EQUIPMENT BUYING GUIDE
CD PLAYERS, SPEAKERS, AMPLIFIERS, RECEIVERS, TURNTABLES, TUNERS

THE BEST RECORDS OF THE YEAR
Introducing Matthew Polk's New SDA Mobile Monitor Systems

Matthew 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."

Complete systems (front and rear speakers plus an SDA Automotive Crossover Matrix) begin under $500.
The world's finest automobiles deserve the world’s finest sounding automotive loudspeakers.

CIRCLE NO. 37 ON READER SERVICE CARD
Matthew Polk and his extraordinary new Signature Edition SDA 1C and SDA 2B.
Better basic concept of mono is that you have one account the fundamental difference between a speaker design was never modified to take into first true stereo speakers. The basic concept of embodied in the SDAs make them the world's better - as a result of their SDA design. 

“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 two different signals, each played back through a separate speaker and each meant to be heard by only one ear (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 (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 huge 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.”

“Matthew Polk Has a Passion for Perfection!”

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

The 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.

Complete specifications of all Polk home speakers on page 202.
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 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”

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.”

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 SDA's. 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 SDA's, 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.

“At the price they’re simply a steal.”

Audiogram Magazine

No matter what your 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 SDA's and begin under $1000. 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 SDA's. You'll always be glad you bought the best.
Radio Shack's New High-Power Receiver With Infrared Remote

Powerhouse performance with the luxury of wireless remote operation! The all-new Realistic® STA-2700 has the power and features to serve as the heart of today's sophisticated digital audio and video systems. Rated 100 watts per channel, minimum rms into 8 ohms from 20 to 20,000 Hz, with no more than 0.05% THD. The 18-key remote gives you total control from across the room. And the digitally synthesized tuning system features a fluorescent frequency display, a programmable memory for storage of six FM and six AM stations for instant recall, plus search and manual tuning modes. The tape control center puts you in command of 2-way dubbing and 2-deck monitoring. Upgrade your system and unleash the power of the STA-2700. Only $499.95, and only at Radio Shack.

Radio Shack
A DIVISION OF TANDY CORPORATION

Send for Your FREE 1988 Catalog!
Mail to Radio Shack, Department 88-A-281
300 One Tandy Center, Fort Worth, TX 76102

NAME
STREET
CITY    STATE    ZIP

Remote batteries extra. Price applies at participating Radio Shack stores and dealers
The McIntosh XRT 22 Loudspeaker System delivers

The McIntosh XRT 22 is the purest expression of the loudspeaker scientist's endeavors. It is the one right combination of component parts that has eluded the diligent searcher for the loudspeaker bridge to the dominion of reproduced musical reality. The high-frequency radiator column is an illustration of the right combination. The 23 tweeter elements can reproduce 300 watts sine wave input power at 20 kHz, with the lowest measured intermodulation distortion. Because each tweeter mechanism handles a small quantity of the total power, extremely low quantities of distortion are developed. The total column radiates the energy in a half cylindrical time-coordinated sound field. The low distortion, transparency of sound, coherence of sound images, definition of musical instruments, and musical balance is simply a revelation that you must experience.

Extra Realism
Extra Depth
Extra Spaciousness
Extra Smoothness

Handcrafted with pride in the United States by dedicated, highly trained craftspeople.
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 Ira, 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 early 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 balance.
Thirty

Birthdays. 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 changed as our median age increases, as larger and larger numbers of Americans pass that water mark. The great mass of “baby boomers” are well into their thirties, and popular opinion has it that the 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 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.”

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 Giddens 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 Giddens 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.
JBL PRO SOUND COMES HOME.

Make the music happen with the speakers that made the music. JBL's "IZ" series home loudspeaker systems. They duplicate the renowned JBL studio monitor line depended on by top engineers and musicians in recording studios around the world. And when superstar artists tour, JBL delivers the most advanced stage of loudspeaker technology to their stage shows, too. JBL brings it all back home with the same level of sonic accuracy and true-to-source excitement. Exceptional frequency response, stereo imaging and power handling put in a professional performance every time. JBL. From in-session to in-home, no one engineers you this near to professional sound.

For more information and your nearest dealer call toll free 1-800-525-7000 Ext. 401 or write:
JBL
240 Crossways Park West
Dept. 9401
Woodbury, NY 11797

A Harman International Company
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

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

Marc Richman
Washington, DC

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.
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 aimed 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 Slocumbe
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 Hogwood 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-singing" 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

Perfected Marriage

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

Our unique 3-layer RS-II mechanism is specifically designed to suppress the generation of modulation noise. A precision die-cast alloy frame and molded tape guide block are sandwiched between two transparent precision-molded shell halves made of a special hard plastic, which also incorporate 4 precisely machined metal guide pins. The RS-II's rigidity of construction, accuracy of fit and superior thermal resistance assure unerring tape travel, optimum tape-to-head contact and reduced modulation noise. The result is virtually true-to-source sound quality.

So whether you choose the outstanding SA-XG, or SA-X, with its new vibration-dampening Dual Layer Mechanism (DLM), you can be assured of one thing: An everlasting high bias honeymoon—till decibels do you part.
**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 Musenex 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 ¼-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 ± 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
Experts applaud a new speaker system they've barely seen.

"Superb sound and virtual invisibility."

"In our listening room, side by side with speakers costing three to five times as much, the AM-5 consistently produced the more exciting and listenable sound in A/B tests."

Stereo Review, Julian Hirsch, April, 1987

"...a sonic standout."

"It was reassuring to find in extensive listening tests that no sonic essentials had been sacrificed to virtual invisibility."


They're talking about the Bose® Acoustimass™ system—a patented speaker design that delivers purer sound and virtual invisibility. So you no longer need a room full of speakers for a room full of sound. Listen for yourself—and see it, if you can—at your local Bose dealer.
Horowitz In Moscow The historic return! Music by Scarlatti, Mozart, Rachmaninov, Liszt, Chopin, Scriabin, Schumann, others. DG DIGITAL 125364

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/Mazel. Philips DIGITAL 115473

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

Handel, Messiah (Highlights) Musica Sacra-Westenburg, Hallelujah Chorus. I Know That My Redeemer Liveth, more. RCA DIGITAL 153386

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


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 105429


Rimsky-Korsakov, Scheherazade Vienna Philharmonic/Previn. "A fresh and spacious reading." —Gramophone Philips DIGITAL 15415

Pops In Love The Boston Pops: Williams. Clair de lune, Gymnopédies Nos. 1 & 2, Albéniz suites, Schubert, more. Philips DIGITAL 125230


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 Havanna-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


Tomita: The Mind Of The Universe (Live At Linz, 1984) Ode To Joy, Also Sprach Zarathustra (opening), more. RCA 173829
Fiddler On The Roof: Zero Mostel & original cast; Matchmaker Matchmaker, Sunrise Sunset; If I Were A Rich Man, more. RCA 100051
Pavarotti: Anniversary Che gelida manina, E lucevan le stelle, Vestì 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 Ambrosian Singers, Philharmonia Orchestra/Marriner. Philips DIGITAL 115548
Artur Rubinstein: Chopin, 14 Waltzes ' [Hls] playing is relaxed, assured, and wonderfully controlled."—American Record Guide RCA 101967
Kiri te Kanawa: Blue Skies With Nelson Riddle: Title song, Speak Low, How High The Moon, So In Love, 8 more. London DIGITAL 115053
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 232742
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
Luciano Pavarotti

3 COMPACT DISCS, RECORDS OR CASSETTES $100

with No Obligation to Buy Anything...Ever!

For every regular purchase you do make, you may choose a bonus album for only half of the members club price! A shipment will be sent automatically. If you'd prefer an alternate opportunity a year to shop for fine music at home. But there is no obligation to accept any offering at any time.

Substantial savings with our half-price bonus plan. For every regular purchase you do make, you may choose a bonus album for only half of the members' club price! A shipping/handling charge is added to each shipment.

The International Preview Society
P.O. Box 91406 • Indianapolis, IN 46291

☑ YES! Please accept my membership in The International Preview Society and send me, for 10 days FREE examination, the 3 albums I have indicated below. I may return them after 10 days and owe nothing, or keep them and pay only $1 plus shipping & handling.

Please send all selections on: ☐ Compact Disc ☐ Cassette ☐ Record

Write Selection Numbers Here:

☐ Mr. ☐ Mrs. ☐ Miss First Name Initial Last Name (PLEASE PRINT)

Address ___________________________ Apt. ___________________________
City ___________________________ State __________ Zip. ___________________________

Telephone (_________ ) ____________ Area Code ___________________________

NOTE: Members who select compact disc will be serviced by the Compact Disc Club. Full membership details will follow with the same 10-day, no-obligation, no-minimum purchase privilege.

Limited to new members, continental USA only. One membership per family. We reserve the right to request additional information or reject any application.

Local taxes, if any, will be added.
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 ±0.3 dB, dynamic range as greater than 96 dB. Dimensions are 16 1/2 x 3 x 12 3/4 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, 1150 Feehanville Dr., Mount Prospect, IL 60056.

Circle 124 on reader service card

Genesis

The Genesis Model 7 Series 2 compact two-way speaker has a 6 1/2-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 a 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
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!

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.

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.
Integrated Amplifiers

PM 948

PM 94G
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 Elma 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.
Cupe plating the entire chassis provides a high immunity to low level electrical noise.
Compact Disc Players

CD-946

CD-948
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 side panels, and includes a full function remote control. We believe that no other compact disc player has been made with such absolute attention to detail.
DAT (digital audio tape) is the newest and most accurate recordable audio format available to the consumer, and the Marantz DT-94/84 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.
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 decoding 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**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Output per Channel</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td></td>
<td>FTC 8 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td></td>
<td>200 watts</td>
</tr>
<tr>
<td></td>
<td>140 watts</td>
</tr>
<tr>
<td>Total Harmonic Distortion at Rated Power</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td>5 ohms</td>
<td>0.03%</td>
</tr>
<tr>
<td>8 ohms</td>
<td>0.02%</td>
</tr>
<tr>
<td>IMD at Rated Power</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td>4 ohms</td>
<td>0.005%</td>
</tr>
<tr>
<td>8 ohms</td>
<td>0.006%</td>
</tr>
<tr>
<td>THD Dynamic Power</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td>4 ohms</td>
<td>1.0%</td>
</tr>
<tr>
<td>8 ohms</td>
<td>0.3%</td>
</tr>
<tr>
<td>Damping Factor</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td>4 ohms</td>
<td>200</td>
</tr>
<tr>
<td>8 ohms</td>
<td>100</td>
</tr>
<tr>
<td>Slew Rate</td>
<td>70 V/μs</td>
</tr>
<tr>
<td>Frequency Response (±1 dB)</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td></td>
<td>101 Hz – 20kHz</td>
</tr>
<tr>
<td>SNR (A weighted) at 1 W Output</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td></td>
<td>97 dB</td>
</tr>
<tr>
<td>Dimensions H x W x D</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td></td>
<td>6½&quot; x 18½&quot; x 17&quot;</td>
</tr>
<tr>
<td>Weight</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td></td>
<td>51 lbs</td>
</tr>
</tbody>
</table>

**CD-94**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Response</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td></td>
<td>4 Hz – 20 kHz ± 0.5 dB</td>
</tr>
<tr>
<td>Dynamic Range</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td></td>
<td>Greater than 96 dB</td>
</tr>
<tr>
<td>SNR (A weighted) at 1 W Output</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td></td>
<td>96 dB</td>
</tr>
<tr>
<td>Dimensions H x W x D</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td></td>
<td>6½&quot; x 18½&quot; x 17&quot;</td>
</tr>
<tr>
<td>Weight</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td></td>
<td>51 lbs</td>
</tr>
</tbody>
</table>

**CDA-94**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Response</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td></td>
<td>2 Hz – 20 kHz ± 0.3 dB</td>
</tr>
<tr>
<td>SNR (A weighted) at 1 W Output</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td></td>
<td>More than 100 dB</td>
</tr>
<tr>
<td>SNR (A weighted) at 1 W Output</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td></td>
<td>More than 96 dB</td>
</tr>
<tr>
<td>Channel Separation</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td></td>
<td>More than 90 dB</td>
</tr>
<tr>
<td>THD at Rated Power</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td></td>
<td>0.005% (at 1 kHz)</td>
</tr>
<tr>
<td>Headphone Output Terminal</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td>Output level @ 8 ohms, 14 mW (THD: 0.1%)</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td>Dimensions H x W x D</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td></td>
<td>4½&quot; x 18½&quot; x 13½&quot;</td>
</tr>
<tr>
<td>Weight</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td></td>
<td>28 lbs</td>
</tr>
</tbody>
</table>

**DT-94/84**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Response</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td></td>
<td>2 Hz – 22 kHz ± 0.5 dB</td>
</tr>
<tr>
<td>S/N</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td></td>
<td>95 dB</td>
</tr>
<tr>
<td>Dynamic Range</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td></td>
<td>95 dB playback</td>
</tr>
<tr>
<td>SNR (A weighted) at 1 W Output</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td></td>
<td>90 dB</td>
</tr>
<tr>
<td>Harmonic Distortion</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td></td>
<td>0.005%</td>
</tr>
<tr>
<td>Channel Separation</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td></td>
<td>90 dB</td>
</tr>
<tr>
<td>WOW/Flutter</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td></td>
<td>± 0.001%</td>
</tr>
<tr>
<td>Input/Output</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td></td>
<td>Analog + Digital Optical</td>
</tr>
<tr>
<td>Dimensions H x W x D</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td></td>
<td>4½&quot; x 18½&quot; x 13½&quot;</td>
</tr>
<tr>
<td>Weight</td>
<td>FTC 4 ohms (20Hz-20kHz)</td>
</tr>
<tr>
<td></td>
<td>25 lbs</td>
</tr>
</tbody>
</table>

Note: Pre-recorded digital audio tapes and compact discs cannot be copied directly via the digital ports. Both are recorded at a 44.1 kHz 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.
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?

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?

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 copy 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.
System Compatibility Problems

In the early years of component hi-fi, there was little difficulty in matching 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 ± 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 phone 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 STEREEO 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
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 excellence 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

The 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 23 inches, including the 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 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. A button above the window switches the display to show the remaining time on the disc and the position 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. A button above the window switches the display to show the remaining time on the disc and the position of the current track.
Investing in sound?  
Here’s how to make it pay off.

Great buys—at a great buy:  
HALF PRICE!

Stereo Review is written for people who want to make smart buying decisions. We’ll help you find the right stereo equipment—the first time you buy—and show you how to use it the right way. Because sound information is the key to getting an audio system that gives you what you really want.

We test over 70 stereo products in all price ranges each year. Stereo Review’s product evaluations tell you how the components sound, identify unique features, compare models to others in the same price bracket. We warn you about design quirks, distortion, potential problems. We make the components suffer—so you don’t have to.

You’ll appreciate our straightforward explanations of audio technology. Telling you how to get more out of your equipment. Announcing important breakthroughs. Clueing you in on professional maintenance tips. The kind of inexpensive know-how that can make a million-dollar difference in how your system sounds.

Even if you already have the perfect system, you’ll value Stereo Review’s record reviews. An average of 30 a month, in all categories of music. They’ll inspire that your system’s power isn’t wasted on inferior recordings.

Use this coupon to subscribe to Stereo Review at HALF PRICE. It’s one of the best sound investments you’ll ever make!
amount of noise contributed by its operation.

The circuit configuration of the DP-113R includes quadruple-over-sampling 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 1 1/2 inches in diameter. In addition, the top of the player is stiffened (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 ±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 +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,
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.

**KLIPSCH CHORUS SPEAKER SYSTEM**

*Julian Hirsch, Hirsch-Houck Laboratories*

*The 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 midrange horn are 10 1/4 x 3 3/4 inches, and the treble horn’s mouth measures 4 1/2 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 39 1/2 inches high, 18 1/2 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

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Output Level</th>
<th>Response Curve</th>
<th>Distortion</th>
</tr>
</thead>
<tbody>
<tr>
<td>500 W</td>
<td>1030 W (7 Ohms)</td>
<td>Remains stable</td>
<td>0.5%</td>
</tr>
<tr>
<td>600 W</td>
<td>1150 W (15 Ohms)</td>
<td>Remains stable</td>
<td>0.5%</td>
</tr>
</tbody>
</table>

**Remarks**

- **Klipsch Chorus**
  - Considered a highly efficient loudspeaker.
  - Produced a sound-pressure level (SPL) of 96 dB at 1 meter.
  - Exhibited a relatively constant delay within its operating range.
  - Slight phase shift observed in the midrange.
  - Minimal distortion up to 100 Hz.

**Comments**

- **Sound Quality**
  - "Laid-back" sound of most direct-radiator speakers.
  - Strong treble output.
  - Low bass output.

**Conclusion**

Although the low bass output of this speaker drops off below 60 Hz, it remains 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.

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*
These oscilliscope photos reveal the true dynamic character of music. They also show why NAD designs amplifiers to produce up to seven times their rated power.

Because of the incredible dynamics of today's compact disc recordings, ample "reserve" power is more important than ever for the accurate reproduction of music. That's why you should postpone buying any amplifier or receiver—in any price range—until you've auditioned the "Power Envelope" products from NAD.

The Dynamics of Music. Amplifiers and receivers are rated for power output by using a test instrument to generate a steady, continuous tone. But music is anything but continuous. As you can see, in the spectrum analysis photos above, most music includes frequent furious surges that require brief bursts of power. And indeed, many amplifiers are capable of delivering bursts of high "dynamic power" for very brief periods (typically 0.02 seconds, or 20 milliseconds). But as the photographs show, the tone-bursts in music can last 80 to 450 milliseconds, and sometimes longer.

The Power Envelope. That's why every NAD amplifier and receiver, from our modest 3220PE Amplifier to our top-of-the-line Monitor Series 7600 Receiver features our exclusive "Power Envelope" technology. The Power Envelope design uses two power supplies: a low-voltage unit that operates up to the rated power level, and a high-voltage unit that is used only when a burst of power is needed.

When a musical surge occurs, a special tracking circuit instantly lets current flow from the high-power supply to your loudspeakers. This system allows NAD amplifiers to deliver two to seven times their rated power for bursts of 500 milliseconds or more. With Power Envelope technology, NAD components have the musically-useful output power of much larger, much more expensive equipment. In fact, High Fidelity magazine tested our 75-watt-per-channel Power Envelope receiver and found it delivered dynamic peaks "the equivalent of 560 watts per channel."

Power Envelope technology is only one of the many innovative features that set NAD amplifiers and receivers apart from the rest of the crowd. If you'd like to have the whole story—including a complete explanation of our Power Envelope circuit—visit your local NAD dealer or send us the coupon below.

The Power Envelope From NAD

Left: NAD 7600 Remote Controlled Stereo Receiver bridged with NAD 2600 Power Amplifier. Rack handles are optional equipment.

Right: NAD 3220PE Integrated Stereo Amplifier.
IF BI-AMPLIFIED
SOUND IS THE
CAT'S MEOW,
GET READY FOR
THE LION'S ROAR.

ALTEC LANSING INTRODUCES PENTAMPLIFIED™ SOUND.

Audiophiles have long been purring over the benefits of bi-amplified speakers. They point to the incredibly lifelike dynamic range. The reduced intermodulation distortion.

At Altec Lansing however, we've been pursuing much bigger cats.

Introducing the Altec Lansing BIAS™ 550. The first loudspeakers in the world with Pentamplified Sound.

The 550 is a system unlike any other. With discreet amplifiers for each of 5 bandwidths. A total of ten driver-dedicated amplifiers delivering 1400 watts of power (.05 % THD/1 Watt to rated power.)

And because you can adjust the volume of each amplifier by remote control, you can tailor the sound perfectly for the nuances of your room.

From the very first moment, you'll hear subtleties you've never heard before. Startling dynamics. Airy sound staging. Reproduced without any noticeable coloration.

But of course, sophisticated technology demands equally sophisticated materials.

To complement our woven carbon fiber cones, we developed mid and high frequency drivers coated with diamond particles. Producing an astonishingly accurate high frequency response.

To eliminate resonance, we designed a unique double enclosure cabinet. Literally a cabinet within a cabinet separated by a layer of acoustical foam rubber.

We believe the 550 to be the finest loudspeaker system in the world. For more detailed information and complete specifications call 1-800-ALTEC 88** and ask about our special demonstrations.

They'll be easy to find. Just follow your ears.

*Built In Amplification System **In PA or Canada call 717-396-HIFI Copyright 1988 Altec Lansing Consumer Products. Mifflin, PA 18337
CIRCLE NO. 21 ON READER SERVICE CARD
Only ComponentGuard protects product & performance

The ComponentGuard Product & Performance Guarantee Program

Serious audio and video enthusiasts choose their components on the basis of one factor alone—PERFORMANCE! And, protecting your equipment’s performance is what ComponentGuard is all about.

Through a select group of audio/video specialty dealers, we offer the ComponentGuard Product & Performance Program. When you purchase a piece of high quality equipment covered by ComponentGuard, we will guarantee all of its key performance specifications, plus extend the manufacturer’s original warranty, 3 additional years.

All important performance specs are protected, covering most consumer electronic products ranging from CD players and cassette decks to VCRs & MTS televisions. ComponentGuard is not available on every brand, only those that demonstrate superior quality and integrity in their manufacturing and design.

