1,000 W max; 19" w x 10.5" d x 5.25" h; 50-lb shipping weight ..... \$1,995

### B&K COMPONENTS

#### EX-442 Dual-Mono Power Amplifier

Dual-mono power amp with gold-plated input and output connectors. 200 continuous average W/ch; FR 5-45,000 Hz  $\pm$ 3 dB; s/N 95 dB; dynamic headroom 0.5 dB; slew rate 15 V/ $\mu$ sec; IMD 0.09%; 300 W into 4 ohms; 42-ampere peak-to-peak current capability. 19" w x 6" h x 15" d; 35 lb ..... \$895

#### ST-202 Plus Power Amplifier

200 continuous average W/ch from 20-20,000 Hz with no more than 0.9% THD into 8 ohms; dynamic headroom 1.8 dB; s/N 95 dB; slew rate 11 V/ $\mu$ sec; IMD 0.09%. 19" w x 6" h x 15" d; 30 lb ..... \$649

#### ST-140 Class A Power Amplifier

Power amp with Class A design up to output stage. 100 continuous average W/ch from 20-20,000 Hz with no more than 0.09% THD into 8 ohms, 100 W into 4 ohms; FR 5-45,000 Hz  $\pm$ 3 dB; s/N 90 dB; dynamic headroom 1.4 dB; slew rate 11 V/ $\mu$ sec; IMD 0.09% ..... \$440

### B&W LOUDSPEAKERS

#### MPA810 Mono Power Amplifier

Mono power amp with MOSFET circuitry.

# AMPLIFIERS

Bridge-mode configuration cancels harmonic distortions, loads supply symmetrically, eliminates heavy speaker return currents in ground circuit. Passive heatsinks progressively assisted by DC fan as temp rises. Features 30-segment output-voltage display and clipping indicator. 650 continuous average W/ch from 20-20,000 Hz into 8 ohms with no more than 0.006% THD, 1,110 W into 4 ohms; 200-ms dynamic power 850 W; dynamic headroom 1.3 dB; S/N 107 dB; slew rate 60 V/ $\mu$ s; IMD 0.006%; peak current  $\pm$  60 amperes; bandwidth 0-100,000 Hz  $-2$  dB. 11" w x 9.25" h x 17.5" d; 44 lb ..... \$3,500

## BELLES RESEARCH

### Belles 250 Stereo Power Amplifier

Solid-state power amp with dual complementary circuitry. Features van den Hul silver mono-crystal wiring; Tiffany connectors; high-quality capacitors and resistors; toroidal power transformer. 125 continuous W/ch from 20-20,000 Hz with no more than 0.05% THD and IMD into 8 ohms; dynamic headroom 1.8 dB; slew rate 200 V/ $\mu$ s; damping factor  $>175$ ; 35 lb; 17" w x 6" h x 10" d ..... \$995

## BERNING

### EA-2100 Tube Power Amplifier

All-triode stereo vacuum-tube power amp with low coloration. Features high-frequency power-conversion system for fully regulated power supply; low power consumption; 10- to 20-year tube life. 100 continuous average W/ch from 20-20,000 Hz with no more than 2% total distortion into 8 ohms; FR 7-70,000 Hz  $\pm 1.5$  dB; S/N 100 dB; dynamic headroom 2 dB; slew rate 15 V/ $\mu$ sec; input imp 100,000 ohms; output imp 4, 8, 16 ohms; negative feedback 8 dB; sens 1 V for 170 W out; clipping level (soft clipping) 170 W; 19" w x 5.25" h x 19" d; 40 lb ..... \$2,695  
EA-230. As above except 30 W/ch, conventional power supply. 30 lb, 8" d ..... \$895

## BRYSTON

### 6B 500-W/ch Power Amplifier

Mono power amp with high voltage and current. Max 120+ amperes instantaneously into 1 ohm; 100 W into 4 ohms with average current of 22 amperes; 1,000 W into 1 ohm with 3.5 amperes average; ground lift switch. 500 continuous W/ch from 20-20,000 Hz with no more than 0.005% THD into 8 ohms; S/N 105 dB; slew rate  $>60$  V/ $\mu$ sec; IMD 0.005%; 55 lb; 19" w x 5.75" h x 12" d ..... \$1,700

### 4B 200-W/ch Power Amplifier

Fully complementary class-AB power amp with bridging switch. 1,500-sq-in. heat-sink area; regulated power supplies to all voltage gain stages; ch sep back to line cord; red LED clipping indicator. Output power 200 W/ch, 800 W bridged into 8 ohms, 20-20,000 Hz at 0.01% THD; IMD 0.01%, 10 mW-200 W; noise  $-100$  dB; slew rate 60 V/ $\mu$ sec; power bandwidth 1-100,000 Hz; damping factor 500 at 20 Hz, 8 ohms; input sens/imp 1.25 V/50k ohms; 19" w x 13.5" d x 5.25" h ..... \$1,500

## CAMBRIDGE BY CELESTION

### A250 Mono Power Amplifiers

Features hybrid circuit for voltage-gain stages; 12 power transistors; 2 200 VA toroidal transformers and 4 large-reservoir capacitors in power supply; 1 direct input; 1 AC-coupled input; power switch and LED indicator on front panel. Each amp 250 W into 8 ohms; peak current 50 amperes; THD  $<0.05\%$  at 250 W into 8 ohms with 1,000 Hz ..... \$1,698/pr

## A75 Power Amplifier

Features all 1% metal-film resistors; 2 toroidal transformers; wide open-loop bandwidth; power switch only. 100 W/ch; peak output current 45 amperes; FR 5-50,000 Hz  $-1$  dB; S/N  $>100$  dB; THD 0.5%. 17.5" w x 2.5" h x 11" d; 21 lb. Wood side panels included ..... \$698

## CARVER

### M-1.5t 400-W/ch Power Amplifier

Magnetic Field stereo power amp with LED dual peak-responding power displays, infrasonic and ultrasonic filters. 400 W/ch into 8 ohms; dynamic power 600 W/ch at 4 and 8 ohms; 16 lb ..... \$899

### M-500t 250-W/ch Power Amplifier

Stereo power amp with Magnetic Field circuitry in slim cabinet; peak-responding power meters; cool operation; anodized brushed aluminum in dark pewter finish. 250 W/ch into 8 ohms; slew rate 40 V/ $\mu$ sec ..... \$629

### M11.0t 200-W/ch Power Amplifier

Magnetic Field amplifier with long-term, high headroom and dual peak-responding power LED's. Features electronic protection; sonic transfer modification. 200 W/ch into 8 ohms; dynamic headroom 3 dB; slew rate 200 V/ $\mu$ s. 19" w x 3.5" h x 10.5" d; 12 lb ..... \$499

### M200t 120-W/ch Power Amplifier

Magnetic Field power amp produces 120 W/ch into 8 ohms. Dark pewter finish; LED's indicate power and use of speaker-protection circuitry. 17.3" w x 2.55" h x 9" d; 10.25 lb ..... \$399

## CELLO

### 7000-00 Performance Amplifier Set

2 mono amps (left and right) and 2 mono supplies (left and right) for stereo; power output section has 40 output devices per ch ..... \$12,500

## CONRAD-JOHNSON

### Premier One Vacuum-Tube Power Amp

Power amplifier using vacuum tubes and low-noise precision parts in audio circuitry; LED bias indicators. Output power 200 W/ch into 4, 8, or 16 ohms; S/N 90 dB ..... \$4,800

### Premier Five Vacuum-Tube Mono Power Amp

Low-imp power supplies and extensive use of polystyrene capacitors; LED bias indicators. 200 W into 8 ohms; S/N 94 dB; 19" w x 9" h x 20.5" d; 90 lb ..... \$3,000

Premier Four. Similar to Premier Five except 100 W ..... \$2,950

MV50. Similar to Premier Five except stereo, 50 W/ch into 8 ohms; S/N 94 dB; 40 lb ..... \$1,485

## COUNTERPOINT

### SA-4 130-W/ch Power Amplifier

Power amp with 130 continuous average W/ch from 20-20,000 Hz with no more than 0.2% THD into 8 ohms; S/N 92 dB; dynamic headroom 2 dB; IMD 0.65%; 19" w x 6.7" h x 19" d; 60 lb ..... \$5,225

### SA 20 Hybrid Power Amplifier

Hybrid power amp with tube front end and MOSFET output stage. Features no overall loop feedback; warm-up and shut-off auto speaker muting; internal switching to operate as a bridged mono amp for 3x power. Includes vacuum-tube rectification. 220 continuous average W/ch from 20-20,000 Hz into 8 ohms with no more than 0.5% THD, 420 W into 4 ohms, 1,000 W into 1 ohm; 20-ms peak amperage into 0.1

ohm 50 amperes; S/N 84 dB; slew rate 0.6 V/ $\mu$ s; IMD 0.02%. 19" x 6.7" x 19" ..... \$1,995

### SA-12 Hybrid Power Amplifier

Hybrid power amp with tube front end and MOSFET output stage. Features no overall loop feedback; warm-up and shut-off automatic speaker muting. 85 continuous average W/ch from 20-20,000 Hz with no more than 1% THD into 8 ohms; FR 5-100,000 Hz  $\pm 0.2$  dB; S/N 92 dB; dynamic headroom 2 dB; channel separation  $>85$  dB from 100-10,000 Hz; 19" x 4.5" x 12.5" ..... \$995

## DB SYSTEMS

### DB-6A 40-W/ch Power Amplifier

Stereo power amp able to drive 1-ohm loads. Features 12-dB/octave infrasonic filter; peak-clipping LED's; electronic clamp. Output power 40 W/ch continuous into 8 ohms from 20-20,000 Hz at 0.003% THD; THD 0.0008% at 1,000 Hz; IMD  $<0.002\%$ ; FR 20-40,000 Hz  $+0/-1$  dB; input sens/imp 1 V/50 kilohms; S/N 112 dB at 1 V A-wtd; slew rate 15 V/ $\mu$ s; damping factor  $>400$ , 20-1,000 Hz. 4.9" h x 16" w x 12.8" d ..... \$750

## DBX

### BX1 Configurable Power Amplifier

Configurable 2-/3-/4-channel power amplifier with 3 sets of fuses and complementary circuitry throughout. Features high-quality film capacitors; 8 x 250-W high-speed bipolar devices/ch; 2 x 3,200 VA toroidal transformers with 2 taps each; separate rectifiers for each ch;  $\pm 55$ -V power-supply rails. Contains no fans or limiting circuitry. Power output into 2 channels: 400 W/ch into 8 ohms, 650 W/ch into 4 ohms, 800 W/ch into 2 ohms, 1,400 W/ch into 1 ohm. Power output into 4 channels: 100 W/ch into 8 ohms, 200 W/ch into 4 ohms, 325 W/ch into 2 ohms, 400 W/ch into 1 ohm ..... \$2,500

## DENNESEN ELECTROSTATICS

### Antares II 75-W/ch Power Amplifier

MOSFET power amp. 75 continuous average W/ch from 20-20,000 Hz with no  $>0.1\%$  THD into 8 ohms; FR 10-100,000 Hz  $\pm 0.1$  dB; S/N 90 dB; dynamic headroom 3 dB; slew rate 30 V/ $\mu$ s; IMD 0.1%. 19" w x 5.25" h x 8" d; 30 lb ..... \$595  
Orion. Same as above except 150 W mono ..... \$1,500

## DENON

### FOA-3000Z 250-W/ch Power Amplifier

Features dual super non-NFB circuitry; 4 large-capacity high-speed power transistors; floating load circuitry; self diagnostic display; CD direct input terminals. 250 continuous average W/ch from 20-20,000 Hz with no more than 0.008% THD into 8 ohms; FR 1-300,000 Hz  $+0, -3$  dB; S/N 123 dB A-wtd; dynamic power 315 W + 315 W (8 ohms), 585 W + 585 W (4 ohms), 900 W + 900 W (2 ohms); slew rate  $\pm 500$  V/ $\mu$ sec; IMD 0.0015% ..... \$2,400

### POA-6600 250-W Mono Power Amplifier

Mono power amp with Dual Super Non-NFB circuit for high-speed signal transmission. Features pure current power supply; separate power supply block chassis; Cannon-type balanced input connector; conventional RCA input jack with selector switch; front-panel level control; extra-large speaker terminals; peak indicators; high-speed reset-type protection circuit; remote power on/off switching from DAP-5500 or PRA-1100 preamps. 250 W min rms into 8

The love of music taken to Infinity



Two decades ago, a small group of music-obsessed physicists and engineers working on advanced aerospace problems discovered they shared an absolute dissatisfaction with existing speaker technology. They decided to put their knowledge of electronics, audio and music to the task: Could they expand existing technological boundaries to create the kind of speaker *they* could live with?

The result was the Infinity Servo Statik I, immediately acclaimed by leading audio critics as the State of the Art in the reproduction of music.

In the ensuing years, this absolute obsession with music, this passion for perfection has continued to drive us. And to please equally fanatic music lovers and audiophiles throughout the world.

Today the benchmark 7½ foot tall \$45,000 Infinity Reference Standard V is the embodiment of Infinity's obsession. It is also the source of much of the state-of-the-art technology used throughout the entire Infinity product line.

Every Infinity speaker at every price point—our IRS V, our IRS Beta, Gamma and Delta, our Kappa Series, our RS Series, our Studio



Infinity Reference Standard V

IRS Beta



Kappa 9



Kappa 6  
(optional pedestal)

Monitor Series and Kappa Automotive Series—shares a 20-year tradition of technological innovation.

This Infinity dedication to developing some of the most demanding and expensive high-end products has enabled us to offer the audiophile speakers of unprecedented value and musicality.

The rich velvet timbre of a French horn with all its overtones; the crisp, gutty attack of a Fender bass; the clean, delicate swish of a brush on a Ziljian cymbal; nowhere but through an Infinity speaker will you hear them with such warmth and lifelike presence.

Unless you're at the live concert. Which, as we've been saying all along, is what it's all about.



RS 4000

RS 62k 2-way driver

RS 693k 3-way driver

CS-1 component system



20 years of technological innovation in the love of music.

CIRCLE NO. 17 ON READER SERVICE CARD

All of our advances in speaker technology are compiled into a brief presentation booklet called "The Creative Technology of Infinity Speakers, Vol. II." Ask your Infinity dealer for your copy.

# AMPLIFIERS

ohms from 20-20,000 Hz with no more than 0.02% THD; dynamic power 800 W at 1 ohm; intermodulation distortion <0.002%; S/N 123 dB; slew rate  $\pm 500$  V/ $\mu$ sec ..... \$700

## POA-2200 200-W/ch Power Amplifier

Features unity-current interface; twin pure-current power supply; dual super non-NFB; direct CD input; 200 W/ch ..... \$675

## DISCRETE TECHNOLOGY

### Distech LSII 100 W/ch Power Amplifier

Power amp with MOSFET output and Distech AC power cable. 100 continuous average W/ch from 20-20,000 Hz into 8 ohms with less than 0.95% THD. 200 W into 4 ohms; 200-millisecond dynamic power 200 W; dynamic headroom 3.2 dB; S/N 90 dB below 10-watt output; slew rate 40 V/microsecond; intermodulation distortion <0.09%. 16" x 5" x 14" ..... \$950

## ELECTROCOMPANET

### BY MUSIC & SOUND IMPORTS

#### Ampliwire Power Amps

All Electrocompaniet power amps are Class AB and feature thermal shutoff safety filter in output stage for undistorted use with any type of speaker.

**200.** Inverts phase. 150 W/ch into 8 ohms; 270 W/ch into 4 ohms; FR 0-100,000 Hz; THD 0.003%. 45 lb. ..... \$2,995

**100.** Does not invert phase. 100 W/ch into 8 ohms; 180 W/ch into 4 ohms; FR 0-100,000 Hz; THD 0.003%. 40 lb. ..... \$1,995

**60.** Does not invert phase. 75 W/ch into 8 ohms; 135 W/ch into 4 ohms; FR 0-100,000 Hz; THD 0.004%. 32 lb. ..... \$1,295

## FORTE AUDIO

### Model 1 40-W/ch Power Amplifier

Dual-channel, noninverting, complementary-symmetry amp operates in pure class A mode throughout all stages. Features direct-coupled input stage; custom-wound toroidal transformer; military-grade glass-epoxy circuit boards; gold-plated connectors. 40 W/ch at 0.1% THD into 8 ohms, 70 W/ch at 0.2% THD into 4 ohms from 20-20,000 Hz; FR 1-100,000 Hz  $\pm 3$  dB; slew rate 30 V/ $\mu$ sec; input imp 47 kilohms; output imp 0.02 ohms at 1,000 Hz; output current 30 amp peak; output noise <300  $\mu$ V. 19" w x 7" h x 12" d ..... \$950

## FOSGATE

### M-60 Mono Amplifier

Mono amp designed for use in A/V system. Can be used for center-front-channel applications or two units can be used for stereo; compact complementary/symmetry output stage. Low TIM and TID. Includes gain adjust and clipping indicator. 45 continuous average W from 20-20,000 Hz into 8 ohms with no more than 0.1% THD. 60 W into 4 ohms; 200-ms dynamic power 65 W; dynamic headroom 1.5 dB; S/N 95 dB; slew rate 15 V/ $\mu$ s; IMD 0.1%. 6.56" wide x 3.56" high x 6.56" deep; 5 lb ..... \$149

## HAFLER

### XL-600 MOSFET Power Amplifier

Excelinear near-zero-phase shift circuit with J-FET double differential push-pull cascoded tube-like input and current-mirroring 2nd stage. 16 MOSFET outputs; direct coupled; stable into all loads; high capacitance (72,000 mF); Excelinear speaker tweaking adjustment; gold inputs; mono bridging switch; variable speed DC fan cooling. 305 W/ch into 8 ohms at <0.05% THD.

20-20,000 Hz; <0.04% IMD from 1-305 W; 450 W/ch into 4 ohms; 900 W mono into 8 ohms; input sens 2.4 volts for 305 W at 8 ohms; FR 10-50,000 Hz  $\pm 0.1$  dB; S/N >100 dB at 305 W; 7" h x 19" w x 13" d; 50 lb. .... \$995

### DH-500 Power Amplifier

Stereo power amp designed to deliver >255 W/ch with <0.025% distortion into 8 ohms; >400 W into 4 ohms (can be bridged, using optional bridging kit, to deliver >800 W into 8 ohms). Employs MOSFET's on compact enclosed multispeed fan-cooled heatsink. Fuses and relay protect speakers against turn-on thumps or DC shifts; self-protective capability of MOSFET's eliminates need for amp protection. Factory assembled ..... \$850  
Kit ..... \$725

### XL-280 MOSFET Power Amplifier

J-FET double differential input and 12 MOSFET output. Excelinear speaker tweaking adjustment; gold inputs; mono bridging switch; speaker protection fuses. 145 W/ch into 8 ohms; <0.05% THD, 20-20,000 Hz; <0.04% IMD; S/N >100 dB; FR 10-50,000 Hz  $\pm 0.1$  dB; 200 W/ch into 4 ohms; 400 W into mono. 5.25" h x 17" w x 10.5" d; 27 lb; assembled ..... \$600  
Kit ..... \$525

## HARMAN KARDON

### Citation twenty-two 200-W/ch Power Amp

Selectable high-current and high-voltage output; dual-voltage design; dual power transformers; gold-plated input jacks and speaker terminals; 8 130-W power transistors per ch; clipping indicators; LED power meters; anodized brushed aluminum blue/black finish with rubber trim. 200 W/ch into 8 ohms, 400 W bridged into mono; current capability  $\pm 120$  amps; neg feedback 12 dB; damping factor 120 into 8 ohms ..... \$895  
**twenty-four.** Similar to above except 100 W/ch; current capability  $\pm 60$  amps; 4 130-W power transistors per ch; damping factor 75 into 8 ohms ..... \$595



Harman Kardon Citation twenty-two

## HEYBROOK BY D'ASCANIO

### P-2 Power Amplifier

Hand-assembled power amp with toroidal transformer capable of 30-amp output. Features circuits designed with close-tolerance, high-quality components. Thick aluminum chassis acts as heatsink over entire surface, equalizing temp in case and maintaining a stable relationship between internal components. 80 continuous average W/ch from 20-20,000 Hz into 8 ohms with no more than 0.05% THD. 120 W into 4 ohms; S/N 60 dB; IMD 0.05%; instantaneous peak current  $\pm 30$  A. 17" w x 4" h x 12" d; 18 lb ..... \$1,198

## HITACHI

### HMA120AVSW Power Amplifier

Power display of 10 LED's per ch. 120 W/ch into 8 ohms; 200-ms power 120 W. 14.5" w x 5" h x 13" d; 17.7 lb ..... \$250

## JADIS BY MADRIGAL

### JA-80 60-W/ch Tube Power Amp

Pure Class A; core of output transformer acts like solid core for high efficiency; 2 chassis. 60 W/ch into 4 and 8 ohms. 154 lb ..... \$8,300

### JA-30 30-W/ch Class-A Power Amp

Dual-mono (2 chassis); each transformer hand built for symmetry in resistance and self-inductance of coils; transformer encapsulated for optimal self-damping and thermal stability. 30 W/ch into 4 and 8 ohms. 97 lb ..... \$4,300

## JVC

### ML10 Power Amplifier

Power-cascode Super-A power amplifier. 160 continuous average W/ch from 20-20,000 Hz with no more than 0.002% THD into 8 ohms; FR DC-300,000 Hz  $\pm 0$ , -3 dB; S/N 120 dB; IMD 0.002%; damping factor 200 (1,000 Hz 8 ohms). 18.12" w x 8" h x 16.44" d; 61.6 lb ..... \$2,100

## KENWOOD

### Basic M2A Stereo Power Amplifier

Features Super Dynamic Linear Drive (DLD) dual-output power amplifier; low-impedance drive capability; dynamic power (EIA) 616 W/ch into 2 ohms; wide range FL peak power meters with selectable peak-hold and two hold times; Sigma Drive Type B; full circuit protection with thermostat-controlled fan cooling; 2 speaker pair selection; gold-plated input terminals; headphone jack; power indicator; muting relay. 220 continuous average W/ch from 20-20,000 Hz with no more than 0.004% THD into 8 ohms; damping factor 1,000 at 50 Hz. 17.31" w x 6.25" h x 14.69" d; 34.1 lb ..... \$650

### Basic M1D Stereo Power Amplifier

Features Voltage Interface Gate with Dynamic Linear Drive amplification; low-imp drive capability; FL peak power meters; full circuit protection; Sigma Drive type B; two speaker pair switching; power indicator; headphone jack; muting relay. 125 continuous average W/ch from 20-20,000 Hz with no more than 0.005% THD into 8 ohms; dynamic power (EIA) 210 W/ch into 2 ohms ..... \$410

## KINERGETICS

### KBA-202 Gold Series 200-W/ch Power Amp

Zero overall feedback (feedback in output stage only); fully cascoded J-FET input stage; dual mono construction; DC servo control to eliminate capacitors in signal path; 24 output transistors; power supply for front end of each ch; 4 toroidal transformers; 300-joule power supply; military-grade glass circuit boards with 2-sided ground plane and 20-oz copper traces; AB output operation; does not invert phase; hysteresis-distortion cancelling circuit. 200 W/ch into 8 ohms, 400 into 4; headroom 3 dB; input imp 50,000 ohms; slew rate 100 V/ $\mu$ sec; 59 lb; 19" w x 7.5" h x 19" d ..... \$1,795

## KYOCERA

### B-910 150-W/ch Power Amplifier

Class AB power amp with triple push-pull high-frequency power stages; ceramic base/chassis; DC configuration; large-cutless-core power transformer; large honeycomb heatsinks; direct and subsonic inputs. 150 W/ch 20-20,000 Hz with no >0.02% THD into 8 ohms; FR DC-200,000 Hz  $\pm 3$  dB at 1 W; S/N 120 dB; damping factor 150 (50 Hz); 200 W/ch into 4 ohms with 0.03% THD; power bandwidth 10-50,000 Hz; input sens 1.5 V (30 kilohm); 17" w x 8.25" h x 15.75" d; 59.5 lb ..... \$2,000

# AMPLIFIERS

## LINEAGE

### PA-200 Stereo Power Amplifier

Features all-discrete audio circuitry; full-complementary direct-coupled FET design; complementary differential inputs; Class A operation in gain/driver stages; MOSFET output stages with Class AB1 operation; DC servo to eliminate all capacitors from audio stages; gold-plated input and output connectors; protection circuitry acting entirely outside of signal path; front-panel overload indicators. High-current ultra-stable design optimized for low distortion under rapidly changing speaker loads. Nominal rated power 100 W/ch into 8 ohms; 1-100,000 Hz bandwidth with no slew rate limiting. Matte silver with removable teak pedestal base. 17" w x 12" d x 6.36" h (with base), 5.25" h (without base) ..... \$1,650

## LINN BY AUDIOPHILE SYSTEMS

### LK2 Stereo Power Amplifier

75 W/ch from 20-20,000 Hz; companion to LK1 preamp. 12.75" w x 3" h x 10.5" d; 19 lb ..... \$855

## LUXMAN

### M-05 Power Amplifier

Duo-Beta/S Class A power amp. 105 W/ch from 20-20,000 Hz with no more than 0.025% THD into 8 ohms; FR 10-100,000 Hz  $\pm 0.5$  dB; S/N 120 dB; 18.12" w x 8.25" h x 17.25" d; 88.4 lb ..... \$3,300

### M-02 Power Amplifier

Duo-Beta/S power amp. 140 W/ch from 20-20,000 Hz with no more than 0.025% THD into 8 ohms; FR 10-100,000 Hz  $\pm 1$  dB; S/N 120 dB; 17.19" w x 5.56" h x 13.19" d; 31.9 lb ..... \$800

## MARK LEVINSON BY MADRIGAL

### No. 20 100-W/ch Mono Reference Amp

Class-A highly biased mono amp with fully regulated power to all audio stages; internal spike and surge suppression; RF filtering of raw AC from outlet to reduce noise; separated + and - supply rails each with their own toroidal power transformer, full-wave bridge rectification, and filter capacitors to prevent cross modulation between rails; electronic regulation to refine power used by signal-carrying circuits; 3 high-current devices to drive output stage; electronic protection against abuse; all gain stages controlled at clipping; balanced inputs with Camac connectors; Neutrik-XLR connector; internal switching to adjust for operation at 90 to 240 V AC. 100 W/ch into 8 ohms, 200 W into 4 ohms. 17.5" w x 8.25" h x 22" d; 90 lb. Faceplate also available in 19" width ..... \$10,200/pr

### ML-11 Stereo Power Amplifier

All discrete circuitry; Class-A operation in voltage gain and driver stages; Class AB2 operation in output stage. Power supply of 320 VA toroidal power transformer, 2 12-ampere bridge rectifiers, 4 10,000  $\mu$ F filter capacitors, for separate rectification and 20 joules of energy storage for each ch. Six 200 W, 15 ampere power transistors per ch enable ML-11, when pulsed, to develop 25 volts peak, at peak currents up to 12.5 amperes (312.5 W peak) per ch. Optional externally programmable voltage-limiting circuit reduces voltage output to protect speakers; gold-plated binding posts for output connections and Camac input connectors; hand-brushed black anodized front panel. 50 W/ch into 8 ohms, 100 W/ch into 4 ohms; 140 W/ch into 8 ohms in bridged mode. 19" w x 8.62" h x 12" d; 25 lb ..... \$2,100

## McINTOSH

### MC-2500 Stereo Power Amplifier

500 W/ch power amplifier with Power Guard circuit. Features Sentry Monitoring circuit which constantly monitors signal to output transistors to protect them from damage; left and right channel gain control; speaker on/off switch; peak-reading, peak-locking power meters; meter range selector; headphone jack. Power output: 500 W/ch both channels driven from 20-20,000 Hz with less than 0.02% THD; IM  $< 0.02\%$  if instantaneous peak power output is less than 1,000 W/ch both channels driven; FR 20-20,000 Hz  $+0 -0.25$  dB; damping factor  $> 30$ ; input imp 50,000 ohms; input sensitivity switchable, 0.75 or 2.5 V (level control provided for higher input voltages). Power Guard: THD not to exceed 2% with up to 20 dB overdrive at 1 kHz. Power requirements: 120 V 50/60 Hz 0.7 to 22 amps, 15 amps UL/CSA. Standard 19" rack mounting; 129 lb ..... \$3,495

### MC-2002 Stereo Power Amplifier

200 W/ch power amplifier with Power Guard circuit. Features McIntosh Sentry Monitor circuit; DC failure protection; power line surge protection; peak responding power meters. Power output: 200 W/ch into 8 ohms both channels driven from 20-20,000 Hz with less than 0.01% THD; IM  $< 0.02\%$  at any power level below rated power both channels driven; FR 20-20,000 Hz  $+0, -0.25$  dB, 10-100,000 Hz  $+0, -3.0$  dB; damping factor  $> 100$ ; input imp 20,000 ohms; input sensitivity switchable, 1.4 or 2.5 V; IHF dynamic headroom 1.7 dB at 8 ohms. Power requirements: 120 V 50/60 Hz, 0.6-15 amps, 16.19" w x 7.13" h x 14.5" d; 50 lb ..... \$1,850

### MC-752 Stereo Power Amplifier

75 W/ch power amplifier with Power Guard circuit. Features McIntosh Sentry Monitor circuit; DC failure protection; power line surge protection. Power output: 75 W/ch into 8 ohms both channels driven from 20-20,000 Hz with less than 0.01% THD; IM  $< 0.005\%$  at any power level below rated power both channels driven; FR 20-20,000 Hz  $\pm 0.25$  dB; damping factor  $> 40$ ; input imp 22,000 ohms; input sensitivity 1.4 V; IHF dynamic headroom 1.4 dB at 8 ohms. Power requirements: 120 V 50/60 Hz, 21 lb ..... \$895

## MEITNER AUDIO BY MUSEATEX

### MTR-100 Mono Power Amplifier

Features floating-charge power supply; protection circuits outside audio path; protection from overheating; dual feedback loop; custom toroidal transformer; DC coupling. Power output 100 W into 8 ohms, 200 into 4; peak output current 35 amperes; FR 0.1 to 100,000  $-3$  dB; damping factor  $> 100:1$  at 1,000 Hz; THD  $< 0.25\%$  at full rated power from 20-20,000 Hz ..... \$3,000

MTR-50. Similar to above except stereo power amp with 50 W/ch into 8 ohms; peak output current 10 amperes ..... \$1,450

## NAD

### Monitor Series 2600 Power Amplifier

Bridgeable stereo/mono power amp features Power Envelope circuitry; Close Tracking Soft Clipping circuit; Lab inputs for extended frequency range. Normal inputs with infrasonic and ultrasonic filters; audible-clipping indicator; high-voltage, high-current capability; speaker imp selector; input-level control for each channel; rack mountable. 150 W/ch in stereo, 500 W in mono when bridged; dynamic power 400 to 600 W in stereo,  $> 1,200$  W in mono when bridged; max peak current up to 50 amperes;

peak SPL  $> 115$  dB with most speakers; dynamic headroom 4 dB; damping factor 120. 17 $\frac{1}{4}$ " x 5" x 15 $\frac{1}{2}$ "; 28 lb, 8 oz ..... \$748

### 2200PE Power Envelope Power Amplifier

Stereo/mono power amp. Features high voltage, high current design; bridgeable; Close Tracking Soft Clipping circuit; audible clipping indicator on front panel. 100 W/ch from 20-20,000 Hz with no more than 0.03% THD into 8 ohms; FR 3-80,000 Hz  $+0, -3$  dB; S/N  $> 91$  dynamic headroom  $+6$  dB; slew rate  $> 35$  V/ $\mu$ sec; IMD  $< 0.03\%$ ; 16.5" w x 4.8" h x 14.5" d ..... \$598

### 2240PE Power Amplifier

Features Power Envelope circuitry; Soft Clipping circuit; speaker imp selector. 40 W/ch (16 dBW) into 8 ohms minimum rms with both channels driven and no more than 0.03% THD from 20-20,000 Hz; clipping power 50 W at 1,000 Hz; dynamic headroom 6 dB at 8 ohms; dynamic power 160 W into 8 ohms, 200 W into 4 ohms, 250 W into 2 ohms; damping factor 50; slew rate 15 V/ $\mu$ sec; input imp 22k ohms; gain 26 dB; input sens 150 mV for 1 W out, 850 mV for 40 W out ..... \$298

## NAKAMICHI

### PA-7 Power Amplifier

Power amp utilizes Stasis topology. Features 700-W toroidal power transformer; 33,000 microFarad x 4 filter capacitors; dual rectifiers; 16 transistors per ch. 200 W/ch from 20-20,000 Hz with  $< 0.1\%$  THD into 8 ohms; FR 7-150,000 Hz  $+0, -3$  dB; S/N  $> 120$  dB; dynamic headroom 1.7 dB; IMD  $< 0.1\%$ ; output current capability 18 amps continuous (50 amps peak); dynamic output power 300 W/ch into 8 ohms; power bandwidth 5-50,000 Hz (8 ohms, 100 W, 0.1% THD); 17.12" w x 7.88" h x 16.56" d; 59 lb, 8 oz ..... \$1,750

PA-5. Similar to above but 100 W/ch. 17.12" w x 5.31" h x 14.5" d; 35 lb, 4 oz ..... \$1,095

## NEC

### M-50 Mono Power Amplifier

Single-channel power amp with 3 switch-selected inputs. Features variable-frequency low- and high-cut filters; vibration-free construction; large F1 power meter; separate circuit construction; industrial-grade twin-crossbar relays with gold-plated contacts; sculptured brass terminals; heavy-duty speaker terminals. Rated power output 50 W into 8 ohms from 20-20,000 Hz with 0.004% THD, 100 W into 4 ohms with 0.006% THD; dynamic power 240 W into 2 ohms, direct input; FR 5-300,000 Hz; S/N  $> 115$  dB (direct input), 8.26" w x 4.72" h x 14.87" ..... \$375



NEC M-50

# AMPLIFIERS

## NIKKO

### Alpha 650 Power Amplifier

Power amp with 300 W/ch, 700 W strappable to mono at 8 ohms ..... \$1,700

### Alpha 480 Power Amplifier

Features protection circuits with front-panel LED; 2 pairs of speaker outputs. 230 W/ch from 20-20,000 Hz into 8 ohms with no more than 0.006% THD; FR DC-100,000 Hz; S/N 120 dB. .... \$900

## ONKYO

### Grand Integra M-510 Power Amplifier

Dual-mono power amp with real-phase power supply. Features ultra-high-current capability with any speaker system regardless of imp or efficiency; 3 separate power supplies (left, right, aux for lights, meters etc.); speaker-imp range down to 1 ohm; calibrated power meters accurate to 1 dB; A + B speaker systems; adjustable meter sens. 300 W/ch into 8 ohms from 20-20,000 Hz with no more than 0.005% THD; 500 W/ch into 4 ohms; 2-ms dynamic power 400 W into 8 ohms; S/N 120 dB; IMD 0.003%; dynamic power 750 W into 4 ohms, 1,300 W into 2 ohms, 2,100 W into 1 ohm. 20" w x 10.5" h x 21" d; 165 lb ..... \$4,500

### Grand Integra M-508 Power Amplifier

Dual-mono power amp with real-phase power supply. Features 4 x 2 high-current storage capacitor block; calibrated high-speed power meters; A + B speaker systems; low-imp drive capability; variable and direct inputs. 200 W/ch into 8 ohms from 20-20,000 Hz with no more than 0.003% THD; 200-ms dynamic power 265 W into 8 ohms; S/N 122 dB; IMD 0.002%; dynamic power 460 W into 4 ohms, 685 W into 2 ohms. 18.25" x 7.25" x 16.75" ..... \$1,150

### Integra M-504 Power Amplifier

Dual-mono power amp with real-phase power supply. Features peak-reading power meters; A + B speaker systems; low-imp drive capability; high-current output stage; heavy-duty 5-way banana-plug speaker connectors. 150 continuous average W/ch into 8 ohms from 20-20,000 Hz with no more than 0.003% THD, 240 W/ch into 4 ohms; S/N 120 dB; IMD 0.002%; dynamic power 190 W into 8 ohms, 360 W into 4 ohms, 480 W into 2. 17.12" x 7.25" x 16.75" ..... \$800

## PARASOUND

### D/AS-1000 130-W/ch Power Amplifier

Digital/analog servo amp with voltage and current feedback; computer-switched dual-voltage power supply; 60-MHz output devices; switchable BTL operation (1,000 W mono into 2 ohms); 80,000-MFD power supply; LED indicators for peak over continuous power rating and operation of 2nd power-supply stage. Rack-mount extensions available. 130 W/ch into 8 ohms, 185 W into 4 ohms, 300 W into 2 ohms; 400-ms dynamic power 660 W into 2 ohms; dynamic headroom 6 dB; slew rate 90 V/ $\mu$ s. 17.25" w x 6" h x 12" d; 40 lb ..... \$650

### HCA-800 80-W/ch Power Amp

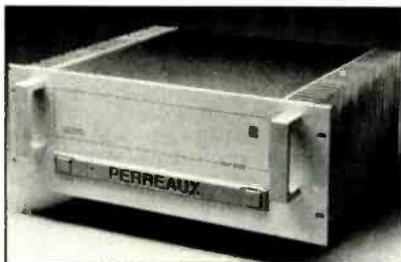
High-current design; front-panel level controls; relay protection; rack mounts with optional kit. 36,000-MFD power supply; gold-plated input jacks. 80 W rms per ch; 250 W mono. 17.25" w x 3.5" h x 12" d; 25 lb ..... \$325

## PERREAUX BY SIGNET

### PMF3150 Dual-Channel Power Amplifier

300 W/ch into 8 ohms from 20-20,000 Hz with

no more than 0.03% THD; MOSFET circuitry; THD/IMD 0.03%; max current output 10 A continuous per/ch; bandwidth  $\pm$ 0.5 dB 10-3,000,000 Hz at 1 W; sep >70 dB; damping factor >400 10-1,000 Hz; input sens 1.5 V rms for rated output at 1,000 Hz ..... \$2,395  
**PMF1850.** Similar to above with 180 W/ch rms ..... \$1,895



Perreaux PMF3150

## PIONEER

### M-90(BK) Power Amplifier

Features CD direct input with volume control; low-imp driving capability; independent L/R mono construction; copper-plated chassis; nonswitching Type-II circuit; 2 pair speaker outputs; FL power level indicator; rosewood-finished vinyl-covered side panels. 200 W/ch from 5-50,000 Hz into 8 ohms with no more than 0.003% THD; dynamic power 300 W at 8 ohms, 550 W at 4 ohms. 22.47" w x 10.41" h x 21.22" d ..... \$950

## PROTON

### D1200 Power Amplifier

100-W/ch stereo power amp with Dynamic Power on Demand (DPD) to deliver as much as 1,500 W/ch (2 ohms) at peak demand, with 6-dB headroom. Features one-touch bridging and wide-range power-output meters. 16.5" w x 4.31" h x 9.75" d; 33 lb ..... \$599

### D-1150 Power Amplifier

Features 50 W/ch rms; DPD; dual-mono configuration to enhance stereo imaging and reduce crosstalk ..... \$429

## QUAD

### Model 606 Power Amplifier

Power amp with feed-forward error correction (current dumping) combines clarity of Class A with efficiency of Class B. Is not rated for continuous power. Protection circuitry uses a sensor on AC-input side of power supply to integrate current over time. No fuses or relays in signal path. Detailed static and dynamic power curves available upon request from manufacturer. THD (continuous sine wave in 8-ohm resistive load any level up to 130 W) <0.01% at 20 Hz, <0.01% at 1,000 Hz, <0.03% at 20,000 Hz; FR 20-20,000 Hz -0.25 dB. 12.75" wide x 5.5" high x 9.5" deep; 27 lb ..... \$1,195

## RCA

### MPA120 Power Amplifier

Dimensia power amplifier with auto power and on-screen volume graphics indication when used with Dimensia monitor. Features fluorescent output display with peak hold; LED power and overload indicators; quick-connect speaker terminals; display on/off switch; headphone jack; A/B speaker switching; AC outlet. Power output: 120 W/ch into 8 ohms from 20-20,000 Hz with no >0.015% THD; S/N 88 dB. 14.63" w x 4.75" h x 13.75" d ..... \$399

## REVOX

### B242 Power Amplifier

High-output power amp capable of driving loads from 2 to 8 ohms at rated levels. Features dual independent power supplies; DC voltage control; electronic short-circuit protection; temperature sensor to activate fan cooling; auto on/off switching responds to signal from preamp; 4/8-ohm speaker output switch; LED bar-graph output meter; heavy-duty output connectors. 200 W/ch from 20-20,000 Hz with no >0.03% THD, 300 W into 4 ohms; dynamic headroom 2.5 dB into 8 ohms; S/N 117 dB; rise time -2  $\mu$ s; damping factor 200 (1 kHz 8 ohms); sep 80 dB at 1,000 Hz. 18" w x 6" h x 14" d; 37.5 lb ..... \$3,000

## ROTEL

### RB890 Stereo Power Amplifier

Power amp with 160 W/ch from 20-20,000 Hz into 8 ohms with no >0.03% THD; bridgeable to 480 watts/8 ohms; high-current close-tolerance components ..... \$699

### RB870BX Stereo Power Amplifier

100-watt power amp bridgeable with RA870 (integrated amp) for 300 watts into 8 ohms; THD/IMD 0.03% 20-20,000 Hz; high current \$499

## ROWLAND RESEARCH

### Model 3 Mono Power Amplifier

Solid-state power amp with bipolar outputs with FET inputs. Features direct-coupled zero-negative-feedback circuitry; separate power supplies for front-end; toroidal power transformer stable to 1 ohm; remote power switching; balanced or unbalanced inputs standard; adjustable input imp. 100 W into 8 ohms, 220 into 4 ohms, 330 into 2 ohms; peak output current >55 amperes. 15.2" x 5.25" x 14" ..... \$3,950/pr

## SAE

### X10A Power Amplifier

Hypersonic Class A power amp. Features gold-plated connectors; toroidal transformer; wide/narrow band inputs; LED true power meters; anodized gray finish. 100 W/ch from 20-20,000 Hz with no >0.025% THD into 8 ohms; FR 20-20,000 Hz  $\pm$ 0 dB; S/N 110 dB; dynamic headroom 1.2 dB; slew rate 20 amperes/ $\mu$ s; IMD 0.02%; 19" w x 3.5" h x 12.5" d; 28 lb ..... \$900

### A502 Power Amplifier

Power amp with automatic bridging circuit. 200 W/ch from 20-20,000 Hz with no >0.025% THD into 8 ohms; 600 W mono operation. Features dual-speaker system switching; peak and average LED power display. Rack mountable. FR 20-20,000 Hz  $\pm$ 0 dB; S/N 110 dB; dynamic headroom 1.2 dB; IMD 0.025% ..... \$699

## SANSUI

### B-2301 Power Amplifier

Vintage series DC power amp with X-balanced technology. Features fluorescent peak power display with switchable peak/hold functions; balanced ch-conductor inputs. 300 continuous average W/ch from 20-20,000 Hz with no >0.003% THD into 8 ohms; FR 0-300,000 Hz +0, -3 dB; slew rate 300 V/ $\mu$ sec; 18.66" w x 4.94" h x 19.69" d; 81 lb ..... \$2,600

### B-2102 Power Amplifier

Vintage series DC power amp with X-balanced technology. Features fluorescent peak power display with switchable peak/hold functions. Handles 2 pairs speakers with front-panel bass

## ONE STEP IN THE MAKING OF A KEF

'Most speaker companies buy their drivers from somebody else. Either they don't know how to make their own, or they just can't be bothered. Here at KEF, we've been building our own drive units for over 25 years.

'We're very fussy about our ingredients — bextrene, neoprene, nomex, cast aluminium and such. And

I better do a good job in putting everything together. Because the lads in the laboratory test every single driver.

'They test for mechanical tolerances. They test for frequency response. Then they test the completed systems. There surely must be easier ways to make speakers. But not better.'

CIRCLE NO. 69 ON READER SERVICE CARD

**'We make a better speaker starting at the very beginning.'**

—Jean Britt, KEF DRIVE UNIT CONSTRUCTOR



MODEL C60

**KEF**  
The Speaker  
Engineers



# AMPLIFIERS

and treble attenuators. 200 W/ch from 20-20,000 Hz with no >0.003% THD into 8 ohms, 600 W/ch dynamic power into 2 ohms; FR 0-300,000 Hz +0, -3 dB; S/N 115 dB; slew rate 350 V/ $\mu$ sec; 16.94" w x 6.94" h x 16.25" d ..... \$1,100

## SOUNDCRAFTSMEN

### Pro Power Eight Power Amplifier

MOSFET stereo power amp. Features phase-control-regulation power supply; 600 W/ch continuous rms into 4 ohms, 750 W/ch into 2 ohms; over 1,000 W/ch short term continuous power into 2 ohms; 375 W/ch from 20-20,000 Hz with no >0.05% THD into 8 ohms; FR 20-20,000 Hz  $\pm$ 0.1 dB; S/N -105 dB; slew rate 50 V/ $\mu$ s; IMD 0.05%; rack mount. 60 lb ..... \$1,399

### Pro-Power Four Power Amplifier

Ultra-high-current MOSFET power amp with 20-segment LED meter, true clipping indicators, 2-pair speaker switching, level controls. 205 continuous average W/ch from 20-20,000 Hz into 8 ohms with no >0.05% THD, 300 W into 4 ohms, 450 W into 2 ohms; S/N 105 dB; slew rate 40 V/ $\mu$ s. 19" w x 5.25" h x 11" d ..... \$749

**Pro-Power 3.** As above without level controls and LED meters ..... \$649

### Pro Reference Two Power Amplifier

MOSFET stereo power amp with 20-LED power meters. Features switching for 2 pairs of speakers; input level controls; true clipping indicators; brushed aluminum with charcoal finish rack-mount front panel. Output power 100 W/ch into 8 ohms, 200 W/ch into 4 ohms, continuous rms, 20-20,000 Hz at <0.05% THD; S/N >105 dB; damping factor 200 ..... \$699

**Pro Reference One.** Same as Pro Reference Two without LED meters ..... \$599

## SUMO

### Andromeda Power Amplifier

Class AB power amp with full-wave quadrant differential balanced-bridge topology using 4 independent push-pull feedback loops. Power output 200 W/ch into 8 ohms; THD 0.05%; IM 0.05%; slew rate 20 V/ $\mu$ sec; sens 1.8 V for rated output; dynamic headroom 1.5 dB; 19" w x 8.75" h x 7" d; 35 lb ..... \$999

### Polaris Power Amplifier

Class AB power amp that does not invert phase. Power output 100 W/ch into 8 ohms; THD 0.05%; IM 0.05%; sens 1.27 V for rated output; dynamic headroom 1.5 dB; 25 lb. With custom front panel and handles ..... \$649

## TANDBERG

### TPA 3016A Power Amplifier

Stereo power amp with high-current (100 amp/ch) output design. Features separate power supply and toroidal transformer for each ch; zero feedback with 16 power MOSFET's in the output stage; 120,000-microfarad storage capacity; stable to 1 ohm; electronically controlled auto fan. 220 W/ch with no >0.05% THD; slew rate 200 V/ $\mu$ s; S/N 100 dB; 17.13" w x 8.69" h x 13.75" d; 62 lb ..... \$3,595

## TECHNICS

### SE-A3MK2 300-W/ch Power Amplifier

Features computer-drive linear-feedback Class-A circuitry; concentrated power block; extra-large transformers and capacitors for stable power supply; 4-stage Darlington output circuitry; auto-load imp detector; computer-protection circuitry; large, fast peak-power meters; extra 2-

Hz low-cut input terminals; main/remote/main and remote/off pushbutton speaker selectors; thick aluminum cabinet. Output power 300 W/ch into 8 ohms; FR DC-200,000 Hz  $\pm$ 3 dB; input sens/imp 55 mV/4-16 ohms main or remote, 8-16 ohms main and remote; damping factor 200 8 ohms, 100 4 ohms; 16.94" w x 8.19" h x 19.97" d; 86 lb ..... \$2,325

### SE-A5MK2 150-W/ch Power Amplifier

DC power amp with linear feedback and computer drive to neutralize transient crossover distortion. Features parallel 3-stage Darlington output; power-linear circuit to compensate for speaker imp variation; power-output meters. 150 W/ch into 8 ohms; FR DC-150,000 Hz +0, -3 dB; IMD 0.002% 8 ohms; LF damping factor 100; 16.94" w x 7" h x 16.36" d ..... \$800

## THRESHOLD

### Model SA/1 Class A Stasis Power Amplifier

Single-ch, noninverting complimentary-symmetry power amp with N-ch JFET's in front-end signal path and proprietary Stasis output stage. Rated power 160 W rms into 8 ohms of resistive or reactive imp 20-20,000 Hz at no >0.05% THD; idling bias 320 W; bandwidth at -3 dB points, 7 Hz and 100,000 Hz; slew rate 50 V/ $\mu$ sec; IMD 0.1%; input imp 75,000 ohms; output imp 0.03 ohms; output current capability 40 amperes continuous, 150 amperes peak; 19" w x 9.5" h x 17.5" d; 79 lb ..... \$3,950

### Model S/500 Class A/AB Stasis Power Amp

Dual-ch, noninverting complementary-symmetry power amp employing the same signal-path and optical topology as SA-series amps except current bootstrap section of Stasis output stage is operated under high bias as Class A/AB. 250 W/ch rms from 20-20,000 Hz with no >0.1% THD into 8 ohms; idling bias 240 watts; frequency bandwidth at -3 dB points 7 Hz and 100,000 Hz; S/N -100 dB unwt'd referenced to rated output; slew rate 50 V/ $\mu$ s; IMD 0.1%; 12 continuous, 100 peak amperes capability/ch. 19" w x 9.5" h x 17.5" d; 78.5 lb ..... \$3,500

**Model S/300 Class A/AB Stasis Power Amp.** As model S/500 except rated power 150 W/ch rms into 8 ohms, both chs driven 20-20,000 Hz at 0.1% THD; output transistor complement fourteen 200-V, 20-ampere devices/ch; power supply 700-W toroidal transformer, 60,000  $\mu$ F capacitance; output current capability 10 amperes/ch continuous, 80 amperes/ch peak; 19" w x 9.5" h x 13" d; 56 lb ..... \$2,550

**Model S/200 Class A/AB Stasis Power Amp.** As model S/300 above except rated power 100 W/ch rms into 8 ohms, both chs driven 20-20,000 Hz at 0.1% THD; idling bias 160 watts; output transistor complement eight 200-V, 20-ampere devices/ch; power supply 400-W toroidal transformer, 30,000- $\mu$ F capacitance; max output current 8 amperes/ch continuous, 50/ch peak; 19" w x 9.5" x 17.5" ..... \$1,700

## VECTOR RESEARCH

### VA-1450 Power Amplifier

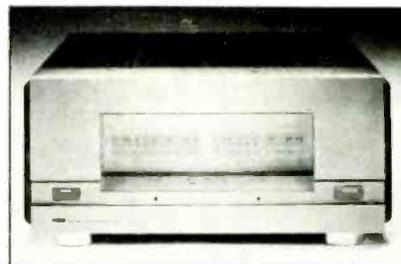
Features high-current, 8-output transistors, dual transformers; used in bridging mode with VA-1400 to convert to 200 W/ch, 100 continuous average W/ch 20-20,000 Hz <0.08% THD into 4 ohms; dynamic headroom 2.5 dB; IHF IMD 0.08%; FR 10-40,000 Hz  $\pm$ 1 dB; 21 lb. 17" w x 3" h x 12" d ..... \$349

## WINGATE AUDIO

### 2000A Class A Power Amp

100% MOSFET's; zero negative feedback; dual-

mono construction; MOSFET regulated power; toroidal power transformer; ultra-wide bandwidth, 100 W/ch from 20-20,000 Hz with no >0.5% THD into 8 ohms; FR 0.06-250,000 Hz +0, -3 dB; S/N <100 dB; dynamic headroom 1.6 dB; slew rate 100 V/ $\mu$ sec; IMD 0.5%; gain 30 dB; input imp 20,000 ohms; 19" w x 8.12" h x 22" d; 95 lb ..... \$3,700



Yamaha MX-10000

## YAMAHA

### MX-10000 Power Amplifier

Limited Centennial Edition power amplifier. Features dual-amp class-A operation; hyperbolic converting nonswitching circuitry; power MOSFET's; high-precision analog dB scale peak level meter. 250 W/ch min rms into 8 ohms from 20-20,000 Hz with <0.0005% THD. Titanium grey with high luster walnut end panels; 120 lb ..... \$7,000

### M-85B Power Amplifier

Features auto class A; Zero Distortion Rule; high dynamic power; low-imp drive capability; 3-pair speaker switching; wide-range LED power level meters with on/off switch. 260 W/ch min rms into 8 ohms from 20-20,000 Hz with <0.003% THD. Black; 53 lb ..... \$999

### M-65B Power Amplifier

Features Auto Class A; Zero Distortion Rule circuitry; low-imp drive capability; 3-pair speaker switching; wide range LED power meters with on/off switch. 170 W/ch min rms into 8 ohms from 20-20,000 Hz with <0.003% THD. Black; 38 lb ..... \$729

### M-45B Power Amplifier

Features Auto Class A; Zero Distortion Rule circuitry; low-imp drive capability; wide range LED power level meters with on/off switch. 125 W/ch min rms into 8 ohms from 20-20,000 Hz with <0.003% THD. Black; 31 lb ..... \$449

## PREAMPLIFIERS

### ACCUPHASE BY MADRIGAL

#### C280L Class A Preamplifier

All-stage Class A push-pull arrangement and DC servo-controlled direct-coupled unit amps and signal paths. Built-in head amp for MC cartridges; separate power transformers for each ch (+26 dB or +32 dB); MC input-imp selector switch; separate R and L input-level control; 2-stage selectable loudness compensation. Phono input 2 mV, phono (head amp on); 0.1 mV/0.5mV selectable; line/tuner input 126 mV; rated output 2 V; line/tuner S/N 110 dB; phono S/N 85 dB; phono S/N (head amp on) 72 dB ..... \$7,625

#### C270 Class A Preamplifier

Cascade push-pull circuits on all stages; separately regulated power supply for each gain stage

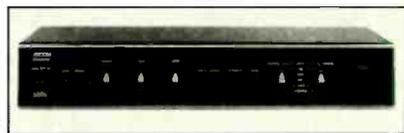
# AMPLIFIERS

in each ch; fully balanced input and output for CD player; 10 inputs; selectable loudness compensation. Inputs for MM phono; tape; tape 2; CD player; CD player/balanced; tuner; 4 line-level sources. S/N 92 dB; 34.4 lb ..... \$5,480

## ACOUSTIC RESEARCH

### AR C-06 8-Input Preamplifier

Features infrared remote control of inputs and volume via T-04 tuner cable link; switchable MM input capacitance; gold-plated phono inputs; separate headphone amp. Inputs for MM phono; MC phono; tape; tape 2; AUX; CD player; tuner; video. FR 13-50,000 Hz  $\pm 3$  dB; S/N 90 dB; THD 0.005%; phono sens/imp 0.8 mV/47 kilohms (MM), 60  $\mu$ V/180 kilohms (MC); phono overload level 180 mV (MM), 15 mV (MC); CD input sens/imp 50 mV/15 kilohms; tuner/tape input sens/imp 50 mV/33 kilohms. 17" w x 3.31" h x 13" d ..... \$360



Adcom GFP-555

## ADCOM

### GFP-555 Preamplifier

Features 2-sided copper-plated circuit board for low noise and hum; switchable phono-input capacitance; switchable gain on phono input; tape dubbing; separate headphone amp; 2 sets of outputs (AC coupled, DC coupled); signal-processor loop; 5 pairs of high-level inputs. Can record from one input while listening to another input. Inputs for MM phono; MC phono; tape; tape 2; CD player; tuner; video. FR DC-400,000 Hz  $\pm 0.5$  dB; THD 0.005%; MM phono sens 0.4 mV for 0.5-V output at 1,000 Hz; sens for line-level inputs 40 mV. 17" x 3.25" x 12.75" ..... \$500

### GTP-500 Preamplifier/Tuner

Preamplifier with built-in tuner can be used with Adcom or other power amps. Wireless remote control included. Remote sensors available for remote control from different rooms. Preamp section features inputs for MM phono; tape; tape 2; CD player; tuner. Tuner section features quartz-referenced digitally synthesized tuning; auto up and down scan; 8 AM/FM presets; 5-LED signal-strength display; high-blend circuit; 2 sets of outputs (AC coupled, DC coupled). S/N phono A-wid 85 dB; IMD preamp 0.0015%; sens tuner 36.5 dBf stereo; THD tuner 0.09% stereo at 1,000 Hz; S/N tuner 75 dB stereo. 17" w x 3.25" h x 12.75" d ..... \$550

## AUDIO DESIGN ASSOCIATES

### DSP-8 Preamplifier

Used in conjunction with ASU-10 and SC-88. Allows remote control selection of any of 8 sources with digital readout in each room. Features 3 tape loops; 1 external processor loop; separate phono stage (external). Inputs for MM phono; tape; tape 2; AUX; CD player; tuner; video; CD 2. FR 5-50,000 Hz  $\pm 3$  dB; S/N 110 dB; THD 0.007%; sens 50 mV. 8 lb; 19" w x 3.5" h x 12" d ..... \$1,300

## AUDIO DYNAMICS

### C200 Preamplifier

Audio/video preamplifier with built-in Dolby and matrix surround-sound processors. Features simulated stereo for mono sources; bass,

midrange, and treble tone controls; tone-defeat switch; loudness switch; muting switch; external processor loop; dubbing; separate recording and listening selectors for recording one source while listening to another. Inputs for MM/MC phono; tuner; AUX; CD player; video monitor, and 3 audio or video tape decks. FR 10-50,000 Hz  $\pm 0. -3$  dB (line level), 20-20,000 Hz  $\pm 0.25$  dB (phono). 11.75" w x 4" h x 12.62" d ..... \$599

## AUDIO RESEARCH

### SP-11 Stereo Hybrid Preamp

High-Definition preamp with both vacuum tubes and field effect transistors. Inputs for MM phono/MC phono; tape; tape 2; AUX; CD player; tuner; video. Features auto muting for warm-up, brown-out, powerline interruption; manual muting; bypass switch for audiophile-quality program material; absolute phase switch; level control; toroidal power transformer. FR 0.1- $>200,000$  Hz  $\pm 3$  dB; S/N 110 dB; THD  $<0.005\%$ ; MM phono sens 0.088 mV for 0.5 V output at 1,000 Hz; MM phono input overload level 350 mV at 1,000 Hz; sens for line-level inputs 18 mV. 46 lb; 19" w x 5.25" h x 10.25" d ..... \$4,900

### SP-9 Hybrid Stereo Preamp

On-board power supply; auto mute circuit for warmup, voltage drop; switchable muting; 2 tape inputs, 2 tape outputs; 2-position tape-monitor switching; gold-plated input/output jacks connect ground before hot, disconnect hot before ground; shielded toroidal power transformer; internally adjustable phono-section imp; 2 6DJ8 vacuum tubes (1 in phono stage, 1 in line stage); compatible with many MC cartridges; black front panel extra. FR (high level,  $\pm 0.5$  dB) 5-50,000 Hz; magnetic phono,  $\pm 0.3$  dB of RIAA, 30-40,000 Hz; max output 2 V rms; distortion  $<0.01\%$  at 2 V rms out; input imp 50k ohms; phono 47k ohms (changeable). 19" w x 5.25" h x 10.25" d; 13 lb ..... \$1,695

## B&K COMPONENTS

### Pro-10 Preamplifier

Preamp with separate power supply and gold-plated connectors for positive contact and reliability. Inputs for MM phono, tape, AUX, CD player, video, tuner. FR 1-100,000 Hz  $\pm 3$  dB; max output 6 V; THD 0.01%; IMD 0.01% IHF; MM phono sens 0.5 mV for 0.5-V output at 1,000 Hz; MM phono input overload level 100 mV, sens for line-level inputs 0.450 mV. 19" w x 3.5" h x 10" d; 12 lb ..... \$550

## B&W LOUDSPEAKERS

### CU810 Preamplifier

Features highly linear MC stage; unbalanced and balanced outputs. Overload margin uses 4 ultra-low-noise multiple transistors in parallel with DC servo feedback loop. Inputs for MM phono; MC phono; tape; tape 2; AUX; CD player; tuner. S/N 108 dB; THD 0.005%; MM phono sens 5.14 mV for 0.5-V output at 1,000 Hz. 18.5" w x 3.75" h x 7.25" d; 8.8 lb ..... \$2,150

## BEDINI

### 66SPA Preamplifier

Flat preamp; no tone controls. FR 5-35,000 Hz; THD 0.015%; IMD 0.015%; MM phono overload 500 mV ..... \$700

## BELLES RESEARCH

### XL Preamplifier

Solid-state preamp with MM and MC capability. Features van den Hul silver mono-crystal wir-

ing; Tiffany connectors; Wonder caps; infrasonic filter; regulated remote power supply (48 VA); external phono loading capability; 6 stereo inputs including 1 monitor, 2 stereo tape outputs; phono RIAA FR 20-20,000 Hz  $\pm 0.1$  dB; S/N 80 dB; THD and IMD 0.05%; 15 lb; 17" w x 3" h x 12" d ..... \$1,249

## BERNING

### TF-12 Preamplifier

Dual-mono tube preamp with all-differential triode design and no negative feedback. Features digitally controlled switching matrix (1-dB steps over 80-dB range) for volume and balance functions to avoid colorations; LED dot-matrix displays relative levels of both channels in dB's; high-frequency resonant power supply; wireless remote control of volume, balance, and mute; high-gain line section (36 dB). Inputs for MM phono; MC phono; tape; AUX; CD player; tuner; video. FR 5-100,000 Hz  $\pm 3$  dB; MM phono sens 0.2 mV for 0.5-V output at 1,000 Hz; sens for line-level inputs 20 mV. 19" w x 3.5" h x 12" d; 5 lb ..... \$3,000

## BRYSTON

### 12B Preamplifier

Control amp can play 1 source while taping or remoting another. Features stereo/mono/mute switch; 14-V headroom. Inputs for MM phono, MC phono, tape, tape 2, CD player, tuner; video. S/N -84 dB; THD 0.005%; 19" W x 1.75" H x 11" D ..... \$1,500  
11B. Second MM input instead of MC input ..... \$1,100

## CAMBRIDGE BY CELESTION

### C75 Preamplifier

Inputs for MM/MC phono (switchable), tape, tape 2. Features dubbing capabilities; straight-line design; solid-wood end panels. FR flat within 0.1 dB 20-80,000 Hz; THD 0.005% 20-20,000 Hz; max output 12 V; MM input 2.6 mV at 47 kilohms; MC input 0.3 mV at 47 kilohms; S/N MM 82 dB, line 96 dB. 17.5" w x 2.5" h x 11" d; 12 lb ..... \$648

## CANTON

### EC-PI Preamplifier

Hand-wired preamp with gold-plated connections. Inputs for magnetic and dynamic pickup systems (with level R.Q.), CD player or PCM tape deck, tuner, 2 tape decks, AUX, MM & MC phono. Provides hook-up for EQ loop, 2 RCA outputs and 1 Cannon jack. THD 0.004%; MM phono sens 2 mV for 0.5 V output at 1,000 Hz; sens for line-level inputs 200 mV. 17.13" w x 2.76" h x 9.45" d; 13.44 lb ..... \$2,000

## CARVER

### 4000-t Sonic Holography Preamplifier

With Sonic Hologram Generator designed to recreate 3-dimensional sound field of recording site and locate instruments precisely in space. Features MC preamp; surround-sound decoder; Digital Time Lens; Auto Correlator NR; L and R bass and treble controls with turnover frequency switches, tone defeat; cartridge matching; 2-way tape dubbing, monitoring; external signal processor input; infrasonic filter. NR 20 dB (20-200 Hz), 10 dB (2,000-20,000 Hz); Sonic Hologram image resolution 5° horizontally, 20° vertically; 19" w x 8" d x 6.25" h ..... \$1,199

### C-1 Sonic Holography Preamplifier

Features Sonic Hologram Generator; separate L and R bass and treble controls, tone defeat; MC phono input; 18 dB/octave infrasonic filter;

# AMPLIFIERS

tape/source monitor with 2-way tape-dubbing; provision for external processor ..... \$599

## CELO

### Audio Suite

Open-architecture mainframe accepts up to 10 slide-in vertical modules for phono, tape, CD, video, and tuner inputs; houses pro modules including mic preamp/mixers, tape head recording and mastering amplification, upcoming digital-to-analog converters, monitor amps for headphones or speakers. Can control multi-room and multi-media systems.

Mainframe chassis	\$1,500
P101. MC phono input module	\$3,000
P100. MM phono input module	\$1,700
P100. High-gain MM phono module	\$1,700
P200. Tape input module	\$1,000
P200. CD input module	\$1,000
P200. Tuner input module	\$1,000
P200. AUX input module	\$1,000
P200. Video input module	\$1,000
B301. Output module	\$1,000
B100. MM phono input module	\$1,000
B201. Camac line input module	\$700
B200. RCA line input module	\$600
P301. Output module	\$2,700
P300. Output module	\$2,300

### Etude Control Unit

4 inputs for sources such as CD players, tuners, tape, and video; 59-position volume control ..... \$1,000

## CONRAD-JOHNSON

### Premier Three Vacuum-Tube Preamp

With low-noise precision metal-film resistors; polystyrene capacitors in audio circuitry; facilities for 2 tape recorders; 2-way dubbing; phono, tuner, AUX inputs; 2 amp outputs; front-panel mute control. FR 20-20,000 Hz  $\pm 0.25$  dB phono; S/N 70 dB below 10 mV phono, 84 dB below 2.5 V output high level; THD and IMD 0.05%; gain 40 dB phono, 29 dB high level; max output 25 V; phono overload 500 mV at 1 kHz; 14" w x 11.25" d x 4.75" h ..... \$2,950

### PV5 Vacuum-Tube Preamp

With cathode follower outputs and solid-state voltage regulator designed for minimal AC imp; regulated filament supplies virtually eliminate infrasonic noise resulting from AC line fluctuations. Features 1% tolerance mil-spec deposited tin-oxide audio circuit resistors; audio circuit capacitors are polystyrene dielectric; volume control tracks within 0.5 dB; auto muting at turn-on, turn-off; 2 tape recorder loops with 2-way dubbing; 5-function mode switch; precision tracking volume control. Max output 40 V rms; FR 2->100,000 Hz; <0.5% THD and IMD; hum and noise 20-20,000 Hz, phono 72 dB below 10 mV input, high level 84 dB below 2.5 V output; output imp <200 ohms; 15 lb ..... \$1,485

## COUNTERPOINT

### SA-11 Line-Level Control Amplifier

Full-featured line-level control center includes industrial-grade stepper motors to control 2 massive custom-built 41-position attenuators. Features full vacuum-tube power supply and audio circuitry; wireless hand-held remote control; Isolinear design for max isolation and extreme linearity. Inputs for tape; tape 2; AUX; CD player; tuner; video. 19" w x 6.7" h x 19" d; 70 lb ..... \$3,995

### SA-9 Phono Equalizer/Preamp

Full-vacuum-tube phono-cartridge preamplifi-

cation and equalization system with completely independent MC and MM circuits. Isolinear design for max isolation and extreme linearity. Inputs for MM and MC phono. 25 lb ..... \$1,995

### SA-5.1 Preamplifier

Preamp with inputs for MM phono, MC phono, tape, tape 2, AUX, CD player, tuner. FR 0.5-88,000 Hz  $\pm 0.1$  dB; max output 70 V; THD 0.08%; IMD 0.08% IHF; MM phono sens 0.5 mV for 0.5-V output at 1,000 Hz; MM phono input overload level 700 mV; 19" w x 2.03" h x 17.03" d; 24 lb ..... \$1,795

### SA-3.1 Preamplifier

Preamp with inputs for MM phono, MC phono, tape, tape 2, AUX, CD player, tuner. FR 2.5-30,000 Hz  $\pm 0.1$  dB; max output 70 V; THD 0.18%; IMD 0.18% IHF; MM phono sens 2.5 mV for 0.5-V output at 1,000 Hz; MM phono input overload level 800 mV; 19" w x 2.03" h x 17.33" d; 18 lb ..... \$995

## DB SYSTEMS

### DBR-15B & 2A Preamp

Rack-mount precision preamp and tone control with power supply. Combines DB-1B, DB-5 in a 19" rack unit. Auxiliary cable included ..... \$935 With oak cabinet ..... \$1,085

### DB-1A & 2A Preamp

Stereo preamp with separate DB-2A regulated power supply. THD  $\pm 0.0008\%$ , 20-20,000 Hz; IMD  $\pm 0.001\%$ ; FR phono 10-40,000 Hz  $\pm 0.07$  dB, high-level 2-50,000 Hz  $\pm 0$ , -1 dB; S/N A-wtd 89 dB phono, 90 dB line; filters: low-cut flat, 20 Hz, 36 Hz at 6 dB/octave phono only, high-cut flat, 5 kHz, 10,000 Hz at 6 dB/octave; output imp 1 kilohm; max output voltage 6 V into 10 kilohms/3,000 pF; input sens for 1 V output; phono 2 mV into 50,000 ohms/100 pF, high-level 120 mV into 50 kilohms; 8.5" x 7" x 3.2" ..... \$495

## DBX

### CX1 Preamp

Audio/video preamplifier with a 2-channel switchable all-digital delay for ambience recovery. Dolby Pro Logic surround system has a 5-ch calibration signal and input-level adjustments for precise setup. Inputs for MM and MC phono, tuner, CD player, VCR, AUX, and 3 tape decks or 2 tape decks and 1 VCR (with video). Outputs for front L and R and side/rear stereo or Dolby Surround with center ch, 3 stereo-to-tape jacks, and a video-signal monitor. Features a stereo audio external-processor loop; audio/video dubbing; independent recording and listening selectors; switchable tone controls (conventional bass/treble curves or low-bass only/spectral tilt); switchable infrasonic and high filter for all sources; precision-tracking 5-ch volume control; ch-mode controls for L/R stereo, RL reverse, L or R only, L+R mono, and L-R positions; headphone jack; anti-resonance chassis and aluminum feet ..... \$1,500

## DENNESEN ELECTROSTATIC

### JC-80 Preamp

Dual mono, all FET, DC-coupled, fully complementary, push-pull, A preamp. No interstage coupling caps; feedback input stage; virtually unswearable; passive RIAA; each stage separately regulated. MM phono, MC phono, tape 1, tape 2, AUX. FR 1-15,000 Hz  $\pm 0.1$  dB; max output 20 V; THD 0.005%; IMD 0.005%; MM phono sens variable mV for 0.5 output at 1,000 Hz; MM phono input overload level 350  $\mu$ V; 19" w x 1.75" h x 12" d; 10 lb ..... \$2,250

## DENON

### PRA-2000Z Preamp

Inputs for 2 MC phonos. 1 MM phono, tape, tape 2, AUX, tuner, CD. Equalizer amplifier: input sens/imp phono-1 MC 0.1 mV/40 ohms, phono-2 MC 0.12 mV/100 ohms, phono-3 MM 2.5 mV/47 kilohms; max input level phono-1 MC 20 mV (1,000 Hz), phono-2 MC 24 mV (1,000 Hz), phono-3 MM 500 mV (1,000 Hz); THD phono-1 <0.001% 1,000 Hz 20 V output, phono 2, 3 <0.0015% 20-20,000 Hz 3 V; S/N A-wtd phono-1 MC 80 dB at 0.25 mV input, phono-2 MC 75 dB at 0.25 mV input, phono-3 MM 90 dB at 2.5 mV input; sep 20 Hz-1,000 Hz 80 dB, 20,000 Hz 70 Hz. Flat amplifier: input sens/imp 150 mV/47 kohms; THD <0.0015% (20-20,000 Hz, 4 V output); FR 1-300,000 Hz  $\pm 0$ , -3 dB; S/N A-wtd 105 dB; sep 20 Hz 100 dB, 1,000 Hz 75 dB, 20,000 Hz 65 dB ..... \$1,600

### DAP-5500 D/A Preamp

Preamplifier with built-in D/A converter. Digital section features 4-D/A push-pull Super Linear Converter system; separate digital and analog chassis; 3 digital inputs (1 optical, 2 coaxial); coaxial digital tape-monitor loop; 4-times oversampling digital filter; optical isolators between digital and analog sections; D/A converter output jacks. Audio section features Unity Gain Interface amplifier; cannon input/output; 2 RCA line-in; 1 RCA line out; front-panel mounted RCA input/output jacks; two tape loops; source-direct switch; separate power supplies for digital section and analog section; non-resonant, vibration-resistant chassis to reduce effects of microphonic and acoustic feedback. 17.09" w x 5.2" h x 15" d ..... \$1,400

### PRA 1100 Preamp

Features unity-gain interference-output amp; variable loudness; 5 audio, 3 video inputs; MC/MM inputs ..... \$425

## ELECTROCOMPANET

### BY MUSIC & SOUND IMPORTS

Electrocompamet preamps feature FR 5-100,000 Hz  $\pm 0.5$  dB; max output 15 V; MM phono S/N 84 dB; high-level sens 100 mV; no tone controls; balance and volume only; MM input imp 47 kilohms; external power supplies.

### EC-1 Preamp

Inputs for MM and MC cartridges, 2 tape recorder or signal-processor loops, and tuner. Inverts phase. Approximately ..... \$1,995

PreIIA. As above except no MC phono and no phase inverting. Approx ..... \$1,395

## FORTÉ AUDIO

### Model 2 Class A Preamp

Dual-channel, noninverting, hybrid IC/discrete, straight-line preamplifier. Features MM/MC phono inputs; 4 high-level inputs; tape monitor; full record and signal-monitor routing ability; selectable-gain cartridge section; internally selectable cartridge loading; all gain stages biased for pure class A operation at all signal levels; external power supply; gold-plated signal connectors. FR DC-100,000 Hz  $\pm 3$  dB; THD <0.01% at 2 V rms out 20-20,000 Hz into 10 kilohm load; phono section S/N >80 dB; high-level section S/N >100 dB. Front-panel controls allow selection of program source for monitoring or recording, tape monitoring, recorder disengagement (removes recorder's input characteristics as a load factor for other source equipment), channel balance, audio level. 19" w x 1.75" h x 7" d ..... \$775

# AMPLIFIERS

## HAFLER

### DH-110 Discrete Preamplifier

Preamplifier operates all discrete devices (no integrated circuits in signal path) in full symmetry format. Controls: volume, balance, bass, treble, input selector, phono selector, monitor selector, mono/stereo, high-pass filter; external processor loop, tone control engage. Features rack-mounting capability; single active circuit board; step-action volume control; integral muting circuit; 2 pairs of audio outputs; low-imp power supply; full power bandwidth to 200,000 Hz; 2 phono, tuner, AUX, 2 tape deck, EPL inputs; 2 tape (buffered), 2 line, EPL outputs; headphone jack. THD <0.0006% at 1,000 Hz, 3 V rms; phono input FR 20-20,000 Hz  $\pm 0$ ,  $-0.25$  dB; S/N weighted 87 dB; rated output 3 V rms, 4-210,000 Hz; THD <0.001% 20-20,000 Hz; 17" wide x 3" high x 8.5" deep; 10 lb.

Assembled ..... \$450  
Kit ..... \$375

### DH-100 Preamplifier

No-frills preamp with RIAA EQ utilizing 1%-tolerance components; low-imp power supply; power on delay circuit. Inputs for MM phono, tape, AUX, tuner. Features volume, balance, treble, bass, tape monitor, power controls; 2 switched outlets. FR 20-20,000 Hz  $\pm 0.25$  dB; max output 8 V; THD <0.005%; IMD below residual noise of current test instruments; MM phono sens 10 millivolts for 0.5-V output; 13.5" wide x 3" high x 9" deep; 7 lb.

Assembled ..... \$225  
Kit ..... \$175

## HARMAN KARDON

### Citation twenty-one Preamplifier

Inputs for CD, CD direct, video sound, tuner, phono, 2 tape decks; ultrawideband fully discrete circuitry; low negative feedback; active/passive symmetrical RIAA EQ; gold-plated jacks; mono switch; low-noise transistors; discrete MC head amp; infrasonic filter (6 dB/octave, <3 at 15 Hz); phase-correct loudness (+10 at 50 Hz, +3 at 250); bass and treble max boost/cut 10 dB; tone defeat. Max output 10 V ..... \$495

## HEYBROOK BY D'ASCANIO

### C-2 Preamplifier

Hand-assembled preamplifier with versatile input selections and black finish. Features special circuitry for CD input to prevent overloading; aluminum chassis; rear-panel power switch. Inputs for MM and MC phono, tape, AUX, CD player, tuner, and video. FR 10-50,000 Hz  $\pm 3$  dB; MM phono sens 85 mV for 0.5-V output at 1,000 Hz; line-level sens 160 mV ..... \$798

## HITACHI

### HPT120AVSW AM/FM Preamp/Tuner

Quartz digital-synthesized tuner section; 20 AM/FM presets; unified infrared remote control with LCD display; audio inputs for phono, CD, tape; video inputs for TV, VCR, videodisc player; electronic volume and balance controls; 5-band graphic equalizer; video signal enhancer; rosewood end caps ..... \$450

## JADIS BY MADRIGAL

### JP-80 2-Part Tube Preamplifier

2 separate chassis (preamp and power supply). Uses no directly delivered voltages to avoid noise generated by main input voltage. High voltage generated by custom-built oscillator circuit and amp. Inputs for MM phono; tape; AUX;

S/N 46-60 dB; MM phono sens 5 mV for 0.5-V output at 1,000 Hz. 48.5 lb ..... \$7,600

## JVC

### PL10 Precision Control Preamplifier

Features Gm processor; ultra-high-sensitivity head amp. Inputs for MM phono, MC phono, tape, tape 2, AUX, phono 2, tuner. THD 0.002%; MM phono sens 2.5 mV for 0.15 V output (rec out) at 1,000 Hz; MM phono input overload level 300 mV; sens for line-level inputs 150 mV. 18.12" w x 5.69" h x 16.56" d ..... \$1,650

## KENWOOD

### Basic C2 Preamplifier

Preamp with 2-step MM and 3-step MC inputs. Features single NFB-loop phono equalizer amplifier; 2-way tape dubbing with monitoring; source (rec out) tape selector; 2 AUX/video inputs; Kenwood NF-CR tone controls with selectable turnover; Super-coupled volume control for low noise at low volume; 4-way filter system; loudness switch; mono/stereo switch; headphone jack with level control; output on/off switch; power and output LED indicators. FR 1-350,000 Hz  $-0.3$  dB; THD 0.002% phono. 0.001% line; input sens/imp MM 2.5 mV/47 kilohms, line 150 mV/47 kilohms; S/N 110 dB. MM 88 dB; 17.31" w x 3.06" h x 12.63" d; 9.9 lb ..... \$310

### Basic C1 Preamplifier

Features CD/AUX input; MM/MC cartridge selector; advanced single NFB loop phono equalizer amplifier; 2 tape inputs with dubbing and monitoring; infrasonic filter; continuously variable loudness control; Kenwood NF-CR tone controls; LED input indicators; power-on muting relay. FR 1-250,000 Hz  $-0.3$  dB; THD 0.005% phono. 0.004% line; input sens/imp MM 2.5/47 kilohms, line 150 mV/47 kilohms; S/N 108 dB; MM 87 dB; 17.31" w x 3.06" h x 12.88" d; 9.3 lb ..... \$240

## KINERGETICS

### KPA-1 Preamplifier

Designed to eliminate hysteresis distortion; MC phono, MM phono inputs, 2 tape loops; remote power supply; adjustable imp and capacitance for phono inputs; polarity switch. FR 2-500,000 Hz; slew rate >20 V/ $\mu$ sec; gain 60 dB; 20 lb; 19" w x 2.5" h x 16.25" d ..... \$795

## KYOCERA

### C-910 Preamplifier

Control preamp with input and output level controls. Features complete DC configuration; cutless-core power transformer; single-stage push-pull amplification. Inputs for MM phono, MC phono, tape, tape 2, AUX, phono 2, CD player, tuner/AUX 2. FR DC-200,000 Hz  $\pm 3$  dB; max output 2 V at rated input; THD 0.003%; MM phono sens 2.2 mV for 0.5 V output at 1,000 Hz; MM phono input overload level 300 mV; sens for line-level inputs 125 mV; 17" w x 5.75" h x 13" d; 22 lb ..... \$1,200

## LINEAGE

### CP-100 Control Preamplifier

Class-A preamp with all-discrete audio circuitry. Features full-complementary direct-coupled wide-bandwidth design using all FET's; DC servo to eliminate all capacitors in signal path except as required for phono EQ; complementary differential inputs; 2-stage phono EQ; electronic input switching; front-panel phono gain for both MM and MC phonos; rear-panel control with

continuously variable resistive cartridge loading; tone controls for low bass and upper treble; tone in, mute, stereo/mono, and polarity invert switches; gold-plated connectors. Inputs for phono; tuner; CD player; video sound source; AUX; 2 tape monitors for 2-way dubbing. Rated output 3 V rms; max output 15 V. Includes separate power supply to provide 3 switched AC convenience outlets. Matte silver with removable teak pedestal base. Dimensions: 17" w x 12" d x 6.36" h (with base), 17" w x 12" d x 5.25" h (without base) ..... \$1,995

## LINN BY AUDIOPHILE SYSTEMS

### LK1 Remote-Controlled Preamp

Stereo microprocessor preamp with independently adjustable input-level matching; keyboard lockout; all switching and level adjustments electronic on board. Inputs for MM phono; MC phono; tape; tape 2; AUX; tuner. 10.5" w x 3" h x 10.5" d; 9 lb ..... \$845

## LOGAN LABS BY SYMDEX

### PA-10B Preamplifier

Electron tube phono-only preamp with separate power supply. Features symmetrical layout for both chs; muting function for no system crash due to power loss; slow turn-on circuitry to prevent thermal shock to tubes. Input for MM phono, 1010T is required for MC cartridges. FR 1-3,000,000 Hz  $\pm 3$  dB; max output 160 V; THD <0.2%; IMD <0.2%; separate transformer; 19" w x 3.5" h x 7" d ..... \$5,495

**HLE-1010T.** Companion pre-preamplifier for MC cartridges to be used in conjunction with PA-10B ..... \$3,495

## LUXMAN

### C-05 Preamplifier

Duo-Beta/S Class A preamp. Inputs for MM phono, MC phono, tape, tape 2, AUX, phono 2, CD player, tuner. FR 2-100,000 Hz  $\pm 0.5$  dB; max output 18 V; THD 0.005%; 18.12" w x 5.25" h x 17.44" d; 24.3 lb ..... \$2,200

### F-105 Surround Sound System Remote

Full remote-control-system center with surround sound. Provides inputs/outputs for complete system. Integrated amp, EQ, tuner, CD, turntable, 2 tape decks, 2 VCR's, LaserDisc player, and video monitor or TV with video input. Switchable dubbing for audio/video; 25 W/ch rear speaker amp; Dolby Surround sound; time delay surround; includes input for connecting external remote control sensors for A/V remotes. 17.25" w x 2.94" h x 11.88" d; 13.2 lb ..... \$550

**U-100 A/V System Controller.** Same as above without surround sound ..... \$350

## MARK LEVINSON BY MADRIGAL

### ML-7A Preamplifier

Inputs for 5 line sources, monitors 2 tape decks, with choice of 3 plug-in phono sections for virtually any cartridge. All audio circuitry completely discrete and operates in Class-A mode. Fitted with 2 L1 line amps. PLS-154 power supply maintains load regulation of 0.05% with wideband noise output of 18  $\mu$ V; external 5-pin self-locking connector parallels. Camac phono inputs for cartridge loading; 10 or 20 dB of line gain. L1 provides up to 26 dB of gain, with 0.003% THD and 0.002% IMD typical, typical S/N of 100 dB unweighted below 2 V ref. Hand-brushed black anodized finish. ML-7: 2.25" h x 19" w x 10.12" d; PLS-154: 4.36" h x 4" w x 10.62" d; 14 lb. With no phono section ..... \$4,450

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# LUXMAN

# Ultimate Power.



With a worldwide reputation for sonic excellence, the new Luxman Receivers also deliver more power than ever before.