After being accepted in the ComponentGuard program, you’re issued our Gold GuardCard, honored at more than 500 service centers. If you’re concerned about your equipment not being up to spec during the coverage period, you can bring it in for a checkup on a periodic basis at absolutely no charge. And if the product should break (the ultimate non-performance spec), our extended warranty service plan takes over, and the equipment is repaired and tested absolutely free.

With the ComponentGuard program, your home entertainment system will always work as well as the day you bought it. That’s Product & Performance Protection you can count on.

If your dealer doesn’t offer ComponentGuard, call us toll free at 1-800-421-9820

COMPONENTGUARD
Product & Performance Protection
928 Broadway New York, NY 10010
In New York, call 212-420-9820

CIRCLE NO. 38 ON READER SERVICE CARD

Because there are always a few people who will abuse a good thing, we must state the following: Program acceptance subject to approval. Certain restrictions apply. Call or write for full details.
LUXMAN R-115 RECEIVER

Julian Hirsch, Hirsch-Houck Laboratories

LUXMAN'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 preselector 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-
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 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 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.

Laboratory Measurements

- Tuner Section (all figures for FM only except frequency response)
  - Usable sensitivity (mono): 10.8 dS (0.95 mV in 75 ohms)
  - 50-dB quieting sensitivity: mono, 14 dB (1.4 μV into 75 ohms); stereo, 36 dB (17.4 μV into 75 ohms)
  - Harmonic distortion (THD + noise) at 65 dB: mono, 82.3%; stereo, 75.7%
  - Capture ratio at 65 dB: 1 dB
  - AM rejection at 65 dB: 138 dB
  - Image rejection: 138 dB
  - 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): 0.019% at 70 watts (20,000 Hz)
  - Sensitivity (for 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 1-watt output): CD, -77 dB; phono, -76 dB
  - RIAA equalization error: +0.2, -1.1 dB at 20 and 20,000 Hz
  - Tone-control range: 100 Hz, +10 dB; 10,000 Hz, ±9 dB

- Amplifier Section
  - 1,000-Hz output power at clipping: 105 watts into 8 ohms, 145 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): 0.019% at 70 watts (20,000 Hz)

- 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; 0.1 to 30,000 Hz; AM, -6 dB at 20 and 3,000 Hz
MAGNA
One Great Smoke

SURGEON GENERAL'S WARNING: Cigarette Smoke Contains Carbon Monoxide.
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 17½ inches wide, 16¼ inches deep and 5½ inches high, and it weighs 25½ 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 ±12 dB in the bass and ±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
What The Experts Say About Magnat® MSP Loudspeakers

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

"We were pleased by this first encounter with Magnat speakers. Rarely have we experienced such a sense of musical color and liveliness without any obtrusive artificiality in the sound." 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

Magnat MSP Series loudspeakers are available in models from $195 each to $845 each. * For more information, send us the coupon!

Send me a brochure on Magnat MSP Speakers

Name

Address

City State Zip

SR88

Magnat

Germany’s Number One Brand Of High-Performance Speakers

Box 808 Marblehead, MA 01945 (617) 639-1400

*Suggested retail, actual price may vary. © Magnat is a registered trademark of Magnat Elektronik, GMBH & Co. KG

CIRCLE NO. 56 ON READER SERVICE CARD
Your audio-video system should be a reflection of your lifestyle. That's why you'll want the ultimate in picture, sound and design.

Introducing Proton's new AV27 audio-video system.

At the heart of the system is our superb, remote-controlled 300 Series audio components with exclusive Dynamic Power on Demand™ (DPD™). Since its introduction, DPD has received the highest acclaim. It does what no other technological innovation has for CD, other digital recordings, or hi-fi video listening pleasure. DPD boosts the amp's output up to four times its rated power, to let you hear even the highest musical peaks clearly, without distortion.

When you put the 300 Series together with our new matching speakers, you'll have a combination that sounds as extraordinary as it looks. And, it's the perfect complement to Proton's stunning new 27" flat screen stereo monitor/receiver.

The Proton AV27 audio-video system. Once you own it, you'll know you've arrived.

The ultimate audio/video guide is yours free for the asking.

Proton's Ultimate System Guide for Audio/Videophiles tells you everything about the innovative technology and design that go into creating the renowned Proton line.

For your copy, which includes a list of the Proton retailers near you, call (800) 772-0172. In California, (800) 428-1006.
The 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 3/4 x 1 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 1/2 x 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 (3/16 x 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 1/2 x 2 inches), normally shows only the number of the current track and its elapsed playing time. The 7/8-inch-high white fluorescent numerals are highly legible. Small symbols appear in the window to indicate the activation of the memory and re-
pea 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 1/8 inches wide, 12 1/2 inches deep, and 3 9/16 inches high, and it weighs about 10 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, a load of 10,000 ohms in parallel with NJ 08873-1284. Randolph Rd., CN 6700, Somerset, Electronics, 39/18 inches high, and it weighs about inches wide, 121/8 inches deep, and Kyocera DA-310cx measures 18 1/8 more compact than most such de-

310cx is supplied with a full -func-
tion hardware. The DA-310cx has a motorized disc drawer. The DA-

button is at the lower left, near the er right of the panel, and the power control knob are located at the low-

number of tracks and total playing time. This is replaced by the total number of tracks in a couple of seconds as the disc is initialized.

Channel separation: 86 dB at 1,000 Hz, 62.5 dB at 20,000 Hz. The interchannelresponse was ±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-over-sampling 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 travel 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

<table>
<thead>
<tr>
<th>FEATURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Double oversampling</td>
</tr>
<tr>
<td>□ Digital and analog filtering</td>
</tr>
<tr>
<td>□ Single 16-bit D/A converter multiplexed between channels</td>
</tr>
<tr>
<td>□ Programming for up to sixteen tracks in any order</td>
</tr>
<tr>
<td>□ Track skipping and fast search in either direction with audio muted during search</td>
</tr>
<tr>
<td>□ Repeat of any track, entire disc, or programmed sequence</td>
</tr>
<tr>
<td>□ 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</td>
</tr>
<tr>
<td>□ Wireless remote control for all front-panel functions except power</td>
</tr>
<tr>
<td>□ Can be used with Kyocera RC-101 remote-control center</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LABORATORY MEASUREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Maximum output level</strong>: 1.96 volts</td>
</tr>
<tr>
<td><strong>Total harmonic distortion at</strong>: 1,000 Hz: 0.0048% referred to 0 dB, 0.0145% referred to −10 dB, 0.0416% referred to −20 dB</td>
</tr>
<tr>
<td><strong>Signal-to-noise ratio (A-weighted)</strong>: 94 dB</td>
</tr>
<tr>
<td><strong>Dynamic range</strong>: 100 dB</td>
</tr>
<tr>
<td><strong>Channel separation</strong>: 86 dB at 1,000 Hz, 62.5 dB at 20,000 Hz</td>
</tr>
</tbody>
</table>

| **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 |
PIONEER ELITE SERIES
— A NEW CLASS OF AUDIO AND VIDEO COMPONENTS
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 discernible, 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. In addition to the input for a control amp, the M-90 has an input, 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 70µm-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.

M-90
Reference Power Amplifier
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 48,000µF) 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. 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 70µm-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.
A-91D
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. 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.
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.
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.
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 produces 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.
LD-S1
The best in picture and sound
Here’s the first 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 clamper uses a powerful magnet to hold the disc. The moment a disc is in place, the clamper arm is removed from the clamper, 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.
# SPECIFICATIONS

## C-90

### AUDIO SECTION

<table>
<thead>
<tr>
<th>Rated Output</th>
<th>8V (20 - 20,000Hz, 10k ohms, THD 0.001%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Sensitivity/Impedance</td>
<td>PHONO (MM): 2.5mV/50k ohms</td>
</tr>
<tr>
<td></td>
<td>PHONO (MC): 0.25mV/40 ohms or 0.125mV/3 ohms</td>
</tr>
<tr>
<td></td>
<td>CD TUNER, AUX, TAPE: 150mV/50k ohms</td>
</tr>
<tr>
<td>Output Level/Impedance</td>
<td>PRE OUT: 11800 ohms</td>
</tr>
<tr>
<td></td>
<td>TAPE REC: 150mV/1k ohms</td>
</tr>
<tr>
<td>Total Harmonic Distortion</td>
<td>0.002% (20 - 20000Hz, 8k ohms, output 1V)</td>
</tr>
<tr>
<td></td>
<td>Intermodulation Distortion</td>
</tr>
<tr>
<td>Frequency Response</td>
<td>PHONO (RIAA Equalization): 20 - 20000Hz ±0.2dB</td>
</tr>
<tr>
<td></td>
<td>CD, TUNER, AUX, TAPE: 20 - 20000Hz 0dB, -1dB</td>
</tr>
<tr>
<td>Tone Control</td>
<td>BASS: ±9dB (100Hz)</td>
</tr>
<tr>
<td></td>
<td>TREBLE: ±9dB (10kHz)</td>
</tr>
<tr>
<td></td>
<td>Muting: -20dB</td>
</tr>
<tr>
<td>Signal-to-Noise Ratio</td>
<td>PHONO (CD, Tuner, Aux, Tape): 96dB (MM), 86dB (MC)</td>
</tr>
<tr>
<td></td>
<td>CD, TUNER, AUX, TAPE: 115dB</td>
</tr>
</tbody>
</table>

### VIDEO SECTION

| Input Sensitivity/Impedance | VPD VCR, TV Tuner, Adapter: 1Vp-p/75 ohms |
|                            | Monitor, Adapter, REC Monitor: 1Vp-p/75 ohms |
|                            | Frequency Range: 10Hz - 100Hz 0dB, -3dB |

### MISCELLANEOUS

| Power Requirements | 120V 60Hz |
| Power Consumption | 40W |
| Dimensions (W x H x D): (without package) | 18 x 415/16 x 15-15/16 inches |
| 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 20000Hz with no more than 0.003% total harmonic distortion.

| Total Harmonic Distortion | 0.003% (20 - 20000Hz, 8 ohms, continuous rated power output) |
|                          | Intermodulation Distortion | 0.002% (continuous rated power output) |
|                          | Input Sensitivity/Impedance | CONTROL AMP: 1V/50k ohms (fixed) |
|                          | CD DIRECT, LINE DIRECT: 1V/50k ohms (variable) |
|                            | SPEAKERS: A, B, A+B, OFF |
| Frequency Response (CD): | 125dB (HI, A-network) |
| Signal-to-Noise Ratio: | PHONO Overload Level (1kHz) |
|                        | MM/MMC: 95dB/83dB |
|                        | CD, TUNER, AUX, TAPE: 109dB |

### MISCELLANEOUS

| Power Requirements | 120V 60Hz |
| Power Consumption | 670W (UL) |
| Dimensions (W x H x D): (without package) | 18 x 6-13/16 x 16-11/16 inches |
| Weight (without package) | 65 lbs. 15 oz./29.6kg |

### A-91D

**AMPLIFIER SECTION**

Continuous average power output of 120 watts* per channel, min., at 8 ohms from 20Hz to 20000Hz with no more than 0.003% total harmonic distortion.

| Total Harmonic Distortion | 0.003% (20 - 20000Hz, 8 ohms, continuous rated power output) |
|                          | Intermodulation Distortion | 0.002% (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/MMC: 200mV/20mV (THD 0.008%) |
| Output Level/Impedance | TAPE REC: 150mV/10.8k ohms |
|                          | SPEAKERS: A, B, A+B, OFF |
|                      | HEADPHONES: Low impedance |
| Frequency Response | PHONO (RIAA Equalization): 20 - 20000Hz ±0.2dB |
|                           | CD, TUNER, AUX, TAPE: 20 - 20000Hz 0dB, -3dB |
| Tone Control | BASS: ±8dB (100Hz) |
|              | TREBLE: ±8dB (10kHz) |
|                | Filter (Subsonic): 17Hz (-120dB per oct) |
|                | Loudness Contour: +5dB (10kHz), +3dB (10kHz) |
|                | (Volume at -40dB position) |
| Signal-to-Noise Ratio | PHONO (MM/MMC): 95dB/83dB |
|                        | CD, TUNER, AUX, TAPE: 109dB |

### MISCELLANEOUS

| Power Requirements | 120V 60Hz |
| Power Consumption | 670W (UL) |
| Dimensions (W x H x D): (without package) | 18 x 6-13/16 x 16-11/16 inches |
| Weight (without package) | 65 lbs. 15 oz./29.6kg |

### F-91

**FM TUNER SECTION**

Usable Sensitivity (mono): 9.86dB (0.85V, 75 ohms)

50dB Quieting Sensitivity: 12.6dB (1.2V, 75 ohms)

Stereoscopic Sensitivity: 34.6dB (15V, 75 ohms)

Signal-to-Noise Ratio

| Mono/Stereo: 95dB/87dB |

Distortion at 80dBf

| 1kHz (mono/stereo): 0.01%±0.02%
| 1kHz (mono/stereo): 0.009%±0.02%
| 6kHz (mono/stereo): 0.02%±0.07%
| Frequency Response: 20 - 15000Hz ±0.2dB, -0.8dB |
| Capture Ratio: 0.8dB |

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: 20 - 1000Hz

Stereo Antenna: 75 ohms unbalanced

**AM TUNER SECTION**

Sensitivity

| IHF, Loop Antenna: 150µV/m |

Selectivity: 15dB

Signal-to-Noise Ratio: 50dB

Image Response Ratio: 40dB

IF Response Ratio: 60dB

Antenna: Loop antenna

**AUDI O 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): (without package) | 18 x 3-5/16 x 12-7/16 inches |
| Weight (without package) | 6 lbs. 7 oz./2.9kg |

---

*Measured pursuant to the Federal Trade Commission’s Trade Regulation Rule on Power Output Claims for Amplifiers.*
<table>
<thead>
<tr>
<th>System</th>
<th>Frequency Response: 4-20,000Hz ±0.5dB</th>
<th>Signal-to-Noise Ratio (EIAJ): 100dB</th>
<th>Dynamic Range (EIAJ): 96dB</th>
<th>Channel Separation (EIAJ): 93dB</th>
<th>Wow and Flutter (EIAJ): Unmeasurable (±0.001%, weighted peak)</th>
<th>Output Voltage (EIAJ): 2V ±0.5V</th>
<th>Power Consumption: 23W</th>
<th>Dimensions (W x H x D): 18 x 4-1/8 x 12-3/8 inches</th>
<th>Weight (without package): 15 lbs./6.8kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>PD-M90X</td>
<td>Compact disc digital audio system</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 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**: 6555g/cm²
- **Speed**: 33-1/3 and 45 rpm
- **Wow and Flutter (WRMS)**: 0.018% (0.008%)
- **Signal-to-Noise Ratio**: 105dB
- **Tone Arm**
  - **Type**: Statically balanced, alumina-ceramics straight tone arm with DRA
  - **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
- **Weight (without package)**: 38 lbs. 2 oz./17.3kg

*Measured directly from FG output.*

### LD-S1

**Type**: LaserVision videodisc system

**Outputs**

- **VHF Output (NTSC)**: Channel 3 or 4 (switchable)
- **Video Output**: Type jack (75 ohms, unbalanced)
- **Audio Output**: RCA jack (75 ohms, unbalanced)

**Digital Audio Characteristics**

- **Frequency Response**: 4 — 20,000Hz (+0.5dB)
- **Signal-to-Noise Ratio**: 105dB
- **Dynamic Range**: 97dB
- **Channel Separation**: 100dB
- **Total Harmonic Distortion**: 0.0035%

### Analog Audio Characteristics

- **Frequency Response**: 20 — 20,000Hz
- **Signal-to-Noise Ratio**: 70dB (CX on)
- **Dynamic Range**: 70dB (CX on)

**MISCELLANEOUS**

- **Power Requirements**: 120V 60Hz
- **Power Consumption**: 55W
- **Dimensions (W x H x D)**: 18 x 5-3/8 x 13-7/16 inches
- **Weight (without package)**: 457 x 136 x 468 mm

**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)

**Dimensions (W x H x D)**: 15-3/16 x 26-3/16 x 13-7/8 inches

**Weight (without package)**: 57 lbs. 5 oz./26kg

### LD-S6

**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)

**Dimensions (W x H x D)**: 10-5/8 x 18-1/2 x 9-9/16 inches

**Weight (without package)**: 23 lbs. 2 oz./10.5kg

Note: Specifications and design subject to modification without notice.

**CIRCLE NO. 70 ON READER SERVICE CARD**
Stereo Review's
RECORD OF THE YEAR
AWARDS
FOR 1987

The 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
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.”

CHO-LIANG LIN
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.”

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 MARSLIS: 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; Homernajes; 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."
A Year For Gershion

THE BIRTH OF RHAPSODY IN BLUE:
Pau1 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."

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, Eliahu Inbal cond.). DENON.

SUSANNAH MCCORKLE: Dream. PAUSA.

MESSIAEN: Quartet for the End of Time. BARTÔK: Contrasts (Chamber Music Northwest). DELLOS.

LIZA MINNELLI: At Carnegie Hall. TELARC.

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, Placido Domingo, Giorgio Zancanaro; Orchestra of La Scala, Milan, Riccardo Muti cond.). ANGEL.
YOU'LL NEVER HAVE TO SIT THROUGH ANOTHER AMATEUR NIGHT AGAIN.

How can you really enjoy professional entertainment when your equipment isn't professional?
You can't. And dbx can prove it to you. Here and now, and with a dbx dealer demo later.

For over 15 years, the greatest moments in entertainment have come through us. Today, you'll find dbx professional equipment at work at most every important recording studio, broadcast facility and live performance in the world.

With 75 patents and a recent Emmy for co-developing stereo TV, our list of firsts and onlies puts us in a class all our own.
The results are ready for you to take home now. Professional equipment with all the clarity, impact, nuance and range you couldn't get before. Even in the most expensive amateur systems.
The differences you'll see and hear are audible, visible and phenomenal.

For example, our Soundfield psychoacoustic-imaging speaker systems sound spectacular in any room. Anywhere you sit in that room.

Our audio/video preamplifier incorporates Dolby® Pro Logic surround sound using dbx proprietary technology. For the most thrilling home-theater performance you can get.

Our incomparable configurable 2/3/4-channel amplifier provides over 800 watts per channel in actual use. With a flatter response than amateur amps costing twice as much.

Add to these one-of-a-kind components our FM/AM tuner with Schoz® noise reduction, uncanny clarity and a noise floor way below what you're probably listening to now.

And a CD player that's so good, Stereo Review's Julian Hirsch wrote: "Even without its special circuits [proprietary sonic enhancements], the dbx DX5 would rank as one of the best available."

Complete your home studio/theater with our superlative digital-processing VCR with VHS Hi-Fi and our own MTS stereo TV sound. And bring your video enjoyment up to where it should be.

A visit to your dbx dealer will convince you that your amateur days, and nights, are over.
“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.”

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 romantic or sweet, like New York Audio's new Moscodes. Rather, it offers natural soundstage that the amplifier simply isn't there on really good material.

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 degrades when driving the Scintilla at 1 ohm.

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

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 bloating, 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 is not an Audio Research D-250, but is exquisitely 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 yin-yang 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 7½" by 12¾" by 19½".

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: 0.09% 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 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

1 Elkins Road, East Brunswick, NJ 08816 U.S.A.
Distributed in Canada by: PRO ACOUSTICS INC.
Pontiac, Quebec, Quebec 4B4X5

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

<table>
<thead>
<tr>
<th>Product</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adcom GFA-555</td>
<td>$700</td>
</tr>
<tr>
<td>Krell</td>
<td>2300-7500</td>
</tr>
<tr>
<td>N.Y. Audio Moscode</td>
<td>900-1600</td>
</tr>
<tr>
<td>Tandberg</td>
<td>1000-2000</td>
</tr>
<tr>
<td>Threshold</td>
<td>1490-3150</td>
</tr>
<tr>
<td>Audio Research D-250 (MK II)</td>
<td>6000</td>
</tr>
<tr>
<td>Conrad Johnson Premier 5 (pair)</td>
<td>6000</td>
</tr>
<tr>
<td>&quot;high powered receivers&quot;</td>
<td>850</td>
</tr>
<tr>
<td>&quot;amps with trick power supplies&quot;</td>
<td>?</td>
</tr>
</tbody>
</table>

CIRCLE NO. 6 ON READER SERVICE CARD
IRVING 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,” deepened 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

Drawing of Irving Berlin (on facing page) copyright © 1988 Al Hirschfeld. Reproduced by special arrangement with Hirschfeld’s exclusive representative, the Margo Feiden Galleries, New York.
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."

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
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.

In 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”) Cams, 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
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 Berlin’s 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.

In an interview Berlin gave the New York Herald in 1912 wasbanneredit 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 remotest 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
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 in the music of a particular composer. Berlin rehearsed stars Alice Faye, Tyrone Power, and Don Ameche for their roles in the film Alexander's Ragtime Band.

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

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

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, Summer 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.

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, Summer 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.
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.

Still, 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 "Damnfiknow," 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 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 troupers. 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 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)
Magnificent Reception.

THE TX-11a COMBINES CARVER'S REVOLUTIONARY ASYMMETRICAL CHARGE COUPLED FM DETECTION CIRCUITS WITH AN AM STEREO SECTION CAPABLE OF FM-QUALITY RECEPTION.

The Carver TX-11a Stereo AM-FM Tuner is the most complete high fidelity broadcast reception component ever offered. It is a technical tour-de-force which further distances Bob Carver's unique products from traditional electronic components. First, by eliminating forms of FM distortion and interference that even the most expensive tuners available can't correct. And second, with a unique additional tuning section capable of making AM stereo sound as good as FM!

THE SILENT TREATMENT. While AM stereo may not yet be available in your area, you can receive FM stereo. Including stations so fraught with interference and distortion that you may be tempted to return to mono AM. That's why the TX-11a includes the first circuitry to remove hiss, "picket fencing" and the myriad other unpredictable noises which often disturb FM listening. Without reducing stereo imaging, frequency response or dynamic range.

Part of the FM signal, the left minus right portion, is extremely prone to "ghosting" or multipath interference caused by hills, buildings and other obstructions. Bob Carver's Asymmetrical Charge Coupled circuitry cancels distortion-causing "dirty mirror" images before they can reach your ears. It filters out noise and restores the part of the signal needed by our ears and brain to construct stereo imaging. Reintroduced into the mono (L+R) signal matrix, a net reduction of 93% - or better than 20dB of noise reduction - is achieved. All ambient and localizing information is recovered. Only hiss and distortion are left behind. Or, as High Fidelity magazine put it, "... clean, noise-free sound out of weak or multipath-ridden signals that would have you lunging for the mono switch on any other tuner!"

Ovation magazine observed that the circuit "...may well mean the difference between marginal reception of the station signals you've been yearning to hear and truly noise-free reception of those same signals."

Audio magazine called it, "An FM tuner breakthrough."

THE FIRST AUDIOPHILE AM STEREO CIRCUITRY. Contrary to popular belief, most AM stereo stations have frequency response (20-15kHz), separation (35dB) and signal-to-noise ratios (70dB) audibly indistinguishable from FM stations of equal strength. But only Carver offers the technology to appreciate this hidden performance.

At a press conference in front of America's top stereo writers, Bob Carver unveiled a low powered C-QUAM format AM stereo broadcast transmitter with a Carver Compact Disc Player as a source. The CD source and the TX-11a were also routed directly to a preamplifier and speakers for comparison.

When Bob switched back and forth, most listeners had difficulty distinguishing between the straightwire CD player and the TX-11a's over-the-air AM stereo reception! Many could tell no difference at all!

HUMAN ENGINEERED FEATURES AND CONVENIENCE. The TX-11a is designed to make enjoying FM and AM easy, not dazzle you with flashing light and complex programming. Thirteen presets, wide/narrow band selection, automatic/manual scanning as well as Multipath and Noise Reduction buttons are inset into the burnished anthracite metal face. Full instrumentation including digital display, 6-step signal strength LED's and other monitor functions are tastefully recessed, visible but not garish. The result is performance without theatricality, access without complication.

CLEAR THE AIR by visiting your nearest Carver dealer. Ask to hear the most expensive tuner they sell. (It probably won't be the Carver TX-11a). Tune a multipath-ravaged, hiss-filled FM station on it; then the same station on the TX-11a Stereo AM-FM Tuner. Now press the Carver Multipath and Noise Reduction buttons. You'll hear why High Fidelity Magazine called it, "By far the best tuner we have tested..."
Now there's a better way to... 

SAVE 37% on Car Stereo Review...

Until now, it always took a lot of time and effort to ensure "living room" sound from your car stereo. That's why the Editors of Stereo Review are proud to introduce Car Stereo Review - The Ultimate Guide to Ultimate Autosound!

This is the world's first and only regular publication dedicated to the pursuit of high-quality autosound. Each quarterly issue will be packed with how-to articles for buying, installing, and maintaining autosound equipment—so you can get more pure enjoyment from your car stereo than you thought possible.

Whether you're purchasing your first car stereo system or upgrading your present one, you'll want to check out our product reviews of all the latest amplifiers, AM/FM receivers, CD players, cassette decks, equalizers, speakers and more. Our Equipment Test Reports, with laboratory results from our expert technicians, make it easy for you to select the right components for your needs and your budget. And our exclusive Road Tests feature users' evaluations of various installations under real driving conditions.

You'll also find money-saving shopping tips, expert advice for choosing an installer (or doing it yourself), car stereo security tips, CD and tape reviews—and fresh, updated listings of car stereo products, so you can compare features, specs and prices.

Here, then, is everything you need to know about car stereo, written by the Stereo Review experts who are in the know: William Wolfe, Julian Hirsch, Louise Boundas, Michael Smolen, and others. Subscribe today and receive
orchestrate your autosound.

new from the Editors of Stereo Review!

special Charter Subscriber rates: just $9.98 for four big quarterly issues. That's a 37% saving off the annual newsstand cost!

Charter Subscription Savings Certificate

YES, show me the better way to guarantee the sound quality of my car stereo! Please enter my one-year Charter Subscription to Car Stereo Review, and send me four quarterly issues for only $9.98. That's 37% off the annual newsstand cost of $15.80.

CHECK ONE: [ ] Payment enclosed. [ ] Bill me later.

Mr./Mrs./Ms. __________________________ (please print full name)

Address __________________________ Apt. No. __________________________

City __________________________ State __________ Zip __________________________

Offer valid in U.S. and possessions only. Please allow 60 to 90 days for delivery of first issue.
LOUIS ARMSTRONG. A marvelous Berlin interpreter, Armstrong recorded at least seven standards (including a version of "Moon," 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.


BILLE 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.

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, © MCA-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, © MCA-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 Schenck, Grace Moore, Ruth Etting, Jolson, Clifton Webb, Ginger Rogers, and more.

Other gems worth hunting down, many of them instrumental, are Sonny 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, Eastern Star (Impulse); 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).
Sometimes you just have to be there.

If you have never experienced it, you cannot believe the beauty of a sunrise in the mountains—or the fresh scent of clean mountain air. Few have ever experienced the effect of superbly reproduced music of their choice played in the private environment of their automobile. Music, reproduced with lifelike quality, has the power to touch our deepest emotions and to elevate our moods. And this to an extent that is not expected.

Our experience has convinced us that, regardless of your interest in music, you will require less than one minute of listening to know that you want the Delco/Bose music system in your next General Motors* car.

Through this listening experience you will also appreciate why the Delco/Bose system is the most highly reviewed music system available.

* Available in selected models.
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 videodisc, 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.
AN AUDIOPHILE RECEIVER THAT’S A VIDEOPHILE DREAM.

The first A/V receiver with built in MTS tuning, Dolby Surround Sound, and Universal Programmable Remote Control.

The new ONKYO TX-SV7M can function as the heart of both a superb home audio system and an unparalleled video theater. It combines the ONKYO reputation for excellence in receiver performance with today’s most demanded video capabilities.

The TX-SV7M has built-in stereo MTS television reception and tuning. That means any TV can become a stereo TV merely by connecting it to the TX-SV7M via conventional antenna or cable converter.

Full Dolby Surround Sound with 90 watts per channel for front speakers and 20 watts per channel for the rear is supplied by four high quality amplifier sections which can also deliver 100 watts per channel in stereo mode.

Finally, our new audio/video receiver comes with the RC-AV7M Universal Programmable Remote Control, which assures full system remote control capability with multiple brands of equipment.

No other receiver on the market offers the outstanding performance and remarkable feature combinations the TX-SV7M does. It truly is an audiophile receiver that’s a videophile dream.

For complete information on the new ONKYO TX-SV7M, write to us for a free brochure or visit your Onkyo dealer.

Artistry in Sound

ONKYO

200 Williams Drive, Ramsey, N.J. 07446 201-825-7950

*Dolby is a trademark of Dolby Labs, Inc.*
To select the right audio components, you must balance the features and performance you want with prices you can afford. 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.
A COUPLING Detector: engages a Coupled Field Amplifier. 6 AM/6 FM presets; 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 omega) with Charge-Coupled Detector engaged: usable sens 16.3 dBF (1.78 AV); FM/AM stereo tuner section; Magnetic Field Amplifier; 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 37.2 dBf; max s/N with 65 dB-A-wtd stereo 65 dB; capture ratio 1.5 dB. 17" w x 4" h x 13.5" d; 16.2 lb $589

AA-2005-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 37.2 dBf; capture ratio 1.5 dB. 17" w x 4" h x 13.5" d $499

AA-2005-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 37.2 dBf; capture ratio 1.5 dB. 17.5" w x 4" h x 13.5" d; 16.2 lb $399

BANG & OLFUSSEN

Beomaster 5500 20-W/ch AM/FM Receiver Includes Master Control Panel remote control and hand-held infrared remote; presets for 20 AM and FM stations; Auto Power Handling Control compression; dual-acting auto gain control in FM volume, bass, treble, and balance controlled from knob on MRC 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 43 dBf; capture ratio 1.7 dB. 16.5" w x 3.4" h x 12.75" d; 19.2 lb $1,950

DENON

DRA-95VR Receiver Features remote control; 85 W/ch; nonnegative feedback, pure current supply; simulcast; simulated stereo; audio external processing loop; re-

A COUPLING Detector: engages a Coupled Field Amplifier. 6 AM/6 FM presets; 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 omega) with Charge-Coupled Detector engaged: usable sens 16.3 dBF (1.78 AV); FM/AM stereo tuner section; Magnetic Field Amplifier; 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 37.2 dBf; max s/N with 65 dB-A-wtd stereo 65 dB; capture ratio 1.5 dB. 17" w x 4" h x 13.5" d; 16.2 lb $589

AA-2005-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 37.2 dBf; capture ratio 1.5 dB. 17" w x 4" h x 13.5" d $499

AA-2005-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 37.2 dBf; capture ratio 1.5 dB. 17.5" w x 4" h x 13.5" d; 16.2 lb $399

BANG & OLFUSSEN

Beomaster 5500 20-W/ch AM/FM Receiver Includes Master Control Panel remote control and hand-held infrared remote; presets for 20 AM and FM stations; Auto Power Handling Control compression; dual-acting auto gain control in FM volume, bass, treble, and balance controlled from knob on MRC 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 43 dBf; capture ratio 1.7 dB. 16.5" w x 3.4" h x 12.75" d; 19.2 lb $1,950

DENON

DRA-95VR Receiver Features remote control; 85 W/ch; nonnegative feedback, pure current supply; simulcast; simulated stereo; audio external processing loop; re-
**Denon DRA-95VR**

Features digital synthesized quartz-locked tuner. Features reactive load and high instantaneous current capability. Features wideband, low negative feedback. Inputs for MM phono, CD, tape, etc. Amp section: 45 W/ch into 8 ohms. FM section: all-ch sel 65 dB; 50-dB quieting sens mono 1.65 μV (15.6 dBf), max s/N, A-wtd stereo 75 dB; sep 50 dB at 1,000 Hz, capture ratio 1.2 dB. $750

**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 input for phono, CD, tape, etc. 2-way dubbing; sound select; A/B control. Power output: 50 W/ch into 8 ohms from 20-20,000 Hz with no more than 0.05% THD. $275

**Hyundai**

**RX500VCR Audio/Video Receiver**

Receiver with 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; audio EQ curves, sleep timer, 3 video inputs; variable level. $475

**Kenwood**

**KR-V126R Audio/Video Receiver**

Receiver with 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; audio EQ curves, sleep timer, 3 video inputs; variable level. $260

**Magnavox**

**RX9300 Audio/Video Receiver**

Receiver with 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; audio EQ curves, sleep timer, 3 video inputs; variable level. $185

**Panasonic**

**RX95BK Audio/Video Receiver**

Receiver with 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; audio EQ curves, sleep timer, 3 video inputs; variable level. $800

** Pioneer**

**RX100W 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; audio EQ curves, sleep timer, 3 video inputs; variable level. $1000

**Sanyo**

**750W 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; audio EQ curves, sleep timer, 3 video inputs; variable level. $1200

**Stereofonix**

**RX950VR 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; audio EQ curves, sleep timer, 3 video inputs; variable level. $2000

**Toshiba**

**RX7300 Audio/Video Receiver**

Receiver with 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; audio EQ curves, sleep timer, 3 video inputs; variable level. $3000

**Vestal**

**RX6700 Audio/Video Receiver**

Receiver with 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; audio EQ curves, sleep timer, 3 video inputs; variable level. $3500

**Yamaha**

**RX7300 Audio/Video Receiver**

Receiver with 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; audio EQ curves, sleep timer, 3 video inputs; variable level. $4000
MARANTZ
TA 170 AV 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 dB, stereo 37 dB, mono 94 dB, stereo 68 dB; THD mono 0.15%, stereo 0.3%; sep 42 dB at 1,000 Hz; capture ratio 1.2 dB, 16.5" x 7.25" x 13". 30 lb. $650

TA 135 AV 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 dB, stereo 38 dB; other specs similar to TA 170's (above). 16.5" x 7.25" x 13". 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.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 dB, mono with 65 dB (1,000 µV), A-wd stereo 68 dB, THD 0.3%; capture ratio 1.2; all-ch sel 50 dB. 16.5" x 7.25" x 10.25". 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". 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". 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 input; 2 video inputs for bass control switchable to 50, 120, or 250 Hz; turn-over frequency for treble control switchable to 3, 6, or 12 kHz; wide/narrow IR modes, speaker impulse 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" 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; iFi-noise phone 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" x 4.25" h x 15" d. 20 lb. 4 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, no-ARR noise phone preamp section: headphone jack. 40 W/ch, dynamic headroom 6 dB, dynamic power 60 W/ch into 8 ohms. 200 W/ch into 2 speakers; 50 dB stereo quieting <20 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 >5 W/ch into 8 ohms, >75 W/ch into 4 ohms, and 85 W/ch into 2 ohms. THD dynamic headroom 4.4 dB; maximum peak current output 15 amperes. $298

SR-3A AM/FM Stereo Receiver
Stereo receiver with Stasis power amp, multi-regulated power supply, defatable 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 dB; S/N 74 dB at 65 dB 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. 16.94" w x 3.94" h x 19.56" d. 22 lb. 4 oz. $895

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 dB; S/N 74 dB at 65 dB 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. 16 lb. 9 oz. $650

NEC AVR-1000
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-locked digital-synthesis tuning; audio mute; speaker selection: stereo/mono, local/DR, high-blend, stereo/mono, local/DR, 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 V (37.2 dB) stereo, capture ratio 1.3 dB, alt-ch sel 70 dB. 16.94" w x 5.5" h x 16.94" d. 35 lb. $869

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/DR, 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 V (37.2 dB) 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

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/DR, 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 V (37.2 dB) 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

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/DR, 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 V (37.2 dB) 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

Nikko R-25
Nakamichi SR-4A
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 dB; S/N 74 dB at 65 dB THD stereo 0.07%; capture ratio 1.5 dB. AM rej 60 dB, alt-ch sel 60 dB. 16.94" w x 3.94" h x 19.56" d. 22 lb. 4 oz. $895

Nikko R-25
Nakamichi SR-4A
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 dB; S/N 74 dB at 65 dB THD stereo 0.07%; capture ratio 1.5 dB. AM rej 60 dB, alt-ch sel 60 dB. 16.94" w x 3.94" h x 19.56" d. 22 lb. 4 oz. $895
363465. Dolly Parton - (Columbia)
362236. Tony Bennett - Rock n' Roll. (MCA)
362283. Orig.
361543. Kitaro-The light Earth. (MCA)
362129. Belinda (Columbia)
362483. Orig.
361279. World's Greatest Idol. (Chrysalis)
360974. Whids That Bunnymen. (Sire)
360149. Echo & The Group - Still Life (Talking). (Geffen)
359208. Loverboy-359901. Mick Jagger - Wildside. (Columbia)
359075. Grateful Dead - In The Dark. (Warner Bros.)
357887. Grateful Dead - Workingman's Dead. (Warner Bros.)
357277. The Who-Whatis Hits. (Fantasy)
357616-397612. The Best Classics. (A&M)
356287. Suzanne Vega - Solitude Standing. (A&M)
356154. Whitney Houston — Whitney (Nonesuch)
355515-395111. Prince—Sign O'The Times. (Polydor)
355362. Whitesnake. (Capitol)
355210. Earth, Wind & Fire - Touch The World. (Columbia)
355156. Vladimir Horowitz - (Geffen)
355014. Pretenders - Get Close. (Sire)
354829. lisp -Lisa And Cult Jam With Full Force-Spanish Fly. (Columbia)
354985. Johnny Mathis/ Harry Mancini—The Hollywood Musicals (Columbia)
354727. Beethoven- Symphony No. 9 (Choral) Bernstein, NY. Phil. Digitally Remastered - CBS Masterworks)
354650. Bryan Adams — Into The Fire. (A&M)
354571. Boston—Third Stage (MCA)
354324. Blood, Sweat & Tears Greatest Hits (Columbia)
354112. Europe -The Game. (Atlantic)
353946. Bryan Adams — Into The Fire. (A&M)
353789. Sly & The Family Stone Greatest Hits. (Epix)
353711. Rolling/Rampal-Suite No2 for Flute & Jazz Piano Trio (Digital—CBS)
353534. Holst: The Planets—A. Davis, Toronto Symph. (Digital—Angel)
353112. Europe—The Final Countdown. (Epix)
353075-393079. Aretha Franklin—30 Greatest Hits. (Atlantic)
353040. Prezenders—Get Close. (Sire)
350652. Rolling Stones — Exile On Main St. (Rolling Stones Rec.)
350793-390799. Aretha Franklin—30 Greatest Hits. (Atlantic)
350726. In The Dark. (Warner Bros.)
350171. The Steve Miller Band—Greatest Hits 1974-78. (Capitol)
349703. Eagles' Greatest Hits 1971-1975 (Asylum)
349614. Fleetwood Mac—Rumours (Warner Bros.)
349571. Boston Third Stage (MCA)
349373. Beethoven: Symphony No. 9 (Choral) Bernstein, NY. Phil. Digitally Remastered - CBS Masterworks)
349276. Rodgers And Hammerstein's Carousel. Barbara Cook, Samuel Ramey. (Digital - MCA Classics)
349177. Chaka Khan—Shalie Orphanos, Vangelis, Lobo. (Digital—CBS Masterworks)
349074. Squeeze — Babyshy And On (A&M)
348979. Johnny Mathis/ Harry Mancini—The Hollywood Musicals (Columbia)
348711. Boston—Third Stage (MCA)
348649. Poschel/Canon & Other Digital Delights—Toronto Chamber Orch. (Digital—fanfare)
348458. Dvorak Cello Concerto—Yo Yo Ma, Mazas, Berlin Philhar. (Digital — CBS Masterworks)
348338. The Police—Every Breath You Take—The Singles (A&M)
348100. Buddy Holly — From The Original Master Tapes. (Digitally Remastered - MCA)
A sound investment, indeed! Any time you can get six brand-new, high-quality Compact Discs for $1.00—that's a good deal! And that's exactly what you get as a new member of the CBS Compact Disc Club. Just fill in and mail the application—we'll send your six CDs and bill you $1.00, plus shipping and handling. You simply agree to buy four more CDs (at regular club prices) in the next two years—and you may then cancel your membership anytime after doing so.

How the Club works: About every four weeks (13 times a year) you'll receive the Selection of the Month... plus many exciting new selections and favorites from every field of music. In addition, up to six Selections with two numbers contain 2 CDs and count as 2 selections, or none at all, fill in the alternate selection, or none at all, fill in the response card always provided and mail it by the date specified. You will always have at least 10 days in which to make your decision. If you ever receive any Selection without having 10 days to decide, you may return it at our expense.

The CDs you order during your membership will be billed at regular Club prices, which currently are $14.98 to $15.98—plus shipping and handling (Multiple-unit sets may be somewhat higher). After completing your enrollment agreement you may cancel membership at any time if you decide to continue as a member, you'll be eligible for our money-saving bonus plan. It lets you buy one CD at half price for each CD you buy at regular Club prices.

10-Day Free Trial: We'll send details of the Club's operation with your introductory shipment. If you are not satisfied for any reason whatsoever, just return everything within 10 days and you will have no further obligation. So why not choose 6 CDs for $1 right now?