For over 60 years, Luxman audio components have been internationally recognized for their superb sonic quality.

However, the recent introduction of compact discs with wide dynamics and high-accuracy loudspeakers with low impedance

ratings has created a need for receivers with "real" output power.

With the tremendous dynamic power of the new Luxman receivers, our reputation for "Ultimate Fidelity" is likely to change to "Ultimate Power."

# LUXMAN

A Division of Alpine Electronics of America, Inc. (213) 326-8000

CIRCLE NO. 52 ON READER SERVICE CARD

# AMPLIFIERS

With L2 phono module. Gain 38 or 44 dB \$5,400  
 With L3 or L3A. L3 gain 67 dB; L3A gain 55 dB \$6,050

## ML-10A Stereo Preamplifier

Simplified version of L-series circuitry in single circuit board configuration. All audio circuitry completely discrete and operates in Class A. Inputs for 2 line sources, monitors tape deck, phono section for virtually any cartridge. Camac connectors. Line section provides up to 22 dB of gain with typical distortion of 0.004% THD and 0.004% IMD and typical S/N of 95 dB unwt'd below 2 V reference. Phono section offers selectable gain of 42, 53 or 63 dB. Six internal switches and gold-plated loading sockets allow infinite cartridge-loading capability. Typical distortion for phono circuit are 0.014% THD and 0.005% IMD and S/N typically 72 dB. Internal power supply with high-speed push-pull regulator, biased for Class A; load regulation of 0.05%; wideband noise output 23 V; 7 or 17 dB line gain. Hand-brushed black anodized finish. 2.25" h x 19" w x 10.12" d; 8 lbs \$3,325

## McINTOSH

### C-31V A/V Control Center

Audio/video control center with wireless IR remote control. Features McIntosh Electronic Precision Ladder Attenuator; 5-band equalizer; adjustable loudness contour; 9 source inputs; switching of 2 VCR's with two-way dubbing; remote-control expandable allowing remote control in two additional listening areas \$1,895  
**C-34V. A/V control center.** 38 lb \$2,195

### C-30 Stereo Preamplifier

Preamp with inputs for CD, tuner, phono, videodisc, TV, VCR, and AUX. Features two tape monitors with switchable dubbing; two external processor loops; current sensing power outlet activates preamp when component connected to it is turned on; 6 switched, one unswitched outlet; 5-band equalizer; output signal mode selector; variable loudness compensation control; headphone jacks with independent level control. FR 20-20,000 Hz +0, -0.5 dB; max output 10 V; THD 0.007% max from 20-20,000 Hz at 2.5 V rated output; S/N phono 90 dB below 10 mV input; S/N high level 100 dB below rated output; sensitivity: phono 2 mV, high level 200 mV, for 2.5 V rated output. Max input signal: phono 100 mV, high level 10 V. Power requirements 120 V, 50/60 Hz, 25 watts. 16" w x 5.44" h x 13" d; 18 lb \$1,649

## MEITNER AUDIO BY MUSEATEX

### PA-6 Remote-Controlled Preamplifier

Wireless remote control of volume, balance, polarity, and source switching; no audio signal passes through remote circuits; FET switches; 2 interchangeable phono modules (for MM or MC cartridges); adjustable sens of CD, tuner, and phono inputs; DC coupled without capacitors in signal path; charge-biased of RIAA timing capacitors; floating-charge-current external power supply; Class A design; gold-plated Tiffany connectors. Typical phono input overload 30 dB; FR phono input  $\pm 0.2$  dB with 1% L/R match; FR 1-100,000 Hz -3 dB; THD <0.01% (-80 dB) from 20-20,000 Hz at +10 dB output; IMD <0.01%; output level 8 V max at rated THD into 600 ohms \$2,195  
**Without phono module** \$1,945  
**With wired remote** \$1,995  
**Wired remote, no phono module** \$1,745

## MERIDIAN BY MADRIGAL

### 201 Control Unit

Multi-room remote capability and ability to play 2 different sources simultaneously in any combination of 14 remote locations. Inputs for MM phono; MC phono; tape; tape 2; AUX; CD player; tuner \$975

## NAD

### 1300 Monitor Series Preamplifier

Features high-resolution phono preamp; bass EQ; null switch to amplify L-R difference signal; low-noise MC pre-preamp; external processor loop; semiparametric tone controls (bass center switchable to 50, 120, or 250 Hz, treble to 3,000, 6,000, 12,000 Hz) with 1.5-octave bandwidth, 12-dB max boost or cut; 2-way tape dubbing; infrasonic filter. Max output 12 V; RIAA response accuracy  $\pm 0.3$  dB \$498

### 1240 7-Input Preamplifier

Features discrete transistors in phono preamp; inputs for MM or MC phono, CD player, tuner, tape, video, AUX 1, AUX 2; treble boost or cut max 7 dB at 10,000 Hz, bass boost or cut max 10 dB at 50 Hz; switchable infrasonic filter down 3 dB at 12 Hz at 12 dB/octave; high-current (15 V) headphone amp; bass EQ; 2 outputs; cartridge capacitance loading \$298



Nakamichi CA-7A

## NAKAMICHI

### CA-7A Control Amplifier

Preamp with full-system wireless remote control of Nakamichi series 7 or 5 components. Features total isolation of digital and analog sections; isolated ground technology; acoustical fine-tuning system; motor-driven volume control; inputs for MM and MC phono, 2 tape, 2 AUX, tuner, CD; 2 outputs; multi-room remote control with RS-7 remote sensor. Input sens/imp MC (switchable) 40-80-160  $\mu$ V/100 ohms, MM 2.5 mV/50 kilohms, line 150 mV/12.5 kilohms; S/N >94 dB; THD <0.002%; FR 1-100,000 Hz  $\pm 3$  dB. 17.12" w x 3.25" h x 12.19" d; 15 lb, 4 oz \$2,395

### CA-5 Control Amplifier

Control amp with min controls. Features 2 power outputs (2 amps); 2 tape inputs; hand-selected components. Inputs for MM phono, MC phono, tape, tape 2, AUX, CD player, tuner. FR 1.5-100,000 Hz +0, -3 dB; max output 16 V; THD <0.002%; MM phono sens 0.6 mV for 0.5-V output at 1,000 Hz; MM phono input overload level 170 mV, sens for line-level inputs 50 mV; 17.12" w x 2.5" h x 11.36" d \$750

## NIKKO AUDIO

### Beta 50II Preamplifier

Dual-input signal-selector preamp with 3 sound-processor input/output terminals \$420  
**Beta 30.** Same as above except 1 sound-processor input/output \$280

## ONKYO

### Grand Integra P-308 Preamplifier

Dual-mono preamp with electrically separate left and right circuitry and 2 sets of preamp out-

puts: output #1 is from precision-paired master volume control using Alps potentiometers, output #2 includes fine balance adjustment via stepped left and right precision resistor attenuators. Features passive tone control system; dual record output selectors; individual stereo/mono switching for output 1 and 2; contra bass equalization. Wood side panels included. Inputs for MM phono; MC phono; tape; tape 2; tape 3; AUX, AUX 2; tuner; CD player and DAT with input common-mode noise filters. FR 0.8-170,000 Hz  $\pm 3$  dB; phono S/N 92 dB; THD 0.0005%. 18.25" w x 4" h x 15.88" d \$650

### Integra P-304 Preamplifier

Dual-mono preamp with electrically separate left and right circuitry. Features direct tone controls with passive EQ; dual record output selectors; adjustable phono gain and load imp. Inputs for MM phono; MC phono; tape; tape 2; tape 3; AUX, AUX 2; tuner; CD player. FR 0.8-170,000 Hz  $\pm 3$  dB; phono S/N 85 dB; THD 0.005%. 17.75" w x 4" h x 15.88" d; 16 lb \$480

## PARASOUND

### PR200 Preamplifier

Discrete phono circuitry; variable loudness; bass EQ; signal relay to mute turn-on transients; high voltage rails for high overload capability. Inputs for MM phono, tape, tape 2, CD player/video, tuner. Max output 12.5 V; MM phono sens 2 mV for 0.5-V output at 1,000 Hz; sens for line-level inputs 150 mV; 17.25" w x 2.75" h x 8" d; 8 lb \$265

## PERREAUX

### SM3 Preamplifier

High-voltage MOSFET design; inputs for MM/MC cartridges; tuner, tape, CD. FR 20-50,000 Hz  $\pm 0.25$  dB; input sens MC 175  $\mu$ V rms at 1 kHz/47 kilohms, 100 pF, MM 1.8 mV rms; AUX/CD 350 mV rms/20 kilohms, all other inputs 100mV rms/25 kilohms; THD/IMD phono 0.005%, all other inputs 0.008%; channel sep 70 dB, 20-20,000 Hz, all inputs. 19" w x 1.75" h x 13.5" d; 12 lb \$1,795  
**SA3 Preamplifier.** Similar to above \$1,195

### SX1 Dual-Channel Preamplifier

Class-A operation; FET tone control section. FR 20-50,000 Hz  $\pm 0.025$ %; input sens MC 250  $\mu$ V rms, MM 2.5 mV, AUX/CD 285 mV rms; THD/IMD phono inputs 0.005%, all other inputs 0.009%. 17" w x 2.25" h x 13.5" d \$795

## PIONEER

### C-90 Audio/Video Preamplifier

Features wireless remote control; motorized rotary volume control; 5 audio inputs; 3 video input/outputs, 2 inputs only; 3 power supplies; copper-plated chassis; recording selector/tape-dubbing switch; infrasonic and high/low filters; loudness, muting, and tone controls; video enhancer (detail, sharpness, noise cancel). 8.88" h x 21.69" w x 18.88" d \$900

## PROTON

### 1100 Preamplifier

Stereo preamp with separate MC phono input. Features built-in headphone amp; bass EQ switch; listen/record selector; high-level pre-out 18 V. THD 0.003% (20-20,000 Hz, 2 V output); IMD 0.003% (2 V output); FR 20-20,000  $\pm 2$  dB; high-level input resistance 30 kilohms; line-level input sens 150  $\mu$ V, 2.5  $\mu$ V MM phono, 0.2  $\mu$ V high-level MC, 0.1  $\mu$ V low-level MC; S/N A-wtd 105 dB line level, 94 dB MM phono, 79 dB MC phono; bass control at 100 Hz  $\pm 10$  dB; treble

# AMPLIFIERS

control at 10,000 Hz  $\pm$  10 dB; bass EQ at 75 Hz +3 dB; infrasonic filter at 20 Hz -3 dB, slope -12 dB/oct; phono input capacitance selectable between 100, 200, 320 pF; phono overload MM 290  $\mu$ V (1,000 Hz, 0.1% THD); MM, phono THD 0.006% at 4.5 V output, 0.01% MC phono; RIAA response  $\pm$  0.2 dB MM phono,  $\pm$  0.3 dB MC phono. 16.5" w x 2.5" h x 13" d ..... \$249

## QUAD

### Quad 44 Control Unit

Preamp/control system with lift/step bass control to boost low-frequency output of small speakers, attenuate bass output when operating as filter to give 5-dB drop at 2 frequencies;  $\pm$  2-dB tilt control that shifts tonal balance; variable filter slope control at 5,000, 7,000, 10,000 Hz; all tone controls have defeat positions; balance/mono switch; radio, AUX, disc, tape 1, tape 2 input selectors with optional mic or MC phono inputs available. Input sens/imp 1 mV at 35 mV in/47 kilohms phono, 100 mV at 5 V in/39 kilohms tape, 1 megohm radio and AUX; FR  $\pm$  0.5 dB 30-20,000 Hz phono RIAA, 30-20,000 Hz -0. +1 dB; high-level distortion 0.02%; residual noise -104 dB A-wtd; 321 mm w x 207 d x 103 h ..... \$995

## RCA

### MPT200 Audio/Video Preamp Tuner

Dimensia A/V control center with unified remote control and on-screen status indication when used with Dimensia monitor lets you select inputs from up to 13 Dimensia components and 5 nonsystem components. Features automatic input selection; remote control volume, mute, direct access and station scan, and off/on; SystemLink cabling; simultaneous recording and playback; auto status indication; auto switching; quartz-PLL synthesis tuning; 20-station random tuning memory; preset channel scanning; FM search tuning; electronic volume control; signal-processing loop; preset turn-on volume; fluorescent display; muting; bass, treble, and balance controls; 4 AC convenience outlets. Tuner section: FM sens 12.2 dB; S/N 73 dB (mono); image rejection 45 dB; sel 60 dB; sep 40 dB at 1,000 Hz; capture ratio 1.5 dB; FM FR 30-15,000 Hz, 14.63" wide x 4.13" high x 13.38" deep ..... \$349

## REVON

### B285 Preamp/Tuner

AM/FM stereo preamp/tuner with two microprocessors for control of input sensitivities, output levels, and operating functions. Features alphanumeric multi-mode LCD display; 29 AM or FM presets; level and reception mode (mono/stereo, blend) separately programmable for each preset station; programmable volume limit; -20 dB button; infrasonic filter; loudness contour; programmable output levels for A and B speaker pairs; comprehensive speaker-protection circuits; serial data bus for external control devices; wireless infrared remote control (transmitter optional). Inputs for phono, tape, CD player, tape 2. FM section: alt-ch sel 96 dB; adj-ch sel 16 dB; 50-dB quieting sens, mono 1.6  $\mu$ V (15.2 dBf), stereo 19  $\mu$ V (36.8 dBf); max S/N, A-wtd, mono 84 dB, stereo 80 dB; THD mono 0.15%, stereo 0.3%; sep 43 dB at 1,000 Hz; capture ratio 2 dB. AM section: FR 120-3,000 Hz  $\pm$  6 dB; sens 36  $\mu$ V, 17.75" w x 6" h x 13.06" d; 33 lb ..... \$2,300

## ROTEL

### RC870BX Stereo Preamplifier

Flat preamp (no tone controls) with inputs for

MM phono, MC phono, tape 2. FR 4-100,000 Hz +0.5 dB, -0.3 dB; THD 0.004%; IMD 0.004%; MM phono input overload level 180 mV, MM/MC S/N 80/70 dB ..... \$399  
**RC850.** Similar to above but has 2 tone controls ..... \$249

## SAE

### XIP X-Series Preamplifier

Computer direct-line fully discrete preamp. Features separate power supply, loading for MM and MC phono inputs, rack mountable. Inputs for MM phono, MC phono, tape, AUX. FR 20-20,000 Hz  $\pm$  0.1 dB; max output 17 V; THD 0.01%; IMD 0.01%; MM phono sens 0.07 mV for 0.5 V output at 1,000 Hz; 19" w x 1.75" h x 12.5" d; 14 lb ..... \$1,200

### P102 Preamplifier

Computer direct-line preamp with 3 digital tone memories, electronic volume and balance controls. Features sequential audio muting to provide cross-fade between input sources; alphanumeric displays of all functions. Inputs for MM phono, MC phono, tape, tape 2, AUX, phono 2, CD player, tuner, external processor. FR 20-20,000 Hz  $\pm$  0.5 dB; max output 7.5 V; THD 0.025%; IMD 0.025% IHF; MM phono sens 160 mV for 0.5-V output at 1,000 Hz; MM phono input overload level 240 mV. 19" w x 3.5" h x 14" d; 17 lb ..... \$399

## SANSUI

### C-2301 Preamplifier

Vintage series preamp with balanced and unbalanced 75-ohm imp outputs. Inputs for MM phono, MC phono, tape, tape 2, phono, CD player, tuner. FR 5-300,000 Hz 20.2 dB; MM phono sens 2 mV for 0.5-V output at 1,000 Hz; sens for line-level inputs 150 mV/47,000 ..... \$2,400

### C-2102 Stereo Control Center

Vintage series features built-in 2-band parametric EQ; 2 preamp outputs; headphone output; LED indicators for EQ, infrasonic, loudness, and muting. Inputs for MM phono; MC phono; tape; tape 2; phono 2; CD player; tuner video; PCM line 1 & 2. FR 0-300,000 Hz  $\pm$  3 dB; S/N 88 dB; MM phono sens 2.5 mV for 0.5-V output at 1,000 Hz; sens for line-level inputs 150 mV. 16.94" w x 4.81" h x 12.88" d; 13.2 lb ..... \$700

## SONY

### TA-E77ESD Preamplifier

Features digital inputs for CD players, PCM processors, or DAT recorders; universal programmable remote control (for power, volume, source switching, muting, source direct, adaptor on/off); video monitor out; S-Video jacks for separate Y and C signals; chassis with same composition as marble; 75-VA power transformer; 11,400  $\mu$ F capacitor in amp stage; separate audio and video signal paths; gold-plated contacts; inputs for phono, tuner, AUX, DAT, CD, tape 1 and 2, digital 1 and 2, video 1, 2, and 3; signal-processor terminals; 3-type cartridge selector ..... \$1,100

## SOUNDCRAFTSMEN

### DX 4200 Preamplifier/Equalizer

Combination preamp/equalizer with digital audio and video inputs. Features in/out balancing to 0.1 dB; phono preamp has variable cartridge loading (50-800 pF, 100/47,000 ohm) adjustable  $\pm$  20 dB gain; MC variable reluctance or MM cartridge inputs; 3-way tape dubbing; 2 external signal-processor loops; conventional line outputs plus separate autobridge line outputs for

auto mono bridging of most amps; EQ S/N 114 dB; passive-coil filters with 15-dB boost or cut for each octave; differential/comparator circuitry for true 0.1 dB unity-gain EQ balancing; 19" rack-mount front panel; includes frequency spectrum analyzer test record and instant reset Computone charts ..... \$699  
**DX4000.** Same as DX4200 without graphic equalizer but with 2 external signal-processor loops; 3.5" w x 19" h x 11" d ..... \$439

### Pro Control Four-Control Center/Preamplifier

Digital C-MOS MOSTROL. Features 5 tape monitors for audio or video, CD, tuner and phono inputs. 2 signal-processor loops, infrasonic filter, and direct mode to bypass all processing. Headphone jack, auto-bridge circuit triples amplifier output. FR 20-20,000 Hz  $\pm$  0.1 dB; THD < 0.005%; S/N; phono 97 dB, high-level 116 dB. Rack-mount front panel. 19" w x 3.5" h x 10.5" d ..... \$699

## SUMO

### Athena Preamplifier

With MC head amp; discrete circuitry utilizing 1% metal film resistors and metalized polypropylene capacitors; gold-plated input/output jacks; separate record/mode select functions; linear-phase-matrix infrasonic filter; high-level bypass; laser-trimmed stepped volume control. FR 20-20,000 Hz  $\pm$  0.1 dB; crosstalk 80 dB; THD/IM < 0.01% below 10 V output ..... \$649

## TANBERG

### TCA 3018 Control Preamplifier

Preamplifier with zero-negative-feedback design. All high-level inputs have overload rating of 20 V; toroidal transformer with separate winding for each ch; separate power supply for each ch; selected metal-film resistors and polypropylene capacitors; no tone controls; separate record and program selection. 17.13" w x 3.25" h x 13.75" d; 12.5 lb ..... \$2,195

## TECHNICS

### SU-A200 Class AA Preamplifier

Class AA circuitry to separate voltage amplification from current amplification for ideal voltage/current phase relationship. Voltage amp operates in Class A driving Class AA bridge circuit which provides ideal load characteristics for max linearity and isolation from imp fluctuations. Class AA EQ circuit isolates voltage amp from load-imp fluctuations. Active Servo power supply provides improved regulation and contributes to low-noise performance. Switches video signals from A/V inputs as well as audio signals from 8 inputs with video output for monitor. Inputs for MM phono; MC phono; tape; tape 2/VCR; AUX; phono 2; CD player; tuner; video (A/V 1). FR 0.5-180,000 Hz +0, -3 dB. 17" w x 5" h x 14.25" d; 20 lb ..... \$1,150

### SU-A6MK2 Stereo DC Preamplifier

Features shelving tone controls, selectable turn-over frequencies, infrasonic filter, audio muting. Inputs for MM phono, MC phono, tape 3, tape 2, AUX 2, phono 2, CD player, tuner, computer, VCR, DAT recorder, TV. Max output 8 V; 16.94" w x 3.88" h x 14.19" D ..... \$600

## THRESHOLD

### Model FET ten/hl Control Preamplifier

Dual-ch, high-level noninverting FET preamp dedicated specifically to line-level signal applications. Accepts 5 high-level sources and 2 tape decks with full flexibility in record/monitor signal routing. External power supply in separate

## AMPLIFIERS

chassis. Input J-FET's operated in parallel, doubling transconductance and lowering noise and distortion. Secondary gain stages use cascoded MOSFET's to suppress voltage fluctuations for low distortion even when driving loads of less than 500 ohms. Circuit boards are military-grade glass-epoxy with gold-over-nickel-over-copper-plated paths. Precision metal film and wirewound resistors are used throughout. Controls for program source selector; record signal routing; monitor signal selection; mode; balance; audio level. FR 1.5-125,000 Hz -3 dB; distortion 0.01% at 3 V rms from 20-20,000 Hz into 1,000-ohm load; crosstalk no greater than -75 dB at 20,000 Hz with 1,000-ohm source; noise no greater than -110 dBA referenced to 1 V input; input imp 25,000 ohms, nominal; output imp 100 ohms. 1.75" h x 19" w x 6.5" d ..... \$1,800

### Model FET nine Preamplifier

Dual-ch noninverting FET preamp. Accepts inputs from high- and low-level MC, MM or other velocity-output characteristic phono cartridge, 3 high-level sources, and 2 tape decks with full flexibility in record/monitor signal routing. Cartridge section uses single gain-variable preamplification stage for MC and MM cartridges. Cartridge loading selected by internal DIP switch assemblies. Signal-path topologies and power-regulation circuits derived from FET ten research. External power supply in separate chassis. Circuit boards are military-grade glass-epoxy with gold-over-nickel-over-copper-plated paths. Gold-plated connectors with Teflon insulation. Precision metal film and wirewound resistors are used throughout. FR 1.5 Hz and 125,000 Hz at -3 dB down points; distortion 0.01% at 3 V rms from 20-20,000 Hz into 10,000-ohm load; high-level input imp 25,000 ohms, nominal; output imp 100 ohms. Controls for program source selector; record signal routing; monitor signal selection; ch balance; audio level. 1.75" h x 19" w x 6.5" d ..... \$1,600

### WINGATE AUDIO

**1000 Remote-Controlled Audio/Video Preamp**  
Switches 3 video sources; separate audio and video record-out selectors; selectable phase inversion; ultra-low-noise MC phono input; zero-feedback; all FET's and pure Class-A circuitry ..... \$2,600  
Without remote control ..... \$2,200

### YAMAHA

#### CX-10000 Digital Preamplifier

Limited Centennial Edition digital control amplifier with built-in digital sound field processor and D/A converter. Features hi-bit quadruple oversampling (18-bit quantization at sampling frequency of 176.4 kHz); hi-bit precision D/A conversion; digital-direct connection; digital input/output port; digital parametric equalizer; 16 memory programs combining digital sound field ambience information and/or digital parametric equalizer; wireless remote control. Titanium grey with high luster walnut end panels; 65 lb ..... \$7,500

#### C-85B Preamplifier

Features Zero Distortion Rule (ZDR); DC-servo; current noise suppression; extended roll-off equalizer; continuously variable loudness control; record output selector; 2-band parametric equalizer (adjustable center frequencies, bandwidth, amplitude); inverting preamp output; gold-plated input terminals and headphone jack. Black; 16 lb ..... \$799



Yamaha CX-10000

#### C-65B Preamplifier

Features Zero Distortion Rule circuitry; direct-current-servo; current noise suppression; extended roll-off equalizer; continuously variable loudness control; record out selector; bass and treble controls with continuously variable turn-over frequencies; gold-plated input terminals and headphone jack. Black; 16 lb ..... \$579

## INTEGRATED AMPLIFIERS

### ACCUPHASE BY MADRIGAL

**E-303X 150-W/ch Integrated Amp**  
Power meters; 3-position loudness compensation; inputs for MM phono, MC phono, tuner, tape, tape 2, AUX, phono 2, CD player, line 2. 150 W/ch into 8 ohms; 250 W/ch into 2 ohms; MM phono sens 0.22 mV for 0.5 V output at 1,000 Hz; sens for line-level inputs 13.9 mV; 45.2 lb; 17.5" w x 6.4" h x 14.6" d ..... \$3,300

#### E-205 80-W/ch Integrated Amp

Parallel push-pull output stage driven by MOSFET driver stage; large power supply; direct-coupled circuitry with DC servo; high-gain equalizer; MC-input imp selector; 9 inputs; turn-over selector switch; tape monitor and dubbing switches; infrasonic filter; outputs for 2 pairs of speakers; speaker selection switch; mono switch. Inputs for MM phono; MC phono; tape; tape 2; CD player; tuner; 3 line-level inputs. Champagne-gold or black-anodized finish. 80 W/ch into 8 ohms, 100 W/ch into 4 ohms. 17.5" w x 5.75" h x 14.56" d; 30.8 lb ..... \$1,600

### ACOUSTIC RESEARCH

#### AR A-06 Integrated Amplifier

Features infrared remote control of input functions and volume via cable link to AR T-04 tuner. Pre and power amps can be split. Inputs for MM phono; MC phono; tape; tape 2; AUX; CD player; tuner; video. 60 W/ch from 20-20,000 Hz with no >0.03% THD into 8 ohms; 90 W into 4 ohms; 200-ms dynamic power 90 W; dynamic headroom 2 dB; slew rate 40 V/ $\mu$ s; FR 13-50,000 Hz  $\pm$  3 dB; THD 0.03%; S/N 90 dB; IMD 0.03%; 40-ampere current capability. 17" w x 3.31" h x 13" d ..... \$440

### A/D/S/

#### Atelier A2 80-W/ch Amplifier

Stereo integrated amp with separate input selectors for recording and listening. Features 2 tape monitor loops; 2 separate phono preamps, for MM and MC; preamp output and main amp input jacks; fast-response linear LED displays; clipping indicators; power output 100 W/ch into 4 ohms, 80 W/ch into 8 ohms, 70 W/ch into 2 ohms. 17.5" w x 2.8" h x 14.8" d; 20 lb ..... \$699

### AKAI

#### AM-A402-B 100-W/ch Integrated Amp

DC-servo circuitry for increased dynamic range; electronic circuit protection for system and speakers; 5-band EQ; processing loop; output level meter; loudness circuit. Inputs for CD player; tuner; MM phono; tape; tape 2; AUX. 100 W/ch into 8 ohms; EQ center frequencies at 63, 250, 1,000, 4,000, 16,000 Hz with 10-dB maximum boost/cut. 17.3" wide x 3.9" high x 9.8" deep; 16.1 lb ..... \$300

### AUDIO DESIGN ASSOCIATES

#### MRA-808 Multiroom Amp Mainframe

Contains 8 integrated amplifier modules. Each module features digitally controlled volume, bass and treble. 40 W/ch continuous from 20-20,000 Hz into 8 ohms with no >0.03% THD; 60 W/ch into 4 ohms; slew rate 10 V/ $\mu$ sec; IMD 0.02%; 50 lb ..... \$9,927

#### DCA-40 Digital Control Amplifier

Integrated amp with inputs for MM phono, tape, tape 2, AUX, CD player, tuner. Features electronic digital volume control; separate phono preamp. 40 continuous average W/ch from 20-20,000 Hz with no >0.06% THD into 8 ohms; 50 W into 4 ohms; FR 20-20,000 Hz  $\pm$  3 dB; THD 0.06%. 6 lb; 19" w x 3.5" h x 12" d ..... \$950

### CAMBRIDGE BY CELESTION

#### P55 Integer Integrated Amplifier

Designed for high current output, high listening levels, and difficult loads; 5 inputs (including MM and MC inputs); passive tone controls (bass turnover at 50 Hz +5, -7 dB, treble at 15,000 Hz +5, -8 dB). 70 W/ch continuous 1,000-Hz sine wave into 8 ohms; THD <0.05% up to rated power ..... \$648

#### P40 Integrated Amplifier

Designed for high peak output current for difficult loads; low-regulation toroidal transformer; simple signal path; controls for volume, input, balance, tape monitor, mono; MC input option; black finish. 40 W/ch continuous 1,000-Hz sine wave into 8 ohms; THD <0.05% up to rated power ..... \$498

### DENON

#### PMA-900V Integrated Amplifier

Features 120 W/ch; pure-current power; high-speed dual non-NFB amp; A/V switching; front-panel video input; MM/MC input; external-processor loop; muting switch. Side panels standard ..... \$700

#### AVC-500II A/V Integrated Amplifier

Audio/video control center with 25-W/ch amp, surround processor, Dolby surround sound, 3 sets of audio/video inputs/outputs with full switching capability, master volume, simulated stereo, full video dubbing with enhancer circuit, auto copy, external audio source input; 5-band graphic EQ; headphone jack ..... \$375

#### PMA-300V Integrated Amplifier

Features 55 W/ch; 2 audio, 2 video inputs; MM and MC inputs ..... \$250

### DUAL BY ORTOFON

#### PAS060 Integrated Amplifier

60 watt/ch integrated amplifier with high current output capability and MC phono input. Black ..... \$380

# AMPLIFIERS

## HARMAN KARDON

### PM665 Vxi 150-W/ch Integrated Amplifier

Inputs for A/V, AUX, tuner, CD player, phono (MM or MC); VCR/tape monitor switches 2 decks and source; drives 2 pairs of speakers; selectable turnover frequencies (bass 200 or 400 Hz, treble 2,000 or 6,000); tone defeat; mono switch; capacitance trim (normal, +100, 200, 300 pF); phase-correct loudness; high and low filters; 2-way tape dubbing; lit mute button (20 dB down); preamp out and main in jacks; active/passive phono section; 2 power transformers; 8 150-W power transistors. 150 W/ch into 8 ohms; dynamic power 500 W; current capability  $\pm 80$  amps \$925

**PM655 Vxi.** Similar to above except 90 W/ch; current capability  $\pm 45$  amps for 260 W on peaks \$625

**PM645 Vxi.** Similar to above except 60 W/ch; current capability  $\pm 30$  amps; external processor loop instead of preamp out/main in jacks \$425

## HITACHI

### HA-007SW 65-W/ch Integrated Amp

Drives 2 pairs of speakers; inputs for 2 video sources, phono, CD, tuner, videodisc player, tape; bass and treble controls; balance control; loudness control; infrasonic filter; Pure Drive Circuit; MOSFET's; rosewood end caps. 65 W/ch into 8 ohms; damping factor 60 at 1,000 Hz; 19 lb \$400

## JVC

### AX90VBK Remote-Controlled Integrated Amp

Integrated amp with unified wireless remote control to operate amp plus selected JVC Compu-Link Components. Features dynamic Super-A power amp; Gm selector and driver; electronic 7-band S.E.A. graphic EQ with 10 preset memories; 2-way volume adjustment; 3 video inputs with sound selector and acoustic expander; high-gain phono EQ; 2-amp construction; low-imp direct-power supply; LCD serves as EQ setting indicator and real-time spectrum analyzer. Inputs for MM phono; MC phono; tape 1; tape 2; AUX; CD player; tuner; video 1; video 2; VCR. 120 continuous average W/ch from 20-20,000 Hz with no  $>0.007\%$  THD into 8 ohms; FR 5-100,000 Hz  $\pm 3$  dB; THD 0.003%; S/N 100 dB; IMD 0.007%. 17.19" w x 5" h x 15.75" d; 22 lb \$600

### AX70VBK Integrated Amplifier

Integrated amp with equalized recording and dubbing from tape 1 to tape 2. Features dynamic Super-A power amp; Gm selector and driver; computer-controlled 7-band S.E.A. graphic EQ with 10 preset memories; high-gain phono EQ; 2-amp construction; low-imp direct-power supply; LCD serves as EQ setting indicator and real-time spectrum analyzer. Inputs for MM phono; MC phono; tape 1; tape 2; AUX; CD player; tuner. 70 continuous average W/ch from 20-20,000 Hz with no  $>0.007\%$  THD into 8 ohms; FR 5-100,000 Hz  $\pm 3$  dB; THD 0.002%; S/N 100 dB; IMD 0.007%. 17.19" w x 4.62" h x 13.81" d; 17.2 lb \$400

## KENWOOD

### KA-3300D Integrated Amplifier

Basic series digital integrated amplifier with dual built-in 16-bit D/A converters. Features optical interface with DP-3300 CD player; VIG-DLD (Voltage Interface Gate with Dynamic Linear Drive) power amplifier; 4x oversampling digital filters; 7-pole Butterworth FDNR analog low-pass filters; 3 sampling frequencies

(48/44.1/32 kHz); coaxial digital input; 3 tape inputs; dual rec-out selector; 2-way dubbing; digital-direct and line-straight switches; dual MM/MC phono equalizer amplifiers; Kenwood NF-CR tone controls with selectable turnover; high-rigidity chassis; audio insulator feet; Sigma Drive Type B; variable loudness; infrasonic filter; mono/stereo switch; volume control with dB settings; gold-plated input jacks. 150 W/ch min rms into 8 ohms from 20-20,000 Hz with no  $>0.004\%$  THD; S/N 110 dB (line), 87 dB (MM phono) \$1,199

### KA-880D Integrated Amplifier

Basic series integrated amplifier with VIG-DLD power amplifier. Features low-impedance drive capability; independent CD input; CD-direct and line-straight switches; 3 tape inputs; dual rec-out selector; 2-way dubbing with monitor switch; MM/MC cartridge selector with NFB loop equalizer amplifier; Kenwood NF-CR bass and treble controls; Sigma Drive Type B; -30 dB muting; loudness switch; infrasonic filter; mono/stereo switch; 2 speaker systems operation. 100 W/ch min rms into 8 ohms from 20-20,000 Hz with no  $>0.008\%$  THD; S/N 108 dB (line), 86 dB (MM phono) \$410

## KYOCERA

### A-910 150-W/ch Integrated Amplifier

Ceramic base/chassis; cutless-core power transformer; DC configuration with DC servo control; fine-ceramic linear modularized phono stages. Inputs for MM phono, MC phono, tape, tape 2, AUX, phono 2, CD player, tuner, video. FR 10-100,000 Hz  $\pm 1.5$  dB; max output 0.25 V at rated sens; S/N 96 dB; MM phono sens 2.2 mV for 0.5 V output at 1,000 Hz; sens for line-level inputs 250 mV; 150 continuous average W/ch from 20-20,000 Hz with no  $>0.02\%$  THD into 8 ohms; dynamic headroom 1.2 dB; slew rate 90 V/ $\mu$ s; 200 W/ch into 4 ohms with 0.05% THD; damping factor 150 (1 kHz); S/N 78 dB. 17" w x 5.75" h x 16.5" d \$1,500

## LUXMAN

### LV-109 Digital-Direct Integrated Amplifier

Integrated amplifier with built-in D/A converter. Features digital interaction with Luxman D-109 CD player; 2 digital-direct inputs; line straight switch; front panel video input jack; signal-processor switch; rec-out dubbing selectors; sampling frequency indicator; tape/video monitor selector; mono/stereo switch; -30 dB attenuator switch; bass/treble controls. 150 W/ch; THD/IMD  $<0.09\%$ ; FR 5-200,000 Hz -3 dB; S/N (line straight) CD/line, tape  $>110$  dB; 17.25" w x 6.56" h x 18.13" d; 44 lb \$1,500

### LV-105U Integrated Amplifier

Features BRID (hybrid) and STAR circuitry; Duo-Beta; voltage-driven amplification; tape and video dubbing; front-panel inputs (A/V 2, audio-video); rec-out selector; video amp and switching capability. Inputs for MM phono; MC phono; tape; tape 2; A/V; A/V 2; CD player; tuner. 80 continuous average W/ch from 20-20,000 Hz into 8 ohms with no  $>0.25\%$  THD; 200-ms dynamic power 200 W at 4 ohms; FR (audio high-level inputs) 3.5-300,000 Hz  $\pm 3$  dB, 20-20,000 Hz  $\pm 0.2$  dB phono, 10-6 MHz video  $\pm 1$  dB; S/N 90 dB (MM), 70 dB (MC), 96 dB (tuner, tape, CD, video audio); IMD 0.03%. 17.25" w x 5.19" h x 13.88" d; 25.3 lb \$900

### LV-103 Integrated Amplifier

Features BRID (hybrid) design circuitry; STAR circuitry; Duo-Beta; voltage-driven amplification; tape dubbing; front panel inputs (A/V

AUX); rec out selector. Inputs for MM phono; MC phono; tape; tape 2; A/V AUX; CD player; tuner. 50 continuous average W/ch from 20-20,000 Hz into 8 ohms with no  $>0.3\%$  THD; 200-ms dynamic power 160 W at 4 ohms; FR 1-150,000 Hz  $\pm 3$  dB high-level inputs. 20-20,000 Hz  $\pm 0.3$  dB phono RIAA; THD 0.3%; S/N  $>105$  dB; IMD 0.01%. 17.25" w x 5.89" h x 13.62" d; 22.5 lb \$650

### LV-100 Integrated Amplifier

Features STAR circuitry; Duo-Beta; voltage-driven amplification; CD straight; tape dubbing; infrasonic filter; stereo headphone jack. Inputs for MM phono; tape; tape 2; AUX; CD player; tuner. 35 continuous average W/ch from 20-20,000 Hz into 8 ohms with no  $>0.05\%$  THD; 200-ms dynamic power 80 W at 4 ohms; FR 10-80,000 Hz  $\pm 3$  dB high-level inputs. 20-20,000 Hz phono RIAA; THD  $<0.05\%$ ; S/N  $>96$  dB; IMD 0.015%. 17.25" w x 5.31" h x 10.94" d; 13.2 lb \$300

## MARANTZ

### PM-94G Integrated Amplifier

140 W/ch integrated amp features Quarter-A design for Class-A operation at normal listening levels; AVSS (automatic voltage supply shift) for increased dynamic headroom; matched complementary MOSFET output devices in triple push-pull circuit; CD/phono direct switch; tone defeat switch; toroidal power transformer; ceramic damped capacitors; copper-plated chassis; separate monitor/dubbing selectors for 2 tape decks plus VCR; built-in MC step-up transformer; switches for mono mode, infrasonic filter, muting, speakers on/off. 140 W/ch into 8 ohms from 20-20,000 Hz with no  $>0.01\%$  THD. Rose-gold with rosewood side panels \$3,000

**PM-94BL.** As above with black finish \$2,800

### PM-74D Integrated Amplifier

100 W/ch integrated amp features Quarter-A design for Class-A operation at normal listening levels; AVSS (automatic voltage supply shift) for increased dynamic headroom; CD/phono direct switch; tone defeat switch; ceramic damped capacitors; copper-plated chassis; separate monitor/dubbing selectors for 2 tape decks; switches for mono mode, infrasonic filter, muting, speakers on/off. 100 W/ch into 8 ohms from 20-20,000 Hz with no  $>0.03\%$  THD. Black \$880

## McINTOSH

### MA-6200 Integrated Amplifier

Power output 100 W/ch into 4 ohms, 75 W/ch into 8 ohms. 42 lb \$1,795

## MISSION

### Cyrus II 60-W/ch Integrated Amp

Integrated amp with optional external power supply to double power output. Inputs for MM phono; MC phono; tape; AUX; CD player. 60 continuous average W/ch from 20-20,000 Hz with no  $>0.004\%$  THD into 8 ohms; 60 amperes peak-to-peak swings; FR 20-20,000 Hz  $\pm 0.2$  dB; THD 0.004%; S/N 83 dB; IMD 0.005%; MM phono sens 0.31 mV for 1-W output; sens for line-level inputs 50 mV for 1-W output; dynamic headroom 1.4 dB; slew rate 150 V/ $\mu$ sec (input filter bypassed); 11 lb; 8.5" w x 3" h x 13.5" d \$449

## NAD

### 3300 Monitor Series Integrated Amp

Power-Envelope circuitry; bass EQ; Close Tracking Soft Clipping; semiparametric tone controls;

# AMPLIFIERS

inputs for MM phono, MC phono, tape, tape 2, AUX, CD player, tuner, video; speaker-imp selector. 75 W/ch into 8 ohms ..... \$598  
**3240PE.** Similar to above except 40 W/ch; dynamic headroom +6 dB ..... \$378

## NEC

### A-1300E Integrated Amplifier

Features unified remote control with LED read-out that can operate other NEC audio and video components; Dolby and matrix surround-sound processors. Inputs for MM phono, tape, AUX, CD player, tuner, video and TV sound sources. 50 continuous average W/ch from 20-20,000 Hz into 4 ohms with no >0.05% THD; dynamic headroom 5 dB; FR 10-70,000 Hz  $\pm$  3 dB; S/N 75 dB. Bridgable to 130-W/ch 2-ch operation. 17" w x 4.33" h x 17" d; 30.4 lb ..... \$699

### A-910 Integrated Amplifier

Features unified remote control that can operate other NEC audio and video components; inputs for MM/MC phono, tuner, CD player, tape deck, AUX, TV and VCR sound sources; independent record and input selectors for listening to one source while recording another; mute switch; bass and treble controls; bipolar power supply for video output to keep degradation of video signal to a minimum. 100 W/ch into 8 ohms from 20-20,000 Hz with 0.006% THD, 130 W/ch into 4 ohms; dynamic headroom 2 dB; FR 10-40,000 Hz  $\pm$  1 dB. 16.94" w x 5.12" h x 13.38" d ..... \$649

### AV-350 Integrated Amplifier

Remote-controlled integrated amp with built-in Dolby, hall, and matrix surround-sound processors. Features 16-bit digital delay; simulated stereo from mono sources; 3 volume/balance presets; video image enhancer; separate front and rear tone controls; a master volume control; front/rear volume control; front-left, front-right, rear-left, and rear-right volume controls; 4 built-in amplifiers that can be bridged into 2. Inputs for 2 audio and 4 video sound sources. 30 W/ch x 4 ch, 60 W/ch bridged; 21 lb ..... \$579

## NIKKO

### IA-120 Integrated Amplifier

Integrated amp with inputs for CD, tuner, phono, AUX, tape 1 and 2, video 1 and 2, signal processor, and CD direct. Each input is duplicated for an output selector. Features auto record-output routing system; 20-dB muting; stereo/mono switches; infrasonic filter; loudness, bass, and treble controls; speaker selector for 2 pairs of speakers; and headphone output. Optionally rack mountable. 120 W/ch into 8 ohms from 20-20,000 Hz with no >0.008% THD ..... \$490

## ONKYO

### A-8190 Integrated Amplifier

Features real-phase power supply; full audio and video input switching; 6 audio and 2 video inputs including MM/MC phono; direct CD input with gold-plated terminals; direct tone control with contrabass; pre-out terminals; dubbing capability; heavy-duty speaker terminals. 100 W/ch min rms into 8 ohms from 20-20,000 Hz with no >0.008% THD; dynamic power 303 W/ch into 2 ohms, 235 W/ch into 4 ohms; 150 W/ch into 8 ohms; 29.1 lb ..... \$500  
**CW-A90.** Optional woodgrain side panels for A-8190 ..... \$70

### A-8170 Integrated Amplifier

Features super-servo and delta power supplies; full audio and video input switching; 6 audio

and 2 video inputs including MM/MC phono; direct CD input; direct tone controls with contrabass; heavy-duty speaker terminals. 80 W/ch min rms into 8 ohms from 20-20,000 Hz with no >0.008% THD; dynamic power 224 W/ch into 2 ohms, 170 W/ch into 4 ohms, 115 W/ch into 8 ohms; FR 2-50,000 Hz  $\pm$  0, -1 dB. 17.12" w x 5.81" h x 15.31" d; 24.7 lb ..... \$400

## PARASOUND

### CA250 50-W/ch Integrated Amp

Electronic volume control; detented variable loudness; separate record output selector; 10-transistor discrete phono preamp; relay protection; discrete output transistor; 3-color LED power meters; 2-way tape dubbing; A/B speaker switching. Inputs for MM phono; tuner; tape; tape 2, CD player/video. 50 W/ch 8 ohms; dynamic headroom 2 dB; slew rate 55 V/ $\mu$ sec; MM phono sens 2 mV for 0.5 V output at 1,000 Hz; sens for line-level inputs 500 mV; 16 lb; 17.25" w x 3.5" h x 11" d ..... \$300

### CA220 20-W/ch Integrated Amp

Discrete output transistors; detented volume and tone controls; A/B speaker switching; headphone jack. Inputs for MM phono; tuner; tape; CD player/video. 20 W/ch into 8 ohms; dynamic headroom 1 dB; MM phono sens 2 mV for 0.5 V output at 1,000 Hz; sens for line-level inputs 500 mV; slew rate 22 V/ $\mu$ sec; 11 lb; 17.25" w x 3.5" h x 10" d ..... \$165

## PHILIPS BY NAP

### FA960XBK Integrated Amplifier

Features CD direct; switches 7 sources; gold-plated CD and phono inputs; 4-gang volume control; parallel recording from any source; bidirectional tape copying; screw-down speaker terminals for large cables; relay-protected outputs; split power supplies; separate heatsinks; active tone controls with defeat; bass turnover at 100 Hz, treble at 10,000 Hz, both  $\pm$  10 dB; Class AB operation; loudness and mono buttons; drives 2 pairs of speakers; headphone output; balance slider; all-metal cabinet. 100 W/ch into 8 ohms from 20-20,000 Hz with no >0.03% THD, 125 W/ch into 4 ohms; sep 75 dB with 1,000 Hz through CD input, 60 dB with 250-10,000 Hz ..... \$549

### FA860XBK Integrated Amplifier

Inputs for 2 tape decks, MM or MC phono, CD, tuner, TV/AUX, video/AUX 2; drives 2 pairs of speakers; slide balance control; mono button; headphone jack; gold-plated CD and phono jacks; bidirectional dubbing; drives 8, 4, or 2 ohms; parallel outputs for 2 pairs of speakers. 100 W/ch sine wave into 8 ohms from 20-20,000 Hz with no >0.03% THD; sep 75 dB at 1,000 for CD direct; FR 18-70,000 Hz  $\pm$  1 dB for linear inputs, 40-20,000 for equalized inputs ..... \$439

## PIONEER

### A-91D Elite Integrated Amplifier

Features two digital-to-analog converters; 4-times oversampling digital filtering; analog low-pass filter; 6 digital inputs (2 optical); 3 digital outputs (1 optical); Optical Transfer Distortion Canceller; inputs for MC and MM phono (with or without infrasonic filter); drives 2 pairs of speakers; line-direct connection bypasses all controls but volume; Non-Switching Circuit Type III separates voltage and current circuits; anti-vibration construction; designed to handle low impedances. Power output 120 W/ch min into 8 ohms with no >0.003% THD, 150 W/ch into 4 ohms ..... \$1,500



Pioneer A-91D

### A-88X Integrated Amplifier

Features Non-Switching Type-II Circuit; 3-transformer multi-power supply; MC phono input; line-straight selector (tone control bypass); infrasonic filter; 2 tape monitors; 2-way tape dubbing; headphone output; connections for 2 pairs of speakers; black finish with rosewood-finished vinyl-covered side panels. 120 continuous average W/ch into 8 ohms from 20-20,000 Hz with no >0.003% THD. 5.94" h x 17.94" w x 16.8" d ..... \$770

### A-V1200 Integrated Amplifier

Features Non-Switching Type-II Circuit; 5 audio inputs; 5 video inputs; simulated stereo; video enhancer; line-straight selector (tone control bypass); dynamic expander; RF converter terminal; audio and video tape dubbing; connections for 2 pairs of speakers. 80 continuous average W/ch into 8 ohms from 20-20,000 Hz with no >0.007% THD ..... \$600

## PROTON

### D540 Integrated Amplifier

High-current, high-dynamic power amplifier with Dynamic Power On Demand (DPD). Features MC and MM inputs; active volume control; anti-clipping circuit. 40 continuous W/ch from 20-20,000 Hz; FR 20-20,000 Hz  $\pm$  0.2 dB; S/N 85 dB (unweighted), 105 dB (A-wtd); dynamic headroom 6 dB; dynamic power rating: 1HF 20 ms at 8 ohms is 160 W, 4 ohms 280 W, 2 ohms 380 W; 100 ms duration 8 ohms is 150 W, 4 ohms 220 W, 2 ohms 230 W; 200 ms 8 ohms is 150 W, 4 ohms 190 W, 2 ohms 200 W. 16.5" w x 3.5" h x 12.5" d; 19.14 lb ..... \$299



Proton AM-300

### AM-300 Integrated Amplifier

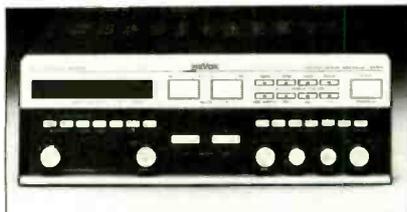
30 W/ch integrated amp with DPD for 6 dB of headroom and a dynamic power rating at 8/4/2 ohms of 120/200/220 W. Features low imp drive capability; remote control; low-noise MC amp; selectable MC/MM input. THD 0.01%; damping factor 90 dB; line input sens 150 mV; line input imp 47 kilohms/220 pF; phono input sens MM/MC 2.5/0.25 mV; phono input imp MM/MC 47 kilohms/100 ohms; crosstalk at 1,000 Hz is 75 dB; S/N 100 dB ..... \$249

## REALISTIC BY RADIO SHACK

### SA-150 Stereo Mini Amplifier

Inputs for tuner, tape deck, turntable. Mono/stereo button; tone control; headphone jack; walnut-grain vinyl. 9" x 2.5" x 6" ..... \$60

# AMPLIFIERS



Revox B251

## REVOX B251 Integrated Amplifier

Microprocessor-controlled integrated amp with switched power supply; liquid cooling by heat pipe; input sensitivities programmable into nonvolatile memory. Features infrared remote control; rise time of 2  $\mu$ sec with 4-ohm load; cable capacitance selector (150/300/450 pF). Inputs for MM phono; MC phono; tuner; tape; tape 2; AUX; phono 2; CD player; external equalizer. 120 continuous average W/ch 20-20,000 Hz with no  $>0.01\%$  THD into 8 ohms; FR 20-20,000 Hz  $+0, -0.2$  dB; THD 0.01% at nominal output and at 50 mW; S/N 96 dB at nominal output, 80 dB at 50 mW; MM phono sens 1.6-23 mV for 5-mV output at 1,000 Hz; sens for line-level inputs 160 mV to 2.3 V; dynamic headroom 3 dB; slew rate 100 V/ $\mu$ sec. 17.75" w x 6" h x 13.1" d; 18.7 lb ..... \$1,700

## SAE I102 Integrated Amplifier

60 W/ch integrated amp with on board computer to eliminate dependency between front-panel control switches and audio circuits. Max THD from 20 Hz-20,000 Hz 0.025% at full rated power both chs driven. All controls grouped by function with alphanumeric and digital LED display for input functions, tone settings and volume level. Features 2-way tape copy; external loop; MM and MC phono inputs; 3 programmable digital tone memories; sequential audio muting (fade out/in when switching inputs); high-current power-amp stage; peak/average LED power display ..... \$499

## SANSUI AU-X901 Integrated Amplifier

Vintage series stereo integrated amp with Alpha X-balanced technology. Features direct-balanced input for Sansui CD players; independent record selector with OFF position; power amp direct connection; high-gain phono EQ for MM and MC cartridges with FET input; bass and treble controls; selectable bass turnover; gold-plated input/output terminals; A-B speaker switching; infrasonic filter; loudness contour; ext processor loop. Inputs for phono; tuner; tape; tape 2; tape 3; tape/DAT; CD player; tuner. 130 continuous average W/ch from 10-20,000 Hz with no  $>0.003\%$  THD into 8 ohms, S/N 120 dB; MM phono sens 2.5 mV/47k ohms. Slew rate  $\pm 200$  V/ $\mu$ sec; 17.63" w x 6.31" h x 17.38" d; 44.1 lb; black finish ..... \$1,000

**AU-X301 Integrated Amplifier**  
Vintage series integrated amplifier with Alpha X-balanced technology. Features high-gain phono EQ for MM and MC cartridges; independent record selector; infrasonic filter; A-B speaker switching. 65 W/ch into 8 ohms from 20-20,000 Hz with no  $>0.05\%$  THD ..... \$430

**AU-G99X Integrated Amplifier**  
Stereo integrated amp with X-balanced technology. Features FL peak power level indicators

with meter range switch; MC cartridge preamp; bass, treble, and midrange tone controls; tone-defeat switch; bi-directional tape dubbing with REC selector; low/high filters; muting switch; loudness switch; headphone jack; connections for 2 pairs of speakers. 160 W/ch into 8 ohms from 20-20,000 Hz with no  $>0.003\%$  THD; S/N 110 dB (line), 88/70 dB (MM/MC phono) \$1,000

## SHURE AVC20 Power Station Integrated Amplifier

A/V integrated amplifier with 4 30-W/ch amps; inputs for 3 video sources, turntable, AUX; 17-function remote; 3 volume memories; 3 surround-sound modes; stereo synthesizer for mono sources; video and audio dubbing; independent volume control for each ch; image enhancer; noise filter; 2 video-monitor outputs; bridges to 2 60-W/ch amps. FR 20-30,000 Hz  $\pm 3$  dB. 21 lb ..... \$599

## SONY TA-F700ES Integrated Amplifier

Features nonmagnetic G-chassis construction; spontaneous twin-drive power supply; super legato linear circuitry; source direct switch to route input signal directly to volume control; passive tone-control circuitry with switch-selectable bass and treble turnover frequencies; defeatable infrasonic filter; inputs for 3 tape decks with dubbing capabilities, MM/MC phono, CD player, tuner, and AUX signal; independent record output selector for taping one signal while listening to another; A-B, A+B speaker switching. 105 W/ch into 8 ohms with 0.004% THD. 140 W/ch into 4 ohms with 0.008% THD. 17" w x 6.38" h x 17.25" d; 40 lb ..... \$700



Sony TA-F700ES

**TA-F500ES Integrated Amplifier**  
Features nonmagnetic G-chassis construction; spontaneous twin-drive power supply; super legato linear circuitry; source direct switch to route input signal directly to volume control; passive tone-control circuitry; defeatable infrasonic filter; inputs for 3 tape decks (2 video); MM/MC phono, CD player, tuner, and AUX signal; independent record output selector for taping one signal while listening to another; A-B, A+B speaker switching. 80 continuous W/ch into 8 ohms with 0.006% THD, 100 W/ch into 4 ohms with 0.01 THD. 17" w x 5.75" h x 14.75" d; 29 lb ..... \$500

**TANDBERG  
TIA 3012A Integrated Amplifier**  
Features high-current MOSFET output, passive calibrated tone controls utilizing metal-film resistors (1% tolerance), no electrolytic or ceramic capacitors from phono input to speaker output. Thermic servo loop to detect DC offset on the output. Minimized Miller Effect; minimal negative feedback and no current or voltage limiting on output stages. 100 W/ch rms into 8 ohms  $<0.02\%$  THD. Rosewood side panels optional. May be combined with Tandberg tuner and a

pair of rosewood side panels to create a receiver ..... \$1,495

**TECHNICS  
SU-V10X 120-W/ch Integrated Amplifier**  
Features separate record and input selectors and A/V terminals. Inputs for MM phono; MC phono; tuner; tape; tape 2; AUX; phono 2; CD player; DAT deck; VCR; TV; tuner. 120 W/ch into 8 ohms; 29.8 lbs; 16.94" w x 5.8" h x 15.41" D ..... \$750

**SU-V60 90-W/ch Integrated Amplifier**  
Voltage-control amp and current-drive amp for each ch. Class AA bridge connected to separate current-drive amp isolates voltage-control amp from load to reduce distortion. Current-drive amp supplies current to speakers to avoid adverse influence of speaker-imp fluctuations and phase differences caused by complex speaker imps. Inputs for MM phono; tape; tape 2; tuner; CD player; AV/AUX. 90 W/ch; 16.94" w x 4.56" h x 13.36" d; 18.8 lb ..... \$375

**SU-V40.** Similar to above except 50 W/ch into 8 ohms, 16.94" w x 3.91" h x 11.44" d; 13.9 lb ..... \$280

**VECTOR RESEARCH  
VA-1400 100-Watt Integrated Amplifier**  
100-W/ch high-current integrated amp with 8 output transistors. 200 W/ch with optional VA-1450 bridging amp. Inputs for MM phono; MC phono; tape; CD; video sound source. 100 continuous average W/ch from 20-20,000 Hz with  $<0.08\%$  THD into 4 ohms; dynamic headroom 2.5 dB; IHF IMD 0.08%; FR 10-40,000 Hz  $\pm 1$  dB. 17" w x 3" h x 12" d; 20 lb ..... \$350

**YAMAHA  
AX-900U Integrated Amplifier**  
Integrated amplifier with independent preamp/power amp configuration. Features absolute linear amplification; high dynamic power; low-impedance drive capability; CD direct; continuously variable loudness control; preamp in/main amp out terminals; dual record-out selectors. 130 W/ch min rms into 8 ohms. Black; 42 lb ..... \$649

**AX-700U Integrated Amplifier**  
Features absolute linear amplification; high dynamic power; low-impedance drive capability; CD direct; continuously variable loudness control; record-out selector; accessory output loop; 3 tape inputs. 110 W/ch min rms into 8 ohms from 20-20,000 Hz with less than 0.005% THD. Black; 29 lb ..... \$519

**AVC-50 Audio Video Integrated Amplifier**  
Master A/V integrated amplifier with built-in surround sound decoder. Features 10 audio and 4 video inputs and outputs; RS integrated system remote control; built-in video enhancer with continuously variable sharpness, detail, and level control; 5 surround modes including Dolby Surround; bass extension control; continuously variable delay time control. 45 W/ch (front), 45 W/ch (rear) min rms into 8 ohms from 20-20,000 Hz with less than 0.05% THD. Black; 18 lb ..... \$499

**AX-500U Integrated Amplifier**  
Features high dynamic power; low-impedance drive capability; continuously variable loudness control; pure-current servo phono-EQ amp; MM/MC phono selector; banana-plug compatible speaker terminals. 55 W/ch min rms into 8 ohms from 20-20,000 Hz with less than 0.015% THD. Black; 16 lb ..... \$249

Power. Precision. Performance. The new generation of Citation separates goes far beyond its predecessors to create the ultimate listening experience.

Designed and developed by Harman Kardon, one of the most respected names in audio, every generation of Citation has earned a reputation of excellence with audiophiles around the world. A true testing and proving ground for the most revolutionary audio concepts, Citation's innovations have ultimately been featured in all Harman Kardon components.



Dr. Sidney Harman, Founder and Chairman of Harman Kardon.

was introduced. In 1977, the 150-Watt-per-channel Citation 19 became the first power amplifier to feature low negative feedback. 1981 saw the introduction of the Citation XX. Its exclusive High Instantaneous Current Capability (HCC) design provided the instantaneous current required to precisely drive and control any loudspeaker system.

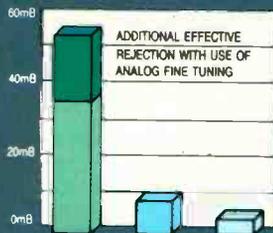
Now, just as the original Citation separates established design innovations that were years ahead of their time, the new Citation series sets the standards for the decade to come.

The new Citation twenty-three makes tuner design history as the world's first Active Tracking tuner and the world's first synthesized tuner with Analog Fine Tuning. This patented system delivers two aspects of tuner performance that were previously mutually exclusive: high selectivity and high fidelity. Its superior adjacent and alternate channel rejection lets you tune in more stations with more fidelity than was ever before possible.



A thorough analysis of internal layout and a strict code of symmetrical circuitry ensure rapid, accurate reproduction of the music signal.

20kHz, 20kHz - 0.004% THD into 8 Ohms and into 4 Ohms



ADJACENT CHANNEL SELECTIVITY  
 ■ CITATION TWENTY-THREE ■ TYPICAL SINGLE IF TUNER  
 ■ NARROW MODE OF TYPICAL WIDE/NARROW TUNER

In contrast to traditional methods, the Citation twenty-three's Active Tracking circuitry provides previously unheard of adjacent channel selectivity, with little or no sacrifice in stereo separation or THD.

As the world's first High Voltage/High Current power amplifiers, the 200-Watt-per-channel\* Citation twenty-two and the 100-Watt-per-channel\* Citation twenty-four redefine amplifier design. With just the flick of a switch, their exclusive High Voltage/High Current technology lets you select the optimum mode for driving either 8-Ohm or 4-Ohm loudspeakers. The result is higher power output and cleaner, clearer sound than any traditional design, without distortion, overheating or current limiting.

In an area where the smallest interference can result in the biggest problems, the new Citation twenty-one preamplifier further ensures accurate signal reproduction. Its symmetrical circuitry and many design refinements offer the most precise amplification, for a difference you can hear.



Gold-plated input jacks on the Citation twenty-one preamplifier provide reduced signal loss and improved long-term conductivity.

Citation's attention to detail can be seen as well as heard. The heavy rolled-steel, rubber-mounted chassis creates a solid, vibration-free environment that combines world class styling with sophisticated American industrial design.

The new Citation series from Harman Kardon. The next generation of the world's premier high fidelity components.

For more information and your nearest dealer call toll free 1-800-525-7000 Ext. 101 or write 240 Crossways Park West, Box 9101, Woodbury, New York 11797.

**Citation**  
harman/kardon

**Citation. The next generation.**



# TUNERS



## ACCUPHASE BY MADRIGAL

### T-106 AM/FM Stereo Tuner

Quartz-locked synthesis; 14 presets; pulse tuning; double-tuned front end; FM stereo demodulator; AM synchronous detector; signal-strength meter; peak-modulation meter; MPX filter; sel switch; muting switch. FM section: 50-dB quieting sens mono 17 dBf, stereo 17 dBf; S/N 83 dB stereo, 79 dB mono (at 80 dBf A-wid); FR 10-60,000 Hz  $\pm 0.5$  dB; capture ratio 1.5 dB; sep 50 dB at 1,000 Hz; AM sup 80 dB at 65 dBf. AM section: sens 20  $\mu$ V/m at 20 dB S/N; 17.5" w x 5.06" h x 14.56" d ..... \$1,850

### T-107 Synthesizer FM Tuner

Electronic tuning; 12-station random memory; auto sweep for FM reception; double-tuned front end to reject interference and IM; differential-gain linear FM detector; IF filters with flat group-delay characteristics; resonator-controlled stereo demodulator; multipath and signal-strength meter; MPX filter; muting switch; champagne-gold or anodized-black finishes. FM section: 50-dB quieting sens 17 dBf; S/N stereo 85 dB; FR 10-16,000 Hz  $\pm 1$  dB; capture ratio 1.5 dB; sep 50 dB at 1,000 Hz; AM sup 80 dB; adj-ch rej 30 dB. 17.5" w x 4.36" h x 13" d; 12.8 lb ..... \$1,200

## ACOUSTIC RESEARCH

### AR T-04 AM/FM Tuner

Features infrared remote control of tuning functions; system remote operation; 8 AM/8 FM station presets; frequency-synthesized tuning; digital frequency display; flywheel-assisted tuning; manual or auto search. FM section: FM usable sens (mono) 11.2 dBf (2.0  $\mu$ V); FM 50-dB quieting sens 37.2 dBf (40  $\mu$ V) stereo, 14.6 dBf (3.0 mV) mono; S/N 75 dB stereo; FR 30-15,000 Hz  $\pm 0.5$  dB; capture ratio 1.0 dB; sep 48 dB at 1,000 Hz; AM suppression 58 dB; alt-ch sel 60 dB. AM section: FR 60-3,000 Hz  $\pm 3$  dB. 17" w x 3.31" h x 13" d ..... \$380

## ADCOM

### GTP-500 Tuner/Preamplifier

Preamplifier with built-in tuner can be used with Adcom or other power amps. Wireless remote control included. Sensors available for remote control from different rooms. Tuner section features quartz-referenced digital-synthesis tuning; auto up and down scan; 8 AM/FM presets; 5-LED signal-strength display; high-blend circuit; 2 sets of outputs (AC and DC coupled). Preamp section features inputs for MM phono; tape; tape 2; CD player; tuner. S/N phono A-wid 85 dB; IMD preamp 0.0015%; sens tuner 36.5 dBf stereo; THD tuner 0.09% stereo at 1,000 Hz; S/N tuner 75 dB stereo; sep tuner 52 dB at 1,000 Hz. 17" x 3.25" x 12.75" ..... \$550  
**GTP-500W.** With white front panel ..... \$625  
**GTP-500S.** With silver front panel ..... \$625

### GFT-555 AM/FM-Stereo Tuner

Features quartz-referenced digitally synthesized tuning; auto up/down scan; instant-recall preset tuning; fluorescent digital-frequency display; 8 AM/FM presets; 5-LED signal-strength display; switchable high-blend circuit; mono/mute switch; tuning accuracy of 0.00025%. THD stereo 0.07% at 1,000 Hz; 50-dB quieting sens stereo 35.5 dBf; S/N 78 dB stereo; FR 30-15,000 Hz  $\pm 3$  dB; capture ratio 1.5 dB; sep 53 dB at 1,000 Hz; AM sup 70 dB. 17" x 3.25" x 12.5" ..... \$300  
**GFT-555W.** As above with white front panel ..... \$375  
**GFT-555.S.** With silver front panel ..... \$375

## A/D/S/

### CC4 Digital Tuner/Preamp

With microprocessor operating system for remote-control operation, digital volume and tone controls, and alphanumeric display. Remote IR receiver capability for multi-room remote control; RS-232 port for control by personal computer; digital-synthesized tuning with 30 AM or FM presets; optional remote control. Preamp section: max output  $> 7$  V rms into 10,000 ohms/1,000 pF; volume and balance control range 80 dB in 1-dB steps; bass and treble control range  $\pm 10$  dB in 2-dB steps; low bass 0 to  $+6$  dB in 1-dB steps. FM section: sens  $< 13$  dBf mono; 50-dB quieting sens  $< 40$  dBf stereo; capture ratio  $< 1.5$  dB; sel  $> 65$  dB; spurious rejection  $> 100$  dB; stereo S/N  $> 70$  dB; sep at 1,000 Hz  $> 47$  dB. AM section: sens for 6-dB S/N  $< 10$   $\mu$ V; IF rejection  $> 50$  dB; S/N 44 dB. 17.5" w x 2.8" h x 14.8" d; 18 lb ..... \$999

### Atelier T2 Digital Tuner

AM/FM synthesized tuner with 16 presets and auto FM search tuning. Features flywheel manual tuning; fine-tuning control; switchable muting; high-blend control; LED frequency display; center tuning plus signal-strength displays; AC outlets. FM usable sens mono 1.0  $\mu$ V (11.0 dBf) stereo 5.5  $\mu$ V (26.1 dBf); stereo 50-dB quieting sens 15  $\mu$ V (34.8 dBf); S/N mono  $> 70$  dB, stereo  $> 65$  dB; FR 10-14,500 Hz,  $+0, -1$  dB; ch sep  $> 38$  dB at 10,000 Hz; capture ratio  $< 1.8$  dB; AM quieting sens  $< 5$   $\mu$ V for 6 dB S/N; image rejection  $> 55$  dB; S/N (with 1,000-Hz 5-mV signal)  $> 44$  dB; 17.5" x 2.8" x 14.8" ..... \$539

## AKAI

### AT-A102-B AM/FM Stereo Tuner

Quartz-synthesized tuner with random presets for 16 stations ..... \$149

## AUDIO DESIGN ASSOCIATES

### FM-600 Tuner

Analog FM tuner with 6 presets and digital frequency readout. Features AFC tuning; muting; stereo blend noise filter; stereo/mono mode all

front panel switchable; signal strength/multipath LED meter; 15-pole IF filter; rear panel left and right output-level controls; standard EIA rack-mountable. FM section: FM usable sens stereo 1.9 mV; 50-dB quieting sens stereo 2.7 mV; THD 0.15% at 1,000 Hz; S/N 65 dB; FR 15-15,000 Hz  $\pm 3$  dB; capture ratio 1.9 dB; sep 47 dB at 1,000 Hz; adjacent-ch rejection 90 dB; 12 lb; 19" w x 5.25" h x 13" d ..... \$2,395

## AUDIO DYNAMICS

### T200 AM/FM Tuner

Digital-synthesis tuner with Schotz noise reduction. Features 8 AM/8 FM presets; auto wide/narrow-bandwidth switching; extended AM response; auto scanning. FM FR 15-15,000 Hz  $\pm 0.375$  dB; FM S/N 77 dB stereo; FM sens 44 dBf (43  $\mu$ V) stereo 60-dB S/N; capture ratio 1.75 dB ..... \$399

## CARVER

### TX-11a FM/AM Stereo Tuner

Digital quartz-synthesized tuner with Asymmetrical Charge Coupled FM Detector circuit to reduce multipath distortion while retaining full separation. 13 presets; auto/manual scan; wide/narrow bandwidth selector; antenna. FM section: FM usable sens 1  $\mu$ V mono; 50-dB quieting sens 3.1  $\mu$ V; alt-ch sel 110 dB; adj-ch rej 110 dB; capture ratio 1.0 dB; AM sup 65 dB; image, IF, spurious-response ratio 110 dB. AM section: sep 35 dB; S/N 77 dB ..... \$699

### TX-2 AM/FM Stereo Tuner

AM/FM tuner with Asymmetrical Charge Coupled FM Detector. FM section: FM usable sens mono 1.8  $\mu$ V, stereo 4.5  $\mu$ V; 50-dB quieting sens stereo 5  $\mu$ V; capture ratio 1.5; sep 43 dB at 1,000 Hz; AM sup 60 dB; alt-ch rej 58 dB; adj-ch rej 28 dB. AM section: sens 250  $\mu$ V with built-in antenna, 20  $\mu$ V with external antenna ..... \$399

## CREEK AUDIO BY MUSIC HALL

### 3140 FM Tuner

Auto mute; AFC. Capture ratio 0.4 dB wide mode, 3 dB narrow; max S/N 80 dB mono, 70 dB stereo ..... \$350

## DBX

### TX1 AM/FM Tuner

Features Schotz dynamic noise reduction; auto IF-bandwidth switching; extended NRSC AM response; 6 AM/6 FM presets; mono and high-blend switches. FM FR 15-15,000 Hz  $\pm 0.25$  dB; FM S/N 79 dB stereo; capture ratio 1.5 dB; FM sens 43.7 dBf with 60-dB S/N ..... \$600

## DENON

### TU-800 AM/FM Tuner

Features Dynamic-Twin-Drive PLL circuits; 3-step IF bandwidth selection; 30-station random

HELP US HELP YOU!

# PARTICIPATE IN THE STEREO REVIEW BUYER POLL

Stereo Review wants to know more about our readers. How much equipment you buy (and how often), how much you spend on it, what sort of product features you like. That will help us create a better, more informative magazine, specially geared to your tastes and preferences.

To gather this important information, we've created the Stereo Review Buyer Poll. And we need your help to make it work.

If you've bought any equipment within the past 30 days, we'd like you to participate (see instructions below). We'll use the information you give us to keep manufacturers up to date on the buying habits of stereo enthusiasts—the most knowledgeable group of audio buyers in the country. And in the long run, that will mean better service for you.

## HOW TO PARTICIPATE

You can participate in the Stereo Review Buyer Poll by sending in the Reader Service Card appearing next to this page. We've provided space for you to list any equipment purchased in the past 30 days. Any kind of audio/video equipment qualifies.

For example:

### Home Audio Components

- Amplifier ■ Receiver/Tuner
- Speakers ■ Turntable
- Cassette Deck ■ Equalizer
- CD player

### Portable Stereo

- Portable Cassette Player
- Portable CD Player
- Headphones

### Car Stereo

- Tuner ■ Cassette Deck
- Speakers

### Home Video

- VCR ■ Camcorder
- Videodisc Player
- Stereo TV

Fill in the type of equipment, manufacturer, model number, and price you paid. Include all the equipment you bought this month. Then print your name and address and drop it in the mail (we pay the postage). It's that simple!

**Free Information Service** ★ ★ ★

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**STEREO REVIEW BUYER POLL**

1. In the past 30 days, have you purchased any audio or video equipment or accessories?  
A.  YES B.  NO → Thank You

2. Which type(s) of equipment did you purchase in the past 30 days?  
A.  Home audio B.  Portable stereo  
C.  Car stereo D.  Video

3. In the space below, please write in the type (speakers, car CD player, stereo VCR, etc.), the make, the model number and the price paid for each item purchased in the past 30 days.

TYPE	MAKE	MODEL	PRICE PAID
C.D. player	Sony	KA-5923	\$379.00
Speakers	Boyer	BS3-10	\$435.00
car stereo/cassette deck	Boyer	KT 4372 (A)	\$1699.00

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## LOOK FOR THE BUYER POLL EVERY MONTH

The Stereo Review Buyer Poll will appear in every issue—just check the Table of Contents for that month's location. You can participate in any month in which you purchased audio/video equipment. Of course, even if you don't join our Poll, you can still send in the Reader Service card to get information about products advertised in that month's issue.

We hope you'll participate regularly in the Stereo Review Buyer Poll. Your answers are important to us—and you'll find the resulting benefits important to you.

Thanks for helping us out!