ADVANCE BONUS OFFER: As a special offer to new members, take one additional Compact Disc right now and pay only $6.95. It's a chance to get a seventh selection at a super low price!
RX-74 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 SX on/off functions. Features dynamic bass expander, stereo image expander, stereo/image expander, stereo syntheses, and separate audio and video switching. Unifies remote control to operate all Pioneer SR components, 3 video inputs with stereo; audio/video dubbing and simultaneous recording; 5-band graphic equalizer; video signal selector for separate audio/video switching; quartz-P LL synthesis tuner with 20 presets; auto/manual search; surround-sound processor with copper-plated screws, 20 continuous average W/ch into 8 ohms from 20-20,000 Hz with no more than 0.1% THD; 4.75" x 14.125" x 16.56" d x 12.62" d x 8.69" d $240

SX-1600 AM/FM Receiver
Features 5-band graphic EQ; quartz-P LL synthesis tuner with 20 presets; auto and manual search; connections for 2 pairs of speakers; remote-communication construction. 20 continuous average W/ch into 8 ohms from 20-20,000 Hz with no more than 0.1% THD; 4.75" x 14.125" x 16.56" d x 12.62" d x 8.69" d $240

SX-1100 AM/FM Receiver
Features 5-band graphic EQ; quartz-P LL 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; 4.75" x 14.125" x 16.56" d x 12.62" d x 10.125" d $240
**STEREO REVIEW FEBRUARY 1988**

**REALISTIC**

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

"RECEIVERS"

AV-300 AM/FM Receiver

Digital synthesized stereo receiver. Features Schott P1L detector. Inputs for MM phono, tape, aux, video sound source. Remote control optional. 30 continuous average W/ch from 20-20,000 Hz with <0.03% THD into 8 ohms; includes Dynamic Power on Demand which boosts dynamic power to 120 W (8 ohms) with 6 dB dynamic headroom. THD IMD 0.015%, FR 17,31' w/45,000 Hz. FM section: 50-DB quieting sens. stereo. 2.8 µV; max. S/N 90 dB; A-wtd. stereo 70 dB; THD 0.2%; sep 50 DB at 1.000 Hz; capture ratio 1.5 dB. AM section: sens 300 µV/m, 20 lb. 16.5" w x 3.75" h x 9.75" d $399

ST-30-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; 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 µV (32 dB); max S/N with 65 dB (100 µV) A-wtd; stereo 75 dB; capture ratio 1.5 dB; AM rej 50 dB; all-ch sel 50 dB $260

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

Quartz digital tuning; larger FM and AM sections; 2 pairs of speakers included; stereo/mono switch; bass, treble, volume, balance controls. 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 2.0 dB; AM rej 45 dB; all-ch sel 50 dB $220

STA-460 22-W/ch Personal Receiver

PLL tuned; loudness button; FM muting; drives 2 pairs of speakers; stereo/mono switch; bass, treble, volume, balance controls. FM muting; 5-LED signal-strength meter. Incl. infrared remote control (transmitter optional). Features alphanumeric push buttons for control of input sensitivities, output levels, and operating functions. Battery 2 AA batteries. Walnut vinyl over metal case. 3 W/ch into 8 ohms; S/N 70 dB; 72 aux; HED sens 23.2 dB; sep 35 dB $120

**REVOX**

B285 AM/FM 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 AM/FM Receiver

Sansui S-XV1000

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 65 dB (40.7 dB); 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 µV/m, 17' w x 3.88' h x 13' d; 12.7 lb $219

RX75 AM/FM Receiver

70 W/ch bridgeable to 140 W mono. AM/FM receiver. Digital tuning with 8 W and 8 FM presets; THD 0.03%; IMD 0.05%; S/N (stereo) 75 dB. Inputs for video $599

RX855. Similar to above but with only 7 FM and 7 AM presets and 50 W/ch $499

**SAPIENT**

S-X1200 AM/FM Stereo Receiver

S-X1200 AM/FM 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**

RX830 AM/FM Receiver

RX830 AM/FM Receiver

RX850 AM/FM Receiver

RX850 AM/FM Receiver

RX850 AM/FM Receiver

RX850 AM/FM Receiver

RX850 AM/FM Receiver


**RECEIVERS**

**S-XX1000 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, tape 2, AUX, CD, video sound source. Amp section: 100 continuous average W/ch into 8 ohms from 20-20,000 Hz with no more than 0.01% THD into 8 ohms for front channels. 8 W/ch for rear: FR 10-100,000 Hz ± 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 dB. max S/N with 65 dB; stereo 70 dB. 16.46" 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 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 section: 80 continuous average W/ch from 20-20,000 Hz; max S/N ratio, A-wtd, mono 76 dB; stereo 70 dB. 17.36" w x 4.62" h x 9.25" d. 15 lb $500

**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 µV (19.2 dB) $250

**RS30 AM/FM Stereo Receiver**
Quartz digital-synthesizer tuning section, power output meter; high filter: presets for A M and 8 FM stations. Inputs for MM phono, tape, CD, DAT. Amp section: 25 W/ch into 8 ohms. FM section: usable sens 5 µV (19.2 dB) $150

**SHARP**

**SA-CD8000 CD 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.

**SUX1000 Video/Receiver**
Receiver with multiple audio/video inputs and outputs. Features PLL-synthesis tuner; auto scan tuning; 12 presets; 5-band graphic equalizer; video sound source. Amp section: 110 continuous average W/ch into 8 ohms with 0.9% THD. 17" w x 6.6" 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 sound source. Amp section: 110 continuous average W/ch into 8 ohms with 0.9% THD. 17" w x 6.6" h x 15.69" d; 28 lb $900

**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 from 20-20,000 Hz with no more than 0.5% THD into 8 ohms. 1/4" IFD 0.15% FR 15-15,000 Hz ± 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. 17" w x 5.12" h x 13.25" d; 16 lb $600

**S-2750CP AM/FM Receiver**
AM/FM-stereo receiver with 5-band graphic EQ. Features 16 station presets; surround sound; MOSFET input stage. FM section: adjacent-ch sel 56 dB; max S/N 68 dB stereo; THD 0.1% stereo; sep 32 dB at 1,000 Hz. Black or silver. 17" w x 3.69" h x 10.5" d; 10 lb $325

**S-2730CP AM/FM Receiver**
AM/FM-stereo receiver with quartz-PLL digital-synthesized tuning. Features 16 station presets; surround sound; MOSFET input stage; synthetic stereo mode for mono source material; auto-scan tuning; quartz-PLL digital-synthesized tuning; 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: 110 continuous average 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 dB (45 µV) stereo; S/N 76 dB. 17" w x 5.12" h x 13.62" d; 18 lb $750

**S-2710C AM/FM Receiver**
Remote-controlled AM/FM receiver with inputs for MM phono, tape 1 & 2, CD player, 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: 55 continuous average 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 dB (45 µV) stereo; S/N 74 dB stereo. 16.94" w x 11.25" x 11.25"; 16 lb $500

**S-2700C AM/FM Receiver**
Remote-controlled AM/FM receiver with inputs for MM phono, tape 1 & 2, CD player, 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: 30 continuous average W/ch into 8 ohms from 20-20,000 Hz with no more than 0.008% THD; FR 3-90,000 Hz ± 0.1 dB. Tuner section: 50 dB quieting sens 38.3 dB (45 µV) stereo; S/N 74 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, 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: 55 continuous average 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 dB (45 µV) stereo; S/N 74 dB stereo. alt-ch sel 60 dB narrow, 30 dB wide. 17" w x 5.12" h x 13.62" d; 15 lb $370

**STR-AV450 AM/FM Receiver**
Remote-controlled AM/FM receiver with inputs for MM phono, tape deck, CD player, 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: 30 continuous average W/ch into 8 ohms from 20-20,000 Hz with no more than 0.08% THD; FR 10-70,000 Hz ± 0.1 dB. Tuner section: 50 dB quieting sens 38.3 dB (45 µV) stereo; S/N 76 dB stereo.
38.3 dB (45 µV) stereo; S/N 70 dB stereo; all-ch sel 60 dB narrow; 17' w x 4.25' h x 11.38' d; 11 lb $300

**STEREO 71 dB; THD stereo 0.3%; capture ratio**

**SA-250 AM/FM Receiver**
Features inputs for MM phono, tape, deck, CD player, video source; quartz frequency-synthesis tuning; 10 AM/FM preset; direct-access tuning, auto sweep tuning; preset scan; balance and loudness controls; headphone jack; A-B speaker switching; separate power supplies. Amp section: 5 continuous W/ch into 8 ohms from 20-20,000 Hz with more than 0.01% THD; dynamic headroom 25 dB. Tuner section: 50 dB quieting sensor 38.3 dB (45 µV) stereo; S/N 70 dB stereo; all-ch sel 60 dB $200

**TECHNICS**

**SA-R510 AM/FM Receiver**
Features quartz digital tuning section; 16 station presets; auto scan; 3-LCD signal-strength display; drives main and remote speakers; loudness; headphone jack; electronic protection. Inputs for tape deck, CD player; turntable. 35 W/ch; FM S/N 11.2 dB; FM sel 65 dB. $1,995

**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 sources. Inputs for MM and MC phono, CD, DAT, video, and tape. $20/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 $245

**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; preset/main-in/mains; 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

**VECTOR RESEARCH**

**VRX-2000U Audio/Video Receiver**
110-W/ch A/V receiver with full-function remote control. Features motorized rotary volume control; built-in matrix surround; preset/main-in/mains; video signal routing; A/V processing loop; video monitor output; dedicated CD input; quartz-synthesis tuning; 16 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 $600

**VRX-7000U Audio/Video Receiver**
16-W/ch A/V receiver features A/B speaker switching; analog flywheel tuning; loudness; 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 tuning; continuously variable loudness control; dual tape monitor inputs; pre-main coupling terminals; three video source inputs; video and audio record out selections; video enhancer with level and detail control; switching for three pairs of speakers. 85 W/ch min rms into 8 ohms from 20-20,000 Hz with less than 0.015% THD. $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. 65 W/ch min rms into 8 ohms from 20,000 Hz with less than 0.015% THD. Black $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 $549

**RX-500U AM/FM Receiver**
AM/FM receiver with wireless remote control. Features digital tuner; high dynamic power; low-impulse 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 $379

**RX-300U AM/FM Receiver**
Features digital tuner; high dynamic power; low-impulse drive capability; continuously variable loudness control; switching for two pairs of speakers. 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 circuits 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/channel. 300 W/channel into 8 ohms; 1,000 W into 8 ohms bridged; damping factor 300: 1HF 50 Hz; s/N <125 dB (HF-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-parallell 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 spec, power output 800 W into 4 ohms, 300 W into 8 ohms, 250 W into 16 ohms, all min rms; damping factor 300; s/N 130 dB; 19.14 lb
  - $10,750

### ACoustics RESEARCH

- **AP-10 Power Amplifier**
  - Power amp with massive transient (IHF dynamic) power capability of 1,200 W/channel into 2 ohms, 800 W into 4 ohms, and 400 into 8 ohms. 150 continuous average W/channel from 20-20,000 Hz into 8 ohms with no >0.3% THD, 200 W into 4 ohms, 200-mW dynamic power 300 W, dynamic headroom 4.3 dB, s/N 95 dB, slew rate 30 V/µs, IMD 0.03%, 17’’ x 4.33’’ x 14.5’’
  - $3,800

### ADA (Audio Design Assoc.)

- **PF-300 Power Amplifier**
  - MOSFET power amplifier capable of driving 1/8-ohm loads continuously. Front-panel power switches, indicators, and fuses. dual-mono design with independent toroidal transformers; fan cooled; 200 W/channel from 20-20,000 Hz with no >0.05% THD into 8 ohms; 300 W into 4 ohms; slew rate 10 V/µsec; IMD 0.08%; 48 lb; 19’’ x 7’’ x 15.5’’
  - $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/channel 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/µsec; IMD 0.15%; 28 lb; 19’’ x 3.5’’ x 16.88’’
  - $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/channel into 8 ohms; 350 W/channel into 4 ohms with <0.005% THD and <0.005% IMD; constant damping factor >100 20-20,000 Hz
  - $700

- **GFA-545 Power Amplifier**
  - High-current power 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 output; direct-coupled design. 100 continuous average W/channel from 20-20,000 Hz into 8 ohms with no >0.09% THD, 150 W/channel into 4 ohms; IMD 0.008%, 17’’ x 5.5’’ x 12.5’’
  - $480

### A/D/S/

- **PA4 High-Current 150-W/channel 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 limit 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-L, EN's 150 W/channel into 4 ohms; 250 W into 1 ch. 17.5’’ x 2.8’’ x 14.8’’
  - $999

### AUDIO Dyanamics

- **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/channel into 8 ohms, 300 W/channel into 4 ohms. Power output into 4 channels: 90 W/channel into 8 ohms, 120 W/channel into 4 ohms. FR 20-20,000 Hz ±0.25 dB
  - $999

### B&K Components

- **ST-140 Class A Power Amplifier**
  - Basic power amp with auto servo DC balance. Front-panel bias adjustment and indication. 100 continuous average W/channel from 20-20,000 Hz with no >1% THD into 8 ohms; FR 2-60,000 Hz +/−3 dB; s/N 90 dB, slew rate 25 V/µsec; 19’’ x 10.5’’ x 16.3’’
  - $6,990

### B&K Components

- **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 screens 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/µsec; 19’’ x 10.5’’ x 16.3’’
  - $6,990

### B&K Components

- **M100 100-W/channel Mono Tube Power Amplifier**
  - Basic power amp with auto servo DC balance. Front-panel bias adjustment and indication. 100 continuous average W/channel from 20-20,000 Hz with no >1% THD into 8 ohms; FR 2-60,000 Hz +/−3 dB; s/N 90 dB, dynamic headroom <1 dB; slew rate 15 V/µsec; IMD 0.2%, input sens 0.7 V rms for 100 W. 19’’ x 7’’ x 18.3’’
  - $2,495

### B&K Components

- **D120 120-W/channel 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/channel into 8 ohms, 10-20,000 Hz at <0.25% THD; FR 1.2-75,000 Hz ±1 dB; power bandwidth 0.6-100,000 Hz ±3 dB; input sens/imp 1 V rms/60k ohms; THD <0.004% at 1.000 Hz. 1 W; IMD <0.03% at rated power; slew rate 40 V/µsec; rise time 2 µsec; damping factor 300; 10-20,000 Hz, power consumption 1,000 W max; 19’’ x 10.5’’ x 5.25’’; 50-lb shipping weight
  - $1,595

### B&K Components

- **EX-442 Dual-Mono Power Amplifier**
  - Dual-mono power amp with gold-plated input and output connectors. 200 continuous average W/channel; FR 5-45,000 Hz ±3 dB; s/N 95 dB; dynamic headroom 1.8 dB; s/N 95 dB; slew rate 1 V/µsec; IMD 0.09%; 300 W into 4 ohms; 42-ampere peak-to-peak current capability. 19’’ x 6’’ x 15’’
  - $895

### B&K Components

- **ST-202 Plus Power Amplifier**
  - 200 continuous average W/channel 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 1 V/µsec; IMD 0.09%; 19’’ x 6’’ x 15’’
  - $649

### B&K Components

- **ST-140 Class A Power Amplifier**
  - Power amp with Class A design up to output stage. 100 continuous average W/channel 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 ±3 dB; s/N 90 dB, dynamic headroom 1.4 dB; slew rate 11 V/µsec; IMD 0.09%
  - $440

### B&K Components

- **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-ns dynamic power 850 W; dynamic headroom 1.3 dB; s/N 107 dB, slew rate 60 V/μs, IMD 0.006%, peak current ±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/μs; damping factor >175; 35 lb. 19” 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-coupling 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 ± 1.5 dB; s/N 100 dB; IMD into 8 ohms; dynamic headroom 2 dB; slew rate 15 V/μs; input imp 100,000 ohms; output imp 4, 8, 16 ohms; negative feedback 8 dB; s/n 1 V for 170 W out; clipping level (soft clipping) 120 W; 19” w x 25” h x 13” d; 40 lb $695

BRYSTON

6B 500-W/ch Power Amplifier
Mono power amp with high voltage and current. Max 120+ amperes instantaneously into 100 W; 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/μs; IMD 0.0035%; 55 lb; 19” w x 5.75” h x 12” d $1,100

4B 200-W/ch Power Amplifier
Fully complementary class-AB power amp with bridging switch, 1,500-ohm input, regenerative power supply, 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 0.1% THD; IMD 0.01%; 10 mW-200 W; noise –100 dB; slew rate 500 V/μs, power bandwidth 1-100,000 Hz; damping factor 500 at 20 Hz, 8 ohms; output 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, 2,000 VA toroidal transformers and 4 large-reservoir capacitors in power supply. 1 direct input; 1 4-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 0.08%; 17.5” w x 2.5” h x 11” d; 21 lb. Wood side panels included $698

CARVER

M-1Si 400-W/ch Power Amplifier
Magnetic Field stereo power amp with LED dual peak-responding power display, 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/μs $629

M-1t 200-W/ch Power Amplifier
Magnetic Field long-term, high-precision parts in audio circuitry; LED bias section has 40 output devices per ch. $1,500

M-200t 120-W/ch Power Amplifier
Magnetic Field stereo power amp produces 120 W/ch into 8 ohms. Dark power finish; LED’s indicate power and use of speaker-protection circuitry. 17.3” w x 2.55” h x 9” d 10.5” $399

CELLO

7000-00 Performance Amplifier Set
2 mono amps (left and right) for stereo; power output section has 40 output devices per ch $12,500

CONRAD-JOHNSON

SA-20 Hybrid Power Amplifier
Hybrid amplifier 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 5-50,000 Hz; ±0.2 dB; s/N 100 dB; IMD 0.02%; peak current ±60 amperes, bandwidth 0-100,000 Hz – 2 dB. 19” x 4.5” x 12.5” $999

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; IMD <0.002%, FR 20-40,000 Hz/±1 dB; input sens/imp 1 V/50kohms. s/N 112 dB at 1 V A-wide; slew rate 15 V/μs, damping factor >200, 20-1,000 Hz. 4.9” h x 16” w x 12.8” d $750

DBX

RX1 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; ±55-V power-supply rails. Contains no fans or limiting circuitry. Power output into 2 channels: 400 W/ch into 8 ohms, 650 W 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 ± 0.1 dB, s/N 90 dB; dynamic headroom 3 dB; slew rate 30 V/μs; IMD 0.1%; 19” w x 5.25” h x 8” d; 30 lb $595

OREN: Same as above except 150 W mono $1,500

DENON

PAO-3000Z 250-W/ch Power Amplifier
Features dual super non-NFB circuit; 4-channel, high-current, high-speed power transistors; floating load circuit; self-diagnostic display; CD direct input terminals. 2.3 continuous average 1000 Hz; FR 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-wide; dynamic power 315 W + 315 W (8 ohms), 585 W + 585 W (4 ohms), 900 W + 900 W (2 ohms); slew rate ≥500 V/μs; 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 supply; separate power supply block chassis; Cannon-type balanced inputs/outputs; 0.1% THD into 8 ohms at 1000 Hz, ±0.1 dB, >0.1% THD into 8 ohms; FR 1-300,000 Hz ± 0.3 dB; s/N 123 dB A-wide; dynamic power 315 W + 315 W (8 ohms), 585 W + 585 W (4 ohms), 1030 W + 1030 W (2 ohms); peak power 3600 W (sub) $2,500

STEREO REVIEW February 1988 103
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 1, 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 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.

Infinity

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.

©1988 Infinity Systems, Inc. 9409 Owensmouth Avenue, Chatsworth, CA 91311 (818) 709-9400 A Humana International Company. In Canada: H. Ray Gray Ltd. 14 Laddie Blvd. Markham, Ontario Canada L3P 1W7 (416) 294-4833
**AMPLIFIERS**

- **Cooling. 305 W/ch into 8 ohms at <0.05% THD, XL-600 MOSFET Power Amplifier**
- **Discrete Technology**
  - Distech LS11 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/µsec; intermodulation distortion <0.09%. 16" x 5' x 14" $675
- **Electrocompaniet by Music & Sound Imports**
  - All Electrocompaniet power amps are Class A/B 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 0.1-100,000 Hz; THD 0.003%. 45 lb. $2,995
  - Does not invert phase. 100 W/ch into 8 ohms. 180 W/ch into 4 ohms. FR 0.01-100,000 Hz; THD 0.003%. 40 lb. $1,995
  - Does not invert phase. 75 W/ch into 8 ohms. 135 W/ch into 4 ohms. FR 0.01-100,000 Hz; THD 0.004%. 32 lb. $1,295
- **Forte Audio**
  - Model I 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 ± 3 dB. slew rate 30 V/µsec; input imp 47 kilohms; output imp 0.02 ohms at 1000 Hz; output current 30 amp peak. output noise <300 µV. 15 ¾" h x 7" ½ w 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 THD and DTD. Includes gain adjust and clipping indicator. 45 continuous average W from 20-20,000 Hz into 8 ohms with no more than 1% THD. 60 W into 4 ohms; 200-mains dynamic power 65 W: dynamic headroom 1.5 dB; S/N 95 dB; slew rate 15 V/µsec; imp 0.1%; 6.56" wide x 3.56" high x 6.56" deep; 5 lb $149
- **Hafner**
  - XL-600 MOSFET Power Amplifier
  - Excelinear near-zero-phase shift circuit with J-FET double differential input and 12 MOSFET output. Excelinear speaker tweaking adjustment; gold-input mono bridged switch; speaker protection fuses. 145 W/ch into 8 ohms; <0.05% THD. 20-20,000 Hz; <0.04% IMD into 8 ohms; FR 10-50,000 Hz ± 0.1 dB; 200 W/ch into 4 ohms. 400 W into mono. 3.25 x 17 x 6.5" d. 27 lb. assembled $850 Kit $725
- **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 ±120 amps; neg feedback 12 dB; damping factor 120 into 8 ohms $895 twenty-four. Similar to above except 100 W/ch; current capability ±60 amps; 4-130-W power transistors per ch; damping factor 75 into 8 ohms $595
- **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 ±30 A. 17" w x 4 x 12" d. 18 lb $1,198
- **Hitachi**
  - M128A/WS Power Amplifier
  - Power display of 10 LED’s per ch. 120 W/ch into 8 ohms; 200-mass power 120 W. 14.5" w x 5" h x 13.7" d. $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 chass, 60 W/ch into 4 and 8 ohms. 154 lb. $8,300
  - JA-30 30-W/ch Class-A Power Amp
  - Dual-mono (2 chass); 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-cascade 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 ± 0.3 dB; S/N 120 DB; IMD 0.002%; damping factor 200 (1,000 Hz @ 8 ohms). 18.12 x 8" x 16.44" d. 61.6 lb $2,100
- **Kenwood**
  - Basic M2A Stereo Power Amplifier
  - Features Super Dynamic Linear Drive (DDL) dual-output power amplifier; low-impedance drive capability; dual power driver; FL peak power meters; selectable phase-lock 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 0.005% THD into 8 ohms; damping factor 1,000 at 50 Hz. 17.31 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 (DDL) with 2 speaker pair selection; gold-plated input terminals; headphone jack; power indicator; 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
- **Kinergitics**
  - KB Audio Gold Series 200-W/ch Power Amp
  - Zero overall feedback (feedback in output stage only); fully cascaded 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/µsec; 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-cuts-core power transformers; large honeycomb heatsinks; direct and subsonic inputs. 150 W/ch from 20-20,000 Hz with no >0.02% THD into 8 ohms; FR DC-200,000 Hz ± 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 pads 1.5 V (30 kilohm). 17" w x 8.25" h x 15.75" d. 59.5 lb $2,000
LINELINEAGE
PA-200 Stereo Power Amplifier
Features front-to-back linearity; full-complement direct-coupled FET design; complementarity differential inputs; Class AB operation in gain/driver stages; MOSFET output stages with Class ABI 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 audio; provides close to 1% THD at full output. 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. 17.12" w x 3.5 h x 10.5" d; 19 lb.$855

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.$1,650

LEXMAN
M-05 Power Amplifier
Duo-Beta/S Class A power amp, 105 W/ch from 20-20,000 Hz with less than 0.01% THD into 8 ohms; FR 10-100,000 Hz ±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 ±1 dB; SN 120 dB; 17.19" w x 5.56" h x 13.19" d; 31.9 lb; $800

MARK LEXBONN 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 capacitor filters 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 μF 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 (31.25 W peak) per ch. Optional external 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; 8.625" w x 11.25" d, 25 lb.$2,100

MCMINTOSH
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 0.05% at 100 Hz; clipping power >500 W at 8 ohms; 1200 Hz to 10,000 Hz ±0.5 dB; damping factor >500; input 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 LF/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 0.25 - 1 dB 10-100,000 Hz -0.25 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 0.5-15 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 0.25 - 1 dB 10-100,000 Hz -0.25 dB; damping factor >100; input imp 22,000 ohms; input sensitivity switchable. 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 Hz -3 dB, damping factor >100 at 1 kHz; THD <0.25% at full rated power into 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 filters; audible-clipping indicator; high-voltage, high-current capability; speaker imp selector; input-level control for each channel; rack mountable. $250 W into 8 ohms 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 spk. >115 db with most speakers; dynamic headroom 4 dB, damping factor 120. 17" h x 5" x 15 1/2; 28 lb, 8 oz. $748

2200FE 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 3-30,000 Hz ±1 - 3 dB; SN ?91 dynamic headroom >6 db; slew rate >35 V/μsec; 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 1000 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 (5 V/sec) input imp 220 ohms; gain 26 db, input sens 150 mV for 1 W out. 830 V/m for 40 W out.$298

NAKAMICHI
PA-7 Power Amplifier
Power amp power stages 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; SN >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 FL 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 3-30,000,000 Hz, S/N >115 dB (direct input). 9.26" w x 4.72" h x 14.87" d. $375

NEC M-50
STEREO REVIEW FEBRUARY 1988 107
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

ONYKO
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 480 W into 4 ohms. 685 W into 2 ohms. 18.25" w x 7.25" h x 16.75" d; 1,150 lb

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 4 ohms; 200 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" 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 BTIL 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-mountable; dimensions 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 90V/us. 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

PERREAX 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 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 $1,895

PERREAX PMF3150

PIONEER
M-908 (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; PL 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; 95 lb $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 90 W/ch rms; DPD; dual mono-config. for each channel. 200 W into 8 ohms, 330 into 2 ohms; peak output current >55 amperes. 15.2" x 5.25" x 14" $3,950/pr

QUAD
Model 605 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. Power circuitry uses a sensor on an 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 resistors) 0.01% at 1,000 Hz, <0.03% at 20,000 Hz; FR 20-20,000 Hz ±0.25 dB. 19" w x 3.5" h x 12.5" d; 28 lb $900

RCA
MFA120 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 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 >0.01% 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 µs; 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
RB980 Stere 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
RB870B Stere Power Amplifier
100-watt power amp bridgeable with RB-870 (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 EET inputs. Features direct-coupled zero-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 W into 4 ohms; 330 into 2 ohms; peak output current >55 amperes. 15.2" x 5.25" x 14" $3,950/pr

SANSUI
X10A Power Amplifier
Hypersonic Class A power amp. Features gold-plated connectors; toroidal transformer; wide/narrow band inputs; LED true power meters; analogized gray finish. 100 W/ch from 20-20,000 Hz with no >0.025% THD into 8 ohms. 20-20,000 Hz ±0 db; S/N 110 db; dynamic headroom 1.2 dB, slew rate 20 amperes/µs, IMD 0.02%, 19" w x 3.5" h x 12.5"; 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 direct-speaker system switching, peak and average LED power display. Rack mountable. 20-20,000 Hz ±0 db; S/N 110 db; dynamic headroom 1.2 dB, IMD 0.025% $699

SAE
B-2102 Power Amplifier
Vintage series DC power amp with X-balanced technology. Features fluorescent peak power display with switchable peak/hold functions; balanced ch-connector 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/µsec. 16.86" 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

108 STEREO REVIEW FEBRUARY 1988
'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 sureIy 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
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/µsec; 16.94" w x 6.94" h x 16.25" d $1,100

**SOUNDCASTSMEN**

**Pro Power Eight Power Amplifier**

MOSFET stereo power amp. Features phase-control-regulation power supply, 600 W/ch continuous 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 +0.1 dB; S/N 105 dB; slew rate 50 V/µsec. 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/µsec; 19" w x 5.25" h x 11.5" d $749

**Pro Reference 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%; IMD 0.05%; slew rate 20 V/µsec; sens 1.8 V for rated output; dynamic headroom 1.5 dB; 19" w x 8.75" h x 7.5" 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%; IMD 0.05%; sens 1.37 V for rated output; dynamic headroom 1.5 dB. 25 lb. With custom front panel and handles $649

**TANDERG**

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/µsec; S/N 100 dB; 17.13" w x 8.69" h x 13.75" d; 62 lb $3,935

**TECHNICS**

SE-A3MK2 300-W/ch Power Amplifier

Features computer-drive linear-feedback Class-A circuitry: concentrated power block; extra-large heat sinks 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

**VECTOR RESEARCH**

VA-1450 Power Amplifier

Features high-current, 8-output transistors, dual transistors coned in bridging, power 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 ±1 dB; 21 lb. 17" w x 3" h x 12" d $349

**WINGATE AUDIO**

2000A Class A Power Amp

100% MOSFET; 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/µsec; 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-V10000

**YAMAHA**

MX-V10000 Power Amplifier

Limited Edition Centennial power amplifier. Features dual-amp class-A operation; hyperbolic converting nonswitching circuitry; MOSFET's. high-precision analog dB scale peak level meter. 250 W/ch min 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 meters with on/off switch. 260 W/ch min 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 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 into 8 ohms from 20-20,000 Hz with <0.003% THD. Black. 31 lb $449

**PREAMPTIFIERS**

**ACCUPHASE by MADRIGAL**

C270 Class A Preamp

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 10 mV. phono output 10 mV/0.5 mV 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 Preamp

Cascode push-pull circuits on all stages; separately regulated power supply for each gain stage.
**AMPLIFIERS**

<table>
<thead>
<tr>
<th>Model</th>
<th>Features</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adcom GFP-555</td>
<td>Stereo at 1,000 Hz; s/N tuner 75 dB; 2 sets of outputs (AC coupled, DC couplable); switchable phono input</td>
<td>$5480</td>
</tr>
<tr>
<td>Acoustic Research AR C-08 8-Input Preamplifier</td>
<td>Features infrared remote control of inputs and volume with T-04 tuner cable link; switchable MM input capacitance; gold-plated phono inputs; separate headphone amp.</td>
<td>$33000</td>
</tr>
<tr>
<td>ACOUSTIC RESEARCH AR 06 8-Input Preamplifier</td>
<td>Features van den Hul silver monocrystal wiring; Tiffany connectors; Wonder caps; infrasonic filter; regulated remote power supply (48 VAC); external phono loading capability; 6 stereo inputs</td>
<td>$1249</td>
</tr>
<tr>
<td>BERNING TF-12 Preamplifier</td>
<td>Dual-mono tube preamp with all-differential triple gain 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 display relays 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).</td>
<td>$30000</td>
</tr>
<tr>
<td>Bryston 12B Preamplifier</td>
<td>Control amp can play 1 source while tuning or remote another. Features stereo/mono/mute switch; 14-V headroom.</td>
<td>$1100</td>
</tr>
<tr>
<td>Cambridge by Celestion C75 Preamplifier</td>
<td>Inputs for MM/mcphono, tape, cd player, tuner, video, s/n – $484, thd 0.005%, 19' w x 1.75' H x 11' D</td>
<td>$1500</td>
</tr>
<tr>
<td>Canton EC-PL Preamplifier</td>
<td>Hand-wired preamp with gold-plated connections.</td>
<td>$1199</td>
</tr>
<tr>
<td>Carver 8000-t Sonic Holography Preamplifier</td>
<td>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.</td>
<td>$30000</td>
</tr>
</tbody>
</table>

**AUDI0 DESIGN ASSOCIATES DSP-8 Preamp**

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 mcphono stage (external). Inputs for MM phono; tape; tape 2; AUX; CD player; tuner, video; CD 2, FR 5-50,000 Hz ± 3 dB, S/N 110 dB, THD 0.007%; sens 50 mV, 8 lb; 19' w x 3.5' h x 12' d | $1300 |

**AUDIO DYNAMICS C200 Preamp**

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/mcphono, tape; CD player; video monitor, and 3 audio or video tape decks. FR 10-50,000 Hz ± 0.3 dB (line level), 20-20,000 Hz ± 0.25 dB (phono), 11.75' w x 4' h x 12.62' d | $5500 |

**B&W LOUDSPEAKERS CU10 Preamp**

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, video. | $1500 |

**BEDINI 66SPA Preamplifier**

Flat preamp; no tone controls. | $3000 |

**BELLES RESEARCH XL Preamplifier**

Solid-state preamp with MM and MC capability. Features van den Hul silver monocrystal wiring, Tiffany connectors; Wonder caps; infrasonic filter; regulated remote power supply (48 VAC); external phono loading capability; 6 stereo inputs | $1199 |

**BERNING TF-12 Preamplifier**

Dual-mono tube preamp with all-differential triple gain 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 display relays 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). | $30000 |

**BERNING TF-12 Preamplifier**

Dual-mono tube preamp with all-differential triple gain 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 display relays 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). | $30000 |

**BERNING TF-12 Preamplifier**

Dual-mono tube preamp with all-differential triple gain 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 display relays 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). | $30000 |

**BERNING TF-12 Preamplifier**

Dual-mono tube preamp with all-differential triple gain 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 display relays 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). | $30000 |

**BERNING TF-12 Preamplifier**

Dual-mono tube preamp with all-differential triple gain 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 display relays 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). | $30000 |

**BERNING TF-12 Preamplifier**

Dual-mono tube preamp with all-differential triple gain 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 display relays 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). | $30000 |

**BERNING TF-12 Preamplifier**

Dual-mono tube preamp with all-differential triple gain 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 display relays 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). | $30000 |
cation and equalization system with completely independent MC and MM circuits. Isolateral design for maximum isolation and extreme linearity. Inputs for MM and MM phono. 25 lb $1,995

SA-5.1 Preampifier
Preamp with inputs for MM phono, MC phono, tape, 2 AUX, CD player, tuner, FR 0.5-88,000 Hz ±0.1 dB, max output 70 V; THD 0.08%; IMD 0.001%; FR phono 10-40,000 Hz ±0.07 dB, high-level 2-50,000 Hz ±0, -1 dB; S/N A-wtd 89 dB, phono 90 dB, 20,000 Hz 65 dB. Max output 20 V; THD 0.18%; IMD 0.018%; MM phono sens 0.25 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 Preampifier
Preamp with inputs for MM phono, MC phono, tape, 2 AUX, CD player, tuner, FR 2.5-30,000 Hz ±0.1 dB, max output 70 V; THD 0.18%; IMD 0.018%; MM phono sens 0.25 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 $1,995

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 $925 With oak cabinet $1,085

DB-1A & 2A Preamp
Stereo preamp with separate DB-2A regulated power supply; THD ≤0.0008%, 20-20,000 Hz; IMD ≤0.001%; FR phono 10-40,000 Hz ±0.07 dB, high-level 2-50,000 Hz ±0, -1 dB; S/N A-wtd 89 dB, phono 90 dB, 20,000 Hz 65 dB. Max output 20 V; THD 0.05%; FR 2-100,000 Hz ±3 dB; THD 0.005%; IMD 0.005%; MM phono sens 0.25 mV for 0.5 output at 1,000 Hz; MM phono input overload level 700 mV; 19" w x 2.5" h x 17.33" d; 24 lb $1,995

DBX

CX1 Preamp
Audio/video remastering amplifier with a 2-channel switchable digital-only delay for ambient recovery. Dolby Pro Logic system contains a 5-channel playback with precision audio adjustment for precise setup. Inputs for MM and MC phono. CD player, tuner, AUX, 2 mike loops or signal processors, 2 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, stereo-to-tape jack, and a video-monitor output. Features a stereo audio external-processors loop, audio/video dubbing, independent recording and listening selectors; switchable tone controls (conventional bass/treble curves or low-pass high-pass switching), high-pass filter and distortion filters; precision-tracking 5-channel volume control; ch-mode controls for L/R stereo, detail, L or R on, L+R mono, and L-R positions, headphone jack, anti-resonance chassises and aluminum feet $1,500

DENNESEN ELECTROSTATIC

JC-80 Preamp
Dual mono all-FET, discrete, fully complementary, push-pull, preamp. No interstage coupling caps; feedback input stage; virtually unsuitable; passive RIAA; each stage separately regulated. MM phono, FR phono, tape 1, tape 2, AUX, LF 1-15,000 Hz = 0 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 mV; 19" w x 1.75" h x 12" d; 10 lb $2,250

DENON

PRA-2000F Preampifier
Inputs for 2 MC phono, 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 100 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% 1.00 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, MC phono 75 dB at 0.25 mV input, phono-3 MM 90 dB at 2.5 mV input, cep 20-1,000 Hz 80, 20,000 Hz 70 Hz. Flat amplifier: input sens/imp 150 mV/47 kilohms, THD <0.0015% (20-20,000 Hz; 4 V output); FR 1-300,000 Hz ±3, -6 dB; S/N A-wtd 105 dB, 20 Hz 100, 1,000 Hz 75 dB, 20,000 Hz 65 dB $1,600

DAP-5500 D/A Preamp
Preampifier 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, 2 optical, 1 coaxial; digital-to-analog conversion: 24-bits oversampling digital filter; optical isolators between digital and analog sections; D/A converter output jacks. Audio section features Unity Gain Interface amplifier; finish: brushed, brushed/stainless; auxiliary input/output: 3 RCA jacks; 1 RCA line-in; 1 RCA line out; front-panel mounted RCA input/output jacks; 2 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. 17.0"w x 3.2"d x 15"h $1,400

PRA 1100 Preampifier
Features unity-gain interference-output amp with variable loudness; 5 audio, 3 video inputs; MM/MM inputs $425

ELECTROCOMPANET BY MUSIC & SOUND IMPORTS

Electrocompaniet preamps feature FR 5-100,000 Hz ±0.05 dB; max output 15 V/s; MM phono 9/10 dB; 84 dB; high-level sens 100 mV; no tone controls; balance and volume only; MM input 47 kilohms; external power supplies. EC-1 Preamp Features for MM and MC cartridges, 2 tape recorders or signal-processors loop, and tuner. Inverts phase. Approximately $1,995 PRA-1. As above except no MM phono and no phase inverting. Approx $1,395

FORTÉ AUDIO

Model 2 Class A Preampifier
Two-channel, noninverting, hybrid ic/discrete, straight-line preamp. 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-20,000 Hz ±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. Fully monitored, recorder disengagement (removes recorder's input characteristics as a load factor for other equipment); channel balance, audio level 19" w x 1.75" h x 7" d $775
**AMPLIFIERS**

**HAFLER**
- **DH-110 Discrete Preamplifier**
  - Preamp operates all discrete devices (no integrated circuits in signal path) in full symmetry.
  - Controls: Volume, balance, treble, 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-size volume control, integral muting circuit, 2 pairs of audio outputs, low-imp power supply, full power bandwidth to 200,000 Hz, 2 phone, tuner, AUX, 2 tape decks, signals, headphones jack, THD <0.0006% at 1,000 Hz, 3 V rms: phono input FR 20-20,000 Hz +0.25 dB.
  - Dimensions: 9.9" w x 1.66' h x 12.63' d; 9.3 lb. With no phono section.
  - Kit: Assembled $450

**JVC**
- **PL-110 Precision Control Preamplifier**
  - Features: GM processor, ultra-high-sensitivity head amp.
  - Inputs: MM phono, MC phono, tape, TAPE, AUX, PHONO, 2 TUNER. THD 0.002%, MM phono sensitivity 2.5 mV for 0.15 V output (rest output) at 1,000 Hz. MM phono input overload level 300 mV, sens for line-level inputs 150 mV. 18.12" x 5.69" x 16.56" $1,650

**KENWOOD**
- **Basic C2 Preamplifier**
  - Features: 2-way tape dubbing with monitoring source (see out) tape selector, AUX INPUT for inputs.
  - Kenwood NF-40 tone controls with selectable turnover, Super-coupled volume control, for low noise at low volume, 4-way filter system: loudness switch, mono/stereo switch, tuning, IN/OUT. 17.31" wide x 3.06" high x 8.5" deep; 10 lb.
  - Kit: Assembled $175

**HARMAN KARDON**
- **Citation twenty-one Preamplifier**
  - Features: C/D/AUX INPUT; MM/MC cartridge selection; Advanced NF-loop, low-imp power amplifier; 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 +0.25 dB. Max output 8 V, THD <0.005%, IMD below residual noise of current test instruments; MM phono sens 10 mV/50 for 0.25-V output: 15.5" wide x 3.06" high x 9" deep; 7 lb.
  - Kit: Assembled $225

**HEYBROOK by D'ASCANIO**
- **C-2 Preamplifier**
  - Hand-assembled preamplifier with versatile input selections and black finish.
  - Features: volume, balance, treble, bass, tape monitor, power controls; 2 switched outlets, FR 20-20,000 Hz +0.25 dB. Max output 8 V, THD <0.005%, IMD below residual noise of current test instruments; MM phono sens 10 mV/50 for 0.25-V output: 15.5" wide x 3.06" high x 9" deep; 7 lb.
  - Kit: Assembled $175

**HITACHI**
- **HPT120A8WS AM/FM Preamp/Tuner**
  - Quartz digital-synthesized tuner section, 20 AM/FM presets; unified infrared remote control with LCD display; audio inputs for phone, 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 (preamplifier 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

**JVC**
- **PL-110 Precision Control Preamplifier**
  - Features: GM processor, ultra-high-sensitivity head amp. Inputs for MM phono, MC phono, tape, AUX, PHONO, 2 TUNER. THD 0.002%, MM phono sensitivity: 2.5 mV for 0.15 V output (rest output) at 1,000 Hz. MM phono input overload level 300 mV, sens for line-level inputs 150 mV. 18.12" x 5.69" x 16.56" $1,650

**KINERGETICS**
- **KPA-1 Preamplifier**
  - Designed to eliminate hysteresis distortion; MM phono, MC phono inputs. 2 tape loops, remote power supply, 25-W/batt and capacitors for phono inputs, polarity control. FR 2-500,000 Hz; slew rate >20 V/µsec; gain 60 db; 20 lb; 9" x 2.5" x 16.25" $795

**KYOCERA**
- **C-910 Preamplifier**
  - Control preamp with input and output level controls. Features complete DC configuration: cut-off core power transformer, single-stage push-pull amplification. Inputs for MM phono, MC phono, tape, AUX/2, PHONO/2, CD, PHONO/2, TUNER, AUX/2, PHONO/2, DC. Power: 200,000 Hz; max output 2 V at rated input; THD <0.003%, MM phono sens 2.2 mV for 0.35 V output at 1,000 Hz. MM phono input overload level 300 mV, sens for line-level inputs 125 mV; 17" x 5.75" x 13" $1,200

**LINEAGE**
- **CP-100 Control Preamplifier**
  - Class-A preamp with all discrete-IC 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 phone EQ. complementary differential inputs, 2-stage phono EQ. electronic switching, front-panel phone gain for both MM and MC phono; remote-panel control with continuously variable resistive cartridge loading, tone controls for low bass and upper treble; tone, mute, stereo/mono, and polarity inverter 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 tear pedestal base. Dimensions: 17" x 12" x 6.60" (w/hase), 17" x 12" x 6.25" (without base) $1,995

**LINN by AUDIOPHILE SYSTEMS**
- **LKI Remote-Controlled Preamp**
  - Stereo microphone preamp with independently adjustable input-level matching, key-board lockout; all switching and level adjustments electronic on board. Inputs for MM phono, MC phono, tape, AUX, Tuner, Tape, 10.5" w x 3" h x 10.5" d; 9 lb. $845