# Stereo Review

# TUNERS

preset memory; MPX-NR switch; high-sensitivity digital synthesis tuning; low-imp output; auto-scan tuning; quick manual tuning; step manual tuning; last-channel-tuned memory; large FL display. FM 50 dB quieting sens 20  $\mu$ V (37.2 dBf) stereo, 1.6  $\mu$ V (15.3 dBf) mono; S/N 96 dB mono, 86 dB stereo; capture ratio 1.2 dB; AM sup 70 dB. 17.09" w x 3.5" h x 12.4" d ... \$475



Denon TU-600

## TU-600 AM/FM Tuner

Features dynamic PLL detection with auto bandwidth selection; 20 AM/FM presets with stored bandwidth instruction from each station; low-imp outputs; auto or manual scan. Side panels standard ... \$350

## TU-450 AM/FM Tuner

Quartz-locked digital tuner features 16 presets; digital synthesis tuning; MPX-NR switch; auto-scan tuning; quick manual tuning; manual step tuning; last-channel memory. FM 50 dB quieting sens 23.1  $\mu$ V (38.5 dBf) stereo, 3.1  $\mu$ V (21.2 dBf) mono; S/N 80 dB mono, 76 dB stereo; capture ratio 1.5 dB; AM sup 50 dB. 17.09" w x 2.75" h x 9.37" d ... \$200

## DUAL BY ORTOFON

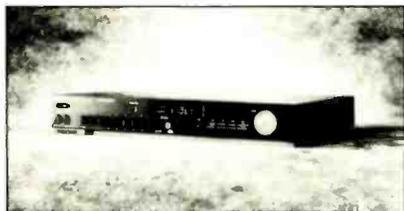
### CT5040 AM/FM Tuner

Digital-synthesis tuning; 40 AM/FM presets. Black ... \$250

## HAFLER

### DH-330 Tuner

Quartz-controlled tuner provides exact station selection with a digitally synthesized tuning system. Features multipath distortion and noise-sensing circuit; 5 presets; auto search; digital readout; nonvolatile memory; 3 dual-gate MOSFET's; 5 tuned front-end circuits; triple-tuned RF stage; volume control and separate output on front panel for taping or headphones; kit is comprised of 4 fully assembled, tested, and aligned circuit boards which plug together. Usable sens 11.3 dBf; 50-dB quieting sens mono 15.3 dBf, stereo 36.5 dBf; dist. at 1,000 Hz, 100% modulation mono 0.1%, stereo 0.18%; capture ratio 1.5 dB; alternate ch sel 60 dB; sep 45 dB at 1,000 Hz; 35 dB at 10,000 Hz; S/N, mono, 72 dB, stereo, 68 dB. Kit ... \$385 Assembled ... \$460



Harman Kardon Citation twenty-three

## HARMAN KARDON

### Citation twenty-three AM/FM Tuner

16 presets; infrared remote control; mono and mute buttons; LCD readout; Active-Tracking High-Selectivity (Hi Q) Circuit; digital-synthesized quartz-locked tuning; analog fine tuning; flywheel-stabilized tuning knob; seek and man-

ual tuning; anodized brushed aluminum blue/black finish with molded rubber trim; heavy-gauge metal chassis. FM specs: 50-dB quieting sens stereo 15.2 dBf (normal), 19.1 (Hi Q); S/N stereo 75 dB (normal and Hi Q); capture ratio 0.75 dB (normal), 1.75 (Hi Q); alt-ch sel 75 dB ... \$595

## TU920 Active-Tracking AM/FM Tuner

Active-Tracking High-Selectivity (Hi Q) Circuit; digital-synthesized quartz-locked tuning; all-metal chassis; 16 presets; muting; 2-way seek; manual up/down tuning; 5-LED signal-strength meter; tuned indicator. FM specs: S/N stereo 74 dB (normal and Hi Q); capture ratio 1.3 dB (normal), 2.0 (Hi Q); alt-ch sel 65 dB (normal), 75 (Hi Q) ... \$365

TU911. Similar to above except lacks Active Tracking; 3-LED signal-strength meter. FM alt-ch sel 50 dB ... \$235

## HITACHI

### HPT120AVSW AM/FM Tuner/Preamp

Quartz digital-synthesized tuner section; 20 AM/FM presets; unified infrared remote control with LCD display; audio inputs for phono, CD, tape; video inputs for TV, VCR, videodisc player; electronic volume and balance controls; 5-band graphic equalizer; video signal enhancer; rosewood end caps ... \$450

## FT-007SW Quartz Digital AM/FM Tuner

16 AM or FM presets; FCCS designed to eliminate intermodulation and interference; auto quieting control; signal-locked indicator for FM; 2-pole birdy filters; AM loop antenna; digital display to help position FM antenna; rosewood end caps ... \$350

## JVC

### FX1100BK AM/FM Tuner

Computer-controlled quartz-PLL digital-synthesis tuner with Optilink system for reduced digital noise. Features 40 AM/40 FM presets; auto memory; preset scan; variable stop level; dB signal-strength indicator; auto QSC; 6-column alphanumeric display; 2 antenna inputs; program memory and monitor for recording ... \$470

### FX50BK AM/FM Tuner

Computer-controlled digital-synthesis tuner with remote-control capability when used with Compu-Link components. Features 16 AM/16 FM presets; auto memory; dB signal-strength indicator; preset scan; module for music source from CATV ... \$270

### FX33BK AM/FM Tuner

Computer-controlled digital-synthesis tuner with remote-control capability when used with JVC Compu-Link components. Features 16 AM/16 FM presets; auto memory; preset scan; digital readout on LCD panel; optional CATV control unit ... \$125

## KENWOOD

### KT-3300D FM Tuner

Basic series FM tuner with Pentacle Power Supply design. Features Direct Linear Reception Circuit; Direct Linear Loop FM Detector; IF distortion-correcting circuit; direct pure MPX decoder; direct/distance RF selector; wide/narrow IF band selector; rec calibration with modulation meter; auto/manual quieting control; 16 preset memory with display; digital-rotary tuning system; dynamic tuning process display; auto/manual tuning; 3-station preprogramming with tuning lock; output level control; A/B an-

tenna selector; copper transformer shield and heat sink. FM 50 dB quieting sens 38.8 dBf (24  $\mu$ V) stereo; S/N 76 dB at 65 dBf, 86 dB at 85 dBf (stereo); capture ratio 1.0 dB (wide), 2.5 dB (narrow); FR 20-15,000 Hz  $\pm$  0.5 dB. 17.31" w x 3.5" h x 12.88" d; 11.9 lb ... \$525

## Basic KT-880D FM Tuner

Basic series FM tuner with Pentacle Power Supply design. Features Direct Linear Reception Circuit; computer-controlled tuning system; 10-key direct-access tuning; auto/manual digital tuning; wide/narrow FM IF band selector; rec calibration switch; 20 presets; FL display. FM 50 dB quieting sens 38.8 dBf (24  $\mu$ V) stereo; S/N 76 dB at 65 dBf, 83 dB at 85 dBf (stereo); capture ratio 1.0 dB (wide), 2.5 dB (narrow); FR 20-15,000 Hz  $\pm$  0.5 dB. 17.31" w x 3.06" h x 12.25" d; 7.7 lb ... \$260



Kenwood KT-76

## KT-76 AM/FM Tuner Timer

Quartz-synthesis digital tuner with built-in 2-program audio-system timer. Features Station Name Preset System (SNPS) for 12 stations; 20-station random preset memory with SNPS off; auto tuning; preset scan; 60-minute sleep timer; remote-controlled through KC-206 preamp. FM 50 dB quieting sens 39 dBf (49  $\mu$ V) stereo; S/N 73 dB at 65 dBf (stereo); capture ratio 1.2 dB; alt ch sel 50 dB; FR 30-15,000 Hz +0.5, -2.0 dB. 16.56" w x 2.94" h x 10.5" d; 6.2 lb ... \$200

## KT-56 AM/FM Tuner

Quartz-synthesis digital tuner features 16 presets; preset scan; auto/manual tuning; FL frequency and status display; power standby for timer; remote-controlled through KC-206. FM 50 dB quieting sens 39 dBf (49  $\mu$ V) stereo; S/N 73 dB at 65 dBf (stereo); capture ratio 1.2 dB; alt ch sel 50 dB; FR 30-15,000 Hz +0.5, -2.0 dB. 16.56" x 2.94" x 10.5"; 6.2 lb ... \$140

## KINERGETICS

### KBT-1 AM/FM Stereo Tuner

Adjustable correction for hysteresis errors in electronics of broadcast station; circuit designed to compensate for components used in broadcast station's electronics; remote power supply; digital-synthesis tuning; 5 AM, 5 FM presets; scan tuning; selectable IF bandwidth; inputs for 300- and 75-ohm antennas; finished in black or silver anodized brushed aluminum. FM specs: 50-dB quieting sens 36.0 dBf stereo; THD stereo 0.05% (wide), 0.10% (narrow) at 1,000 Hz, 100% modulation, signal level 65 dBf; S/N mono 75 dB, stereo 70 dB; sep 40 dB (wide), 45 dB (narrow); capture ratio 1.5 dB; alt ch sel 70 dB (narrow), 50 dB (wide); image rej 75 dB; pilot and subcarrier rej 60 dB. AM specs: sens to 6 dB; S/N 6.3  $\mu$ V; image rej 50 dB; IF rej 50 dB; FR 4,000 -6 dB ... \$695

## KYOCERA

### T-910 Digital AM/FM Tuner

Digital PLL quartz-synthesized AM/FM stereo tuner. Features Dynamic Noise Reduction; 16 station presets; nonferrous ceramic base/chassis; 2 FM antennas; computer-programmed narrow/wideband IF selection. FM section: FM usable sens 1.7  $\mu$ V (9.8 dBf); 50-dB quieting sens mono 3.0  $\mu$ V (14.8 dBf); THD 0.07%, mono 0.06% (at 1,000 Hz); S/N stereo 81 dB, mono 84

# TUNERS

dB; capture ratio 1.0 dB; sep 58 dB at 1,000 Hz; AM sup 55 dB; alt-ch rej 85 dB narrow, 40 dB normal. AM section: sens 280  $\mu$ V with built-in antenna, 10  $\mu$ V with external antenna; 26.5 lb ..... \$590

## LUXMAN

### T-02 Digital Synthesized Tuner

PLL frequency-synthesized AM/FM stereo tuner. FM section: usable sens stereo 1.8  $\mu$ V (10.3 dBf); THD stereo 0.06%, mono 0.05%; S/N 81 77 dB stereo, 81 dB mono; FR 20-15,000 Hz  $\pm$  0.5 dB; sep 55 dB; 17.81" x 3.44" x 13.56" ..... \$500

### T-102 AM/FM Stereo Tuner

AM/FM tuner with digital-synthesized tuning and pulse-count detector. Features compu-store; 5-station programmable timer; 20 presets; memory scan/auto seek; muting-level control; IF narrow switch. FM section: usable sens stereo 0.9  $\mu$ V (10.3 dBf); 50-dB quieting sens stereo 27  $\mu$ V (39.9 dBf); THD stereo 0.06% at 1,000 Hz; S/N stereo 75 dB at 65 dBf; FR 25-15,000 Hz  $\pm$  0.5 dB; capture ratio 1 dB; sep 50 dB at 1,000 Hz; AM suppression 70 dB; adjacent-ch rejection 20 dB narrow; alt-ch rejection 80 dB narrow. AM section: FR 120-2,200 Hz  $\pm$  3 dB. 5.5 lb; 17.25" w x 2.25" h x 8.62" d ..... \$330

### T-100 AM/FM-Stereo Tuner

AM/FM tuner with digital-synthesized tuning and system remote-control capability. Features 16 random presets; auto seek; cable ready. FM section: usable sens stereo 0.95  $\mu$ V (10.8 dBf);



Luxman T-02

50-dB quieting sens stereo 34.5  $\mu$ V (42 dBf); THD stereo 0.15% at 1,000 Hz; S/N stereo 70 dB at 65 dBf; FR 20-15,000 Hz  $\pm$  0.5 dB; capture ratio 1.5 dB; sep 50 dB at 1,000 Hz; AM suppression 60 dB; ch rejection 65 dB. AM section: FR 120-2,200 Hz  $\pm$  3 dB. 5 lb; 17.25" x 2.25" x 8.62" ..... \$250

## MARANTZ

### ST 54 AM/FM-Stereo Tuner

Quartz-locked digital frequency synthesis tuner. Features 24 presets (16 FM/8 AM plus bandwidth setting for each preset); retains memory for 2 weeks without AC or battery; switchable wide/narrow bandwidth ..... \$780

## MCINTOSH

### MR-7082 AM/FM Tuner

AM/FM tuner with Signal Locked Loop tuning system. Features electronic memory for 7 FM and 7 AM stations; digital frequency readout; MOSFET RF amp; double-balanced mixer; PLL MPX decoder; audio output suppression circuits for 19 kHz and 38 kHz carrier; LED tuning meter; electronically regulated power supply; internal processor; memory search; wide-band AM; remote-control interface. FM section: sens mono 13 dBf (1.3  $\mu$ V) for 30 dB of quieting; signal strength for 50 dB quieting, 18/36 dBf mono/stereo; capture ratio 1.5 dB; IM 0.08% from 20-15,000 Hz with 100% modulation or less; alt channel sel 55 dB; sep 50 dB at 1 kHz; AM sup 60 dB; image rejection 90 dB. AM sec-

tion: sens 35 V; S/N 55 dB IHF, 65 dB at 100% modulation; THD 0.2% at 30% modulation; sel 40 dB IHF; IF response 90 dB. 16" W x 5.44" H x 13" D ..... \$1,499  
MR-510. Compact digital FM tuner ..... \$1,699

## MERIDIAN BY MADRIGAL

### 204 FM Stereo Tuner-Timer

Instant access to 18 preset stations; scan tuning; manual tuning in 50-kHz steps; displays frequency, preset number, signal strength, or time; battery backup; timer controls 200 system, 50-dB quieting sens 23  $\mu$ V stereo; sel 56 dB; capture ratio 1.5 dB; AM sup > 55 dB ..... \$900  
209. Remote master control works with 204 and other Meridian 200-series components; selects FM stations; controls 8 inputs, volume, and mute; needs 9-V battery ..... \$125

## MISSION

### Cyrus Digital AM/FM Tuner

Quartz-locked synthesized tuner matches Cyrus amp; 19 FM, 9 AM presets; auto scan with auto FM mute. FM section: usable sens mono 0.85  $\mu$ V (26 dBf), stereo 19  $\mu$ V (46 dBf); THD stereo 0.42%, mono 0.17% at 1,000 Hz; S/N 73 dB stereo, 76 dB mono; FR 20-15,000 Hz  $\pm$  1 dB; capture ratio 73 dB; sep 45 dB at 1,000 Hz; AM sup 47 dB; pilot-tone rej 42 dB; image frequency rej 57 dB; cross modulation sup 36 dB; output 1 V. AM section: FR 20-15,000 Hz  $\pm$  1 dB; sens 140  $\mu$ V with built-in antenna; 8.5" w x 3" h x 13.5" d; 4.18 lb ..... \$449

## NAD

### 4300 FMX Tuner

With circuitry to decode FMX broadcasts for improved reception in stereo of weak stations. FM section: switchable IF bandwidth (wide/narrow); FM usable sens stereo 9 dBf; 50-dB quieting sens stereo 22 dBf; THD stereo 0.07% at 1,000 Hz; S/N stereo 80 dB; FR 30-15,000 Hz  $\pm$  0.5 dB; sep 50 dB at 1,000 Hz; capture ratio < 1.5 dB; adj-ch rej 80 dB ..... \$548

### 4130 AM/FM-Stereo Tuner

Digital-synthesized AM/FM-stereo tuner with dynamic-blend circuit. FM usable sens 1.8  $\mu$ V mono; 50-dB quieting sens mono 14.2 dBf; stereo 34.2 dBf; S/N mono/stereo 82/75 dB; FR 30-15,000 Hz  $\pm$  0.5 dB; THD mono/stereo 0.9%/0.9% at 1,000 Hz; capture ratio < 1.5 dB; alt-ch rejection 70 dB; sep 50 dB ..... \$228

## NAKAMICHI

### ST-7 AM/FM Stereo Tuner

With Schotz NR; signal/multipath meter; 16 presets; separate R and L output-level controls. FM IHF sens mono 1.7  $\mu$ V (10 dBf), stereo 3.9  $\mu$ V (17 dBf); FM usable sens mono 1.7  $\mu$ V (10 dBf), stereo 3.9  $\mu$ V (17 dBf); 50-dB quieting sens mono 2.7  $\mu$ V (14 dBf), stereo 14  $\mu$ V (28 dBf); THD stereo 0.08%, mono 0.06% at 1,000 Hz; S/N 76 dB stereo, 80 dB mono; FR 20-15,000 Hz  $\pm$  1 dB; capture ratio 1.9 dB; sep 55 dB at 1,000 Hz; AM sup > 60 dB; alt-ch rej > 60 dB. 17.12" w x 2.5" h x 11.37" d; 10 lb, 6 oz ..... \$725

## NEC

### T-710 Digital AM/FM Tuner

Computer-controlled quartz-PLL digital-synthesis tuner with 16 AM/FM presets. Features auto scan; preset scan; selectable (wide, narrow) IF bandwidth; FL frequency readout; dual-gate MOSFET front end; multiplex stereo decoder with a pilot canceller and active filter; static-re-

sistant low-imp AM loop antenna; ladder IF filter. Remote controllable when used with NEC unified-remote integrated amps. FM usable sens 10.8 dBf (1.9  $\mu$ V). 16.94" w x 3.16" h x 10.84" d ..... \$299

### T-601E Digital AM/FM Tuner

Digital quartz-PLL tuner with 16 AM/FM presets. Features auto seek; IC-PLL multiplex FM decoder; LED signal-strength meter. Fully remote controllable when used with NEC's A-1300E integrated amp. FM usable sens 13.2 dBf (2.5  $\mu$ V); alt-ch sel 60 dB. 16.9" x 2.4" x 10.5" ..... \$199

## NIKKO

### Gamma 80 AM/FM Tuner

Features 20 random presets; auto and manual seek; memory scan; muting control with variable high blend. FM S/N 86 dB; sens 43.2 dBf. 19" rack mount ..... \$470  
T-120. Same as above but not rack mountable ..... \$440

### Gamma 60 AM/FM Tuner

10 AM/10 FM presets; variable high blend; auto and manual seek; memory scan; muting control. 19" rack mount ..... \$360

### Gamma 30 AM/FM Tuner

Quartz frequency-synthesis tuner with variable muting; high blend; auto scan; manual search; 7 AM/7 FM presets. 19" rack mount ..... \$340

### NT-950 AM/FM Tuner

Digital quartz-synthesis tuner with 10 AM/10 FM presets; preset scanning; IF band (wide/narrow) switching ..... \$260

## ONIX AUDIO BY MUSIC HALL

### BW01 FM Tuner

Designed for high sens, excellent capture ratio, and AM suppression ..... \$775

## ONKYO

### T-9090 MKII FM Tuner

Remote-controlled ultra-high-sensitivity FM tuner with computer-controlled APR to adjust automatically or manually for stereo/mono, local/DX, high-blend, wide/narrow/super-narrow bandwidth, and A/B antenna switching. Features multifunction digital display; digital readout of signal strength in dBf; 20 presets; preset scan; auto memorization; timer programming; motorized output level control. Cable ready ..... \$700



Onkyo Integra T-4087

### T-4087 AM/FM Tuner

Tuner with auto precision reception system to control 4 modes (stereo-muting on/mono-muting off, auto high-blend on/off, local/DX, and IF bandwidth wide/narrow). Features 4 separate power supplies for RF amp, IF amp, demodulator, and multiplex decoder; 20 AM/FM presets; battery-free memory backup; MOSFET RF amp front end; PLL demodulator. Black finish; wood side panels included. FM usable sens 17.2 dBf (2  $\mu$ V) stereo; 50-dB quieting sens 36 dBf (17  $\mu$ V)

# TUNERS

stereo: S/N 77 dB stereo; FR 30-15,000 Hz  $\pm$  1 dB; capture ratio 1 dB. 18.25" w x 3" h x 14.62" d; 12 lb ..... \$400

## T-4150 AM/FM Tuner

Computer-controlled quartz-synthesized AM/FM tuner with 3-mode APR, 20 presets, high-blend override, and multi-PLL. FM usable sens 17.2 dBf (2  $\mu$ V) stereo; 50-dB quieting sens 36.1 dBf (35  $\mu$ V) stereo; capture ratio 1.3 dB (wide); FM FR 30-15,000 Hz  $\pm$  0.5, -1 dB. 17.2" w x 2.75" h x 14.5" d; 8.2 lb ..... \$280

## T-4130 AM/FM Tuner

Digital quartz-synthesized AM/FM tuner with 16 presets. Features digital frequency display; battery-free memory backup; stereo/mono switch; mute on/off; memory and signal-strength indicator. FM usable sens 17.2 dBf (2  $\mu$ V) stereo; 50-dB quieting sens 36.1 dBf (35  $\mu$ V) stereo; capture ratio 1.5 dB (wide); FM FR 30-15,000 Hz  $\pm$  1.5 dB. 17.2" w x 2.81" h x 10.56" d; 6 lb \$180

## PARASOUND

### ST220 AM/FM Tuner

Quartz-synthesis with PLL tuning; 6 AM, 6 FM presets; auto or manual tuning; 4-LED signal-strength indicator. FM section: IHF sens mono 10.8 dBf; 50-dB quieting sens mono 16.1 dBf, stereo 37.7 dBf; S/N 76 dB stereo. 82 dB mono; capture ratio 1.4 dB; sep 48 dB at 1,000 Hz; AM sup 65 dB; alt-ch rej 66 dB; adj-ch rej 8 dB. AM section: sens 175  $\mu$ V with built-in antenna. 17.25" w x 2.75" h x 11" d; 10 lb ..... \$265



Perreaux TU3

## PERREAUX

### TU3 PLL FM Tuner

5-section tuned-Varicap RF section; microprocessor-controlled digital tuning; linear phase filters in IF stage; switchable de-emphasis. S/N stereo 68 dBA (at 65 dBf), usable sens stereo 35.8 dBf (17  $\mu$ V); THD stereo 0.14%; FR 15-30,000 Hz  $\pm$  0.5 dB; capture ratio 1.5 dB; de-emphasis 25  $\mu$ s, 50  $\mu$ s, 75  $\mu$ s (switchable). 19" w x 1.75" h x 13.5" d; 13.5 lb ..... \$795

### TU1 PLL FM Tuner

MOSFET front end with 4 Varicap tuned sections; 6 presets; stereo/mono switch; last station recall; switchable de-emphasis. S/N 68 dBf; usable sens 12.8 dBf; THD stereo 0.14%; FR 30-15,000 Hz  $\pm$  0.5 dB; capture ratio 1.5 dB. 17" w x 2.25" h x 13.5" d; 12 lb ..... \$650

## PHILIPS BY NAP

### FT565XBK AM/FM Tuner

Features quartz-PLL digital tuning; 8 AM, 16 FM presets; 2-level auto search; FM noise reduction; LCD display of frequency, preset, and indications of memory, stereo, and tuning; 5-part signal-strength indicator; accepts 75- or 300-ohm antenna inputs; SISC filter; optional remote control; FM Auto Stereo and Manual Mono;

Tetrode MOSFET front ends. FM section: FR 30-15,000 Hz  $\pm$  0.5/-2 dB; sep 45 dB at 1,000 Hz; AM sup 55 dB; S/N 76/68 mono/stereo ..... \$259

## PIONEER

### F-91 Digital-Synthesis Tuner

Features presets for 24 AM and FM stations; ATRS that actively follows signal and rejects interference; Digital Direct Decoder Type III converts signal to digital and back to analog to reduce degradation; ID MOSFET; anti-vibration design; honeycomb-ribbed chassis; programming of three stations for sequential tuning; auto tuning; selectable muting level; rec-level calibration; 75-ohm antenna input. FM section: 50-dB quieting sens 34.8 dBf stereo; S/N 95/87 dB mono/stereo; FR 20-15,000 Hz  $\pm$  0.2/-0.8 dB. AM section: S/N 50 dB; sel 18 dB. 18" x 3<sup>9</sup>/<sub>16</sub>" x 12<sup>7</sup>/<sub>16</sub>"; 11 lb, 7 oz ..... \$550

### F-99X(BK) Digital AM/FM Tuner

Digital Direct Decoder tuner with quartz-PLL synthesis tuning. Features 16 random presets; search; LED signal-strength meter; AM-stereo adaptor jack; black with rosewood-finished vinyl-covered sides. 2.38" h x 17.94" w x 12.25" d ..... \$375

### TX-V1160(BK) Digital AM/FM/TV Tuner

Quartz-PLL digital-synthesis tuner with MTS decoder. Features 24 AM/FM presets; 12 TV presets; LED tuning indicator; RF input/output; video output; black. 2.31" h x 16.56" w x 12.5" d ..... \$330

CU-760(BK). Optional remote control for use with TX-V1160 tuner ..... \$50

### F-77(BK) Digital AM/FM Tuner

Digital Direct Decoder tuner with quartz-PLL synthesis tuning. Features 16 random presets; LED tuning indicator; auto station search; AM-stereo adaptor jack; black. 2.38" h x 16.56" w x 12.5" d ..... \$270

### F-X707(BK) AM/FM Tuner

Quartz-PLL synthesis tuner with 12 presets and auto search. 2.19" x 14.19" x 13.06" ..... \$170

### TX-V70 AM/FM Tuner

Quartz-PLL synthesis tuner with 16 presets; auto search; memory scan ..... \$165

## PROTON

### 440 Digital Tuner

Schotz AM/FM tuner with Schotz Noise Reduction. Features digital station readout; 12 presets; memory backup holds presets for 2 weeks when unplugged; adjustable rear panel output level. FM section: usable sens mono 1.8  $\mu$ V (10.3 dBf); 50-dB quieting sens mono (15.3 dBf), stereo (33.2 dBf); THD stereo 0.2%, mono 0.05% at 1,000 Hz; S/N 70 dB stereo, 75 dB mono; FR 20-20,000 Hz  $\pm$  0.2 dB; capture ratio 1.5 dB; sep 45 dB at 1,000 Hz; AM sup 60 dB; alt-ch rej 55 dB; adj-ch rej 90 dB. AM section: sens 300  $\mu$ V with built-in antenna. 16.5" w x 2.5" h x 9.75" d; 15 lb ..... \$250



Proton AT-300

### AT-300 AM/FM Stereo Tuner

AM/FM stereo tuner with Schotz noise reduction and remote control option; 20 presets; search

and scan; PLL; FM sens 1.9  $\mu$ V and 50 dB quieting sens (stereo) is 3.5 dB; THD 65 dBf 0.1%; S/N 75 dB; sep 50 dB ..... \$219

## QUAD

### FM4 FM Tuner

Stereo FM tuner designed to be used with Quad 44 preamp. Features no controls except 8 preset buttons, tuning knob, power switch; bar-graph meter indicates signal strength, center-channel tuning; dedicated microprocessor recalls desired station from memory, tunes it, automatically sets muting, automatic frequency control levels. Stations stored in memory for up to 5 years without power; anthracite grey. Mono/stereo 50-dB quieting sens 2.7/25  $\mu$ V; mono/stereo S/N ratio 76/70 dB at 1 kHz, 1 mV A-wid; mono/stereo distortion 0.05%/0.10% stereo; capture ratio 2.5 dB; sel 53 dB; image/IF rej 80/100 dB; FR 20-15,000 Hz  $\pm$  0/-1 dB; crosstalk 40 dB at 1 kHz; pilot-tone sup 60 dB; deemphasis switchable 50/75  $\mu$ sec ..... \$595

## RCA

### MPT200 Audio/Video Preamp Tuner

Dimensia A/V control center with unified remote control and on-screen status indication when used with Dimensia monitor lets you select inputs from up to 13 Dimensia components and 5 nonsystem components. Features auto input selection; remote control of volume, mute, direct access and scan, and off/on; SystemLink cabling; simultaneous recording and playback; auto status indication; auto switching; quartz-PLL synthesis tuning; 20-station random tuning memory; preset channel scanning; FM search tuning; electronic volume control; signal-processing loop; preset turn-on volume; fluorescent display; muting; bass, treble, and balance controls; 4 AC convenience outlets. Tuner section: FM sens 12.2 dBf; S/N 73 dB (mono); image rej 45 dB; sel 60 dB; FM FR 30-15,000 Hz; capture ratio 1.5 dB. .... \$349

## REALISTIC BY RADIO SHACK

### TM-150 AM/FM-Stereo Mini Tuner

PLL tuning; stereo/mono switch; FM stereo LED; illuminated tuning dial; built-in AM and FM antennas; terminals for external FM antenna. 9" x 2.5" x 6" ..... \$60

## REVOX

### B285 Tuner/Preamp

AM/FM stereo tuner/preamp with two microprocessors for control of input sensitivities, output levels, and operating functions. Features alphanumeric multi-mode LCD display; 29 AM or FM presets; level and reception mode (mono/stereo, blend) separately programmable for each preset; programmable volume limit; -20 dB button; subsonic filter; loudness contour; programmable output levels for A and B speaker pairs; comprehensive speaker protection circuits; serial data bus for external control devices; wireless infrared remote control (transmitter optional). Inputs for phono, tape, CD player, tape 2. FM section: alternate-ch sel 96 dB; adjacent-ch sel 16 dB; 50-dB quieting sens. mono 1.6  $\mu$ V (15.2 dBf), stereo 19  $\mu$ V (36.8 dBf); max S/N, A-wid, mono 84 dB, stereo 80 dB; THD mono 0.15%, stereo 0.3%; sep 43 dB at 1,000 Hz; capture ratio 2 dB. AM section: FR 120-3,000 Hz  $\pm$  6 dB; sens 36  $\mu$ V. 17.75" w x 6" h x 13.06" d; 33 lb ..... \$2,300

### B261 Tuner

Microcomputer-controlled tuner with programming feature covering ID and frequency of 20 stations, including preferred mode of reception

# Reality Realized.

## SONIC HOLOGRAPHY TRANSFORMS EXCITING NEW PROGRAM SOURCES AS WELL AS FAMILIAR OLD ONES INTO TRULY LIFELIKE MUSIC EXPERIENCES.

Watch a movie on a 13" black and white TV. Now see it in 70 millimeter Technicolor with Surround Sound.

Listen to your favorite musicians on a portable radio. Now sit three rows back from the stage at a live concert.

The difference is dimension: Width, depth, breadth and detail that turn flat sensory input into breathtaking reality. They're the missing ingredients of live musical performance that Sonic Holography restores to records, compact discs and even hi-fi movie soundtracks.

The most experienced and knowledgeable experts in the audio industry have concurred. Julian Hirsch wrote in *Stereo Review*, "The effect strains credibility — had I not experienced it, I probably would not believe it."

*High Fidelity* magazine noted that "...it seems to open a curtain and reveal a deployment of musical forces extending behind, between and beyond the speakers." According to another reviewer, "It brings the listener substantially closer to that elusive sonic illusion of being in the presence of a live performance."

All this with your existing speakers and music collection.

**HOW SONIC HOLOGRAPHY WORKS.** Unfortunately, conventional stereo cannot isolate the output of left and right speakers and send their output only to your left and right ears. Left and right versions of a sound occurrence also cross in the middle of your listening room, confusing your ears with additional extra sound arrivals a split second apart. Stereo imaging and separation suffer because both speakers are heard by both ears, confusing your spatial perception.

The Sonic Hologram Generator in the Carver 4000t Preamplifier, C-1 Preamplifier and Carver Receiver 2000 solve this muddling of sound arrivals

by creating a third set of sound arrivals. These special impulses cancel the objectionable second sound arrival, leaving only the original sound from each loudspeaker.

The result is a vast sound field extending not only wider than your speakers, but higher than your speakers as well. Sounds will occasionally even seem to come from behind you! It is as if a dense fog has lifted and you suddenly find yourself in the midst of the musical experience. Or, as the Senior Editor of a major electronics magazine put it, "When the lights were turned out, we could almost have sworn we were in the presence of a live orchestra."

**IMAGINE THE POSSIBILITIES.** Thanks to VHS and Beta Hi-Fi stereo soundtracks (found even on rental tapes), and the increasing number of stereo TV broadcasts, Sonic Holography can put you inside the video experience, too.

It's a breathtaking experience. Without the need for additional rear speakers, extra amplifiers or decoders, the visual experience is psychoacoustically expanded by lifelike sound that envelops you, transforming stereo from monochromatic flatness into vibrant three-dimensional reality. Instead of being at arm's length from the action, you are immersed in it.

Then there are the familiar audio sources which Carver innovation has further improved upon, each of which gains character and heightened impact through Sonic Holography.

Compact discs, whose potential is still trapped in the two-dimensionality of conventional stereo, are even more lifelike with Sonic Holography.

Thanks to the Carver Asymmetrical Charge-Coupled FM Detector, FM stereo broadcasts can be received hiss- and interference-free, ready to take on an astonishing presence and dimension through Sonic Holography.

Even AM stereo can actually become a three-dimensional phenomenon with Sonic Holography and the new Carver TX-11a AM/FM tuner which delivers AM stereo broadcasts with the same dynamics and fidelity as FM.

**ENHANCE YOUR SPATIAL AWARENESS WITH CARVER COMPONENTS.** When considering the purchase of a new preamplifier or receiver, remember how much more you get from the Carver 4000t, C-1 and Receiver 2000. Or add Sonic Holography to your existing system with the C-9 add-on unit.

Each can transcend the limits of your listening (and viewing) experiences by adding the breathtaking, spine-tingling excitement that comes from being transported directly into the midst of audio-video reality.

Visit your nearest Carver dealer soon and expand your range of experiences with Sonic Holography.



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# TUNERS

for each station. Features 20 station selector buttons; infrared remote control; two separate muting threshold buttons; high blend button; auto scanning; LCD display indicates stations and frequency alphanumerically; sens 0.5  $\mu$ V on 75 ohms for 26-dB S/N with 40-Hz deviation; usable sens mono 2  $\mu$ V, stereo 20  $\mu$ V on 75 ohms for a S/N ratio of 46 dB with 40,000 Hz deviation; capture ratio 0.8 dB for a S/N ratio of 30 dB; sel 80 dB tuned-in signal 100  $\mu$ V on 75 ohms. FR 30-15,000 Hz  $\pm$  1 dB; harmonic distortion 0.07% at 1,000 Hz and 40,000 Hz deviation mono and stereo L-R mV input on 75 ohms; S/N 75 dB, 30 Hz 15,000 Hz linear referred to deviation of 75,000 Hz with an input of 1 mV on 75 ohms; 17.75" x 6" x 13.06" \$1,800

## ROTEL

### RT850 AM/FM Tuner

Quartz-synthesizer tuner with microprocessor circuitry. Features 6 AM/6 FM presets, manual and autotune tuning. FM section: usable sens mono 2  $\mu$ V (11.2 dBf), 50-dB quieting sens mono 3  $\mu$ V (14.6 dBf), stereo 40  $\mu$ V (37.2 dBf); THD stereo 0.2%, mono 0.08% at 1,000 Hz; S/N 73 dB stereo, 75 dB mono; FR 30-15,000 Hz  $\pm$  0.2 dB; capture ratio 1.0 dB; sep 48 dB at 1,000 Hz; AM suppression 58 dB; AM section: sens 300  $\mu$ V/m; S/N 50 dB; 17" w x 2.56" h x 11.5" d \$279

### RT830 AM/FM Analog Tuner

AM/FM stereo tuner with LED indicators for signal strength; muting switch. FM section: usable sens mono 2  $\mu$ V (11.2 dBf), 50-dB quieting sens mono 3.5  $\mu$ V (16 dBf), stereo 50  $\mu$ V (39.4 dBf); THD stereo 0.6%, mono 0.3% at 1,000 Hz; S/N 65 dB stereo, 70 dB mono; FR 35-13,000 Hz  $\pm$  1.5 dB; capture ratio 2 dB; sep 38 dB at 1,000 Hz; AM sup 62 dB; AM section: sens 300  $\mu$ V/m; S/N 45 dB; 17" w x 2.56" h x 12.56" d; 6.8 lb \$179

## SAE

### T101 AM/FM Stereo Tuner

Computer direct-line digital tuner. Features 16 presets (8 AM/8 FM); auto and manual tuning; signal-strength, multipath, and level indicators; IF narrow; high blend; memory scan. FM section: IHF sens stereo 3.9  $\mu$ V (17 dBf); 50-dB quieting sens stereo 32  $\mu$ V (35.3 dBf); THD stereo 0.08% at 1,000 Hz; S/N stereo 70 dB; FR 30-18,000 Hz  $\pm$  1, -2 dB; capture ratio 1.2 dB; sep 55 dB at 1,000 Hz; alt-ch rejection -100 dB narrow; adj-c rejection -15 dB narrow; 20 lb; 19" w x 3.5" h x 12.5" d \$650

### T102 AM/FM Stereo Tuner

Computer direct-line digital tuner with 16 presets; auto and manual tuning. IF narrow; high blend. FM section: IHF sens stereo 4.1  $\mu$ V; 50-dB quieting sens 34  $\mu$ V; THD stereo 0.08% at 1,000 Hz; S/N 70 dB stereo; FR 30-18,000 Hz  $\pm$  1, -2 dB; capture ratio 1.2 dB; sep 55 dB at 1,000 Hz; alt-ch rejection -100 dB narrow; adj-c rejection -15 dB narrow; 19" w x 3.5" h x 12.5" d \$349

## SANSUI

### TU-X701 AM/FM Tuner

Vintage series tuner featuring random presets for 30 FM and AM stations; numeric keypad for recall; programming two frequencies for unattended recording; memory scan; RF mode selection; IF bandwidth selection; record calibrator; FM noise canceller; mode switch. Usable sens 38.0 dBf (stereo); THD 0.0095% (stereo); S/N 98 dB; IF response (at 84 MHz) 110 dB. 17.63" h x 3.81" w x 11.81" d; 10.4 lb \$475

### TU-X301 AM/FM Tuner

Vintage series tuner features digital-synthesis tuning; 6 AM/6 FM presets; FM noise-canceller circuit. 50 dB quieting sens 36 dBf (stereo), 16 dBf (mono); S/N 72 dB (stereo), 78 dB (mono); capture ratio 1 dB. 17.69" w x 1.81" h x 8.94" d; 5.3 lb \$290

### TU-D33X AM/FM Tuner

Digital-synthesizer front end; 6 presets for FM and 6 for AM; last station memory; stereo lock indicators. Selectivity 35 dB; S/N 50 dB; FM quieting sens 50 dB. 16.94" w x 1.81" h x 8.94" d; 5.1 lb \$250

## SONY

### ST-S700ES AM/FM Tuner

Features quartz frequency-synthesis tuning; SST super sound tracking front end that continuously shifts the center of the bandpass filter in response to the frequency modulations; wave optimized IF system to automatically select optimum filter characteristics; wave optimized direct PLL detector with low distortion and noise; wave optimized digital stereo decoder; direct comparator circuitry; 10 AM/FM presets; multi-process memory to remember various station settings for each preset; memory scan; calibration tone presets for off-air taping. S/N 91 dB stereo; FR 15-15,000 Hz  $\pm$  0.2, -0.5 dB; sel 65 dB. 17" w x 3.38" h x 13.62" d; 9 lb \$400

### ST-S500ES AM/FM Tuner

Features quartz frequency-synthesis tuning; WODSD wave optimized direct PLL detector with low distortion and noise; WODSD wave optimized digital stereo decoder; direct comparator circuitry; 10 AM/FM presets; multi-process memory to remember various station settings for each preset; calibration tone presets for off-air taping. S/N 84 dB stereo; FR 15-15,000 Hz  $\pm$  0.2, -0.5 dB; sel 55 dB narrow, 90 wide. 17" w x 3.38" h x 13.62" d; 9 lb \$300

## SOUNDCRAFTSMEN

### T6200 AM/FM Stereo Digital Tuner

Digital quartz-PLL tuner with 16 presets, 5-digit station readout, auto scan tuning, and active high-blend filter. 19" rack-mount front panel. IHF sens 1.6  $\mu$ V; S/N 75 dB; distortion 0.08%. 2.36" h x 19" w x 12" d \$299

## TANDBERG

### TPT 3001A Programmable FM Tuner

Features computer logic servo tuning; 8-ganged varactor tuning diodes in front end, dual-gate MOSFET's in RF and mixer stages; 8-station memory preset with touch-button recall and LED program readout; wide/normal/narrow IF bandwidth selector; autorange signal-strength meter with meter-range LED; center-tuning/preset-frequency meters. Audio circuitry includes selected all-metal film resistors, polypropylene capacitors, and min negative feedback; mono, ANC, servo, mute switches with LED's; 3-circuit muting; output level control; S/N 90 dB; narrow sel 125 dB. Rosewood side panels optional \$1,995

### TPT 3031A Programmable FM Tuner

Remote controlled tuner with 4 ganged diodes; dual gate MOSFET's in RF stage; 16 presets; manual/auto tuning; zero-negative-feedback audio section. Remote control and rosewood side panels optional. 17.13" w x 3.25" h x 13.75" d; 11 lb \$895

## TECHNICS

### ST-G7 AM/FM-Stereo Tuner

Features 16 presets; triple-quartz control (front-end IF and MPX) for 120 dB IF strip, quartz-controlled double-PLL DC-peak sample-and-hold MPX digital linear detector using 1-shot multivibrator and mirror-loaded current stabilizer for wide dynamic range; auto IF bandwidth; in/out computer interface. THD stereo 0.03%, mono 0.02%; S/N stereo 94 dB; capture ratio 1.0 dB; sens 20  $\mu$ V; 9 lb \$500

### ST-G6T AM/FM-Stereo Tuner

Features quartz synthesis. FM section: IHF sens mono 1.2  $\mu$ V (12.8 dBf); THD stereo 0.03%, mono 0.02%; S/N 73 dB stereo, 80 dB mono. AM section: sens 20  $\mu$ V with built-in antenna. 5.1 lb \$315

### ST-G50 AM/FM-Stereo Tuner

Features 39 AM/FM presets; twin-quartz tuning; linear-switching MPX circuit for wide stereo sep and FR; DC construction. FM section: 50-dB quieting sens stereo 44  $\mu$ V (38.1 dBf); THD stereo 0.03% at 1,000 Hz; S/N 73 dB stereo; capture ratio 1 dB. 4.8 lb \$240

### ST-G40 AM/FM-Stereo Tuner

Features 16-station random-access preset memory and large LCD readout. FM section: 50-dB quieting sens stereo 44  $\mu$ V (38.1 dBf); THD stereo 0.18% at 1,000 Hz; S/N 73 dB stereo; capture ratio 1 dB; separation 50 dB at 1,000 Hz. 4.8 lb \$185

## VECTOR RESEARCH

### VU-1500 Tuner

Quartz PLL-synthesized tuner. FM section: alt-ch sel 60 dB; 50-dB quieting sens mono 3  $\mu$ V (10 dBf); 50-dB quieting sens stereo 40  $\mu$ V (37 dBf); max S/N A-wtd. mono 75 dB, stereo 73 dB; THD mono 0.08%; stereo 0.2%. 8.5 lb; 17" w x 3" h x 12.5" d \$200

## YAMAHA

### T-85B AM/FM Digital Tuner

Features RS integrated system remote compatibility; CSL tuning; digital fine tuning; low-distortion high-separation pure-stereo MPX demodulator; 20 random-access presets; 6-way status station memory; 4-position IF mode selector (super-wide, wide, narrow, super-narrow); dynamic auto blend; signal-quality meter; switchable FM RF mode; zero IM mixer front end. 50 dB quieting sens 1.6  $\mu$ V (15.3 dBf) mono; S/N stereo 87 dB; sep 68 dB. 17.12" w x 3.62" h x 14" d \$469

### TX-900U AM/FM Digital Tuner

Features RS integrated system remote compatibility; digital fine tuning; 3-position auto/manual IF mode selector; 20 random presets; 4-way station memory; high blend; integrated multifunction LCD display. \$379

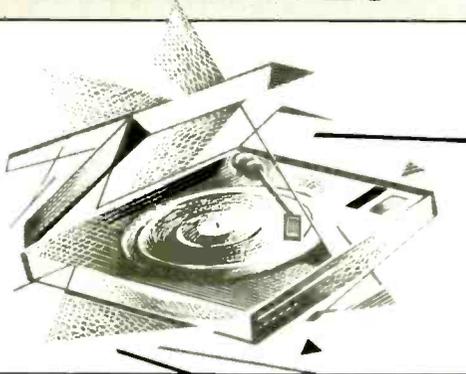
### TX-500U AM/FM Digital Tuner

Features RS integrated system remote compatibility; direct PLL IF count synthesizer tuning; 2-position IF mode selector; 20 random presets; 4-way station memory; high blend; integrated multifunction LCD display. \$269

### TX-400U AM/FM Digital Tuner

Features RS integrated system remote compatibility; direct PLL synthesizer tuning; 16 random presets; integrated multifunction LCD display; auto-search tuning; manual up/down tuning. Black; 7 lb \$219

# TURNTABLES



## ACOUSTIC RESEARCH

### Connoisseur Series

#### ETL-1 Manual Turntable

Manual belt-drive turntable with electronic speed control and 3-point dual-spring suspension system factory tuned with removable lead weights. Features adjustable isolation feet; sapphire main bearing; 33.33 and 45 rpm; 8.5-lb platter. w&F 0.03% wrms; rumble -81 dB; 20.44" w x 7.5" h x 17.5" d (dustcover down); 29 lb. Natural cherry finish ..... \$700

#### ES-1 Manual Turntable

Manual belt-drive turntable with 24-pole synchronous motor. Features 33 and 45 rpm speeds. w&F 0.04% wrms; rumble -78 dB; effective tonearm mass without cartridge 14.5 g; effective tonearm length 229 mm; max tracking error 2.6°. 18.19" w x 7" h x 15.25" d (dustcover down). Natural cherry, with tonearm ..... \$500  
Natural cherry, without tonearm ..... \$375

### AR Series

#### EB-101 Manual Turntable

Manual belt-drive pivoted-arm turntable with fully isolated 3-point suspension. Arm and platter on subchassis formed by pressed-steel T-bar spring-suspended and damped at 3 points. 33.33 and 45 rpm. Features 12-pole synchronous motor; 3.9-lb platter; detachable carbon-fiber headshell with clamping screw on arm; base finished in oiled walnut veneer. w&F 0.05% DIN; rumble -72 dB DIN; effective tonearm mass without cartridge 12 g; cartridge weight range 3-9 g; effective tonearm length 229 mm; overhang 16 mm; 18.19" w x 7" h x 15.25" d (dustcover down); 13.5 lb ..... \$425

## ADC

#### LT 60 Automatic Turntable

Linear-tracking belt-drive P-mount turntable. Features 33.33 and 45 rpm; soft-touch electronic controls; illuminated electronic strobe with pitch control; anti-feedback suspension. 16.5" w x 5" h x 15.5" d (dustcover down) ..... \$140

#### LT 34 Automatic Turntable

Compact linear-tracking belt-drive P-mount turntable. Features 33.33 and 45 rpm; 2 DC-servo-controlled motors; anti-feedback suspension. 13.25" w x 3.5" h x 13.75" d (dustcover down); 9.5 lb ..... \$100

#### RC1 Changer Turntable

Belt-drive turntable stacks up to 4 records. Features 33.33 and 45 rpm; viscous-damped cueing; electronically controlled DC-servo motor. ADC magnetic cartridge included ..... \$100

## A/D/S/

#### Atelier P4 Automatic Turntable

Quartz-crystal-controlled direct drive; pivoted

arm; ultra-low-mass tonearm; 33.33 and 45 rpm; variable speed control with strobe; holds platter and tonearm on a subchassis that floats on 4 tuned mounts. W&F  $\pm 0.025\%$  wrms; rumble -75 dB DIN B, 53 dB DIN A; effective tonearm length 8.69"; max tracking error 2.2"; 17.5" w x 4.53" h x 14.25" d (dustcover down); 11 lb ..... \$649

## AKAI

#### AP-A305-B Semiautomatic Turntable

Belt drive; straight low-mass tonearm ..... \$99

## ARISTON

#### RD90 Superior Turntable

Two speed 33 $\frac{1}{3}$  and 45 rpm; precision ground and lapped single point bearing; closed transmission loop isolation; massive concave platter; Q-damping to chassis and platter; anti-stat mat; solid aluminum pre-cut tonearm board; walnut veneered medium density fibreboard plinth; outboard power supply ..... \$1,200

#### RD90 Turntable

Two speed 33 $\frac{1}{3}$  and 45 rpm; precision ground and lapped single point bearing; closed transmission loop isolation; massive concave platter; Q-damping to chassis and platter; anti-stat mat; solid aluminum pre-cut tonearm board; real wood walnut veneered medium density fibreboard plinth ..... \$950

#### RD60 Turntable

Two speed 33 $\frac{1}{3}$  and 45 rpm; closed transmission loop isolation; massive concave one-piece 13" platter; Q-damping to plinth and platter; anti-stat mat; enigma tonearm; w&F 0.08%; finished in carmine, black, powder blue or white ..... \$475

#### RD50 Turntable

Two speed electronic 33 $\frac{1}{3}$  and 45 rpm; massive concave one-piece 13" platter; Q-damping to plinth and platter; anti-stat mat; rubber belt drive; enigma tonearm; balanced phono cables; gold-plated phono connectors; magnetic cartridge; w&F 0.08%; Lux finish in carmine, black, powder blue or white; electronic speed switching ..... \$375

#### Q Deck Turntable

Two speed electronic 33 $\frac{1}{3}$  and 45 rpm; concave single piece platter; anti-stat mat; rubber belt drive; Opus tonearm; auto lift at end of record; w&F 0.08%; grey top plate and black surround. With arm ..... \$260  
With arm and cartridge ..... \$299

## BANG & OLUFSEN

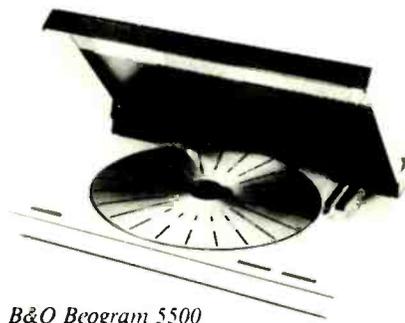
#### Beogram 5500 Automatic Turntable

Short tangential tonearm; 33 and 45 rpm; silver

and black; remote controlled by B&O Master Control Panel; repeats play up to 7 times; leaf-spring suspension; compatible with B&O microcross cartridges; auto record-size sensing; auto interior light. w&F 0.06% DIN, 0.03% wrms; DIN-weighted rumble -80 dB; 12.5" w x 3" h x 12.75" d; 11.6 lb ..... \$450

#### Beogram 3300 Belt-Drive Turntable

Tangential tonearm; 33 and 45 rpm; remote control with Terminal 3300 remote, Master



B&O Beogram 5500

Control Link, or Datalink system; black plexiglass and brushed aluminum; can be wall mounted with optional shelves; repeat; interior light; auto pause at end of tape, and cassette deck pauses at end of LP; leaf-spring-suspended subchassis; neoprene belt; electronic speed control (within 0.2%). w&F 0.06% DIN, 0.03% wrms; DIN-weighted rumble -80 dB; 16.5" w x 3" h x 12.75" d; 11.7 lb ..... \$399

#### Beogram TX-2 Automatic Turntable

Tangential-tracking belt-drive turntable; 33 and 45 rpm; fixed headshell. Recommended tracking force 1-1.5 g; w&F 0.03% DIN; rumble -80 dB; 16.5" w x 3" w x 12.75" d; 22 lb ..... \$329

#### Beogram RX-2 Automatic Turntable

Belt-drive turntable with pendulum-suspended chassis and straight pivoting tonearm; 33 and 45 rpm; fixed headshell. Recommended tracking force 1-1.5 g; w&F 0.035% DIN; rumble -75 dB; 16.5" w x 2.5" h x 17.9" d ..... \$229

## CW&J WALKER

### BY MUSIC & SOUND IMPORTS

#### CJ-58 MKII Manual Turntable

Belt-drive pivoted-arm turntable. Features 33.33 and 45 rpm; 3-point fully adjustable suspension; removable tonearm board; tufnol platter to eliminate ringing. w&F 0.05% wrms; rumble -77 dB; effective tonearm mass without cartridge 11 g; effective tonearm length 229 mm; 20 lb. With MAS 28211 tonearm ..... \$587  
Without tonearm ..... \$289

# TURNTABLES

## CJ-61 Turntable

Belt-drive turntable with independent 3-point fully adjustable suspension; floating subframe design utilizes a min of vibration-causing materials for excellent dynamic behavior and rapid recovery following excitation. Features manual pivoted arm, 33.33 and 45 rpm. w&F 0.06%; rumble -77 dB; effective tonearm mass without cartridge 11 g ..... \$329  
Without tonearm ..... \$179

## DENON

*All arm and automatic functions of Denon turntables are noncontact, microprocessor controlled. Motor servo is controlled and maintained by magnetic speed detection.*

### DP-59L Direct-Drive Turntable

Features massive wood base with isolation; 5.5-lb platter with high-torque direct-drive AC motor. Lift only ..... \$650

### DP-47F Direct-Drive Turntable

Features dynamic servo tracer; flat-twin direct drive; full auto plus locate function; thick wood base ..... \$425

### DP-35B Automatic Turntable

Features dynamic servo tracer tonearm; begins and ends play automatically; flat-twin direct drive; high-density compound base ..... \$320

### DP-23F Turntable

Full-size automatic turntable with dynamic servo tracer. Black ..... \$260

### DP-7F Turntable

P-mount automatic turntable with dynamic servo tracer. Black ..... \$180

## DUAL BY ORTOFON

### CS5000 Semiautomatic Turntable

Belt-drive turntable with hall-effect motor and 4-point full-floating suspension system. Features quartz-monitored 3-speed electronic control; optimum-pivot tonearm design; acoustic mat; cueing lever; 33.33, 45, and 78 revolution-per-minute speeds. Wow-and-flutter 0.015% wrms; rumble -56 dB DIN unwt. Available with black or walnut wood base ..... \$450

### CS505-3 Semiautomatic Turntable

Belt-drive, heavy mass platter and acoustic mat. Features floating chassis design; vario-pitch;



Dual CS505-2

carbon fiber headshell on ULM tonearm. Walnut or black wood base ..... \$350

### CS505-2 Belt-Drive Turntable

Semiautomatic turntable with acoustic mat. Features floating-chassis design; vario-pitch;

ULM tonearm. Available in black or walnut wood base ..... \$290

### CS503-1 Semiautomatic Turntable

Belt drive turntable features solid block shock-absorbing chassis with damping feet; heavily damped platter; ULM tonearm; carbon fiber headshell. 33/45 rpm, w&F <0.07%/0.04%; rumble, unwt. >46 dB. 17.3" w x 4.5" h x 14.3" d. Black base ..... \$250

## HARMAN KARDON

### T65C Semiautomatic Turntable

Belt-drive turntable with AC sine-wave driven motor; 33.33 and 45 rpm; ±3% speed pitch control; 3-point floating suspension with counter-weighted subchassis; 3.3 lb. platter; highly absorbent platter mat; disc stabilizer; removable ultra-low capacitance cables with gold-plated plugs. w&F 0.025% wrms; rumble -70 dB DIN-B; tonearm mass without cartridge 9.5 g ..... \$575

## HEYBROOK BY D'ASCANIO

### TT-2 Series II Turntable

Hand-assembled belt-drive 33.33- and 45-rpm armless manual turntable with removable armboard. Features low-speed synchronous motor driving massive 2-piece platter; adjustable 3-point spring-suspension subchassis of cast aluminum; laminated armboard; massive wood base. Finished in real walnut or gloss black. w&F <0.1% DIN peak wtd; rumble -73 dB wtd DIN-B. 6.25" h x 17.5" w x 14.25" d; 26 lb ..... \$580

## HITACHI

### HTMD46 Automatic Turntable

Linear tracking; belt drive; MM cartridge with diamond stylus; auto size/speed selector; photo sensor return; feather-touch IC-logic control; muting; front-panel operation; die-cast aluminum-alloy platter; remote controlled through Hitachi HTA50AV or HPT120AV. w&F 0.045% wrms; S/N 70 dB DIN-B ..... \$180

## J. A. MICHELL BY RMI

### Gyrodec Manual Turntable

Belt drive; 33.33 and 45 rpm; balanced 3-point suspension. w&F 0.04% wrms; rumble <78 dB; S/N <76 dB A-wtd. 53 cm w x 19 cm h x 42 cm d (dustcover down); 43 lb ..... \$1,190

### Synchro Manual Turntable

Belt drive; 3-point suspension; 33.33 and 45 rpm; w&F 0.05% wrms; rumble <74.5 dB; S/N <72 dB A-wtd. 18" w x 5.5" h x 13.5" d (dustcover down); 18 lb ..... \$650

## JVC

### QLA75 Quartz-Locked Turntable

Select Series turntable features double-servo quartz control; dynamic-Q damping system for tonearm; J-shaped tonearm interchangeable with straight arm; gimbal support; high-torque coreless DC servo motor and heavy platter. Mirror-finished multi-layer solid cabinet. w&F 0.18% wrms; S/N 80 dB (DIN-B). 19.5" w x 8.25" h x 16.5" d; 30.8 lb ..... \$650

### ALFQ5BK Quartz-Locked Turntable

Automatic direct-drive turntable with double-servo quartz control and Super-FG servo for speed accuracy. Features coreless DC-FG-servo direct-drive motor with smooth cog-free rotation; independent suspension system; low-mass straight tonearm with low-center-of-gravity sup-

port for reduced IMD and w&F; space-efficient dustcover; P-mount compatible; repeat; strobe; cueing lever; 33.33 and 45 rpm; floating tonearm/platter suspension. w&F 0.025% wrms; rumble 78 dB; effective tonearm length 220 mm; max tracking error -0° 43', +3° 35'. 17.19" w x 3.19" h x 14.19" d (dustcover down); 10.8 lb ..... \$180

### ALF350BK Automatic Turntable

Automatic turntable with remote control capability when used with JVC Compu-Link components. Features new cabinet support system and large insulators; low-mass straight tonearm with low-center-of-gravity support for reduced IMD and w&F; precision DC-servo motor; P-mount compatible ..... \$165

### ALF3BK Automatic Turntable

Automatic direct-drive turntable with new cabinet support system and large insulators for better stability and higher resistance to vibration and acoustic feedback. Features coreless DC-FG-servo direct-drive motor with smooth cog-free rotation; low-mass straight tonearm with low-center-of-gravity support for reduced IMD and w&F; P-mount compatible; pivoted arm; strobe; cueing lever; 33.33 and 45 rpm; variable speed control. w&F 0.03% wrms; rumble 78 dB; effective tonearm length 220 mm; max tracking error -0° 43', +3° 35'. 17.19" w x 4.25" h x 14.19" d (dustcover down); 10.1 lb ..... \$145

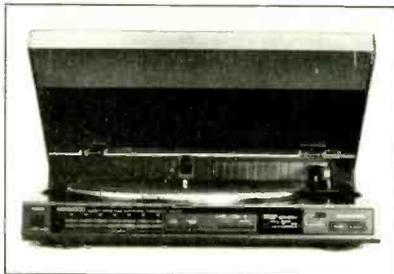
## KENWOOD

### KD-76F Linear-Tracking Turntable

Programmable direct-drive turntable with 7-track random program memory. Features auto disc size/speed selector; slotless/coreless FG servo drive; dual-magnet type cartridge; cartridge sensor sensitivity selector; remote controlled through KC-206 preamp and Kenwood receivers; w&F less than 0.025 wrms. 16.56" w x 3.56" h x 14.13" d; 11 lb ..... \$240

### KD-66F Linear-Tracking Turntable

Automatic direct-drive turntable with auto lead-in and return. Features slotless/coreless FG servo drive; P-mount cartridge connector (cartridge included); cueing control; repeat switch; auto disc size/speed selector; w&F less than 0.025% wrms; remote controlled through KC-206 preamp and Kenwood receivers. 16.56" w x 3.75" h x 14.13" d; 9 lb ..... \$200



Kenwood KD-76F

### KD-56R Direct-Drive Turntable

Semiautomatic turntable with slotless/coreless FG servo drive. P-mount cartridge included; straight tonearm; cueing; w&F less than 0.028% wrms. 16.56" w x 4.06" h x 14.38" d ..... \$130

## KYOCERA

### PL-910 Manual Turntable

Armless belt-drive turntable with ceramic plat-

# TURNTABLES

ter and base. Features 33.33 and 45 rpm; variable speed control with strobe; cutless-core power transformer; dual suspension; heavy-duty DC-servo brushless motor; 11-lb platter assembly. w&F 0.025% wrms; s/n 78 dB DIN-B; accepts 9"-10" tonearms. 18" x 7.5" x 15.25"; 44 lb ..... \$2,000

### PL-701 Automatic Turntable

Fully automatic turntable with 4.6-lb platter and microcomputer electronic sensing tonearm. Features belt drive; pivoted arm; 33.33 and 45 rpm; variable speed control; strobe. Supplied with stabilizer (0.7 lb); straight aluminum tonearm; dual suspension. W&F 0.03% wrms; s/n 70 dB DIN-B; effective tonearm length 8.88" (0.6" overhang); max tracking error  $\pm 2^\circ$ ; 18.12" w x 6" h x 15.36" d; 19.6 lb ..... \$450

### PL-601 Semiautomatic Turntable

Front-panel controls; belt drive; dual suspension; pivoted arm; 33.33 and 45 rpm; variable speed control with strobe; wood base with adjustable feet; nonfriction electronic sensing; straight aluminum tonearm. W&F 0.035% wrms; s/n 68 dB DIN-B; effective tonearm length 8.5" (0.6" overhang); max tracking error  $\pm 2^\circ$ ; 18.12" w x 6" h x 15.36" d ..... \$350

## LINN BY AUDIOPHILE SYSTEMS

### LPI2 Manual Single-Play Turntable

Belt-drive 33.33-rpm turntable with manual tonearm; 24-pole synchronous motor; 12" zinc-aluminum alloy die-cast platter with felt mat; 1-point oil-bath bearing; 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% wrms; rumble -60 dB unwd; speed accuracy  $\pm 0.04\%$ ; 17.5" w x 14" d x 5.5" h ..... \$945

### Axis Manual Turntable

With Class A amplifier; belt-drive; pivoted arm. Plays 33.33-rpm LP's and 45-rpm singles. Speed accuracy 0.1%; W&F 0.05%; rumble -75 dB DIN; effective tonearm length 284 mm; 16 lb ..... \$595

## LUXMAN

### P-102 Belt-Drive Turntable

Automatic linear-tracking turntable with strobe, variable speed control, floating tonearm/platter suspension, cueing lever, repeat play, manual play. P-mount compatible. Remote capable. W&F 0.04% wrms; rumble 70 dB; effective tonearm length 133 mm; max tracking error 0.1". 16.36" w x 4.5" h x 14.06" d (dustcover down); 11.61 lb ..... \$350

### P-100 Belt-Drive Turntable

Automatic linear-tracking turntable with pivoted arm, 33.33 rpm only, variable speed control, floating tonearm/platter suspension, cueing lever. W&F 0.06% wrms; rumble 72 dB; effective tonearm length 222 mm. 16.36" w x 4.81" h x 14.89" d; 11.7 lb ..... \$250

## MARANTZ

### TT-451 Linear-Tracking Turntable

Automatic linear-tracking turntable. Features auto-speed/size selector; P-mount compatible; 33.33 and 45 rpm; w&F 0.05% wrms; rumble -70 dB. 16.36" w x 3.75" h x 13.56" d (dustcover down); 9.5 lb ..... \$230

### TT-170 Semiautomatic Turntable

Belt drive turntable features front panel cueing;

P-mount cartridge; 33.33/45 rpm; w&F 0.08% wrms; rumble -55 dB. 4.63" h x 16.5" w x 13.25" d; 9.5 lb ..... \$100

## MEITNER BY MUSEATEX AUDIO

### AT-2 Turntable

Features a small, lead-filled aluminum platter that supports the record by its label area only, holding it in place with an inverted, double-edged clamp; subchassis rests on three large aluminum cones. Platter design is for low resonance and efficient dissipation of vibrational energy to the surrounding air. Subchassis and platform are made from Corian, a synthetic marble, for feedback isolation. Adjustable controls for vertical tracking angle and pitch; plays at 33 $\frac{1}{3}$ , 45, and 78 rpm; AT-2 unipivot 3-rod tonearm included ..... \$1,500

## MICRO SEIKI BY ANALOG EXCELLENCE

### SZ-1T Manual Turntable

Massive zinc-alloy turntable system with vacuum hold-down; belt drive; 33.33 and 45 rpm; variable speed control; strobe; outboard air-bearing motor with high-inertia flywheel spindle; 44-lb bronze platter. W&F 0.025% wrms; s/n 90 dB A-wtd. 33" w x 12" h x 18" d (dustcover down); 240 lb ..... \$15,000

SZ-1TSS. Same as above with 48-lb steel platter, 2 tonearms, and isolation base. 260 lb ..... \$20,000

### SX-555FVW Manual Turntable

Belt-drive turntable with patented quadruplex isolation feet and vacuum hold-down; rosewood cabinet; 17-lb air-bearing bronze and aluminum duplex platter; 33.33 and 45 rpm; variable speed control. W&F 0.025% wrms; s/n 78 dB A-wtd. 21.5" w x 7.5" h x 17.5" d (dustcover down); 47 lb ..... \$2,495

### SX-111FV Belt-Drive Turntable

Vacuum hold-down; air-bearing system; rosewood cabinet; 22-lb bronze platter; 33.33 and 45 rpm; variable speed control. W&F 0.0225% wrms; s/n 78 dB A-wid ..... \$3,995

### RX-1500VG Thread-Drive Turntable

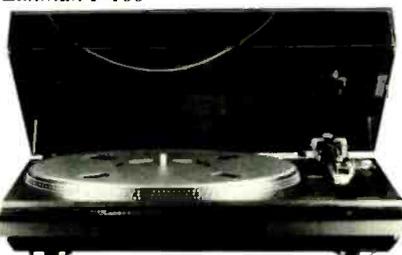
20-lb bronze platter turntable with light-force vacuum record hold-down; 33.33 and 45 rpm; variable speed control; nonresonant zinc alloy frame and outboard motor; 4-lb sealed oil-bath center spindle. W&F 0.025% wrms; signal-to-noise ratio 85 dB A-weighted. 26" w x 6.5" h x 16" d; 100 lb ..... \$2,995

RX-1500FVG. Air-bearing version of above. 120 lb ..... \$3,995

### RX-1500 Basic Turntable

Belt-drive nonresonant zinc-alloy turntable with ability to mount 2 tonearms simultaneously. Features 33.33 and 45 rpm; variable speed control; aluminum platter. W&F 0.025% wrms; s/n 78 dB A-wtd. 19" w x 6" h x 13" d ..... \$1,495

### Luxman P-100



## NIKKO AUDIO

### NP-750 Automatic Turntable

Fully automatic quartz-lock direct-drive turntable ..... \$240

### P-5 Semiautomatic Turntable

Direct-drive semiautomatic turntable with 20-pole, 30-slot brushless DC 3-phase motor. Features die-cast aluminum platter; straight-line tonearm;  $\pm 3\%$  pitch control. W&F 0.085% wrms; rumble 38 dB weighted ..... \$200

### P-3 Semiautomatic Turntable

Semiautomatic full-size belt-drive turntable with P-mount tonearm, repeat key, and manual damped cueing. W&F 0.045% ..... \$100

## ONKYO

### CP-1057FB Integra Automatic Turntable

Computer-controlled quartz-PLL direct-drive turntable. Features pivoted arm; strobe; 33.33 and 45 rpm; triple-stage isolation; floating subchassis on 3-point suspension; gimbal-support tonearm bearings; computer-controlled tonearm functions; separate motor for tonearm; 2-speed search; straight low-mass tonearm; Polysorb vibration absorbing compound for record mat and cabinet feet; gold-lacquered platter; gold-anodized tonearm; opto-electronic record-end detector; black finish. Remote control optional. W&F 0.023% wrms; rumble -80 dB; effective tonearm length 226 mm; max tracking error  $\pm 3$ ,  $-1^\circ$ . 17.44" w x 6.25" h x 16.12" d; 20 lb ..... \$350

### CP-1046FB Automatic Turntable

Computer-controlled direct-drive pivoted-arm turntable. Features PLL; quartz-lock; 33.33 and 45 rpm; 2-color quartz-lock indicator; triple-stage isolation system with floating subchassis; 3-point subchassis suspension; computer-controlled motor-assisted tonearm; opto-electronic record-end detector; straight low-mass tonearm; gimbal-precision tonearm bearings; 2-speed search; black finish. Remote control optional. W&F 0.025% wrms; rumble -75 dB; effective tonearm length 224 mm; max tracking error  $\pm 3$ ,  $-1.5$ . 16.5" w x 5.06" h x 14.75" d (dustcover down); 13 lb ..... \$230

### CP-1036A Semiautomatic Turntable

Direct-drive pivoted-arm turntable. Features PLL; quartz-lock 33.33 and 45 rpm; triple-stage isolation with floating subchassis; front-panel controls; straight-line low-mass tonearm; gimbal-support precision tonearm bearings; black finish with smoked dustcover. W&F 0.025% wrms; rumble -70 dB; effective tonearm length 224 mm; max tracking error  $\pm 3$ ,  $-1.5$ . 16.5" w x 5.06" h x 14.75" d; 12 lb ..... \$180

## ORACLE AUDIO

### Premiere Mark III Manual Turntable

Belt-drive turntable without tonearm. Remote control power drive module, 33.33 and 45 rpm; variable-speed control; strobe; hi-torque DC motor; adjustable spring-suspension system; record-coupling system; tonearm cartridge protractor, strobe disc included. 20" w x 6.5" h x 15" d; 42 lb ..... \$2,350

Gold Plated. Premiere Mark III aluminum and 24k gold plating ..... \$2,950

### Delphi MK III Manual Turntable

Belt-drive turntable without tonearm. Features 33.33 and 45 rpm; hi-torque DC motor; adjustable spring-suspension system; record-coupling system; tonearm/cartridge protractor and strobe

disc included. 19" w x 6" h x 14" d ..... \$1,395  
**Delphi Aluminum.** Aluminum/24k gold plating ..... \$1,970  
**Delphi Black.** 24k gold plating ..... \$2,295

**Alexandria Mark III Manual Turntable**  
 Belt-drive turntable without tonearm. Features 33.33 and 45 rpm; hi-torque DC motor; adjustable spring-suspension system; record-coupling system. 20" w x 6" h x 15" d ..... \$895

## PARASOUND

**T/FS-880 Semiautomatic Turntable**  
 Belt-drive; floating suspension (motor separate from subchassis); P-mount compatible; die-cast platter; decoupled counterweight. W&F 0.025%; rumble -72 dB; effective tonearm length 222 mm; 17" w x 4" h x 14.25" d ..... \$200

## TTb-720 Semiautomatic Turntable

Belt-drive; front-mounted controls; P-mount compatible; 33.33 and 45 rpm; variable speed control; strobe; pivoted straight arm; DC-servo motor; damped spring suspension isolated from bottom of base. W&F 0.05% wrms; rumble -65 dB; effective tonearm mass without cartridge 14 g; effective tonearm length 215 mm; max tracking error 1.6°. 16" w x 3.75" h x 12.75" d (dustcover down); 10 lb ..... \$130

## PIONEER

**PL-90 Direct-Drive Turntable**  
 Features aluminaceraic tonearm; Dynamic Resonance Absorber consisting of a viscous damper and weight for eliminating resonance; coreless direct-drive DC-servo motor controlled by quartz-PLL servo system; platter has diameter of 14<sup>3</sup>/<sub>16</sub>". and weighs 7 lb. 4 oz ..... \$900

## PL-V70 Programmable Turntable

Automatic front-loading belt-drive programmable turntable. Features DC servomotor; dynamic resonance absorber; linear-tracking; 33.33 and 45 rpm; random program playback. Includes low-mass tonearm with Pioneer PC-291 cartridge. W&F 0.05% wrms. 16.56" w x 4.12" h x 13.75" d ..... \$300

## PL-L550 Automatic Turntable

Direct-drive linear-tracking turntable with Stable Hanging Rotor. Features dynamic resonance absorber; T4P P-mount cartridge adaptor; Polymer Graphite straight tonearm; auto disc size selector; auto speed selector. W&F 0.025% wrms. 16.56" w x 4.25" h x 14.38" d ..... \$250

## PL-X505(BK) Automatic Turntable

Belt-drive turntable with Stable Hanging Rotor. Features linear-tracking tonearm; T4P P-mount PC-295T cartridge; up/down cueing; repeat function. W&F 0.045%. \$140

## RCA

### MT230 Linear Tracking Turntable

Dimensia turntable with remote-control operation and on-screen status indication when used with Dimensia monitor. Features belt-drive design; P-mount cartridge; programmable track selection; system record-protection logic; auto size and speed selection; cue muting. S/N 65 dB; W&F less than 0.06%. 14.63" w x 3.5" h x 14.25" d ..... \$249

## REALISTIC

### LAB-2200 Direct-Drive Turntable

Automatic linear-tracking turntable with Realistic/Audio-Technica dual-magnet P-mount cartridge, repeat button, straight tone-



*Revolver by Music Hall*

arm, strobe, variable speed control, 33.33 and 45 rpm. W&F 0.065% wrms; rumble 62 dB DIN; effective tonearm length 132 mm ..... \$150

## LAB 450 Semiautomatic Turntable

With Realistic/Shure MM cartridge; direct drive; neon strobe; straight tonearm; damped cueing; front-panel controls; 33.33 and 45 rpm; adjustable antiskating; rubber mat; 45 adaptor. Rumble -65 dB; W&F <0.05% ..... \$130

## LAB-330 Turntable with Phono Preamp

Semiautomatic turntable with switchable stereo preamplifier for compatibility with MM inputs, ceramic phono inputs, or high-level tape or aux inputs. With Realistic/Audio-Technica cartridge; belt drive; neon strobe; pitch control; damped cueing; rubber mat; 45 adaptor; straight tonearm; electronically controlled DC motor; 33.33 and 45 rpm. Rumble -55 dB; W&F <0.1% ..... \$90

**LAB-89.** Similar to above except changer that stacks 4 records ..... \$80

## REVOLVER BY MUSIC HALL

### Revolver Belt-Drive Turntable

Split-plinth turntable with plinth and platter of medium-density fibreboard and self-damping material. AC synchronous motor with 2-speed stepped pulley; ethylene proylene drive belt; 3 molded nonadjustable feet. Includes Precision Instant Grip clamp, starmat, lubricating oil. With Revolver tonearm and Audio-Technica cartridge. Redwood high-gloss finish ..... \$525  
 Black-ash veneer ..... \$475  
 Gray ..... \$450

## REVOX

### B291 Linear-Tracking Turntable

Quartz-controlled direct-drive turntable with patented Revox Linatrack system. Features ultra-short linear-tracking tonearm; pitch control regulation of  $\pm 9.9\%$  in precise 0.1% steps, with LED display showing the variation; P-mount cartridge adaptor; channel balance; auto start; front-panel-mounted controls; W&F <0.05%. 17.7" w x 5.6" h x 15.6" d; 20 lb ..... \$1,000

## ROKSAN ENGINEERING

### Xerxes Turntable Without Tonearm

Meditate top platform; 2-piece single-point bearing designed to be self-centering and self-aligning; inner and outer platters of solid aluminum alloy; spring-mounted revolving motor; felt mat; separate power supply in small box; 33.33 or 45 rpm; diamond-turned platter and pulley. 15" x 6" x 19".

Rosewood ..... \$1,665  
 White ash ..... \$1,585  
 Walnut or teak ..... \$1,530  
 Black ash ..... \$1,450

## ROTEL

### RP850 Belt-Drive Turntable

Pivoted-arm turntable features 33.33 and 45 rpm; 4-pole hysteresis synchronous motor. W&F 0.03% wrms; max tracking error  $\pm 2.35$  to  $-1.3$ °; signal-to-noise ratio 70 dB (DIN-B); 17" w x 5.31" h x 12.75" d ..... \$349

## SANSUI

### XP-99 Automatic Turntable

Silent-synchrotor quartz-servo programmable direct-drive turntable. Features pivoted arm; 33.33 and 45 rpm; quartz lock. W&F 0.012% wrms. 16.94" w x 6.81" h x 16.47" d (dustcover down); 20.3 lb ..... \$500

## SCOTT

### PS4004 Automatic Turntable

Belt drive; 33.33 and 45 rpm; soft-touch controls; integrated low-mass magnetic cartridge; pitch control with electronic strobe; frequency-governed DC servo motor; insulating feet; LED speed indicators; gold-plated output plugs. W&F 0.06% wrms; rumble -62 dB DIN B; 16.8 w x 5 h x 14.6 d (dustcover down) ..... \$200

### PS59C Semiautomatic Turntable

33.33 and 45 rpm; P-mount arm and cartridge; pitch control with electronic strobe; frequency-governed DC servo motor; W&F 0.1% wrms; rumble -55 dB DIN B; 16.8 w x 4 h x 13.3 d (dustcover down) ..... \$110

## SHERWOOD

### ST-887 Fully Automatic Direct-Drive Turntable

Digi-Link remote compatibility with other Sherwood products. P-mount cartridges; direct read-out stylus pressure indicator; DC servo motor; front panel access to controls; 33.3/45 rpm; variable pitch ..... \$180

### ST-875 Semiautomatic Turntable

Belt-drive turntable with push-button cueing, auto reject, auto return, and DC-servo motor. Features pivoted arm; P-mount compatible; 33.33 and 45 rpm. W&F 0.08% wrms; effective tonearm length 225 mm; max tracking error  $\pm 2.6$ . -1.17.36" x 4.88" x 14.25" ..... \$100

## SONOGRAPHE

### BY CONRAD-JOHNSON

#### SG-3 Manual Turntable

Belt-drive turntable without tonearm. Tuned suspension, resonance-free polymer platter. W&F <0.02% wrms; rumble -65 dB; 18.25" w x 6.75" h x 14.5" d (dustcover down) ..... \$449

## SONY

### PS-FL7IIB Automatic Turntable

Front-loading linear-tracking automatic turntable. Features direct drive, PLL, quartz-lock, P-mount compatible; 33.33 and 45 rpm; remote control capability, stackable top. W&F 0.03%; S/N 75 dB; effective tonearm length 3"; max tracking error  $\pm 0.1$ °; 16 lb ..... \$330

### PS-LX520 Automatic Turntable

Fully automatic linear-tracking turntable. Features direct drive, PLL, quartz-lock, P-mount compatible, 33.33 and 45 rpm; gel-filled feet; remote control capable. W&F 0.035%; S/N 75 dB; effective tonearm length 3 inches; max tracking error  $\pm 0.1$ °; 11 lb ..... \$230

### PS-LX430 Automatic Turntable

Belt-drive P-mount turntable with pivoted arm. Features 33.33 and 45 rpm, cueing lever, anti-resonance base, disc size selector, remote control capability. W&F 0.046%; rumble 70 dB. 9 lb ..... \$165

### PS-LX230 Semiautomatic Turntable

Belt-drive turntable with pivoted arm. Features 33.33 and 45 rpm, cueing lever, anti-resonance base, disc size selector. W&F 0.045%; rumble 70 dB. 7.75 lb ..... \$130

# TURNTABLES

## SOTA INDUSTRIES

### SOTA Sapphire Series III Turntable

Manual 2-speed belt-drive turntable with variable speed control and strobe. Heavyweight (22 lb) sub-assembly for maximum isolation; exclusive inverted bearing with sapphire disc; single piece (11 lb) platter, rim drive. W&F 0.02% wrms; rumble -84.5 dB; 20.5" w x 7.5" h x 16.25" d 44 lb; oak finish ..... \$975  
African rosewood ..... \$1,075

**STAR Series III Sapphire.** As above with vacuum hold-down system; low-level pressure, continuous through play, adjustable vacuum. Includes acrylic vacuum supermat. All-wood top and speed control panel; heavy-duty dust cover, oak finish ..... \$1,600  
Black lacquer ..... \$1,800  
Ebony, Brazilian rosewood ..... \$1,900  
Wood ..... \$1,900  
African rosewood, walnut and cherry ..... \$1,750

## SYSTEMDEK

### Systemdek IV Turntable

Belt drive turntable; 33.33 and 45 rpm. Wow & flutter 0.06%; rumble -78 dB; pivoted tonearm; anti-skate adjustment; fixed cartridge mount; 19.5" x 15.75" x 6" ..... \$850  
Without tonearm ..... \$699

### Systemdek II X Turntable

Belt drive turntable; 33.33 and 45 rpm. Wow & flutter 0.08%; rumble -78 dB; pivoted tonearm; anti-skate adjustment; fixed cartridge mount; 18.75" x 14.5" x 5.5" ..... \$459  
Without tonearm ..... \$299

## TECHNICS

### SL-M3 Automatic Direct-Drive Turntable

Features 33.33 and 45 rpm; quartz lock PLL; P-mount; variable speed; strobe. W&F 0.008% wrms; rumble -82 dB; effective tonearm length 238 mm; max tracking error within  $\pm 0.05^\circ$ ; 33.1 lb ..... \$585

### SL-1200MKII Direct-Drive Disco Turntable

Quartz-controlled 33.33- and 45-rpm manual turntable. Features  $\pm 8\%$  quartz-locked pitch control; quick start and stop; pop-up stylus light; gimbal-suspended tonearm with height adjustment; brushless DC motor; aluminum die-cast cabinet; W&F 0.025% ..... \$480

### SL-M2 Manual Direct-Drive Turntable

Quartz-locked P-mount turntable; 33.33 and 45 rpm, variable speed control with optical sensor for end-of-record pickup. W&F 0.008% wrms; rumble -82 dB ..... \$460

### SL-MA1 Automatic Direct-Drive Turntable

Features PLL quartz lock; P-mount; 33.33 and 45 rpm. W&F 0.012% wrms; rumble -80 dB; effective tonearm length 230 mm; max tracking error  $+0^\circ 32'$  at inner groove and  $+2^\circ 32'$  at outer groove; 19.8 lb ..... \$400

### SL-J33 Programmable PLL Turntable

Direct-drive automatic P-mount turntable allows up to 8 tracks to be played in any order. Indicates number of tracks on album side and which track is playing. Remote controlled through some Technics receivers. Features linear tracking; quartz lock; 33.33 and 45 rpm; front-panel feather-touch controls; cueing; auto stylus muting. W&F 0.012%; rumble -78 dB; 9 lb ..... \$240

### SL-J11D Linear-Tracking Turntable

Belt-drive automatic P-mount turntable; 33.33 and 45 rpm; electronic feather-touch controls;

cueing; auto-disc-detection system to prevent lowering of tonearm on empty mat; TNRC anti-vibration cabinet. W&F 0.045% wrms; rumble -70 dB; 7.5 lb ..... \$180

### SL-QD22 Semiautomatic P-Mount Turntable

Direct-drive turntable with 2 motors to avoid mechanical linkages between tonearm and platter-drive motor; end-of-disc detection; ultra-low-speed DC brushless motor; pivoting arm; PLL quartz lock; strobe; 33.33 and 45 rpm; front-panel electronic feather-touch controls. W&F 0.012% wrms; rumble -78 dB; effective tonearm mass 7.5 g, length 230 mm. 17" w x 4.5" h x 14.75" d ..... \$170

### SL-BD1 Manual P-Mount Turntable

Belt-drive turntable with variable speed control; strobe; 33.33 and 45 rpm. W&F 0.045% wrms; rumble -70 dB; effective tonearm mass without cartridge 7.5 g, length 230 mm; max tracking error  $+0^\circ -32'$  at inner groove and  $+2^\circ 32'$  at outer groove; 7.1 lb ..... \$125

### SL-BD10 Manual P-Mount Turntable

Belt-drive turntable with aluminum die-cast full-gimbal pivot with highly rigid lightweight aluminum tonearm. Features front-panel cueing control; TNRC vibration-isolation base; pivoted arm; 33.33 and 45 rpm. W&F 0.45% wrms; rumble -70 dB DIN B; max tracking error  $+2^\circ$  ..... \$100

SL-BD22K. As above; semiautomatic ..... \$120

### Turntables Without Tonearms

**SP-10MK3 33/45/78-rpm Turntable**  
Quartz-synthesizer direct-drive turntable with high torque for full speed in 30" of rotation; electronic, mechanical braking for speed change in 0.3 sec; high-precision integral rotor-platter quartz motor; quartz-locked pitch control (0.1% steps to  $\pm 9.9\%$  all speeds). Separate power supply in remote-control unit with numeric LED speed, pitch displays. W&F 0.015%  $\pm 0.001\%$  ..... \$2,500  
**SH-10B5.** Optional turntable base ..... \$1,000

### SP-15 33/45/78-rpm Turntable

Quartz-synthesized direct-drive turntable reaches full speed in 0.4 sec (40" of rotation); stops in 0.4 sec (40" of rotation) at 33.33 rpm;  $\pm 9.9\%$  quartz-locked pitch control. W&F 0.025% wrms; rumble 56 dB DIN-A, 78 dB DIN-B ..... \$870

**SP-25.** Similar to SP-15 except no 78-rpm speed.  $\pm 6\%$  pitch control ..... \$500

**SH-15B2.** Heavy acoustic rubber base with simulated wood for SP-25 and SP-15 ..... \$330

**SH-15B3.** Similar to SH-15B2 except heavy acoustic rubber base only ..... \$330

## THORENS BY EPI

*All Thorens turntables are belt-driven, single-play units having straight tubular tonearms for maximum rigidity; gimbal suspension; antiskate control; 9.12" effective tonearm length; tracking error  $< 0.18"/\text{cm}$  ( $< 0.46"/\text{in.}$ ).*

### Phantasie Semiautomatic Single-Play Turntable

Belt-drive 33.33 and 45-rpm turntable with solid plexiglass chassis; 16-pole synchronous motor; twin solid-core chassis and 3-point leaf-spring suspension. W&F 0.35%; rumble -52 dB unwd. -72 dB wid ..... \$2,295

**TD 320.** As above with wood chassis ..... \$549

**TD 321.** Armless version of TD-320 ..... \$450

### TD 318 Semiautomatic Single-Play Turntable

Belt-drive 33.33 and 45 rpm turntable with 16-pole synchronous motor; twin solid-core chas-

sis; 3-point leaf-spring suspension. W&F 0.04%; rumble -50 dB unwd, -70 dB unwd. .... \$399  
**TD 316.** Manual turntable similar to TD 318 without auto lift and shut off ..... \$299

### TD 280 Semiautomatic Single-Play Turntable

Belt-drive 33.33/45 rpm with 24-pole synchronous motor. 1-piece solid-core chassis and spring damping elements in feet. W&F 0.045%; rumble -48 dB unwd, -70 dB wid ..... \$249

## VECTOR RESEARCH

### VT-185 Belt-Drive Turntable

Features quick-start DC-servo motor; traditional plug-in head-shell with standard 0.5" mounting centers; front-panel controls; aluminum-alloy platter; auto-return and shut-off; auto-start function; separate pitch controls for 33 and 45 rpm ( $\pm 3\%$ ); strobe. W&F 0.05% wrms; S/N 68 dB (DIN B). 17.38" w x 4.5" h x 14.63" d; 11.5 lb ..... \$150

### VT-155 Belt-Drive Turntable

Features DC-servo motor; P-mount cartridge compatibility; front-panel controls; aluminum-alloy platter; auto-return and shut-off; pitch control; strobe; 8.75 lb ..... \$100



Yamaha PF-800B

## YAMAHA

### PF-800B Semiautomatic Turntable

Belt-drive pivoted-arm turntable with dynamic balance twin-pipe tonearm. Features 2-section zinc plus aluminum platter; 33.33 and 45 rpm speeds; variable speed control  $\pm 6\%$ . W&F 0.023% wrms; rumble 80 dB; effective tonearm length 8.75"; 35 lb ..... \$519

### TT-500U Automatic Turntable

Direct-drive turntable with RS integrated remote system compatibility. Features straight tonearm design; resonance absorbing turntable mat; disc clamper. Black; 15 lb ..... \$229

### PF-50B Automatic Turntable

Direct-drive turntable with 3-point floating suspension and knife-edge dynamic-balance tonearm. P-mount compatible; 33.33 and 45 rpm; resonance-absorbing mat; disc clamper/EP adaptor; overhang adjustment gauge. W&F 0.15% wrms; S/N 78 dBA; 9 lb, 14 oz ..... \$229  
**PF-30B.** As above but belt-drive ..... \$179  
**PF-20B.** Similar to PF-30 except semiautomatic, standard EP adaptor ..... \$149

### TT-400U Automatic Turntable

Belt-drive; compatible with RS system remote straight tonearm; resonance-absorbing mat; disc clamper. Black; 15 lb ..... \$179

### TT-300U Semiautomatic Turntable

Belt-drive; straight tonearm design; resonance-absorbing turntable mat; EP adaptor. Black finish; 10 lb ..... \$149

# TAKE OUT T



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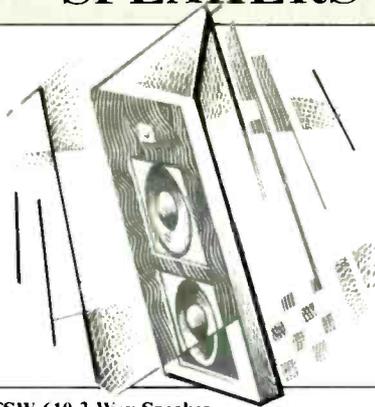
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 Butch's Sound Shack  
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 Eastern Discount  
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 Leiser Sound, Inc.  
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 Georgetown  
 Stereo Video Center  
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- TENNESSEE**  
 Knoxville  
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 Audio Systems  
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 Green Bay  
 Sound World  
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 (608) 781-8500



# SPEAKERS



## ACOUSTAT

### Model Eight Electrostatic Speaker

Eight-panel vertical-array electrostatic speaker. Min power 50 W x 2; imp 6 ohms; FR 24-20,000 Hz  $\pm 2$  dB. 36" w x 94" h x 4" d; total weight of each system 440 lb ..... \$5,500/pr

### Model Six Electrostatic Speaker

Six-panel vertical-array electrostatic speaker. Min power 50 W x 2; imp 6 ohms; FR 26-20,000 Hz  $\pm 2$  dB. 28" wide x 94" high x 4" deep; 340 lb/system ..... \$4,500/pr

### Model Two + Two Electrostatic Speaker

Four-panel vertical-array electrostatic speaker. Min power 50 W; imp 4 ohms; FR 28-20,000 Hz  $\pm 2$  dB. 20" w x 94" h x 4" d; 200 lb/system ..... \$2,599/pr

### Model Three Electrostatic Speaker

Three-panel curved-array electrostatic speaker. Min power 70 W; imp 4 ohms; FR 30-20,000 Hz  $\pm 2$  dB. 28" w x 72" h x 4" d; 196 lb/system ..... \$2,199/pr

### Model One Electrostatic Speaker

Single-panel electrostatic speaker with satellite woofer. Min power 75 W; imp 4 ohms; FR 30-18,000 Hz  $\pm 3$  dB. 11" w x 72" h x 4" d; 180 lb/system ..... \$1,299/pr

## ACOUSTIC RESEARCH

### MGC-1 Ambience-Subsystem Speaker

Floor-standing acoustic-suspension speaker with delayed ambience subsystem built into enclosure plus MGC-1e control and amplification electronics. Speakers are mirror-imaged pairs consisting of a 4-way passive system and a 2-way active subsystem. Electronic unit controls system parameters and provides signal processing, delay, and power amplification for subsystem. Main system features two 8" cone woofers; two 4" cone lower/midrange drivers; one dual-dome driver with a 1.5" upper midrange dome and a 0.75" tweeter dome closely spaced on a single magnet. Delayed-ambience system features 6" woofer in subenclosure; 1" dome tweeter. FR (3-dB down point, half power) 39 and 32,000 Hz; power range 25-250 W; sens 88 dB SPL/W/m; imp 4 ohms; 26.25" w x 52" h x 16.12" d; 150 lb; oiled walnut ..... \$3,600/pr

### TSW-910 4-Way Speaker

Floor-standing columnar acoustic-suspension speaker with tetra-helix tweeter mounting plate. Features two 12" woofers (one front-firing, one rear-firing); 8" lower-midrange driver; two 6.5" midranges; 1" titanium-dome liquid-cooled tweeter with acoustic lens; split crossover network. Power range 35-400 W; imp 4 ohms; FR -3 dB (half-power) points at 28 Hz and 32,000 Hz. 15.75" w x 52.81" h x 18.5" d ..... \$2,000/pr

### TSW-610 3-Way Speaker

Floor-standing acoustic-suspension speaker with tetra-helix tweeter mounting plate. Features 12" woofer; 6.5" midrange; 0.75" titanium-dome liquid-cooled tweeter with acoustic lens. Power range 15-175 W; imp 4 ohms; frequency response  $\pm 3$  dB (half-power) points at 40 Hz and 40,000 Hz; sensitivity 90 dB with 2.83 V rms input at 1 meter on axis. Solid walnut or oak top and bottom with black-vinyl-veneer cabinet and black cloth grille. 14.06" wide x 32.88" high x 13.31" deep; 57 lb ..... \$900/pr

### TSW-310 2-Way Speaker

Floor-standing acoustic-suspension speaker with tetra-helix tweeter mounting plate. Features 10" woofer; 0.75" titanium-dome liquid-cooled tweeter with acoustic lens. Power range 10-100 W; imp 6 ohms; FR -3 dB (half-power) points at 45 Hz and 40,000 Hz; sens 90 dB with 2.83 V rms input at 1 meter on axis. Solid walnut or oak top and bottom with black-vinyl-veneer cabinet and black cloth grille. 12.31" w x 27.75" h x 11.72" d; 35.5 lb ..... \$500/pr

### TSW-100 2-Way Speaker

Bookshelf acoustic-suspension speaker features 6.5" woofer; 1" liquid-cooled tweeter. Power range 10-75 W; imp 8 ohms; FR -3 dB (half-power) points at 72 Hz and 25,000 Hz; sens 89 dB with 2.83 V rms input at 1 meter on axis. Solid walnut or oak top with black-vinyl-veneer cabinet and black cloth grille. 9.81" w x 14.19" h x 8.4" d; 12.3 lb ..... \$225/pr

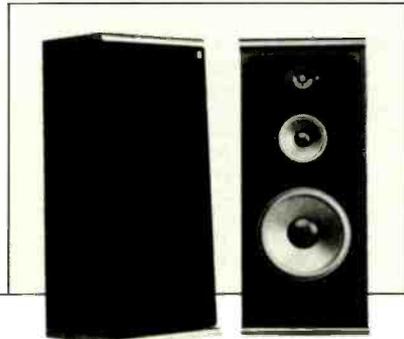
### Connoisseur Series

All Connoisseur Series speakers feature woofer and midrange drivers with carbon-loaded polypropylene cones, vertically arrayed drivers, and genuine walnut veneer cabinets.