**LOGAN Labs by SYMED**
- **PA-10B Preamplifier**
  - Electron tube phono-only preamp with separate power supply. Features symmetrical layout for both chs; matching function for no system crash due to power loss. Switchable turn-on circuitry to prevent thermal shock to tubes. Input for MM phono, 1001T is required for MC cartridges. FR 1-3,000,000 Hz ±3 db; max output 160 V; THD <0.2%, IMD <0.02%, separate transformer. 19.6" x 3.5" x 7.6" $5,495

**LUXMAN**
- **C-015 Preamplifier**
  - Duet-bi/S Class A preamp. Inputs for MM phono, MC phono, tape, 2, AUX, PHONO, 2, CD player, Tuner. FR 2-100,000 Hz ±0.5 dB, max output 18 V, THD 0.005%, 18.12" x 5.25" x 17.44" $4,450

**F-105 Surround Sound System Remote**
- Full remote-control-system with remote sound. Provides complete system operation: input for remote control. Separate 5-pin self-locking connector parallels. Camac phono inputs for cartridge loading; 10 or 20 dB of line level. 17.25" x 2.94" x 11.88"; 13.2 lb $550

**MARK Levinson by MADRIGAL**
- **ML-7A Preamplifier**
  - Inputs for 5 line sources. monitors 2 tape decks, with choice of 3 plug-in phone sections for virtually any cartridge. All audio circuitry completely discrete and operates in Class-A mode. Fitted with 2 L1 line amps. PL5-154 power supply maintains load regulation of 0.05% with wideband noise output of 18 µV; external 5-pin self-locking connector parallels. Cameo phono inputs carry 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, 850 Hz, 0 dB bandwidth below 3 Hz. Copper-plated black anodized finish. ML-7: 2.25" h x 19" w x 10.12" d; PL5-154: 4.36" h x 4" w x 10.62" d; 14 lb. With no phone section $4,450

**STEREO REVIEW FEBRUARY 1988**
The finest sounding receivers in the industry...are available only at the finest retailers:
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."
**AMPLIFIERS**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ML-10A Stereo Preamplifier</strong></td>
<td>Simplified version of L-series circuitry in single circuit board configuration. All audio circuitry is discrete and operates in Class A.</td>
<td>2.25&quot; tor, biased for Class A; load regulation of 0.05%; power supply with high-speed push-pull regulation.</td>
</tr>
<tr>
<td><strong>NAD 100 Monitor Series Preamplifier</strong></td>
<td>Features high-resolution phono preamp; bass EQ; null switch to amplify L-R difference signal; low-noise MC 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).</td>
<td>0.005% IMD and s/N typically 72 dB.</td>
</tr>
<tr>
<td><strong>Nakamichi CA-7A</strong></td>
<td>Preamp with full-system wireless remote control. Similar to above.</td>
<td>18 V. THD 0.003% (20-20,000 Hz, 2 V output); built-in headphone amp; bass EQ.</td>
</tr>
<tr>
<td><strong>MEININGER Audio by MUSEATEX PA-6 Remote-Controlled Preamplifier</strong></td>
<td>Wireless remote control of volume, balance, polarity, and source switching; no audio signals pass through remote circuits; FET switches.</td>
<td>116 mV phono input ±0.2 dB with 1% L/R match; phono 100 mV, high-level input 150 mV; s/N A-weighted 100 mV; s/N 85 dB; THD 0.005%.</td>
</tr>
<tr>
<td><strong>NIKKO Audio Beta 5011 Preamplifier</strong></td>
<td>Double-input signal-selector preamp.</td>
<td>20 dB. Same as above except 1 sound-processor input/output terminals are used.</td>
</tr>
<tr>
<td><strong>ONKYO Grand Integra P-308 Preamplifier</strong></td>
<td>Mono-tone preamp with electriically separate left and right circuitry and 2 sets of preamp outputs.</td>
<td>output #1 is from precision-paired master volume control using Alps potentiometers.</td>
</tr>
</tbody>
</table>
control at 10,000 Hz + 10 dB, bass eq at 75 Hz + 3 dB, infrasonic filter at 20 Hz - 3 dB, slope + 1 input, phone input bus output when operating as filter to give 5+5 dB drop at 2 frequencies: ±2 dB tilt control that shifts tonal balance; variable filter slope control at 3,000, 7,000, 10,000 Hz; all tone controls have deflections positions; balance, mono, 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 nV in/47 kohms phono, 100 mV at 5 V in/1 kohm for MC phono; FR +0.5 dB 30-20,000 Hz phono RIAA, 30-20,000 Hz. -0.1 dB, ±1 dB; high-level distortion 0.02%; residual noise -104 dB A-weighted; 321 mm in/39 kilohms tape, 35 mV in/47 kilohms phono, 100 mV at 5 V tape 2 input selectors with optional mic or MC phono inputs. Feature sequential audio muting to provide independent control between audio and video signal paths; 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 +0.1 dB; crosstalk 80 dB; THD/M/IMD <0.01% below 10 V output $469

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 non-system components. Features automatic input selection; remote control volume mute, direct access and station scan, and off/on: Speakers, attenuate bass output when operating as filter to give 5+5 dB drop at 2 frequencies: ±2 dB tilt control that shifts tonal balance; variable filter slope control at 3,000, 7,000, 10,000 Hz; all tone controls have deflections positions; balance, mono, 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 nV in/47 kohms phono, 100 mV at 5 V in/1 kohm for MC phono; FR +0.5 dB 30-20,000 Hz phono RIAA, 30-20,000 Hz. -0.1 dB, ±1 dB; high-level distortion 0.02%; residual noise -104 dB A-weighted; 321 mm in/39 kilohms tape, 35 mV in/47 kilohms phono, 100 mV at 5 V tape 2 input selectors with optional mic or MC phono inputs. Feature sequential audio muting to provide independent control between audio and video signal paths; 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 +0.1 dB; crosstalk 80 dB; THD/M/IMD <0.01% below 10 V output $469

SAE
XIP V-Series Preamp
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 1, 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 mVd, MM/MC/S/N 80/70 dB $399
RC850. Similar to above but has 2 tone controls $249

PRO-CONTROL
CU-100 Control Center
Computer direct-line preamp with 3 digital tone memories, electronic volume and balance controls. Features sequential audio muting to provide independent control between audio and video signal paths; 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 +0.1 dB; crosstalk 80 dB; THD/M/IMD <0.01% below 10 V output $469

SUMO
Athena Preamp
With MC head amp; discrete circuitry utilizing 1% metal film resistors and metalized polypoly carbonate capacitors; no tone controls; separate record and program selection. Select. 17.13" w x 3.25" h x 13.75" d; 12.5 lb $2,195

TANDBERG
TCA 3018 Control Preamp
Preamp 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 polypoly carbonate capacitors; no tone controls; separate record and program selection. Select. 17.13" w x 3.25" h x 13.75" d; 12.5 lb $2,195

TECHNICS
SU-A200 Class AA Preamp
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: 2-VC/aux; 2 CD player; tube; video 4 (7V). FR 0.5-180,000 Hz ±0.4 dB, 17" w x 5" h x 14.25" d; 20 lb $1,150
SU-A6MK2 Stereo DC Preamp
Features shelving tone controls, selectable turnover frequencies, inflation filter, audio muting. Inputs for MM phono; MC phono, tape 3. tape 2, aux 2,= phono 2; CD player; tuner. VCR: DAT recorder, TV; Max output 8 V; 16.94" w x 3.88" h x 14.19" D $600

THRESHOLD
Model FET ten/hi Control Preamp
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
chassis. Input 1-FET's are operated in parallel, doubling transconductance and lowering noise and distortion. Secondary gain stages use cascode 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. FET 1.5-125,000 Hz ± 3 dB, distortion 0.01% at 3 V rms from 20-20,000 Hz into 1000-ohm load; crosstalk no greater than -75 dB at 20,000 Hz with 1000-ohm source; no noise greater than -10 dB Reference to 1 V input; input Lm 25,000 ohms, nominal; output Lm 100 ohms. 1.75" h x 19" w x 6.5" d $1,800

Model FET nine Preamplifier
Dual-ch non-inverting 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 RCA test 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 25,000 ohms, nominal; output 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

Yamaha CX-10000
C-65B Preamplifier
Features Zero Distortion Rule circuitry: direct-current-servos current noise suppression, extended roll-off equalizer, continuously variable loudness control; record output selector; bass and treble controls with continuously variable turnover frequencies, 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 Yamaha test 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 1000-ohm load; crosstalk no greater than -75 dB at 20,000 Hz with 1000-ohm source; no noise greater than -10 dB Reference to 1 V input; input Lm 25,000 ohms, nominal; output Lm 100 ohms. 1.75" h x 19" w x 6.5" d $1,800

Model FET nine Preamplifier
Dual-ch non-inverting 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 RCA test 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 1000-ohm load; crosstalk no greater than -75 dB at 20,000 Hz with 1000-ohm source; no noise greater than -10 dB Reference to 1 V input; input Lm 25,000 ohms, nominal; output Lm 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

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 ambiance information and/or digital parametric equalizer; wireless remote control. Titanium grey with high luster walnut end panels. $7,700

C-85B Preamplifier
Features Zero Distortion Rule (ZDR); DC-servos current noise suppression, extended roll-off equalizer, continuously variable loudness control; record output selector; bass and treble controls with continuously variable turnover frequencies, 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 Yamaha test 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 1000-ohm load; high-level input 25,000 ohms, nominal; output 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 $1,800

 possesses 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, slide rate 10 V/µsec; IMD 0.02%; 50 lb

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/ch into 4 ohms, FR 20-20,000 Hz ± 3 dB, THD 0.06% 6 Ib; 19" w x 3.5" h x 12" d $950

CAMBRIDGE BY CELESTION
P55 Integrated Amplifier
Designed for high current output, high listening levels, and difficult loads: 5 inputs (including MM and MC inputs); passive tone controls (bass turn over at 50 Hz ± 5, -7 dB, treble at 8000 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 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-NFB amp, A/V switching; front-panel video input; MM/MMC input; external-proessor loop; muting switch. Side panels standard $700

AVC-5001H 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-360V Integrated Amplifier
Features 55 W/ch, pure-current power; high-speed dual-NFB amp, A/V switching; front-panel video input; MM/MMC input; external-proessor loop; muting switch. Side panels standard $350

DUAL BY ORTOFON
PA5060 Integrated Amplifier
60 watt/ch integrated amplifier with high current output capability and MC phono input. Black $350

Yamaha CX-10000
C-65B Preamplifier
Features Zero Distortion Rule circuitry: direct-current-servos current noise suppression, extended roll-off equalizer, continuously variable loudness control; record output selector; bass and treble controls with continuously variable turnover frequencies, 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 Yamaha test 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 1000-ohm load; crosstalk no greater than -75 dB at 20,000 Hz with 1000-ohm source; no noise greater than -10 dB Reference to 1 V input; input Lm 25,000 ohms, nominal; output Lm 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 $1,800
Harman Kardon
PM665 Vxi 150-W/ch Integrated Amplifier
Inputs for A/V, AUX, tuner, CD player, phone (MM or MC), VCR/tape monitor switches. 2 decks and source; drives 2 pairs of speakers; selectable turnover frequencies (high 200 or 400 Hz, treble 2,000 or 6,000 Hz); tone defect; mono switch; capacitance trim (normal, ±0.1, ±0.2, ±0.5 dB); phase correct loudness; high and low filters, 2-way tape dubbing, limiter mute button (20 dB down); preamp out and main in jacks; active/passive phono section; 2 power transformers. 150 W/ch into 8 ohms; dynamic power 200 W; current capability ± 45 amps for 260 W on down; £1,599

Hi-Fi
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 NFQ 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 m 5-20,000 Hz with no >0.004% THD; FB 108 dB (line), 85 dB (MM phone). £410

JVC
AX90V BK Remote-Controlled Integrated Amplifier
Integrated amp with unified wireless remote control to operate amp plus selected JVC Comp-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 phone eq; 2-amp construction; high 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 >0.004% THD into 8 ohms; FR 5-20,000 Hz ± 3 dB; THD 0.003%; S/N 100 dB; IMD 0.007%; 17.19" w x 5.5" h x 15.75" d. £226

AX70V BK 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 phone eq; 2-amp construction; high 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 >0.004% THD into 8 ohms; FR 5-20,000 Hz ± 3 dB; THD 0.003%; S/N 100 dB; IMD 0.007%; 17.19" w x 4.62" h x 13.81" d. £126

Lexicon
LV-108U 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, Aux; CD player; tuner; 80 continuous average W/ch from 20-20,000 Hz with no >0.025% THD; 200-mw dynamic power 200 W at 4 ohms; FR (audio high-level inputs) 3.5-300,000 Hz ± 3 dB; 20-20,000 Hz ± 0.2 dB phone; 10-6 MHz video ± 1 dB; S/N 90 dB (MM); 70 dB (MC); 90 dB (tuner, tape, CD video audio); IMD 0.015%; 17.25" w x 5.19" h x 13.88" d. £1,500

LV-103 Integrated Amplifier
Features BRID (hybrid) circuitry. STAR circuitry; Duo-Beta; voltage-driven amplification; tape dubbing; front-panel inputs (A/V)

McIntosh
MA-6200 Integrated Amplifier
Power output 100 W/ch into 4 ohms. 75 W/ch into 8 ohms. £1,795

Mission
Cyress II 60-W/ch Integrated Amplifier
Integrated amp with optional external power supply to double power output. Inputs for MM phono; MC phono; tape; tape 2, Aux; CD player; tuner. 60 continuous average W/ch from 20-20,000 Hz with no >0.004% THD into 8 ohms; 80 amperes peak-to-peak swings; FR 20-20,000 Hz ± 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 30 mV for 1-W output; dynamic headroom 14 ms; video picker switch. £900

NAD
CM-300 Monitor Series Integrated Amplifier
Power-envelope circuitry; bass EQ; Close Tracking Soft Clipping; semiparametric tone controls.
inputs for MM phono, MC phono, tape, 2, AUX, CD player, tuner, video, speaker-imp selector, 75 W/ch into 8 ohms, bipolar output $350
3240PE. Similar to above except 40 W/ch, dynamic headroom +6 dB $378

NEC
A-1300E Integrated Amplifier
Features unified remote control with LED readout 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 with no >0.005% THD; dynamic headroom 5 dB, FR 10-70,000 Hz ± 3 dB, SN/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, treble, and balance controls; heavy-duty speaker terminals. 80 W/ch sine wave into 8 ohms with no >0.003% THD, 150 W/ch into 8 ohms with no >0.008% THD; dynamic power output 120 W/ch min $387

FA960XBK Integrated Amplifier
Features CD direct; switches 7 sources; gold-plated CD and phono inputs; 4- gang volume control; 4-color LED display with digital delay. 16.8" h x 17.9" w x 5.12" d; 16.5 lb $165

A-910D Elite 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; selectable MC/MM input. THD 0.01%; anti-clipping circuit. 40 continuous W/ch from 20-20,000 Hz; FR 20-20,000 Hz ± 0.2 dB; SN/85 dB (unweighted), 105 dB (A-weighted); dynamic headroom 6 dB; dynamic power rating: 1HF 20 ms at 8 ohms is 160 W, 4 ohms 80 W; 2 ohms 80 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, 200 W. 16" w x 12.5" d; 19.14 lb $299

CA250 50-W/ch Integrated Amp
Electronic volume control; detented variable loudness; separate record output selector; 10-turn, direct stereo phono preamp; relay protection; discrete output transformer; 3-color LED power meters; 2-way tape dubbing; A/B speaker switching. Inputs for MM phono; tuner; tape, 2, CD player/vide o. 50 W/ch 8 ohms; dynamic headroom 2 dB, slew rate 55 V/µsec; MM phono sens 2 mV for 0.5 V output at 1000 Hz, sens for line-level inputs 500 mV; slw rate 22 V/µsec; 16 Ib; 17.25" w x 3.5" h x 11" d $300

D540 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 MM and MC 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 $1,300

Parasound
CA20 20-W/ch Integrated Amp
Discrete output transistors; detented volume and tone controls; A/B speaker switching; headphone jack; 4-way balanced inputs for MM phono; tuner, tape, 2, CD player/vide o. 20 W/ch into 8 ohms; dynamic headroom 1 dB; MM phono sens 2 mV for 0.5 V output at 1000 Hz, sens for line-level inputs 500 mV, slew rate 22 V/µsec; 11 lb; 17.25" w x 3.5" h x 10" d $185

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 heat sinks; heavy-duty speaker terminals. 80 W/ch sine wave into 8 ohms with no >0.003% THD, 150 W/ch into 8 ohms with no >0.008% THD, 225 W/ch into 4 ohms, 75 W/ch into 8 ohms; parallel outputs for 2 pairs of speakers; headphone output; balance slider; all-metal cabinet. 100 W/ch into 8 ohms from 20-20,000 Hz with no >0.003% THD, 125 W/ch into 4 ohms, sep 75 V/ch with 10,000 Hz through CD input; 60 dB with 250-10,000 Hz $549

A-91D Elite Integrated Amplifier
Features Non-Switching Type-II Circuit; 3-transformer multi-power supply; MM phono input; line-direct 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 >0.007% THD $770

Pioneer
A-V1200 Integrated Amplifier
Features Non-Switching Type-II Circuit; 5 audio inputs, 5 video inputs; simulated stereo, video enhancer; line-direct 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 ± 0.2 dB; SN/85 dB (unweighted), 105 dB (A-weighted); dynamic headroom 6 dB; dynamic power rating: 1HF 20 ms at 8 ohms is 160 W, 4 ohms 80 W; 2 ohms 80 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, 200 W. 16" w x 12.5" d; 19.14 lb $299

Poly Realistic
A-8900 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; 4-color LED display with digital delay. 17.25" w x 16.5" h x 5.12" d; 20 lb $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; selectable MC/MM input. THD 0.01%; damping factor 90 dB; line input sens 150 mV; line input imp 47 kilohms/120 pF, phono input imp MM/MMC 47 kilohms/100 ohms; crosstalk at 1000 Hz is 75 dB; SN/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

Stereo Review February 1988
120
**Amplifiers**

1. **Revox B251**
   - Microprocessor-controlled.
   - Integrated amp with switched power supply.
   - Liquid cooling by heat pipe.
   - Input sensitivities programmable into nonvolatile memory.
   - Features infrared remote control.
   - Silver 20-20,000 Hz with no >0.003% THD, S/N 110 dB (line), 88/70 dB (MM/PCOCH) $1,000

2. **Shure AVC20 Power Station Integrated Amplifier**
   - A/V integrated amplifier with 45 W/ch amps.
   - Inputs for 3 video sources, turntable, AUX.
   - Features absolute linear amplification; high dynamic power; low-impedance drive capability; CD direct.
   - Available as a complete system with steering circuitry.
   - Features 2-way tape copy; external equalizer.
   - TA-F700ES Integrated Amplifier
   - Features nonmagnetic G-Chassis construction.
   - Spontaneous twin-drive power supply.
   - Super high-gain linearity circuitry.
   - Source direct switch to route input signal directly to volume control.
   - Passive tone-energy circuitry.
   - Defeatable infrasonic filter; inputs for 3 tape decks.
   - TA-F500ES Integrated Amplifier
   - Features nonmagnetic G-Chassis construction.
   - Spontaneous twin-drive power supply.
   - Super high-gain linearity circuitry.
   - Source direct switch to route input signal directly to volume control.
   - Passive tone-energy circuitry.
   - Defeatable infrasonic filter; inputs for 3 tape decks.
   - Sony TA-F700ES Integrated Amplifier
   - Features nonmagnetic G-Chassis construction.
   - Spontaneous twin-drive power supply.
   - Super high-gain linearity circuitry.
   - Source direct switch to route input signal directly to volume control.
   - Passive tone-energy circuitry.
   - Defeatable infrasonic filter; inputs for 3 tape decks.
   - Sony TA-F500ES Integrated Amplifier
   - Features nonmagnetic G-Chassis construction.
   - Spontaneous twin-drive power supply.
   - Super high-gain linearity circuitry.
   - Source direct switch to route input signal directly to volume control.
   - Passive tone-energy circuitry.
   - Defeatable infrasonic filter; inputs for 3 tape decks.

3. **SANSUI AU-3001 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 phone EQ for MM and MC cartridges, and PET input for bass and treble controls, selectable bass turnover, gold-plated input/output terminals, A-B speaker switching, infrasonic filter, loudness contour, external processor loop. Inputs for phone; tuner; tape; 2 tape; tape; 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 phone sens 2.5 mV/47k ohms, 17 dB w/± 200 V/psec; 17.63' w x 6.31' h x 17.38' d; 44.1 lb; black finish $1,000

4. **AX-500U 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 systems remote control; built-in video enhancer with continuously variable sharpness, detail, and level control.
   - 4 channels including Dolby Surround, bass extension control, continuously variable delay time control.
   - AX-460 W/ch, $699

5. **AX-700U Integrated Amplifier**
   - Features absolute linear amplification; high dynamic power; low-impedance drive capability; CD direct; continuously variable loudness control; preamp/mix amp out terminals; dual record-out selectors.
   - 130 W/ch min rms into 8 ohms. Black. 42 lb $649

6. **AX-900U Integrated Amplifier**
   - Features high dynamic power; low-impedance drive capability; CD direct; continuously variable loudness control; preamp/mix amp out terminals.
   - 80 continuous W/ch into 8 ohms with <0.07% THD into 4 ohms, dynamic headroom 2.5 dB, 1THD IMD 0.08% FR 10-40,000 Hz ± 1 dB. 17' w x 5' h x 12' d; 20 lb $350

7. **Technics SU-V10X 120-W/ch Integrated Amplifier**
   - Features separate record and input selectors and A/V terminals. Inputs for MM phone, MC phone, tuner, tape; tape; AUX; phone 2, CD player, captive deck; VCR, TV.
   - 120 W/ch into 8 ohms; 29.8 lbs. 16.94' w x 5.8' h x 15.4' d $750

8. **Yamaha AX-1400 100-Watt Integrated Amplifier**
   - 100-W/ch high-current integrated amp with 8 output transistors.
   - 200 W/ch with optional VA-1400 bridging amp.
   - Inputs for MM phone; MC phone; 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, 1THD IMD 0.08%, FR 10-40,000 Hz ± 1 dB. 17' w x 5' h x 12' d; 20 lb $350

9. **Magnavox 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.
   - 4 channels including Dolby Surround, bass extension control, continuously variable delay time control.
   - 45 W/ch, 45 W/ch $699

10. **Magnavox 500 Audio Video Integrated Amplifier**
    - Features high dynamic power; low-impedance drive capability; continuously variable loudness control; pure-current servo input.
    - MM/MC phone selector; banana-plug compatible speaker terminals. 55 W/ch min rms into 8 ohms from 20-20,000 Hz with less than 0.05% THD. Black; 16 lb $249

**Stereo Review February 1988**

$1,495
Dr. Sidney Harman, Founder and Chairman of Harman Kardon

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.

Steeped in audio breakthroughs and advanced designs, Harman Kardon’s Citation division introduced the world’s first Ultrawideband amplifier in 1963—the Citation 2 vacuum tube amplifier. In 1972, the Citation 14, the first FM stereo tuner with Phase Locked Loop (PLL) MPX decoding 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 (HIC) 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.

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 1-800-225-7000 Ext. 101 or write 240 Crossways Park West, Box 9101, Woodbury, New York 11797.
Citation. The next generation.
ACCOUPHASE 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; select switch, muting switch. FM section: 50-DB quieting sens mono 17 dB, stereo 17 dB; S/N 83 dB stereo, 79 dB mono (at 80 dBf A-weight); FR 10-60,000 Hz ±0.5 dB, capture ratio 1.5 dB; sep 50 dB at 1,000 Hz; AM sup 80 dB at 65 dB. AM section: sens 20 µV/m at 20 dB, 17.5 µV at 20 dB, 3.56 x 14.56 dB; THD 0.15% at 1,000 Hz; S/N 65 dB; FR 15-15,000 Hz ±3 dB; capture ratio 1.5 dB; sep 47 dB at 1,000 Hz; adjacent-channel rejection 90 dB; 12 lb; 19" w x 5.25" h x 13" 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 dB; S/N 85 dB; FR 10-60,000 Hz ±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

ACOUTIC RESEARCH
T-404 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; fly-wheel-assisted tuning, manual or auto search. FM section: FM usable sens (mono) 11.2 dB, (2.0 µV); FM 50-DB quieting sens 37.2 dB (40 µV) stereo, 14.6 dB (3.0 µV) mono; S/N 75 dB stereo, FR 30-15,000 Hz +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 ±3 dB; 17.5" w x 3.31" h x 13" d. $800

ADCOM
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 dB, S/N 78 dB stereo, FR 30-15,000 Hz ±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-555S. As above with white front panel. $375
GFT-555S. With silver front panel. $375

A/D/S/
CC-4 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 into 10,000 ohms/1,000 pF; volume and balance control range 80 dB in 1-dB steps; bass and treble control range ±10 dB in 2-dB steps; low bass 0 to +3 dB in 1-dB steps. FM section: sens <13 dB mono; 50-DB quieting sens <40 dB stereo; capture ratio <1.5 dB; sep >65 dB; spurious rejection >100 dB. FM section: sens <10 µV; sep >65 dB. 17.5" w x 7.18" h x 14.8" d. 12 lb. $999

ATLIE 2 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 µV (11.0 dB) stereo 5.5 µV (28.1 dB); stereo 50-DB quieting sens 15 V (34.8 dB), 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 µV for 6 dB S/N; image rejection >55 dB S/N (with 1,000-Hz 5-mV signal) >44 dB; 17.5" w x 2.8" x 14.8". $539

AKAI
AT-A102 AM/FM Stereo Tuner
Digital quartz-referenced PLL circuits; 8 AM/8 FM presets; auto wide/narrowband switching; 2 preset AM/3 preset FM; auto FM search tuning. Features flywheel manually controlled, tuning, with digital display. FM section: FM usable sens 1.0 µV (11.0 dB) stereo 5.5 µV (28.1 dB); stereo 50-DB quieting sens 15 V (34.8 dB), 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 µV for 6 dB S/N; image rejection >55 dB S/N (with 1,000-Hz 5-mV signal) >44 dB; 17.5" w x 2.8" x 14.8". $539

AUDIO DESIGN ASSOCIATES
AD-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 gain; signal strength/multipath LED meter, 15-µV 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 ±3 dB; capture ratio 1.5 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 Schott noise reduction. Features 8 AM/8 FM presets; auto wide/narrowband switching; extended AM response; auto scanning. FM FR 15-15,000 Hz ±0.375 dB; FR 83 dB stereo, 85 dB mono (at 80 dBf); FR 83 dB stereo, 80 dBf mono; capture ratio 1.75 dB; sep >55 dB. $399

CARVER
T1x11 AM/FM 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 µV mono; 50-DB quieting sens 3.1 µV; 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

T2 AM/FM Stereo Tuner
AM/FM tuner with Asymmetrical Charge Coupled FM Detector. FM section: FM usable sens mono 1.8 µV, stereo 4.5 µV; 50-DB quieting stereo 5.0 µV; 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: FM usable sens 250 µV with built-in antenna; 20 µV 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. $1,199

DBX
TX-1 AM/FM Tuner
Features Schott dynamic noise reduction; auto IF switching; extended NRSC AM response, 6 AM/6 FM presets; mono and high-blend switches. FM FR 15-15,000 Hz ±0.25 dB; FR 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
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!

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!
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 50 µV (37.2 dB) stereo; 1.6 mV (15.3 dB) 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-NK switch; auto- scan tuning; quick manual tuning; manual step tuning; last-channel memory; FM 50 dB quieting sens 53.1 µV (38.5 dB) stereo; 3.1 µV (21.2 dB) 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 CT5640 AM/FM Tuner**
Digital-synthesis tuning. 40 AM/FM presets. Black ... $250

**HAFNER 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; non-volatile memory; 3 dual-gate MOSFET's; 5 tuned front-end circuits; trip- tune RF stage; volume control and separate output on front panel for tapping or headphones; kit is comprised of 4 fully assembled, tested, and aligned circuit boards which plug together. Usable sens 11.5 dB; 50 dB quieting sens mono 15.3 dB; stereo 36.5 dB; 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 manual tuning; anodized brushed aluminum blue/black finish with molded rubber trim; heavy-gauge metal chassis. FM specs: 50 dB quieting sens stereo 15.2 dB (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; 3-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

**JVC KT-76 AM/FM Tuner**
Quartz-synthesis digital tuner with built-in 2-program audio-system tuner. Features Station Name Preset System (SNPS) for 12 stations; 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 dB (49 µV) stereo; s/N 73 dB at 65 dB (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

**HITACHI HPT120AYSV AM/FM Tuner/Preamp**
Quartz digital-synthesized tuner section; 20 AM/FM presets; unified infrared remote control with LCD display; audio inputs for phone, 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-0075W Quartz Digital AM/FM Tuner**
16 AM or FM presets; FCC's designed to eliminate intermodulation and interference; auto memory 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 FX1000BK 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 control; 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 infrared remote 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 base; 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 anenna selector; copper transformer shield and heat sink. FM 50 dB quieting sens 38.8 dB (24 µV) stereo; s/N 76 dB at 65 dB, 86 dB at 85 dB (stereo); capture ratio 1.0 dB (wide), 2.5 dB (narrow); FR 20-15,000 Hz ±0.5 dB. 17.31" w x 3.06" h x 12.25" d; 7.7 lb ... $525

**Basic KT-880D FM Tuner**
Basic series FM tuner with Pentacle Power Supply design. Features Direct Linear Reception Circuit; computer-programmed narrow/wideband IF selection. FM section: FM usable sens 1.7 µV (9.8 dB); THD 0.07%, mono 0.08% (at 1,000 Hz); s/N stereo 81 dB, mono 84 dB

**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 µV (9.8 dB); THD 0.07%, mono 0.08% (at 1,000 Hz); s/N stereo 81 dB, mono 84 dB

**KINERGETICS KBT-I 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 dB stereo; THD stereo 0.05% (wide), 0.10% (narrow) at 1,000 Hz, 100% modulation, signal level 65 dB; 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 µV; image rej 50 dB; if rej 50 dB; fr 4.000 - 6 dB ... $695

**STEREO REVIEW FEBRUARY 1988**

![Image of page from STEREO REVIEW FEBRUARY 1988 issue](https://example-image-url.com)
| TUNERS |
|-----------------|-----------------|-----------------|-----------------|-----------------|
| **LUXMAN**      | **T-02 Digital Synthesized Tuner** | PLL frequency-synthesized AM/FM tuner. FM section: usable sens stereo 1.8 µV (10.3 dB); THD stereo 0.06%; mono 0.05%; s/n 81 77 dB; stereo 81 dB; Fm 20-15,000 Hz = 0.5 dB, sep 55 dB, 17.81 x 3.44 x 13.56; $500 |
| **MARANTZ**     | **ST-54 AM/FM Stere-o Tuner** | Quartz-locked digital frequency synthesis tuner. Features 16 random presets; auto seek; cable ready. FM section: usable sens stereo 0.95 µV (10.8 dB). |
| **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; electronic regulated power supply; internal processor; memory search; wide-band AM; remote-control interface. FM section: sens mono 13 dB (1.3 µV) for 30 dB of quieting; signal strength for 50 dB quieting, 18/36 dB mono/stereo, capture ratio 1.5 dB; IF = 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. | $780 |
| **McINTOSH**    | **MR-510 Compact digital FM tuner** | Designed for high sens, excellent capture ratio, and AM suppression. |
| **MERIDIAN**    | **BY MADRIGAL** | 204 FM Stereo Tuner-Tuner. Instant access to 18 preset stations; scan tuning; manual tuning in 50-kHz steps; displays frequency, preset number, signal strength, or time; battery backup; tuner controls 300 system. 50-dB quieting sens stereo 23 µV; sel 56 dB, capture ratio 1.5 dB; THD 0.02%. |
| **MISSION**     | **Cyris 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 µV (25 dB); stereo 1.9 µV (46 dB); THD stereo 0.42%; mono 0.17% at 1,000 Hz; s/n 73 dB stereo, 76 dB mono; Fr 20-15,000 Hz ± 1 dB; capture ratio 73 dB; sep 45 dB at 1,000 Hz; AM sup 60 dB; pilot-tone rej 42 dB; image frequency rej 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. |
| **NAD**         | **4500 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 dB; 50-dB quieting sens stereo 22 dB; THD stereo 0.07% at 1,000 Hz; s/n stereo 80 dB; Fr 30-15,000 Hz ± 0.5 dB, sep 50 dB at 1,000 Hz; capture ratio <1.5 dB, adj rej 80 dB. |
| **NAD**         | **4130 AM/FM Stere-o Tuner** | Digital-synthesized AM/FM stereo tuner with dynamic-blend circuit. FM usable sens 1.8 µV mono; 30-dB quieting sens mono 14.2 dB; stereo 34.2 dB; s/n mono/stereo 82/75 dB; Fr 15,000 Hz = 0.5 dB; THD mono/stereo 0.9%/0.9% at 1,000 Hz; capture ratio <1.5 dB, alt-rejection 70 dB, sep 50 dB. |
| **NAMIKI**      | **ST-7 AM/FM Stere-o Tuner** | With Schottky, signal/multipath meter: 16 presets; separate R and L output level controls. FM HIF sens mono 1.7 µV (10 dB), stereo 3.9 µV (17 dB); FM usable sens mono 1.7 µV (10 dB), stereo 3.9 µV (17 dB). 50-dB quieting sens mono 2.7 µV (14 dB), stereo 4 µV (28 dB); THD stereo 0.08%; mono 0.06% at 1,000 Hz; s/n 76 dB stereo, 80 dB mono; Fr 20-15,000 Hz = 1 dB; capture ratio 1.9 dB, sep 55 dB at 1,000 Hz, AM sup > 60 dB, alt-rej > 60 dB, 17.12 x 3.5 x 8.62; d: 1.4 lb. |
| **NEC**        | **T-710 Digital AM/FM Tuner** | Computer-controlled quartz-PLL digital-synthesized tuner with 16 AM/FM presets. Features auto scan; 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 dB (2.5 µV), alt-ch sel 60 dB. 16.9 x 2.4 x 10.5; T-120. Same as above but not rack-mountable. |
| **Niko**       | **Gamma AM/FM Tuner** | Features 20 random presets; auto and manual seek; memory scan; muting with variable high blend. FM $86 dB; sens 43.2 dB. 19" rack mount. |
| **NTC**        | **AM/FM Tuner** | Designed for high sens, excellent capture ratio, and AM suppression. |
| **Onkyo**      | **T-3000 MKII FM Tuner** | Remote-controlled ultra-high-sensitivity FM tuner with computer-controlled VHF to adjust automatically or manually for stereo/mono, local/DX, and IF band (wide/narrow) switching. |
| **Onkyo**      | **T-4087 AM/FM Tuner** | Tuner with auto precision reception system to control 4 modes (mono/mut- ing off, auto high-blend off/on, local/DX, and IF bandwidth/wide/narrow). Features 4 separate power supplies for RF amp, IF amp, demodulator, and multiplexer decoder. 20 AM/FM presets; battery-free memory backup; MOSFET RF amp; remote-control interface; PLL demodulator. Black finish, wood side panels included. FM usable sens 17.2 dB (2 µV) stereo, 36 dB quieting sens 36 dB (17 µV). |
| **Onkyo**      | **T-4087 AM/FM Tuner** | Features 20 random presets; auto and manual seek; memory scan; muting with variable high blend. FM $86 dB; sens 43.2 dB. 19" rack mount. |
| **Onkyo**      | **Integra T-4087** | Designed for high sens, excellent capture ratio, and AM suppression. |
| **ONIX Audio** | **by MUSIC HALL** | Designed for high sens, excellent capture ratio, and AM suppression. |
| **STEREO REVIEW** | **February 1988** | 127 |
Stereo: S/N 77 dB stereo; FR 30-15,000 Hz +1 dB; capture ratio 1.0 dB/33 Hz x 1.4°; 12 lb $400

T-1410 AM/FM Tuner
Computer-controlled quartz-synthesized AM/FM tuner with 3-mode ATR, 20 presets, high-bias override, and multi-PLL. FM usable range 17.2 µV; 50 dB quieting range 36.1 dBf (35 µV) stereo; capture ratio 1.3 dB (wide); FM FR 30-15,000 ±6.5 dB; AM ±2.5 dB; 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 range 17.2 µV (2 dB); 50 dB quieting range 36.1 dBf (35 µV) stereo; capture ratio 1.5 dB (wide); FM FR 30-15,000 ±1.5 dB; AM 17.2” x 2.81” x 10.56” x 6 lb $180

Perreaux TU3

Perreaux TU3 PLL AM/FM Tuner
3-section tuned-Varicap RF section; microprocessor-controlled digital tuning; linear phase filters in IF stage; switchable de-emphasis. S/N stereo 68 dB (at 65 dB), usable range stereo 35.8 dBf (17 µV), THD stereo 0.04%; FR 15-30,000 Hz ±0.3 dB; capture ratio 1.35 dB; de-emphasis 25 µs, 50 µs, 75 µs (switchable); 19” x 1.75” x 13.5” x 13.5” x 13.5” x 13.5” x 12 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 dB; usable range stereo 32.8 dB; THD stereo 0.14%; FR 30-15,000 ±0.3 dB; capture ratio 1.5 dB; 17.2” x 2.25” x 13.5” x 12 lb $650

Philips by NAP
FT565X3R AM/FM Tuner
Features quartz-PLL digital tuning; 9 AM, 16 FM presets; level auto search; FM noise reduction; LCD display of frequency, preset, and memory. Features digital memory, stereo, and tuning; 8-part signal-strength indicator; accepts 75- or 300-ohm antenna inputs; SISC filter; optional remote control. FM Auto Stereo and Manual Mono.

Tuners

T-4130 AM/FM Tuner
Computer-controlled quartz-synthesized AM/FM tuner with 3-mode ATR, 20 presets, high-bias override, and multi-PLL. FM usable range 17.2 µV; 50 dB quieting range 36.1 dBf (35 µV) stereo; capture ratio 1.3 dB (wide); FM FR 30-15,000 ±6.5 dB; AM ±2.5 dB; 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 range 17.2 µV (2 dB); 50 dB quieting range 36.1 dBf (35 µV) stereo; capture ratio 1.5 dB (wide); FM FR 30-15,000 ±1.5 dB; AM 17.2” x 2.81” x 10.56” x 6 lb $180

Perreaux TU3

Perreaux TU3 PLL AM/FM Tuner
3-section tuned-Varicap RF section; microprocessor-controlled digital tuning; linear phase filters in IF stage; switchable de-emphasis. S/N stereo 68 dB (at 65 dB), usable range stereo 35.8 dBf (17 µV), THD stereo 0.04%; FR 15-30,000 Hz ±0.3 dB; capture ratio 1.35 dB; de-emphasis 25 µs, 50 µs, 75 µs (switchable); 19” x 1.75” x 13.5” x 13.5” x 13.5” x 12 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 dB; usable range stereo 32.8 dB; THD stereo 0.14%; FR 30-15,000 ±0.3 dB; capture ratio 1.5 dB; 17.2” x 2.25” x 13.5” x 12 lb $650

Philips by NAP
FT565X3R AM/FM Tuner
Features quartz-PLL digital tuning; 9 AM, 16 FM presets; level auto search; FM noise reduction; LCD display of frequency, preset, and memory. Features digital memory, stereo, and tuning; 8-part signal-strength indicator; accepts 75- or 300-ohm antenna inputs; SISC filter; optional remote control. FM Auto Stereo and Manual Mono.

Tuner Features

T-4130 AM/FM Tuner
Computer-controlled quartz-synthesized AM/FM tuner with 3-mode ATR, 20 presets, high-bias override, and multi-PLL. FM usable range 17.2 µV; 50 dB quieting range 36.1 dBf (35 µV) stereo; capture ratio 1.3 dB (wide); FM FR 30-15,000 ±6.5 dB; AM ±2.5 dB; 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 range 17.2 µV (2 dB); 50 dB quieting range 36.1 dBf (35 µV) stereo; capture ratio 1.5 dB (wide); FM FR 30-15,000 ±1.5 dB; AM 17.2” x 2.81” x 10.56” x 6 lb $180

Perreaux TU3

Perreaux TU3 PLL AM/FM Tuner
3-section tuned-Varicap RF section; microprocessor-controlled digital tuning; linear phase filters in IF stage; switchable de-emphasis. S/N stereo 68 dB (at 65 dB), usable range stereo 35.8 dBf (17 µV), THD stereo 0.04%; FR 15-30,000 Hz ±0.3 dB; capture ratio 1.35 dB; de-emphasis 25 µs, 50 µs, 75 µs (switchable); 19” x 1.75” x 13.5” x 13.5” x 13.5” x 12 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 dB; usable range stereo 32.8 dB; THD stereo 0.14%; FR 30-15,000 ±0.3 dB; capture ratio 1.5 dB; 17.2” x 2.25” x 13.5” x 12 lb $650

Philips by NAP
FT565X3R AM/FM Tuner
Features quartz-PLL digital tuning; 9 AM, 16 FM presets; level auto search; FM noise reduction; LCD display of frequency, preset, and memory. Features digital memory, stereo, and tuning; 8-part signal-strength indicator; accepts 75- or 300-ohm antenna inputs; SISC filter; optional remote control. FM Auto Stereo and Manual Mono.