### 50T 3-Way Speaker

Floor-standing acoustic-suspension speaker features 12" woofer; 6.5" midrange; 1" titanium-dome tweeter; three inputs for tri-amp operation capability. Power range 15-200 W; imp 4 ohms; FR (-3 dB points) 31-22,000 Hz; sens 90 dB with 2.83 V rms input at 1 meter on axis. 14.63" w x 32" h x 13.13" d; 78 lb ..... \$1,150/pr

### Acoustic Research TSW-610



### 35T 3-Way Speaker

Bookshelf acoustic-suspension speaker features 8" woofer; 6.5" midrange; 1" titanium-dome tweeter; two inputs for bi-amp operation capability. Power range 10-100 W; imp 6 ohms; FR (-3 dB points) 50-22,000 Hz; sens 88 dB with 2.83 V rms input at 1 meter on axis. 10.81" w x 22.88" h x 10.88" d; 24.2 lb ..... \$700/pr

### Partners Series

#### Powered Partner Speaker

Acoustic-suspension bookshelf 2-way speaker with shielded drivers for use with TV and personal stereo systems. Features built-in equalized amp; on/off switch; volume and tone controls; AC/DC inputs; 4" long-throw woofer; 1" liquid-cooled tweeter. Can be placed on top or near TV, hung on a pole, mounted on wall, or clamped to a shelf with optional clamps. FR 50-25,000 Hz  $\pm 3$  dB; imp 10 kilohms. Black aluminum finish. Triangular shape 10.5" w x 6" h x 7.62" d; 7 lb ea ..... \$380/pr

#### Environmental Partner 2-Way Speaker

Weather-resistant acoustic-suspension speaker with triangular shape for versatile mounting options. Features 4" long-throw polypropylene woofer; 1" liquid-cooled polymer cone tweeter. Power range 7-75 W; imp 6 ohms; FR 95-25,000 Hz  $\pm 3$  dB; sens 88 dB SPL/W/m. Die-cast aluminum case and endcap. 10.5" w x 6" h x 7.63" d; 6 lb ea ..... \$280

## A/D/S/

### Monitor Series

#### M15 Floor-Standing 3-Way Speaker

Vertically aligned "unison" drivers (2 10" woofers and 5.25" midrange in separate subenclosure, 1" dome tweeter); woofers near floor, midrange at top, to control boundary effects; copolymer diaphragms; 4th-order (24 dB per octave) Linkwitz-Riley crossovers at 200 and 2,000 Hz; stainless-steel voice-coil former; magnetic cooling fluid in midrange and tweeter for high power handling and dynamic linearity; frameless perforated-steel grilles; walnut veneer or black. FR 30-22,000 Hz  $\pm 3$  dB; sens 89 dB SPL/W/m; imp 8 ohms. 47.3" h x 11.5" w x 15.8" d; 105 lb ..... \$2,750/pr

**M12.** Similar to M15 except 8" woofers; FR 36-22,000 Hz  $\pm 3$  dB; sens 88 dB SPL/W/m; 43.3" h x 10.5" w x 14.2" d; 85 lb ..... \$1,850/pr

**M10.** Similar to M12 except 1 10" woofer; 33.7" h x 11.5" w x 13" d; 80 lb ..... \$1,350/pr

### Compact Monitor Series

#### CM7 3-Way "Unison" Speaker

7" woofer, 1.5" dome midrange, 1" dome tweeter; copolymer diaphragms; 4th-order Linkwitz-Riley crossovers at 700 and 2,000 Hz; voice-coil formers of stainless steel for woofer and Kapton for midrange and tweeter; magnetic cooling flu-

# SPEAKERS

id in midrange and tweeter for high power handling and dynamic linearity; enclosure molded from polymer resin filled with metallic mineral for high density and inertness; frameless perforated steel grille. Black or white. FR 40-22,000 Hz  $\pm$  3 dB; sens 87 dB SPL/W/m; imp 4 ohms; 16.4" h x 8.8" w x 10.9" d; 45 lb. \$1,350/pr

**CM6.** Similar to CM7 except 2-way, with 6" woofer and 1" tweeter; 2,000-Hz crossover; FR 50-22,000 Hz  $\pm$  3 dB; 12.7" h x 7.3" w x 8.9" d; 33 lb. \$850/pr

**CM5.** Similar to CM6 except 5.25" woofer; FR 65-22,000 Hz 3 dB; sens 86 dB SPL/W/m; 9.7" h x 5.7" w x 6.9" d; 22 lb. \$500/pr

## L Series

### L990 3-Way Tower Speaker

Floor-standing speaker with drivers vertically aligned and positioned for optimum imaging and control of floor reflections. 10" Stiffite woofer, 1.5" woven soft-dome midrange, 0.75" woven soft-dome tweeter; 12-dB-per-octave all-pass crossovers at 700 and 4,000 Hz; Kapton voice-coil formers and magnetic cooling fluid in midrange and tweeter; frameless perforated steel grille; black or oak veneer. FR 38-25,000 Hz  $\pm$  3 dB; sens 87 dB SPL/W/m; imp 8 ohms; 34.7" h x 10.5" w x 11.7" d; 65 lb. \$975/pr

### L780 3-Way Bookshelf Speaker

Acoustic-suspension speaker with 8.25" high-compliance long-excursion Stiffite cone woofer, 1.5" soft-dome midrange, 0.75" magnetic-cooling-fluid soft-dome tweeter and midrange; diffraction-corrected and flush-mounted drivers. Black perforated-steel grille. FR 42-27,000 Hz  $\pm$  3 dB; crossovers 650 and 5 kHz; sens 88 dB SPL/W/m; max power 125 W; nominal imp 8 ohms; 20.88" h x 12.25" w x 10.5" d; walnut or black. \$749/pr

### L690 2-Way Tower Speaker

Floor-standing speaker with drivers vertically aligned and positioned for lobe-free wide dispersion. 8" Stiffite woofer, 0.75" woven soft-dome tweeter; 12-dB-per-octave all-pass crossover at 2,000 Hz; Kapton voice-coil former and magnetic cooling fluid in tweeter; frameless perforated steel grille; black or oak veneer. FR 44-20,000 Hz  $\pm$  3 dB; sens 88 dB SPL/W/m; imp 8 ohms; 31.1" h x 9.5" w x 10.5" d. \$590/pr

## ADVENT

### The Advent Maestro

Acoustic-suspension floor-standing speaker with solid-pecan top and base with beveled edges, anti-diffraction baffle cover, and grille with rounded side edges. Features 10" black cone and surround woofer; 2" mica-filled black polypropylene-dome midrange in subenclosure; 1" ferrofluid-filled soft-dome tweeter. FR 40-23,000 Hz  $\pm$  2.5 dB; min power 150 W rms; max power 750 W peak; sens 90 dB SPL/W/m; imp 6 ohms. 50 lb; 33.25" h x 16" w x 9.75" d. \$700/pr

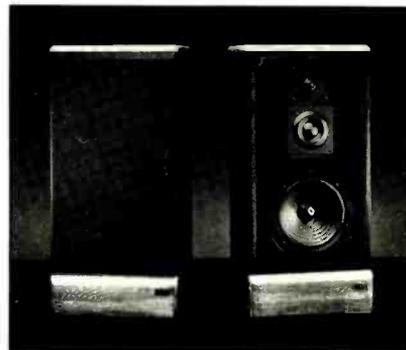
### The Advent Legacy

Acoustic-suspension floor-standing liquid-cooled speaker with solid-pecan top and base with wrap-around grille. Features 10" high-excursion cone woofer with aluminum-coil form; 1" ferrofluid-filled soft-dome tweeter. FR 42-23,000 Hz  $\pm$  3 dB; min power 100 W rms; max power 500 W peak; sens 88 dB SPL/W/m; imp 8 ohms. Black textured-vinyl finish. 46.5 lb; 28.25" h x 16" w x 9.75" d. \$399/pr

### The Baby Advent

2-way speaker with 6.5" woofer and 1.75"

ferrofluid cone tweeter. FR 60-25,000 Hz  $\pm$  3 dB; imp 8 ohms; sens 87 dB SPL/W/m; max power > 150 W peak; 11" w x 16.5" h x 6.75" d; 13 lb. \$198/pr



Advent Maestro

## ALLISON ACOUSTICS

Prices slightly higher in the West.

### IC-20 Image-Control Speaker

Triangular acoustic-suspension tower speaker with 1 side facing wall, 1 side facing in, 1 facing out; each side facing away from wall has 10" woofer, 4 3.5" convex midranges, 4 1" convex tweeters; relative balance of mids and tweeters on each panel may be adjusted by remote control or with switch on rear to direct more sound in (for precise imaging with more direct and less reflected sound), out (for open and spacious ambience with more reflected and less direct sound), left, right, or centered (for equal amplitude at off-center listening positions); level of each panel has 3 possible settings; LED's on center of speakers display setting; drivers positioned to minimize room interaction; inside woofer pointed into cabinet, outside woofer pointing out; separate inputs for woofers and for mids and tweeters for easy biamping; auto-resetting resistors in each crossover; cabinet panels 0.75"-1.25" thick, braced front-to-back and between panels; interior damped with glass fiber; passive parallel half-section crossovers at 350 and 3,750 Hz; oak, walnut, or black. FR -3 dB at 28.5 Hz, -8 dB at 21 Hz; imp 6 ohms nominal, 8 average, 5 min; power range 30-400 W/ch; sens 87 dB SPL/2.83 V/m; 21" w x 48" h x 12" d; 100 lb. \$4,900/pr

### CD9 3-Way Floor-Standing Speaker

Stabilized-radiation-loading speaker with 10" woofer, 3.5" convex-diaphragm midrange, 1" convex-diaphragm tweeter, designed for placement against single wall. LC half-section crossover network; switches to select system acoustic power response (flat to concert-hall balance slope); walnut or oak-veneer cabinet with hand-rubbed lacquer finish; steel base. FR down 3 dB at 35.5 Hz; crossovers 350 and 3,750 Hz; imp 4 ohms; efficiency 0.7% at floor/wall intersection; power range 30-200 W; 37.5" h x 12.5" w x 10.75" d. \$1,100/pr

### CD8 3-Way Floor-Standing Speaker

Stabilized-radiation-loading speaker with 8" woofer, 3.5" convex-diaphragm midrange, 1" convex-diaphragm tweeter. LC half-section crossover network with switches to select system acoustic power response from flat to concert-hall slope. Walnut- or oak-veneer cabinet with hand-rubbed lacquer finish. Crossover frequencies 450 and 3,750 Hz; efficiency 0.7%; power range 30-200 W; response -3 dB at 39 Hz; 28.62" h x 10.5" w x 10.5" d. \$790/pr

## ALTEC LANSING

### 501 3-Way Tower Speaker

Acoustic suspension speaker system with 2 10" carbon fiber woofers; 2" midrange; 1" dome tweeter each with polyimide vacuum-deposited titanium. Power range 150 W nominal 300 W max; sens 93 dB W/m; imp 4 ohms; 46" h x 12" w x 13.5" d. \$1,500/pr

### 508 3-Way Tower Speaker

Acoustic suspension with 2 8" woven carbon fiber cones, 2" midrange, 1" tweeter, each with polyimide vacuum-deposited titanium housed in walnut veneer high-density pressed-wood cabinet. FR 40-20,000 Hz  $\pm$  3 dB. SPL 90.5 dB W/m; power handling nominal 125 W, max 250 W, recommended min 10 W; imp 4 ohms; 40" h x 11" d x 10.75" w. \$1,000/pr

### 401 3-Way Acoustic-Suspension Speaker

12" carbon fiber woofer; 2" midrange; 1" tweeter. Power range 125 W nominal 250 W max; sens 93 dB W/m; imp 8 ohms; 32" h x 17" w x 12" d. \$960/pr

301. Similar to above with 8" woofer. 27" h x 14.5" w x 12" d. \$750/pr

### 55 Weatherproof Speaker

Compact indoor/outdoor 2-way acoustic-suspension speaker with 4" carbon-fiber-cloth woofer reinforced with epoxy and a 20-mm polyimide dome tweeter. FR 85-20,000 Hz  $\pm$  3 dB; power range 40 W nominal, 80 W max; imp 4 ohms; 9.38" h x 7" w x 5.31" d. \$250/pr



Altec Lansing Model 55

## AMERICAN ACOUSTICS

### 9500B Tower Speaker

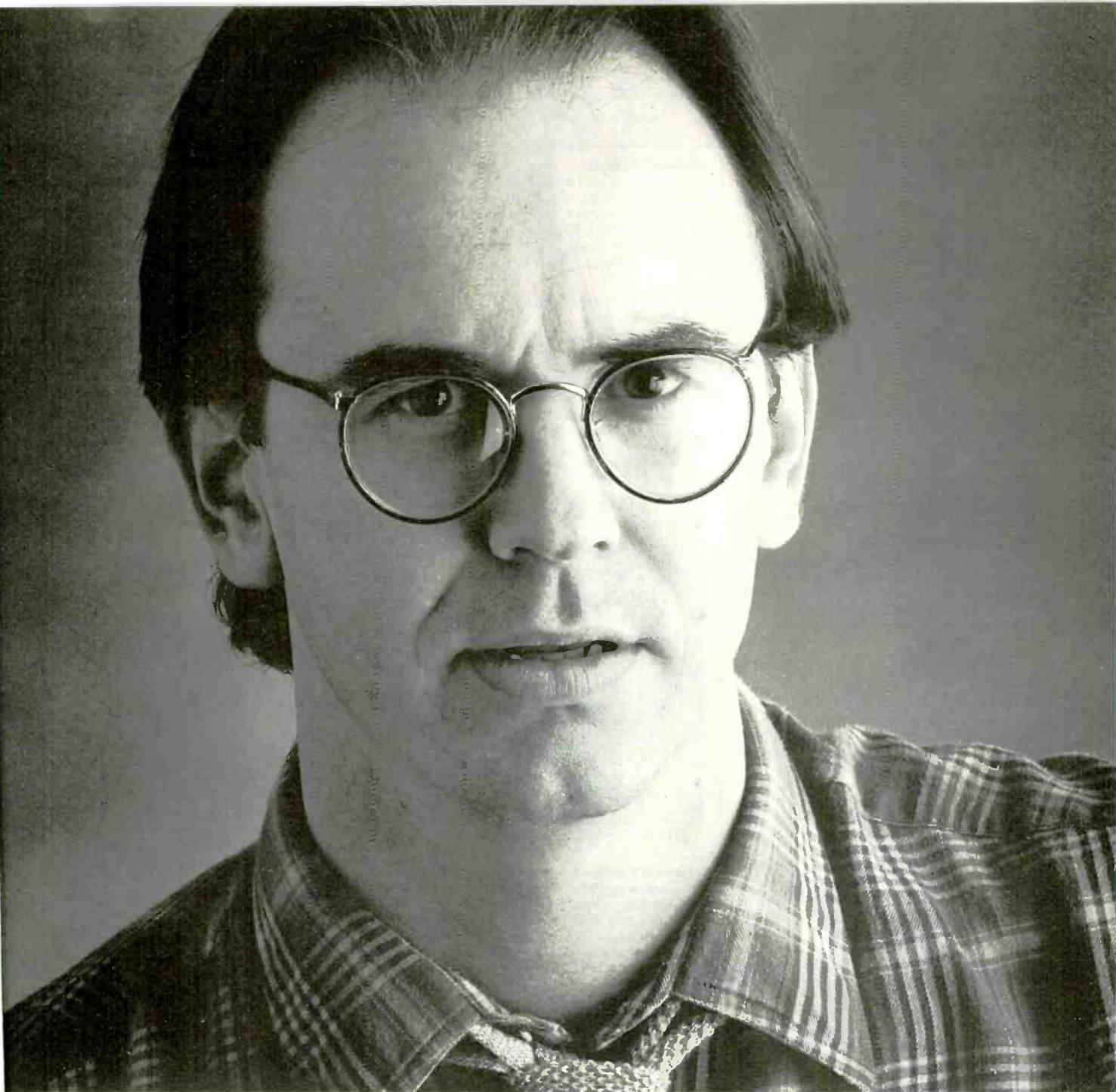
Vented 4-way floor standing speaker with 12" polymer coated woofer; 8" polymer mid bass; 2.5" polymer midrange; 1 soft dome polymer, 1 3" cone tweeter. FR 32-22,000 Hz; sens 99.5 dB W/m; imp 4/8 ohm; crossover frequency 600 Hz, 1,700 Hz, 6,000 Hz; power handling 205 W rms, 410 W peak; 40.88" h x 15.94" w x 14.56" d. \$1,000/pr

### 8550 3-Way Speaker

Vented speaker with 15" polymer coated woofer; 5" sealed back ferrofluid damped midrange; soft dome polymer ferrofluid tweeter. FR 37-22,000 Hz; sens 98.5 dB W/m; imp 4/8 ohm; crossover frequencies 700 Hz, 5,000 Hz; power handling 205 W rms, 410 W peak; 30.38" h x 18.5" w x 14.5" d. \$980/pr

### 2550 Bookshelf Speaker

2-way vented bookshelf speaker with 6.5" polymer woofer; soft dome polymer ferrofluid tweeter. FR 65-22,000 Hz; sens 91.5 dB W/m; imp 4/8 ohm; power handling 40 W rms, 80 W peak; 12.75" h x 9.38" w x 7" d. \$260/pr



## “How Come So Much?”

It's easy to spend a lot of money on speakers. So make sure you get a lot of value and performance in return.

Start with the cabinet. Don't settle for wood grained plastic. Look for *real wood* in a time-honored design.

Then peel back the grille cloth. If you find some ho-hum handful of cheap cones and domes, keep shopping. If you're staring down

the throat of a horn and into the eye of a compression driver, you may be on to a speaker worth your money.

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# SPEAKERS

## APOGEE ACOUSTICS

### Apogee Full-Range Ribbon Speaker

Full-range ribbon speaker with seamless crossover. Features steel framework; trapezoidal woofer panel; 0.5" tweeter ribbon; 2" midrange ribbon. SPL 115 dB; imp 4 ohms. 80.5" h x 35" w x 4" d; 300 lb ea ..... \$8,000/pr

### Diva 3-Way Ribbon Speaker

Full-range ribbon speaker with adjustable seamless crossover. Features trapezoidal woofer ribbon; separate midrange and tweeter ribbons. SPL 115 dB; imp 4 ohms. 73" h x 31" w x 3" d; 150 lb ea ..... \$7,000/pr

### Scintilla Full-Range Ribbon Speaker

Full-range ribbon speaker with internal seamless crossover. Features trapezoidal woofer ribbon; integrated, coalescent midrange/tweeter ribbon that utilizes magnetic and electromagnetic constraints. SPL 110 dB; imp 4 or 1 ohms. 57" h x 30" w x 3.5" d ..... \$3,780/pr

### Caliper 2-Way Ribbon Speaker

Mid-size 2-way full-range ribbon speaker. Features trapezoidal woofer ribbon; narrow-canted combination midrange/tweeter ribbon; seamless crossover circuitry. SPL 105 dB; imp 3 ohms. Taupe or grey finish. 48" h x 24" w x 2" d; 70 lb ea ..... \$1,995/pr

## AUDIO PRO

### BY SONIC RESEARCH

#### A4-14 Biampified Speaker System

Biampified 3-way bass-reflex bookshelf speaker incorporates Ace-Bass subwoofer with two 5" down-firing rear-mounted woofers and own amp, flush-mounted 4.5" cone midrange, 1" soft-dome tweeter with separate amp. Features room-matching bass control, tweeter control, sens control (100 mV-50 V range), L/R signal pushbutton, bass-blend control, power on/off signal-actuated in automode; walnut or black-ash finish; stands included. FR 30-20,000 Hz  $\pm 2$  dB; crossovers 300 and 2,500 Hz; 20.5" h x 2.12" w x 10.5" d ..... \$2,095/system

#### A2-2 Mini Powered Speaker

Mini speaker with Ace-Bass and Ace-Plus circuits in each channel. Includes volume control, three line inputs and tape output on amp carrying case. FR 50-20,000 Hz; sens 99 dB SPL/W/m. Glossy lacquer finish available in white, black, red, or grey. 8.25" h x 5.5" w x 4.13" d; 22 lb ..... \$1,195/system

#### 3-40 Passive Speaker

Floor-standing 2-way speaker with two 8" cone woofers and 1" soft-dome tweeter. FR 43-20,000 Hz  $\pm 3$  dB; min power 25 W rms; max power 125 W rms; sens 92 dB SPL/W/m; imp 6 ohms. Walnut, black ash, or white lacquer finish. 12" w x 24" h x 11" d ..... \$648/pr

#### 2-25 2-Way Speaker

Features 1" soft-dome tweeter; 8" midrange woofer. FR 50-20,000 Hz  $\pm 3$  dB; crossover at 2,000 Hz; imp 4 ohms 20.25" x 11.25" x 10.25"; sens 90 dB SPL/W/m; walnut finish ..... \$549/pr

## AUDIOSOURCE

### LS-Nine Speaker

Box speaker intended for bookshelf placement. Features L-C crossover at 3.5 kHz. Contains 8" polypropylene woofer; 1" tweeter. FR 65-20,000 Hz  $\pm 3$  dB; max power 80 W; sens 88 dB; imp 6 ohms; white oak with cloth grille; 17.62" w x 11.36" h x 8.31" d ..... \$320/pr

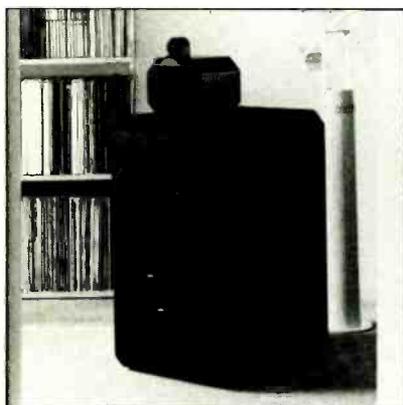
### LS-Seven Speaker

2-way compact speaker with 6.5" polywoofer, 1" soft-dome tweeter, wood enclosure. FR 70-20,000 Hz; max power 60 W; imp 8 ohms; sens 87 dB SPL/W/m; L-C crossover at 2 kHz; genuine white-oak veneer, cloth grille; 8.88" w x 13.62" h x 6.44" d; 7 lb ..... \$260/pr

## B&W LOUDSPEAKERS

### 808 Ported Speaker

Floor-standing speaker with two 300-mm thermoplastic cone woofers, two 100-mm polyamide matrix-cone midranges, 32-mm polyamide dome tweeter. Features computer-optimized drivers and cabinet; Audio Powered Overload Circuit; 4th-order Butterworth crossover; sep terminals for bi and triamping. FR 30-20,000 Hz  $\pm 2$  dB; min power 100 W; sens 91 dB SPL/W/m; imp 8 ohms; walnut, or black ash finish; 25.75" w x 41.25" h x 20" d ..... \$7,500/pr  
Rosewood finish ..... \$9,500/pr



B&W Matrix 801 Series 2

### Matrix 801 Series 2 Speaker

Floor-standing 6th-order Butterworth-vented speaker with vertically aligned drivers to minimize time delays; APOC to prevent driver damage. FR 20 Hz-20 kHz  $\pm 2$  dB; imp 8 ohms; power range 50-600/W. 39.75" h x 17" w x 22" d; 110 lb. Walnut or black ash ..... \$4,500/pr  
Rosewood finish ..... \$5,200/pr

### CM2 Matrix Mini Tower

Floor standing 4th order Butterworth vented system consisting of CMI head unit crossing over at 150 Hz into subwoofer section forming the stand. B&W matrix enclosure is employed in both stand and head module. APOC system. Imp not less than 4 ohms; power range 50-200 W. 39.19" h x 6.38" w x 8.31" d; base width 10" x 9.5" d. Finish black, white, nextel grey, walnut ..... \$1,650/pr  
Rosewood finish ..... \$1,950/pr

### Matrix Series Speakers

All Matrix speakers are acoustic suspension and feature an electronic time delay overload protection, homopolymer polypropylene bass/mid drivers, and ferrofluid-cooled tweeters. Matrix enclosure comprised of a honeycomb structure of interlocking perforated cross members bonded to the outer walls and filled with acoustic foam for resonance-free environment for drivers.

**Matrix 3.** Floor-standing speaker with two 200-mm cone woofers (one for lower bass and other for bass/mid frequencies); 26-mm polyamide tweeter; heavy magnet assemblies in mid/bass drivers (5 lb ea). FR 70-25,000 Hz  $\pm 2$  dB; min power 25 W rms; no upper power limit due to

overload protection; sens 90 dB SPL/W/m; imp 4 ohms. Available in walnut and black ash finishes. 10.25" w x 35.75" h x 16" d ..... \$2,198/pr  
Rosewood finish ..... \$2,698/pr

**Matrix 2.** Bookshelf speaker with 200-mm cone woofer; 26-mm polyamide dome tweeter. FR 80-25,000 Hz  $\pm 2$  dB; min power 25 W rms; no upper power limit due to overload protection; sens 87 dB SPL/W/m; imp 4 ohms. Available in walnut and black ash finishes. 10.25" w x 23.5" h x 12.25" d; 35 lb ..... \$1,498/pr  
Rosewood finish ..... \$1,798/pr

**Matrix 1.** Bookshelf speaker with 1500-mm cone woofer, 26-mm polyamide dome tweeter. FR 80-25,000 Hz  $\pm 2$  dB; min power 25 W rms; no upper power limit due to overload protection; sens 85 dB SPL/W/m; imp 4 ohms. Available in walnut and black ash finishes. 9" w x 16" h x 12.25" d; 35 lb ..... \$1,098/pr  
Rosewood finish ..... \$1,398/pr

### Digital Monitor Series

**DM1800.** Features low-density version of Matrix enclosure; finite analysis metal dome tweeter. Larger motor assembly and cabinet enclosure than DM1600. Power rating 30-200 W. 19.25" h x 9.25" w x 11.75" d; 26.5 lb. Black ash or walnut ..... \$1,100

**DM1600.** Features low-density Matrix enclosure; finite-analysis metal-dome tweeter. Power range 30-200 W. 25" h x 9.25" w x 16" d; 24.25 lb; black ash or walnut ..... \$800/pr

### DM330i Acoustic-Suspension Speaker

Floor-standing speaker with 8" woofer, 8" bass/midrange driver, 1" polyamide dome tweeter. FR 48-20,000 Hz  $\pm 3$  dB; power range 10-100 W; sens 91 dB SPL/W/m; imp 8 ohms; walnut or black ash finish; 11.5" w x 33.75" h x 12.62" d; 37.5 lb ..... \$720/pr

### DM110i 2-Way Speaker

Vented speaker with 2 drive units. Features 8" woofer crossed over to 1" dome tweeter via 4th-order Butterworth squared circuit that provides frequency division at 3,000 Hz. Sens 90 dB SPL/W/m; FR 70-20,000 Hz  $\pm 3$  dB; recommended power 10-75 W rms; 19.3" h x 10.25" w x 9.8" d; 18.5 lb ..... \$370/pr

## BANG & OLUFSEN

### Beolab Penta Floor-Standing Speaker

Powered 5-sided bass-reflex speaker with 150-W amp in each cabinet; 9 drivers in 3-way configuration (4 5" woofers, 4 3" mids, 1 1" dome tweeter vertically aligned); dynamic clipping attenuator for compression; 3-position bass-level switch; auto turn on and off; when used with Beosystem 5500, digital display shows source, volume, recording status, overload; finished in brushed stainless steel with black grille. Frequency response 40-20,000 Hz +4, -8 dB; 65" high x 5" wide x 5" deep; 53 lb ..... \$2,999/pr

### RI. 140 Speaker

Floor-standing bass-reflex speaker with 2 6.5" woofers, 5" mid, 1" dome tweeter in gray plastic enclosure with black grille. Frequency response 40-20,000 Hz +4, -8 dB; sensitivity 93 dB SPL/W/m; minimum power 10 W; imp 8 ohms; 28" x 20" x 9"; 43 lb ..... \$900/pr

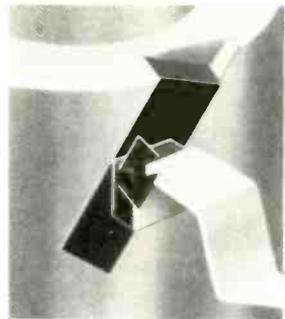
### Beovox S-80.2 Speaker

3-way speaker in infinite-baffle cabinet with 8" woofer, 3" dome phase-link midrange, 1" tweeter; baffle moldings designed for min diffraction; vertically aligned drivers; auto driver protection; rosewood veneer (other finishes available). Max power 80 W rms ..... \$700/pr

## Canton announces significant engineering advances in the science of music reproduction.



Enlarged detail from center of photo: the rigid aluminum ring with obliquely positioned permanent magnets. In front of it, the semiconductor sensor which is linked via a supporting plate with the diaphragm and moves to and from with it.



### Motion Feedback:

All loudspeaker systems have an inherent problem. A driver's diaphragm is burdened by mass and reacts to sound impulses with a certain amount of inertia. A time delay exists between the instantaneous sonic impulse and the acceleration and deceleration of the diaphragm. This delay translates into coloration of the source material.

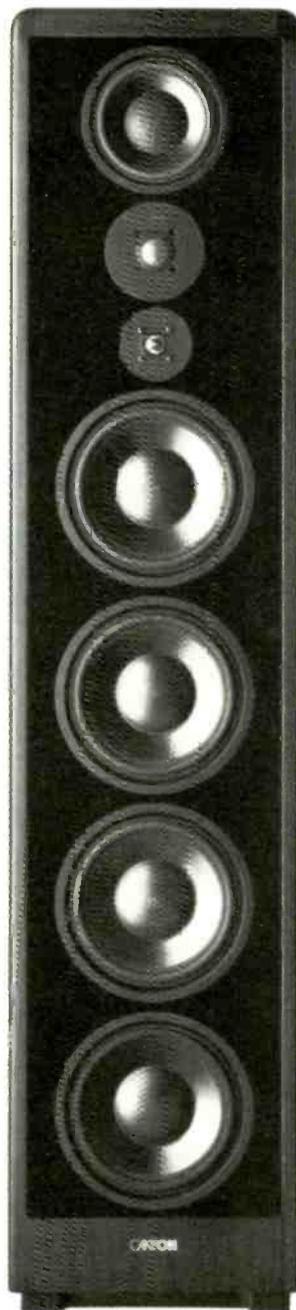
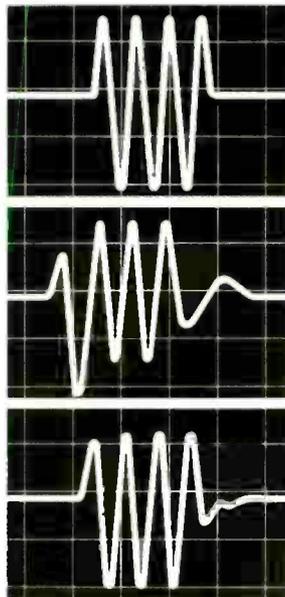
Canton's new CA series, in addition to their advanced power amplifiers, are equipped with a built-in electronic signal correction system which monitors each speaker diaphragm, checking whether its motion corresponds exactly with the impulses of the musical signal at all times. Instantly—within a fraction of a

A "sound burst" (upper curve) as seen on the oscilloscope: fast attack and equally rapid decay of sonic impulses. Here's

what an uncorrected speaker makes of the signal (center curve): there are distinct discrepancies on both incursion and excursion. And here's how the Canton system corrects diaphragm motion (lower curve): to the exact image of the original sound burst, in all but infinitesimal "afterflash."

millisecond—any discrepancies are registered, fed back and corrected via counteraction of the built-in power amplifiers.

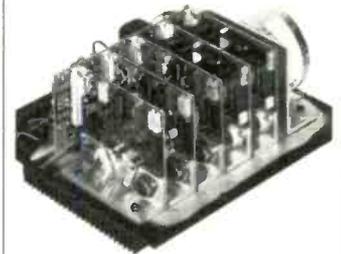
Canton employs a number of new patented processes for driver correction. In the woofer illustrated here, the "Hall Effect" is used. A semiconductor element serving as sensor cuts across the field of a fixed magnet. This creates an electrical voltage related to depth of insertion. Inversely, this "Hall Voltage" is an indicator for the position of the sensor, e.g. the diaphragm. By comparing this actual value with the target value of the musical signal, the control circuitry acquires the impulse needed for any amplifier counteraction. The diaphragm is accelerated or braked accordingly.



The top-of-the-line CA 30 active speaker is a 4-way system powered by 7 internal amplifiers (one for each driver). The woofers are powered by 4x120 Watt amplifiers, the midranges by 2x100 Watt amplifiers and the titanium tweeter by 1x100 Watt amplifier. A total of 780 Watts per CA 30 speaker.

In addition, problems normally associated with passive crossover networks are non-existent due to Canton's advanced MOS-FET electronic crossovers.

### Each amplifier is meticulously fine tuned to achieve optimal performance with its associated, companion driver.



With these high standards, all components—not just the signal correction circuitry—incorporate the most sophisticated technical advances. The entire system reflects the design approach customary in industrial electronics like using thick film modules with SMD's (Surface Mounted Devices), bus interface connections, and plug-in card technology for high reliability and performance capability.



Connecting and control elements on rear panel of a CA series active speaker. Each frequency range can be independently boosted or attenuated to compensate for listening room idiosyncrasies.



Since active speakers incorporate their own built-in power amplifiers, all that's needed to drive them is a pre-amp like the new EC-P1 from Canton (picture above).

Find out more about the entire Canton product line by visiting an Authorized Canton Dealer and picking up Canton's 1986/1987 40-page Loudspeaker Journal.

## Advanced Technology

from

# CANTON

High Fidelity Made in W. Germany

Canton North America, Inc. 254 First Avenue North Minneapolis, MN 55401 Telephone (612) 333-1150

CIRCLE NO. 33 ON READER SERVICE CARD

# SPEAKERS

## BOSE

### AM-5 Acoustimass Speaker System

Compact 3-piece speaker system with Acoustimass bass module and Direct/Reflecting cube satellites. Each satellite has 2 separate cube enclosures that can be used stacked or separated and are switchable for direct or reflecting configuration. The bass module has 2 6.5" woofers in a double-ported enclosure. Features positive temperature coefficient protection circuit; high positive current coefficient resistor to compress overloading input signals. Max input power 165 W. Satellite cube: 3.5" on a side with a 1" extension for the grille. Bass module: 12" w x 20" l x 8" h ..... \$699/system

### 901 Series V Speaker System

Direct/Reflecting acoustic-matrix speaker with Active Equalizer and 8 rear-facing, 1 front-facing 4.5" full-range drivers. Features pentagon-shaped cabinet with multi-cell injection-molded core with particle-board external panels and walnut veneer finish; Active Equalizer with specifically designed fixed EQ; bass shelf control to provide 6 dB of attenuation at 40 Hz; tape monitor switch. Power range 10 W to unlimited; imp 8 ohms; dynamic range 106 dB; noise 90 dB re 1 V (A-wid); max input 2.1 V rms at 35 Hz. Equalizer 13" w x 4.88" d x 2.75" h. Speaker 21" w x 13" d x 12.36" h. Sold only in stereo pairs (equalizer supplied with each pair) ..... \$1,485/pr Speakers only ..... \$1,264/pr

### 501 Series IV Speaker System

Floor-standing Direct/Reflecting speaker system with 2 3" tweeters mounted in Free Space array and a 10" long-excursion woofer. Teak-grain vinyl veneer finish. Crossover 1.5 and 2.5 kHz; power range 20-125 W continuous; imp 8 ohms; 25" h x 16" w x 14" d ..... \$750/pr

### 201 Series II Speaker

Direct/Reflecting bookshelf speaker with Free Field tweeter. Features dual-frequency crossover network: 6" woofer; 2" tweeter; auto tweeter protection. Available in rosewood vinyl-veneer finish. Crossover frequencies 1.5 and 2.5 kHz; power range 5-60 W rms; imp 8 ohms; 14.5" w x 7.75" h x 9" d; 9 lb ..... \$254/pr

### RM-1 RoomMate Powered Speaker

Pair of speakers with stereo amp in one to accept output of pocket stereo or portable CD player through audio cable. 4.5" full-range driver with helical voice coils in each speaker. Features active EQ; distortion-limiting circuitry; AC powered. Power supply 25-W transformer; enclosure of structural polypropylene composite. Peak SPL 101 dB with 300-3,000 Hz pink noise at 1 meter. Each speaker 6" x 9" x 6"; 10 lb. Black or white finish ..... \$229/pr

### Point Two Series

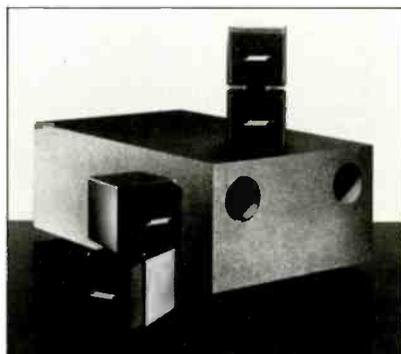
#### 10.2 Speaker

Floor-standing ported speaker with two 8" cone woofers and two 3" cone tweeters. Features Stereo Everywhere technology; Stereo Targeting system; automatic system protection; Syncom II computer quality control. Power range 10-180 W; sens 88 dB SPL/W/m; imp 4 ohms; genuine waxed teak hardwood veneer; 12" w x 39.75" h x 12" d; 61 lb ..... \$1,199/pr

#### 8.2 Speaker

Floor-standing ported speaker with 10" cone woofer and two 3" cone tweeters. Features dual-chamber design; Stereo Targeting system; Stereo Everywhere technology; ducted port enclosure; automatic system protection circuit; Syncom II

computerized quality control. Power range 10-120 W; sensitivity 86 dB SPL/W/m; impedance 4 ohms; teak vinyl; 16" wide x 33" high x 9.25" deep; weight 41 lb ..... \$949/pr



Bose AM-5 Acoustimass System

### 4.2 Bass-Reflex Speaker

Compact bookshelf speaker with Stereo Everywhere performance. Features 8" woofer; 2.5" axial-mounted tweeter; Stereo Targeting system; dual-chamber bass-venting system with slot-port exit; auto tweeter-protection circuit; vinyl finish with teak pattern. Min power 10 W rms; max power 75 W rms; imp 8 ohms. 18" w x 9.5" h x 10" d; 15 lb. Optional speaker stand (AS-1) available at extra cost ..... \$419/pr

## BOSTON ACOUSTICS

### T Series Speakers

#### T1000 3-Way Speaker

Floor-standing acoustic-suspension speaker with 2 active 8" copolymer-cone woofers, 6.5" copolymer-cone midrange in an internal subenclosure, and 1" CFT5 ferrofluid-cooled tweeter. Features tapered-grille design to eliminate sonic diffraction; tall slender enclosure requires minimum floor space; oak and walnut veneers. Power range 15-150 W rms; FR 38-25,000 Hz  $\pm 3$  dB; sens 90 dB SPL/W/m; imp 8 ohms; crossover frequencies 250 and 2,500 Hz. 10.25" w x 42.5" h x 11.5" d ..... \$1,000/pr

#### T830 3-Way Speaker

Floor-standing acoustic-suspension speaker with 8" copolymer-cone woofer, 3.5" copolymer-cone midrange, and 1" Textile-dome tweeter. Features woodgrain vinyl finish with charcoal grilles or black ebony vinyl with black grille. Power range 15-100 W rms; FR 45-20,000 Hz  $\pm 3$  dB; sensitivity 88 dB SPL/W/m; impedance 8 ohms; crossover frequencies 800 and 4,000 Hz. 10" wide x 29" high x 10.5" deep ..... \$480/pr

### Designer Series Speakers

All Designer speakers are designed for flush mounting in walls or ceilings and come packaged ready to install. Each water-resistant speaker has a matte white finish that can be painted to match room decor. Includes mounting hardware with optional brackets available for installation in new construction. Prices vary depending on included installation costs.

#### 360 2-Way Speaker

Flush-mount speaker with 6.5" copolymer-cone woofer and 1" CFT4 ferrofluid-cooled soft-dome tweeter. Woofer specially designed to provide full bass without needing special enclosure. Power range 5-60 W rms; FR 48-20,000 Hz  $\pm 2$  dB; imp 8 ohms; sens 90 dB SPL/W/m. 12.06" h x 8.63" w; depth 3.25" ..... \$350-400/pr

### 705 White Full-Range Speaker

Compact dual-cone full-range speaker. Imp 4 ohms; FR 58-17,000 Hz  $\pm 3$  dB. 5.88" h x 5.88" w; mounting depth 1.75" ..... \$90-\$150/pr

### A Series Speakers

#### A150 Series II 3-Way Speaker

Acoustic-suspension speaker with 10" copolymer-cone woofer, 3.5" copolymer-cone midrange, and 1" CFT5 ferrofluid-cooled soft-dome tweeter. Features tapered-grille design to eliminate sonic diffraction. Power range 15-125 W rms; FR 39-20,000  $\pm 3$  dB; imp 8 ohms; crossover frequencies 550 Hz and 3,500 Hz. Includes black pedestal base. 32.5" h x 16" w x 8.36" d. Oak or walnut veneers ..... \$650/pr Woodgrain vinyl finish ..... \$560/pr

#### A70 Series II 2-Way Speaker

Acoustic-suspension bookshelf speaker with 8" copolymer-cone woofer and 1" CFT5 ferrofluid-cooled soft-dome tweeter. Power range 15-75 W rms; FR 45-20,000 Hz  $\pm 3$  dB; crossover at 2,500 Hz; sens 90 dB SPL/W/m; imp 8 ohms. Woodgrain vinyl finish with charcoal grille. 23" h x 12.5" w x 8.88" d ..... \$300/pr

## BOZAK

### CS-310B Concert Grand Speaker

3-way speaker with 4 B-199B woofers, 2 B-2098 midranges, and 8 tweeters in array. Power range 60-350 W; imp 8 ohms. Matte walnut enclosure. 52" h x 36" w x 19" d ..... \$4,199/pr

### Symphony No. 1 CS-4000A Modern Speaker

Infinite-baffle 3-way floor-standing speaker with 2 woofers, 6.5" midrange, and 8 2" tweeters in array. Max power 250 W; crossovers 400 and 2,500 Hz at 6 dB/octave; imp 8 ohms. Matte walnut enclosure; 44.5" h x 26.25" w x 15.62" d ..... \$2,599/pr

### Digital Music Series

#### DMS-6000Wi Speaker

Floor-standing infinite-baffle speaker with 12" cone woofer, 6" midrange, 2" cone mid-tweeter, and 0.75" dome supertweeter. FR 28-21,000 Hz  $\pm 3$  dB; minimum power 10 W rms, max power 300 W rms; sens 94 dB SPL/W/m; imp 8 ohms; genuine oak veneer finish; 80 lb; 15.5" w x 41" h x 12.5" d ..... \$1,349/pr

#### DMS-4500i Speaker

Floor-standing bass reflex speaker with 12" cone woofer, 4" cone midrange, and 1" dome tweeter. FR 25-21,000 Hz  $\pm 3$  dB; minimum power 10 W rms, max power 150 W rms; sens 95 dB SPL/W/m; imp 8 ohms; kumaka or oak finish; 48 lb; 15.5" w x 26.5" h x 11.5" d ..... \$719/pr

## BSM BY LASER AUDIO

### Series 12 MKII 4-Way Speaker

Floor-standing passive-radiator speaker with 12" polypropylene-cone passive radiator; 12" polypropylene cone woofer; 4" cone midrange; 2" cone tweeter; circuit overload protection. FR 30-20,000 Hz  $\pm 3$  dB; min power 15 W rms; max power 100 W rms; sens 94 dB SPL/W/m; imp 4/8 ohms. Ebony wood-grain finish. 15" w x 41" h x 11" d; 37 lb ..... \$320/pr

## CANTON

### CA 30 Active Speaker

Quad-amplified floor-standing speaker with differential amp and motion feedback system for each driver section (120 W woofer, 100 W midrange, 100 W tweeter). Features four 260-

# SPEAKERS

mm cone woofers; 190-mm cone woofer; 38-mm metal-dome midrange; 25-mm titanium-dome tweeter; Darlington output stage for amps; auto on/off stabilized dual mains supply; electronically controlled protection circuitry. FR 20-30,000 Hz  $\pm$  3 dB; bandwidth 3-140,000 Hz; distortion  $<$  0.03%; s/N 100 dB. 15" w x 66.5" h x 16.5" d; 275 lb ..... \$15,000/pr



Canton CT 120

## CA 15 Active Speaker

Tri-amplified floor-standing speaker with electronic signal correction of all drivers. Features 260-mm long-throw woofer; 120-mm midrange; 25-mm titanium-dome tweeter; crossover frequencies 350/3,500 Hz; 3 separate 100-W amplifiers for bass, mid, and high frequencies; THD  $<$  0.03% ..... \$6,000/pr

## CT 120 Floor-Standing Speaker

4-way bass-reflex speaker features 310-mm (12") woofer; 200-mm (8") bass/midrange; 38-mm (1.5") midrange; 25-mm (1") titanium-dome tweeter. Power handling 200 W continuous/350 W peak; imp 4 ohms; crossover frequencies 250 Hz, 1,100 Hz, 4,600 Hz. 14.2" h x 47.25" w x 15.6" d ..... \$5,000/pr

## CT 90 Floor-Standing Speaker

3-way bass-reflex speaker features 260-mm (10") woofer; 120-mm (5") midrange; 25-mm (1") titanium-dome tweeter. Power handling 150 W continuous, 250 W peak; imp 4 ohms; crossover frequencies 450/4,000 Hz. 12.2" w x 35.5" h x 12.9" d ..... \$2,250/pr

## Karat 60 Bookshelf Speaker

3-way speaker features 260-mm woofer; 120-mm midrange; 25-mm titanium-dome tweeter; power handling 100 W continuous/150 W peak; imp 4 ohms. 12.4" w x 22.9" h x 12.5" d ..... \$1,500/pr

## Karat 20 Bookshelf Speaker

2-way speaker features 200-mm woofer; 25-mm titanium-dome tweeter; power handling 50 W continuous/80 W peak; imp 4 ohms. 8.7" w x 13.5" h x 8.2" d ..... \$650/pr

## GI. 300 F Speaker

Low-profile 2-way speaker acoustically tuned for wall mounting. Features 25-mm dome tweeter (fabric); long-throw 160-mm cone woofer. Enclosure surfaces black or white; grille of perforated steel plate; color to match enclosure; Permafix spring clamps; 5-m connecting cable; removable grille. Nominal imp 4 ohms; nominal power handling 40/60 W; FR 48-30,000 Hz; crossover at 1,700 Hz; 12.6" w x 8.66" h x 3.15" d ..... \$500/pr  
With walnut finish ..... \$550/pr

## HC 100 Speaker

Bookshelf speaker with 110-mm cone woofer, 25-mm dome tweeter. Features Permafix spring clamps; 5-m connecting cable; one-point mounting fixture; removable grille. FR 48-30,000 Hz; max power 60 W; imp 4 ohms; black, white, or bronze finish; 5.12" w x 7.5" h x 5.75" d; 5 lb ..... \$325/pr

## CARVER

### The Amazing Loudspeaker

Floor-standing panel speaker with line-source ribbon drivers with low mass, high efficiency, and high speed. 4 planar subwoofers in panel for low frequencies and ribbon for mid to high frequencies. Black. Min power 100 W rms; max power 350 W rms; sens 91 dB SPL/W/m; imp 5 ohms. 24" w x 60" h x 4" d; 160 lb ..... \$1,576/pr

## CELESTION

### SL600 2-Way Speaker

2 way sealed box design, using Acrolam cabinet of 12 liter volume. 120 W program power handling and designed for use on rigid stands. Copper dome tweeter and bass unit with integral dust cover ..... \$1,800/pr

**SL6S.** Similar to above. Two-way speaker with aluminum 1-piece tweeter and 6" dual-surround woofer ..... \$900/pr

### DL8 Series 2 2-Way Speaker

Sealed cabinet speaker with 8" celoprene cone woofer and 1" metal tweeter. Designed for stand mounting, uses figure 8 cabinet brace and is available in simulated American walnut or black finishes ..... \$540/pr

### DL4 Series 2 2-Way Speaker

Compact, 2-way sealed-box speaker, using 6" woofer and 1" metal-dome tweeter. Designed for stand or bookshelf mounting ..... \$330/pr

## CERWIN-VEGA

### Digital Series Speakers

#### D-9 Speaker

3-way, 4-driver, floor-standing speaker with 15" woofer, dual 6" midranges and 1" tweeter. Features Helmholtz/Theile enclosure fabricated from high-density pressed board with woodgrain vinyl finish and acoustically transparent brown stretch grille. FR 29-20,000 Hz; power range 5-350 W; sensitivity 101 dB; impedance 4 ohms; crossover frequencies 500 and 3,500 Hz; 35.5" x 18" x 17.75" ..... \$1,050/pr

#### D-7 Tower Speaker

3-way tower speaker with 12" woofer, dual 6" cone distributed midrange driver in large chamber, 1" horn tweeter. Features circuit protection; midrange, tweeter level controls; FR 25-20,000 Hz  $\pm$  3 dB; crossovers 500 and 3.5 kHz; sens 98 dB sound-pressure level W/m; max power 200 W; imp 8 ohms ..... \$870/pr

#### D-5 Horn-Tweeter Speaker

Floor/shelf 3-way speaker with 12" woofer, 6"

cone midrange, 1" horn tweeter. Features circuit protection; tweeter level controls; FR 32-20,000 Hz  $\pm$  3 dB; crossovers 700 and 3.5 kHz; sens 96 dB SPL/W/m; max power 150 W; imp 8 ohms ..... \$660/pr

#### D-1 2-Way Speaker

2-way speaker with 8" woofer and 1" voice-coil high frequency horn. Features resettable high-frequency protection circuit breaker; vented cabinet; hickory woodgrain vinyl with cloth grille. FR 30-20,000 Hz; power min/max 5/100 W; sens 92 dB W/m; 8 ohms imp; crossover frequency 3,000 Hz; 20" h x 11" w x 10" d; 49 lb/pr ..... \$340/pr

## SE Speaker Series

### 300SE Speaker

Floor-standing bass reflex speaker with 12" cone woofer, 7" polyolefin cone midrange, and 1" VC horn-loaded dome elliptical tweeter. FR 25-20,000 Hz  $\pm$  3 dB; minimum power 5 W rms, maximum power 255 W rms; sens 98 dB SPL/W/m; imp 6 ohms; black vinyl; 65 lb; 14.5" w x 32" h x 16.25" d ..... \$900/pr

### 280SE Speaker

Floor-standing bass reflex speaker with 12" cone woofer, 6" cone midrange, and 1" VC horn loaded dome, elliptical tweeter. FR 32-20,000 Hz  $\pm$  3 dB; min power 5 W rms, max power 155 W rms; sens 96 dB SPL/W/m; imp 6 ohms; black vinyl; 14.5" w x 25.5" h x 11.5" d ..... \$690/pr

### 240SE Speaker

Bookshelf bass reflex speaker with 10" cone woofer and 1" VC horn loaded dome elliptical tweeter. FR 32-20,000 Hz  $\pm$  3 dB; min power 5 W rms, max power 125 W rms; imp 6 ohms; black; 12.5" w x 25" h x 11.5" d ..... \$470/pr

## DAHLQUIST

### DQ-20 Speaker

Three-way vertical-phase-array speaker intended for floor placement. Speaker contains 250-mm cone woofer; 120-mm cone midrange; 20-mm dome tweeter. Min power 70 W rms imp 4 ohms. Oak finish with black or white grille ..... \$1,800/pr

### DQ-10 Speaker

Phased-array speaker. Features low-diffraction time-delay treble-slope control; solid walnut or oak trim black or white grille cloth; in mirror-image pairs. FR 37-27,000 Hz; crossovers 400, 1k, 6k, 12.5; power range 60-200 W; imp 8 ohms; 31.5" h x 9" d ..... \$1,200/pr

### DQ-1 W Subwoofer

Subwoofer with 13" driver in heavy cast frame for bi-amplified systems. Features walnut or oak finish with black or white grille cloth; 28" h x 18" w x 14" d ..... \$395

## Dynamic Tracking Studio Monitors

### DQM-9 Speaker

Dual rear-firing tuned-port speaker system features rigid die-cast zinc chassis drivers on anti-diffraction baffle in "unbox" enclosure; 11" woofer and 5" cone midrange feature flat-wound ribbon-wire voice coils; tweeter is 1" soft dome. Power range 25-200 W; sens 95 dB SPL/W/m; crossovers 450 and 3.5 kHz; imp 8 ohms; 14.5" w x 25" h x 13.25" d; 55 lb; suede gray Nextel vibration damping and oak or walnut sides with black lacquer top finishes ..... \$1,350/pr

### DQM-9 Compact Speaker

Dual rear-firing tuned-port speaker features rig-

# SPEAKERS

id die-cast zinc chassis drivers on anti-diffraction baffle in "unbox" enclosure; 9" woofer and 5" cone midrange feature flat-wound ribbon wire voice coils; 1" soft dome tweeter; power range 25-140 W; sens 92 dB at 1,000 Hz; crossovers 450 and 3.5 kHz; imp 8 ohms; 22.75" h x 14.36" w x 11.25" d; 43 lb; suede gray Nextel vibration-damping finish ..... \$980/pr  
Oak or walnut sides with black lacquer top ..... \$1,200/pr

## M Series

### M-909 Floor-Standing Speakers

Genuine wood enclosure, spaced grille with solid wood trim, flocked anti-diffraction baffle. 3 way Quasi-Phased Array ..... \$1,100/pr

### M-907 Acoustic-Suspension Speaker

Genuine walnut enclosure, spaced grille with solid walnut trim. 3 way with 10" woofer, 5" midrange, 1" dome tweeter, damped enclosure. 28" h x 14.5" w x 12.5" d ..... \$820/pr

### M-905 Tuned-Port Speaker

Genuine walnut enclosure, spaced grille with solid walnut trim. 2-way speaker with cast-frame 8" woofer and 1" dome tweeter; front-firing tuned port. Sens 91 dB; power range 20 W minimum to 125 W maximum; impedance 8 ohms; 24" x 13.5" x 12" ..... \$590/pr

## DBX

### Soundfield 1A Speaker

Two floor-standing enclosures, each with 4 10" woofers, 4 4" midranges, and 6 0.5" dome tweeters. Self-balancing phased arrangement produces both measurably flat axial and power response (20-20,000 Hz  $\pm$  2 dB) and stable and consistent image anywhere in listening area (no preferred listening location). Computer-designed crossover individually tailors amplitude and phase of each driver to produce psychoacoustically optimized radiation pattern and constant imp (4 ohms). System includes processor to go in preamp/receiver tape-monitor loop. Processor equalizes speaker FR and also features power amp monitor/speaker protector; rumble suppressor; adjustable HF/LF EQ and high-pass/low-pass filters for ends of audio band; auto ch balancing for out-of-balance program material; ambience control; bypass (for headphone listening); and replacement tape monitor. Sens 90 dB SPL/2.83 V/m, average room; power range 30-400 W/ch; system will produce 110 dB SPL in 3,000 cu-ft. room. Walnut or oak veneer with dark brown grilles. 42" h x 14.5" w x 14.5" d; 80 lb ..... \$3,000/system

### Soundfield 50 Speaker

Two floor-standing vented enclosures each with 10" woofer, 6.5" midrange, 4" upper midrange, and 3 ultra-wide-dispersion 0.5" tweeters. Phased arrangement produces both measurably flat response (34-20,000 Hz  $\pm$  2.5 dB) and consistent "Listen Anywhere" stereo imaging throughout room. Sens 91 dB SPL/2.83 V/m; imp 4 ohms nominal, 2.5 ohms min; power range 40-400 W; phased-arranged crossover 200 Hz, 800 Hz, 3,150 Hz, main axis. Walnut or black base and top with matching grille wraps ..... \$2,000/pr

### Soundfield Ten Speaker

Two floor-standing sealed-box speakers each with 2 10" cone woofers, 2 4" cone midranges, 4 0.5" dome tweeters. Features outboard processor with adjustable low-frequency/high-frequency EQ; EQ for against-wall and out-from-wall placement; bypass switch for headphone listen-

ing; replacement tape monitor; self-balancing phase arrangement produces measurably flat axial and power response from 30-20,000 Hz  $\pm$  2.5 dB. Power range 40-300 W; nominal imp 4 ohms; sens 90 dB SPL/W/m. 14.5" w x 34" h x 14.5" d. Oak/walnut veneers ..... \$1,499/pr

### Soundfield 100 Speaker

Two floor-standing vented enclosures each with 10" woofer, 4" midrange, and 3 ultra-wide-dispersion 0.5" tweeters. Phased arrangement produces both measurably flat response (39-20,000 Hz  $\pm$  3 dB) and consistent "Listen Anywhere" "Self-Balancing" stereo imaging throughout room. Computer-designed crossover and asymmetrical cabinet individually tailor amplitude and phase of output in psychoacoustically optimized radiation pattern. Imp 4 ohms; sens 91 dB SPL/2.83 V/m; power range 20-250 W. Walnut veneer with dark brown grilles. 32" h x 16" w x 13" d ..... \$899/pr

### Soundfield 1000 Speaker

Two floor-standing vented enclosures each with 8" woofer, 4" midrange, and 2 ultra-wide-dispersion 0.5" tweeters. Phased arrangement produces both measurably flat response (45-20,000 Hz  $\pm$  3 dB) and consistent "Listen Anywhere" "Self-Balancing" stereo imaging throughout room. Computer-designed crossover and asymmetrical cabinet individually tailor amplitude and phase of output in psychoacoustically optimized radiation pattern. Imp 4 ohms; sens 92 dB SPL/2.83 V/m; power range 20-250 W. Walnut or black vinyl with matching grilles. 31" h x 14" w x 11" d ..... \$699/pr

## DCM

### Time Frame TF2000 3-Way Speaker

Floor-standing folded tapered transmission-line speaker with two 8" cone woofers, two 6.5" cone midranges, and 1" horn-loaded tweeter. Accurate impulse response combines with high efficiency and power handling for digital sources. FR 30-20,000 Hz  $\pm$  3 dB; min power 20 W rms; max power 1,000 W rms; sens 92 dB SPL/W/m; imp 8 ohms. Available in dark oak or brown grille. ..... \$1,999 to \$2,299/pr

### Time Window 3 Speaker

Folded transmission-line 3-way speaker intended for floor placement. Features time-coherent point source for more accurate off-axis sound reproduction. Adjustable high-and middle-frequency energy output, narrow to wide image spatial control; also utilizes acoustic anti-diffraction lenses. 8" cone woofer; 6.5" cone midrange; 2.75" soft-plastic-dome tweeters. FR 24-20,000 Hz; min power 10 W, max power 200 W; sens 90 dB; imp 8 ohms; available in dark oak with dark brown fabric; 45 lb; 16.25" x 39.25" x 12.36" ..... \$1,399 to 1,499/pr

### Time Window 1A Speaker

Hybrid transmission-line speaker intended for floor placement. Improved version of original Time Window with wide-angle sound distribution, pinpoint imaging properties and high power-handling capability. Features cylindrical back and triangular-prism front. Optimized for min time-dispersion error. Contains two 6.5" cone woofers with acoustic lens; 2.75" soft plastic dome tweeter with acoustic lens. Min power 10 W, max power 200 W; sens 91 dB; imp 8 ohms; dark oak with dark brown fabric; 32 lb; 15" w x 36" h x 11.75" d ..... \$879 to \$949/pr

### Time Frame TF500 Speaker

Mirror-imaged floor-standing loudspeaker. Fea-

tures 6.5" cone woofer; 0.75" soft-plastic-dome tweeter with acoustic lens; folded, tapered transmission-line bass loading; FR 34-20,000 Hz; power range 10-100 W; sens 90 dB SPL/W/m; imp 8 ohms; dark oak finish with dark-brown fabric grille; 17" wide x 41" high x 6.75" deep; 42 lb ..... \$549 to \$599/pr

## DENNESEN ELECTROSTATICS

### Dennezen Nine 3-Way Speaker

Floor-standing bass-reflex electrostatic hybrid speaker designed for minimal edge refractions and reflections. Features electrostatic tweeter system; 10" bextrene woofer; 6.5" bextrene midrange; 6 3" electrostatic tweeters. Phase corrected and time aligned. Includes separate electronic crossover for bi-amping in stereo or summed subwoofer. Includes summed subwoofer. FR 20-35,000 Hz  $\pm$  3 dB; min power 50 W rms; max power 200 W rms; sens 89 dB SPL/W/m; imp 8 ohms. Oiled walnut finish. 11" w x 35" h x 15" d; 60 lb ..... \$2,650/pr

## DESIGN ACOUSTICS

### PS-30 3-Piece Speaker System

Consists of 2 PS-5 satellites, PS-LF bass module. Satellites are low-diffraction design with 5" midwoofer, 1" soft-dome tweeter. Bass module has 12" dual voice coil, long-throw woofer; power satellites/subwoofer 35/250 W ..... \$695/set

### PS-LF Bass Module

Down-firing dual voice coil, long-throw 12" woofer with twin crossover networks at 18 dB/octave, 140 Hz. Features input for use with PS-5 satellites (below); biamp inputs for use with other satellites. Response to below 40 Hz; walnut veneer cabinet; brown cloth grille; power range 15-250 W; 21" x 16" x 16" ..... \$350/ea

## Point Source Series

### PS-103 Floor-Standing Speaker

Acoustic-suspension speaker with down-firing 10" woofer housed in a separate enclosure within the cabinet. 6" midwoofer and 0.75" dome tweeter in the upper portion of the cabinet. 5-way binding posts will accept bare stranded cable up to 8 gauge, looped wire, banana plugs, spade lugs, and terminal pins. Cabinet is mounted on casters. Sens 88 dB SPL/W/m; power range 30-250 wrms; nominal impedance 8 ohms; 38.25" high x 13.56" wide x 13.31" deep; 55 lb ea ..... \$950/pr

### PS-10 3 Way Bookshelf Speaker

Acoustic-suspension 3-way speaker with down-firing 10" long-throw woofer, 5" midwoofer, 1" soft-dome tweeter. Features tweeter level control; mirror-image driver placement; acoustically treated baffle; walnut-vinyl finish; brown cloth grille. FR 48-20,000 Hz; crossovers 190 and 2,000 Hz; sens 90 dB SPL/W/m; power range 15-200 W; imp 8 ohms; 14" h x 13.75" d x 11" w ..... \$500/pr

### PS-6 Bookshelf Speaker

Two-way design features 6" woofer; 0.75" soft-dome tweeter; FR 50-20,000 Hz; sens 88 dB SPL/W/m; power range 15-100 W; 11.5" d x 12" h x 8.12" w; 12 lb ..... \$240/pr

## ELECTRO-VOICE

### Interface Series II Speakers

Each Interface 2-way full-range vented direct-radiator system uses an 8" midrange/woofer and 1.5" Super Dome tweeter with a 25-W long-term power-handling capacity in a scientifically designed "optimally vented" enclosure. Lowest octave of speaker's bass response is reproduced by

## SPEAKERS

the vent (Interface 1) or vent substitute (passive radiator, Interface 2 & 3) so as the frequency lowers, the excursion of woofer decreases producing better transient response, lower distortion, and 6-dB higher efficiency. Cabinets are particle board covered with simulated walnut-grained vinyl and include a dark-brown grille.

**Interface 3.** FR 40-18,000 Hz  $\pm$  3 dB; long-term average power capacity 50 W; 10-ms short-term power capacity 200 W; sens 92 dB SPL/W/m; imp 8 ohms nominal, 5 ohms minimum; crossover frequencies 57 Hz acoustical, 1,500 Hz electrical. Includes 12" low-frequency radiator. 14.75" w x 25.25" h x 13.13" d ..... \$630/pr

**Interface 2.** FR 47-18,000 Hz  $\pm$  3 dB; long-term average power capacity 50 W; 10-ms short-term power capacity 200 W; sens 92 dB SPL/W/m; imp 8 ohms nominal, 5 ohms minimum; crossover frequencies 66 Hz acoustical, 1,500 Hz electrical. Includes 10" low-frequency radiator. 13.75" w x 24.25" h x 10.69" d ..... \$546/pr

**Interface 1.** FR 56-18,000 Hz  $\pm$  3 dB; long-term average power capacity 50 W; 10-ms short-term power capacity 200 W; sens 92 dB SPL/W/m; imp 8 ohms nominal, 5 ohms minimum; crossover frequencies 79 Hz acoustical, 1,500 Hz electrical. 11.38" x 21.25" x 9.69" ..... \$420/pr

### Sentry 100A Monitor Speaker

Compact monitor with Super Dome tweeter and 8" direct-radiator woofer in an optimally vented enclosure. Features front-mounted high-frequency control; 4th-order Butterworth tuning;

utility cabinet with scratch-resistant matte-black vinyl; steel-reinforced grille covered with gray cloth. Designed for rack mounting. FR 1 meter on axis anechoic environment swept 0.33-octave pink noise  $\pm$  3 dB 45-18,000 Hz; crossover frequency 2,000 Hz; average power handling above 40 Hz 30 to 300 W; imp 6 ohms. 17.25" x 12" x 11.12" ..... \$255 ea

### EMINENT TECHNOLOGY

#### LFT-III Planar Doublet Speaker

Single-diaphragm Linear Field Transducer with diaphragm remaining within constant magnetic-flux field over entire displacement range; push-pull operation; soft-foil/mylar diaphragm with very thin traces and narrow gaps between each trace driven directly by amp; recommended placement at least 3 ft from rear wall; diaphragm area 580"; peak-to-peak displacement 0.2". FR 35-40,000 Hz  $\pm$  4 dB; power range 50-200 W; sens 83 dB SPL/2.83 V/m; max SPL 106 dB at 1 m; imp 8-22 ohms; 27" w x 54" h x 13" d; 90 lb ea ..... \$2,700

### ENERGY

#### Reference Connoisseur

2-way bass-reflex mirror-imaged speakers, matched 0.12 dB left and right. 6 different exotic matched wood veneers available. 7" polypropylene cone woofer with PVC-stitched suspension; 1.5" dual hyperdome tweeter. FR 25-20,000 Hz  $\pm$  1.5 dB off axis; sens 89 dB SPL/W/m; imp

8 ohms; power range 20-200 watts; 35.36" high x 11" wide x 14" deep; 80 lb; priced according to finish from ..... \$1,500-\$3,000/pr

### Reference

2-way bass-reflex front-port monitors matched within 0.12 dB left and right. 7" polypropylene cone woofer with PVC-stitched suspension; 1.5" dual hyperdome tweeter; includes stands; lagsos walnut or black vinyl. FR 34-20,000 Hz  $\pm$  1.5 dB off axis; sens 89 dB SPL/W/m; imp 8 ohms; power range 20-200 W; 24.62" h x 10.5" w x 12" d; 34 lb ..... \$1,060/pr

### Pro Monitor

2-way bass-reflex mirror-imaged speakers matched 0.5 dB left and right. With stands. 7" polypropylene cone woofer with PVC-stitched suspension; 1.5" dual hyperdome tweeter. Walnut-grain vinyl with black sag-resistant fabric grilles. FR 28-20,000 Hz  $\pm$  1.5 dB off axis; sens 89 dB SPL/W/m; 24.62" x 10.5" x 12" ..... \$800/pr

### EPI

#### Time/Energy Series II Speakers

All EPI Time/Energy Series II speakers have 2-layer bass and midrange speaker cones and treble speaker domes. Stiff plastic layer resists flexing. Other damping layer controls resonances. Ferrofluid-cooled treble voice coils.

#### T/E 320 Series II 3-Way Speaker

Floor-standing speaker with 10" woofer, 4" midrange, 1" tweeter. Features dark-oak-grain

# Honesty. It's been a rare virtue in sound. Until now. *Introducing the new Design Acoustics PS•103 3-Way Loudspeaker*



While other speakers attempt to make their mark with bombast and sizzle, the Design Acoustics PS•103 loudspeaker system has been created to accurately reflect the actual sonic drama of the music. No more. And certainly no less.

#### Hear the original acoustic space

The PS•103 starts with smooth, uniform response for every octave of music. That's basic. Dispersion at the higher frequencies is also enhanced by a tapered, sealed, independent Point Source enclosure for the 6" mid-range and 3/4" tweeter. The result of this combination is an appropriate spaciousness to the reproduced sound... neither collapsed, nor overextended. With the PS•103, the illusion of a live performance is more accurate, making possible a more intense reaction to the music.

#### Bass you can feel

The illusion is enhanced by the extended bass performance from the 10" down-firing woofer, housed in its own cabinet with unique multi-element baffles that stiffen the enclosure while smoothing and extending useful sound output. You both hear and feel the deepest bass, while sensing the original room acoustics all around you.

#### Honestly superior

Before you settle for an artificial sounding speaker, give our spectacular honesty a chance. Audition the Design Acoustics PS•103 loudspeaker system today. Write for the names of Design Acoustics dealers in your area. Like you, they are very serious about very good sound.

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An Audio-Technica Company  
1225 Commerce Drive, Stow, OH 44224

# SPEAKERS

vinyl-veneered cabinet and brown grille cloth. FR 38-20,000 Hz  $\pm$  3 dB; crossovers at 300 and 2,500 Hz; power range 15-250 W; imp 6 ohms. 34.25" h x 13" w x 10" d ..... \$500/pr



*EPI T/E 100 Series II*

### T/E 280 Series II 2-Way Speaker

Floor-standing speaker with 8" woofer, 8" passive radiator, 1" tweeter. Features dark-oak-grain vinyl-veneered cabinet and brown grille cloth. FR 32-20,000 Hz  $\pm$  3 dB; crossover at 1,800 Hz; power range 10-100 W; imp 8 ohms. 34.5" h x 12" w x 9" d ..... \$400/pr

### T/E 250 Series II 3-Way Speaker

Floor-standing speaker with 8" woofer, 4" midrange, 1" tweeter. Features dark-oak-grain vinyl-veneered cabinet and brown grille cloth. FR 42-20,000 Hz  $\pm$  3 dB; crossovers at 300 and 2,500 Hz; power range 15-225 W; imp 6 ohms. 25.5" h x 15.5" w x 8.25" d ..... \$360/pr

### T/E 100 Series II 2-Way Speaker

Bookshelf speaker with 8" woofer, 1" tweeter. Features dark-oak-grain vinyl-veneered cabinet and brown grille cloth. FR 40-20,000 Hz  $\pm$  3 dB; crossover at 1,800 Hz; power range 15-100 W; imp 8 ohms. 21" h x 13" w x 7" d ..... \$260/pr

### EPI Time/Energy Monitor Speakers

#### T/E Monitor 2 Three-Way Speaker

Floor-standing speaker with two 10" woofers, 6" cone midrange, and 4.5" x 2.75" horn tweeter. Features black-ash woodgrain vinyl-veneered cabinet with black grille cloth and tweeter output level control. Crossovers at 500 and 5,000 Hz; power range 10-275 W; imp 6 ohms. 37" h x 14" w x 10.75" d ..... \$600/pr

### T/E Mini Monitor Two-Way Speaker

Floor-standing speaker with 10" woofer and 4.5" x 2.75" horn tweeter. Black ash grille cloth. Crossover at 4,500 Hz; power range 10-150 W; imp 8 ohms. 24.75" h x 11.75" w x 11.12" d ..... \$360/pr

### Magnus Series Speakers

#### EPI Magnus A24 3-Way Speaker

Floor-standing speaker with two 12" woofers, 6" mid-bass driver, and CDH tweeter. Features constant-dispersion horn tweeters; dual level controls; closed frame. Crossovers at 500 and 4,000 Hz; power range 10-350 W peak; nominal impedance 4 ohms. Walnut-grain vinyl-veneered cabinet and brown grille cloth; 10.5" high x 17" wide x 10.88" deep ..... \$700/pr

#### EPI Magnus A12 3-Way Speaker

Bookshelf speaker with 12" woofer, 6" mid/bass driver, and CDH tweeter. Crossovers 500 and 4,000 Hz; power range 10-300 W peak; imp 4 ohms; walnut-grain vinyl finish, brown grille cloth; 25.88" h x 15.36" w x 11.5" d ..... \$500/pr

## ESM BY ENERGY

### ESM-2 Bass-Reflex Speaker

Mirror-imaged pair with 8" woofer, 1" ferrofluid dome tweeter; phase-corrected crossover at 2,000 Hz; walnut or black ash vinyl; black grilles. FR 40-22,000 Hz  $\pm$  3 dB; sens 86 dB SPL/W/m; recommended power range from 12-100 W; nominal imp 8 ohms, minimum imp 4 ohms; 23" x 11" x 11"; 24 lb ..... \$350/pr

## ESS

### AMT Series

#### AMT Monitor Speaker

Floor-standing passive radiator speaker with 21.5" x 21.5" Heil air motion transformer with mylar articulated diaphragm. Features 12" cone passive rad; 12" cone woofer. FR 35-23,000 Hz  $\pm$  3 dB; min power 35 W rms, max 400 W rms; sens 91 dB SPL/W/m; imp 6 ohms; oiled walnut finish; 18.5" x 41" x 12" ..... \$1,299/pr

#### AMT 1D Speaker

Floor-standing passive-radiator 2-way speaker with 12" polypropylene woofer, 12" passive radiator. Features 21.5" x 21.5" Heil air motion transformer with mylar articulated diaphragm; midrange presence, brilliance controls; oiled-walnut finish; black-brown grille. FR 35-23,000 Hz  $\pm$  3 dB; crossover 800 Hz; max power 400 W; imp 6 ohms; horizontal/vertical dispersion 120°/30°; sens 91 dB SPL/W/m; 35.25" h x 16.25" w x 16.25" d; 85 lb ..... \$1,199/pr

#### AMT 1S Speaker

Floor-standing passive-radiator 2-way speaker with 10" fiber cone woofer, 10" passive radiator. Features 21.5" x 21.5" Heil air motion transformer with mylar articulated diaphragm; midrange, presence, brilliance controls; oiled-walnut finish; black-brown grille. FR 38-23,000 Hz  $\pm$  3 dB; crossover 900 Hz; max power 160 W music; imp 6 ohms; horizontal/vertical dispersion 120°/30°; sens 91 dB SPL/W/m; 33.75" h x 15.5" w x 15.5" d; 65 lb ..... \$899/pr

### Performance Series

#### PS-1220 Floor-Standing Speaker

Floor-standing passive-radiator speaker with 12" woofer, Heil air-motion transformer tweeter with 10.4" x 10.4" radiating area, dynamic 4" midrange with hi-temp voice coil. FR 28-23,000 Hz  $\pm$  1 dB at midband; sens 93 dB SPL/W/m; imp 4 ohm; power range 10-200 W; solid walnut finish ..... \$429/pr

#### PS-1020 Floor Standing Speaker

Floor standing passive radiator speaker with 12" woofer, Heil air-motion transformer tweeter-midrange. 10.4" x 10.4" radiating area; FR 28-23,000 Hz  $\pm$  1 dB at midband; sens 93 dB SPL W/m; imp 4 ohm; power range 10-150 W; solid walnut finish ..... \$369/pr

#### PS-820 Bookshelf Speaker

Passive radiator speaker with 6" woofer. Heil air-motion transformer tweeter-midrange with 10.4" x 10.4" radiating area. FR 42-23,000 Hz  $\pm$  1 dB; sens 89 dB SPL/W/m; imp 4 ohm; power range 5-125 W; solid walnut finish ..... \$259/pr

## EUPHONIC AUDIO

### Precept Model A 3 Way Speaker

Floor standing speaker with 2 polymer-cone midranges, 1" fiberglass inverted-dome tweeter, 10" coated paper cone woofer. Internally wired with Monster Cable. FR 35-18,500 Hz  $\pm$  2 dB; sens 91 dB at 2.83 V rms; min imp 4 ohms; 39" h x 13" w x 13" d; 65 lb/ea ..... \$2,200/pr

### Precept Model B 3 Way Speaker

Floor standing speaker with 1 8" polypropylene woofer, 4.5" TPX cone midrange, 0.75" treated linen dome tweeter. FR 36-19,000 Hz  $\pm$  2.5 dB; sens 91 dB at 2.83 V rms; min imp 4 ohms; 36" h x 11.5" w x 11.5" d; 53 lb/ea ..... \$1,550

## FOCUS SPEAKER SYSTEMS

### High-Definition Tower Speaker

2-way staggered-transmission-line speaker with 3 phase-aligned drivers; 1.25" inverted Kevlar dome tweeter with 3-lb magnet; 2 8"-mm woofers; lead-lined cabinet; cabinet made of 14-layer epoxy-pulp sleeve; internal bracing; rounded baffle; subenclosure for tweeter; solid oak bases, tops, side rails; 1st-order crossover at 1,000 Hz; adjustable and removable spiking system. FR 35-20,000  $\pm$  2 dB; group delay better than  $\pm$  0.02 msec; nominal imp 4 ohms, min imp 3.2 ohms; sens 92 dB SPL/W/m; power range 30-200 W/ch; 14" w x 64" h x 16.5" d; 115 lb ..... \$2,950/pr

### .7 High-Definition Monitor Speaker

2-way computer-matched time-aligned speaker with Pox Pulp internally braced cabinet; 8" woofer; 1" dome tweeter; contoured port; hardwired crossovers. FR 37-19,000 Hz  $\pm$  2 dB; nominal imp 8 ohms, min imp 4.8 ohms; power range 30-150 W/ch; sens 90 dB SPL/W/m; 12" w x 28" h x 12" d; 37 lb ..... \$995/pr

### .5 High-Definition Monitor Speaker

Bookshelf speaker with Pox Pulp cabinet; 8" woofer; 1" dome tweeter. FR 45-20,000 Hz  $\pm$  3 dB; nominal imp 8 ohms, min imp 4.8 ohms; power range 30-150 W/ch; sens 90 dB SPL/W/m; 12" w x 19" h x 12" d; 27 lb ..... \$750/pr

## FOSTEX

### RP2001 4-Way Planar/Cone Speaker

Sealed bass enclosure for cone woofer; mid-bass planar driver handles 200-1,000 Hz; dipole midrange handles 1k-7k; 12.5-mm-wide supertweeter with samarium-cobalt magnet. FR 30-45,000 Hz; sens 90 dB SPL/W/m; imp 8 ohms ..... \$3,300/pr  
**RP2001R.** In rosewood ..... \$3,500/pr

### RP1001 3-Way Planar/Cone Speaker

Vented box with cone woofer; planar midrange and supertweeter. FR 40-45,000 Hz; sens 90 dB SPL/W/m; imp 8 ohms ..... \$1,990/pr  
**RP1001R.** In rosewood ..... \$2,190/pr

### RP60 Coaxial Bass-Reflex Speaker

Regulated Phase tweeter mounted in front of 6.5" woofer in vented box; 2 voice coil/magnet assembly; double spider. Frequency response 70-20,000 Hz ..... \$598/pr  
**RP80.** As above except 8" woofer ..... \$738/pr

## FRIED PRODUCTS

### G/3 3-Way Speaker

Floor-standing transmission-line speaker with series crossover networks and duocone drivers. Features full-free-flow transmission-line loading of midrange and aperiodic-design principles for linearity and dynamic range. 10" polypropylene duocone woofer; 6.5" midrange; 0.75" dome tweeter. FR 23-22,000 Hz  $\pm$  3 dB; power range 10-200 watts averaged root mean square; sensitivity 91 decibels SPL/W/m; impedance 8 ohms. Walnut or oak finish. 16" wide x 44" high x 18" deep; weight 100 lb ..... \$2,200/pr

### Studio IV 3-Way Speaker

"Flow-resistance" floor-standing speaker with

# SPEAKERS

duocone drivers and series networks. Features 8" duocone woofer; 2" duocone midrange; 1.75" dome tweeter. FR 26-22,000 Hz  $\pm$  3 dB; power range 10-1,000 W; sens 91 dB SPL/W/m; imp 8 ohms. Walnut finish. 12" w x 39" h x 18" d; 75 lb ..... \$1,230/pr

## C/3-L 2-Way Speaker

Full-transmission-line-loaded speaker for use alone or as a satellite. Features 6.5" duocone woofer; 0.75" dome tweeter; series networks; pyramid shape. FR 60-22,000 Hz  $\pm$  3 dB; power range 10-250 W rms; sensitivity 91 dB SPL/W/m; nominal impedance 8 ohms. 10.5" wide x 13.5" high x 15.5" deep; 20 lb ..... \$950/pr

## A/3 2-Way Speaker

Features 8" polypropylene woofer; 1" soft-dome tweeter; edge-on free-flow filters; line tunnel. FR 45-20,000 Hz  $\pm$  3 dB; power range 25-100 W; imp 8 ohms; crossover frequency from woofer to tweeter at 2,000 Hz; sensitivity 89 dB SPL/W/m. 23" h x 13" w x 10.5" d ..... \$635/pr

## GENESIS

### Genesis 66/2 Floor Standing Speaker

3-way floor-standing speaker with ferrofluid cooled 1" inverted aluminum dome tweeter, 3" treated fabric dome midrange in tuned sub-enclosure, 2 8" magnesium silicate filled polypropylene cone woofers, 4th-order tuned port. FR 28-25,000 Hz  $\pm$  3 dB; sens 92.5 dB W/m; power range 30-350 W; imp 4 ohms; oak veneer; 44" h x 18" w 12" d; 81 lb ..... \$1,800/pr

### Genesis 44/2 2 Way Speaker

2 way design with 10" tuned passive radiator. Woofer and tweeter same as 66/2 (above). FR 34-25,000 Hz  $\pm$  3 dB; sens 91 dB W/m; imp 5 ohms average; recommended power 15 W min, 150 W max; oak veneer; 32.5" h x 18" w x 9" d; 42 lb ..... \$800/pr

### Genesis 33/2 2 Way Speaker

2 way speaker with 10" tuned passive radiator. Woofer and tweeter same as 66/2. FR 39-25,000 Hz  $\pm$  3 dB; sens 91 dB W/m; recommended power 15 W min, 150 W max; imp 5 ohms average; 29" x 16" x 8"; oak ..... \$650/pr  
Vinyl finish ..... \$550/pr

### Genesis 7 Bookshelf Speaker

2-way tuned-port speaker with 0.8" polycarbonate dome tweeter; 6.5" polymer/fibre woofer; FR 60-20,000 Hz  $\pm$  3 dB; sens 90 dB W/m; recommended power 10 W min, 60 W max; imp 6 ohms. 16" h x 11.75" w x 5" d ..... \$200/pr

## REUBEN GUSS ENTERPRISES

### System 1: Guss Monitor Speaker System

Floor-standing speaker system with 102 drivers in 4 enclosures. Features 12 15" cone woofers; 24 5" dome dual-diaphragm midranges; 16 1" dome tweeters; 50 custom piezo-electric supertweeters. Controls include midrange; tweeter; rear ambience; satellite. FR 25-25,000 Hz  $\pm$  3 dB; power range 30-600 W; sens 92 dB SPL/W/m; imp 6 ohms; walnut oak; 36" w x 73" h x 21" d ..... \$50,000/system

### System 3: Concerto Speaker System

Floor-standing speaker system with 22 drivers in 4 enclosures. Features 4 12" cone woofers; 6 5" dome dual-diaphragm midranges; 4 1" dome tweeters; 8 custom piezoelectric supertweeters. Controls include midrange; tweeter; rear-ambience; and satellite. FR 30-22,000 Hz  $\pm$  3 dB; power range 30-300 W; sens 92 dB SPL/W/m;

imp 4 ohms. Walnut and oak finishes. Two cabinets 22" w x 54" h x 20" d and two 8" w x 25" h x 8" d ..... \$6,000/system

## HARTLEY PRODUCTS

### The Reference

Floor-standing 4-way speaker with 24" superwoofer, 10" midrange, two 7" tweeters. Crossovers 250, 3,000, 7,000 Hz; FR 16-25,000 Hz; power range 25-300 W; impedance 5-8 ohms; wood cabinet with removable knit grille; 50.25" h x 36" w x 24" d ..... \$4,995/pr

### The Concertmaster

Floor-standing 4-way speaker with 18" woofer, 10" midrange, two 7" tweeters. Crossovers at 250, 3,000, 7,000 Hz; FR 16-25,000 Hz; power range 25-300 W; impedance 5-8 ohms; wood cabinet with removable black grille; 41.5" high x 29" wide x 18" deep ..... \$3,850/pr

### H Series

All cabinets in the H Series have hand-rubbed walnut veneers and black knit grilles.

### H-100 Speaker

Aligned air-column speaker with 8" long-throw woofer with 1.5" high-temperature voice coil, chemically treated cone, 1.5" air-column midrange, 2" low-mass cone tweeter. Frequency response 50-20,000 Hz  $\pm$  4 dB; power range 5-50 W rms, unclipped; crossover 2,300 Hz; 21.5" h x 10.5" w x 10.5" d ..... \$380/pr

### H-200 Speaker

Aligned air-column speaker. Features 10" long-throw woofer with 1.5" high-temperature voice coil, chemically treated cone, 2.5" air-column midrange, 1" coated mylar dome tweeter. FR 35-25,000 Hz  $\pm$  3 dB; power range 5-100 W rms; imp 8 ohms; crossover 2,600 Hz; 30" h x 15" w x 15" d ..... \$650/pr

## HEYBROOK BY D'ASCANIO

### HB-3 3-Way Speaker

Hand-assembled acoustic-suspension speaker with 10" doped-cone woofer; 4.5" doped-cone midrange and 0.75" soft-dome tweeter; removable rear panel for bi- and triamping. FR 35-20,000 Hz  $\pm$  3 dB; power range 15-200 W. Real walnut, or gloss-black finish. 25" h x 13.36" w x 11.36" d; 46 lb ..... \$1,198/pr

### HB-LC 2-Way Speaker

Hand-assembled reflex-tuned bookshelf speaker with 6.5" Bextrene woofer; 1" dome tweeter; time-aligned crossover. FR 38-20,000 Hz  $\pm$  3 dB; power range 20-75 W; imp 8 ohms. Walnut or black finish. 16.36" h x 9.25" w x 9.25" d; 20 lb ea ..... \$650

### HB-1 2-Way Speaker

Hand-assembled acoustic-suspension bookshelf speaker with 8" doped-cone woofer; 1" dome tweeter. Features removable rear panel for biamping. FR 42-20,000 Hz  $\pm$  3 dB; imp 8 ohms; power range 10-75 W; sens 89 dB SPL/W/m. Walnut vinyl or gloss-black finish. 18.75" h x 11.5" w x 9.25" d; 19 lb ..... \$329/pr

## IMAGE

All Image speakers, both in the Concept and Reference Series, have nominal impedances of 6 ohms, with minimum impedance of 4 ohms, and black grilles.

### Concept 200 Ported Speaker

2 6.5" woofers; 0.75" cotton dome tweeter; crossover at 2,100 Hz; Italian black walnut vinyl. FR 35-23,000 Hz  $\pm$  2 dB; sens 87 dB

SPL/W/m; power range 35-150 W; 43" x 10" x 15"; 66 lb each ..... \$900/pr

### Concept 100 Ported Speaker

6.5" woofer; 0.75" cotton dome tweeter; crossover at 2,100 Hz; Italian black-walnut vinyl. FR 45-23,000 Hz  $\pm$  2 dB; sens 87 dB SPL/W/m; power range 35-100 W; 16" x 9" x 11"; 23 lb each ..... \$600/pr

### Reference Two Ported Speaker

8" doped woofer; 1" polyester soft-dome tweeter; crossover at 2,200 Hz; lagos hickory vinyl. FR 35-20,000 Hz;  $\pm$  3 dB; sens 88 dB SPL/W/m; power range 20-100 W; 24" x 11" x 12"; 31 lb each ..... \$370/pr

## INFINITY

### IRS Series V Reference Speaker

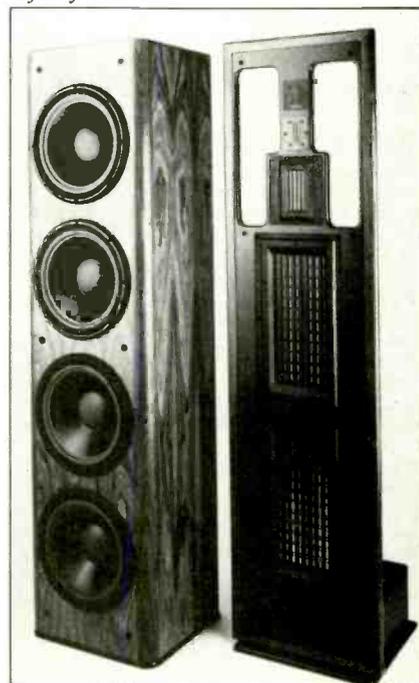
Modular 4-piece 3-way floor-standing speaker. Features 2 woofer modules with six 12" woofers in feedback loop of servo amp (2 1,800-W woofer amps); 2 midrange/tweeter modules with 12-dipole midrange drivers; 36 tweeters in dipole line-source array (24 front/12 rear-facing); bass variable low-pass filters; low-pass variable damping; woofer level controls; selectable input imp midrange/tweeter amp control; woofer phase switch; servo bass on/off circuit; Monster Cable wiring for midrange and woofer. FR 16-40,000 Hz  $\pm$  2 dB; crossovers 70 Hz nominal, 60-120 Hz at main control unit woofer/midrange, 5 kHz midrange/tweeter; midrange/tweeter amp input range 100-500 W/ch; oiled and "Grand Piano" Indian rosewood finish; 100-ft cable for hookup of midrange/tweeter to midrange/tweeter amp. Woofer modules: 7 ft, 6" h x 18" square; midrange/tweeter modules 7 ft, 6" h x 40" w x 12" d (with hollow and sand-filled curved wing sections) ..... \$45,000/system

### IRS Series

#### IRS Beta Speaker

Includes (per side) four 12" woofers with servo-controlled polypropylene/graphite fiber injec-

### Infinity IRS Beta



# SPEAKERS

tion molded cones; 2 upper bass/midrange (70 Hz-60 kHz) planar push-pull drivers which act as dipole; low-mass EMIT with neodymium magnets for upper midrange; low mass/neodymium EMIT's from IRS V (in dipole configuration) for the lower treble; SEMIT (a smaller aperture EMIT) which extends response beyond 44 kHz. The system operates in biamp mode and includes the IRS V servo control unit ..... \$10,000

**IRS Gamma.** Similar to Beta with 2 woofers and 1 upper-bass midrange ..... \$5,500

**IRS Delta.** Similar to Gamma with accelerometer servo system ..... \$4,500

## Kappa Series

### 9 Kappa Reference Standard Speaker

5-way design features 2 12" cast-frame L/C-tuned woofers; SEMIT K supertweeter; rear-firing EMIT K tweeter; 3" polydome rear radiator; polygraph K composite polypropylene/graphite 5" mid-bass dome; 3" edge-wound polydome K midrange; internal crossovers; biampable; oak solids and veneer with high-density particle board with furniture-grade lacquer finish. FR 29-45,000 Hz  $\pm$  3 dB; crossover frequencies 80, 800, and 4,500 Hz; power rating 60-340 W rms; sensitivity 89 dB SPL/W/m; impedance 4-6 ohms. 59.5" high x 21.5" wide x 8" deep ..... \$2,698/pr

**8 Kappa.** 4-way design similar to 9 Kappa without supertweeter, rear-firing tweeter and radiator, and 1 woofer. FR 33 Hz-45,000 Hz  $\pm$  3 dB; power rating 50-250 W rms; sens 89 dB SPL/W/m; imp 4-6 ohms. 47.5" h x 20.5" w x 8" d ..... \$1,898/pr

**7 Kappa.** 3-way design similar to 8 Kappa with 12" woofer, 3" polydome K midrange, and EMIT K tweeter. Power rating 40-200 W rms; FR 37 Hz-45,000 Hz ..... \$1,318/pr

**6 Kappa.** 3-way design similar to 7 Kappa except the woofer is 10". Power rating 30-150 w rms; frequency response 39 Hz-45,000 Hz. 25" h x 15" w x 10.5" d ..... \$998/pr

## SM Speaker Series

### SM 150 3-Way Speaker

Floor-standing bass-reflex speaker with 15" cone woofer, 2 4.5" midranges, and 1" polycell dome tweeter. FR 29-27,000 Hz  $\pm$  3 dB; min power 10 W/rms, max power 300 W/rms; sens 101 dB SPL/W/m; imp 8 ohms; rosewood vinyl; 19" w x 39.5" h x 12.5" d ..... \$1,118/pr

### SM 100 2-Way Speaker

Floor-standing bass-reflex speaker with 10" cone woofer and 1" polycell-dome tweeter. Min power 10 W rms, max power 150 W rms; sens 98 dB SPL/W/m; imp 8 ohms; rosewood vinyl; 14" w x 29.5" h x 12.5" d ..... \$518/pr

## RS Speaker Series

### RS 6000 3-Way Speaker

Features 2 10" cone woofers, 2" dome midrange, EMIT planar tweeter. FR 41-44,000 Hz  $\pm$  3 dB; sens 89 dB SPL/W/m; min power 35 W rms; max power 200 W averaged root mean square. 15" wide x 37" high x 10" deep ..... \$850/pr

### RS 5000 3-Way Speaker

Acoustic-suspension speaker with 10" cone woofer, 3.5" cone midrange, and EMIT planar tweeter. FR 42-32,000 Hz  $\pm$  3 dB; min power 20 W rms, max power 135 W rms; sens 89 dB SPL/W/m; imp 6 ohms; oak vinyl; 15" w x 24" h x 10.25" d ..... \$590/pr

### RS 3000 2-Way Speaker

Bookshelf acoustic-suspension speaker with 8"

cone woofer and 1" polycell dome tweeter. FR 45-22,000 Hz  $\pm$  3 dB; min power 20 W rms; max power 100 W rms; sens 89 dB SPL/W/m; imp 6 ohms; oak vinyl; 12" w x 20.75" h x 10.25" d ..... \$310/pr

## JAMO

### Digital Monitor Series

All Jamo Digital Monitor speakers feature Jamo's Center Bass Reflex technology for increased sound pressure at low frequencies and decreased sound coloration, phased-aligned drivers, anthracite finish, and detachable grilles.

**Digital 200.** 3-way speaker with 10" woofer, 5" midrange, and 1" dome tweeter. Features treble and midrange sound pressure control; treble overload diode. Peak power 300 W; continuous power 200 W; sens 92 dB SPL/W/m; FR 20-24,000 Hz  $\pm$  3 dB; crossover frequencies 540 and 3,800 Hz; imp 8 ohms. 32.25" x 15.75" x 13.75"; 53 lb ..... \$1,198/pr

**Digital 120.** 3-way speaker with 8" woofer, 4" midrange, and 1" dome tweeter. Features treble sound pressure control; treble overload diode. Peak power 180 W; continuous power 120 W; sens 91.2 dB SPL/W/m; FR 30-22,000 Hz  $\pm$  3 dB; crossover frequencies 890 and 4,900 Hz; nominal imp 8 ohms. 27.5" x 13.75" x 11.75"; 37.5 lb ..... \$798/pr

**Digital 70.** 3-way speaker with 5.5" woofer, 3" midrange, and 1" dome tweeter. Features treble overload diode. Peak power 100 W; continuous power 70 W; sens 89 dB SPL/W/m; FR 40-20,000 Hz  $\pm$  3 dB; crossover frequencies 1,200 and 4,600 Hz; imp 8 ohms. 19" x 9.5" x 6"; 15.4 lb ..... \$398/pr

### Compact Line Series

**C120.** Bookshelf 3-way bass-reflex speaker with 8" dual-magnet woofer, 5" midrange, and 1" dome tweeter. FR 38-20,000 Hz  $\pm$  3 dB; peak power 140 W; continuous power 120 W; sens 92 dB SPL/W/m; crossover frequencies 1,200 and 5,000 Hz; imp 8 ohms. Black or white finish. 16.5" x 10.25" x 8.75"; 14.3 lb ..... \$320/pr

**C90.** Bookshelf 3-way bass-reflex speaker with 8" cone woofer, 3.25" cone midrange, and 1" dome tweeter. FR 40-20,000 Hz  $\pm$  3 dB; peak power 120 W; continuous power 90 W; sens 91.6 dB SPL/W/m; crossover frequencies 1,200 and 4,000 Hz; imp 8 ohms. Black or white finish. 14.5" x 9" x 8.75"; 11 lb ..... \$240/pr

**C50.** Bookshelf 2-way bass-reflex speaker with 4" cone woofer and 2" cone tweeter. FR 70-20,000 Hz  $\pm$  3 dB; peak power 60 W; continuous power 50 W; sens 89 dB SPL/W/m; crossover frequency 2,600 Hz; imp 4 ohms. Black finish. 6.5" x 4" x 6.75"; 2.9 lb ..... \$160/pr

## JBL

### Everest DD55000 3-Way Speaker

Features constant-directivity design; 15" woofer in vented enclosure; defined-coverage horn-loading midrange; biradial constant-coverage horns; ultra-high-frequency slot-loaded ring radiator; mylar capacitors; aircone inductors; polystyrene and polypropylene bypass capacitors; 3 position switches to vary output levels of compression driver and ring radiator; mid-bass attenuator; high-density compressed wood; Rosewood veneer. Power range 40-250 W; imp 8 ohms; sens 100 dB SPL/W/m; crossovers 850 and 7,500 Hz. Mirror-image pairs. 55.13" h x 36" w x 20" d ..... \$9,900/pr

## LT Series

### L100T 3-Way Speaker

Floor-standing speaker with 12" aquaplas-laminate woofer, 5" high-polymer-laminate midrange, and 1" pure-titanium-diaphragm tweeter. Max power 200 W continuous, 800 W peak; crossovers 800 and 4,500 Hz; sens 91 dB SPL/W/m. Oiled hardwood veneer. 36.5" h x 16" w x 13.25" d; 70 lb ..... \$1,150/pr

### L80T 3-Way Speaker

Floor-standing speaker with 10" aquaplas-laminate woofer, 5" polymer-laminate midrange; 1" pure-titanium-diaphragm tweeter. Power handling: 150 W continuous, 600 W peak; crossovers 800 and 4,500 Hz; sens 90 dB SPL/W/m. Oiled hardwood veneer. 33.5" h x 14" w x 11.75" d; 53 lb ..... \$850/pr

### L60T 2-Way Speaker

Floor-standing speaker with 8" high-polymer-laminate woofer and 1" pure-titanium tweeter. Power handling: 120 W continuous, 400 W peak; crossover 2,500 Hz; sensitivity 89 dB sound-pressure level with input of 1 watt measured at 1 meter. Oiled hardwood veneer; 30.5" high x 12" wide x 10" deep; 38 lb ..... \$590/pr

## JBL Series

### JBL 940 4-Way Speaker

Floor-standing bass-reflex speaker with 1" titanium-laminate dome tweeter, 10" x 8" high-polymer-laminate cone woofers, and 5" high-polymer-laminate cone midrange. FR 34-25,000 Hz  $\pm$  3 dB; min power 10 W rms, max power 300 W rms; sens 94 dB SPL/W/m; impedance 4 ohms; rosewood vinyl finish. 65 lb; 18.5" wide x 43.75" high x 10.25" deep ..... \$790/pr

### JBL 830 3-Way Speaker

Floor-standing bass-reflex speaker with 2 8" high-polymer-laminate cone woofers, and 1" titanium-laminate dome tweeter. FR 40-25,000 Hz  $\pm$  3 dB; minimum power 10 W rms, max power 200 W rms; sens 94 dB SPL/W/m; imp 4 ohms; rosewood vinyl finish; 53 lb; 16.75" w x 39.75" h x 8.75" d ..... \$590/pr

### JBL 630 3-Way Speaker

Floor-standing bass-reflex speaker with 2 6.5" high-polymer cone woofers and 1" titanium-laminate dome tweeter. FR 42-25,000 Hz  $\pm$  3 dB; min power 10 W rms, max power 150 W rms; sens 93 dB SPL/W/m; imp 4 ohms; rosewood vinyl finish. 40 lb; 15" w x 35.75" h x 8.25" D ..... \$450/pr

## Ti Series

### 250 Ti 4-Way Speaker

Floor-standing speaker with 14" woofer, 8" lower midrange, 5" polypropylene midrange, and 1" titanium-diaphragm tweeter. Mirrored-image SFG magnetic structure. Max power 400 W; nominal impedance 8 ohms; crossovers 400, 1,400, and 5,200 Hz; sensitivity 90 dB SPL/W/m. Hand-oiled Burmese teak finish. 52" high x 22.5" wide x 14.25" deep; weight 126 lb ..... \$3,790/pr

### 240 Ti 3-Way Speaker

Floor-standing speaker with 14" woofer, polypropylene midrange, and ultra-low-mass pure-titanium-diaphragm tweeter. Features SFG magnetic structure. Max power 300 W/ch; nominal imp 8 ohms; crossover 900 Hz, 4,000 Hz; sens 89 dB SPL/W/m. Hand-oiled Burmese teak; 36.62" h x 18" w x 12" d; 85 lb ..... \$1,790/pr

### 120 Ti 3-Way Speaker

Features 12" woofer; polypropylene midrange;

# SPEAKERS

ultra-low-mass pure-titanium-diaphragm tweeter; SFG magnetic structure. Max power 250 W; nominal imp 8 ohms; crossovers 900 and 4,000 Hz; sens 89 dB SPL/W/m. Hand-oiled Burmese teak; 24.5" h x 14.5" w x 11" d ..... \$1,190/pr

## JENSEN

### Model 3120 3-Way Speaker

Features 12" cone woofer; 5" midrange; 3" tweeter. FR 48-21,000 Hz; max power 150 W peak, 60 W continuous; imp 8 ohms. 29" h x 15.5" w x 10.5" d; 30 lb ..... \$379/pr

### Model 3100 3-Way Speaker

Features 10" cone woofer; 5" midrange; 3" tweeter. FR 43 Hz-21 kHz; max power 125 W peak, 50 W continuous; imp 8 ohms. 20" h x 13" w x 10.5" d; 24 lb ..... \$299/pr

## JPW LOUSPEAKERS

### AP3 Infinite-Baffle Speaker

Features wiring for biamp capabilities; 200-mm doped-paper-cone woofer; 19-mm soft-plastic dome tweeter with Ferrofluid damping. FR 55-20,000 Hz  $\pm$  3 dB; min power 10 W rms; max power 100 W rms; sens 100 dB SPL/W/m; imp 8 ohms. Available in walnut, black ash, blonde ash or teak finishes. 53.36 lb/pr; 10.25" w x 20.5" h x 11.5" d ..... \$499/pr

### AP2 Infinite-Baffle Speaker

Features wiring for biamp capabilities; 200-mm doped-paper-cone woofer; 19-mm soft-plastic dome tweeter with Ferrofluid damping. FR 60-20,000 Hz  $\pm$  3 dB; min power 10 W rms; max power 80 W rms; sens 80 dB SPL/W/m; imp 8 ohms. Available in walnut, black, blonde ash and teak finishes. 42.32 lb/pr; 10.25" w x 17.25" h x 10.25" d ..... \$349/pr

## J. S. ENGINEERING (JSE)

### Infinite Slope Model 1.8 Speaker

Infinite slope phase shift bass loading speaker with patented phase shift. Contains 8" and 10" cone woofers, 6" cone midrange, and 28 mm dome tweeter. FR 35-20,000 Hz  $\pm$  3 dB; minimum power 20 W rms, max power 300 W rms; sens 90 dB SPL/W/m; imp 8 ohms; oak, walnut, black gloss; 100 lb; 16" w x 38" h x 16" d ..... \$1,695/pr

### Infinite Slope Model 1 Loudspeaker

Sealed floor-standing speaker featuring Infinite Slope crossover and patented Phase Shift Bass Loading. Front of speaker angled 15°. Two cone woofers 7", 8"; 28 mm dome tweeter. Available in oak, walnut, black gloss. FR 40-20,000 Hz  $\pm$  2 dB; power range 10-150 W; imp 8 ohms; sens 90 dB SPL/W/m; 13" x 29" x 14.5" ..... \$995/pr

**Model 2.** Similar to above except has cone woofers of 12" and 10", with 6.5" cone and 2" dome midranges, 21 mm dome tweeter. Front of speaker angled 8°. FR 25-24,000 Hz  $\pm$  2 dB; power range 50-350 W; sensitivity 90 dB SPL/W/m; nominal impedance 8 ohms; 47" high x 18" wide x 16" deep at bottom of enclosure, 11" deep at top; 150 lb ..... \$2,295/pr

### Infinite Slope Model .6 Speaker

Floor-standing ported speaker with infinite slope crossover (100 dB/octave). Features 8" cone woofer; 1" dome tweeter. FR 40-20,000 Hz  $\pm$  3 dB; power range 5-150 W; sens 91 dB SPL/W/m; imp 8 ohms; walnut, oak, black lacquer finish; 11" w x 23" h x 13" d ..... \$599/pr

## JVC

### SX-A3 2-Way Speaker

Bookshelf passive-radiator speaker with self-restoring protection for more tweeter power handling. LED overload indicator. Magnetically shielded for both audio and video use. Features 8" x 12" passive radiator; 8" cone woofer; 1" soft-dome tweeter. FR 35-23,000 Hz  $\pm$  3 dB; power handling capacity 130 W/200 W (music); sens 88 dB SPL/W/m; imp 6 ohms. Wood finish. 13.5" w x 24.5" h x 11.31" d; 31 lb ..... \$400/pr

### SX-A6 4-Way Speaker

Floor-standing 4-way 5-speaker system with two 3" ambience-enhancement drivers in rear, self-restoring protection for more tweeter power handling. LED overload indicator. Features 9.25" x 13.75" passive radiator; 8" cone woofer; 1.25" soft-dome midrange; 1" soft-dome tweeter. FR 25-23,000 Hz  $\pm$  3 dB; power-handling capacity 150 W rms, 240 W music; sens 89 dB SPL/W/m; imp 6 ohms. Wood finish. 15.36" w x 31.88" h x 10.23" d; 38.6 lb ..... \$250 ea

## KEF

### Reference Series

#### Model 107 3-Way Speaker

Floor-standing coupled-cavity bass-loading speaker uses 2 woofers operating into resonant chamber vented at top of enclosure to combine sensitivity of bass reflex with accuracy and bass extension of acoustic suspension. Features 2 10" cone woofers; 4" polypropylene-cone midrange; 1" ferrofluid-cooled soft-dome tweeter; pivoting midrange/tweeter head assembly with individual contoured enclosures for minimum diffraction, reduced off-axis coloration, and optimum stereo imaging; hybrid crossover network with built-in passive crossover and outboard KUBE active bass EQ with controls for contour, damping, and extension. Conjugate load-matched passive crossover presents amp with uniform imp at all frequencies. FR 20-20,000 Hz  $\pm$  2 dB; min power 50 W rms; max power 300 W rms; sens 90 dB SPL/W/m; imp 4 ohms. Walnut, black ash, rosewood. 13" w x 46" h x 17.75" d; 99 lb ..... \$3,900

**104/2 KUBE.** Active bass EQ with controls for contour and extension ..... \$200

#### 104/2 3-Way Speaker

Floor-standing speaker with cone woofers vertically aligned, coupled-cavity bass loading technique, chassis-less drivers, conjugate load matching. Two 8" cone woofers, two 4.5" cone midranges and 1" ferrofluid-cooled dome tweeter. FR 55-20,000 Hz  $\pm$  2 dB; power range 25-200 W; sensitivity 92 dB sound-pressure level with input of 1 watt measured at 1 meter; imp 4 ohms; 11" w x 35.5" h x 16.36" d; 70.5 lb. Walnut or black ash finish ..... \$1,800/pr  
Rosewood finish ..... \$1,850/pr

#### 103/3 3-Way Speaker

Bookshelf coupled-cavity bass-loading speaker with woofer operating into resonant chamber vented at bottom of enclosure to combine sensitivity of bass reflex with accuracy and bass extension of acoustic suspension. Features 8" cone woofer; 6" polypropylene-cone midrange; 1" ferrofluid-cooled soft-dome tweeter; hybrid crossover network with built-in passive crossover and outboard KUBE active bass EQ with controls for contour and extension. Conjugate load-matched passive crossover presents amp with uniform imp at all frequencies. FR 50-20,000 Hz  $\pm$  2 dB; min power 50 W rms; max power 200 W rms; sens 92 dB SPL/W/m; imp 4

ohms. Walnut, black ash, rosewood. Includes feet for shelf mounting. 10.5" w x 22.75" h x 12.5" d; 38 lb ..... \$1,390/pr

## C Series

### C80 3-Way Speaker

Floor-standing closed-box speaker with conjugate load-matched crossover network that presents amp with uniform imp at all frequencies. Features flat-diaphragm woofer; 6" polypropylene-cone midrange; 1" ferrofluid-cooled soft-dome tweeter; matched walnut, rosewood, or black-ash veneers. FR 50-20,000 Hz  $\pm$  3 dB; min power 15 W rms; max power 150 W rms; sens 89 dB SPL/W/m; imp 4 ohms. 10.5" w x 33.5" h x 12.5" d; 44 lb ..... \$1,090/pr

### C60 2-Way Speaker

Bookshelf closed-box speaker with conjugate load-matched crossover network that presents amp with uniform imp at all frequencies. Features 8" polypropylene-cone woofer with die-cast alloy chassis; 1" ferrofluid-cooled soft-dome tweeter; matched walnut, rosewood, or black-ash veneers. FR 66-20,000 Hz  $\pm$  3 dB; min power 10 W rms; max power 100 W rms; sens 89 dB SPL/W/m; imp 4 ohms. 10" x 18.5" x 12.25" ..... \$690/pr

### C30 2-Way Speaker

Bookshelf closed-box speaker with 8" polypropylene-cone woofer and 1" soft-dome tweeter. FR 70-20,000 Hz  $\pm$  3 dB; min power 10 W rms; max power 100 W rms; sens 90 dB SPL/W/m; imp 8 ohms. Simulated woodgrain finishes. 9.75" w x 20" h x 8.5" d; 16 lb ..... \$350/pr

## KENWOOD

### LS-P9100 4-Way Speaker

Basic Series floor-standing speaker with 17" passive radiator. Features 10.5" polypropylene woofer; 4" polypropylene midrange; flat-leaf supertweeter plus 2 cone tweeters in wide dispersion Ton-Säule vertical array; high-grade crossover network; auto-resetting overload protector; high-rigidity enclosure; simulated rosewood finish. Max input power 250 W; sens 91 dB/W/m; crossovers at 900, 5,500, 10,000 Hz; imp 8 ohms. 17.31" w x 44.5" h x 13.25" d; 62 lb ..... \$720/pr

### LS-P5100 4-Way Speaker

Basic Series floor-standing speaker with 13" passive radiator. Features 8.5" polypropylene woofer; 4" polypropylene midrange; flat-leaf supertweeter plus 2" cone tweeter in wide dispersion Ton-Säule vertical array; high-grade crossover network; auto-resetting overload protector; high rigidity enclosure; simulated rosewood finish. Max input power 150 W; sens 90 dB/W/m; crossovers at 800, 5,000, 10,000 Hz; imp 8 ohms. 14.56" w x 35.44" h x 10.69" d; 40 lb ..... \$480/pr

### LSK-702W 3-Way Speaker

Features acoustic-suspension enclosure; 12" woofer; 4.5" midrange; 2" cone tweeter. Max input power 160 W; sens 91 dB/W/m; imp 8 ohms; simulated woodgrain finish. 14.81" w x 26" h x 10.56" d; 26.5 lb ..... \$285/pr

## KINDEL AUDIO

### PLS-A 2-Way Speaker

Floor-standing line-source speaker with vertical array of 6 6.5" woofers and 16 1" dome tweeters. FR 35-22,000 Hz  $\pm$  3 dB; power range 5-500 W rms; sens 94 dB SPL/W/m; imp 8 or 2 ohms. Available in oak or walnut finish. 22" w x 67" h x 9" d; 130 lb ea ..... \$2,000/pr

# SPEAKERS

## P-200 MKII 2-Way Speaker

Sealed-box speaker with high-frequency control, binding posts, and low-diffraction grille. Features 2 6.5" polypropylene woofers (1 for low bass and 1 for mid bass); 2.5" cone tweeter; 0.75" dome supertweeter. FR 40-22,000 Hz  $\pm$  3 dB; power range 5-100 W; sens 90 dB SPL/W/m; imp 4 ohms; crossover frequencies 300, 1,500, and 8,000 Hz. Natural or dark oak finish. 10" W x 24" h x 10" d; 32 lb. \$600/pr

## P-100 MKII 2-Way Speaker

Sealed-box speaker designed for stand placement. Features high-frequency control; binding posts; low-diffraction grille; 6.5" polypropylene woofer; 2.5" cone tweeter; 0.75" dome supertweeter. FR 45-22,000 Hz  $\pm$  3 dB; power range 5-50 W; sens 86 dB SPL/W/m; imp 8 ohms; crossover frequencies 1,500 and 8,000 Hz. Natural or dark oak finish. 9" wide x 18" high x 9" deep; 21 lb. \$350/pr

## KINETIC AUDIO

### Titan 6-Way Speaker

Floor-standing ported speaker. 12" polypropylene cone subwoofer; 12" polypropylene cone woofer; 6.5" polypropylene cone mid/woofer; 2" textile-dome midtweeter; 1.12" synthetic-dome tweeter; 0.75" synthetic-dome supertweeter. Crossover points 60, 90, 500 Hz; linear-phased driver arrangement in mirror-image pairs; front-mounted fuse and noninductive level controls. Interconnecting harness of color-coded high-performance speaker cables; 5-way heavy-duty binding posts. Mirror-matched high-grade walnut veneer. Black grille with nonresonant frame. FR 12-22,000 Hz  $\pm$  1.5 dB; min power 35 W, max power 250 W; sens 90 dB SPL/W/m; imp 4 or 8 ohms; 245 lb; 18" w x 60" h x 22" d. Grilles, stands, and casters included. \$5,000/pr

### Trapezoid 4-Way Speaker

Floor-standing ported speaker. 12" polypropylene-cone woofer; 6.5" polypropylene-cone midrange; 1.12" synthetic-dome tweeter with magnetic-liquid cooling/damping; 0.75" synthetic-dome supertweeter with magnetic-liquid cooling/damping. Crossover points 90, 2,000, 7,000 Hz; linear-phased driver arrangement in mirror-image pairs; front-mounted fuse and noninductive level controls. Interconnecting harness of color-coded high-performance speaker cables; 5-way heavy-duty binding posts. Mirror-matched high-grade walnut veneer. Black grille with nonresonant frame. FR 18-22,000 Hz  $\pm$  1.5 dB; min power 20 W, max 200 W; sens 92 dB SPL/W/m; imp 8 ohms; 115 lb; 16" w x 40" h x 14" d. \$2,000/pr

### Stat Miniature Monitor

2-way ported speaker. Features 6.5" polypropylene-cone woofer; 1.12" synthetic-dome tweeter with magnetic-liquid cooling/damping; crossover point 2,000 Hz; linear-phased driver arrangement in mirror-image pairs; front-mounted fuse and noninductive level controls. Interconnecting harness of color-coded high-performance speaker cables. 5-way heavy-duty binding posts. Mirror-matched high-grade walnut veneer. Black grille with nonresonant frame. Frequency response 38-22,000 Hz  $\pm$  2 dB; minimum power 5 W, maximum 150 W; sensitivity 93 dB SPL/W/m; impedance 8 ohms; 30 lb; 9" wide x 15" high x 9" deep. \$700

## KIRKSAETER

### Monitor Tower 260 4-Way Speaker

Floor-standing acoustic-suspension speaker with 2 10" long-excursion woofers, 4.5" coated-

cone lower midrange, 2" soft-metal midrange with 2.3-lb magnet; 0.75" titanium-dome supertweeter with Ferrofluid; 8 wood or 4 glossy lacquer finishes. Power range 10-250 W; sens 93 dB SPL/W/m; imp 4-8 ohms. \$2,000/pr

### Monitor 201 3-Way Bookshelf Speaker

Air-suspension speaker with 12" long-excursion woofer; 2" soft-metal midrange; 0.75" titanium dome tweeter; crossovers at 600 and 5,000 Hz. Sens 93 dB SPL/W/m; imp 4-8 ohms; 14.2" w x 24.7" h x 11.9" d. \$1,450/pr

### Monitor Tower 140 3-Way Speaker

Floor-standing acoustic-suspension speaker with 10" long-excursion woofer, 2" suprynl-dome midrange with 2.3-lb magnet, 0.75" titanium-dome tweeter; 8 wood or 4 glossy lacquer finishes. Power range 10-140 W; sens 93 dB SPL/W/m; imp 4-8 ohms. 11.12" w x 37" h x 11.12" d. \$1,400/pr

### Monitor 121 3-Way Speaker

Bookshelf infinite-baffle speaker. Features 8" long-excursion woofer; 2" suprynl dome midrange; 0.25" titanium-dome tweeter with Ferrofluid magnet. FR 22-32,000 Hz  $\pm$  5 dB; power range 10-130 W; sens 92 dB SPL/W/m; imp 4-8 ohms; walnut, mahogany, teak, cherry, black/white/antique/dark/unfinished oak finishes; 12.25" w x 20.5" h x 10.25" d. \$900/pr



Belle Klipsch

## KLIPSCH

### Klipschorn 3-Way Speaker

Fully horn-loaded speaker requiring corner placement. Sens 104 dB SPL/W/m; power handling 100 W; FR 35-17,000 Hz  $\pm$  5 dB. 52" h x 31.25" w x 28.5" d. Priced depending on finish from approximately \$3,198/pr

### Belle Klipsch 3-Way Speaker

Horn-loaded floor-standing speaker with same drive components as Klipschorn. Sens 104 dB SPL/W/m; power handling 100 W; FR 45-17,000 Hz  $\pm$  5 dB. 35.62" h x 30.12" w x 18.75" d. Available in exotic woods. Priced depending on finish from approx. \$2,598/pr

**La Scala.** Fully horn-loaded 3-way speaker similar to Belle Klipsch but available only in natural birch, stained birch, or black finishes. Specs same as Belle Klipsch. 35.5" h x 23.75" w x 24.5" d. Priced depending on finish from approx. \$1,706/pr

## Cornwall II 3-Way Speaker

Features 15" woofer in ported enclosure; horn-loaded compression tweeter and midrange. Sens 100 dB SPL/W/m; power handling 100 W; FR 38-20,000 Hz  $\pm$  3 dB. 35.75" h x 25.5" w x 15.5" d. Available in exotic woods. Priced depending on finish from approx. \$1,638/pr

## Chorus 3-Way Speaker System

3-way system with horn-loaded tweeter and midrange sections; 15" woofer cone mated to a 96 oz magnet and 3" voice coil; woofer mounted on cast basket; two-port vented; comes with riser base; sens 101 dB SPL/W/m; nominal imp 8 ohms; FR 45-20,000 Hz  $\pm$  3 dB; 100 W max power handling. 39" x 18 1/2" x 15 1/2". \$1,490

## Forté 3-Way Speaker

Features horn-loaded compression drivers for tweeter and midrange; 12" woofer; 12" passive radiator mounted on rear of cabinet. FR 32-20,000  $\pm$  3 dB; sens 98 dB SPL/W/m; power handling 100 W. 35.38" h x 16.5" w x 12" d. Available in exotic woods. Priced according to finish from approx. \$1,180/pr

## Heresy II 3-Way Speaker

Features horn-loaded compression tweeter and midrange; 12" woofer in sealed enclosure. FR 50-20,000 Hz  $\pm$  3 dB; max handling power 100 W; sens 96 dB SPL/W/m. 21.36" h x 15.5" w x 13.5" d. Available in exotic woods. Priced depending on finish from approx. \$882/pr

## kg<sup>2</sup> 2-Way Speaker

Floor-standing speaker with 12" rear-mounted passive radiator, 2 8" polymer-cone woofers, and horn-loaded tweeter. FR 38-20,000 Hz  $\pm$  3 dB; max power 100 W; sens 94 dB SPL/W/m. 24.25" h x 15.75" w x 10.75" d. Oak or walnut finish. From approx. \$598/pr

## kg<sup>2</sup> 2-Way Speaker

Features rear-mounted passive radiator. Crossover frequency 1,800 Hz; FR 35-20,000 Hz  $\pm$  3 dB; sens 90 dB SPL/W/m; power handling 65 W. 18.88" h x 11.5" w x 13.25" d. From approx. \$420/pr

## KOSS

### JCK/5000 Wireless Speaker System

Infrared wireless speakers with tone/volume controls on each cabinet; on/off power switch; battery recharger (batteries not included); 2" tweeter; 6.5" woofer; FR 40 Hz-20,000 Hz. 15" w x 9" h x 5" d. \$350/pr



Koss JCK/5000

## LASER AUDIO

### FXT-10 MKIV 2-Way Speaker

Floor-standing double-active speaker with two 10" polypropylene-cone woofers; 1" dome tweeter; circuit-overload protection. FR 35-20,000 Hz  $\pm$  3 dB; min power 15 W rms; max power 125 W rms; sens 94 dB SPL/W/m; imp 4/8 ohms. Solid-select wood top. 13" w x 33" h x 12" d; 30 lb. \$600/pr

# SPEAKERS

## R-150 MKV 3-Way Speaker

Floor-standing bass-reflex speaker with 12" polypropylene-cone woofer; 4.5" cone midrange; 1" dome tweeter; circuit overload protection. FR 25-20,000 Hz  $\pm$  3 dB; min power 15 W rms; max power 150 W rms; sens 95 dB SPL/W/m; imp 4/8 ohms. Solid-select wood top. 16" w x 30" h x 15" d; 40.5 lb ..... \$650/pr

## LAZER-TECH SPEAKERS

### OM908 3-Way Speaker

Omnidirectional-cabinet monitor system designed to deliver total sound dispersion. 8" translucent long-throw bass driver with matched 8" passive radiator; two 4.5" extended range drivers mounted on 45° side panels; 2 1" soft-dome tweeters also mounted on side panels; 1 6" horn mounted on rear panel; separate bass and midrange isolation chambers; 18° sloped stands; twin rear-firing tuned ports; 3-way computer-matched crossover network. FR 32-35,000 Hz; min power 25 W; max 200 W; sensitivity 91 dB. Finished in oak, teak, or walnut formica; 105 lb/ea; 27" h x 33" w x 11" d ..... \$895/pr

### LT12 Tower Monitor Speaker

Features 12" poly woofer; 4.5" extended-range driver; 1" soft-dome tweeter; separate isolation chambers for bass and midrange drivers; extensive internal bracing; 18° sloped-front sound plane; twin rear-firing tuned ports; 3-way computer-matched crossover network. Rosewood or teak finish with removable black grilles. FR 32-25,000 Hz; sens 93 dB SPL/W/m; crossover 700 and 4,000 Hz; minimum power 10 W; maximum power 250 W. Enclosure measures 46.25" high x 14" wide x (6" x 12.5") deep; 90 lb ea ..... \$695/pr

### PM12 Acoustic-Suspension Speaker

3-way acoustic-suspension speaker with 12" polypropylene woofer, 4.5" midrange and 1" soft-dome tweeter; separate bass and midrange isolation chambers; computer-matched crossover network; FR 32-25,000 Hz; sens 92 dB. Finished in traditional rosewood or teak formica; 32" h x 14" w x 6.5/13" d; 55 lb/ea ..... \$489/pr

## LINN BY AUDIOPHILE SYSTEMS

### DMS Isobarik Floor-Standing Speaker

Isobarik-loading 3-way speaker with 12", 9" woofers, 5" midrange, 2 1" dome tweeters. Can be triamped. FR 25-20,000 Hz  $\pm$  1.5 dB; crossovers at 375 and 3 kHz; instantaneous dynamic range 54 dB; imp 4 ohms; power range 50-500 W; 30" h x 15" w x 16.5" d ..... \$3,295/pr

### S.A.R.A. Isobarik Bookshelf Speaker

Isobarik-loading 2-way speaker with 2 8" woofers, 1" dome tweeter. Cast structural foam housing. FR 36-20,000 Hz  $\pm$  2 dB; imp 4 ohms; 17" h x 13" w x 10" d ..... \$1,350/pr

### K.A.N. Acoustic-Suspension Speaker

2-way bookshelf speaker with 5" woofer, 1" dome tweeter. FR 70-20,000 Hz  $\pm$  3 dB; imp 8 ohms; 12" h x 7.5" w x 6.5" d ..... \$550/pr

### Index Acoustic-Suspension Speaker

Floor or bookshelf placement; 8" KEF B200 cone woofer; 1" dome tweeter; cabinet of full 0.75" high-density particle board; 50-strand 20-amp cable. FR 60-20,000 Hz  $\pm$  3 dB; power range 15-50 W; sens 87 dB SPL/W/m; imp 8 ohms. 11" w x 17" h x 8" d; 17 lb; black woodgrain ..... \$425/pr

## M&K

### Satellite 1B 2-Way Speaker

Acoustic-suspension speaker with 2 5" polypropylene woofers and 2 1" soft-dome tweeters. Features 36 tonal balances through midrange; tweeter character switches. Walnut or oak finish with black grille. FR 70-22,000 Hz  $\pm$  3 dB; power range 7.5-400 W; imp 4 ohms. 21" h x 7.75" w x 7.62" d; 19 lb ..... \$695/pr

### Satellite 2B 2-Way Speaker

Acoustic-suspension speaker with 6.5" polypropylene woofer and 1" soft-dome tweeter. Features selector for 36 tonal balances; midrange, treble character switches. Walnut or oak finish with black grille. FR 65-20,000 Hz  $\pm$  3 dB; power range 15-100 W. 10.5" h x 6.5" w x 7" d; 9 lb ..... \$525/pr

### SX-4 2-Way Satellite Speaker

Acoustic-suspension speaker with 2 5" woofers and 2 1" soft-dome tweeters. Features selector for 4 tonal balances via multiple inputs. Black vinyl finish. FR 70-20,000 Hz  $\pm$  3 dB ..... \$475/pr

### Satellite 3B 2-Way Speaker

Acoustic-suspension speaker with 5" polypropylene woofer and 1" soft-dome tweeter. Features selector for 4 tonal balances via multiple inputs. Black finish with black grilles. FR 100-20,000 Hz  $\pm$  3 dB; power range 15-100 W. 10.5" h x 7" d x 6.5" w; 9 lb ..... \$375/pr  
Walnut veneer with black grilles ..... \$425/pr

## MAGNAT

### Magnasphere Series Speakers

*Delta II, Gamma, and Beta speakers have Soft-Metal Domes; Ribbon-Wire voice coils of oxygen-free copper wound on aluminum core for better heat dissipation and power handling; ball-shaped, baffle-free midrange and tweeter spheres for omnidirectional dispersion; black perforated steel grilles.*

### Delta II Floor-Standing Speaker

6-sided acoustic-suspension speaker with 6 5.25" long-throw woofers; gray or black enamel. FR 32-29,000 Hz  $\pm$  3 dB; power range 30-150 W; imp 4 ohms; sens 88.5 dB SPL/W/m; 13.8" w x 44" h x 13.8" d; 65 lb ..... \$3,290/pr

### Gamma Floor-Standing Speaker

4-sided pyramid-shaped speaker with 2 8" woofers, 2 5.25" midwoofers (1 front, 1 back); European mahogany or black-oak veneer. FR 32-29,000 Hz  $\pm$  3 dB; power range 30-150 W; imp 4 ohms; sens 88 dB SPL/W/m; 14" w x 50" h x 14" d; 67 lb ..... \$2,490/pr

### Beta Floor-Standing Speaker

4-sided pyramid-shaped speaker with 8" woofer, 5.25" midwoofer. European mahogany or black-oak veneer. FR 37-29,000 Hz  $\pm$  3 dB; power range 30-120 W; imp 4 ohms; sens 87 dB SPL/W/m; 13" w x 43" h x 13" d ..... \$1,990/pr

### MSP Series Speakers

*Acoustic-suspension speakers with Ribbon-Wire voice coils; Soft-Metal Dome tweeters; baffles electrostatically coated with flocking to reduce high-frequency ripples; tweeters and midranges cooled with ferrofluid; cabinets of extra-heavy-duty high-density multi-layer wood with internal bracing.*

**MSP Sigma 1000.** Floor standing column speaker. Features Magnat heavy duty, die-cast, diamond-polished aluminum drivers; ribbon wire voice coil; 1" soft metal dome tweeter ..... \$2,499/pr

**MSP 300.** Floor-standing speaker with 2 8" long-fiber-pulp woofers, 3" cone/dome midrange, 1" tweeter; European walnut or black-oak veneer, top plate 8-layer hand-finished black lacquer. FR 32-29,000 Hz  $\pm$  3 dB; power range 25-150 W; imp 4 ohms; sens 88 dB SPL/W/m; 11.5" w x 42.3" h x 11" d; 60 lb ..... \$1,690/pr

**MSP 110.** Floor-standing speaker with 8" long-fiber-pulp woofer, 3" cone/dome midrange, 1" tweeter; European walnut or black-oak veneer, top plate 8-layer hand-finished black lacquer. FR 39-29,000 Hz; power range 25-120 W; imp 4 ohms; sens 88 dB SPL/W/m; 11.5" w x 31" h x 11" d; 42 lb ..... \$1,190/pr

**MSP 70.** Bookshelf speaker with 10" woofer, 2.75" midrange, 1" tweeter; black woodgrain vinyl. FR 39-29,000 Hz  $\pm$  3 dB; power range 25-100 W; imp 4 ohms; sens 90 dB SPL/W/m; 12.6" w x 22.9" h x 11.5" d; 33 lb ..... \$890/pr

**MSP 60.** Bookshelf speaker with 8" woofer, 2.75" midrange, 1" tweeter; black woodgrain vinyl. FR 41-29,000 Hz  $\pm$  3 dB; power range 25-90 W; imp 4 ohms; sens 89 dB SPL/W/m; 11.5" w x 20.1" h x 10.5" d; 28.6 lb ..... \$700/pr

### Monitor Series Speakers

*Bookshelf acoustic-suspension 3-way speakers with low-resonance, high-rigidity diaphragms designed for low coloration. Crossover networks use low-dissipation capacitors designed for improved imaging and texture. Magnat Ribbon-Wire voice coils used in tweeter for 40% increased winding density and improved transient response. All woofers are cone shaped; all midranges are 4" cones; all tweeters are dome shaped. Black wood-grained vinyl with black metal grilles.*

**SE.** 3-way vented floor-standing column speaker. Features 1" soft metal dome, ferro-fluid-cooled tweeter with ribbon wire voice coil; 2.75" midrange; two 8" woofers; FR 30-34,000 Hz; imp 8 ohms; 170 W max power handling; crossover frequencies 600 and 2,000 Hz; black wood grain finish with steel grille ..... \$790/pr

**D.** 10" woofer with cast-aluminum basket; 4" midrange; 1" soft-metal tweeter. FR 40-29,000 Hz  $\pm$  3 dB; power range 10-100 W rms; sens 90 dB SPL/W/m; imp 4-8 ohms. 16.5" w x 24.5" h x 15.75" d; 26.5 lb ..... \$590/pr

**A.** 8" long-throw woofer; 4" midrange; 0.75" Supranyl tweeter. FR 54-20,000 Hz  $\pm$  3 dB; power range 10-60 W rms; sens 90 dB SPL/W/m; imp 8 ohms. 14.12" w x 19.36" h x 14.12" d; 17.5 lb ..... \$300/pr

## MAGNEPAN

### Magneplanar Tympani-IVa

Planar-magnetic speaker with reduced-mass midrange driver. Features 5-ft-long, 2.5-microns-thick foil tweeter. 3 panels per side; 71" h x 18" w x 1" d ..... \$3,800/pr

### Magneplanar MG-IIIa Speaker

Floor-standing full-range bipolar panel speaker with planar-magnetic and ribbon-driver design. Can be biamplified. Drivers are 1 planar-magnetic woofer (620" sq.); 1 planar-magnetic midrange (170" sq.); 1 line-source 5" bipolar ribbon tweeter (14.25" sq.). Imp 4 ohms; off-white cloth, oak frame; 55 lb ea ..... \$1,995/pr

### Magneplanar MG 2.5/R Speaker

Floor-standing full-range bipolar panel speaker with planar/magnetic woofer and 42" long ribbon tweeter. 2-way design, optional grille fabrics, oak side rails ..... \$1,550/pr

# SPEAKERS

## Magneplanar MG-IIC Speaker

Floor-standing 2-way speaker with Magneplanar woofer and tweeter. Features oak side rails; brown fabric grille. FR 40-18,000 Hz  $\pm$  3 dB; power range 25-200 W rms; imp 5 ohms purely resistive; crossover 400-1,600 kHz at 6 dB/octave; 71" h x 22" w x 2" d; 70 lb \$1,225/pr

## Magneplanar SMGa Speaker

Full-range 2-way speaker with 0.5-mil diaphragm driven by Magneplanar magnetic field. Features oak side rails; brown fabric grille. FR 50-16,000 Hz  $\pm$  4 dB; power range 20-100 watts averaged root mean square method; impedance 4 ohms purely resistive; crossover 2.4 kHz; 48.56" h x 24.25" w x 1.75" d; 70 lb... \$495/pr

## MARANTZ

### SP 1515 Ported Speaker

Floor-standing speaker with 15" woofer; 5" ferrofluid cone midrange; 3" ferrofluid cone tweeter; sculptured furniture-style cabinet. Max power 165 W; sens 92 dB SPL/W/m; imp 8 ohms; Bartonwood vinyl finish: 18" w x 32.5" h x 16.5" d; 47 lb... \$400/pr

### SP104 Tower Speaker

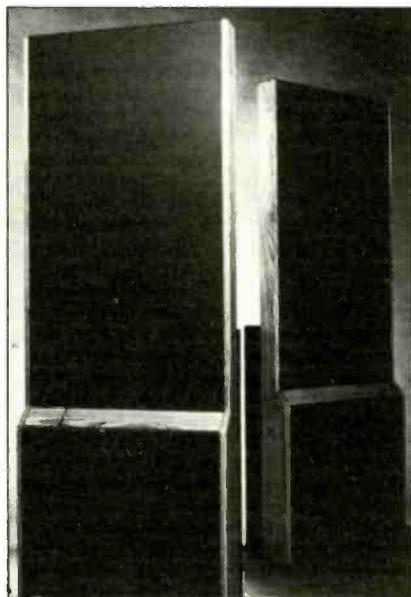
3-way speaker with 10" woofer; 10" passive radiator; 4" midrange with ferrofluid; 3" tweeter with ferrofluid. Max power 135 W; sens 90 dB/W/m; imp 8 ohms. Oak vinyl finish; 37.75" h x 13" w x 11" d; 30 lb... \$340/pr

SP103. Same as above without passive radiator... \$300/pr

## MARTIN-LOGAN

### The Monolith Electrostatic Speaker

Floor-standing curvilinear electrostatic panel speaker mounded atop tuned subwoofer box. Designed for wide dispersion without the use of delay lines or lenses. Constant voltage crossover provides phase coherency. Features 2 x 4-foot electrostatic cell for 100-24,000 Hz and 12" polypropylene-cone subwoofer with 2" voice coil that is down 3 dB at 16 Hz. FR 28-24,000 Hz  $\pm$  2 dB; power range 30-500 W; sens 90 dB SPL/W/m; impedance 8 ohms. Available in variety of finishes. Measures 25" wide x 75" high x 13.5" deep; 165 lb each... \$4,850/pr



Martin-Logan Monolith

## The CLS Electrostatic Speaker

Floor-standing curved electrostatic speaker. Features wide-dispersion format for full-range reproduction; 2 x 4 foot electrostatic cell to reproduce all frequencies from 50-22,000 Hz; 30° seamless horizontal dispersion; 4 foot line-source vertical; arc-free diaphragm; see-through appearance. FR 50-22,000 Hz  $\pm$  2 dB; power range 20-150 W; sens 85 dB SPL/W/m; imp 6 ohms. Available in variety of finishes. 26" w x 48" h x 2" d; 50 lb... \$2,490/pr

## MB QUART ELECTRONICS

### 980S 3-Way Speaker

3-way column speaker. Features 1" titanium dome tweeter; 2" aluminum dome midrange; 2 x 8" woofer; finished in oak, walnut, black, white or grey. 11" x 39 1/2" x 11 1/2"; 55 lb... \$1,999/pr

### 610S 3-Way Speaker

3-way column speaker. Features 1" titanium dome tweeter; 2" supronyl dome midrange; 8" woofer; finished in oak, walnut, black, white or grey. 10 1/2" x 33 1/2" x 10 1/2"; 38 lb... \$1,299/pr

### 390 3-Way Speaker

3-way bookshelf speaker. Features 1" titanium dome tweeter; 4" cone midrange; 10" woofer; finished in oak, walnut, black or white. 12 1/4" x 20 1/2" x 12"; 28 lb, 10 oz... \$699

### 280 2-Way Speaker

2-way bookshelf speaker. Features 1" titanium dome tweeter; 8" woofer; finished in oak, walnut, black or white. 10 1/2" x 17 1/2" x 10 1/2"; 22 lb... \$469/pr

## McINTOSH

### XRT-22 Speaker System

2-piece speaker consisting of bass cabinet containing 2 12" woofers and 8" midrange drivers, and tweeter column containing 23 1" tweeters. Bass cabinet: 40.75" h x 25.75" w x 12.75" d; tweeter column: 79.5" h x 10.5" w x 1.63" d; oak finish... \$4,000/system  
Walnut finish... \$4,250/system

### XRT-18 Speaker System

2-piece speaker consisting of bass cabinet containing 12" woofer and 6" midrange and high-frequency column frame containing sixteen 1" dome tweeters. Features 3-ampere fast acting fuse for woofer and midrange and 1.25-ampere fuse for tweeters. Cabinet constructed of 48-pound density fiber board with walnut veneer exteriors. Sens 86 dB SPL/W/m; max power 150 W continuous program power, 500 W peak; min power 30 W; imp 8 ohms; crossover frequencies 350 and 1,500 Hz. Bass cabinet 27.22" h x 17.5" w x 11.75" d, tweeter column 57.31" h x 10.5" w x 1.63" d; total weight 92 lb... \$2,250/system

### XD-717 3-Way Speaker

Floor-standing speaker with 12" woofer, 6.5" midrange, and 1" dome tweeter. Sens 87 dB SPL/W/m; recommended power handling 30-100 W; imp 8 ohms; crossover frequencies 350 and 1,000 Hz. Cabinet constructed of 0.75" high-density particle board with internal bracing and airtight assembly. Walnut veneer protected by hand-rubbed lacquer finish. 37.75" h x 17.5" w x 11.88" d; 66 lb... \$1,598/pr

### XL-1 2-Way Compact Speaker

Bookshelf speaker with 6" woofer, 1" dome tweeter, and 1,000 Hz crossover network. Features 0.6-ampere fast-acting fuse. Max power 80

W program noise, 200 W peak; min power 30 W; imp 8 ohms; sens 85 dB SPL/W/m. Cabinet of 0.75" high-density particle board with internal bracing and air-tight assembly... \$525/pr

## MERIDIAN BY MADRIGAL

### M100 3-Way Powered Speaker

Inter-Active speaker with 4 power amps (3 70 W/ch, 1 35 W/ch) driving 2 5" woofers, 2 5" midranges, 1 2" dome tweeter. 0.75" birch cabinet with rear-loaded passive radiator. 39" h x 16" w x 18" d; 70 lb ea; walnut... \$6,300/pr  
Rosewood finish... \$6,775/pr

### M20 2-Way Powered Speaker

Ported speaker with two 5" woofers, 2" tweeter, power supply, 2 power amps in low-resonance cabinet; 0.75" A-quality birch plywood cabinet; all-metal stand with resonance damping available. FR 38-20,000 Hz  $\pm$  3 dB; max output 105 dB; 20" h x 15" d x 7" w. Walnut or teak finish; with amplifiers... \$2,300/pr  
Rosewood finish; with amps... \$2,600/pr

### M30 2-Way Powered Speaker

Compact Inter-Active speaker with 5" woofer, 1.25" tweeter; time-delay correction; power supply; power amps. FR 38-20,000 Hz  $\pm$  3 dB; max output 100 dB free-standing, up to 103 dB on shelf; 14.5" h x 12" d x 7" w. Walnut, teak, or black ash finish; with amps... \$1,625/pr

## MIRAGE ACOUSTICS

All speakers are ported; nominal imp 6 ohms (min 4); black knit grilles; dome tweeters with crossover point of 2,200 Hz.

### M1 Floor-Standing Speaker

2 8" polypropylene woofers with 38-oz magnets crossing over to 2 4" cone midranges (1 front, 1 back) at 300 Hz; 2 0.75" soft dome tweeters (1 front, 1 back); black lacquer. FR 20-22,000 Hz  $\pm$  3 dB; min power 60 W; max power 400 W; sens 86 dB SPL/W/m; imp 6 ohms; 120 lb; 19.5" w x 60" h x 9" d... \$3,000/pr

### 460 2-Way Speaker

8" woofer; 1" dome tweeter; black vinyl. FR 40-20,000 Hz  $\pm$  3 dB; sens 88 dB SPL/W/m; power range 15-120 W; 25" x 10" x 11".... \$400/pr

## MISSION ELECTRONICS

### Argonaut Floor-Standing Speaker

2-way speaker with time-aligned drivers and transverse-folded cabinet. Optimum placement near rear wall; 2 reinforced homopolymer 8" cone woofers; 1" super-ellipse cavity-loaded tweeter; spikes. FR 35-20,000 Hz  $\pm$  3 dB; power range 50-200 W; sens 94.5 dB SPL/W/m; imp 4 ohms; walnut, gray, black; 50 lb; 11" w x 38" h x 12" d... \$1,499/pr

### Renaissance 2-Way Speaker

Integral locking stands; transverse-folded cabinet with visco-elastically dampened walls; 8" polypropylene cone woofer; 0.75" polymer-dome tweeter with ferrofluid; crossover frequency 2,400 Hz. FR 40-20,000 Hz  $\pm$  3 dB; nominal imp 8 ohms; power range 20-125 W/ch; sens 90 dB SPL/W/m; 10" h w 21.6" w x 11" d; 23 lb/ea; black/walnut... \$649

### 707 Bass-Reflex Speaker

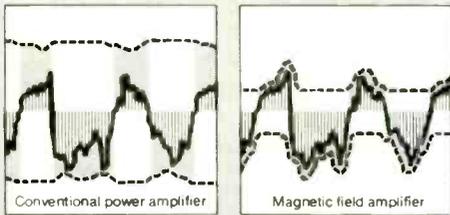
2-way speaker with limestone/polypropylene front baffle board; steel-reinforced 8" paper woofer; 0.75" ferrofluid dome tweeter. FR 50-20,000 Hz  $\pm$  3 dB; min power 20 W, max power 100 W; sens 92 dB SPL/W/m; imp 8 ohms; black or walnut; 10" x 19" x 11".... \$499/pr

# MOBILE MUSICALITY.

**THE CARVER CAR AMPLIFIER** introduces Magnetic Field Amplifier technology to automotive high fidelity. Finally, the traditional weak link between car stereo decks and modern speaker design has been replaced with Carver technology. Into 1/10th of a cubic foot, Bob Carver has engineered a complete 120 watts RMS per channel amplification system with the fidelity, accuracy and musicality demanded by the most critical reviewers and audiophiles.

**ESSENTIAL POWER.** Even before the exciting advent of car Compact Disc players, an abundance of power has been necessary to reproduce, without distortion, the frequency and dynamic range produced by modern decks.

Unfortunately, conventional amplifier technology is particularly unsuited to delivering this needed power to the specialized car interior environment. Like their home stereo counterparts, traditional car designs produce a constant high voltage level at all times, irrespective of the demands of the ever-changing audio signal—even those times when there is no audio signal at all! Because automotive amplifiers must, obviously, derive their power from the host vehicle, such an approach results in substantial drain to delicately balanced automobile electrical systems.



Solid line: audio output signal. Broken line: power supply voltage. Shaded area: wasted power. Vertical lines: power to speakers.

The Carver Magnetic Field Car Amplifier is signal responsive. Highly efficient, it produces only the exact amount of power needed to deliver each musical impulse with complete accuracy and fidelity. Thus the Carver Car Amplifier not only reduces overall long-term power demands, but produces the large amount of power necessary for reproduction of music at realistic listening levels without the need for oversize power supply components. Important considerations in the minuscule spaces which quality car design allocates to add-on electronics.

**INTELLIGENT POWER.** A hallmark of all Carver amplifiers is the careful integration of sophisticated speaker and amplifier protection circuitry. The Carver Car Amplifier is no exception.

Speakers are protected with a DC offset internal fault protection design which turns off the power supply at first hint of overload. An overcurrent detector mutes audio within microseconds of a short circuit, as does an output short circuit monitoring circuit. Together, these three circuits eliminate the potential need to replace fuses, revisit your autostereo installer, or worse yet, replace expensive speakers due to a moment's indiscretion with your deck's volume control.

**ASSIGNABLE POWER.** Integrated bi-amplification and bridging circuits, along with The Carver Car Amplifier's compact configuration make it ideal for multiple-amplifier installations.

The built-in 18dB/octave electronic crossover allows use of two amplifiers in a pure bi-amplification mode without addition of extra electronics. Or, at the touch of a button, one Carver Car Amplifier can become a mono amplifier for subwoofers while the other Carver Amplifier handles full range. Or, for astonishing dynamic and frequency response, two Carver Car Amplifiers may be operated in mono mode into 8 ohms for a 240 watt per channel car system which will truly do justice to digital without taxing your car's electrical generation system.

**INNOVATIVE POWER.** Can 1/10th of a cubic foot of space hold yet more innovations? Yes.

Carver has addressed the ongoing problem of head-end/power amplifier level matching: Output of current car decks varies widely from brand to brand and model to model. The result can be a less than perfect match. The Carver Car Amplifier incorporates circuitry which compensates for variations in head-end output, reducing noise and optimizing signal-to-noise ratio. In addition, Carver has added a subsonic

filter which removes inaudible power-robbing infrasonics before they can tax the amplifier and speakers. Finally, a delayed turn-on circuit activates the Carver Car Amplifier after your head-end unit has powered up, to eliminate starting pops and thumps.

**ACCURATE POWER.** It goes almost without saying that a product Bob Carver designs for the road carries the same superb electronic specifications that his home audio products are known for.

The Carver Car Amplifier is flat from 20Hz to 20kHz, down -3dB at 16Hz and 30kHz. Not coincidentally, the usual specifications given for Compact Discs. A signal-to-noise ratio of over 100dB means that, in even the most quiet luxury sedan, you will never be annoyed by hiss. The other specifications are equally as impeccable. You may peruse them in our literature or in independent reviews soon to appear.

**ACQUIRABLE POWER.** The remarkable Carver Car Amplifier is currently available for audition at Carver dealers across the country.

It is worth the journey. Whether you have a car system in need of the sonic excitement possible with abundant power, or are in search of the perfect complement to a new high-performance automobile, you owe it to yourself to experience the logical extension of Carver technology—The Carver Car Amplifier M-240.

Power Output Stereo Mode: (continuous RMS power output per channel, both channels driven, at 13.8 VDC input), 120 W into 4 ohms, 20 Hz to 20 kHz with no more than 0.15% THD.

Power Output Bridged Mono Mode: (Referenced to 13.8 VDC input) 240 W into 8 ohms, 20 Hz to 20kHz with no more than .15% THD.

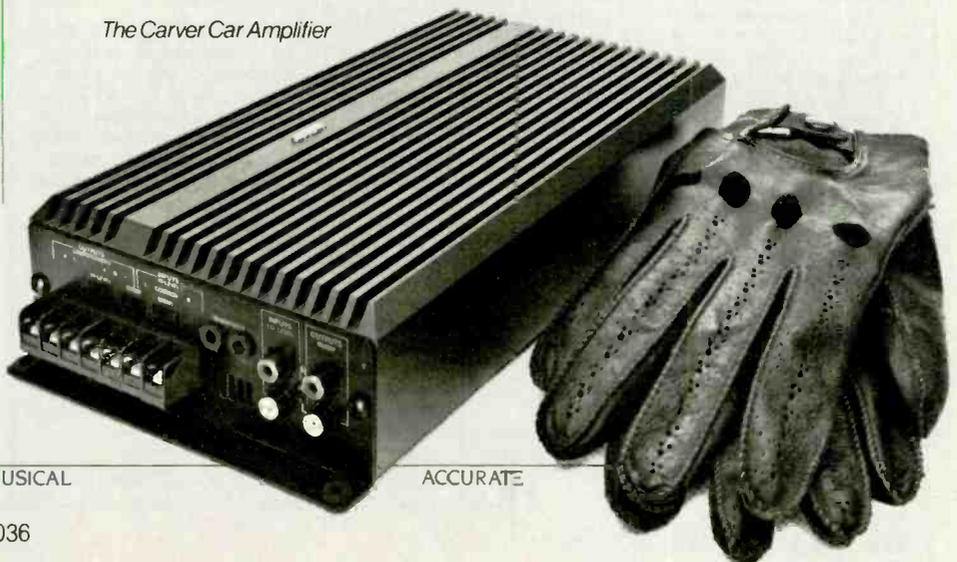
Input Sensitivity: Variable 250mV to 4V

Signal to Noise Ratio: (Referenced to 120 W, A weighted into 4 ohms) Greater than 100 db

Crossover: 115 Hz, 18 dB/octave

Weight: 4.7 lb

The Carver Car Amplifier



CIRCLE NO. 49 ON READER SERVICE CARD

## CARVER

POWERFUL

MUSICAL

ACCURATE

Carver Corporation, P.O. Box 1237, Lynnwood, WA 98036

Distributed in Canada by: evolution technology

# SPEAKERS

## MOREL ACOUSTICS

### Duet 2-Way Double-Magnet Speaker

New MDT-33 tweeter, 28 mm soft-dome design with double-magnet structure. Hexatech technique winding (aluminum wire, wound hexagonally) and ferrofluid cooled. MW-164 6" double-magnet woofer also using the Hexatech voice coil. FR 40-22,000 Hz  $\pm$  2 dB; power handling 150 W rms; 8" w x 15" h x 12" d; 20 lb \$950/pr

### MLP-403-II 3-Way Speaker

Ported floor-standing speaker with Variovent. 9" free-edge paper-cone woofer; 3" dome midrange; 1.1" dome tweeter. FR 38-25,000 Hz  $\pm$  3 dB; min power 10 W; max power 125 W rms; sens 88 dB SPL/W/m; imp 4-8 ohms; finished in walnut, teak, or black; 21" h x 12" w x 10" d; 26 lb \$750/pr

### MLP-206 2-Way Speaker

Acoustic-suspension bookshelf speaker with cabinet proportioned similarly to the smaller MLP-202 II (below) with 33-litre volume. Features 9" coated-paper cone woofer; 1.1" soft-dome tweeter. FR 38-25,000 Hz  $\pm$  3 dB; min power 20 W rms; max power 150 W rms; sensitivity 89 dB sound-pressure level with input of 1 watt measured at 1 meter; impedance 8 ohms. Walnut, teak, or black finish. 12" wide x 20" high x 12" deep; 25 lb ea \$595/pr

## MTX BY MITEK

### Pro 215 Floor-Standing Speaker

Bass-reflex speaker with computer-aided Thiele/Small-aligned cabinet. Features 2 15" cone woofers; 2 5" PL-5 cone midranges; 3" horn-loaded tweeter. FR 50-21,000 Hz  $\pm$  3 dB; power range 5-400 W rms; sens 102.2 dB SPL/W/m; imp 4 ohms; heavy-duty aviation carpet; 18.5" w x 46.5" h x 16" d \$1,400/pr

### Pro 210 Floor-Standing Speaker

Bass-reflex speaker with computer-aided Thiele/Small aligned cabinet. Features 2 10" cone woofers; 2 5" PL-5 cone midranges; 3" horn-loaded tweeter. FR 70-21,000 Hz  $\pm$  3 dB; power range 5-300 W rms; sens 101.6 dB SPL/W/m; imp 4 ohms; heavy-duty aviation carpet; 23.5" w x 18.25" h x 12.5" d \$880/pr

## NAD

### 300A 3-Way Speaker

Internally braced acoustic-suspension tower speaker with 10" long-throw woofer with butyl surround, 1.5" midrange, 1" soft-dome tweeter. Large magnets for powerful bass and no overhang. Power range 10-150 W/ch; nominal imp 4 ohms; crossovers at 900 and 3,000 Hz; resonance 45 Hz; sens 90 dB SPL/W/m. 10.75" w x 11.5" d x 31.5" h; 57 lb \$750/pr

200A. Similar to above except no midrange driver and 8" woofer. Crossover at 1,700. Power range 10-120 W/ch. 39 lb \$500/pr

## NADY SYSTEMS

### WTS-1 Speaker

Portable self-powered speaker with 15-W cordless amplifier. Features 2-channel FM receiver; microphone; miniature body pack stereo transmitter. 6.5" woofer; 1.5" cone tweeter. 8.5" w x 12.75" h x 7.31" d \$200/system

## NEC

### RS-100 3-Way Speaker

Floor-standing speaker with twin-transmission-path low-frequency (variably damped) enclosure. Features Poly-Arc adjustable high-fre-

quency array; 10" polypropylene passive radiator; 2 8" polypropylene woofers; 1.38" cambic-dome midrange; 1" elliptical-dome tweeter. FR 28-18,500 Hz  $\pm$  3 dB; power range 25-200 W; sens 90 dB SPL/W/m; imp 4 ohms. 14" w x 42" h x 16" d; 103 lb \$1,500/pr

### RS-500 3-Way Speaker

Floor-standing acoustic-suspension magnetically shielded speaker with mirror-image design. Features 12" cone woofer; 5" polyvinyl acetate-cone midrange; 1" soft-dome tweeter. FR 40-20,000 Hz  $\pm$  3 dB; power range 15-130 W rms; sens 92 dB SPL/W/m; imp 8 ohms. Teton oak finish. 14" w x 27" h x 10.75" d \$499/pr

### AVS-300E 2-Way Surround-Sound Speaker

Compact acoustic-suspension speaker designed for rear-channel reproduction of surround sound. Features 5.5" cone woofer; 1" polymer-dome tweeter. Power range 5-60 W; nominal imp 8 ohms; sens 89 dB SPL/W/m; FR 60-20,000 Hz. 6.5" w x 9.75" h x 5.62" d \$199/pr

## OHM ACOUSTICS

### Walsh 5 Bass-Reflex Speaker

Features Walsh driver; 3 controls for lows, perspective (midrange), and highs, each with 3 positions; gold-plated 5-way binding posts; gold internal connectors; Monster Cable internal wiring; veneered top edge of cabinet. FR 25-25,000 Hz  $\pm$  4 dB; min power 50 W rms; max power 500 W rms; imp 4 ohms; 1,000-W headroom rating for CD's. Available in walnut, oak and rosewood finishes or teak/white/black lacquer. 95 lb; 17.5" x 17.5" at bottom tapering to 15" x 15" at top; 43" tall. Limited edition run of only 500 sets worldwide. \$4,800/pr

### Walsh 4 Bass-Reflex Speaker

Inverted driver speaker with ferrofluid cooled drivers. Features 500 W maximum power; thermo-guard; input connectors accept banana plugs or bare wire; 3-position sub-bass activator; 3-position high frequency; 3-position perspective; FR 32-20,000 Hz; sensitivity 87 dB; impedance 8 ohms. 15 1/2" x 15 1/2" x 40" \$1,997/pr

Walsh 3. As above, max power 200 W; FR 32-20,000 Hz. 10 1/2" x 10 1/2" x 36" \$1,397/pr

Walsh 2. As above, no 3-position perspective, max power 120 W; FR 44-20,000 Hz. 9 1/4" x 9 1/4" x 32 1/2"; 29 lb \$997/pr

Walsh 1. As above, no sub-bass activator or high frequency switch; max power 90 W; FR 48-20,000 Hz. 11 1/2" x 11 1/2" x 32 1/2" \$597/pr

### Ohm C3 Speaker

Features 10" polypropylene driver with 38-oz ferrite magnet; 1.5" liquid-cooled voice coil; penta-vented liquid-cooled 1" soft dome tweeter; 10-oz ferrite magnet; 2,400 Hz/14,000 Hz Sub-Bass Activator; vented (quasi-third order Butterworth filter); press connectors; 0.62" flakeboard stock-oiled walnut finish, oak on special order. FR 37-21,000 Hz  $\pm$  4 dB; imp 4 ohms; 26.36" h x 15" w x 11.75" d \$750/pr

### Sound Cylinder Speaker Tall

Inverted-cone speaker. Features woodgrain-vinyl or custom fabric-covered exterior; FR 39-21,000 Hz  $\pm$  4 dB; sensitivity with 2.83 V 90 dB; minimum power requirement 28 W; max power 150 W; impedance 8 ohms. 36 1/2" high x 11 1/2" diameter; 23 lb \$700/pr

Sound Cylinder Speaker Small. As above, but 31 1/2" h \$549/pr

### Model L2 Speaker

Features 8" woofer; 2" tweeter; 2" supertweeter;

tweeter level control; oiled-walnut finish. FR 42-20,000 Hz  $\pm$  4 dB; crossovers 1.7 and 10 kHz; power range 8-100 W; sens 100-dB SPL at 3 ft; 20" h x 12" w x 9.75" d \$595/pr

### Model E2 Speaker

2-way vented speaker with 8" woofer with 5-oz ferrite magnet and 1" liquid-cooled voice coil. Features liquid-cooled Penta-Vented tweeter; 2,700 Hz Sub-Bass Activator; vented enclosure (quasi-third order Butterworth filter); press connectors; 0.62" flakeboard stock, oiled-walnut finish; 21.5" x 11.5" x 7.25"; imp nominal/minimum 8/4 ohms; FR 48-17,000 Hz  $\pm$  4 dB; efficiency 0.73%; recommended power 7-75 W rms on music \$395/pr

## ONKYO

### S-70 4-Way Speaker

Bass-reflex speaker with 12" polypropylene-cone woofer with high-power voice coil, 5" PVA-treated ferrofluid-cooled midrange, 1" polycarbonate-dome ferrofluid-cooled tweeter, and 0.5" polycarbonate-dome ferrofluid-cooled super-tweeter. Features self-resetting auto overload protection. FR 55-20,000 Hz  $\pm$  3 dB; power range 10-150 W rms; sens 93 dB SPL/W/m; imp 8 ohms. Natural-oak-veneer finish. 16" w x 40.75" h x 10.25" d; 49 lb \$600/pr

### S-58 3-Way Speaker

Floor-standing bass-reflex speaker with self-resetting overload protection. Features 15" polypropylene-cone woofer; 5" PVA-treated ferrofluid-cooled cone midrange; 1" polycarbonate-dome ferrofluid-cooled tweeter. FR 65-20,000 Hz  $\pm$  3 dB; power range 10-100 W rms; sens 92 dB SPL/W/m; imp 8 ohms. Oak vinyl finish. 17.5" w x 33.12" h x 12.88" d; 48 lb \$400/pr

## PARASOUND

### CPI-440bi Compact Perfect Image Speaker

2-way speaker with 4" high-compliance carbon-fiber-reinforced polypropylene cone woofer and 1" ferrofluid-damped soft-dome tweeter with acoustic blanket. Nondiffraction cabinet; 1st-order network with polypropylene capacitor; 4th-order vented design. Simulated black oak finish. FR 70-22,000 Hz  $\pm$  4 dB; THD at 92 dB < 1%; imp 4 ohms; sens 88 dB SPL/W/m; sustained power handling 55 W rms; max power 150 W rms; time aligned within 0.05  $\mu$ s. 9" h x 5.88" w x 6.5" d \$235/pr

### CMs330 Compact Monitor Speaker

Bookshelf speaker in die-cast aluminum enclosure. High-compliance polypropylene 4" cone woofer, 1" soft-dome tweeter with phasing plug and ferrofluid damping. 12-dB/octave crossover includes separate choke for woofer. With mounting brackets. FR 60-22,000 Hz  $\pm$  4 dB; power range 10-80 W; sens 89 dB SPL/W/m; imp 4 ohms. Black aluminum. 4.62" w x 7.12" h x 4.5" d; 6 lb \$215/pr

## PHASE TECHNOLOGY

### Phase Coherent Series

### PC-1000 4-Way Speaker

Floor-standing phase-coherent passive-radiator speaker. Features met-polypropylene bypass capacitors; 10" solid-piston RPF radiator; 8" solid-piston RPF woofer; 5.25" solid-piston RPF midrange; 1" soft-dome tweeter; accepts banana plugs. FR 30-20,000 Hz  $\pm$  3 dB; power range 25 W; sens 250 dB SPL/W/m; imp 8 ohms; walnut and dark oak; 15.5" w x 38.25" h x 8.5" d; 70 lb \$1,300/pr

# SPEAKERS

## PC-800Ho 3-Way Speaker

Floor-standing acoustic-suspension phase-coherent speaker with met-polypropylene bypass capacitors, 10" flat solid-piston RPF woofer, 5.25" flat solid-piston RPF midrange, 1" soft-dome tweeter. Features removable min-diffraction grille; genuine wood veneer; speaker protection. Accepts banana plugs. FR 30-20,000 Hz  $\pm$  3 dB; min power 20 W rms; max power 150 W rms; sens 91 dB SPL/W/m; imp 4 ohms. Walnut or dark-oak veneer finishes. 14.5" w x 36.25" h x 8.5" d; 57 lb ..... \$950/pr

## PC-60 2-Way Speaker

Bookshelf phase-coherent acoustic-suspension speaker with met-polypropylene bypass capacitors; accepts banana plugs; solid hardwood and veneers; removable min-diffraction grille; speaker protection. 6" solid-piston RPF woofer; 1" soft-dome tweeter. FR 55-20,000 Hz  $\pm$  3 dB; power range 15-100 W; sens 87 dB SPL/W/m; imp 4 ohms; walnut, stained-oak, light-oak finishes; 8" w x 13.5" h x 8" d; 15 lb ..... \$460/pr

## PC-40 2-Way Speaker

Bookshelf phase-coherent acoustic-suspension speaker with met-polypropylene bypass capacitors; accepts banana plugs; genuine wood veneer; removable min-diffraction grille; speaker protection. 5.25" solid-piston RPF woofer; 1" soft-dome tweeter. FR 70-20,000 Hz  $\pm$  3 dB; power range 15-80 W; sensitivity 89 dB SPL/W/m; imp 4 ohms; walnut, stained-oak, light-oak finish; 6.5" w x 9.75" h x 5.25" d ..... \$360/pr

## Euro Series

### 745 ES 3-Way Speaker

Floor-standing acoustic-suspension speaker with angled projected front baffle for minimum diffraction. Features 8" cone woofer; 6.5" cone midrange; 1" soft-dome tweeter; removable min-diffraction grille; rubber surround on woofer and midrange. Accepts banana plugs. FR 35-20,000 Hz  $\pm$  3 dB; min power 15 W rms; max power 120 W rms; sens 93 dB SPL/W/m; imp 4 ohms. 10" w x 35.25" h x 11.75" d ..... \$550/pr

### 535 ES 3-Way Speaker

Floor-standing acoustic-suspension speaker with angled projected front baffle for minimum diffraction. Features 6.5" cone woofer; 6.5" cone midrange; 1" soft-dome tweeter; removable min-diffraction grille; rubber surround on woofer and midrange. Accepts banana plugs. FR 40-20,000 Hz  $\pm$  3 dB; min power 15 W rms; max power 100 W rms; sens 92 dB SPL/W/m; imp 4 ohms. Walnut or black-ash vinyl finish. 8.5" w x 33.12" h x 10.25" d; 32 lb ..... \$450/pr

## PC-60/50 Subwoofer/Satellite Set

3-piece acoustic-suspension subwoofer system with down-firing floor-loaded woofer and 2-way compact phase-coherent satellites. Features met-polypropylene bypass capacitors; feet extenders for heavy carpet; tweeter level control; accepts banana plugs; solid hardwood and veneers; removable minimum-diffraction grille; speaker protection. 10" solid-piston subwoofer, 6" solid-piston midrange, 1" soft-dome tweeter. FR 30-20,000 Hz  $\pm$  3 dB; power range 25-200 W; sens 87 dB SPL/W/m; impedance 8 ohms; walnut, stained oak, light oak finish; satellites 8" wide x 13.5" high x 8" deep; subwoofer 13" wide x 14" high x 15" deep; 60 lb ..... \$790/set

## PHILIPS BY NAP

### FB565XBK Digital World Speaker

Features 140 W power capability; acoustically coupled 8" passive radiator; 8" woofer with

computer-designed cone and suspension design that resists breakup; polyester 1" dome midrange with FR up to 8,000 Hz; 3/4" dome supertweeter with FR up to 20,000 Hz; beveled edges to prevent diffraction ..... \$549/pr

## PINNACLE

### PN15 4-Way Speaker

Floor-standing 4th-order-vented speaker with LCR-type modified quasi 2nd-order phase-coherent network. Features 10" polypropylene woofer; 1.5" convex fabric-dome midrange; 1" convex fabric-dome tweeter; 0.75" polycarbonate fluidome supertweeter; mylar capacitors; ultra-low-resistance air-core inductors. Imp and resonance compensated. Finished cabinet with removable grilles and binding-post terminals. FR 36-21,000 Hz  $\pm$  3 dB; min power 15 W rms; max power 150 W rms; sens 92 dB SPL/W/m; imp 6 ohms. Mahogany or cherry wood veneer. 16" w x 27.88" h x 9.94" d; 46 lb ..... \$750/pr

### PN10 3-Way Speaker

Floor-standing 4th-order-vented speaker with LCR-type modified quasi 2nd-order phase-coherent network. Features 10" polypropylene woofer; 1.5" convex fabric-dome midrange; 1" polycarbonate fluidome tweeter; mylar capacitors; ultra-low-resistance air-core inductors; binding-post terminals. Imp and resonance compensated. Cabinet has built-in 2" pedestal and removable black-knit grilles. FR 36-21,000 Hz  $\pm$  3 dB; min power 15 W rms; max power 150 W rms; sens 90 dB SPL/W/m; imp 6 ohms. Hickory vinyl finish. 16" w x 27.88" h x 9.94" d; 42 lb ..... \$499/pr

### PN 5+ 2-Way Speaker

Bookshelf speaker with Diaduct-port design. Features 0.75" polycarbonate ferrofluid tweeter; 5.25" polypropylene-cone woofer. FR 65-21,000 Hz; sens 86 dB SPL; power range 10-50 W; imp 6 ohms; 6.75" w x 11.25" h x 6.88" d; 17 lb/pr ..... \$149/pr

## PIONEER

### CS-V900D 3-Way Speaker

Magnetically shielded audio/video speaker with 12" polymer-graphite-cone woofer, 4.75" one-piece solid-boron-cone midrange, and beryllium ribbon-type tweeter. Features metalized-film capacitors and OFC cables in crossover; rounded corners on front baffle board; floating grille; Pioneer's LDMC (linear drive magnetic circuit), EBD (electronic bass drive), and DRS (dynamic response suspension). Nominal imp 6 ohms; sens 91 dB SPL/W/m; max power 240 W; crossover frequencies 650 and 4,000 Hz. Genuine walnut veneer. Sold only in mirror-imaged pairs. 15.38" x 26.75" x 13.88" ..... \$1,300/pr

### CS-707 4-Way Speaker

Bass-reflex speaker with 15.75" dual-voice-coil woofer, 4.75" midrange, horn tweeter with acoustic lens, and twin-piezo supertweeter. Features EBD (electronic bass drive); 3-position tone selector; LED power indicator. Imp 8 ohms; sens 98 dB SPL/W/m; max power 300 W. Walnut-grain vinyl finish. 28.56" h x 17.69" w x 10.56" d ..... \$720/pr

### DSS-E6 3-Way Speaker

Features 7.88" polymer-graphite-cone woofer; 2.88" boron-cone midrange; beryllium ribbon tweeter; mirror-image driver alignment; Pioneer's LDMC (linear drive magnetic circuit), EBD (electronic bass drive), and DRS (dynamic response suspension). Nominal imp 6 ohms; sens

91 dB SPL/W/m; max power 120 W. Sold only in mirror-imaged pairs. 18.5" w x 10.62" h x 9.56" d ..... \$480/pr

### CS-V9020 3-Way Speaker

Floor-standing magnetically shielded bass-reflex speaker with 12" woofer, 5" midrange, and 2.5" tweeter. Imp 8 ohms; sens 90 dB SPL/W/m; max power 150 W. 35.44" h x 14.94" w x 12.81" d ..... \$360/pr

### CS-G301WAll 3-Way Speaker

Bass-reflex bookshelf speaker with 12" woofer, 4.75" midrange, and 2.62" tweeter. Imp 6 ohms; sens 91.5 dB SPL/W/m; max power 120 W. Walnut-grain vinyl finish. 26.5" h x 14.94" w x 13" d ..... \$280/pr

## POLK AUDIO

### SDA-SRS Signature Reference Speaker

Floor-standing speaker that incorporates coherent Line-Source True Stereo (SDA) technology for 3-dimensional imaging. Features 15" planar passive radiator; 8 6.5" trilaminate polymer midranges; 4 1" silver-coil soft-dome tweeters. FR 14-2,600 Hz  $\pm$  3 dB; power range 10-1,000 W; sens 95 dB SPL/W/m; imp 4 ohms. Oiled oak, walnut, or black-lacquer finish. 21" w x 63.75" h x 13" d ..... \$2,990/pr

### SDA-SRS2 Signature Reference Speaker

Floor-standing smaller-version SDA-SRS. Features Polk's SDA True Stereo Technology for 3-dimensional imaging; 15" passive radiator; 4 6.5" trilaminate polymer bass/midrange drivers; 2 1" silver-coil polymer-dome tweeters. Power range 10-750 W rms; sens 93 dB SPL/W/m; imp 4 ohms. Oiled-walnut, -oak, or black-lacquer finish ..... \$2,000/pr

### SDA-1C 3-Way Speaker

Floor-standing speaker. Features 4 Polk MW 6600x trilaminate polymer bass/midrange drivers; Stereo/Dimensional isophase crossover system for blending all 12 active drivers of 2 SDA-1's; SL 2000 L/P high-frequency radiator incorporating exclusive silver-coated voice coil windings for FR beyond 25,000 Hz and hyperbolic section polyamide diaphragm; sub-bass radiator. Recommended power 10-500 W; FR 15-26,000 Hz; imp 4 ohms; crossover frequencies 50, 100, and 2,500 Hz; system resonance 15 Hz; sens 95 dB SPL/W/m. Oiled-walnut or -oak cabinet. Black studio version at lower cost. 43.5" h x 16.5" w x 12" d; 85 lb ..... \$1,600/pr

### SDA-2B 2-Way Speaker

Similar to SDA-1B except 2 6600X bass/midrange and SL2000 tweeter drivers. Crossover frequencies at 50 and 2,500 Hz. FR 15-26,000 Hz; system resonance 15 Hz; sens 92 dB SPL/W/m; imp 6 ohms. Oiled-walnut or -oak cabinet. Black studio version at lower cost. 39.5" h x 16.5" w x 12" d ..... \$1,200/pr

### SDA Compact Reference System + (CRS+)

Bookshelf speaker with SDA technology for life-like three-dimensional imaging. Features 2 6.5" trilaminate polymer bass/midrange drivers; 1" SL 2,000 polymer dome tweeter; 10" passive cone radiator. FR 24-25,500 Hz; power range 10-250 W; sens 92 dB SPL/W/m; imp 4 ohms. Black ash, walnut or rosewood furniture-grade vinyl finish. Hand-rubbed oak or walnut finish available at extra cost. 20" w x 12.5" h x 9.5" d ..... \$800/pr

### R.T.A. 12C Monitor 3-Way Speaker

Real-time-array floor-standing speaker with 12"

# SPEAKERS

low-resonance molded-foam subwoofer, 2 6.5" polymer-laminated bass/midrange drivers, and SL 2,000 tweeter. FR 17-25,000 Hz; crossover frequencies 40 and 2,000 Hz; power range 10-500 W; imp 6 ohms. Walnut- or rosewood-grain finish. Genuine walnut-veneer finish available at extra cost. 39" h x 16" w x 12" d ... \$960/pr

### R.T.A. 11T Monitor 3-Way Sepaker

Real-time-array floor-standing speaker with 2 8" low-resonance subwoofers, 2 6.5" polymer-laminated bass/midrange drivers, and a 1" polymer-dome tweeter. FR 15-25,000 Hz; power range 10-250 W; imp 6 ohms; crossover frequencies 60 and 2,500 Hz. Black-ash or rosewood-grain finish ... \$850/pr

### Monitor 10B 3-Way Speaker

Sub-bass radiator/sealed floor-standing speaker with 10" fluid-coupled subwoofer, 2 6.5" bass/midrange drivers, and 1" soft-dome tweeter. FR 22-25,000 Hz; power range 10-250 W; imp 6 ohms; crossover frequencies 60 and 3,000 Hz. Black-ash, walnut-grain, or rosewood-grain finish. Genuine walnut-veneer finish available at extra cost. 28" x 16" x 11.5" ... \$660/pr

### Monitor 7C 3-Way Speaker

Sub-bass radiator/sealed bookshelf speaker with 10" subwoofer, 6.5" plasticized bass/midrange driver, and 1" soft-dome tweeter. FR 26-25,000 Hz; power range 10-100 W; imp 6 ohms; crossover frequencies 60 and 3,000 Hz. Black-ash, walnut-grain, or rosewood-grain finish. 24" h x 14" w x 9.25" d ... \$520/pr

**Monitor 5B.** Similar to 7C but 8" subwoofer and SL 2,000 tweeter. FR 31-25,000 Hz; power range 10-60 W; imp 4 ohms. 21.5" h x 10.5" w x 8.5" d ... \$400/pr

### Monitor 5Jr+ 3-Way Speaker

Bookshelf speaker with 1" SL 2,000 tweeter, 6.5" tri-laminate polymer bass/midrange driver, and 6.5" fluid-coupled subwoofer. FR 29-26,000 Hz; power range 10-100 W; imp 4 ohms. Black-ash, walnut-grain, or rosewood-grain vinyl finish ... \$300/pr

### Monitor 4.5 2-Way Speaker

Bookshelf speaker with 6.5" tri-laminate polymer bass/midrange driver, 1" moving-coil high-frequency radiator, and isophere crossover. Features cabinet and grille design to eliminate diffraction effects. FR 30-25,000 Hz  $\pm 3$  dB; power range 10-100 W; max output 114 dB SPL; crossover frequency 4,500 Hz; imp 6 ohms. 17" h x 9" w x 8.88" d ... \$220/pr

### Proton AL-300



## PROTON

### AL-300 Floor-Standing Speaker

Floor-standing speaker with 12" woofer; air-suspension enclosure with 30-oz magnet and diffraction control to alter radiation pattern; 3.5" treated cone midrange with integral subenclosure; 1" polyester soft-dome tweeter with fluid cooling. System impedance 4 ohms nominal, 6 ohms weighted average, 3.3 ohms min; sens 90 dB SPL/W/m; 100 W average, 1,000 W peak into 4 ohms for 250 ms repeated 10 times with 2 second intervals. FR 39-20,000 Hz  $\pm 2$  dB; THD <1% at 85 dB SPL ... \$899/pr

## QUAD

### ESL-63 US Electrostatic Speaker

Full-range electrostatic doublet speaker with dipole source (radiates sound from front and back of panel, reflecting energy from wall behind speakers). Features 2 protection circuits. Power range 100-190 W; sensitivity 86 dB, 2.93 V rms; impedance 8 ohms; axis band limits -6 dB at 35 Hz, third-order, -6 dB at 20,000 Hz; 92.5 x 66 x 27 cm; 23 kg; walnut with black grille ... \$3,600/pr  
**ESL-63 Pro.** Professional version with carrying handles ... \$3,800/pr

## RCA

### SPK500 Dimensia 3-Way Speaker

Floor-standing bass-reflex speaker with Zero Magnetic Distortion for placement next to video monitor. Features 11" cross-carbon woofer; 4" pure carbon midrange; 1" titanium-alloy dome tweeter. FR 28-20,000 Hz  $\pm 3$  dB; max input power 160 W rms; imp 8 ohms. 12.75" w x 36" h x 12.5" d ... \$549/pr

### SPK400 Dimensia 3-Way Speaker

Floor-standing acoustic-suspension speaker with Zero Magnetic Distortion. Features 12" nylon-coated woofer; 4" resin-coated midrange; 1" soft dome tweeter. FR 35-20,000 Hz  $\pm 3$  dB; max input power 120 W rms; imp 8 ohms. 13.63" w x 24.25" h x 12.75" d ... \$399/pr

## REALISTIC

*Nominal imp of all Realistic speakers is 8 ohms.*

### Mach Two 3-Way Speaker

Vented Ferrofluid-cooled speaker with 15" woofer, 5" cone midrange, 4" dual-radial superhorn tweeter; level controls for midrange and tweeter; walnut veneer. Max power 160 W; sens 94 dB SPL/W/m; 27.56" x 17.75" x 11.81" ... \$500/pr

### MC-1800 Acoustic-Suspension Speaker

Bookshelf speaker with 8" high-compliance woofer and 2.5" wide-dispersion tweeter. FR 70-20,000 Hz  $\pm 3$  dB; max power 50 W rms; imp 8 ohms. Oiled-walnut finish. 10.9" w x 17.75" h x 6.9" d ... \$120/pr

### Optimus Speakers

**1000.** Floor-standing bass-reflex tuned-port speaker with 15" high-compliance woofer, 5" midrange, 3" tweeter. FR 50-20,000 Hz  $\pm 3$  dB; max power 100 W rms; sens 92 dB SPL/W/m; imp 8 ohms. Oiled-walnut finish. 17.3" w x 31.8" h x 11.6" d; 44 lb ... \$400/pr

**900.** Floor-standing bass-reflex tuned-port speaker with 12" high-compliance woofer, 4" midrange, 2.5" Ferrofluid tweeter. FR 50-20,000 Hz  $\pm 3$  dB; max power 100 W rms; sens 90 dB SPL/W/m; imp 8 ohms. Oiled-walnut finish. 14" w x 29.75" h x 10.88" d; 33 lb ... \$300/pr

**600.** Bass-reflex speaker; 8" woofer; 4" midrange; 2.5" cone tweeter; removable cloth grille; recessed color-coded spring-loaded terminals. Max power 70 W; sens 90 dB SPL/W/m. Oiled walnut veneer ... \$200/pr

## RECOTON

### Wireless 100 Stereo Speaker System

Powered wireless stereo speakers that operate on existing AC wiring. Speaker receives signal from transmitter that plugs into output jacks from system. Transmitter also plugs into AC outlet and transmits stereo wherever needed. Features Schotz wireless audio transmission system which will mesh with other products. FR 80-15,000 Hz; S/N >80 dB; dynamic range >80 dB ... \$270

## REVOX

### Agora B Amplified Speaker

Floor-standing triamplified active ported speaker incorporating three 100-watt amps with active dividing networks in each enclosure. Designed to be driven from preamp or direct from high-level sources such as CD player. Features push-pull dual-woofer design with one woofer facing into enclosure to eliminate even-order harmonic distortion. Two 8" cone woofers; 4.75" cone mid-range; 0.75" titanium-dome tweeter. Low-frequency amp utilizes feedback to compensate for back-EMF. Also features 4-step bass and treble controls; bass-blend switch; auto power on/off. FR 30-21,000 Hz  $\pm 3$  dB; sens 110 dB SPL/W/m; real walnut-veneer finish with brown grille or polished ebony finish with black grille. 16.75" w x 29" h x 16.75" d; 68 lb ... \$4,000/pr  
 Black lacquer finish ... \$4,400/pr

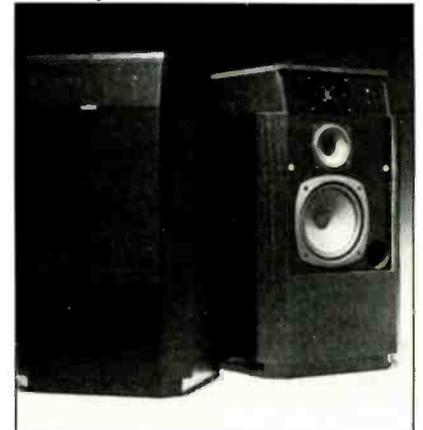
### Atrium MK-II 3-Way Speaker

Floor-standing bass-reflex speaker features 10.2" woofer; 4.8" midrange; 1" tweeter; screw-lock connection terminals; fuse overload protection. Max power input 140 W continuous, 180 W peak; imp 4 ohms; sens 91 dB SPL/W/m. Dark walnut veneer finish; 13.5" w x 33.6" h x 14.5" d; 84 lb ... \$2,000/pr

### Plenum MK-II 3-Way Speaker

3-way bass-reflex bookshelf speaker. Features 10.2" woofer; 4.5" midrange; 1" tweeter; screw-lock connection terminals; fuse overload protection. Max power input 130 W continuous, 170 W peak; imp 4 ohms; sens 89 dB SPL/W/m. Dark walnut veneer finish; 13.7" w x 22.8" h x 13.4" d; 55.2 lb ... \$1,600/pr

### Revox Agora B



# SPEAKERS

## Piccolo Miniature Speaker

Satellite speaker may be used with or without companion subwoofer. Satellites feature 4.19" cone woofer; 0.75" dome tweeter. Subwoofer features 10.19" cone driver. FR 48-22,000 Hz  $\pm 3$  dB; power range 20-70 W; sens 86 dB SPL/W/m; imp 4 ohms; black finish. Satellite 5.5" w x 8.75" h x 5.75" d, 5.5 lb; subwoofer 15.36" w x 14.19" h x 14.62" d, 32 lb.

Satellites ..... \$350/pr  
Subwoofer ..... \$375 ea

## ROBERTSON AUDIO

### Twenty-One Infinite-Baffle Speaker

Floor-standing speaker with custom-built drivers designed to have the speed of electrostatics. Features two 8" cone woofers; 1.5" cone tweeter. FR 30-22,000 Hz  $\pm 3$  dB; min power 20 W; sens 92.5 dB SPL/W/m; imp 4 ohms. 19" w x 31.5" h x 9" d; 54 lb. Mahogany finish ..... \$1,695/pr

## ROKSAN ENGINEERING

### Darius Speaker with Integral Stand

2-way infinite-baffle speaker with dedicated cage frame on spike feet that clamps cabinet at 8 nodal points; all panels of 1" Medite with mitred joints; tweeter mounted on minibaffle suspended on springs from main cabinet (designed to resonate at frequency well below tweeter's range) for isolation from woofer and cabinet effects; can be used away from walls, angled in at approximately 90°; separate crossover. Cabinet 16" x 18.5" x 10.5"; stand 17.5" x 38" x 13".

Rosewood ..... \$3,500/pr  
White ash ..... \$3,030/pr  
Walnut ..... \$2,900/pr  
Black ash ..... \$2,750/pr  
Crossover ..... \$265

## SANSUI

### XL-500C 4-Way Speaker

Floor-standing passive-radiator tower speaker. Features ported enclosure; polypropylene mica and carbon midrange (PM-C); 12" passive rad; 12" TCCF cone woofer; 4.75" cone midrange; 2" dome tweeter; 0.62" dome supertweeter. Max power 320 W; sens 93 dB SPL/W/m; imp 8 ohms. Available in walnut finish. 15" w x 40.56" h x 13" d; 55 lb ..... \$1,320/pr

### S-5000U 4-Way Speaker

Floor-standing speaker features 12" cone woofer; 5" cone ferrofluid midrange; 1" dome tweeter with ferrofluid; 0.50" dome supertweeter with ferrofluid. Max power 200 W; sens 91 dB SPL/W/m; imp 8 ohms. 16" w x 41" h x 11" d; 48 lb ..... \$850/pr

S-3000U. Similar to S-5000U except does not have 0.50" dome supertweeter ..... \$700/pr

### S-V828U 4-Way Speaker

Floor-standing magnetically shielded speaker for audio/video use. Features 10" cone passive radiator; 10" cone woofer; 4" cone midrange; 2.5" cone tweeter. FR 32-22,000 Hz  $\pm 3$  dB; max power 160 W rms; sens 91 dB SPL/W/m; imp 8 ohms. Simulated wood-grain finish. 13" w x 37.44" h x 11" d; 41 lb ..... \$460/pr

### S-V727U 4-Way Speaker

Floor-standing magnetically shielded speaker for audio/video use. Features 10" cone passive radiator; 8" cone woofer; 4" cone midrange; 2" cone tweeter. FR 30-22,000 Hz  $\pm 3$  dB; max power 65 W rms; sens 90 dB SPL/W/m; imp 8 ohms. Simulated wood-grain finish. 13" w x 34" h x 10.25" d; 28.5 lb ..... \$320/pr

## SCOTT

All Scott speakers use acoustic-suspension enclosures with PVA-coated woofers.

### S12T6 Multidirectional Speaker

Floor-standing 3-way 6-driver speaker with 12" woofer, 2 4.5" ferrofluid-cooled midranges (1 front, 1 top), 3 1.75" ferrofluid-cooled tweeters (1 front, 2 top); oak-vinyl finish. FR 42-20,000  $\pm 4$  dB; power range 15-175 W rms; sens 92 dB SPL/W/m; 16.5" w x 31.2" h x 10.7" d ..... \$480/pr

S10T5. Similar to S12T6 except 10" woofer, 5 drivers, max power 150 W ..... \$400/pr

### S153 Floor-Standing 3-Way Speaker

15" woofer, 4.5" ferrofluid-cooled midrange, 1.75" ferrofluid-cooled tweeter. FR 40-20,000 Hz  $\pm 4$  dB; power range 15-175 W rms; sensitivity 91 dB SPL/W/m; 18.75" wide x 33" high x 11" deep; 45 lb ..... \$400/pr

S123. Similar to above except 12" woofer and max power 150 W ..... \$330/pr

## SDM BY SOUND DYNAMICS

All SDM speakers are bass reflex, with 5" cone midrange, 1" horn tweeters, crossovers at 2,000 and 5,000 Hz, nominal impedances of 8 ohms, minimum impedances of 4 ohms, in walnut or black vinyl with black knit grilles.

### Monitor Three Speaker

12" woofer. FR 25-22,000 Hz  $\pm 3$  dB; sens 98 dB SPL/W/m; power range 15-125 W; 26" x 15" x 12"; 33 lb each ..... \$600/pr

### Monitor Two Speaker

10" woofer. FR 30-22,000 Hz  $\pm 3$  dB; sens 97 dB SPL/W/m; power range 10-112 W; 24" x 14" x 9"; 29 lb each ..... \$500/pr

### Monitor One Speaker

8" woofer. FR 35-22,000 Hz  $\pm 3$  dB; sens 96 dB SPL/W/m; power range 10-100 W; 23" x 12" x 9"; 29 lb each ..... \$400/pr

## SIGNET

### SL-100 Definitive Image Speaker

Floor-standing bass-reflex speaker with Ferralipse, wide-dispersion frequency invariant acoustic lens to provide dispersion greater than 120° at 20,000 Hz. Phase coherent for better imaging. Features 10" long-throw cone woofer; 3" soft-dome midrange; two 1" soft-dome tweeters. FR 40-20,000 Hz  $\pm 3$  dB; min power 25 W rms; max power 200 W rms; sens 90 dB SPL/W/m; imp 8 ohms. 12.68" w x 35.83" h x 15.81" d; 66 lb ..... \$1,450/pr

## SNELL ACOUSTICS

### Type A/III 4-Way Speaker

Floor-standing acoustic-suspension speaker with curved baffle to eliminate diffraction, mechanically isolated midrange enclosure, floor-loaded woofer, and rear-loaded supertweeter for accurate room response. Hand-adjustment of crossover values for specific drivers assures acoustic performance virtually identical to reference speaker. Features 12" high-power long-exursion mass-loaded mechanically isolated cone woofer; 5" mechanically-isolated cone midrange; 1" individually adjusted controlled-dispersion dome tweeter; 0.75" low-mass ferrofluid-cooled dome supertweeter. Dual gold-plated inputs allow biwiring or biamping with or without electronic crossover. FR 24-26,000 Hz  $\pm 3$  dB, 38-18,000 Hz  $\pm 1$  dB; power range 80-400 W rms; imp 4 ohms. Hand-sanded, hand-rubbed matching oak or walnut veneers. 23.5" w x 50.75" h x 14" d. Oak ..... \$4,680/pr  
Walnut ..... \$4,490/pr

## Type C-i 4-Way Speaker

Floor-standing acoustic-suspension sloped mirror-imaged speaker with midrange and tweeter baffle and rear-loaded supertweeter for optimum room response and flat early-arrival sound. Hand-adjusted crossover values for specific drivers assures acoustic performance virtually identical to reference speaker. Features 10" mass-loaded dynamically balanced long-throw high-power woofer; 5" cone midrange; 0.75" low-mass polymer-dome tweeter; 0.75" low-mass polymer-dome supertweeter. Dual gold-plated inputs for biwiring or biamping with or without electronic crossover. Hand-sanded hand-rubbed matched oak or walnut veneers. FR 24-20,000 Hz  $\pm 3$  dB; power range 80-400 W rms; sens 86 dB SPL/W/m; imp 8 ohms. 44" h x 14.75" w x 12.75" d. Oak ..... \$1,800/pr  
Walnut ..... \$1,890/pr

## Type E/II 3-Way Speaker

Floor-standing bass-reflex speaker with 8" polymer-treated woofer, 1" soft-dome tweeter, and ultra-low-mass 0.75" ferrofluid-cooled rear-loaded dome supertweeter. Hand-adjusted crossover for specific drivers assures acoustic performance virtually identical to reference speaker. Dual gold-plated inputs allow biwiring or biamping. Features rear-loaded port for optimum low-frequency room loading. Hand-sanded, hand-rubbed matching oak or walnut veneers. FR 39-22,000 Hz  $\pm 1.75$  dB; imp 8 ohms; sens 93 dB SPL/W/m; power range 15-150 W rms. 33" h x 14" w x 11" d. Oak ..... \$960/pr  
Walnut ..... \$990/pr

## Type J/II 2-Way Speaker

Bookshelf bass-reflex speaker designed to maximize accuracy of early arrival sound and listening room response. Hand-adjustment of crossover values for specific drivers assures acoustic performance virtually identical to reference speaker. Features 8" polymer-treated curvilinear cone woofer; 1" soft-dome tweeter; dual gold-plated inputs for optional biwiring and biamping. Oak or walnut veneers. Sens 92 dB SPL/W/m; power range 15-150 W rms; FR 49-22,000 Hz  $\pm 2$  dB; imp 8 ohms. 23" h x 13" w x 10" d; 38 lb. Oak ..... \$650/pr  
Walnut ..... \$680/pr

## SONAB BY AUDIOSOURCE

### OA-52 2-Way Speaker

Bass-reflex (tuned to 30 Hz) speaker with 7" woofer and 1" dome tweeter. FR 27-20,000 Hz  $\pm 3$  dB; sens 89 dB SPL/W/m; imp 8 ohms; 16.06" x 20.75" x 14.5"; 43.5 lb ea; rosewood or walnut veneer ..... \$1,700/pr

### OA-51 2-Way Speaker

Bass-reflex (tuned to 38 Hz) speaker with 7" woofer and 1" dome tweeter. FR 32-20,000 Hz  $\pm 3$  dB; sens 88 dB SPL/W/m; imp 8 ohms. 16.94" x 11.88" x 10.88"; 28.5 lb ea; rosewood or walnut veneer ..... \$1,000/pr

### OA-50 2-Way Speaker

Bass-reflex (tuned to 30 Hz) speaker with 6.5" woofer and 1" dome tweeter. FR 28-20,000 Hz  $\pm 3$  dB; sens 89 dB SPL/W/m; imp 8 ohms; 14.5" x 18.31" x 12.44"; 33.5 lb; walnut, black, or oak veneer ..... \$800

## SONOGRAPHE

### BY CONRAD-JOHNSON

#### SL 21 Mini-Monitor Satellite Speaker

Vented; 6.5" polypropylene woofer; 1" dome tweeter; golden oak cabinet with brown grille.

# SPEAKERS

FR 52-20,000 Hz  $\pm 2$  dB; power range 10-80 W; sens 90 dB SPL/W/m; imp 8 ohms; 10.5" w x 14.5" h x 10.5" d ..... \$695/pr

## SW 1000 Stereo Subwoofer

2 side-firing magnetically shielded 10" woofers in golden oak cabinet. FR 25-110 Hz  $\pm 2$  dB; sens 90 dB SPL/W/m; imp 8 ohms; 36" w x 19.5" h x 18" d. \$849/ea  
**SW 500.** Same as SW 1000 except mono. with 1 10" woofer; 18" x 19.5" x 18" ..... \$595/ea

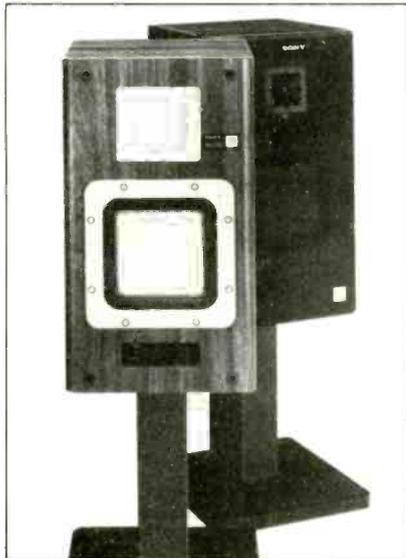
## SONY

### APM-66ES 3-Way Speaker

Bass-reflex speaker with APM (Accurate Pistonic Motion) driver technology that incorporates light, rigid, flat-diaphragm design. Features 66 sq-in APM woofer; 7.4 sq-in APM midrange; 1.4 sq-in APM tweeter; built-in circuit breaker for tweeter protection; heavy-duty cabinet construction with rounded edges. Includes speaker cord. FR 30-30,000 Hz; sens 89 dB SPL/W/m; power capacity 100 W nominal, 200 W peak; nominal imp 6 ohms; crossovers at 600 and 4,500 Hz. 15" w x 26" h x 14.38" d. \$1,100/pr

### APM-22ES 2-Way Speaker

Bass-reflex speaker with APM (Accurate Pistonic Motion) driver technology that incorporates a light, rigid, flat-diaphragm design. Features 45 sq-in APM woofer; 1.4 sq-in APM tweeter; circuit breaker for tweeter protection; heavy-duty cabinet construction with rounded edges. Includes speaker cord. FR 40-20,000 Hz; sens 88 dB SPL/W/m; power capacity 80 W nominal, 160 W peak; nominal imp 6 ohms; crossover at 2,000 Hz. 11.5" w x 20.38" h x 12.62" d ..... \$500/pr



Sony APM-22ES

## SOTA INDUSTRIES

### Simile 2-Way Speaker

2-way slot-loaded speaker with passive radiator. 7" woofer, 1" tweeter. FR 45-22,000 Hz  $-3$  dB; sens 91 dB W/m; crossover, staggered poles, bass filter at 1,000 Hz, high-pass filter at 3,000 Hz; 16.25" h x 12" w x 11.5" d at base; top 9" w x 7" d; cherry finish ..... \$1,295  
 Ebony, rosewood ..... \$1,495

## SOUND DYNAMICS

### 1500 Concert Monitor

Computer-tuned 2-way bass-reflex, mirror-im-

aged pairs with matched parts. 1" horn-loaded soft-dome tweeter with free-floating dome suspension; 15" woofer with high-gauss linear forced motor and epoxy potting. FR 28-23,000 Hz  $\pm 3$  dB; sens 102 dB SPL/W/m; min power 20 W; max power 250 W; imp 8 ohms. 34.75" x 18" x 16"; 90 lb; walnut-grain vinyl ..... \$900/pr

### 700 Concert Monitor

Computer-tuned 2-way bass-reflex mirror-imaged pairs with matched parts. 1" horn-loaded soft-dome tweeter with free-floating suspension; 12" woofer with high-gauss linear forced motor and epoxy potting. FR 32-23,000 Hz  $\pm 3$  dB; sens 101 dB SPL/W/m; minimum recommended power 15 W; maximum recommended power 200 W; nominal impedance 8 ohms. 27.75" x 14.36" x 12"; 45 lb ea; walnut grain vinyl; with 10" stands ..... \$700/pr

### 500 Concert Monitor

Computer-tuned 2-way bass-reflex mirror-imaged pairs with matched parts. 1" horn-loaded soft-dome tweeter with free-floating suspension; 10" high-gauss plastic-coated woofer. FR 34-23,000 Hz  $\pm 3$  dB; sens 98.5 dB SPL/W/m; min power 10 W; max power 200 W; imp 8 ohms. 23.36" x 12.12" x 11.88"; 38 lb each; walnut grain vinyl; with 10" stands ..... \$500/pr

## SPECTRUM LOUDSPEAKERS

### Model 410 2-Way Speaker

Floor-standing Thiele-aligned bass-reflex speaker with plastic-impregnated 10" composite matrix cone woofer; 1" dome tweeter with acoustic imp transformer. FR 18-22,000 Hz; min power 30 W rms; max power 250 W rms; sens 89 dB SPL/W/m. Natural oak or walnut finish. 14.5" w x 38.5" h x 11.75" d; 59 lb ..... \$749/pr

### 208A Stand-Mount Speaker

Thiele-optimized bass-reflex speaker designed for floor placement on special stands. 8" cone woofer; 1.5" cone tweeter; 0.5" aluminum dome tweeter; finished in walnut vinyl. Power range 10-100 W; FR 38-20,000  $\pm 3$  dB; sens 91 dB SPL/W/m; 33 lb ea; 14.5" w x 25.5" h x 10.5" d ..... \$395/pr

208AB. Black, pebble-grain vinyl ..... \$395/pr

208AO. Oak veneer ..... \$495/pr

## SPICA

### Angelus Floor-Standing Speaker

Mirror imaged speaker system with 8" plastic cone bass/mid driver, 1" soft dome tweeter, computer optimized crossover, built in adjustable spikes. FR 45-17,500 Hz  $\pm 3$  dB (90-15,000 Hz  $\pm 1.5$  dB); crossover 3,400 Hz ( $-6$  dB); recommended power 50-200 W; imp 8 ohms; 21" x 46" x 10.25"; walnut finish ..... \$975/pr  
 Oak finish ..... \$900/pr

### TC-50 Bookshelf Speaker

Acoustic-suspension bookshelf speaker with triangular shape allowing system to be within 15° of absolute phase from 350-5,000 Hz. Features 6" cone woofer, 1" dome tweeter. FR 58-14,000 Hz  $\pm 3$  dB; power range 25-50 W, 100 W peak; sens 83 dB SPL/W/m; imp 4 ohms; 13" w x 15.55" h x 11.75" d; 21 lb/ea. Oak or walnut veneer ..... \$450/pr

## SUMO

### Samson Bass-Reflex Subwoofer

Floor-standing subwoofer with 15" composite-cone woofer. 18.62-lb magnet assembly, 4" edgedown copper voice coil; symmetrical magnetic-field motor structure for driver. Features

built-in 1,000-W PWM digital-switching amp. Solid 1" butcher-block oak top. FR 20-120 Hz  $\pm 1$  dB; max power 1,000 W; sens 91 dB SPL/W/m; imp 8 ohms. 27.5" w x 22" h x 18" d; 100 lb ..... \$1,249 ea  
 Without built-in amp ..... \$649 ea

### Opus Two 2-Way Speaker

Floor-standing acoustic-suspension speaker with 6.5" treated-cone woofer, 1" composite-dome tweeter with copper-clad aluminum voice coil. Features symmetrical magnetic-field woofer design with copper-clad pole piece for reduced 2nd-order harmonic distortion; impedance-matching conjugate crossover network with extremely low group delay ( $\pm 0.2$  ms from 100-20,000 Hz); solid-oak end caps. FR 42-24,000 Hz  $+0, -3$  dB min power 35 W rms; max power 250 W rms; sens 85 dB SPL/W/m; imp 4 ohms. Oak or piano-finish black. 10.5" w x 39" h x 5" d; 20 lb ..... \$699/pr

**Opus Three.** Bookshelf version of Opus Two. 10.25" w x 17.5" h x 9.75" d; 16 lb ..... \$649/pr

## SYMDEX

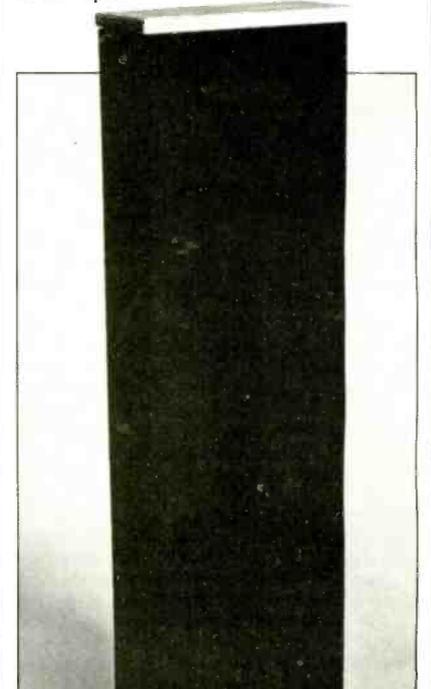
### Epsilon Floor-Standing Speaker

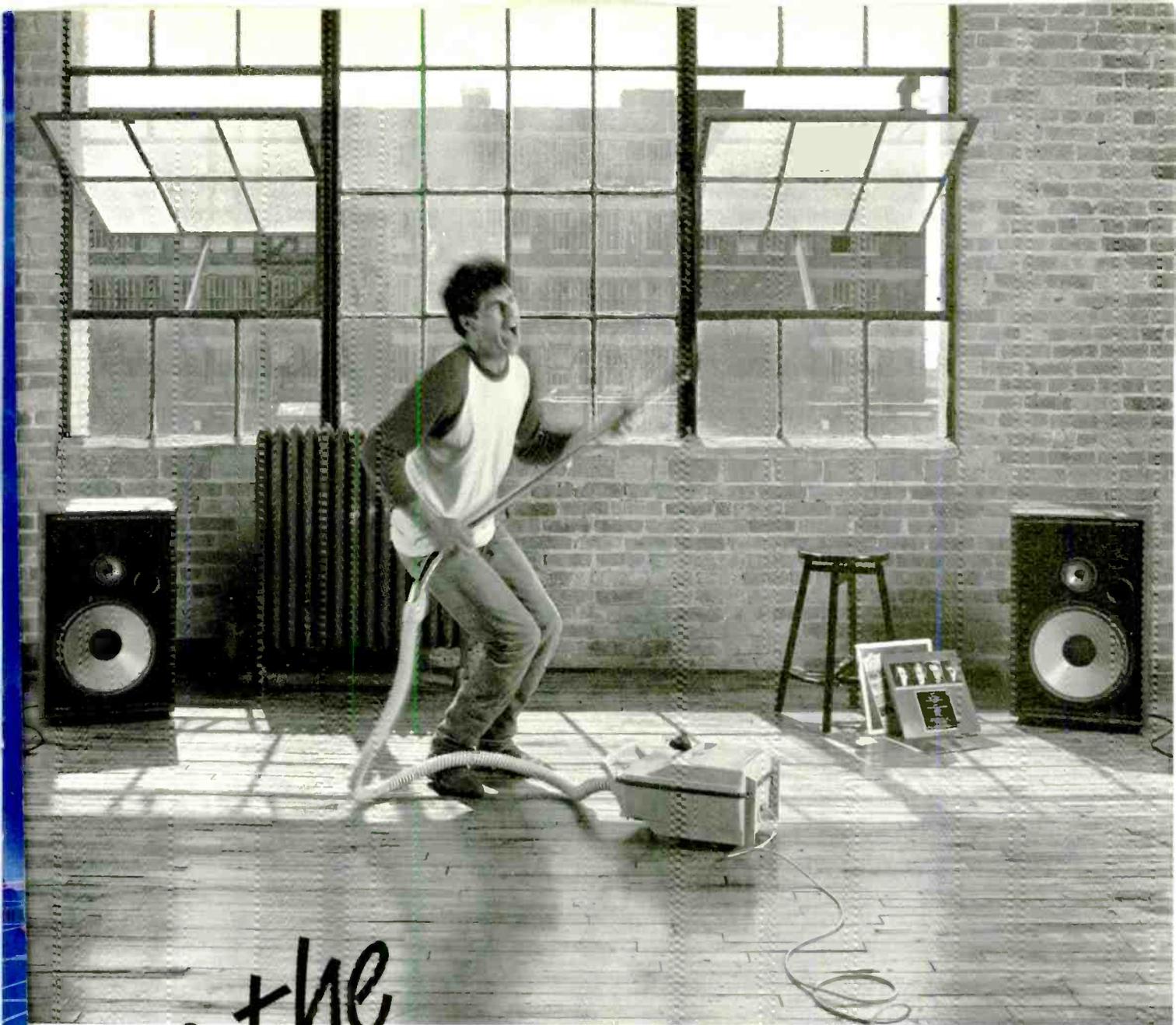
Scaled-box speaker with modular phase-linear crossovers. Features time-aligned drivers; polypropylene capacitors in crossover; 10" cone woofer; 6.5" cone midrange; 1" soft-dome tweeter. Power range 50-250 W; sens 85 dB SPL/W/m; imp 8 ohms; 13" w x 48.5" h x 13" d; 110 lb; black cloth with oak or black top plate; computer-matched pairs ..... \$1,795/pr

### Sigma S Speaker

Acoustic-suspension speaker with 6.5" bextrene cone woofer and 1" soft cambric dome tweeter. Features physically time-aligned drivers; movable track-mounted tweeter; linear-phase crossover network; new crossover network and internal wire by Randall Research; cut-away cabinetry for min diffraction; 2 sets of input terminals for bi-wiring. FR 60-20,000 Hz  $\pm 1$  dB; 10" w x 22" h x 6" d; black-lacquer formica, walnut with black grille ..... \$995/pr

### Sumo Opus 2





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—**High Fidelity.**

*"Unusually high sensitivity; orchestral sound 'big' with a good sense of space; can play loud without any audible distress"*—**Digital Audio.**

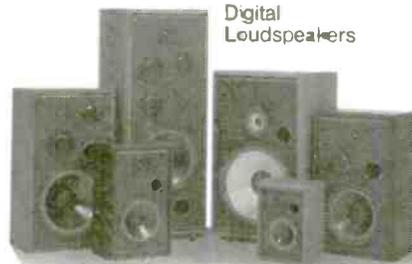
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# SPEAKERS

## SYNTHESIS

### BY CONRAD-JOHNSON

#### Reference Speaker System

5-piece system with 2 subwoofer columns (each with 2 10" woofers), 2 midrange/high-frequency units (with 7" midranges, 1" dome tweeters, leaf supertweeter); golden oak with rounded solid-hardwood edges; active electronic crossover supplied. FR 22-32,000 Hz  $\pm$  2 dB; power range 10-250 W; sens 91 dB SPL/W/m; imp 8 ohms; subwoofer columns 14" w x 69" h x 14" d; satellites 10" w x 44" h x 10" d ..... \$6,800/system

#### LM 310 Floor-Standing 3-Way Speaker

10" woofer; 7" midrange; 1" dome tweeter; oak cabinet with rounded solid hardwood edges. FR 25-20,000 Hz  $\pm$  2 dB; power range 10-200 W; sens 91 dB SPL/W/m; imp 8 ohms; 70 lb ..... \$2,950/pr

#### LM 260 Floor-Standing 2-Way Speaker

Ported; 8" polypropylene woofer; 1" dome tweeter; oak cabinet with rounded solid-hardwood edges. FR 41-20,000 Hz  $\pm$  2 dB; power range 10-100 W; sens 91 dB SPL/W/m; imp 8 ohms; 12" w x 39.5" h x 11" d ..... \$1,595/pr

#### LM 210 Floor-Standing 2-Way Speaker

Ported speaker with 6.5" polypropylene woofer; 1" dome tweeter; oak cabinet with rounded solid-hardwood edges. FR 46-20,000 Hz  $\pm$  2 dB; power range 10-80 W; sens 90 dB SPL/W/m; imp 8 ohms; 10.5" square x 33.5" h ..... \$950/pr

## 3D ACOUSTICS

### 3D610 Surround 5-Piece Speaker System

5-piece phase-conditioned surround-sound speaker system with all matrixing built into 3D10 magnetically shielded subwoofer. Features 10" shield dual-wind voice-coil woofer; 6" rubber-roll midrange; 1" cloth-dome foam-encased tweeter. FR 30-20,000 Hz  $\pm$  3 dB; min power 30 W rms; max power 150 W rms; sens 88 dB SPL/W/m; imp 16 ohms. Oiled-walnut and black finishes. Subwoofer: 24" x 16" x 13.75"; 49 lb. Satellites: 14" x 8.5" x 7.25"; 30 lb each pair ..... \$975/system

### 3D1610 System 3-Piece Speaker System

3-piece speaker system with built-in matrixing for 3D phase-conditioned surround-sound. Magnetically shielded for near-video placement. Features 10" dual-wind-voice-coil woofer; 6" rubber-roll midrange; 1" cloth-dome foam-encased tweeter. FR 30-20,000 Hz  $\pm$  3 dB; min power 30 W rms; max power 150 W rms; sens 88 dB SPL/W/m; imp 8 ohms. Oiled-walnut and black finishes. Subwoofer: 24" wide x 16" high x 13.75" deep; 49 lb. Satellites: 14" wide x 8.5" high x 7.25" deep; 30 lb/pr ..... \$650/system

## TANNOY

### Prestige Series

**Westminster.** Floor-standing dual-concentric speaker with Sync-Source Time Alignment; compound horn enclosure; 15" cone woofer; 2" compression-horn tweeter. FR 18-20,000 Hz  $\pm$  2 dB; min power 10 W; max power 200 W; sens 96 dB SPL/W/m; imp 8 ohms. 43" w x 59" h x 28" d; 253 lb. Walnut finish ..... \$10,000/pr

**Guy R. Foundation Memory.** Floor-standing dual-concentric speaker with Sync-Source Time Alignment; quadruple-ducted-port enclosure; 15" cone woofer; 2" compression-horn tweeter. FR 29-20,000 Hz  $\pm$  2 dB; min power 10 W; max power 200 W; sens 95 dB SPL/W/m; imp 8 ohms. 31" w x 43" h x 19" d; 136 lb each. Walnut finish ..... \$6,800/pr

**Stirling.** Floor-standing dual-concentric speaker with Sync-Source Time Alignment; dual variable-distributed enclosure; 10" cone woofer; 2" compression-horn tweeter. FR 35-20,000 Hz  $\pm$  2 dB; min power 10 W; max power 150 W; sens 93 dB SPL/W/m; imp 8 ohms. 20.5" w x 33.5" h x 15" d; 48.5 lb. Walnut finish ..... \$3,700/pr

### Planet Series

**Mercury II Gold.** Tuned-port bookshelf speaker; 8" woofer, dome tweeter. FR 52-20,000 Hz  $\pm$  3 dB; power range 25-120 W; sens 93 dB SPL/W/m; imp 8 ohms; 9.75" w x 20" h x 9" d; 17 lb each ..... \$850/pr

**Mercury Mk II.** Similar to Mercury II Gold except 16 lb each ..... \$600/pr

**Eclipse.** Tuned-port bookshelf speaker; 6.5" woofer, dome tweeter. FR 53-20,000 Hz  $\pm$  3 dB; power range 25-100 W; sens 93 dB SPL/W/m; imp 8 ohms; 9 lb each ..... \$350/pr

## TECHNICS

### SB-M3 3-Way Floor-Standing Speaker

Ported linear-phase honeycomb-disc speaker with mirror-image cabinets; tweeter and midrange attenuators; low-noise 18-dB/octave mid/high crossover; heavy-duty terminals for large-gauge speaker wires; resettable thermal relay protection. 13" woofer; 3.12" mid; 1.12" tweeter. FR 38-35,000 Hz  $\pm$  5 dB; max power 200 W music, 100 W DIN; sens 90 dB SPL/W/m; imp 6 ohms; 68.3 lb; 15.75" w x 26.36" h x 13.12" d ..... \$1,800/pr

### SB-RX50 Bass-Reflex Bookshelf Speaker

2-way speaker with 9.5" flat-diaphragm woofer and coaxial 1.12" flat-diaphragm tweeter. Can be placed upright or sideways without affecting sound quality. FR 30-48,000 Hz at 16 dB below average level; max power 160 W music; sens 87 dB SPL/W/m; imp 6 ohms. Wood finish. 11.89" w x 18.92" h x 11.09" d; 36.4 lb ..... \$920/pr

### SB-X700A Ported Floor-Standing Speaker

Honeycomb-disc speaker with thermal relay protection; easy connections; 12" woofer; 3.12" midrange; 1.12" tweeter. FR 35-30,000 Hz  $\pm$  10 dB; max power 180 W; sens 90 dB SPL/W/m; imp 8 ohms; walnut grain finish; 15.33" w x 27.33" h x 12.88" d; 39.6 lb ..... \$550/pr

### SB-X300A Ported Floor-Standing Speaker

Honeycomb-disc speaker with thermal relay protection; easy connections; 9" woofer; 2" midrange; 1.12" tweeter. FR 45-30,000 Hz  $\pm$  10 dB; max power 110 W; sens 90 dB SPL/W/m; imp 8 ohms; walnut-grain finish; 12" w x 22.44" h x 10.5" d; 21 lb ..... \$320/pr

### Micro Series

#### SB-F2MK2 Mini Honeycomb-Disc Speaker

Sealed-box speaker in die-cast metal enclosure. Internally shielded. Resettable thermal relay protection. Protective metal grilles. Switchable 4/8-ohm imp; tripod mountable. Linear-phase design. Contains 5.5" honeycomb disc woofer; 1.12" honeycomb disc tweeter. FR 55-33,000 Hz  $\pm$  5 dB; max power 100 W music, 50 W DIN; sens 88 dB SPL/W/m; impedance 4/8 ohms; metallic enclosure; 11 lb; 6.25" wide x 10.06" high x 6.75" deep ..... \$370/pr

#### SB-R100 Passive-Radiator Speaker

Ported speaker for wall mounting. Features 3 concentric coaxial honeycomb-disc drivers, outermost of which is a passive radiator, all in the same plane for phase linearity; resettable thermal relay protection; internally shielded; includes wall-mounting kit and flat speaker ca-

bles. Contains 10" (outer diameter) honeycomb-disc passive radiator; honeycomb-disc woofer; 1 honeycomb-disc midrange; 1 honeycomb-disc tweeter. FR 70-25,000 Hz  $\pm$  5 dB; max power 100 W music, 50 W DIN; sens 87 dB SPL/W/m; imp 8 ohms; finished in black; 9.9 lb; 12.36" w x 12.36" h x 2.5" d ..... \$325/pr

## THIEL

### CS 3.5 Coherent Source Speaker

Floor-standing electronic-bass-equalized speaker with 10" cone woofer, 4" cone midrange, and 1" dome tweeter. Features complete time coherence by sloping baffle; complete phase coherence by synthesized first-order crossover system; 3-dimensional sculpted anti-diffraction baffle; electronic bass system; magnetic distortion-reducing drivers; cast-magnesium driver chassis; polypropylene crossover capacitors; 30-mm thick cabinet panels; real wood veneer. FR 23-20,000 Hz  $\pm$  2 dB; Power range 50-250 W rms; sens 89 dB SPL/W/m; imp 4 ohms. Teak, oak, walnut, black, rosewood finishes. 13" w x 42" h x 13" d; 75 lb ..... \$2,450/pr

### CS 2 Coherent Source Speaker

Floor-standing ported speaker with 8" cone woofer, 3" cone midrange, and 1" dome tweeter. Completely time and phase coherent. Time coherence achieved with sloping baffle; phase coherence achieved with synthesized first-order crossover networks. Features anti-diffraction grille; cast-magnesium driver baskets; polypropylene crossover capacitors. FR 38-20,000 Hz  $\pm$  2 dB; power range 50-250 W; sens 87 dB SPL/W/m; imp 6 ohms. Oak, walnut, black, rosewood, teak finishes. 12" w x 39" h x 12" d; 62 lb ..... \$1,550/pr

### CS 1 Coherent Source Speaker

Floor-standing bass-reflex speaker with 7" cone woofer and 1" dome tweeter. Features complete time coherence by sloping baffle; complete phase coherence by synthesized first-order crossover system; anti-diffraction grille; polypropylene crossover capacitors; cast-magnesium woofer chassis; 30-mm thick cabinet panels; real wood veneer. Frequency response 56-17,000 Hz  $\pm$  2 dB; power range 40-150 W rms; sensitivity 87 dB SPL/W/m; impedance 6 ohms. Teak, oak, walnut, black, or rosewood finishes. 10.5" wide x 36" high x 10.5" deep; 41 lb ..... \$950/pr

## TRIAD DESIGN

### System One 3-Piece Speaker System

3-piece all-acoustic-suspension speaker. Features 2 time-offset-corrected satellites; infinitely adjustable volume control; 6.5" polypropylene cone woofer; 3.5" treated-cone midrange; 0.75" Ferrofluid-cooled dome tweeter. FR 45-20,000 Hz  $\pm$  4 dB; power range 25-100 W; sens 88 dB SPL/W/m; imp 8 ohms; oak or walnut finish; 5.5" w x 8.5" h x 5" d; 20 lb ..... \$525

### HSS-400 2-Way Speaker

Acoustic-suspension speaker with unique shape to produce proper time-offset correction. Features 8" polypropylene cone woofer; 1" dome tweeter. FR 100-20,000 Hz  $\pm$  3 dB; power range 10-100 W; sens 89 dB SPL/W/m; imp 8 ohms; walnut finish; 11" w x 18" h x 8" d ..... \$450/pr

### HSS-300 Bookshelf Speaker

Acoustic-suspension speaker with time-offset-corrected design. Features 6.5" polypropylene cone woofer; 1" dome tweeter. FR 90-20,000 Hz  $\pm$  3 dB; power range 10-100 W; sens 89 dB SPL/W/m; imp 8 ohms; oak, walnut finish; 8" w x 12" h x 12" d; 11 lb ..... \$350/pr

## SPEAKERS

### ULTRALINEAR BY ESS

#### UL-1530 Speaker

Floor-standing 3-way acoustic-suspension speaker protective circuit and resetting circuit breaker. Features 15" cone woofer; 4.5" cone midrange; 2.5" cone tweeter. FR 40-22,000 Hz  $\pm$  3 dB; minimum power 10 W rms, max power 125 W rms; sens 92.5 dB SPL/W/m; imp 4 ohms; walnut-grain vinyl finish; 54 lb; 17.75" w x 29.75" h x 14.5" d ..... \$358/pr

#### UL-1230 Speaker

Floor-standing acoustic-suspension speaker with 12" cone woofer, 4.5" cone midrange, and 2.5" cone tweeter. Features protective circuit with resetting circuit breaker. FR 45-22,000 Hz  $\pm$  3 dB; minimum power 5 W rms, max power 100 W rms; sens 92.5 dB SPL/W/m; imp 4 ohms; 14.5" x 26.5" x 10.75" ..... \$298/pr

### VANDERSTEEN AUDIO

#### Model 4 5-Way Speaker

Floor-standing dynamically aligned sealed 5-way speaker in cast basket. Features two 12" cone subwoofers; 8" cone woofer; 4.5" cone midrange; 1.12" dome tweeter; 0.75" dome supertweeter. FR 26-30,000 Hz  $\pm$  2 dB; power range 100-200 W; sens 89 dB SPL/W/m; imp 4 ohms. 18" w x 52" h x 17" d; 150 lb. Oak or walnut finishes ..... \$3,850/pr

#### Model 2C 4-Way Speaker

Floor-standing 4-way bi-wired speaker. Features 10" cone subwoofer; 8" cone woofer; 4.5" cone midrange; 1" dome tweeter. FR 29-21,000 Hz  $\pm$  2 dB; power range 40-150 W; sens 89 dB SPL/W/m; imp 8 ohms. 16" w x 36" h x 10" d; 60 lb. Oak or walnut ..... \$1,125/pr

### VELODYNE ACOUSTICS

#### ULD-18 Powered Subwoofer

Floor-standing subwoofer with servo-controlled long-throw 18" driver with 3" peak-to-peak linear travel; 350-W amplifier; electronic crossover set at 85 Hz; level control to match subwoofer output to satellite speaker output; walnut, oak, or black. FR 15-85 Hz  $\pm$  3 dB; max undistorted output of 32 Hz 114 dB; cabinet 23" w x 31" h x 22" d; amp 17" w x 3.5" h x 11" d ..... \$1,850  
**ULD-15.** As ULD-18 but with 15" driver and 17" w x 22" h x 18" d cabinet, output capability 109 dB at 32 Hz ..... \$1,350

#### ULD-12 Powered Subwoofer

12" servo-controlled down-firing driver; 100-W rms Class B amplifier; passive crossover set at 85 Hz; line- or speaker-level connection; subsonic filter -3 dB at 15 Hz; walnut or oak veneer. FR 15-85 Hz  $\pm$  3 dB; output capability 103 dB; cabinet 16" w x 17" h x 21" d; controller 8" w x 1.5" h x 6" d; 32 lb ..... \$849

### WHARFEDALE

#### Diamond V Speaker

2-way bass-reflex speaker with 6" polypropylene woofer, 0.75" tweeter. FR 40-20,000 Hz; imp 8 ohms; recommended power range 15-100 watts program ..... \$600/pr

#### Active Diamond Plus Speaker

Built-in amp with 3rd-generation monolithic devices; on/off switch; volume control; bass reflex; 4.5" woofer, 0.75" tweeter; 5th-order crossover; choice of 6 finishes ..... \$500/pr

#### Diamond III Speaker

2-way speaker with 4.5" woofer, 0.75" tweeter.

with 5th-order crossover, in choice of 15 finishes. FR 5-20,000 Hz; output 101 dBA DIN; imp 8 ohms; power range 15-100 W ..... \$300/pr



Velodyne ULD-18, ULD-15, and ULD-12

### YAMAHA

#### Monitor Speakers

##### NS-1000X 3-Way Speaker

Bookshelf speaker with 12" pure-fiber cone woofer, 3.5" beryllium-dome midrange; 1.12" tweeter. Features in-line configuration with rounded baffle; low-distortion crossover network; midrange and tweeter level controls. Music input power 200 W; sens 90 dB SPL/W/m. 16.75" w x 27.75" h x 13.19" d ..... \$1,980/pr

##### NS-1000M 3-Way Speaker

Bookshelf speaker with 12" woofer, 1.12" beryllium-dome midrange; 3.5" tweeter. Features tangential-edge suspension; acoustic-suspension design; acoustic equalizers. Music input power 200 W; sens 90 dB SPL/W/m. 14.75" w x 26.62" h x 12.89" d; 68.2 lb ..... \$1,398/pr

##### NS-500M 3-Way Speaker

Bookshelf speaker with 12" carbon woofer, 4" titanium-carbide semi-dome midrange; 1.19" beryllium-dome tweeter. Features resonance-free enclosure with 3-way mitered construction; low-distortion crossover network; midrange and tweeter level controls. Music input power 200 W; sens 92 dB SPL/W/m. 14.75" w x 26.75" h x 12.75" d; 51.7 lb ..... \$798/pr

##### NS-100X 3-Way Speaker

Bookshelf speaker with 9" pure-carbon-fiber cone woofer, 2.36" pure-carbon fiber cone with titanium-carbide dome midrange; 1.19" titanium-carbide dome tweeter. Features field-isolation dual-magnetic system; low-distortion crossover network. Music input power 160 W; sens 91 dB SPL/W/m. 12.25" w x 20.88" h x 10.88" d; 30.8 lb ..... \$498/pr

##### NS-20M 3-Way Speaker

Bookshelf speaker with 9" pure-spruce cone woofer, 1.88" titanium-carbide semi-dome tweeter; 1.12" titanium-carbide semi-dome supertweeter. Features resonance-free enclosure with 3-way mitered construction. Music input power 160 W; sens 91 dB SPL/W/m. 10.62" w x 16" h x 10" d; 20.9 lb ..... \$398/pr

##### NS-10M 2-Way Speaker

Bookshelf speaker with 7" single-sheet white-cone woofer, 1.36" soft-dome tweeter, acoustic-suspension enclosure. Music input power 100 W; sens 90 dB SPL/W/m. 8.44" w x 15" h x 7.75" d; 13.2 lb ..... \$338/pr

##### NS-W2 Super Woofer

Supplements bass response for any speaker system. Especially useful for compact speakers. Features 10" woofer; built-in 40-W amp with volume control; magnetic shielding; easy system connection. 17.81" w x 14" h x 12.36" d; 24.6 lb ..... \$249 ea

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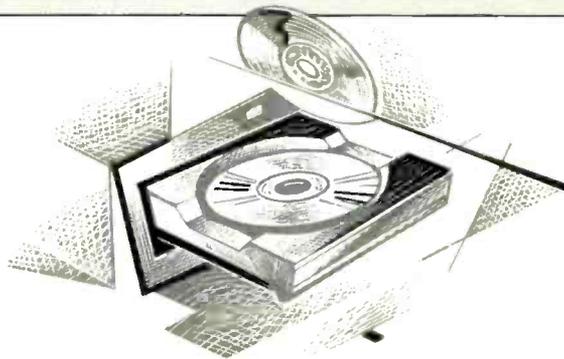
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# COMPACT DISC PLAYERS



## ACCUPHASE BY MADRIGAL

### DP-70 Remote-Controlled CD Player

Play, track search, pause on front panel; number keypad, stop, repeat (all, 1, phrase), index search, display (track and index or time), scan, and output-level controls behind panel; fixed and variable RCA outputs; XLR balanced output; 75-ohm coaxial cable output; optional wide-band optical-fiber output; digital output pins; track selection in <1 sec with linear motor; 4-times oversampling (176.4 kHz) digital filters; discrete digital-to-analog converter; 5-pole GIC Butterworth low-pass filters; isolating optocouplers; independent power supply for digital and analog circuits; 4 optocouplers input digital data, latch clock signal, deglitch signal to D/A converter; directly coupled 0-dB-gain buffer amp as output stage with push-pull DC servo direct coupling; metal shielding; passive elements and buffer amp in de-emphasis circuit; ceramic composite resin floating mounting; legs lathed from pure brass bar; hairline-finish golden panel and natural persimmon sideboard; infrared remote needs 2 AA batteries. Pass-band ripple of digital filters  $\pm 0.00005$  dB with attenuation of <100 dB; 46.4 lb ..... \$5,000

## ACOUSTIC RESEARCH

### CD-04 Remote-Controlled CD Player

Drawer-loading CD player with proven 14-bit quadruple-oversampling DAC. Features programming of 99 tracks in any order, 99 tracks in sequential order; skip forward; skip back; fast forward; fast reverse; time/track selection; repeat track, disc; full-function remote control; 1-beam laser; 14-bit digital filtering; dual D/A converter. Oversamples at 176.4 kHz. Displays current track number, elapsed time of current track, elapsed time on disc, remaining time on disc. 17" w x 4.33" h x 14.5" d ..... \$490

## ADC

### 16/2R Remote-Controlled CD Player

Slide-drawer-loading CD player with full-function remote control and advanced error-processing circuitry for precise tracking and stability. Features programming of 16 tracks in any order; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, or program; 7-pole (7th-order) analog filtering; 3-beam laser. Cues by track number. Samples at 44.1 kHz. Displays current track number, elapsed time of current track; remaining time on disc; program in memory. 17" w x 3.12" h x 11.75" d; 10 lb ..... \$250

## A/D/S/

### Atelier CD3 Remote-Controlled CD Player

Programs 30 tracks in any order; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, phrase, program; head-

phone jack with adjustable level; digital filtering (resampling frequency 88.2 kHz); 3-beam laser. Displays current track number, elapsed time of current track, remaining time on disc, program in memory. Cues by track number, index number. Max line output 2 V; headphone output 2 V; 20 lb; 17.5" w x 2.75" h x 14.8" d ..... \$1,399

### Atelier CD4 Remote-Controlled CD Player

Cast laser and transport assembly shock mounted with rubber isolators, aluminum and steel chassis/housing, and multiple power supplies to isolate digital and analog stages for minimum interaction and noise generation. Servo-laser switches focus intensity depending on quality of disc to maximize performance. Brick-wall digital filter works in conjunction with advanced multiple-pole low-pass filter. Error correction uses variable-size window; 16-bit D/A converters; fast-focus 3-beam laser; programming of 16 tracks in random order; repeat disc, track, phrase, or program; random access by time within a track; access by index point; audible fast search. Displays elapsed time from track start, remaining time to disc end, track/program selection number, index, program in memory ..... \$999



a/d/s Atelier CD4

## AIWA

### XC-001 Remote-Controlled CD Player

Features remote control; programming of 20 tracks in any order; timer play function; repeat disc and program; audible 2-speed cue and review; auto blank; 10-key direct-access pads on front panel and remote; comprehensive FL display. Oversamples at 176.4 kHz. 16.94" w x 3.9" h x 12.06" d; 9.9 lb ..... \$500

### DX-1500 Remote-Controlled CD Player

Drawer-loading CD player with 9-function remote control. Features programming of 16 tracks in any order, 99 tracks in sequential order; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, program; headphone jack with adjustable level; sound audible during fast scan. Samples at 44.1 kHz. Displays current track number, elapsed time on disc, program in memory, remaining time on disc. 13" w x 2.89" h x 11.75" d; 7.5 lb ..... \$295

## AKAI

### CD-A70-B Easy-Programming CD Player

Programs virtually unlimited number of tracks with AND, TO and WITHOUT keys (to play tracks 1, 5, 10, 11, 12, 13, 14, 16, 17, 18, press 1 AND 5 AND 10 to 18 WITHOUT 15); skip forward; skip

back; fast forward; fast reverse; cancel; repeat track, disc, phrase, program; 32-function remote control; 3-beam laser; 90-dB-per-octave digital filter; 7th-order active analog filter; single D/A converter; sound audible during fast scan. Cues by track and index number. Oversamples at 88.2 kHz. Displays current track number, elapsed time of current track, elapsed time on disc, program in memory. Anti-resonant construction including high-polymer cabinet, insulated floating suspension, and support feet for accurate tracking; gold-plated RCA jacks; subcode terminal; stabilized servo control; independent left/right monaural amps. 17.3" w x 3.1" h x 10.2" d; 8.6 lb ..... \$399

## AUDIO BY VAN ALSTINE

### Transcendence CD Player

Drawer-loading CD player with Class-A discrete FET filter circuits, line drivers, and separate 45,000  $\mu$ F audio and filter-section power supplies. Features critically damped ( $Q=0.5$ ) 18 dB/octave filters with half-ampere drive capability at 200 V/ $\mu$ sec; 16-bit, quadruple oversampling digital filters; programs 20 tracks or index points; repeat; skip forward and back; time and track display; infrared remote control optional. 16.5" x 3" x 11.5"; 9 lb ..... \$870

## AUDIOQUEST

### AQ CD-IX Oversampling CD Player

Drawer-loading CD player with premium capacitors and mechanical damping. Features skip forward and back; fast forward and reverse with sound audible; repeat disc; headphone jack; dual D/A converters; cues by track; oversamples at 176.4 kHz; displays track number; has 4 Audioquest sorbothane isolation feet ..... \$995

## BANG & OLUFSEN

### Beogram 5500 Programmable CD Player

Integrates with Beosystem 5500; programs 20 tracks; adds time of programmed tracks; displays time remaining on disc; skip forward and back; 3-speed forward and reverse; direct access by track number; intro scan; 16-bit quadruple oversampling; Bessel elliptical analog filters; auto space; silver and black; controlled by Master Control Panel (comes with Beomaster 5500 receiver); 2 D/A converters; digital output. 16.5" w x 3" h x 12.75" d ..... \$999

### Beogram 3300 Remote-Controlled CD Player

Communicates with other Beosystem 3300 components (stops when cassette deck comes to end of tape; deck stops when disc ends); front panel displays operating status; sensi-touch controls; display of track number, index number, track time, time left on disc; skip forward and back; 4-sec auto space; optional bracketed shelf for wall mounting; 16-bit, quadruple oversampling. 16.5" w x 3" h x 12.25" d ..... \$699

# COMPACT DISC PLAYERS

## Beogram CDX Top-Loading CD Player

Skip forward and back; clear key cancels unwanted tracks or cancels program; quadruple oversampling; search without program audible; digital and analog filters; displays track numbers (up to 20), programmed tracks, elapsed time of track or disc, current track and index number; programs 40 tracks in any order; repeats disc or program up to 4 times; 14-bit D/A conversion; integral output cable. 16.5" w x 3" h x 12.25" d; 12.4 lb ..... \$699

## CALIFORNIA AUDIO LABS

### Tercet Wave-Shaping CD Player

Remote-controlled solid-state CD player with Wave-Shaping digital circuits to reduce odd-order harmonics and other distortions. Controls include fast forward and reverse, skip forward and back, index skip forward and back, repeat ..... \$995

## CAMBRIDGE BY CELESTION

### CD2 16 x 16 CD Player

Remote-controlled 16-bit CD player with 16-times oversampling digital filtering (at 705,600 Hz). Controls for open/close, repeat, program, index skip, search, track skip, play, pause, stop, and on/off; display of track, index, time; indication of pre-emphasis, pause, repeat, error; passive R-C low-pass analog filter for 30-dB attenuation; 8 D/A converters ..... \$1,698

## CARVER

### DTL-200 Mk II Remote-Controlled CD Player

With 3-beam laser and Digital Time Lens circuitry to change frequency balance and ratio of L-R and L+R. Programs 12 tracks in any order, 99 in sequential order; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, phrase, and program; 24-function remote control; quadruple oversampling (at 176.4 kHz); error indication; dual D/A converters. Cues by track and index number. Displays current track number, elapsed time of current track, elapsed time on disc, remaining time on disc, program in memory. Sound audible during fast forward and reverse ..... \$699

### DTL-50 Remote-Controlled CD Player

With 3-beam laser and Digital Time Lens. Programs 9 tracks in any order, 99 in sequential order; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, phrase, and program; 12-function remote control; 88.2 kHz oversampling; dual D/A converters. Cues by track and index number. Displays current track number, elapsed time of current track, elapsed time on disc, remaining time on disc, program in memory. Sound audible during fast forward and reverse ..... \$559

## DBX

### DX5 Sound-Processing CD Player

Remote-controlled CD player with 3 processing circuits (compression, Digital Audio Impact Recovery [DAIR], and increased/decreased ambience), each independently bypassable. Compression control is for background listening, making car cassettes, and easier taping of CD's; DAIR adds impact to musical transients; ambience adds or subtracts left-right information in midrange and treble frequencies. Features programming of 16 tracks in any order; repeat track, disc, program, or A-B phrase; skip forward; skip back; audible fast forward and reverse; error LED to show disc correction; headphone jack with adjustable level; dual 16-bit D/A converters; advanced error processing; 2-

band compressor; impact circuit. Displays track number, total tracks, elapsed time of track, disc time, and program stored in memory. Cues by track or index number. Oversamples at 176.4 kHz. 17.12" w x 11.88" d x 3.5" h ..... \$699



dbx DX5

### DX3 Sound-Processing CD Player

Drawer-loading CD player with a 3-beam laser, digital filter with a 2-time oversampling frequency (88.2 kHz), and 3 dbx signal-processing circuits: DAIR, compression control, and ambience control (see above). Features programming of 9 tracks in any order; repeat track, disc, or program; cancel; skip forward; skip back; audible forward/reverse scan. Cues by track and index number. Displays current track number and elapsed time of current track. 17.12" w x 3.69" h x 11.44" d ..... \$599

## DENON

### DCD-3300 Remote-Controlled CD Player

Features double super-linear converter; quadruple oversampling digital filter; CALP filter; LC-OFC analog filter; twin power transformers; optical isolator; 5 independent power supplies; separated digital and analog circuits; BMC pickup chassis; digital-output terminal; optical digital output terminal; headphone jack; 20-track random programming; 10-key direct selection; index search; time search; repeat function; auto space; timer play; emphasis display; 8-digit FL display ..... \$1,700

### DCD-1700 Remote-Controlled CD Player

Features double super-linear converter; quadruple-oversampling digital filter; CALP filter; LC-OFC analog filter; 5 independent power supplies; separated digital and analog circuits; BMC pickup chassis; digital-output terminal; headphone jack; 20-track random programming; 10-key direct selection; index search; time search; repeat function; auto space; timer play; emphasis display; 8-digit FL display ..... \$900

### DCD-1500II Remote-Controlled CD Player

Features double super-linear converter; quadruple oversampling digital filter; LC-OFC analog filter; optical isolator; 4 independent power supplies; BMC pickup chassis; digital-output terminal; optical digital output terminal; headphone jack; 20-track random programming; 10-key direct selection; index search; A-B repeat; repeat function; auto space; auto edit; timer play; emphasis display ..... \$675



Denon DCD-900

### DCD-900 Remote-Controlled CD Player

Features super-linear converter; double oversampling digital filter; LC-OFC analog filter; 4 independent power supplies; headphone jack; 20-track random programming; 10-key direct selection; A-B repeat; repeat function; auto space; timer play; emphasis display ..... \$480

### DCD-800 Remote-Controlled CD Player

Features super-linear converter; quadruple oversampling digital filter; LC-OFC analog filter; 2 independent power supplies; headphone jack; 20-track random programming; 10-key direct selection; repeat function; auto space; auto edit; timer play; emphasis display; 8-digit FL display ..... \$380

### DCD-500 Remote-Controlled CD Player

Features super-linear converter; double oversampling digital filter; 2 independent power supplies; headphone jack; 15-track random programming; 10-key direct selection (remote only); repeat function; timer play; emphasis display; 6-digit FL display ..... \$300

## EMERSON

### CD170R Remote-Controlled CD Player

Programs up to 15 tracks in any order; skip forward; skip back; 2-speed fast forward and reverse; index search; repeats disc, program, phrase; displays total tracks, total playing time, current track number, elapsed time; 3-beam laser; play and pause indicators. 17.1" w x 2.8" h x 4" d ..... \$350

CD160. Similar to CD170R except lacks remote control ..... \$300



Emerson CD160

## EUPHONIC TECHNOLOGY

### ET650PX Hand-Crafted CD Player

4-times-oversampling 16-bit CD player with assembly done by hand. Features dual digital filters; maximum-strategy error correction; decoupled digital circuits with improved D/A converters; isolated high-slew analog section with independent discrete low-imp power supply; damped transport section ..... \$995

## FISHER

### DAC-205B CD Changer

5-disc CD changer that does not need disc magazines; discs load into 5 individually controlled sliding drawers. Features random play to mix tracks from all 5 discs; 30-button wireless remote control; 32-track programming; 10-sec intro scan; direct-access track search; skip forward/back; forward/reverse scan; 4-way repeat; multi-function display ..... \$500

### AD-815B Remote-Controlled CD Player

Features 6-function wireless infrared remote control; 8-selection programmable with scan function; skip forward/back; all/one/off repeat function with LED indicator; digital display of track and index numbers; index search; 3-beam laser; digital filtering ..... \$250

# COMPACT DISC PLAYERS

## GOLDSTAR

### GCD-613 Programmable CD Player

Programs 9 tracks in any order; repeat disc and program; forward and reverse scan; displays total time, elapsed time, track number; digital and active filter. FR 5-20,000 Hz  $\pm$  1.5 dB; dynamic range >90 dB; S/N >90 dB at 1,000 Hz; output 2 V rms; THD 0.03%. 13.6" x 3.6" x 11" ... \$250

## HARMAN KARDON

### HD300 Remote-Controlled CD Player

Wireless remote control; programs 15 tracks in any order; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, phrase and program; cues by track number; 3-beam laser; single D/A converter; 16-bit linear-conversion digital filter oversamples at 88.2 kHz; all discrete, gradual analog filter ... \$575

### HD100 Programmable CD Player

Programs 36 tracks; track and index search; audible 2-speed forward and reverse; displays track number, elapsed time, and program number, or total tracks, total time on disc, and remaining time; metal chassis ... \$375

## HITACHI

### DA005 Remote-Controlled CD Player

Direct PIT servo; 5-stage error correction; 121-band digital filter; programs 15 tracks in any order; skip forward and back; fast forward and reverse; cancel; repeat track, disc, phrase, program; cue by track; 28-function remote; headphone jack; adjustable headphone level; 3-beam laser; 1 D/A converter; displays current track number, elapsed time of current track, remaining time on disc; sound audible during fast scan. Headphone output 2 V; 11 lb ... \$550

### DAC-60 Remote-Controlled 6-CD Changer

Magazines hold 6 discs or single disc; digital filtering; programs 32 tracks from unit or remote; repeats all 6 discs; random play; 2-speed audible search in forward and reverse; headphone jack with level control; displays disc number, track number, elapsed time of disc, total playing time, number of tracks on disc ... \$399

*Following models all have 3-beam laser, self-program search, index search, and random play.*

### DA-009 Remote-Controlled CD Player

10-key direct random access; Roulette Play begins sequential play with random track; programs 24 tracks; 5-way repeat; skip; 2-speed search; display shows programmed tracks; 121-step digital filtering ... \$300

### DA-405 Remote-Controlled CD Player

Remote volume control; 10-key direct random access; floating suspension; timer play; programs 15 tracks; 4-way repeat ... \$250

### DA-400 Programmable CD Player

Programs 15 tracks; floating suspension; 2-speed search; repeat; timer play ... \$200

DA-7000. Similar to above except midi-sized and programs 24 tracks ... \$190

## JVC

### XLV1100BK Compact Disc Player

Drawer-loading CD player with wireless remote control with numeric keypad for direct track access, programming, and volume control. Features 15-track random programming; 3-beam laser pickup; separate chassis for analog, digital, and servo circuits; Y-servo with high-balance and high-trackability servos; V-sensor to prevent mistracking caused by vibration; indepen-

dent suspension; digital filter; quadruple oversampling; Gm deglitcher; 2-speed search; index search; intro-scan; index play; index skip; track skip; headphone jack with adjustable level; 2 outputs (one fixed, one variable); JVC Compu-Link remote compatible ... \$1,000

### XL-M700BK 7-Disc Changer

Drawer-loading CD player with an auto changer, 6-disc magazine, and single-disc tray for 7-disc play. Features programming of 15 tracks in any order from 7 discs; programming and transport functions via wireless remote control; Y-servo; oversized fluorescent display; direct track access with 21-key touch pad; continuous, programmed, random, and timer play; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc; headphone jack with adjustable level; digital filtering; single D/A converter; sound audible during fast scans; Compu-Link remote compatible. Cues by track number. Oversamples at 88.2 kHz. Headphone output 2 V ... \$600

### XLV550BK Compact Disc Player

Drawer-loading CD player with wireless remote control with numeric keypad for direct track access and volume control. Features 3-beam laser pickup; Opticalink; Y-servo; independent suspension; large insulators; vibration-damping base; radial chassis base; discrete digital filter; separate power supplies for digital and analog circuits; editing key; program chart; 32-track random programming; random play; intro scan; real time; 5-way repeat; index play and skip; multi-mode/8 digit FL display of tracks and times; motor driven line-out/headphone volume control; 2 gold-plated outputs (one fixed level, one variable); JVC Compu-Link system remote compatible ... \$450

### XLV250BK Compact Disc Player

Drawer-loading CD player with 3-beam laser pickup. Features Y-servo; independent suspension; digital filter for low noise; 15-track random programming; repeat all tracks or programmed tracks; 2-speed search; skip forward/reverse; 6-digit LCD display; headphone output; compatible with JVC Compu-Link remote control ... \$260

## KENWOOD

### DP-3300D Compact Disc Player

Basic series CD player with full-function wireless remote control. Features optical interface with KA-3300D amplifier; coaxial digital output; pure digital output switch; twin high-speed ladder network 16-bit D/A converters with FET input; quadruple-oversampling digital filters; 7-pole Butterworth FDNR analog low-pass filter; independent power supplies; Optimum Servo Control Type III; 3-beam laser; rapid direct-play; 4 play modes; 6-mode real time display; 20-track random program memory; A-B section repeat; music skip; index search key; audible manual search; auto spacing; repeat; music calendar display; auto open switch; auto loading; headphone jack with level control; phase inverter switch. THD 0.001%, dynamic range 97 dB, separation 115 dB, S/N 105 dB (all at 1,000 Hz). 17.31" w x 4.31" h x 12.44" d; 22.1 lb ... \$850

### DP-990D Compact Disc Player

Basic series CD player with full-function wireless remote control. Features high-rigidity mechanism; multi-insulation; 16-bit integrator D/A converter with constant-current drive; double oversampling digital filter; discrete 7-pole Butterworth low-pass filters; independent power

supplies and optimum ground pattern; Optimum Servo Control Type III; 3-beam laser; rapid direct-play; 4 play modes; dual time display; 20-track random program memory; A-B section repeat; music skip; track search; audible manual search; auto spacing; repeat; auto loading; headphone jack with level control. THD 0.002%, dynamic range 96 dB, sep 98 dB, S/N 98 dB. 17.31" w x 3.69" h x 12.31" d; 11 lb ... \$460

### DP-860 Compact Disc Player

CD player with wireless remote control. Features CD player with wireless remote control. Features 20-track random programming; Optimum Servo control; 3-beam laser; double oversampling digital filter; 10-key input; track skip & search; total/track playing time, track number, memory display; repeat; headphone jack. THD 0.007%, dynamic range 92 dB (at 1,000 Hz). Kenwood unified-remote compatible. 16.56" w x 3.44" h x 10.31" d; 8.3 lb ... \$280

## KINERGETICS

### KCD-30 Gold Series Remote CD Player

Volume and balance controls on front panel to drive power amp directly; dynamic processing circuits; corrected-slope filter; hysteresis-distortion cancelling circuit; no capacitors in signal path; servo loop to eliminate DC offset; 3-speed search; dual D/A converters; 1-beam laser; 4-times oversampling; spring-isolated transport; program memory for 226 discs; indexing; 19" rack mount. Output level 4 V; 14 lb; 19" w x 3.75" h x 12.6" d ... \$1,495

## KYOCERA

### DA-910 Remote-Controlled CD Player

1-beam laser; digital filtering; programming of 24 tracks in random order; display of current track number, elapsed time of current track, remaining time on disc, program stored in memory; skip forward; skip back; cancel; repeat track, disc, phrase, program, cue by track number, index number; 8-function remote control; headphone jack (adjustable output). Max line output 5 V; THD at 1,000 Hz 0.005%; S/N 95 dB; sep 90 dB; FR 5-20,000 Hz  $\pm$  0.5 dB; 22 lb; 17" w x 5.5" h x 13" d ... \$1,600

### DA-710cx Remote-Controlled CD Player

Programs 24 tracks in any order, 99 tracks in sequential order; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, phrase, program; 39-function remote control; headphone jack with adjustable level; digital filtering; 3rd-order analog filtering; dual D/A converters; sound audible during fast scan. Cues by track and index number. Displays current track number, remaining time on disc, and program in memory. Headphone output 50 mW. 18.12" w x 3.56" h x 12.12" d; 13 lb ... \$800

### DA-510cx Remote-Controlled CD Player

Quadruple-oversampling digital filters; 2 discrete D/A converters; headphone jack with adjustable volume; gold-plated RCA jacks; 39-function remote control; programs 20 tracks; optical isolation between digital and analog sections; digital output; walnut veneer side panels ... \$650

### DA-610cx Remote-Controlled CD Player

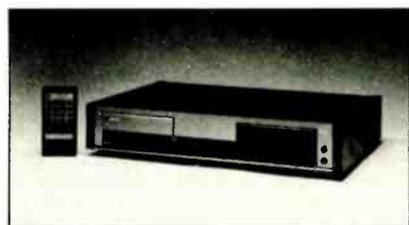
3-beam laser; 24-key hand-held remote control can be used in system remote or separately; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, program; programs 15 tracks in any order, 99 tracks in sequential order; headphone jack with adjustable level; 9th-order analog filtering; single D/A converter; sound audible during fast scan. Displays current

# COMPACT DISC PLAYERS

track number, remaining time on disc, program in memory. 18.12" w x 3.56" h x 12.12" d; 11.11 lb ..... \$550

## DA-410cx Remote-Controlled CD Player

10-button keypad on front panel and remote; programmability; compatible with timers; anti-resonant construction; ceramic chassis spacers; zirconia ceramic laser guide shafts; double oversampling; 16-bit D/A conversion; 3rd-order Bessel-derived analog filters; fluorescent display; headphone jack with level control; walnut veneer side panels ..... \$500



Kyocera DA-410cx

## DA-310cx Remote-Controlled CD Player

Anti-resonant construction; zirconia ceramic laser guide shafts; 2-times oversampling; 16-bit digital-to-analog conversion; 3rd-order Bessel-derived analog filters; fluorescent display; headphone jack with level control; walnut veneer side panels ..... \$350

## LUXMAN

### D-109 Remote-Controlled CD Player

Features full-function remote control; serial remote jacks for connections to other Luxman products; digital output sends digital signal to Luxman LV-109 integrated amp; 1-4 time display functions; programs up to 20 tracks; index scan; A-scan plays first 10 sec of music; A/B switch to mark beginning and end of selected track(s) for repeat; memory check. FR 5-20,000 Hz ( $\pm 0.5$  dB); THD 0.003% (1 kHz); S/N, dynamic range 100 dB; 17.25" x 4" x 15.25"; 27.5 lb ..... \$1,500

### D-113 Programmable CD Player

Double-oversampling digital filter; active 3rd-order analog low-pass filter; 3-beam laser; system remote capability; 16-program random memory. FR 5-20,000 Hz (+0.5/-1.0 dB); THD 0.007%; S/N 94 dB ..... \$650

### D-102 Programmable CD Player

15-track programmability; skip functions; 10-key input; memory call switch; repeat; headphone level control; timer play switch. FR 5-20,000 Hz  $-0.5$  dB; THD  $<0.004\%$ ; S/N  $>96$  dB; dynamic range  $>96$  dB. 17.23" w x 3.38" h x 12.31" d; 11.9 lb ..... \$550

### D-90 Remote Controlled CD Player

15-program random memory; separate power supplies for analog and digital circuits; 3-beam laser; track/index, track elapsed time and disc remaining time display; headphone level control. FR 20-20,000 Hz  $+0.5/-1.0$ ; THD 0.005%; S/N 91 dB; dynamic range 90 dB ..... \$450

## MAGNAVOX BY NAP

### CDV474 CDV/CD/Videodisc Player

Remote-controlled combination player for CD-audio, CD-video, and LaserVision discs. Auto ID of disc type; programming. Video features include fast motion; slow motion; reverse play; freeze frame; random access ..... \$749-\$799

## CDB650 FTS CD Player

Favorite Track Selection memorizes programs from various discs (up to 785 tracks). Extra altered output; music scan; single play; digital output for CD graphics, CD-ROM; skip forward; skip back; 3-speed FF and reverse; 4-sec record-pause insertion; anti-jamming protection; repeat track, disc, program; headphone jack with adjustable level; infrared remote control; 1-beam laser; low-order low-pass digital filter; high-order analog filter; dual D/A converters. Cues by track number. Oversamples at 176.4 kHz. Displays current track number, elapsed time of current track, elapsed or remaining time on disc. Headphone output 0-5 V. 16.5" w x 3.5" h x 11.75" d; 9.75 lb ..... \$480

## CDB473 FTS CD Player

Favorite Track Selection memorizes programs from various discs (up to 785 tracks); touch-close drawer; 24-function remote control with 10-digit keypad and volume control ..... \$379

## CDB472 Remote-Controlled CD Player

Programs 20 tracks in any order; dual 16-bit D/A converters; headphone jack; 6-function remote; skip forward and back; 3-speed search (audible at 2 slower speeds); repeat; index access; quadruple oversampling digital filtering. Displays track number, index number, minutes, seconds, total tracks or total time, with indications for power, memory, errors, pause, repeat ..... \$330

## CDB471 Programmable CD Player

Programs 20 tracks in any order; 3-speed search (music audible at 2 slower speeds); quadruple oversampling digital filter; dual 16-bit D/A converter; skip forward and back; time or track display ..... \$280

## MARANTZ

### CD-94 FTS CD Player

Features dual 16-bit converters, quadruple oversampling, digital outputs with optically coupled link to optional CDA-94 separate D/A converter; Favorite Track Selection memorizes over 200 disc programs; shuffle play; random track programming; intro scan; three independent power supplies for digital, analog, and mechanical sections; wireless remote with full programming capabilities. Black rosewood side panels ..... \$1,700

CD-94G. As above with rose-gold finish and rosewood side panels ..... \$1,800

### CD-75DX Compact Disc Player

Features dual 16-bit converters; quadruple oversampling; digital data output for outboard D/A converter; bi-directional track skip; cue and review; random track programming and repeat. Satin black finish ..... \$450

CD-65DX. Similar to above ..... \$400

### CD-50 Compact Disc Player

Drawer-loading CD player with wireless remote control. Features 3-beam laser; programming of 16 tracks in any order; skip forward; skip back; fast forward; fast reverse; repeat track and disc; digital filtering; dual D/A converters. Cues by track number. Oversamples at 88.2 kHz. Displays current track number, elapsed time of current track, remaining time on disc. 16.5" w x 3" h x 10.88" d; 7.7 lb ..... \$350

### CD-40 Compact Disc Player

Features 16 track programming, 16-bit double oversampling; forward/reverse search/skip; repeat play; track/index display. THD 0.07%; S/N 90 dB; 3" h x 16.5" w x 10.88" d ..... \$300

## McINTOSH

### MCD 7005 Compact Disc Player

Features wireless remote control with volume control; direct-access track, index, and time selection; volume control through McIntosh Precision Ladder Attenuator; same error correction as MCD 7000 with additional 8-bit error correction; full 16-bit D/A converters with 4-times oversampling. 32 lb ..... \$1,599

### MCD 7000 Compact Disc Player

CD player with linear-torque, vibration-free, controllable-speed motor with digital PLL motor control to keep speed at correct value. Features double digital filtering; remote control; music scan; skip forward and back; repeat track; 3-speed music search with search protection; pause; programming of up to 20 tracks in any order; cancel; headphone jack with adjustable level; damaged disc/mute error-correction indicator; positive-lock synchronization. Displays current track number and elapsed time. FR 2-20,000 Hz  $\pm 0.3$  dB; S/N 96 dB; dynamic range 96 dB. 16-bit equivalent through oversampling and 14-bit D/A conversion. 22 lb ..... \$1,399

## MEITNER AUDIO BY MUSEATEX

### CD 3 Remote-Controlled CD Player

Top-loading CD player features BRPI digital filter (no analog filter used); gyroscopically balanced drive; optical coupling between digital filter and D/A converter; mechanical and electrical isolation of DAC and analog section; 2 external power supplies; linear-tracking laser; error-correction indicator; emphasis indication ..... \$2,195

## MERIDIAN BY MADRIGAL

### 207 Professional 2-Part CD Player

Drawer-loading CD player with additional inputs and switching for tuner and tape; 1 chassis for transport, 1 for processing; remote volume control; can operate as a preamp; programs 99 tracks in any order; skip forward; skip back; fast forward; fast reverse; repeat track, disc, or program; full-function remote control; 1-beam laser; dual D/A converters; sound audible during fast scan. Cues by track and index number. Displays current track number, elapsed time of current track, program in memory ..... \$1,795

## MICRO SEIKI

### BY ANALOG EXCELLENCE

#### C2-M2 Remote-Controlled CD Player

Remote controls direct track access, programming, display, phrase repeat, skip forward and back, search forward and back, index search; independent power supplies for each digital printed circuit board, analog PCB, servo mechanism, and FL display; quadruple oversampling; Philips laser pickup mechanism; 2 D/A converters; 3rd-order Bessel analog filter; digital and optical outputs; Brazilian rosewood cabinet; rosewood trim on remote; convertible to 18 bits with outboard processor. FR 2-20,000 Hz  $\pm 0.1$  dB. THD  $<0.0015\%$ ; S/N  $>104$  dB at 1,000 Hz; dynamic range  $>96$  dB; analog out 2 V rms; 48.4 lb ..... \$3,995

## MISSION

### PCM 4000 Programmable CD Player

Drawer-loading CD player with 16-bit quadruple oversampling (at 176.4 kHz); twin DAC-single chip; programs 20 tracks in any order; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, program; cues by track; 1-beam laser; extensive post-DAC analog filtering;

# COMPACT DISC PLAYERS

dual D/A converter; displays elapsed time, remaining time, program in memory. 17" w x 3" h x 13.5" d ..... \$699  
**PCM 7000.** Similar to above but with remote control (with volume control), optimized grounding, 4 separate regulated power supplies ..... \$999

## MITSUBISHI

### DP-311R Remote-Controlled CD Player

Features programming of 36 tracks in any order; phase button to reverse phase of 1 ch; switchable display; quadruple-oversampling digital filtering; track skip; isolating feet; keypad for programming and direct track access; index cueing with remote control; fast search with audible sound; repeat of track, disc, program, or phrase; displays current track and index numbers, time elapsed in track, remaining time on disc; die-cast chassis with internal bracing; stiffened top panel; Music Calendar display. 16" x 3 3/4" x 13"; 14 lb ..... \$740

### DP-409R 5-Disc Compact Disc Changer

Auto-changer holds 5 discs; 3-beam laser; repeat track and disc; skip track; 30 segment programmable; 16-function remote control ..... \$550

### DP-209R Compact Disc Player

Features 3-beam laser; 36-selection programmable; skip function; repeat play; 10-function remote; adjustable headphone level ..... \$300

### DP-109 Compact Disc Player

Features 3-beam laser; 36-selection programmable; skip function; repeat play ..... \$240

## NAD

### 5300 Monitor Series CD Player

Wireless remote control; dynamic range control; ambience circuit; quadruple oversampling; separate D/A converters; error display; 3-beam laser; skip and scan forward and back; displays track number, elapsed and remaining time; repeats disc; programming ..... \$898

### 5240 Remote-Controlled CD Player

Wireless remote control; dynamic range control; 3-beam laser; skip and scan forward and back; displays track number, elapsed and remaining time; repeats disc; programming of up to 16 tracks ..... \$448

### 5220 Programmable CD Player

3-beam laser; skip and scan forward and back; displays track number, elapsed and remaining time; repeats disc; programming of up to 16 tracks; timer compatible ..... \$348

## NAKAMICHI

### OMS-7AII Compact Disc Player

Drawer-loading CD player. Features 3-beam laser; digital filtering (resampling frequency 176.4 kHz); dual 16-bit, glitch-free D/A converters; programming of 24 tracks in random order; display of current track number, elapsed time of current track, remaining time on disc, program stored in memory; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; cancel; repeat disc, program; cue by track number, index number; 7-function remote control; headphone jack with adjustable level. Max line output 2 V; headphone output 35 mW; THD at 1,000 Hz 0.0025%; S/N > 104 dB; sep > 100 dB; FR 5-20,000 Hz  $\pm 0.5$  dB; 16 lb, 5 oz; 17.12" w x 3.94" h x 12.12" d ..... \$1,850

**OMS-5AII.** Similar to OMS-7AII without remote and programming functions ..... \$1,495

### OMS-3A Compact Disc Player

Drawer-loading CD player with shunt-connected de-glitching; multi-regulated power supply; magnetic chuck; remote control. Features programming of 15 tracks in any order; skip forward; skip back; fast forward; fast reverse; cancel; headphone jack with adjustable headphone level; 3-beam laser; 16-bit digital filter; single D/A converter. Oversamples at 88.2 kHz; displays current track number, elapsed time on disc. Headphone output 35 mW/40 ohms. 16.94" w x 3.95" h x 12.69" d; 15 lb ..... \$850

### OMS-2A Compact Disc Player

Drawer-loading CD player with shunt-connected de-glitching; wireless remote control; 15-track programming; oversamples at 88.2 kHz; headphone output 35 mW/40 ohms. 16.94" w x 2.94" h x 12.69" d; 11 lb, 4 oz ..... \$529

### OMS-1A Remote-Controlled CD Player

Programs 15 tracks; repeat; 2-speed cueing; bidirectional skip/search; double-oversampling digital filter; synchronized clocking; 16-bit D/A conversion, dual-mono analog circuitry; 5th-order analog filters; independent digital and analog power supplies; elastomer damping; 3-beam laser; displays track/time/remaining time. FR 5-20,000 Hz  $\pm 0.5$ , -1 dB; S/N > 96 dB A-wtd. 8 lb, 3 oz ..... \$329

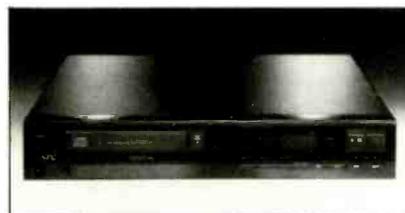
## NEC

### CD-810 Remote-Controlled CD Player

Drawer-loading CD player with wireless remote control. Features programming of 24 tracks in any order; 3-way repeat; disc-eject programming; skip forward; skip back; audible fast forward and reverse; index search; time search; variable intro search; timer play; auto space; direct program access via front-panel or remote keypad; headphone jack with adjustable level; phase-inverter; vibration-free design; optical D/A coupling; 3-beam laser; separate analog and digital power supplies. Fluorescent display indicates elapsed time of disc and track, remaining time of disc and track, elapsed time of program, and remaining time of program. 16.94" wide x 3.34" high x 12.59" deep; 19.4 lb ..... \$629

### CD-610 Remote-Controlled CD Player

Drawer-loading CD player with wireless remote control. Features programming of 24 tracks in any order; 3-way repeat; disc-eject programming; skip forward; skip back; audible fast forward and reverse; index search; timer play; variable intro scan; auto space; auto/manual editing for recording; direct program access via front-panel or remote keypad; headphone jack with adjustable level; variable output; high-linearity D/A converter; isolated optical mechanism; 3-beam laser; separate analog and digital power supplies. Fluorescent display indicates elapsed time of disc and track, remaining time of disc and track, elapsed time of program, and remain-



NEC CD-410

ing time of program. 16.94" w x 3.34" h x 12.59" d; 11.7 lb ..... \$459

### CD-510 Compact Disc Player

Drawer-loading CD player with wireless remote control. Features programming of 20 tracks in any order; 3-way repeat; skip forward; skip back; audible fast forward and reverse; timer play; intro scan; auto space; direct program access via front-panel or remote keypad; headphone jack with adjustable level; 3-beam laser. Fluorescent display indicates elapsed time of disc and track. 16.94" w x 3" h x 10.62" d; 9.2 lb ..... \$359

### CD-410 Compact Disc Player

Drawer-loading CD player with wireless remote control. Features programming of 15 tracks in any order; 3-way repeat; skip forward; skip back; fast forward and reverse; index search; intro scan; headphone jack with adjustable level; 3-beam laser; digital filter. Fluorescent display indicates elapsed time of disc and track. 16.94" x 2.75" x 11.41" ..... \$299

## NIKKO

### NCD-600 Compact Disc Player

Features full computer interface for total control of player from IBM-compatible computer. Menu driven software permits unlimited programmability and Centronics interface plugs into any printer port ..... \$4,599

### NCD-600 Compact Disc Changer

Programmable CD changer stores up to 60 discs ..... \$3,999

### CD-500 Compact Disc Player

Features remote control with 10-key direct-access pad; timer play; space play; index programming; pause; fast search; all clear; headphone output with adjustable level. Optionally rack mountable ..... \$650

### CD-300 Compact Disc Player

Features remote control; 3-beam laser; 18-track random programming; index programming; pause. Optionally rack mountable ..... \$350

## ONKYO

### DX-C600 6-Disc CD Changer

Remote-controlled magazine-loading 6-disc CD changer with opto-coupling that electrically separates digital and analog sections. Features programmed play; random shuffle play; 3 repeat modes; skip forward; skip back; fast forward; fast reverse; direct access to disc and track numbers; multi-function FL display. 17.12" w x 4.5" h x 13" d; 13.2 lb ..... \$600

### DX-530 CD Player with Remote

CD player with opto-coupling that electrically separates analog and digital sections. Features programming of 20 tracks in any order; shuffle play; repeat track, disc, program, A-B phrase, and shuffle play; direct access to tracks; auto-speed music search; index search; skip forward; skip back; 2-speed fast forward and reverse; timer function; headphone jack; motorized volume control; output CMN filter; digital filter; vibration damping; 3-beam laser; digital output terminal; printed circuit boards with specially designed insulation packet to absorb electromagnetic flux. Display indicates track number, index number, program in memory, remaining time of track/disc/program, elapsed time of track/disc/program. 17.12" w x 3.62" h x 14.06" d; 12.3 lb ..... \$600

# COMPACT DISC PLAYERS

## DX-330 CD Player with Remote

CD player with opto-coupled analog and digital sections. Features programming of 16 tracks in any order; 3 repeat modes; music search; skip forward; skip back; 2-speed fast forward and reverse; headphone jack with adjustable level; digital filter; vibration damping; CMN filter; 3-beam laser. Display indicates track number and time information. 17.12" w x 3.62" h x 14.12" d; 10.6 lb ..... \$480

## DX-230 CD Player with Remote

CD player with opto-coupled analog and digital sections. Features programming of 16 tracks in any order; 3 repeat modes; search; skip forward; skip back; 2-speed fast forward and reverse; cue and review; digital filter; 8-digit FL display; 3-beam laser; vibration damping. 17.12" w x 3.44" h x 16.06 d; 10.6 lb ..... \$355

## DX-130 Programmable CD Player

Drawer-loading CD player can be remote-controlled with selected Onkyo components. Features programming of 16 tracks in any order; 3 repeat modes; skip forward; skip back; 2-speed fast forward and reverse; cue and review; 8-digit FL display; digital filter; 3-beam laser; vibration damping. 17.12" w x 3.44" h x 14.12" d; 10.6 lb ..... \$280

## PANASONIC

### SL-P3700 Remote-Controlled CD Player

Programs 20 tracks; preset editing to compute total time of program; number keypad on remote and front panel; repeats track, disc, program; volume control on remote; average access time 1 sec; display shows total tracks and playing time, elapsed or remaining time for track or disc, program; digital double-oversampling filter. \$280

SL-P3500. Similar to above except lacks remote control. \$230

## PHILIPS BY NAP

### CD 960XBK FTS CD Player with Remote

Favorite Track Selection memorizes programming for up to 227 discs; Music Scan; 3-speed forward and reverse search; auto pause; dual 16-bit D/A converter; digital filtering at 176.4 kHz; four independent power supplies; 1-beam laser; exclusive single-chip decoder and error corrector; CD-2 integrated circuits; gold-plated electrical outputs; optical outputs. FR 2-20,000 Hz; amplitude linearity  $\pm 0.1$  dB; phase linearity  $\pm 0.2^\circ$ ; sep > 100 dB at 1,000 Hz ..... \$949

### CD 770XBK FTS CD Player

Favorite Track Selection memorizes programming for up to 227 discs (with up to 20 tracks on each disc); displays track number, index number, running time, program review; sound audible during 3-speed fast forward or reverse; digital output ..... \$549

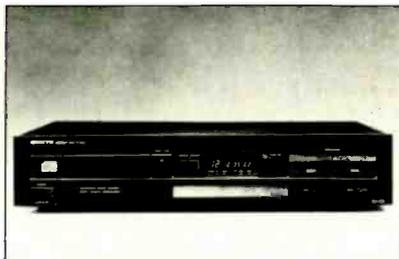
## PIONEER

### CLD-1010 LD/CD/CDV Player

LD/CD/CDV player can play 4 different types of discs: 8" and 12" LaserDiscs, compact discs, and compact disc videos. Features Pioneer SR unified remote; 10-track/-chapter programmable CD and LD play; program edit; full-auto front loading; repeat side, track, memory, program, or segment; LaserVision time search accurate to 1 second; forward and reverse chapter skip and track search; on-screen function displays; 400-line video resolution; 88.2 kHz oversampling. 16.56" w x 16.19" d x 4.75" h ..... \$800

## PD-9010X CD Player with Remote

Drawer-loading CD player with 3-beam laser and digital filtering with 176.4-kHz oversampling. Features programming of 32 tracks in any order; cancel; repeat track, disc, and program; skip forward; skip back; audible fast forward and reverse; headphone jack with



Onkyo DX-130

adjustable level. Displays track number, elapsed time of track, remaining time on disc and program in memory. Cues by track or index number. 18" w x 3.75" h x 12.19" d ..... \$600

## PD-7050 CD Player with Remote

CD player with 4 independent power supplies (analog, digital, servo and display). Features 24-track random programming with music window for programmed fade-in/fade-out and time fade; repeat track, disc, or program; skip forward; skip back; index search; 2-speed fast forward and reverse; quadruple oversampling digital filter; 2 glitch-free D/A converters; accu-focus laser; digital level control; digital fader; anti-resonance design with honeycomb chassis and large insulators; disc stabilizer with magnetic clamper; direct digital output; headphone jack with level control. Displays elapsed, total, and remaining time ..... \$425

## PD-6050 CD Player with Remote

CD player can program up to 24 tracks in any order. Features remote and front-panel direct-access keypads; repeat track, disc, or program; skip forward; skip back; 2-speed fast forward and reverse; digital filter; anti-resonance design with honeycomb chassis and floating laser pickup assembly; accu-focus laser; disc stabilizer with magnetic clamp; headphone jack with adjustable level ..... \$330

## PD-X707 Programmable CD Player

Features programming of up to 27 tracks in any order; repeat track, disc, or program; skip forward and back; 2-speed audible fast forward and reverse; subcode output; disc stabilizer; linear servo. 3.38" h x 14.19" w x 12.44" d ..... \$325

## PD-4050 CD Player with Remote

CD player can program up to 16 tracks in any order. Features repeat track, disc, or program; skip forward; skip back; 2-speed fast forward and reverse; digital filter; anti-resonance designed with honeycomb chassis and floating laser pickup assembly; disc stabilizer with magnetic clamper; headphone jack with adjustable level. Displays track number ..... \$200

## CD Changers

Models below use magazine holding 6 discs and tray for playing single discs; all have remote controls.

### PD-M90X CD Changer with Memories

Features remote programming of 80 tracks into 8 separate memories for instant recall by remote control; LCD function display on remote; pro-

gramming of 32 tracks in any order from a 6-disc magazine; random play; repeat track, disc, magazine, or program; skip forward; skip back; 2-speed audible fast forward and reverse; front-panel and remote direct-access disc and track number pads; direct digital output; digital level control; digital filter; gold-plated output jacks; anti-resonance honeycomb chassis; large insulators; linear servo control; side panels finished in genuine rosewood ..... \$800

### PD-M60 Random-Play CD Changer

Features programming of 32 tracks in any order; random play; repeat track, disc, magazine, or program; skip forward; skip back; 2-speed audible fast forward and reverse; front-panel and remote direct-access key pads; linear servo; honeycomb chassis; anti-resonant construction; digital filter. Displays elapsed, total, and programmed time ..... \$500

### PD-M40 Random-Play CD Changer

Features programming of up to 32 tracks in any order; repeat track, disc, magazine, or program; random play; skip forward; skip back; 2-speed audible fast forward and reverse; digital filter; anti-resonance design with honeycomb chassis; linear servo. Displays elapsed, total, and remaining time ..... \$375

## PROTON

### 830R CD Player with Remote

Programmable CD player with 1-beam laser; digital filter; quadruple (176.4 Hz) oversampling; random programming of 20 tracks; headphone jack with variable level; dual error-correction circuit; skip forward/back; 3-speed search, fine-step adjustment accurate to 1 sec. 2 lower speeds for precise cueing; displays total tracks, time remaining, current track and index, mins and secs elapsed; repeats track, entire disc or program ..... \$349

## QUASAR

### CD8956 Programmable CD Player

Drawer-loading CD player with direct access. Features high-speed linear-motor access; skip forward; skip back; fast forward; fast reverse; cancel; programming of 20 tracks in any order; repeat track, phrase, disc, and program; one-beam laser; single D/A converter; 96th-order FIR double-oversampling filter; audible fast scan. Cues by track and index number. Displays current track number, elapsed time of current track, elapsed time on disc, remaining time on disc. 16.94" w x 3.03" h x 0.19" d ..... \$250

### CD8946 Programmable CD Player

CD player features high-resolution digital filter; high-speed linear motor, 20-step random-access programming; multi-function FL display; preset editing; stop/search forward and reverse; 2-speed search with audible program. S/N 96 dB; THD 0.004%; FR 4 Hz-20,000 Hz  $\pm 0.3$  dB. 16.94" h x 3.03" w x 9.44" d ..... \$230

## RCA

### MCD245 Dimensia CD Player with Remote

Compact disc player with Dimensia remote-control operation and on-screen status indication when used with Dimensia monitor. Features 15-track random programming; forward/reverse search for track, index, or scan; repeat; auto switching; record protection logic; SystemLink cabling; powered disc loading drawer; directory display panel; independent suspension; manual function controls; 3-beam laser pickup. FR 5-20,000 Hz  $\pm 1.0$  dB; S/N > 95 dB;

# COMPACT DISC PLAYERS

THD 0.005% (at 1,000 Hz); sep 90 dB (at 1,000 Hz); sampling frequency 44.1 kHz. 14.63" w x 3" h x 10.63" d ..... \$299

## REALISTIC BY RADIO SHACK

### CD-1500 Remote-Controlled CD Player

Skips forward and back; 2-speed search forward and reverse; programs 24 tracks; index search; repeat tracks; switchable; floating disc tray; auto space; 3-beam laser; wireless remote needs 2 AA batteries ..... \$260

### CD-2300 Programmable CD Player

Programs 15 tracks; 3-beam laser; floating disc tray; 4-digit fluorescent display; repeats track, program, disc; scan forward and reverse ..... \$220

## REVOX

### B226 16-Bit CD Player

Drawer-loading CD player with Revox system-remote compatibility. Features 16-bit quadruple oversampling; dual D/A converters; fixed and variable outputs; 2 digital outputs; 19-step programming by track, times, or special functions; direct track/index access from 1-99; audible forward/reverse search; locate function: headphone jack with adjustable level. LCD panel indicates track number, elapsed/remaining time, track remaining time, program, and pause countdown. FR 20-20,000 Hz  $\pm$  0.1 dB; S/N > 100 dB; ch sep > 90 dB. 17.7" w x 4.3" h x 13" d; 18.7 lb ..... \$1,295

## ROTEL

### RCD820BX Programmable CD Player

Programs 20 track; repeats disc, track, or program; 16-bit quadruple oversampling; regulated power supplies. FR 20-20,000  $\pm$  0.08 dB; THD 0.0025%; S/N 100 dB. 7 lb ..... \$799

### RCD850 Programmable CD Player

Drawer-loading CD player with programming of 9 tracks in random or sequential order. Features skip forward; skip back; fast forward; fast reverse; cancel; repeat track; repeat disc; 3-beam laser; high-slope digital filter; 3rd-order analog filtering; single D/A converter. Cues by track number. Displays current track number, elapsed time of current track. 17" w x 3.81" h x 11.44" d; 9 lb ..... \$379

## SAE

### D102 CD Player with Remote

Computer-Direct-Line CD player with wireless remote control that can set volume level and program up to 20 tracks in any order. Features 3-speed audible search; oversamples at 176.4 kHz ..... \$549

## SANSUI

### CD-X901 Vintage Series CD Player

Vintage series CD player with music scan for playing back first 10 seconds of every track. Features random access programming for 20 tracks; calendar-style programming display; auto music program search; repeats phrase, track, disc; index search; 4-sec auto spacing; elapsed/total time indicators; timer switch; remote control. S/N 110 dB; FR 5-20,000 Hz. 17.63" w x 3.88" h x 15.94" d; 23.1 lb ..... \$1,300

### CD-X701 Programmable CD Player

Features 3-beam laser; oversampling digital filter; 28-key remote control; AMPS; repeat 1 track, point A to point B, and all tracks; random programming for up to 20 tracks; headphone output with volume control. S/N 105 dB; FR 5-20,000. 17.56" w x 3.75" h x 16.13" d ..... \$725

### CD-V550R Auto-Space CD Player

Drawer-loading CD player with auto spacing to add 4-second blanks between dubbing sections. Features programming of 16 tracks in any order; fast forward; fast reverse; repeat track, disc, program; 4-function remote control; headphone jack with adjustable level; combination digital/analog filtering; 3-beam laser; sound audible during fast scan. Cues by track number, index number, time. Displays current track number, elapsed time of current track, elapsed time on disc, remaining time on disc, program in memory. 8.8 lb; 16.94" w x 3.22" h x 12.36" d ..... \$370

## SANYO

### CPM1000 10-Disc CD Changer

CD changer with remote control. Features 10-disc magazine; single disc magazine; 24-button remote control; 32-track programmability; random play; intro-scan; 3-beam tracking mechanism; skip and search mechanism; multi-function FL display; internally damped suspension; mic mixing; 3-way repeat operation; 3-beam laser; adjustable output level from remote and front panel; timer play. 16.75" w x 4.5" h x 12" d; 11 lb, 14 oz ..... \$480

### CP850 Remote-Controlled CD Player

Programs 16 tracks; multi-function LCD display; 3-beam laser; isolated suspension; skip forward/reverse; forward/reverse search; repeat disc. 16.75" w x 3.5" h x 10.75" d ..... \$200

CP840. Same as CP850 but does not have remote control ..... \$180



Sanyo CP840

## SCOTT

### DA990 Remote-Controlled CD Player

3-beam laser; digital filter (oversamples at 88.2 kHz); full-function wireless remote; programs 20 tracks in any order; 16-bit D/A converter; switchable analog filter; headphone jack with volume control; big chrome-plated feet; auto space to add extra time between tracks ..... \$450

### DA963 Remote-Controlled CD Player

Programs 15 tracks in any order; skip forward; skip back; fast forward; fast reverse; repeat track, disc, program; 8-function remote control; 3-beam laser; digital and analog filtering; single D/A converter; sound audible during fast scan. Cues by track number. Displays current track number, elapsed time of current track, elapsed time on disc, remaining time on disc, program in memory. 11.1 lb; measures 17.25" wide x 3.75" high x 11" deep ..... \$300

DA952. Same as above without remote control ..... \$200

## SEARS ROEBUCK

### 97551 Programmable CD Player

Drawer-loading CD player with direct, index, and skip search. Features 3-beam laser; programming of 16 tracks in any order; skip forward; skip back; fast forward; fast reverse; repeat track, disc, and program; 9-key remote control. Displays current track number, elapsed time of current track, elapsed time on disc. 420 mm w x 85 h x 270 d; 11 lb ..... \$250

## SHARP

### SA-CD800 CD/Receiver

CD changer with AM/FM stereo receiver. Features 6-disc (5+1) changer mechanism; 3-beam laser; random play with microcomputer; 32-program auto programmable music selector; continuous play; repeat-play function; auto program search; FL multi display; 7-band graphic EQ with spectrum analyzer; audio and video function selectors; inputs for video 1, video 2, CD, phono, tape, and tuner; sound muting speaker selector (A/B/A+B); 12 AM/12 FM presets. CD section: FR 5-20 kHz S/N 93 dB; THD 0.005%. Amp section: 110 W/ch rms into 8 ohms with 0.0% THD. 17" w x 6" h x 15.69" d; 28 lb ..... \$900

### DX-C6000 6-Disc CD Changer

Multiplay 6-disc (5+1) CD player with remote control. Features 2-speed cue and review; auto program search; programmable play; random play; repeat and continuous play. 17" h x 4.44" w x 12.56" d; 14.3 lb ..... \$500

### DX-R750 Remote-Controlled CD Player

With infrared remote control; APMS; APLD; APSS; cue/review; play time display in seconds and minutes. 17" w x 3.13" h x 11.75" d ..... \$280

### DX-650 Programmable CD Player

With 3-beam laser; 20-selection random-access programming; APSS; cue/review; repeat function; front-loading disc drawer ..... \$200

## SHERWOOD

### CDP-300R Remote-Controlled CD Player

Drawer-loading CD player remote compatible with Sherwood remote-controlled receivers. Features programming of 20 tracks in any order; skip forward; skip back; fast forward; fast reverse; 1-beam laser; quadruple oversampling digital filter; 1st-order linear-phase analog filter; sound audible during fast scan. Displays current track number, elapsed time of current track, elapsed time on disc. 17.36" w x 3.25" h x 9.75" d; 11 lb ..... \$300

### CDP-250R Oversampling CD Player

Features Sherwood Digi-Link remote compatibility; 3-beam laser pickup; double-oversampling digital filter; 16-selection random programming; motorized front loading disc tray; 3-mode repeat; random-play select; auto space; auto timer play; LCD multi-function display ..... \$260

## SHURE

### D6000 Remote-Controlled CD Player

Drawer-loading CD player with remote control including remote volume. Programs 15 tracks in any order. Features skip forward; skip back; fast forward; fast reverse; cancel; repeat track; repeat disc; repeat phrase; repeat program; cue by track; cue by time; 19-function remote; headphone jack; adjustable headphone; 3-beam laser; oversamples at 88.2 kHz; independent L/R digital filters 80 dB attenuation; five-pole active above 30,000 Hz analog filter; dual D/A converter; display of current track number; display of elapsed time of current track; display of program in memory; sound audible during fast scan. Headphone output 5 V; 11 lb; 16.9" w x 2.9" h x 12.9" d ..... \$599

### SV40 Remote-Controlled CD Player

Drawer-loading CD player with volume control included on 17-function remote. Programs 15 tracks in any order. Features skip forward; skip back; fast forward; fast reverse; cancel; repeat

# COMPACT DISC PLAYERS

track; repeat disc; repeat program; cue by track; headphone jack; adjustable headphone; three-beam; oversamples at 44.1 kHz; dual-break-point analog filter; single D/A converter; display of current track number; display of elapsed time of current track; display of program in memory; sound audible during fast scan. Headphone output 5 V; 9 lb, 11 oz; 16.9" w x 2.9" h x 10.6" d ..... \$399

## SONOGRAPHE

### BY CONRAD-JOHNSON

#### SD-1 Programmable CD Player

Drawer-loading CD player with discrete FET audio circuits and power supplies designed by Conrad-Johnson. Features programming of 20 tracks in any order; skip forward; skip back; fast forward; fast reverse; repeat disc, program; headphone jack; digital filter; dual D/A converters; sound audible during fast scan. Cues by track and index number. Oversamples at 176.4 kHz. Displays current track number, program in memory; elapsed time of current track. 18" w x 3.75" h x 12" d; 8.5 lb ..... \$695

## SONY

#### CDP-705ESD Remote-Controlled CD Player

CD player with 20-key direct-access pad on both remote and front panel. Features programming of 20 tracks in any order; AMS auto music sensor; shuffle play; repeat track, disc, program, shuffle play, or user-selected phrase; track and index search; fast forward and reverse; G-chassis construction for vibration absorption; optical transfer for D/A isolation; unilinear dual 16-bit D/A converters; digital filter with quadruple (176.4 kHz) oversampling; converter deglitcher circuit; error prediction logic; linear motor-tracking mechanism; separate large-capacity transformers for digital and analog sections; direct digital output. Music calendar ..... \$1,500

#### CDP-605ESD Remote-Controlled CD Player

Remote-controlled CD player with 20-key direct-access pad on both remote and front panel. Features programming of 20 tracks in any order; AMS auto music sensor; shuffle play; repeat track, disc, program, shuffle play, or user-selected phrase; track and index search; fast forward and reverse; dual-chassis construction; unilinear dual 16-bit D/A converters; digital filter with quadruple (176.4 kHz) oversampling; converter deglitcher circuit; error prediction logic; linear motor-tracking mechanism; multiple power supply; direct digital output ..... \$1,000

#### CDP-505ESD Remote-Controlled CD Player

Remote-controlled CD player with 20-key direct-access pad on both remote and front panel. Features programming of 20 tracks in any order; AMS auto music sensor; shuffle play; repeat track, disc, program, shuffle play, or user-selected phrase; track and index search; fast forward and reverse; monocoque-chassis construction; unilinear dual 16-bit D/A converters; digital filter with quadruple (176.4 kHz) oversampling; converter deglitcher circuit; error prediction logic; linear motor-tracking mechanism; multiple power supply; direct digital output ..... \$600

#### CDP-C10 10-Disc CD Changer

Drawer-loading remote-controlled CD player with 10-disc magazine. Features programming of 20 tracks in any order, 99 in sequential order; skip forward and back; audible fast forward and reverse; cancel; repeat track, disc, phrase, and program; single D/A converter; headphone jack with adjustable level; 3-beam laser. Cues by track and index number ..... \$800



Sony CDP-C5F

#### CDP-C5F Carousel CD Changer

Drawer-loading remote-controlled CD player with motorized carousel that holds up to 5 discs at a time. Features programming of 32 tracks in any order; shuffle play; repeat play modes; AMS auto music sensor; skip forward and back; fast forward and reverse; multi-function FL display; headphone jack with adjustable level; unilinear D/A converter; oversampling digital filter; separate digital and analog power supplies; envelope differential detection ..... \$450

#### CDP-710 Remote-Controlled CD Player

CD player with a 20-key direct-access pad on remote and front-panel. Features programming of 20 tracks in any order; shuffle play; repeat track, disc, program, or shuffle play; index and track search; fast forward and reverse; auto space; timer play; 20-selection music calendar; headphone jack with adjustable level; error prediction logic ..... \$420

#### CDP-310 Remote-Controlled CD Player

Programs 16 tracks in any order; shuffle play; repeat track, disc, program, or shuffle play; track search; fast forward and reverse; auto space; timer play; headphone jack; unilinear D/A converter; digital filtering with double (88.2 kHz) oversampling; envelope error detection. LCD indicates elapsed time of track, remaining time of disc and program, track number, index number, program next track number, and program accumulation time. 17" x 4" x 13.25" ..... \$300

#### CDP-110 Programmable CD Player

Programs 16 tracks in any order; shuffle play; repeat track, disc, program, or shuffle play; track search; fast forward and reverse; auto space; timer play; headphone jack; unilinear D/A converter; digital filtering with double (88.2 kHz) oversampling; envelope error detection system. LCD indicates elapsed time of track, remaining time of disc and program, track number, index number, program next track number, and program. 17" x 4" x 13.25" ..... \$260

## TANDBERG

#### TCP 301SA CD Player

Features 16-bit quadruple oversampling; zero negative feedback; no capacitors between D/A converters and line output; digital filter and phase-linear Bessel analog filter; full programmability; separate headphone output volume control. Rosewood side panels and remote control optional. 17.13" w x 13.5" h x 13.75" d; 12.5 lb ..... \$1,895

## TEAC

#### ZD-3000 Remote-Controlled CD Player

Drawer-loading CD player with Zero Distortion circuit; gold-plated fixed and variable outputs; timer play; subcode output; in-operation program editing; all-metal chassis; floating isolation system; RC-301 20-function remote control. Programs 20 tracks in any order; skip forward and back; fast forward and reverse; cancel; repeat track, disc, phrase, program; headphone jack with adjustable level; 3-beam laser; 7th-order analog filter; dual D/A converters; sound audible during fast scan. Cues by track. Oversamples at 88.2 kHz. Displays current

track number, elapsed time of current track, elapsed time on disc, remaining time on disc, program in memory. 17.5" w x 3.44" h x 13.44" d; 17.6 lb ..... \$950

#### ZD-1000 Remote-Controlled CD Player

Number keypad on front panel and remote; headphone jack with level control; subcode output; sound audible in fast forward and reverse; Zero Distortion circuit; oversampling digital filter (at 88.2 kHz); 7th-order analog filter; 2 D/A converters; timer compatible; repeats disc, program, track, phrase; vibration-damping high-density base; 3-beam laser; linear pickup motor; displays elapsed or remaining time of current track, remaining time on disc; programs 16 tracks in any order; extra-heavy isolating feet; auto space. FR 0-20,000 Hz  $\pm 0.3$  dB; S/N >96 dB (at 1,000 Hz); dynamic range >95 dB (at 1,000 Hz); harmonic distortion 0.0025% (at 1,000 Hz); W&F unmeasurable; sep 95 dB (at 1,000 Hz); output 2 V rms; 17.5" w x 3.8" h x 11.7" d; 13.3 lb ..... \$749

#### ZD-880 Remote-Controlled CD Player

ZD digital circuit; 3-beam laser; linear pickup motor; double-oversampling (88.2 kHz) digital filter; 2 D/A converters; 75-ohm coaxial digital output; optical coupling; programs 20 tracks in random order; delete function; number keypad on unit and remote; skip; scan; index search; repeats disc, program, track, phrase; damping feet; auto space; timer standby; headphone jack with level control; optional wooden side panels. FR 0-20,000 Hz  $\pm 0.5$  dB; S/N >95 dB (at 1,000 Hz); dynamic range >95 dB (at 1,000 Hz); THD 0.003% (at 1,000 Hz); W&F unmeasurable; sep >90 dB (at 1,000 Hz); output 2 V rms; 17.1" w x 3.8" h x 11.7" d; 17.4 lb ..... \$659

#### PD-600M 6-Disc CD Changer

Programs 32 tracks in random order; digital and analog filtering; infrared remote control; shuffle play; auto space; 3-beam laser. FR 5-20,000 Hz; dynamic range >92 dB; S/N >98 dB; W&F unmeasurable; nominal harmonic distortion 0.02%; sep >90 dB ..... \$499

#### PD-450 Remote-Controlled CD Player

3-beam laser; digital filter; programs 20 tracks in random order from unit or remote; number keypad on remote; repeats track, program, disc; skip; scan; displays remaining time of track or disc. FR 2-20,000 Hz  $\pm 1$  dB; dynamic range >93 dB; S/N >95 dB; W&F unmeasurable; nominal harmonic distortion 0.02%; sep >80 dB; 17.1" w x 3.9" h x 11" d; 7.3 lb ..... \$349



Technics SL-P420

## TECHNICS

#### SL-P1200 Disco/Audiophile CD Player

Top-loading CD player for discos or production cues to any point within track. Rocker control for momentary advance or retard. Features quartz-locked pitch control ( $\pm 8\%$ ); 2-speed cueing; rear-panel remote jack for mixer; infrared remote control; auto cue to first note of desired track; FL display; twin high-speed D/A converter; double-oversampling (88.2 kHz) digital filter; 9th-order low-pass analog filter; 1-beam laser; high-speed Linear Motor Access locates track start in <1 sec; subcode output; skip forward;

## COMPACT DISC PLAYERS

skip back; fast forward; fast reverse; sound audible during fast scan; repeat track, disc, program; programming of 20 tracks in any order; headphone jack with adjustable level. Cues by track number, index number, time. Displays current track number, elapsed time of current track, elapsed time on disc, remaining time on disc, remaining time in track, program in memory. 17" w x 7" h x 15" d; 22 lb ..... \$1,295

### SI-P720 Remote-Controlled CD Player

Programmable CD player with cueing dial to cue to any point in any track. Features wireless remote control with volume adjustment; 2-speed cueing; 2-layer nonresonant base; Class AA circuitry; double-oversampling digital filter; 20-step random programming; auto space; auto pause; A-B repeat; repeat; search; skip; recall; headphone jack with adjustable level; programmable music scan plays start of each track for up to 99 sec. FL display shows volume level and function. Music matrix display indicates current and programmed tracks. 8-digit readout indicates track number, index number, elapsed or remaining time of current track, disc, or program ..... \$549

### SI-P600C 6-Disc CD Changer

Plays 6 discs in magazine; wireless remote; 32-track random programming; 10-key number pad on unit and remote; headphone jack with volume control; high-speed access with 2-purpose search/skip buttons; display of number of tracks, programmed tracks, current track, elapsed time; random and repeat play; digital filter ..... \$500

### SL-P120 Quick-Access CD Player

1-sec average access to any track; 20-track random programming; headphone jack with volume control; 2-speed audible search in forward and reverse; skip forward and back; repeat of track, disc, program; 2-color FL display of elapsed or remaining time for track, disc, program; preset editing; double oversampling (88.2 kHz) ..... \$249

## TOSHIBA

### XR-9037 Remote-Controlled CD Player

Remote with volume control; digital peak search; 20-program random memory; double-oversampling digital filter ..... \$450

### XR-9457 Portable/Home CD Player

2 remote controls; 1 wireless for AC operation, 1 wired for DC operation; 3-beam laser; rechargeable NiCad battery or 4 AA batteries; 16-track random memory with repeat (AC only) ..... \$450

### XR-9127 Remote-Controlled CD Player

Double-oversampling digital filter; auto repeat; 10-key remote with volume control ..... \$330

## VECTOR RESEARCH

### VCD-900 Remote-Controlled CD Player

Drawer-loading CD player with full-function remote control (10-key direct-track access, remote volume control). Features programming of 15 tracks in random and sequential order; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, phrase, and program; 3-beam laser; digital and analog filtering; single D/A converter; sound audible during fast scans. Cues by track number. Oversamples at 88.2 kHz. Displays current track number, elapsed time of current track and disc, program in memory. 17" w x 3.5" h x 12.5" d; 11 lb ..... \$450

### VCD-770 Remote-Controlled CD Player

Drawer-loading CD player with 12-key remote control and quadruple oversampling. Features programming of 15 tracks in random or sequential order; skip forward; skip back; fast forward; fast reverse; cancel; repeat track, disc, phrase, and program; 3-beam laser; digital filtering at 176.4 kHz; single D/A converter; sound audible during fast scans. Cues by track number. Displays current track number, elapsed time of current track, elapsed time on disc, remaining time on disc, program in memory. 17" w x 3.5" h x 8.25" d; 11 lb ..... \$350

## YAMAHA

### CDX-5000 Hi-Bit CD Player

Drawer-loading CD player with 44-key wireless remote control. Features hand-selected parts; double floating suspension design; super-high-speed access; Hi-bit quadruple-oversampling digital filter; Hi-bit D/A converter; Hi-bit digital volume control; photo-optical coupling, dual-transformer shunt-regulated power supplies; digital-out terminals; random play; index search; headphone jack; RS integrated remote system compatible. Black; 55 lb ..... \$2,200

### CDX-1100U Hi-Bit CD Player

Features Hi-bit quadruple-oversampling digital filter; Hi-bit D/A converter; Hi-bit digital volume control; photo-optical coupling; digital-out terminals; output level control; gold-plated rear-panel connection terminals; 44-key wireless remote control; floating suspension design; 24-track direct-access random programmable play; random play; index search; front-panel headphone jack; black; 35 lb ..... \$1,099

### CD-2000M Remote-Controlled CD Player

Features Yamaha LSI technology; 3-beam laser;

independent L/R ch digital filters; vibration damping circuit assembly; 10-key direct access; 12-track programmable random-access play; index search; 3-way music search; 3-way repeat play; 6-digit multi-function fluorescent display; fixed/variable-level output terminals; output-level volume controls and display; space-insert function; 10-key remote with volume control; timer-operated play; front-panel headphone jack; gold-plated output terminals; XLR connectors; rack-mount adaptors. 17.12" w x 3.75" h x 11.12" d; 11.4 lb ..... \$899

### CDV-1000 CD/LV/CDV Combi Player

Plays CD's, 8" and 12" LaserVision videodiscs, and compact disc videos; audio outputs; video output; controls for power and disc drawer on front panel, other controls on remote; functions include chapter, speed, still, scan, display; double-oversampling digital filter; phrase repeat; displays CD track and index number on unit or on video screen; track/chapter skip; fast scan forward and backward; variable-speed slow motion; keypad for direct access. 17" x 16" x 4"; 18 lb ..... \$800

### CD-2000B Remote-Controlled CD Player

Features 3-beam laser; independent L/R ch digital filters; vibration damping circuit assembly; 10-key direct access; 12-track programmable random-access play; index search; 3-way music search; 3-way repeat play; 6-digit multi-function fluorescent display; fixed/variable-level output terminals; output-level volume controls and display; space insert; 10-key remote with volume control; timer play; headphone jack; subcode output terminal; gold-plated jacks ..... \$799

### CDX-900U Hi-Bit CD Player

Features Hi-bit quadruple-oversampling digital filter; twin high-speed D/A converters; dual-transformer shunt-regulated power supplies; discrete circuit configuration; 42-key wireless remote control; floating suspension design; 24-track direct-access random programming; random play; index search; headphone jack with level control; RS integrated system remote control compatibility. Black; 17 lb ..... \$649

### CDX-400U Programmable CD Player

Features 3-beam laser; double-oversampling digital filter; vibration-damping construction; 6-digit fluorescent display panel; 16-track random programming; 3-way search; repeat disc, track, or program; auto space; index search; timer play; headphone jack with level control. FR 5-20,000 Hz  $\pm 0.5$ ,  $-1.0$  dB; S/N 100 dB; THD 0.004%; dynamic range 96 dB. 17.13" x 4.19" x 13.75"; 9.3 lb ..... \$299

## DIRECTORY OF MANUFACTURERS

Acoustat (Rockford Corp.), 613 S. Rockford Dr., Tempe, AZ 85281  
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by Christie Barter  
& Steve Simels

**T**HE Rolling Stones may be on hold (translation: Mick Jagger and Keith Richards aren't speaking to each other), but Stones guitarist Ron Wood isn't gathering any moss. In fact, he's been quite busy. Perhaps taking a cue from Richards, who served as music director on the recent Chuck Berry documentary *Hail! Hail! Rock 'n' Roll*, Wood has been touring of late with one of Berry's legendary contemporaries, Bo Diddley.

Closer to home, Wood has just become an author. *Ron Wood: The Works* (Peren-



The Woods, Richie Havens

nial/Harper & Row) is a breezy career memoir detailing Wood's life on the road since his Sixties days with Jeff Beck and Rod Stewart, profusely illustrated with portraits of famous friends and musical influences painted and drawn by Wood himself. Turns out his art work is much like his guitar playing—modest, economical, and thoroughly likable. □

**L**AST month, when the Seattle Opera mounted its new production of *Orphée* (the French version of Gluck's *Orfeo ed Euridice*), the title role was sung not by the customary mezzo-soprano or contralto but by a tenor. And that tenor was Vinson Cole. According to the Seattle company, Cole is the first tenor to sing the role professionally in this country. Afterward, Cole returned to New York to prepare the role of Nemorino in *L'elisir d'amore*

for his second season at the Met. A Saturday afternoon broadcast of the Donizetti opera is scheduled for February 20.

Cole is well represented on discs though not yet in opera recordings; his only role so far is the brief one of the Italian Singer in Herbert von Karajan's recording of *Der Rosenkavalier*. Karajan has also engaged Cole for recordings of Beethoven's Ninth Symphony and *Missa Solemnis* and the recently released Mozart Requiem, all on Deutsche Grammophon. Upcoming for Cole is Bruckner's *Te Deum*, with Bernard Haitink conducting, and Mahler's *Das Lied von der Erde*, conducted by Eliahu Inbal. □

**I**S America ready for a dreadlocked young singer who combines a Sixties soul singing style and stage act with the Black Consciousness of the late Eighties? In the case of Terence Trent D'Arby, it's too early to tell. He's a smash overseas, but at this writing his debut album, "Introducing the Hardline According to Terence Trent D'Arby" (Columbia), is doing only moderately well on the charts.

D'Arby, the first black American since Jimi Hendrix to achieve pop stardom in England before making it at home, was in Manhattan recently taping a segment of the syndicated program *It's Showtime at the Apollo*. Keep an eye on TV schedules for his performance and make up your own mind whether, as D'Arby claims, he's going to be as big as Stevie Wonder or Prince. □

**S**LATED for release this month is a feature film, titled simply *Aria*, to which ten leading directors, including Robert Altman, Jean-Luc Godard, Ken Russell, and Derek Jarman, have contributed what amount to classical-music videos based on excerpts from a variety of well-known and not-so-well-known operas. The soundtrack includes such show stoppers as "Vesti la giubba" from Leoncavallo's *Pagliacci*, the *Liebestod* from Wagner's



Cole: *Orpheus in Seattle*

*Tristan und Isolde*, and "Depuis le jour" from Charpentier's *Louise*, along with less familiar operatic gems by composers as diverse as Rameau and Korngold.

The music for *Aria* is drawn from the RCA Red Seal and Erato catalogs and includes historic performances by such celebrated artists as Enrico Caruso, Birgit Nilsson, and Leontyne Price.

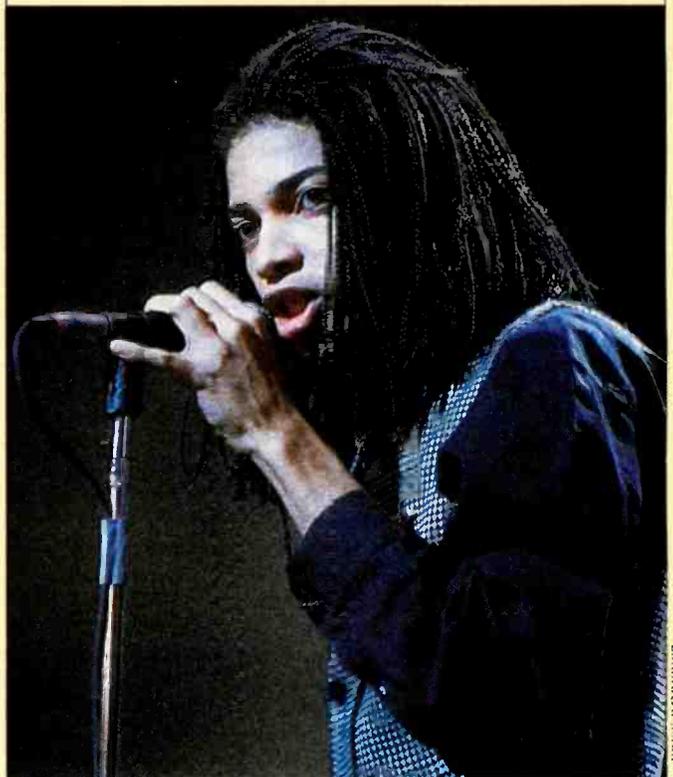
RCA is releasing the soundtrack album concurrently with the film's first screenings in this country.

The actors appearing in the film, however, are relatively unknown aside from John Hurt, who stars in the *Pagliacci* segment. But then, they are in no way meant to portray the operatic characters you'd expect them to since the ten directors were invited to invent their own scenarios. For example, the soundtrack for Godard's contribution, which involves a couple of hefty bodybuilders pumping iron in what appears to be a well-equipped, modern gymnasium, is music from *Armide* by the French Baroque composer Jean-Baptiste Lully, and Russell uses the tenor aria "Nessun dorma" from Puccini's *Turandot* as the background for a sort of voyage into outer space.

Next stop: MTV? □

**Y**OU can't keep a good man down, and English guitarist, songwriter, and musician's musician Richard Thompson is no exception. Dropped by PolyGram re-

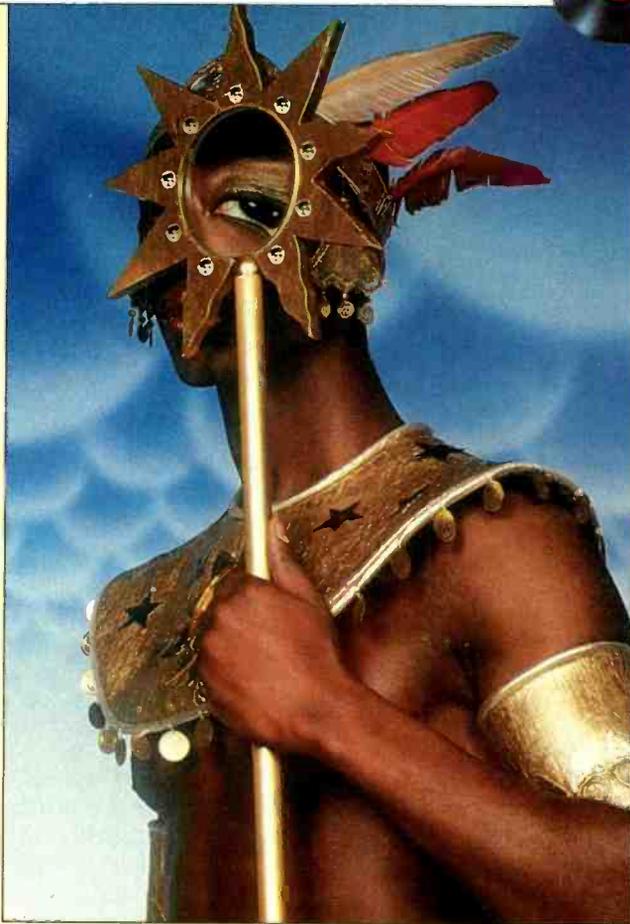
D'Arby: *Is America ready?*



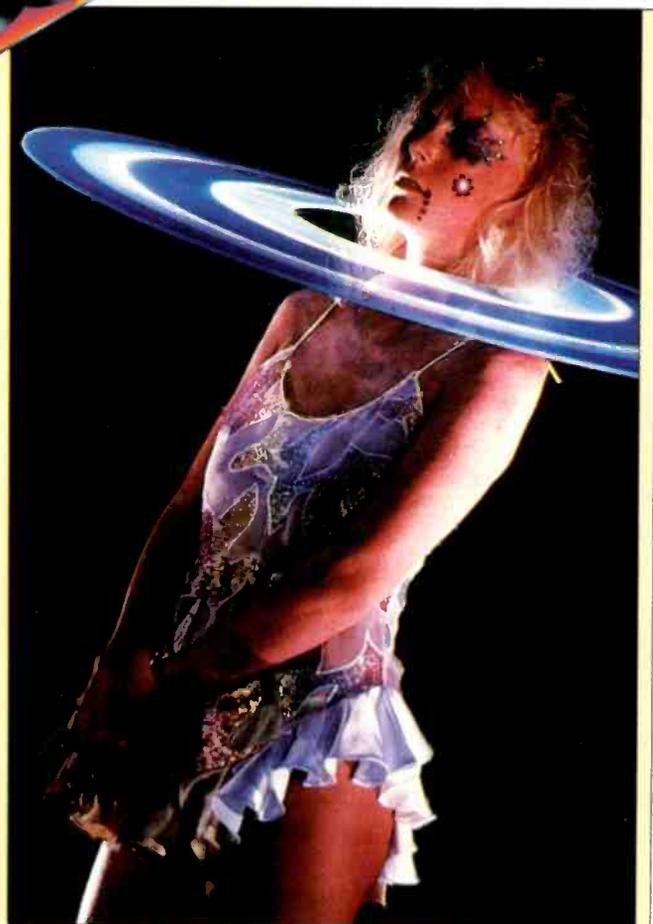
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Ken Russell's operatic visions: Puccini in outer space?

cently after a series of critically acclaimed but commercially unsuccessful albums, Thompson has already signed with Capitol, wooed by the chance to work with *La Bamba* producer Mitchell Froom, now a Capitol staffer.

First, though, Thompson collaborated on a new Rhino album, "Live, Love, Larf & Loaf," with ex-Captain Beefheart drummer John French and avant-garde guitarists Henry Kaiser and Fred Frith. The unlikely band rips through everything from folk-derived Thompson originals to eccentric Beefheartiana to an odd but wonderful version of the Beach Boys' *Surfin' USA*. Highly recommended, especially the compact disc version, which sounds sensational and includes three bonus tracks. □

has spent most of her life studying and performing in America. Her big break came when she was declared winner of the Naumberg International Violin Competition in 1981, and two years later she was further assisted by an Avery Fisher Career Grant. She has even been on CBS-TV's *Sixty Minutes*. Only now, however, is she making

Thompson: Capitol musician



EBET ROBERTS

**A**LTHOUGH she was born in Rome, the violinist Nadja Salerno-Sonnenberg

her recording debut. Her first album, for Angel, features Mendelssohn's E Minor Violin Concerto, in which she is accompanied by the New York Chamber Symphony under the baton of Gerard Schwarz.

Salerno-Sonnenberg's future projects with Angel include a coupling of Shostakovich's Violin Concerto No. 1 and the Tchaikovsky D Major Concerto with the London Symphony Orchestra under Maxim Shostakovich, the composer's son. □

*Killer Bimbos and Space Sluts in the Slammer...* *The Buddy Holly Story*, the Oscar-nominated Gary Busey vehicle from 1978, heretofore unavailable on home video, will hit the stores at the same time as the more recent Ritchie Valens bio-pic *La Bamba*—both courtesy of RCA/Columbia. □

Nadja Salerno-Sonnenberg

**G**RACENOTES. Release of the long-awaited Bob Dylan movie *Hearts of Fire* has been postponed again, leading to speculation that the movie will never see the light of any theater's film projector. But the soundtrack single, a Dylan duet with Eric Clapton written by John Hiatt, continues to do well on rock radio. . . . Home videos to watch for on Empire Entertainment: *Assault of the*



CHRISTIAN STEINER/ANGEL

# Brain vs. Bulk.

## FOR UNDER \$625 YOU CAN OWN AN AMPLIFIER JUDGED TO HAVE THE EXACT SOUND CHARACTERISTICS OF AN ESOTERIC \$3000 MODEL.

Bob Carver recently shocked the staid audiophile world by winning a challenge that no other amplifier designer could ever consider.

The new M-1.0t was judged, in extensive listening tests by one of America's most respected audiophile publications, to be the sonic equivalent of a PAIR of legendary, esoteric mono amplifiers which retail for \$3000 each!

**CARVER'S GREAT AMPLIFIER CHALLENGE.** Bob Carver made an audacious offer to the editors of *Stereophile Magazine*, one of America's exacting and critical audio publications. He would make his forthcoming amplifier design sound exactly like ANY high-priced, esoteric, perfectionist amplifier (or amplifiers) the editors could choose. In just 48 hours. In a hotel room near *Stereophile's* offices in New Mexico! As the magazine put it, "If it were possible, wouldn't it already have been done? Bob's claim was something we just couldn't pass up unchallenged."

What transpired is now high fidelity history. From the start, the *Stereophile* evaluation team was skeptical ("We wanted Bob to fail. We wanted to bear a difference.") They drove the product of Bob's round-the-clock modifications and their nominees for "best power amplifier" with some of the finest components in the world. Ultimately, after exhaustive listening tests with carefully selected music ranging from chamber to symphonic to high-impact pop that led them to write, "... each time we'd put the other amplifier in and listen to the same musical passage again, and bear exactly the same thing. On the second day of listening to his final design, we threw in the towel and conceded Bob the bout. According to the rules... Bob had won."

**BRAIN vs. BULK.** Pictured is a photo of the 20-pound, cool-running M-1.0t. Above it are the outlines of the pair of legendary mono amplifiers used in the *Stereophile* challenge. Even individually, they can hardly be lifted and demand stringent ventilation requirements. And yet, according to some of the most

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The M-1.0t's secret is its patented Magnetic Field Coil. Instead of increasing cost, size and heat output with huge storage circuits, Magnetic Field Amplification delivers its awesome output from this small but powerful component. The result is a design with the dynamic power to reproduce the leading edge attacks of musical notes which form the keen edge of musical reality.

**A DESIGN FOR THE CHALLENGES OF MODERN MUSICAL REPRODUCTION.** The M-1.0t's astonishingly high voltage/high current output and exclusive operation features make it perfect for the demands of compact digital discs, video hi-fi and other wide dynamic range playback media. The M-1.0t:

*Has a continuous FTC sine-wave output conservatively rated at 200 watts per channel into 8 ohms 20 Hz to 20 kHz with no more than 0.15% THD.*

*Produces 350-500 watts per channel of RMS power and 800-1100 watts momentary peak power (depending on impedance).*

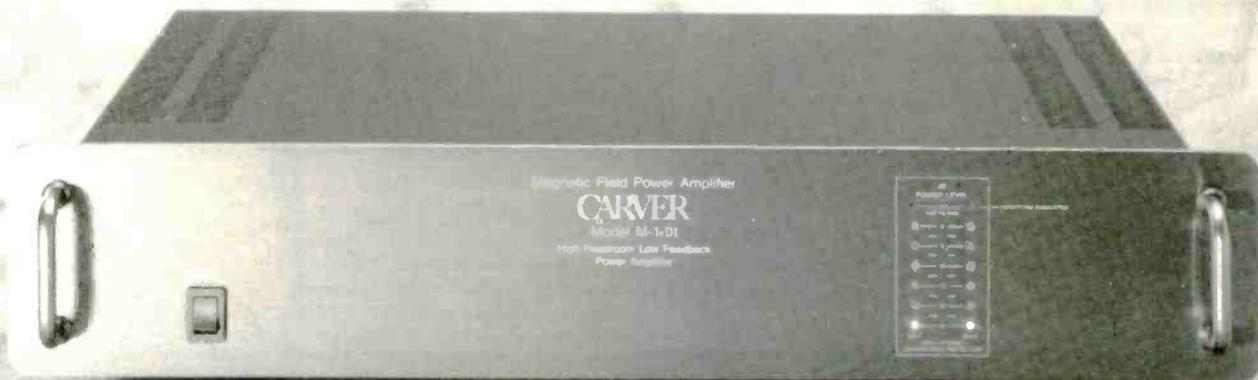
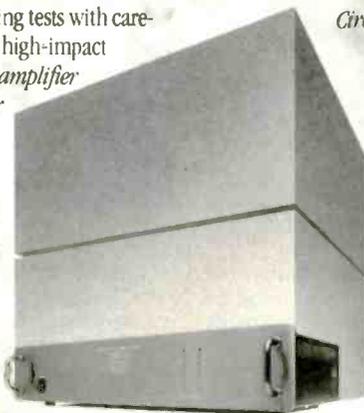
*Delivers 1000 watts continuous sine wave output at 8 ohms in bridging mode without modification.*

*Is capable of handling unintended 1-ohm speaker loads.*

*Includes elaborate safeguards including DC Offset and Short Circuit Power Interrupt protection.*

**SHARE THE RESULTS OF VICTORY.** We invite you to compare the new M-1.0t against any and all competition. Including the very expensive amplifiers that have been deemed the M-1.0t's sonic equivalent. You'll discover that the real winner of Bob's remarkable challenge is you. Because world class, superlative electronics are now available at reasonable prices simply by visiting your nearest Carver dealer.

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## BEST RECORDINGS OF THE MONTH

*Stereo Review's critics choose the outstanding current releases*

### IMPRESSIVE JAZZ FROM BRANFORD MARSALIS

**T**O many serious jazz fans, saxophonist Branford is the most talented Marsalis of them all, but he has never received the kind of push that made his brother, trumpet-player Wynton, a household name. If Branford maintains his present high standard of playing, he won't need the push—his music will speak for him. So far, however, he has not been content merely to maintain his standard of excellence but is surpassing himself with each new release. His latest, "Renaissance," is an impressive, well-varied set of performances, each of which supports my

belief that Branford Marsalis is not just the family champion but is one of the brightest young stars on the jazz scene today. He is capable of generating such exciting jazz that I find no fault with his occasional digressions into pop—in fact, his good taste carries over into such excursions. (I rather like, for example, his collaborations with Sting.)

In "Renaissance" Marsalis is strictly in the jazz groove. Starting with a frisky version of Cole Porter's *Just One of Those Things*, he displays a diversity of approaches: noodling introspectively in Sonny Rollins's *St. Thomas*, an unaccompanied tenor solo, conversing in dulcet soprano tones with Herbie Hancock and bassist Buster Williams in *The Peacocks*, waxing lyrically in *Lament* and *Love Stone*, and making a U-turn in *The Wrath*. Hancock and Williams are heard only in that one selection. The remaining splendidly propulsive support comes from pianist Kenny Kirkland, bassist Bob Hurst, and drummer Tony Williams. It may

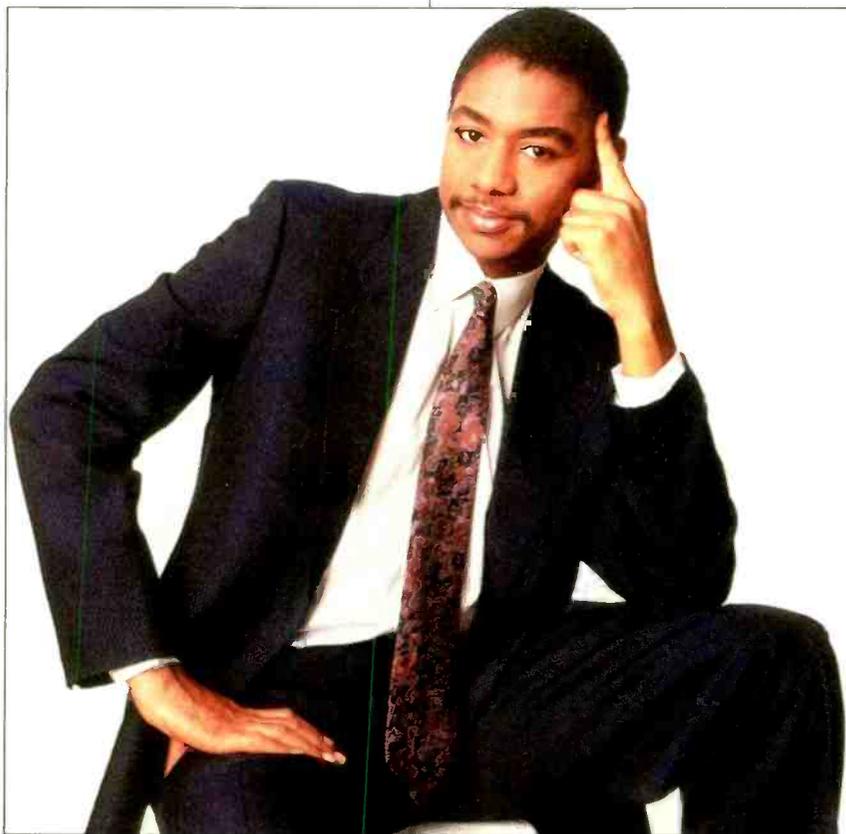
take Branford Marsalis some time to play himself out of his brother's shadow, but albums like "Renaissance" certainly help to speed up the process. *Chris Albertson*

**BRANFORD MARSALIS:** *Renaissance*. Branford Marsalis (soprano and tenor saxophones); Kenny Kirkland, Herbie Hancock (piano); Bob Hurst, Buster Williams (bass); Tony Williams (drums). *Just One of Those Things; Lament; The Peacocks; Love Stone; Citadel; The Wrath (Structured Burnout); St. Thomas*. COLUMBIA FC 40711, © FCT 40711, © CK 40711 (57 min).

### MOZART BY SERKIN AND ABBADO

**I**N the latest installment of their survey of all the Mozart piano concertos for Deutsche Grammophon, Rudolf Serkin and Claudio Abbado have reached not only the project's halfway point but surely its high point to date. The concertos in this newest release are two Serkin had not recorded before, No. 15, in B-flat Major (K. 450), and No. 22, in E-flat Major (K. 482). They make for a most effective balance on the generously filled CD and cassette (there is no LP version), and we are not likely to hear either more enticingly set forth.

The elegant vitality of No. 15's opening tutti, with its springy rhythm and delicious wind coloring, gives notice that this performance is to be what used to be called "an event," an impression strengthened by the first entrance of the piano and gloriously reconfirmed throughout the two concertos. Serkin's technique provides a secure base for an exhilarating sense of spontaneity and freshness. His tone seems more radiantly handsome than ever, without calling attention to itself, and his self-renewing affection and enthusiasm are fully caught and returned by Abbado and the London Symphony Orchestra players in a sort of love-feast of real give and take. This is music making on the very highest level, something we can never take for granted in either a live or a



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DEBORAH FEINGOLD/CBS RECORDS

## BEST RECORDINGS OF THE MONTH



Abbado and Serkin: joy

recorded presentation, and it is to be cherished whenever it is encountered.

Serkin has never been one of those musicians to say, "I can tell you a thing or two about Mozart," or "This is *my* Mozart." If his playing says anything at all about interpretation, it is simply, "This music is so much more wonderful than anything you or I might find to say about it—What a joy to listen to it! What a joy to play it!" And perhaps it is best left at that. Serkin's pacing in general is a little more relaxed than it used to be, but there is no loss of impulse or momentum, never the slightest impression of "slowing down," but, rather, a constant sense of subtle enlivenment. The frequently operatic character of No. 22, the first of the three great concertos composed during Mozart's work on *Figaro*, is pointed up in some wonderful orchestral phrasing that doesn't suggest mere accompaniment so much as a duet built on the most intimate of exchanges. (Some actual vocal sounds are heard from Serkin from time to time, but they are never loud enough to be disturbing.)

There are other fine recordings of both concertos by the likes of Alfred Brendel, Murray Perahia, and Peter Serkin, but none, I think, in which the solo and orchestral elements seem as fully and happily matched, and none that generate such a sense of joy. On this level, comparisons and considerations of duplication are quite beside the point: This is a

recording you must have, not because it is "better" than others but for the genuinely unique listening experience it affords. The sound quality, too, is all one could ask, another sort of high point in its own right for the late Deutsche Grammophon producer Rainer Brock.

Richard Freed

**MOZART: Piano Concerto No. 15, in B-flat Major (K. 450); Piano Concerto No. 22, in E-flat Major (K. 482).** Rudolf Serkin (piano); London Symphony Orchestra. Claudio Abbado cond. DEUTSCHE GRAMMOPHON © 415 488-4, © 415 488-2 (66 min).

### MOZART BY HOROWITZ AND GIULINI

**M**OZART'S music has never loomed particularly large in Vladimir Horowitz's repertoire: His Mozart recordings can be counted on the fingers of one hand. So it was with much curiosity and anticipation that I loaded my CD player with a new Deutsche Grammophon release of two recordings made midway in the pianist's eighty-second year: his first-ever of a Mozart piano concerto, the much-loved No. 23, in A Major (K. 488), and his first recorded performance of the biggest of the Mozart piano sonatas, the B-flat Major (K. 333). In both cases, anticipation was rewarded with keen listening pleasure.

The choice of conductor Carlo Maria Giulini as Horowitz's collaborator in the concerto guaranteed orchestral support that is at once warm and refined. Beautifully recorded in an appropriately intimate acoustic surround, the chamber-orchestra forces of Milan's Teatro alla Scala comprise only paired winds—flutes, horns, and Mozart's beloved clarinets—and a modest body of strings.

The pacing of the concerto's opening movement is brisk without seeming hasty, and Horowitz's nimble fingers are in total command of shading and subtle rubato. While purists may object to his use of the Busoni cadenza, I find it decidedly

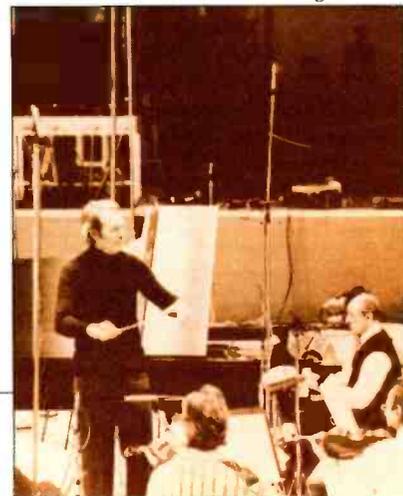
more interesting than Mozart's own. It is in the slow movement, however, that Horowitz's magic touch is most fully in evidence, not only in terms of exquisite legato but also tiny fluctuations of phrasing at harmonically crucial points. Horowitzian glitter comes to the fore in the pianist's statement of the tune in the rondo finale, but not obtrusively so, and he and Giulini make the most of the movement's delightful folk-like digressions. The woodwind playing here is just superb.

As much as I liked the concerto, I found the sonata performance more revelatory of Horowitz's special artistic powers. The first movement is perfectly poised, generous with repeats, and crystal clear in line and texture, but again the slow movement is the high point. Its freely modulating central section, in particular, offers a memorable experience in the varieties of pianistic touch and phrase. The finale is played truly *Allegretto grazioso*, a joy to the ear and the mind. More than in most of his recordings, Horowitz is here totally at ease and making music for the sheer pleasure of it.

Regardless of all the other fine recordings of these Mozart works, and especially of the concerto, this one is well worth owning. The fine sonics are wholly appropriate to the music and to the intimate scale of the performances. David Hall

**MOZART: Piano Concerto No. 23, in A Major (K. 488); Piano Sonata No. 13, in B-flat Major (K. 333).** Vladimir Horowitz (piano); Orchestra del Teatro alla Scala, Carlo Maria Giulini cond. DEUTSCHE GRAMMOPHON © 423 287-1, © 423 287-4, © 423 287-2 (50 min).

Giulini and Horowitz: magic





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## BEST RECORDINGS OF THE MONTH

### ROBBIE ROBERTSON'S COMEBACK

**R**OBBBIE ROBERTSON, the great guitarist and songwriter for the Band, has been away from the pop-music wars (except for some low-profile soundtrack work) for more than a decade now, so his comeback album begs immediate comparison with John Lennon's "Double Fantasy" or John Fogerty's "Centerfield," both records by certifiable legends produced after lengthy sabbaticals. But unlike the Lennon and Fogerty efforts, which were commercially successful but broke little new ground, "Robbie Robertson" sounds almost like a debut. It is, in fact, a thoroughly modern record that has almost nothing in common stylistically with Robertson's Band work but is just as passionately felt and impeccably crafted.

Produced by Robertson and Daniel Lanois, the album features a stellar cast of supporting players without ever sounding like a superstar indulgence. The most impressive numbers, somewhat surprisingly, are the hardest rockers, particularly *Sweet Fire*, a collaboration with U2 that sounds as grand as you'd hope (and features a spectacular guitar duel between Robertson and The Edge), and *Hell's Half Acre*, a fragmented, hallucinatory account of a Southern boy shipped off to Vietnam that sports perhaps the finest guitar riff of Robertson's career.

But almost everything works, and almost everything is determinedly unconventional. *Fallen Angel*, for

example, ostensibly a tribute to the Band's late pianist Richard Manuel, is a swirling collage of Africanisms à la guest vocalist Peter Gabriel rather than the elegiac ballad you might expect. *Broken Arrow* is a gorgeously languid love song in which Robertson makes like Tom Waits imitating Mel Tormé. *Testimony* is a bruising funk track with the Gil Evans Orchestra horn section sounding like the bastard children of James Brown's JB's. And *Some-where Down the Crazy River* is a surreal, half-sung, half-spoken sketch of a late-night American landscape that jumbles New Orleans rhythm-and-blues and the Nigerian pop of Fela Anikulapo Kuti into as crazily evocative a piece of music as you're likely to hear this year.

In short, this is the most surprising major-label release since Paul Simon's "Graceland"—a thoroughly personal record, sure to challenge narrow conceptions of what is or is not acceptable for airplay, by an artist who, at an age when most of us would be content to rest on our laurels, has managed to reinvent himself magnificently. Miss this one at your peril, especially the spectacular-sounding CD version.

Steve Simels

**ROBBIE ROBERTSON.** Robbie Robertson (vocals, keyboards, guitar); U2 (vocals and instrumentals); Garth Hudson (keyboards); Terry Bozzio (drums); other musicians. *Fallen Angel*: *Show-down at Big Sky*; *Broken Arrow*; *Sweet Fire of Love*; *American Roulette*; *Some-where Down the Crazy River*; *Hell's Half Acre*; *Sonny Got Caught in the Moonlight*; *Testimony*. GEFEN GHS 24160, © MSG 24160, © 2-24160 (44 min).

*Robbie Robertson: passionately felt, impeccably crafted rock*

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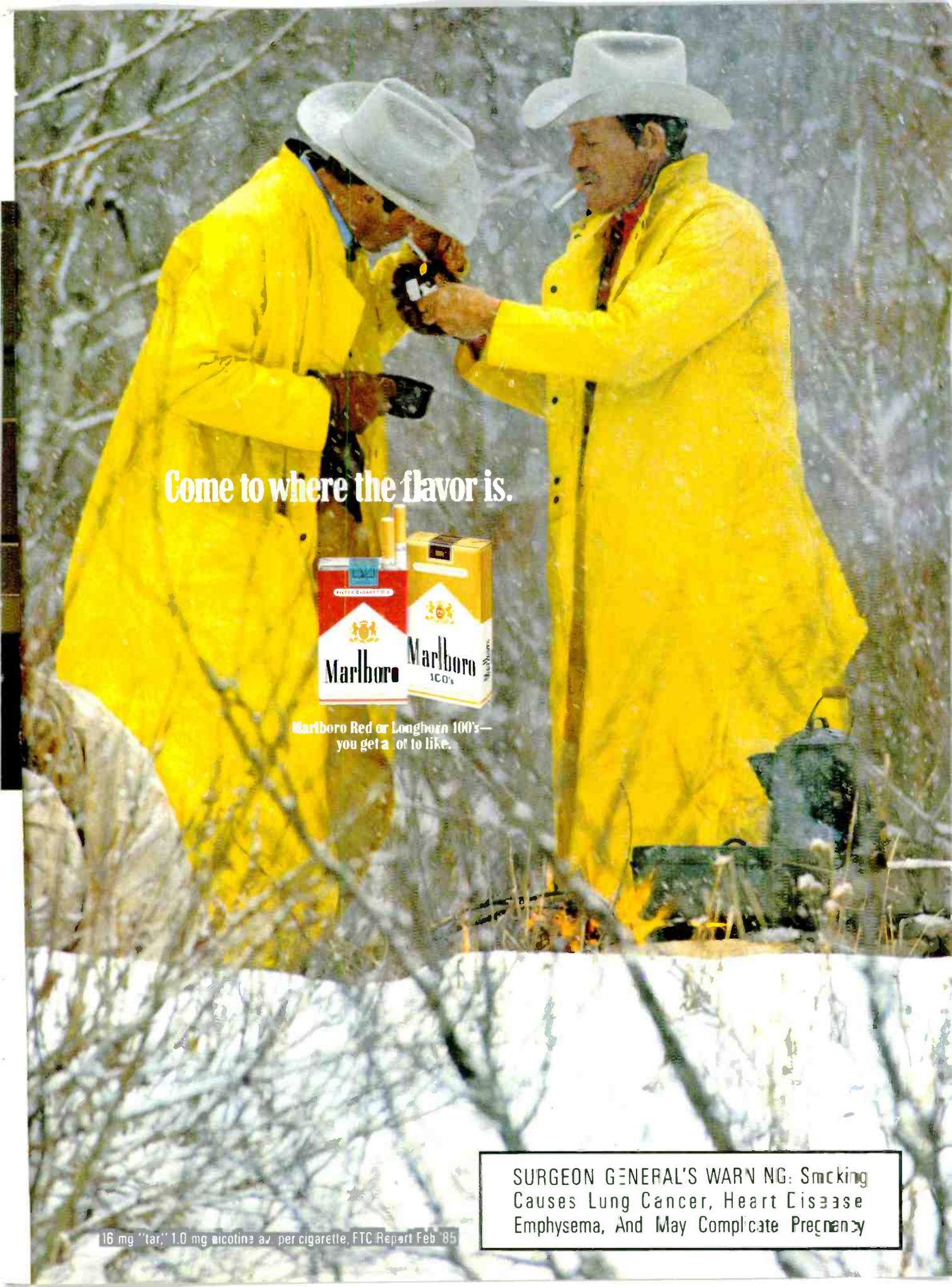
#### POPULAR

- **CULTURE CLUB:** *This Time—The First Four Years*. VIRGIN/EPIC EK 40913 (plus bonus tracks). Recordings dating from 1982 to 1986.
- **EARTH, WIND & FIRE:** *Gratitude*. COLUMBIA CK 33694 (plus bonus tracks). "High-voltage" (April 1976).
- **THE EDGE:** *Music from the Film "Captive."* VIRGIN 90609-2. Composed, co-produced, and performed by the U2 guitarist (1987), with vocals by Sinead O'Connor.
- **ARETHA FRANKLIN:** *Love All the Hurt Away*. ARISTA ARCD 8368. "Sensational" (Best of Month, December 1981).
- **MILT JACKSON:** *Sunflower*. CTI/CBS ASSOCIATED ZK 40800 (plus bonus track). "Exquisite sound paintings" (December 1973).
- **GRACE JONES:** *Living My Life*. ISLAND 90018-2. "Spare, harsh reggae" (April 1983).
- **SWEENEY TODD** (Stephen Sondheim—Hugh Wheeler). RCA 3379-2-RC (two CD's). Original Broadway cast, with Angela Lansbury and Len Cariou (excerpts have been released on a single CD). "Meticulously wrought" (August 1979).
- **THE ZOMBIES:** *Odessey and Oracle*. RHINO RNCNCD-70186. The band's swan song of 1968 and "one of the loveliest albums of the British Invasion."

#### CLASSICAL

- **BEETHOVEN:** *Violin Concerto in D Major*. MENDELSSOHN: *Violin Concerto in E Minor*. Ughi, Sawallisch/Prêtre. RCA 6536-2-RG (mid-price). "Lots of dazzle and clean-cut musicianship" (August 1984).
- **CHOPIN:** *Preludes*. Feltsman. CBS MK 39966. "Unalloyed joy" (May 1986).
- **DELIUS:** *Songs of Farewell; Idyll; A Song of Summer; Cynara; Caprice and Elegy; other short works*. Lott, Rolfe Johnson, Allen, J. Lloyd Webber; Fenby. UNICORN-KANCHANA/HARMONIA MUNDI DKP 9008/9 (two CD's). "Well-nigh perfect re-creations" (Best of Month, April 1982).
- **DVOŘÁK:** *Cello Concerto; "Arpeggione" Sonata*. Harrell, Levine. RCA 6531-2-RG (mid-price). "Superb teamwork" (January 1976).
- **MOZART:** *Don Giovanni*. Wächter, Sutherland, Schwarzkopf, Alva, Taddei; Giulini. ANGEL CDCC-47260 (three CD's). "Out of this world" (January 1961).



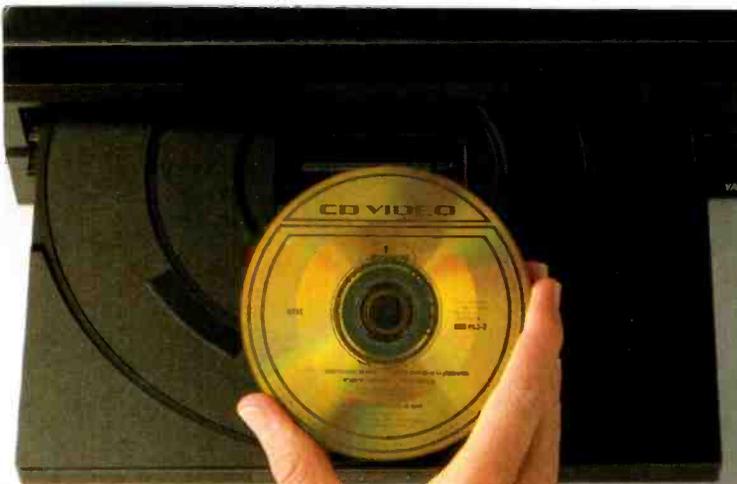


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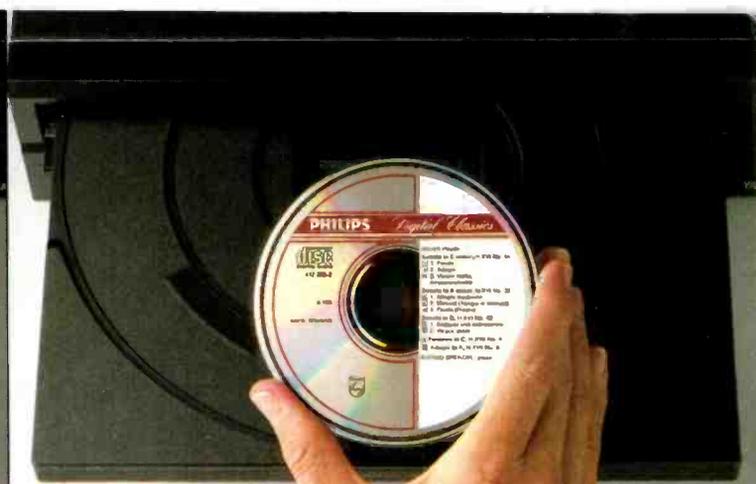
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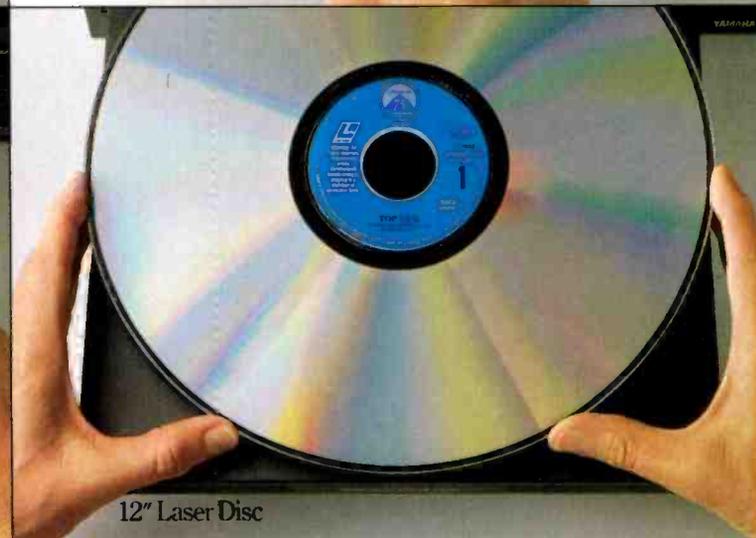
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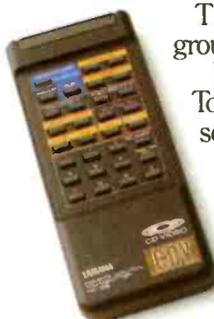
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*Discs and tapes reviewed by  
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Alanna Nash, Mark Peel,  
Steve Simels*

**CABARET VOLTAIRE:** *Code.* Stephen Mallinder (vocals); Richard H. Kirk (computer-generated instrumentation); other musicians. *Don't Argue; Sex; Money; Freaks; Thank You America; Here to Go;* and five others. MANHATTAN MLT-46999, © M4T-46999, © CDP-46999 (40 min).

Performance: *Bargain basement*  
Recording: *Awful*

Some people fear that computers have made it almost impossible to produce a bad record. Not to worry: Here's one made almost entirely with synthesizers and samplers, and it is absolutely dreadful. Cabaret Voltaire mistakes paranoia for vision and electronic impulses for rhythm. It's hard to remember songs as transparent or full of clichés as *Don't Argue*, which drones on and on about how oppressive and conformist our society is, or one as perfunctory as *Sex, Money, Freaks*—tough to be dull on those three topics, but Cabaret Voltaire pulls it off. Since this record is an almost unlistenable product of machine technology, I actually find it comforting: Machines can't do everything. *M.P.*

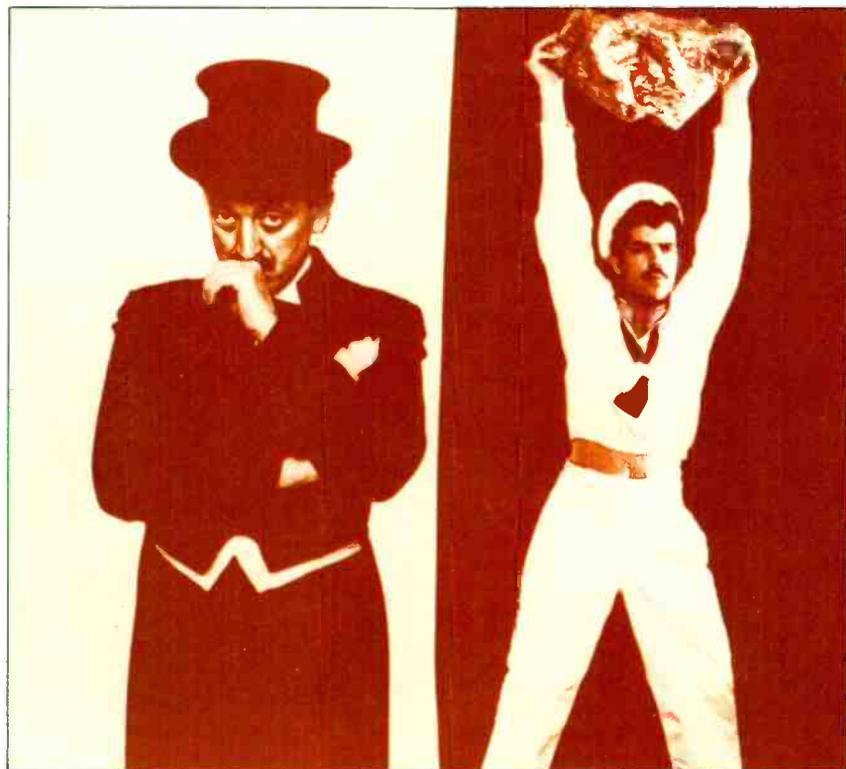
**THE CARS:** *Door to Door.* The Cars (vocals and instrumentals). *Leave or Stay; You Are the Girl; Double Trouble; Fine Line; Everything You Say; Ta Ta Wayo Wayo;* and five others. ELEKTRA ① 60747-1, © 60747-4, © 60747-2 (42 min).

Performance: *Check the warranty*  
Recording: *Excellent*

Though Ric Ocasek's vocals are still mannered enough to make you nostalgic for the days when the Cars passed for avant-garde, basically this band has been drifting in the direction of unabashed mainstream pop for some time now. I mean, let's face it: *Drive*, the big hit from the Cars' last album, owed a lot more to Barry Manilow than it did to Suicide or the Velvet Underground. "Door to Door," the band's first self-produced product, finds them moving off in an entirely unexpected new direction: complete in-one-ear-and-out-the-other disposability. Song after tuneless

EXPLANATION OF SYMBOLS:

- ① = DIGITAL-MASTER LP
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HEAVY YELLO

**T**HE carpenters have just finished propping up the floor joists under my living room, so it is with a caveat that I recommend "One Second," by the Swiss duo called Yello, as perhaps the ultimate party record of the year: Don't fiddle with your amplifier's bass control when playing this album. Leave it at zero. Even then, the rumbling subsonics in *La Habanera* and *Moon on Ice* may crack glass.

In my continuing search for cheap thrills, "One Second" ranks among the cheapest and most thrilling. Never has an album been produced so shamelessly for the dance floor. The aforementioned bass is just the beginning. Latin and Afro-Cuban percussion lace every track, a cheesy but effective counterpoint to the spaghetti-western guitars, Caribbean horns in hand-to-hand combat with disco strings, and crowd noises created by the duo's synth composer, Boris Blank. As if the beat weren't enough, the vocalist, Dieter Meier, is a dark presence whose heavy Germanic accent gives the proceedings the atmosphere of a spy movie. Meier elevates these songs from great dance music to great theater. In *La Habanera*, for instance, we listen as Pedro Camacho, former agent for the secret police, stands outside the Tropicana Club watching a city in the throes of revolu-

tion, consumed in flames, the last evacuation plane to Miami rising overhead. Not bad for disco.

While Meier and Blank are among Europe's leading electro-dance innovators, a surprising and satisfying portion of "One Second" is played by real backup musicians on real instruments. In fact, the furious drum work of Beat Ash, the guitar stylings of Chico Hablas, and the bravura trombone playing of Don Randolph and Steve Trop suggest that buried inside the electronics there lies the makings of a pretty hot jazz combo. The only letdown is a cameo appearance by Shirley Bassey as a disco diva on *The Rhythm Divine*; it's the one song in which the rhythm sags. Everything else is torrid.

So have a structural engineer inspect your sound room, do whatever seismic reinforcing he recommends, then strap on your party helmet and go for it.

*Mark Peel*

**YELLO:** *One Second.* Boris Blank (synthesizers); Dieter Meier (vocals); vocal and instrumental accompaniment. *La Habanera; Moon on Ice; Call It Love; Le Secret Farida; Hawaiian Chance; The Rhythm Divine; Santiago; Goldrush; Oh Yeah; Dr. Van Steiner; Si Señor the Hairy Grill.* MERCURY 832 675-1, © 832 675-4, © 832 675-2 (49 min).

FOLEYGRAM RECORDS

song wafts past you in a haze of over-production, and even *You Are the Girl*, the album's hit single, lacks the kind of high melodic profile you'd expect from the creators of *You Might Think* or *Magic*. At the risk of belaboring the automotive metaphor, "Door to Door," a genuine disappointment, sounds as if the Cars are in dire need of a 50,000-mile tune-up. S.S.

**EXILE: *Shelter from the Night*.** Exile (vocals, instrumentals); instrumental accompaniment. *Just One Kiss; Shelter from the Night; My Heart's in Good Hands; Fly on the Wall; Feel Like Fool-in' Around; She's Already Gone;* and four others. EPIC FE 40901, © FET 40901, © EK 40901 (35 min).

Performance: *Personality change*  
Recording: *Good*

After several years of pretending to be a country group, Exile has finally given up the masquerade and gone back to being a soft-rock band. The result, with producer Elliot Scheiner, is a far more honest sound than Exile has turned out in the recent past, without the obvious, ingratiating hooks that characterized the group's large body of country hits.

Just what audience Exile now intends to play to, however, is unclear. Its record company calls this album "a unique blend of Southern rock, hearty r-&-b, and all-American pop and country." That's stretching it. There's not one shred of Southern rock to be found anywhere in these grooves, and while Exile's raspy-voiced lead singers have always tried for an r-&-b flavor, "hearty" is not the correct adjective to describe the work here. If anything, this is a tamer effort than their country-style records—less hyperactive, less focused, and yet more grown-up than their usual "college boy on the weekend" sound.

Still, "Shelter from the Night" is as shallow as a creekbed, the one bit of interesting writing being a song from outside the band—Bruce Hornsby and Bernie Taupin's melancholy *Fly on the Wall*. Only here does Exile suggest what it could do if anyone in the group had any vision, or any thoughts past the usual boy-girl romance. In a way, this is perfect MOR radio fodder, an album that doesn't aspire to anything but a good disposition. A.N.

**SAMANTHA FOX.** Samantha Fox (vocals); vocal and instrumental accompaniment. *I Surrender (to the Spirit of the Night); Naughty Girls; (I Can't Get No) Satisfaction; Nothing's Gonna Stop Me Now; That Sensation; Dream City;* and four others. JIVE/RCA 1061-1, © 1061-4, © 1061-2 (46 min).

Performance: *Tabloid*  
Recording: *Doesn't matter*

Samantha Fox, that comely blond vixen whose very name suggests triple-X ratings, is back to tease, taunt, and titillate after her Gold album "Touch Me" of



Exile: J.P. Pennington, Sonny Lemaire, Lee Carroll, Steve Goetzman, Les Taylor

last year. Fox, for the uninitiated, first gained notoriety as a Page Three Girl in Britain's lowbrow newspapers. She's really less a singer than a sex fantasy.

In the thoroughly forgettable "Samantha Fox" she sets the drum machine on full tilt, lies on her back, flails her arms and legs, and moans about not getting any satisfaction. What a pity! As she so intimately explains on one cut, naughty girls need love, too. Was there ever any doubt? A.N.

**WAYLON JENNINGS: *A Man Called Hoss*.** Waylon Jennings (vocals, guitar); instrumental accompaniment. *Littlefield; You'll Never Take Texas Out of Me; If Ole Hank Could Only See Us Now; Rough and Rowdy Days; You Deserve the Stars in My Crown;* and five others. MCA • MCA-42038, © MCAC-42038, © MCAD-42038 (26 min).

Performance: *Bare bones*  
Recording: *Very good*

In a spoken introduction to this record, Waylon Jennings explains that he sat down to write his autobiography a short time back, but soon realized "there was too many people still alive who might get killed or divorced if I told everything I knew." So, Jennings says, he decided to write his "audio-biography" with the help of veteran songwriter Roger Murrah. The result is the ten songs of "A Man Called Hoss," a cursory look at Jennings's life and the skeletal framework for a "Broadway-style one-man show."

Playing on the literary metaphor, Jennings calls each tune a "chapter" in his life. Several of the tunes are full of charm and humor—especially *Littlefield*, which details his boyhood, and *If Ole Hank Could Only See Us Now*, a biting satire on Nashville's increasing preoccupation with limousines, technology, Big Business, and the easy formula.

Surprisingly, though, the album falls flat when Jennings turns to the significant areas of his life—his decades of carousing (*Rough and Rowdy Days*), his twenty-one-year battle with drugs (*I'm Living Proof There's Life After You*), and his redemption through the love of his wife, Jessi (*You Deserve the Stars in My Crown*). In the songs where he could be the most dramatic and compelling, Jennings turns sketchy and superficial. And from there on, singing songs in which he reflects on life, present and future (*Turn It All Around* and *Where Do We Go from Here*), he merely hints at regrets, letting a rough-edged instrumental break take it on home.

Perhaps the problem is that Jennings and Murrah wrote all ten songs in eleven days, or the fact that Murrah, a devout member of the Church of Christ, could not effectively write about drug abuse, whoremongering, and trashing hotel rooms. In any case, producer Jimmy Bowen realized the risks from the beginning. "It's going to be awfully hard to do," he told Jennings, "but if you can do it, it's going to be great." Sorry, Hoss. You missed the mark. A.N.

**JESSE'S GANG: *Center of Attraction.*** Jesse's Gang (vocals and instrumentals); other musicians. *Love's No Mystery; Center of Attraction; Real Love; A Fantasy; Your Way; Noiz Without Words;* and four others. GEFEN GHS 24129, © MSG 24129.

Performance: *Noisy*  
Recording: *Good*

Called "house music" after the name of a Chicago club where Jesse Saunders's group used to perform, the music of Jesse's Gang features a rhythmic pattern with emphasis on the off beats, an overlay of hand claps and synthesized rhythmic effects, and just a touch of rap to round it all out. If that sounds familiar, that's because it is. This music might be fun to dance to, but it's an absolute dog to listen to. P.G.

**THE NEIGHBORS: *Welcome Wagon.*** The Neighbors (vocals and instrumentals). *Shadow of a Fool; Will You Ever Come Down; Valerie; Everybody's Got One; Lovin' Tonight; I Don't Wanna Say Bye Bye;* and eight others. UPSIDE UP 60010-1, © UPC 60010-4.

Performance: *Rough but appealing*  
Recording: *Fine*

The Neighbors is the kind of band that proliferated in the brief period between the original punk movement and its subsequent mutation into high-tech New Wave, which is to say, a no-frills, two-guitars-and-harmonies group with solid tunes and a notable lack of pretension—the kind of band that keeps rock-and-roll honest. The basic sound in "Welcome Wagon," not surprisingly, is right out of "Meet the Beatles," and while none of these guys is Lennon or McCartney, their music, particularly the rousing *Shadow of a Fool* and the anthemic *Heaven*, is endearing nonetheless, either despite or because of being so openly derivative. Recommended, especially to people who miss, say, Rockpile or Any Trouble. S.S.

**WILSON PICKETT: *American Soul Man.*** Wilson Pickett (vocals); vocal and instrumental accompaniment. *A Thing Called Love; When Your Heart Speaks; Love Never Let Me Down; A Man of Value; In the Midnight Hour; Don't Turn Away;* and three others. MOTOWN 6244ML, © 6244MC.

Performance: *Stylish*  
Recording: *Good*

Although Wilson Pickett was at one time billed as Soul Brother No. 2, behind the indomitable James Brown, Pickett was always the better singer, and he remains so today. His down-home brand of soul singing, with its guttural hollers, shouts, and melismatic musings, comes as a breath of fresh air in an era when there is more emphasis on production than on singing style and musical substance.

The choicest selection in "American

Soul Man" is Pickett's new interpretation of his old hit *In the Midnight Hour*. The macho strut of his earlier years is undiminished in all the uncommonly tuneful and danceable songs here, though the beat only serves his musical intent, which is as it should be. This is a sleeper, an album that should attract anyone who wonders what the soul music of the past was really all about. P.G.

**THE RED HOT CHILI PEPPERS: *The Uplift Mofo Party Plan.*** The Red

Hot Chili Peppers (vocals and instrumentals). *Fight Like a Brave; Funky Crime; Me and My Friends; Backwoods; Skinny Sweaty Man;* and seven others. MANHATTAN ELT-48036, © E4T-48036, © CDP-48036 (38 min).

Performance: *Wretched excess*  
Recording: *Painful*

I want to like an album as aggressively bad as "The Uplift Mofo Party Plan." But I just can't. The Red Hot Chili Peppers do everything in their power to



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## NELSON AND HAGGARD AND CO.

ON the surface, Merle Haggard and Willie Nelson would appear to be an unlikely pair of songfellows. For one thing, their voices don't exactly complement each other, Nelson's taut, nasal delivery sounding sharp and piercing next to Haggard's rich, leisurely baritone. Then there's the fact that they don't harmonize well (and consequently don't do much of it). Each has his own quirky ideas on syncopation and a penchant for bobbing above and beneath the melody line, so they both wind up sounding awkward and off-center.

Somehow, however, none of that matters when the two old masters get together, as they did in their award-winning duet album of 1982, "Poncho and Lefty." Now, in "Seashores of Old Mexico," they reprise that success with an outstanding collection of ballads and story songs, most of them melancholy and mournful, all of them honest and affecting.

Backed by Haggard's extraordinarily expressive band, the Strangers, the duo begins with the title cut, a good-natured tale of two modern-day rogues who mosey down to Mexico to hide out from life for a while. From there, the mood turns pensive as the old pals recall the friends and lovers they've left behind, trotting out memories as men do when the companionship and the bourbon feel right. There are some gorgeous mo-

ments here, particularly Haggard's *Without You on My Side*, David Lynn Jones's *When Times Were Good*, Nelson's *Why Do I Have to Choose*, Hank Cochran and Grady Martin's *Love Makes a Fool of Us All*, and the Lennon-McCartney classic *Yesterday*.

As usual, Haggard and Nelson deliver these songs with enormous feeling and verve. Nelson draws power from understatement and steely suffering, but it is Haggard who really shines, pouring himself across the lines, reveling in his capacity for tenderness and pain, and wearing the scars of life's battles like badges of survival.

All in all, this album is a gem, from the song selection to the straightforward arrangements to the spit and polish of the instrumental solos and backing. If country music ever gets any better than this, I don't know about it.

Alanna Nash

**MERLE HAGGARD AND WILLIE NELSON:** *Seashores of Old Mexico*. Merle Haggard (vocals, electric guitar); Willie Nelson (vocals, acoustic guitar); the Strangers (instrumentals); other musicians. *Seashores of Old Mexico*; *Without You on My Side*; *When Times Were Good*; *Jimmy the Broom*; *Yesterday*; *If I Could Only Fly*; *Shotgun and a Pistol*; *Love Makes a Fool of Us All*; *Why Do I Have to Choose*; *Silver Wings*. EPIC FE 40293, © FET 40293.

chafe, outrage, and sicken, cranking out with truly dizzying energy a goulash of electrified funk, chest-thumping rap, and vaguely suggestive nonsense lyrics. The Chilis have worked with George Clinton, and a lot of the Funkadelic/Parliament sound has rubbed off on them—but it all rubs the wrong way. If the Beastie Boys could play musical instruments, this is what they'd sound like. In another setting, you might be able to appreciate the heavy-metal-funk-fusion technique of guitarist Hillel Slovak. He's good, but not good enough to overcome the lurching, loudmouthed vocals of an album that re-creates the sensation of being seventeen and drunk on cheap wine.

M.P.

**ROBBIE ROBERTSON** (see Best of the Month, page 180)

**BOBBY LEE SPRINGFIELD:** *All Fired Up*. Bobby Lee Springfield (vocals, guitar); vocal and instrumental accompaniment. *Hank Drank*; *Teenage Darling*; *I Need a Girlfriend*; *All Fired Up*; *Jesus, You've Been a Friend to Me*; and five others. EPIC B6E 40816, © B6T 40816, © EK 40816 (30 min).

Performance: *Time warp*

Recording: *Good*

On a cursory romp through Bobby Lee Springfield's "All Fired Up" you're likely to think you've stumbled upon a cache of unreleased tunes left over from the Fifties. Springfield, who dresses in baggy suits and two-tone shoes and affects his best Ersel Hickey stance, describes his music as "countrybilly" and "rockagrass." What that really means is that Springfield offers a mish-mash of early country and early rock, borrowing thematically from Hank Williams (*Hank Drank*), vocally from Bill Anderson (*I Need a Girlfriend*), and instrumentally from the Drifting Cowboy Band (*All Fired Up*), Bob Wills (*Wild Cat*), and Buddy Holly (*Chain Gang*, "Til You Got a Hold of Me). He even affects some Jerry Lee Lewis braggadocio for good measure. The first time through, you don't know what to think. The second time, it sounds like a goof, but an infectious one. Before long it just seems jive and hokey.

Springfield, it turns out, is not some inexperienced hayseed just in off the turnip wagon, but the writer of Marty Robbins's *Some Memories Just Won't Die* and a host of other hits. And the Sneed Brothers, as the producers of "All Fired Up" call themselves, turn out to be Dennis Morgan and Steve Davis, both top veteran Nashville songwriters who share Springfield's credits on six of the ten cuts. There are a couple of fun things going on here, and if you settle for energy and attitude this might be your kind of thing.

A.N.

**SQUEEZE:** *Babylon and On*. Squeeze (vocals and instrumentals). *Hourglass*; *Footprints*; *Tough Love*; *The Prisoner*;

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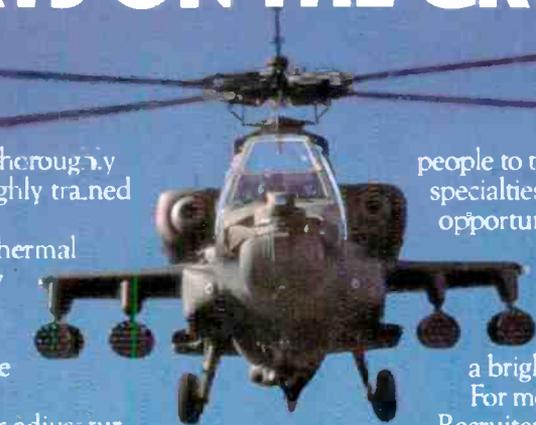
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853-5937; *Trust Me to Open My Mouth*; and six others. A&M SP-5161 © CS-5161, © CD-5161 (42 min).

Performance: *Rockin' ruminations*  
Recording: *Excellent*

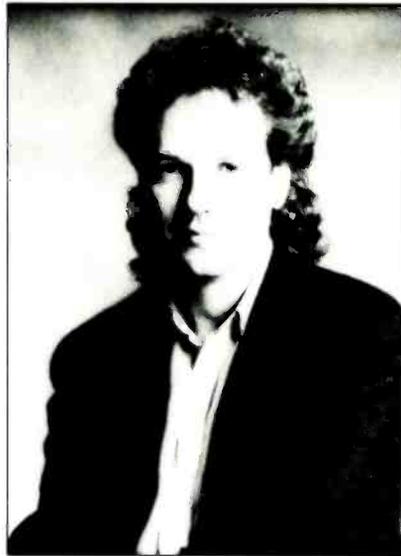
Comeback albums aren't supposed to eclipse a band's original work, but Squeeze's "Babylon and On" comes pretty close. Chris Difford and Glenn Tilbrook are masters of songcraft, and "Babylon" contains a dozen first-rate examples. The songs are simple, energetic, and tuneful, but perhaps more interesting is the tension created between the album's lively pacing and its sober subject matter. You'd never know it from the agile guitar and unfettered keyboard work, but "Babylon" reflects on some pretty grim conditions: from *Footprints*, the remorseful ruminations of a philanderer who's burned too many bridges, to *Tough Love*, about the weakening resolve of a woman whose lover is a drug addict, to *The Prisoner*, about a marriage that has become a prison. Even the lighthearted songs have a troubled edge to them. In *Trust Me to Open My Mouth*, the singer has irreparably damaged a love affair he was enjoying by spilling the beans about it.

Yet "Babylon and On" is never heavy going thanks to its vigorous arrangements, rich vocal harmonies, and an unapologetic back beat. Best of all, Difford and Tilbrook seem to have concentrated on performing rather than on the process of recording. Unlike their 1985 album, the contrived and cluttered "Cosi Fan Tutti Frutti," "Babylon" has a live feel to it. You hear the songs, not the record. Highly recommended. *M.P.*

**BOBBY SUTLIFF:** *Only Ghosts Remain*. Bobby Sutliff (vocals, guitar); Mitch Easter (guitar, drums); other musicians. *Same Way Tomorrow*; *Elam Bridge*; *Stupid Idea*; *Always Love You*; *Second Choice*; *You Could've Told Me*; and five others. PVC/JEM PVC 8957, © PVCC 8957, © PVCD 8957 (38 min).

Performance: *Haunting*  
Recording: *Good*

"Only Ghosts Remain" is what might be called a genre record, the genre being Southern Gothic mystery rock by way of R.E.M., but it's a honey nonetheless. Bobby Sutliff, who's obviously also been influenced by Tom Verlaine and the middle-period Byrds, knows how to set up a great chiming wall of massed guitars, and his singing, in the great nasal/mumbled tradition of Michael Stipe and Roger McGuinn, is a perfect complement for his oblique, allusive lyrics. Sutliff's songs range from the hauntingly droney *Same Way Tomorrow* to the almost-pop *You Could've Told Me*, and the album's lone cover version, a pointed rendition of Richard Thompson's *Small Town Romance*, only adds to an overall impression of intelligence and savvy. In short, this is a very impressive solo debut. *S.S.*



Lee Ritenour: plugged in

**TERESA BREWER AND COUNT BASIE:** *The Songs of Bessie Smith*. Teresa Brewer (vocals); Count Basie Orchestra and Septet. *Gimme a Pigfoot*; *St. Louis Blues*; *Down Hearted Blues*; *Trombone Cholly*; and five others. DOCTOR JAZZ © WK 38836 (40 min).

Performance: *In the spirit*  
Recording: *Very good*

I heard and enjoyed this album when it was first issued on Flying Dutchman in the Seventies. It's an odd pairing, but there are two major reasons why it works. One is that Teresa Brewer's voice had matured by the time she made this record. She was no longer the squeaky, perky post-World War II Betty Boop she had once been. And she was wise in her decision not to attempt an imitation of Bessie Smith's style. Of course, it didn't hurt to have Count Basie and his men around, and Thad Jones's arrangements add a certain hipness, but they don't detract from Brewer's accomplishment here. *C.A.*

**BRANFORD MARSALIS:** *Renaissance* (see *Best of the Month*, page 177)

**LEE RITENOUR:** *Portrait*. Lee Ritenour (guitars); other musicians. *Asa*; *Windmill*; *White Water*; *Route 17*; and six others. GRP © GR-1042, © GRC-1042, © GRD-9553 (45 min).

Performance: *Current*  
Recording: *Excellent*

Guitarist Lee Ritenour honed his instrumental skills in the early Seventies as a Los Angeles session musician, toured with Sergio Mendes during the middle of the decade, and subsequently made a name for himself on the fusion

scene. In "Portrait" he offers a pleasant stylistic hodgepodge, all well crafted and all a loose fit under the "crossover" umbrella. With help from the Brazilian singer/guitarist Djavan, percussionist Paulinho Da Costa, drummer Harvey Mason, and members of Yellowjackets, the music in this album has the sound of this plugged-in era but avoids its clichés. The quality, overall, is unmitigable. *C.A.*

**MAXINE SULLIVAN:** *Together*. Maxine Sullivan (vocals); Keith Ingham (piano); other musicians. *Bye Bye Baby*; *Killing Time*; *Sunday*; *Just in Time*; *Distant Melody*; *Time After Time*; *Papa, Won't You Dance with Me?*; *Things We Did Last Summer*; and eight others. ATLANTIC 81783-1, © 81783-4, © 81783-2 (48 min).

Performance: *Superb*  
Recording: *Very good*

When Maxine Sullivan died early last year, we not only lost a performer whose name is deeply etched in jazz history but one who, in the Eighties and in her seventies, was singing better than ever. "Together," Sullivan's last album, is a sterling tribute to the songs of Jule Styne. Here, as in all her later recordings, her voice has a silken, youthful quality, though her singing has the kind of maturity that comes only after years of experience. The songs range from *Sunday*, which Styne wrote in 1928, to his *Killing Time* of 1983, with familiar stops along the way. The accompaniments, by pianist Keith Ingham and others, are superb. Glenn Zottola's work on the trumpet deserves note, and the John Kirby-like arrangement for *Papa, Won't You Dance with Me?* is a nice touch. It was, after all, with Kirby, her husband at the time, that Sullivan enjoyed her early triumphs. *C.A.*

**SARAH VAUGHAN:** *Brazilian Romance*. Sarah Vaughan (vocals); vocal and instrumental accompaniment. *It's Simple*; *Romance*; *So Many Stars*; *Photograph*; *Love and Passion*; and five others. CBS © FM 42519, © FMT 42519, © MK 42519 (35 min).

Performance: *Sassy*  
Recording: *Very good*

Sarah Vaughan is joined here by Milton Nascimento for a duet in *Love and Passion*, but she sings alone on the rest of "Brazilian Romance," a short excursion south of the border steered straight down the middle of the road by producer Sergio Mendes. Vaughan, of course, is ever the divine one, and it is nice to hear her in this offbeat repertoire, but the whole set lasts only thirty-five minutes, which is a bit skimpy for an LP, outrageously short for a CD. *C.A.*

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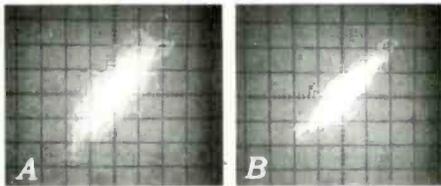
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**BACH: Cantata No. 211 ("Coffee Cantata"); Cantata No. 212 ("Peasant Cantata").** Emma Kirkby (soprano); Rogers Covey-Crump (tenor); David Thomas (bass); Academy of Ancient Music, Christopher Hogwood cond. L'OISEAULYRE ● 417 621-1, © 417 621-4, © 417 621-2 (52 min).

Performance: *Lusty*  
Recording: *Very good*

Bass David Thomas is superb in both his roles here, as the outraged father trying to wean his daughter from the evils of coffee and as the bumptious peasant trying, not too subtly, to win the favors of his girl friend. As the daughter, Emma Kirkby makes her addiction to coffee contagious, and as the girl friend she has a coyness that will get her everywhere. The period instruments of Christopher Hogwood's Academy of Ancient Music support the vocal goings-on with wonderfully bucolic sounds. Lisa Beznosniuk's flute playing, in particular, is as delicious as anything Bach might have brewed up for himself. *S.L.*

**BEETHOVEN: Piano Trio No. 6, in B-flat Major, Op. 97 ("Archduke").** Suk Trio. DENON © 33CO-1586 (39 min).

Performance: *Noble*  
Recording: *Good*

This 1975 recording of Beethoven's *Archduke* Trio by Czechoslovakia's Suk Trio (Jan Panenka, Josef Suk, and Josef Chuchro) has appeared here before in various formats on several labels. The CD-only version on Denon confirms that it is among the best readings of the work around. The execution of the wonderfully ingenious and witty scherzo is particularly outstanding in what is overall a finely integrated interpretation. The acoustics of the church where the recording was made seem rather bright, but the imaging of the three instruments is excellent, resulting in an unusually clear sonic texture. *D.H.*

**HAYDN: Symphony No. 22, in E-flat Major ("The Philosopher"); Piano Concerto in D Major; Symphony No. 104, in D Major ("London").** Carol Rosenberger (piano); Scottish Chamber Orchestra,



Eric Pritchard, Kate Ransom, Sandy Wilson, and Paul Yarbrough

## ALEXANDER STRING QUARTET

**D**ESPITE the formidable competition, the young, New York-based Alexander String Quartet chose the Debussy and Ravel quartets—unquestionably the most popular record coupling in the repertoire—for its album debut. The impressive results suggest that we will be hearing more from this foursome, which met at Yale in 1981, were coached for two years by Robert Mann of the Juilliard Quartet, and went on to win first prize in the City of Portsmouth International Competition in 1985.

The Alexander Quartet takes an intimate approach in their performances of both quartets, and the recording's producer, David Hancock, has followed their lead. The acoustic surround of New York's Holy Trinity Church enhances the inherent warmth of the ensemble, and the tonal blend is remarkably homogeneous. The dynamic range seems a bit narrower than usual but is by no means cramped.

The Debussy quartet comes off with sensuousness and spirit right from the start. In the scherzo, rather than trying

for the "music on needle points" brilliance that César Franck noted in the score, the players emphasize delicacy of timbre and hair-trigger rhythmic precision. One could hardly ask for a more tastefully rich treatment of the slow movement, and the finale emerges with both *brio* and elegance.

The more obviously brilliant Ravel quartet gets a super-polished opening movement and a precisely defined scherzo (with its accented pizzicati). The muted lyricism of the slow movement is flawlessly conveyed, and in the finale the musicians cast off restraint and go for a dynamic conclusion.

If an intimate approach to these works is to your taste, these performances fit the bill perfectly. Within the chosen framework, the sound is glowing and utterly clear in its revelation of musical texture. *David Hall*

**DEBUSSY: Quartet in G Minor, Op. 10. RAVEL: Quartet in F Major.** Alexander String Quartet. GALLO/QUALITON IMPORTS ● 30-512, © CD 512 (53 min).

### EXPLANATION OF SYMBOLS:

- = DIGITAL-MASTER LP
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Gerard Schwarz cond. DELOS © D/CD 3061 (71 min).

**HAYDN:** *Symphony No. 21, in A Major; Cello Concerto No. 1, in C Major; Symphony No. 96, in D Major ("The Miracle")*. Janos Starker (cello); Scottish Chamber Orchestra, Gerard Schwarz cond. DELOS © D/CD 3062 (69 min.).

Performances: *Sparkling*  
Recordings: *Excellent*

The object of the new Delos series devoted to Haydn's orchestral music is not to present every note in chronological order but to assemble balanced programs of the composer's most significant works. Judging from these first two releases in the series, that object has been completely achieved. Concerted works are juxtaposed with symphonies, later works with early ones (like the radiant and unfamiliar Symphony No. 21 in the second album), making for splendid and varied listening.

Gerard Schwarz imparts verve and bounce to the performances, bringing out all of Haydn's irrepressible vigor and wit, but he also rises to the composer's most elegant and deeply felt statements. The soloists are well chosen. Janos Starker turns in a suave reading of the C Major Cello Concerto, and Carol Rosenberger plays the charming D Major Piano Concerto with a silvery tone and graceful poise. Recommended. *S.L.*

**MONTEVERDI:** *Vespro della Beata Vergine*. Soloists: Chorus and Orchestra of La Chapelle Royale; Collegium Vocale; Les Saqueboutiers de Toulouse, Philippe Herreweghe cond. HARMONIA MUNDI FRANCE © HMC 901247.48 two CD's (90 min).

Performance: *Sumptuous*  
Recording: *Beautiful*

Perhaps one of the most beautiful works to be built around Gregorian chant is Monteverdi's Vespers of the Blessed Virgin of 1610. The musical settings are richly varied, ranging from solo voices to double choruses and from intimate chamber ensembles to the full panoply of seventeenth-century Venetian instrumental forces. The complex mosaic is all held together by the chant, serving as a *cantus firmus*, and by Monteverdi's genius as a composer.

The richness of the score is beautifully caught in this performance conducted by Philippe Herreweghe. Although he employs early instruments and scrupulously authentic performance practices, it doesn't sound strained. Everything works, and the unfamiliar sonorities of the instruments and the antique vocal style are in perfect harmony with the effects Monteverdi presumably had in mind. Particularly telling is the contribution made by the Saqueboutiers (sackbut or horn players) of Toulouse. Buy and be rewarded. *S.L.*



Gerard Schwarz: Haydn with verve

**MOZART:** *Horn Concertos Nos. 1-4; Rondo in E-flat Major (K. 371); Concerto Movement in E Major (K. 494a)*. Dale Clevenger (horn); Franz Liszt Chamber Orchestra, Dale Clevenger cond. CBS © MK 42324 (66 min).

Performance: *Tops*  
Recording: *Excellent*

The music that Mozart composed between 1781 and 1791 for his horn-virtuoso friend, Joseph Leutgeb, is among his most beguiling, and on this CD we seem to have all that he set down for horn and orchestra. This includes not only the four completed concertos, but also the delightfully witty Rondo in E-flat and a lovely, fragmentary concerto movement in E Major, which regrettably ends with the soloist in mid-phrase. It adds up to some sixty-six minutes of listening pleasure, and Dale Clevenger carries off the solo role flawlessly. A particular treat—and feat—is the D Major Concerto, which Clevenger plays on an unvalved natural horn. It is marvelous how he handles the lip trills and stopped notes, which in less skilled hands can make the player sound as if he has a bad cold. The pacing overall is correct, and the orchestral support is superb all the way. *D.H.*

**MOZART:** *Piano Concertos Nos. 15 and 22* (see *Best of the Month*, page 177)

**MOZART:** *Piano Concerto No. 23; Piano Sonata No. 13* (see *Best of the Month*, page 178)

**MOZART:** *Der Schauspieldirektor* (see SALIERI)

**PAINE:** *Symphony No. 2, in A Major, Op. 34 ("In the Spring")*. New York

Philharmonic, Zubin Mehta cond. NEW WORLD © NW350-1, © NW350-4, © NW350-2 (50 min).

Performance: *Charming*  
Recording: *Very good*

John Knowles Paine was this country's first symphonic composer of note. His Second Symphony, the first such American work to be printed in full score, was received with enormous enthusiasm in 1880. The good ladies of Cambridge, Massachusetts, waved their handkerchiefs and shouted. John Dwight of the famous *Dwight's Journal* got so carried away that he stood on his chair, opening and closing his umbrella in a veritable paroxysm of enthusiasm. American concert audiences seem to have been more receptive to new music back then than they are now.

Paine studied in Germany, and his jovial Second Symphony falls somewhere between Schumann and Elgar. Yet, we are told, critics debated its "advanced" tendencies—its explicit program and use of leitmotifs (well, sort of). The work is subtitled *In the Spring*, and various sections bear subtitles like "Departure of Winter," "Awakening of Nature," "May-Night Fantasy," "A Romance of Springtime," and "The Glory of Nature." It is charming, it is endearing, it is sprightly, neat, and entirely lovable—but not exactly avant-garde!

Why is the work so entirely forgotten? A whole generation of German-influenced American music sank into oblivion after World War I, when tastes changed tremendously. This music is probably no better and no worse than a host of other conservative works of late Romanticism. The difference is that it is ours. It belongs to American musical history.

New World Records has chosen a Hudson River painting for its cover. Like the painters of that school, but with much less originality, Paine transferred the European Romantic sensibility to an American setting. There was, in fact, a whole New England Romantic school that followed. Paine taught at Harvard, and his pupils included Carpenter, Converse, Foote, Hill, and Mason. He undoubtedly influenced Chadwick, Parker, MacDowell, and others as well. Yet the whole movement vanished, almost without a trace. The German Romantic tendency seems to have affected the ultimate course of American music only through the work of two pupils of Parker at Yale: Charles Ives and Roger Sessions!

Historical musing aside, this is a delightful work, and it is certainly given its due and more by the New York Philharmonic under Zubin Mehta.

*Eric Salzman*

**PENDERECKI: Cello Concerto No. 2.** Mstislav Rostropovich (cello); Philharmonia Orchestra, Krzysztof Penderecki cond. *Partita.* Elzbieta Stefanska-Lukowicz (harp); Wolfgang Bargel (bass guitar); Annemarie Schmeisser (harp); Norbert Brenner (double bass); Southwest German Radio Orchestra, Krzysztof Penderecki cond. ERATO/RCA © ECD 75321 (51 min).

Performance: *Rich*  
Recording: *Very good*

Krzysztof Penderecki's music has changed, and I am not sure that it has changed for the better. The old Penderecki composed music in giant clusters and hammer blows; it was an art of changing colors, dramatic interjections and juxtapositions, and the use of big building blocks. The Partita here, composed in 1971, shows the last phases of his old style. It is process and texture music—a kind of agonizing European avant-garde filmic style that's not easy to take but, like a good horror movie, is brilliant and scary at once. A striking and wide-ranging work, it is colorfully performed and well recorded, though the analog master tape apparently lacked noise reduction (how fussy we have become about a little tape hiss!).

Only a few traces of the old Penderecki remain in the Cello Concerto No. 2, written a decade or so later for Mstislav Rostropovich. It is an old-fashioned concerto in the Romantic-modern tradition, the tradition of the Berg Violin Concerto. As befits a piece for Rostropovich, it is very virtuosic, and, in the old Eastern European tradition, it is dark and brooding, too. Audiences like it, and it is a very well-conceived work. But, unlike a lot of postmodernism, which can be quite fresh, it is a giant step squarely into the past.

Penderecki's music always had a quality of foreboding and angst, but the expression of it was more ritualistic,

more public. With works like the Second Cello Concerto, he has turned inward to that dark night of the soul where his Slavic predecessors liked to hang out. Rostropovich revels in this rich, Slavic material, and the digital recording is equal to the performance. But I enjoyed the Partita more.

*Eric Salzman*

**RACHMANINOFF: Symphonic Dances, Op. 45; Intermezzo from "Aleko."** U.S.S.R. TV and Radio Large Symphony Orchestra, Vladimir Fedoseyev cond. MOBILE FIDELITY © MFC D 858 (35 min).

Performance: *Mellow*  
Recording: *Same*

Rachmaninoff's Symphonic Dances, one of the composer's last works (and one of the few he wrote in this country), is one of my two favorite Rachmaninoff pieces (the Paganini Rhapsody, also relatively late, is the other). It is really a Dance Symphony, and perhaps because it was meant to be danced to (the composer intended it to be choreographed by Fokine), it is less marred by personal anguish than many of Rachmaninoff's other large-scale works. Like Tchaikovsky, Rachmaninoff put a tremendous amount of feeling and drama into his dance music, but it is just objectified enough to allow the frame to hold the emotions in a very powerful way.

This recording, issued on CD in the Mobile Fidelity series derived from the Melodiya catalog, has been processed from an analog master tape and trans-

ferred at half speed. The result is something like an excellent, noise-reduced tape retaining the virtues of a mellow analog recording of a very mellow, very Russian performance. This music may have been written in the U.S. less than a half century ago, but this is still the old Romanticism and it still suits the Russian temperament to perfection.

As a bonus, the Symphonic Dances are followed by the two-and-a-half-minute intermezzo from Rachmaninoff's opera *Aleko*. Mobile Fidelity advises that it was recorded at the same time as the main work, by the same forces, but was not included on the old Melodiya/Angel LP release.

*Eric Salzman*

**RAVEL: L'Enfant et les sortilèges.** Colette Alliot-Lugaz (soprano), the Boy; Arlette Chedel (contralto), the Mother, Chinese Cup, Dragonfly; Isabel Garcisanz (mezzo-soprano), White Cat, Squirrel, Shepherd; Michel Sénéchal (tenor), Teapot, Frog; Philippe Huttenlocher (baritone), Grandfather Clock, Black Cat; Elisabeth Vidal (soprano), Fire, Nightingale; others. La Manécanterie-Conservatoire Populaire de Musique-Genève; Chorus of Radio Suisse Romande; Orchestre de la Suisse Romande, Armin Jordan cond. ERATO © MCE 75312, © ECD 75312 (44 min).

Performance: *Superb*  
Recording: *Excellent*

While hardly anyone buys a recording for its liner notes, the documentation might reasonably be the deciding factor for many in choosing between this new



*Krzysztof Penderecki: brilliant and scary at once*

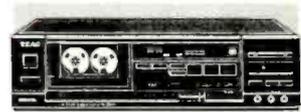
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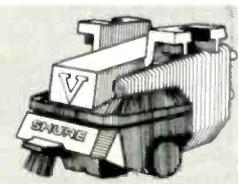


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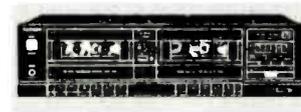


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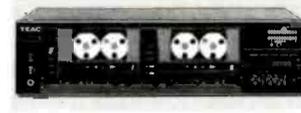
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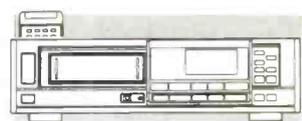
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recording of Ravel's enchanting little opera and the one conducted by André Previn on Angel. Not only does Angel provide a more comprehensive background, but Erato, which presents its skimpier notes in three languages, doesn't even bother to offer a translation of the *text*, which in this case includes what is actually sung as well as the copious stage directions essential to an understanding of the piece. To add to the frustration, the booklet, even without the translation, is still too thick to fit inside the CD "jewel box."

Otherwise I'd have to concede that Armin Jordan's new recording is superb, with some evident advantages over Previn's, delightful as that conductor's is in its own right. In general the two casts are of about equal strength (Huttenlocher, in fact, sings his two roles in both recordings), but Jordan's Colette Alliot-Lugaz brings a more convincingly boyish quality to the principal role than Previn's Susan Davenny Wyner, and the choral sections in the Swiss performance give off a quality of real enchantment beyond what Previn's Ambrosian Singers achieve. There is also, under Jordan, a perceptibly greater sense of vitality in terms of dramatic momentum, and Erato's sound is a bit more vivid than Angel's.

These are all differences of degree between two very enjoyable recordings, however, and since full appreciation of this work is impossible without a knowledge of the text, many may opt for the Previn on that account and may be just as happy with it as with this fine new performance. *R.F.*

**SALIERI: *Prima la musica, poi le parole*.** Robert Holl (bass), Maestro; Thomas Hampson (baritone), Poet; Roberta Alexander (soprano), Donna Eleonora; Julia Hamari (soprano), Tonina. **MOZART: *Der Schauspieldirektor*.** Magda Nador (soprano), Madame Herz; Krisztina Laki (soprano), Mademoiselle Silberklang; Thomas Hampson (baritone), Monsieur Vogelsang; Harry Van Der Kamp (tenor), Buff. Concertgebouw Orchestra, Nikolaus Harnoncourt cond. TELDEC © 8.43336 ZK (49 min).

Performance: *Lively*  
Recording: *Very good*

Here's a pair of one-act operas (vaudeville skits, really), one in Italian and the other in German, both on the same subject and both commissioned by the Emperor Joseph II for consecutive performance at either end of the Schönbrunn Orangery. Seated between the two improvised stages, the Emperor's courtiers were to judge their relative worth. Salieri won hands down; Mozart's piece was a fiasco.

Although Salieri's title suggests the argument of Richard Strauss's *Capriccio*, these two works have less to do with the philosophy of art than with the pitfalls of getting a show on stage. Inter-



Felicity Lott: virtually unmatched in Strauss songs

play of character—jealousy, self-importance, rivalry—focuses our attention. I have never seen the Salieri staged, but I know from experience that Mozart's little vignette can be very funny indeed. And despite Salieri's victory at Schönbrunn, there is no doubt that Mozart's "failure" has more bounce and style. In fact, the overture to *Der Schauspieldirektor* is frequently played on its own as a concert piece.

Both casts sing these graceful and charming *bijoux* with verve and a sense of fun, and the Concertgebouw Orchestra plays with zest and crispness under Nikolaus Harnoncourt's able direction, making the music sparkle in true eighteenth-century style. A recommended merriment. *R.A.*

**STRAUSS: *Ein Heldenleben, Op. 40; Vier letzte Lieder*.** Felicity Lott (soprano); Scottish National Orchestra, Neeme Järvi cond. CHANDOS ● ABRD 1228, © ABTD 1228, © CHAN 8518 (66 min).

Performance: *Very good*  
Recording: *Excellent*

With his remarkably prolific recording activity, conducting orchestras in Glasgow, Gothenburg, and Munich on at least three different labels, Neeme Järvi must be about halfway through the Complete Works of Everybody by now. This new Chandos release initiates yet another "integral" project: all of the

Strauss tone poems, each to be packaged with some of the composer's songs with orchestral accompaniment.

This initial coupling is surely apt since each work represents a sort of summing-up. *Ein Heldenleben* is a self-congratulatory indulgence upon the completion of the cycle of great tone poems written by the thirty-four-year-old Strauss, who would from that point on focus his creative energies primarily on the lyric stage; the set of *Four Last Songs* constitutes a reflection on a long lifetime of achievement. A passage from *Death and Transfiguration* is one of several such quotations in *Ein Heldenleben*, and it reappears both more conspicuously and more poignantly in the last of the valedictory songs. Felicity Lott, I think, gives more pleasure in these songs than anyone who has recorded them since Lisa della Casa's exquisite version with Karl Böhm. Like Della Casa, Lott follows the sequence beginning with *Beim Schlafengehen* rather than the published order beginning with *Frühling*; it is said to have been Strauss's preference, and I've always felt it works better.

As for the grandiose tone poem itself, it seems to suit Järvi's temperament, and the Scottish orchestra responds on a level of virtuosity that surpasses anything it has done on records before. I prefer it to Karajan's granitic approach, and the sound itself rivals what Denon achieved for Blomstedt. *R.F.*

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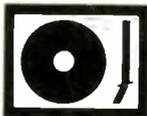
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## VIDEO REVIEWS

*Discs and tapes reviewed by Robert Ackart, Chris Albertson, Louis Meredith, Alanna Nash*

**I LIVE FOR ART: THE GREAT TOSCAS.** Licia Albanese, Montserrat Caballé, Maria Callas, Régine Crespin, Kiri Te Kanawa, Zinka Milanov, Magda Olivero, Renata Tebaldi, others. KULTUR 1150, VHS Hi-Fi and Beta Hi-Fi (91 min).

Performance: *Representative*  
Recording: *Good*

Of more than common interest, this videocassette presents baritone Robert Merrill as host of a series of interviews with famous Toscas of recent years. It might be subtitled, "What Makes a Prima Donna?" The artists talk not only about the role of Floria Tosca and its musical and dramatic demands, but also about themselves in relation to the part and, more broadly, to the art of singing. The video color is good, the settings in which the individual singers appear are attractive, and the questions Merrill asks elicit answers that are often illuminating and sometimes touching. Among the divas, in addition to those listed above, are Eva Turner, Gina Cigna, Ljuba Welitsch, Dorothy Kirsten, Leonie Rysanek, Galina Vishnevskaya, and Grace Bumbry. The film includes some self-serving hokum on the part of a few of the divas, but those artists who have truly considered their metier, and are endowed with a degree of personal profundity, do offer some revealing and pertinent ideas both on singing and, through their experiences, living. *R.A.*

**THE POLICE: *Every Breath You Take—The Videos.*** The Police (vocals and instrumentals). *Roxanne; Can't Stand Losing You; Message in a Bottle; Walking on the Moon; So Lonely; Don't Stand So Close to Me; Every Little Thing She Does Is Magic;* and seven others. A&M VC60122 VHS Hi-Fi, BC60122 Beta Hi-Fi (59 min).

Performance: *Music yes, visuals no*  
Recording: *Very good*

Considering that the Police is one of the most successful and influential bands of the decade, it's something of a shock to sit through this compilation of their greatest video hits. The clips are almost consistently cheesy. Fittingly, the best thing here is the title song. As directed by Godley and Creme, it's an elegant black-and-white rendering of one of the most gorgeous pieces of pop music in memory.

The rest, however, are either grainy shots of concert lip-sync jobs (*Roxanne, Message in a Bottle*), lame Richard Lester pastiches (*Every Little Thing She*



*Characters who have become virtual members of the family*

## STAR TREK IV

**I**T'S no secret that the *Star Trek* movies have been getting progressively more entertaining, thus violating the usually inviolable Rule of Sequels (the higher the roman numeral, the lousier the picture). And *Star Trek IV: The Voyage Home*, the latest in the series, is a particular delight, the kind of serendipitous, old-style Hollywood product in which everything comes together (for basically mysterious reasons) and all the right audience buttons are pushed.

In many ways, this is the closest of the films to the Liberals in Space ambience of the television show at its best, an Innocents Abroad comic fable in which the Enterprise stalwarts confront the twentieth century (specifically, San Francisco in 1986), a conceit that allows director Leonard Nimoy and screenwriter Nicholas Meyer the opportunity to take some terrific satiric potshots at our present-day foibles and mores. There's also a surprising ecological subtext (Save the Whales, no less) that was a far-from-certain commercial move in these Reaganite times, and all concerned deserve applause for simple bravery.

But everything here works. The performances, by actors who have by now

become virtual members of the audience's collective family, are charming, particularly those of William Shatner and Nimoy himself, whose intergalactic Laurel-and-Hardy routine has never been funnier. The special effects, by George Lucas's Industrial Light and Magic, are often stunningly beautiful (check out the lift-off from Vulcan in the opening sequence). Most surprising, the film's score, by Leonard Rosenman, eschews the usual pomposity of sci-fi film epics for something that is altogether more modernist and lighthearted.

Add to all this a genuinely heartwarming ending that wraps up the loose ends from the preceding films, and you get one of the real screen surprises of the decade—a *Star Trek* movie you don't have to be a Trekkie to love. Paramount's picture and sound quality is first-rate, with particularly stunning sound in the disc format.

*Louis Meredith*

**STAR TREK IV: THE VOYAGE HOME.** William Shatner, Leonard Nimoy, Catherine Hicks, Jane Wyatt, others. PARAMOUNT 1797 VHS Hi-Fi and Beta Hi-Fi, LV-1797-2 videodisc (119 min).

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*Does Is Magic, Spirits in the Material World*), or overblown surrealism (*Wrapped Around Your Finger, Don't Stand So Close to Me '86*). The music, of course, is by and large great, but unless you're a rabid fan, you'll be far better off with the CD. L.M.

### SHOSTAKOVICH: *The Golden Age*.

Natalia Bessmertnova, Gediminas Taranda, Ereik Moukhamedov, Tatiana Golikova (principal dancers); Yuri Grigorovich (choreography); Orchestra of the Bolshoi Theatre, Alexander Lavrenyuk cond. HOME VISION GOL01 VHS Hi-Fi, GOL01B Beta Hi-Fi; PIONEER ARTISTS PA-87-199 two LaserDiscs (113 min).

Performance: *Stunning*  
Recording: *Very good*

Shostakovich was only twenty-four in 1930 when his satirical ballet *The Golden Age* (commonly known in the West as *The Age of Gold*) had its première in Leningrad. Critics at the time praised the score but took a rather dim view of the scenario, and decision makers at the Bolshoi had similar feelings. The work was therefore dropped from the company's repertoire and all but forgotten except for the whimsical Polka, which became standard concert fare. Choreographer Yuri Grigorovich, believing the work deserved to live again in full, sought and obtained permission to change the scenario into something more acceptable. The resulting Bolshoi production, brilliantly choreographed by Grigorovich, has fortunately been preserved in a videotape release from Home Vision and two LaserDiscs (three sides) from Pioneer.

If, as someone has said, Brahms was a composer for the middle-aged, surely Shostakovich was a composer for the yet unborn. Almost sixty years after its first performance, *The Golden Age* sounds remarkably *au courant* and fresher than anything Broadway has produced in the past ten years or so. I use that analogy because this ballet has a distinct Broadway flavor, but only the Broadway of more recent years; in 1930, it would have been far too sophisticated for the Great White Way.

The period is the Twenties, the plot centers around a class conflict, and, like much of Shostakovich's work, *The Golden Age* is rife with political overtones. Here, Rita, a foxy night-club dancer, is wooed both by a villainous member of the bourgeoisie and by a fisherman. In the opening of the second act, Shostakovich unashamedly borrows from Vincent Youmans, but you have never seen or heard his *Tea for Two* served so deliciously as when the patrons of the decadent bourgeois café take to the floor. Later, you might recognize the opening thumps of Duke Ellington's *Creole Love Call*, the 1927 recording of which would have reached Europe around the time that Shostakovich was writing this work. The Russian

composer uses Ellington's famous opus as the basis for a dance scene that captures the essence of the era's American big-band sound and parodies it in a manner very reminiscent of Kurt Weill's music during his Berlin period.

There is little change in the scenery other than to take us from the orange glow inside the café to its blue-and-purple exterior, where the drama is more physical. Tatiana Golikova is a feast for the eyes as the naughty Lyuska, and Gediminas Taranda's Yashka is a most charming villain. Both exhibit a wonderful sense of drama, playing out Grigorovich's moves as if they were inventing them on the spot. As Rita, Yashka's dancing partner, Natalia Bessmertnova performs with grace, skill, and wit, and Ereik Moukhamedov, as Boris, her fisherman suitor, seems to defy gravity. The supporting dancers appear to be equally inspired by this wonderful work, and BBC director Colin Nears has done a splendid job of choreographing his cameras. C.A.

**GEORGE THOROGOOD AND THE DESTROYERS:** *Live*. George Thorogood and the Destroyers (vocals and instrumentals). *Madison Blues; One Bourbon, One Scotch, One Beer; Night Time; Reelin' & Rockin'; I Drink Alone; Bad to the Bone; Nobody but Me*. SONY RO500VH VHS Hi-Fi, RO500BE Beta Hi-Fi (60 min).

Performance: *Classy clowning*  
Recording: *Good*

Any discussion of George Thorogood and the Destroyers boils down to a simple question: How did what is basically a second-string bar band ever wind up with a national following and a bunch of hit records? Face it. Thorogood's musical gifts are modest at best. He's an okay guitarist in a sort of middle-Sixties way (a Danny Kalb with discipline, perhaps), but as a singer he's ridiculous, no better or worse than you or me or anybody else who ever sang a Chuck Berry song in a garage band. And his colleagues can't negotiate much beyond a simple blues shuffle.

And yet . . . as this videotape proves, Thorogood's success isn't a fluke. Watching him duck walk and leer and mug his way through this anthology—half concert footage, half MTV conceptual clips—you find yourself smiling against your better judgment. And when Thorogood proclaims, in a price-less pool-hall confrontation with the unutterably cool Bo Diddley, that he's *Bad to the Bone*, you just collapse in front of your TV set, incapacitated with laughter.

In short, Thorogood isn't a bluesman, he's a class clown—and a darn good one at a time when they're in short supply in rock-and-roll. Highly recommended, especially *I Drink Alone*, the most hilariously surreal paean to drunken solipsism anyone's ever committed to tape or film. L.M.

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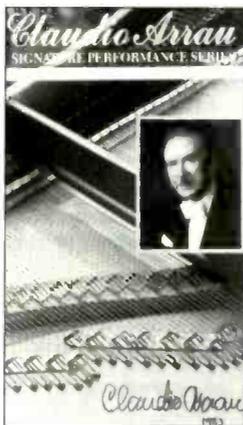
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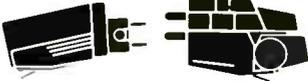
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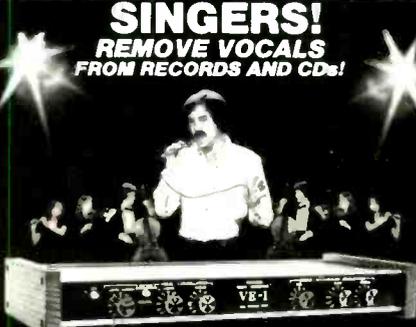
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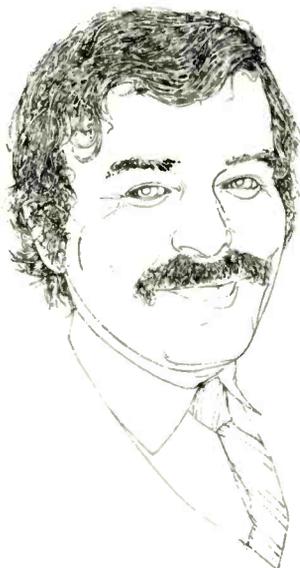
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## THE HIGH END

by Ralph Hodges



### Gremlins

**I**F your system is like most of the ambitious, temperamental ones that are the concern of this column, it gets the wobbles every once in a while. A fully satisfactory listening session on Wednesday is unexpectedly followed by a frustrating, sour-sounding one on Thursday, and you can find nothing more likely to account for this than a particularly unfavorable alignment of astral bodies or mental deterioration progressing even more rapidly than you had feared. Your suspicions about the latter explanation are not allayed when, seconds, hours, or days later, the condition seems to correct itself with no attention from you.

For years, these transient systemic anomalies—or gremlins, if you will—have fascinated me almost to the point of suicide. Every time an explanation comes along that appears at least as reasonable as lack of appropriate Pyramid Power, I am experimentally onto it in a flash. Of course, if a cure of the condition results, there's rarely any way of telling whether it was something I did or something "it" decided to do, whatever "it" is. But it is in the nature of man to keep trying, hop-

ing for a quick glimpse of an orderly universe out there.

Such a glimpse may have been afforded me at the recent New York Audio Engineering Society convention, where the Rane Corporation's Dennis A. Bohn presented a paper innocuously titled "Environmental Effects on the Speed of Sound." Mr. Bohn, principally addressing the field of professional sound-system design, emphasizes that none of his data are new. But as for where the data can lead, Bohn says, "Many people realize that sound velocity depends upon temperature, barometric pressure, relative humidity, altitude, air composition, and so on. Only somewhere they learned they may ignore these effects, that they are not significant."

Bohn obviously meant to differ vigorously. To see what he's up to, let's take a couple of his examples, altering the figures only trivially to relate them better to home situations.

Assume that the ambient temperature in a listening room is 20° C. (68° F.) and the relative humidity is 30 percent—the most comfortable conditions imaginable for humans, says science. The test signal, which I've chosen because it represents the point at which home listening-room effects normally begin to show up strongly in frequency-response plots, is 500 Hz. The velocity of sound in the room (it is independent of frequency) is 1,127.763 feet per second, and a little calculation shows that a 500-Hz wavelength is then 2.256 feet.

Suddenly it's a pleasant summer's day (if you're dressed for it) in the room, with temperature now 30° C. (86° F.) and humidity 70 percent. The velocity of sound increases to 1,151.578 feet per second and the 500-Hz wavelength to 2.303 feet—almost  $\frac{1}{20}$  of a foot difference. Is this scary? Not by itself, but let's look further.

We're dealing with a frequency where room effects are apparent, which means that reflected sounds—emanating from a source, traveling to a reflective surface, and then bouncing back toward the source—are beginning to have a dominant effect on frequency response. A typical to-and-fro sound-

path length for a home listening room might be 50 feet (25 feet to and 25 fro). What happens to 500 Hz in 50 feet? Under the first set of temperature/humidity conditions, 22.17 500-Hz wavelengths fit into 50 feet; under the second set, it's 21.71 wavelengths. The difference is 0.47 of a wavelength. Shocking? Yes, indeed. Over a 50-foot distance there has been an almost perfect phase reversal between the two hypothetical signals.

In practice, what this means is that if under 20°/30-percent-humidity conditions the reflection of a 500-Hz wave reinforces the output just emerging from the speaker, under 30°/70-percent-humidity conditions its reflection will *cancel* that emergent output. Can this make an audible difference? It's very hard to see how it wouldn't. But when all frequencies and all possible climatic conditions are considered, it's obvious that the difference will be an elusive and puzzling one. Very long wavelengths will be correspondingly less affected by this phenomenon, so familiar room-mode patterns will stay pretty much in place. Unfortunately, however, that only makes it harder to identify and measure what is going on.

Bohn points out that, given these uncontrolled variables, a sophisticated electronic-equalization system could sometimes make matters worse than if there were no EQ at all. Informed repositioning of loudspeakers is probably the best way to adjust for a changing environment, but how many of us can or will go through that? It is a tough nut that Bohn has presented us with, frustrating most solutions except acoustical-absorption treatments heavy enough to attenuate or eliminate room effects throughout most of the audio range.

Should Bohn's conclusions prove an important key to the gremlin manifestation, however, we might consider his advice: climate control. For years I have sought an effective, truly quiet air-conditioning system that would permit music, but not landlords' objections, to be heard. Nothing doing so far. But if such a device could be produced, it might become the ultimate audiophile accessory. □



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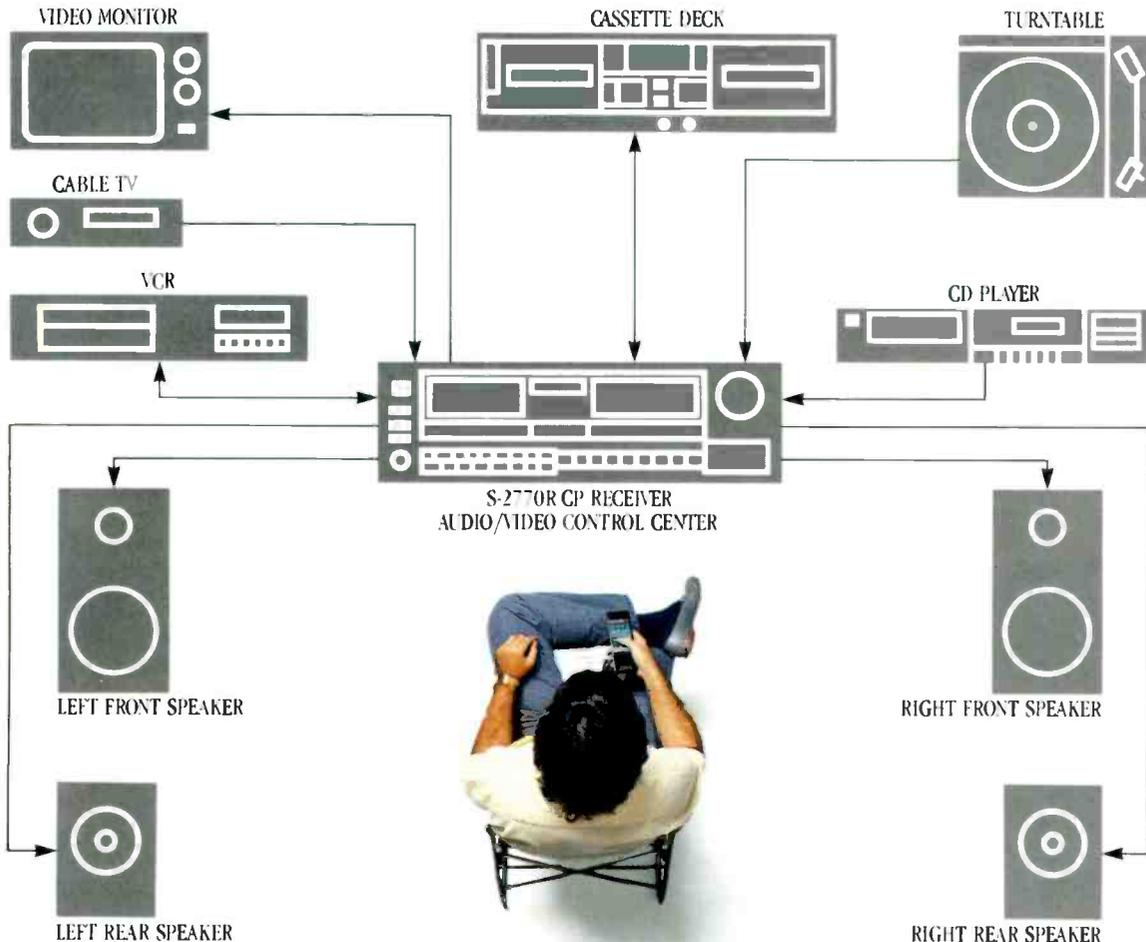


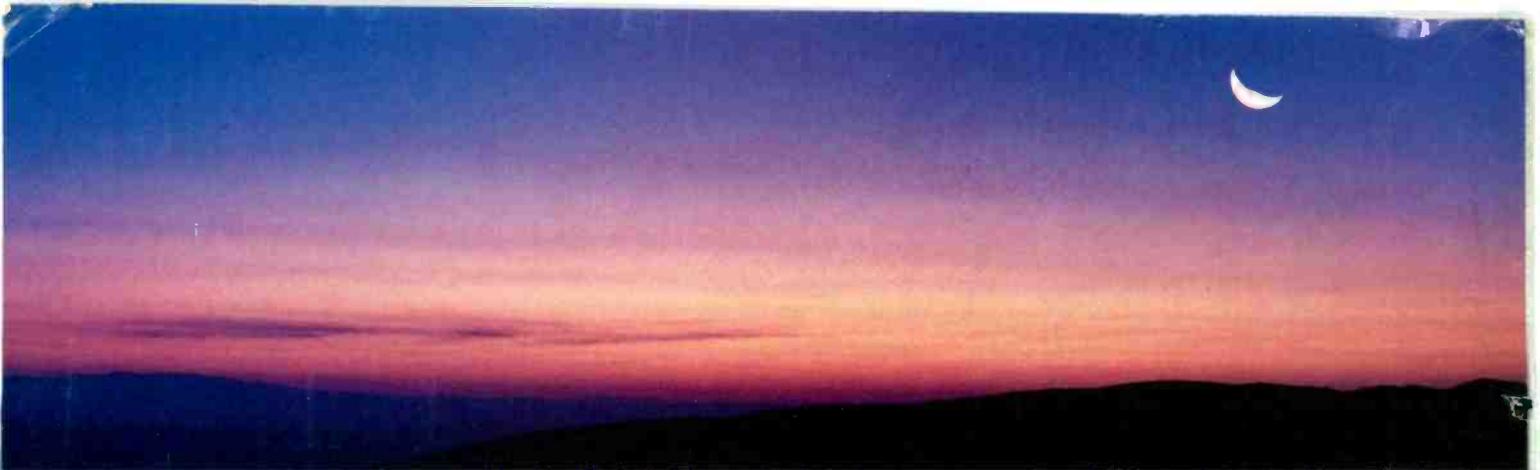
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