Tuner Features

T-4130 AM/FM Tuner
Computer-controlled quartz-synthesized AM/FM tuner with 3-mode ATR, 20 presets, high-bias override, and multi-PLL. FM usable range 17.2 µV; 50 dB quieting range 36.1 dBf (35 µV) stereo; capture ratio 1.3 dB (wide); FM FR 30-15,000 ±6.5 dB; AM ±2.5 dB; 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 range 17.2 µV (2 dB); 50 dB quieting range 36.1 dBf (35 µV) stereo; capture ratio 1.5 dB (wide); FM FR 30-15,000 ±1.5 dB; AM 17.2” x 2.81” x 10.56” x 6 lb $180

Perreaux TU3

Perreaux TU3 PLL AM/FM Tuner
3-section tuned-Varicap RF section; microprocessor-controlled digital tuning; linear phase filters in IF stage; switchable de-emphasis. S/N stereo 68 dB (at 65 dB), usable range stereo 35.8 dBf (17 µV), THD stereo 0.04%; FR 15-30,000 Hz ±0.3 dB; capture ratio 1.35 dB; de-emphasis 25 µs, 50 µs, 75 µs (switchable); 19” x 1.75” x 13.5” x 13.5” x 13.5” x 12 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 dB; usable range stereo 32.8 dB; THD stereo 0.14%; FR 30-15,000 ±0.3 dB; capture ratio 1.5 dB; 17.2” x 2.25” x 13.5” x 12 lb $650

Philips by NAP
FT565X3R AM/FM Tuner
Features quartz-PLL digital tuning; 9 AM, 16 FM presets; level auto search; FM noise reduction; LCD display of frequency, preset, and memory. Features digital memory, stereo, and tuning; 8-part signal-strength indicator; accepts 75- or 300-ohm antenna inputs; SISC filter; optional remote control. FM Auto Stereo and Manual Mono.
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.
**TU-301 AM/FM Tuner**

Vintage series tuner features digital-synthesis tuning. 6 AM/6 FM presets; FM noise-canceller circuit. 50 dB quieting gains 36 dBf (stereo). 16 dB (mono); SN 72 dB (stereo), 78 dB (mono); capture ratio 1 dB. 17.69" x 1.81" h x 8.94" d; 5 lb

$290

**TU-D33X AM/FM Tuner**

Digital-synthetic first-end front; 6 presets for FM and 6 for AM last station memory; stereo lock indicators. Selectivity 35 dB, SN 50 dB, FM quieting gains 50 dB. 16.94" x 1.81" h x 8.94" d; 3 lb

$250

**SONY**

**ST-S700ES AM/FM Tuner**

Features quartz frequency-synthesis tuning; SST sound super sound tracking front exc 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; 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. SN 91 dB stereo; FR 15-15,000 Hz +0.2, -0.5 dB; sel 65 dB; 17" x 3.38" h x 13.62" d; 9 lb

$400

**ST-S500ES AM/FM Tuner**

Features quartz frequency-synthesis tuning; WWD wave optimized direct PLL detector with low distortion and noise; WWD3 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. SN 84 dB stereo; FR 15-15,000 Hz +0.2, -0.5 dB; sel 55 dB narrow, 90 wide: 17" x 3.38" h x 13.62" d; 9 lb

$300

**TANDBERG**

**TP1 3001A Programmable FM Tuner**

Features computer logic servo tuning. 8-ganged vacant tuning dividers 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/narrow; 50 MHz bandwidth selector; autorange signal-strength meter with meter-range LED; centricorption/frecency meters. Audio circuitry includes selected all-metal film resistors, polycarbonate capacitors, and micro feed back. mono, AN4, servo, mute switches with LDP's, 3-circuit muting; output level control; SN 90 dB, narrow: sel 125 dB. Rosewood side panels optional: $1,995

**TP1 301A 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" x 3.25" h x 13.75" d; 11 lb

$895

**TECHNICS**

**ST-G7 AM/FM-Stereo Tuner**

Features 16 presets; triple-quad control (front end if and IFs) for 120 dB IF strip. quartz-controlled double-PLL. DC peak sample-and-hold 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%; SN 94 dB; capture ratio 1.0 dB, sens 20 µV, 9 lb

$500

**ST-G4 AM/FM-Stereo Tuner**

Features quartz synthesis. FM section: IHF sens stereo 1.2 µV (12.8 dB); THD stereo 0.03%, mono 0.02%; SN 73 dB stereo, 80 dB mono. AM section: sens 20 µV with built-in antenna. 5.1 lb

$315

**ST-G50 AM/FM-Stereo Tuner**

Features 39 AM/FM presets; twin-quad tuning, linear-switching MPX circuit for wide stereo and FR; DC construction. FM section: 50 dB quieting sens stereo 44 µV (38.1 dB); THD stereo 0.03% at 1.000 Hz; SN 73 dB stereo; capture ratio 1.4 dB; separation 50 dB at 1.000 Hz. 4.8 lb

$185

**VECTOR RESEARCH**

**VL-1500 Tuner**

Quartz PLL-synthesized tuner. FM section: all-channel 60 dB, 50 dB quieting sens mono 3 µV (10 dB), 50 dB quieting sens stereo 40 µV (37 dB); SN 94 dB stereo, 73 dB stereo; THD mono 0.08%; stereo 0.2%; 8.5 lb; 17" x 3.38" h x 12.5" d

$200

**YAMAHA**

**T-85 AM/FM Digital Tuner**

Features RS integrated system remote compatibility; digital front end. digital tuning; low distortion high-separation pure-stereo MPX demodulator, 20 random-access presets; 4-way status station memory; 4-position mode selector (superwide, wide, narrow, super-narrow); dynamic auto blend, signal-quality meter, switchable FM RF mode; zero FM mixer front end. 50 dB quieting sens 1.6 µV (15.3 dB) mono; SN 87 dB, stere: 68 dB; 17.12" x 3.62" h x 14" d

$469

**TX-900U AM/FM Digital Tuner**

Features RS integrated system remote compatibility; digital front end, digital tuning; low distortion high-separation pure-stereo MPX demodulator, 20 random-access 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 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% w.rms; rumble -81 dB; 20.44" w x 7.5" h x 17.5" d (dustcover down). 29 lb. Natural cherry finish
  - Price: $700

- **LS-1 Manual Turntable**
  - Manual belt-drive turntable with 24-pole synchronous motor. Features 33 and 45 rpm speeds. W&F 0.04% w.rms; 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
  - Price: $500
  - Natural cherry, without tonearm
  - Price: $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 0.035% 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
  - Price: $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)
    - Price: $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. 15.25" w x 3.5" h x 13.75" d (dustcover down);
    - Price: $100

- **RCI 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
  - Price: $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 ± 0.025% w.rms; rumble -75 dB DIN B, 33 dB DIN A; effective tonearm length 8.69"; max tracking error 2.2. 17.5" w x 4.33" h x 14.25" d (dustcover down); 11 lb
    - Price: $649

- **AKAI**
  - **AP-A305-B Semi-Automatic Turntable**
    - Belt drive; straight low-mass tonearm
    - Price: $99

- **ARISTON**
  - **RD90 Superior Turntable**
    - Two speed 33⅓ 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
    - Price: $1,200

  - **RD90 Turntable**
    - Two speed 33⅓ and 45 rpm; precision ground and lapped single point bearing; 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
    - Price: $475

  - **RD50 Turntable**
    - Two speed electronic 33⅓ and 45 rpm; massive concave one-piece 13" platter; Q-damping to plinth and platter; anti-stat mat; 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
    - Price: $375

- **Q Deck Turntable**
  - Two speed electronic 33⅓ and 45 rpm; massive 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
    - Price: $260
  - With arm and cartridge
    - Price: $299

- **BANG & OLUFSEN**
  - **Beogram 5500 Automatic Turntable**
    - Tangential tonearm; 33 and 45 rpm; remote control with Terminal 3300 remote, Master Control Panel; repeats play up to 7 times; leaf-spring suspension; compatible with B&O microcassette cartridges; auto-record-size sensing; auto interior light; w&F 0.005% DIN, 0.03% w.rms; DIN-weighted rumble -80 dB; 12.5" w x 3" h x 12.75" d; 11.7 lb
    - Price: $399

  - **Beogram TX-2 Automatic Turntable**
    - Tangential-tracking belt-drive turntable; 33 and 45 rpm; precision ground and lapped single point bearing; 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; electronic speed switching
    - Price: $450

- **CW&J WALKER**
  - **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% w.rms; rumble -77 dB; effective tonearm mass without cartridge 11 g; effective tonearm length 229 mm; 20 lb. With MAS 28211 tonearm
      - Price: $591
      - Without tonearm
      - Price: $289
**TURN TABLES**

**CI-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 base
- $179

**CS503-3 Semiautomatic Turntable**
- Semiautomatic turntable with acoustic mat.
- or black wood base
- Dual CS503-2
- Features floating chassis design; vario-pitch; w & F rms; rumble -56 dB DIN unwtd.
- Available per-minute
- mat; cueing lever; 33.33, 45, and 78 revolution-trol; optimum-pivot tonearm design; acoustic
- features quartz-monitored 3-speed electronic control; 3-point floating suspension with counter-weighted chassis; 3.3 lb; platter; highly absorbtion platter mat; disc stabilizer; removable ultra-low capacitance cables with gold-plated plugs.
- w & F: 0.025% rms; rumble: -70 dB DIN-B; tonearm mass without cartridge 9.5 g
- $575

**HARMAN KARDON**
**T65C Semiautomatic Turntable**
- Belt-drive turntable with 4C sine-wave driven motor; 33.33 and 45 rpm; ±3% speed pitch control; 3-point floating suspension with counter-weighted chassis; 3.3 lb; platter; highly absorbing platter mat; disc stabilizer; removable ultra-low capacitance cables with gold-plated plugs.
- w & F: 0.025% rms; rumble: -70 dB DIN-B; tonearm mass without cartridge 9.5 g
- $790

**DENON**
**All arm and automatic functions of Denon turntables are noncontact, microprocessor controlled. Motor servo is controlled and maintained by magnetic speed direction.**

**DP-59L Direct-Drive Turntable**
- Features massive wood base with isolation: 5.5-lb platter with high-torque direct-drive AC motor.
- Lift only
- $452

**DP-47 Direct-Drive Turntable**
- Features dynamic servo tracer; flat-twin direct drive; full auto plus locate function; thick wood base.
- $320

**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% rms; rumble: -56 dB DIN unwtd. Available with black or walnut wood base
- $450

**CS505-3 SemiAutomatic Turntable**
- Belt-drive; heavy mass platter and acoustic mat. Features floating chassis design; vairio-pitch;
- ULM tonearm. Available in black or walnut wood base
- $290

**CS503-1 SemiAutomatic Turntable**
- Belt-drive turntable featuring solid block shock-absorbing chassis; heavily damped platter; ULM tonearm; carbon fiber headshell; 33.45 rpm; w & F <0.007% 0.04%; rumble; unwtd >46 dB; 17.3" x 4.5" x 14.3" d. Black base
- $250

**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: 0.0% DIN peak wid; rumble: -73 dB wid DIN-B. 6.25" h x 17.5" w x 14.25" d
- $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 HFA504 or HTF1024A.
- W & F: 0.045% rms; s/n: 70 DIN-B
- $180

**J. A. MITCHELL BY RMI**
**Gyrodec Manual Turntable**
- Belt drive; 33.33 and 45 rpm; balanced 3-point suspension.
- W & F: 0.04% rms; rumble: -78 dB.
- s/n <76 dB A-wid. 53 cm x 19 cm x 42 cm d (dustcover down): 43 lb
- $1.190

**Synchro Manual Turntable**
- Belt drive; 33.33 and 45 rpm; W & F: 0.05% rms; rumble: -74.5 dB; s/n <72 DB A-wid. 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 tonecar. 3-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% rms; w/B DIN (B1): 19.5" w x 32.5" h x 16.5" d. 30.8 lb
- $650

**ALFQSBK 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% rms; 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); 10.8 lb
- $180

**ALF350BK Automatic Turntable**
- Automatic turntable with remote control capability when used with JVC Compu-Link compo-
- nents. 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

**ALF33BK Automatic Turntable**
- Automatic direct-drive turntable with new cabinet support system and large insulators for bet-
- ter 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: 0.039% rms; 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-206B preamp and Kenwood receivers; W & F less than 0.025w rms. 16.56" w x 3.56" h x 14.13" d. 11 lb
- $240

**KD-60F Linear-Tracking Turntable**
- Automatic direct-drive turntable with auto lead-in and return. Features slotless/coreless FG serv-
- o drive; P-mount cartridge connector (car-
- tridge included); cueing control; repeat switch; auto disc size/speed selector; W & F less than 0.025w rms; remote controlled through KC-206B preamp and Kenwood receivers. 16.56" w x 3.75" h x 14.13" d. 9 lb
- $200

Kenwood KD-76F

Kenwood KD-50R Direct-Drive Turntable
Semiautomatic turntable with slotless/coreless FG servo drive; P-mount cartridge included; straight tonearm; cueing; 33.33 and 45 rpm; floating tonearm/platter suspension. W & F 0.028% rms; rumble 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

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PI-701 Automatic Turntable</strong></td>
<td>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. 16 lb.</td>
<td>$2,000</td>
</tr>
<tr>
<td><strong>LIIN BY AUODHIPE SYSTEMS LP12 Manual Single-Play Turntable</strong></td>
<td>Belt-drive 33.33-rpm turntable with manual tonarm; 24-pole synchronous motor; 12&quot; zinc-aluminum alloy die-cast platter with felt mat; 1-point oil-bath bearing; hardened steel-tool spindle; adjustable 3-point spring-suspension subchassis; heavy-gauge stainless-steel base plate; solid hardwood base; optional 45-rpm adapter. W&amp;F 0.0025% wmrms; rumble 75 dB DIN; effective tonarm length 284 mm; 16 lb.</td>
<td>$959</td>
</tr>
<tr>
<td><strong>P-102 Belt-Drive Turntable</strong></td>
<td>Automatic line-tracking turntable with strobe. Variable speed control; floating tonearm/platter suspension. W&amp;F 0.0025% wmrms; rumble 75 dB DIN; effective tonarm length 133 mm; maximum tracking error 0.1&quot;.</td>
<td>$116.12</td>
</tr>
<tr>
<td><strong>P-100 Belt-Drive Turntable</strong></td>
<td>Automatic linear-tracking turntable with pivoted arm. 133.33 and 45 rpm; variable speed control; electrically floating tonearm/platter suspension, cueing lever. W&amp;F 0.0025% wmrms; rumble 72 dB; effective tonarm length 222 mm.</td>
<td>$350</td>
</tr>
<tr>
<td><strong>MATANTZ TT-451 Linear-Tracking Turntable</strong></td>
<td>Automatic linear-tracking turntable. Features auto-speed/size selector; P-mount compatible; 33.33 and 45 rpm; w&amp;f 0.0025% wmrms; rumble -70 dB. 16.36&quot; x 3.75' x 13.56&quot; (dustcover down). 9.5 lb.</td>
<td>$230</td>
</tr>
<tr>
<td><strong>TT-170 Semiomatic Turntable</strong></td>
<td>Belt drive turntable features front panel cueing: P-mount cartridge; 33.33/45 rpm; w&amp;f 0.008% wmrms; rumble -55 dB. 4.63&quot; x 16.5&quot;. 9.5 lb.</td>
<td>$100</td>
</tr>
<tr>
<td><strong>MEITNER BY MUSEATEX AUDIO AT-2 Turntable</strong></td>
<td>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 33.5, 45, and 78 rpm; AT-2 unipivot 3-rod turntable included</td>
<td>$1,500</td>
</tr>
<tr>
<td><strong>MIKROSEIK BY ANALOG EXCELLENCE SZ-1 Manual Turntable</strong></td>
<td>Massive zinc-alloy turntable system with vacuum hold-down; belt drive; 33.33 and 45 rpm; variable speed control; floating tonearm; vacuum bearing with high-inertia flywheel spindle; 44 lb bronze platter. W&amp;F 0.025% wmrms; s/n 90 dB A-wt; 35&quot; w x 12&quot; h x 18&quot; (dustcover down); 240 lb.</td>
<td>$15,000</td>
</tr>
<tr>
<td><strong>LUXMAN P-100</strong></td>
<td>Fully automatic quartz-lock 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-plated platter; gold-anodized tonearm; opto-electronic record-end detector; black finish. Remote control optional. W&amp;F 0.023% wmrms; rumble -80 dB; effective tonarm length 256 mm; max tracking error +3, -1&quot;. 17.44&quot; w x 6.25&quot; h x 16.12&quot; d; 20 lb.</td>
<td>$350</td>
</tr>
<tr>
<td><strong>ORACLE AUDIO P-1064FB Automatic Turntable</strong></td>
<td>Computer-controlled direct-drive pivoted-arm turntable. Features PLL; quartz-lock; 33.33 and 45 rpm; variable speed control; 3-stage 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&amp;F 0.0225% wmrms; rumble -75 dB; effective tonarm length 224 mm; max tracking error +3, -1.5&quot;. 16.5&quot; w x 5.06&quot; h x 14.75&quot; (dustcover down); 13 lb.</td>
<td>$130</td>
</tr>
</tbody>
</table>

### Additional Models

- **Nikko Audio NP-750 Automatic Turntable**: Fully automatic 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; ±3% pitch control. W&F 0.0085% wmrms; 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% rumble. $100
- **ONYKO 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-plated platter; gold-anodized tonearm; opto-electronic record-end detector; black finish. Remote control optional. W&F 0.023% wmrms; rumble -80 dB; effective tonarm length 256 mm; max tracking error +3, -1". 17.44" w x 6.25" h x 16.12" d; 20 lb. $350
- **CP-1064FB 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% wmrms; rumble -75 dB; effective tonarm length 224 mm; max tracking error +3, -1.5". 16.5" w x 5.06" h x 14.75" (dustcover down); 13 lb. $130
- **CP-1036A Semiautomatic Turntable**: Direct-drive pivoted-arm turntable. Features PLL; quartz-lock; 33.33 and 45 rpm; triple-stage isolation with floating subchassis; computer-controlled motor, fixed panel controls, straight-line low-mass tonearm; gimbal-suppression precision tonearm bearings; black finish with smoked dustcover. W&F 0.025% wmrms; rumble -70 dB; effective tonarm length 224 mm; max tracking error +3, -1.5". 16.5" w x 5.06" h x 14.75" (dustcover down); 13 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; digital readout. $2,350
- **Gold Plated Premiere Mark III aluminum and 24k gold plating. $2,950
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

PIONEER
PL-90 Direct-Drive Turntable
Features aluminumum tonearm. Dynamic Resonance Absorber consisting of a viscose damper and weight for eliminating resonance. Coreless direct-drive DC-servo motor controlled by quartz-PLL servo system; platter has diameter of 14.5", and weighs 7 lb. 4 oz

PL-V70 Programmable Turntable
Automatic front-loading belt-drive programmable turntable. Features DC servo-motor; dynamic resonance absorber; linear-tracking; 33.33 and 45 rpm; random program playback. Includes low-mass tone arm with Pioneer PC-291 cartridge, w&F 0.05% wrms; 16.56" w x 4.25" h x 13.75" d

PL-550 Automatic Turntable
Direct-drive linear-tracking turntable with Stable Hanging Rotor. Features dynamic resonance absorber; TAP 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

PL-X505(BK) Automatic Turntable
Belt-drive turntable with Stable Hanging Rotor. Features linear-tracking tonearm. TAP P-mount PC-295T cartridge; up/down cueing; repeat function. W&F 0.045%

RCA
MT230 Linear Tracking Turntable
Dimensions turntable with remote-control operation and on-screen status indication when used with Discman monitor. Features belt-drive design. P-mount cartridge; programmable track selection; system 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

REALISTIC
LAB-2200 Direct-Drive Turntable
Automatic linear-tracking turntable with Realistic/Audio-Technica dual-magnet P-mount cartridge, repeat button, straight tone-arm. 33.33 and 45 rpm; quartz lock, w&F 0.001% wrms. 6.94" w x 8.11 h x 16.47" d (dustcover down). 20.3 lb

SANSUI
XP-99 Automatic Turntable
Silent-synchro 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

SCOTT
PS4004A 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 0.006% wrms; rumble - 62 dB DIN B; 16.8 w x 5 h x 14.6 d (dustcover down)

SHHERWOOD
ST-887 Fully Automatic Direct-Drive Turntable
Digi-Link remote compatibility with other Sherwood products. P-mount cartridges; direct readout stylus pressure indicator; DC servo motor; front panel access to controls. 33.33/45 rpm; variable pitch

SONOGRAPHIE
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)

SONY
PS-FL71B 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 ±0.1%; 11 lb

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, stackable top; w&F 0.03%; S/N 75 dB; effective tonearm length 3 inches, max tracking error ±0.1; 11 lb

PS-LX430 Automatic Turntable
Belt-drive 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

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
### SOTA Industries

**SOTA Sapphire Series III Turntable**  
Eludes acrylic vacuum supermat. All-wood top.  
UM hold-down system: low-level pressure, continuous through play, adjustable vacuum. Includes acrylic base supernumerary, top and speed control panel; heavy-duty dust cover.  
$1,075  
**STAR Series III Sapphire.** As above with vacuum hold-down system: low-level pressure, continuous through play, adjustable vacuum. Includes acrylic base supernumerary, top and speed control panel; heavy-duty dust cover.  
$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 13.75" 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; stroke. W&F 0.008% w rms; rumble: 78 db; effective tonarm length: 238 mm; max tracking error within ±0.05%; 33.1 lb.  
$585

**SL-1200MKII Direct Drive Disc Turntable**  
Quartz-controlled 33.33- and 45-rpm manual turntable. Features ±8% quartz-locked pitch control; quick start and stop; pop-up stylus light; gimbalsuspended 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% w rms; rumble: 82 db.  
$460

**SL-M1A Automatic Direct-Drive Turntable**  
Features PLL quartz lock; P-mount; 33.33 and 45 rpm; W&F 0.012% w rms; rumble: 80 db; effective tonearm length: 230 mm; max tracking error +0° 32' at inner groove and +2° 32' at outer groove.  
$400

**SL-J33 Programmable PLL Turntable**  
Direct-drive automatic P-mount turntable allows up to 8 tracks to be played in any order. Indications 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% w rms; 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, ultralow-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% w rms; rumble: 78 db; effective tonearm mass: 7.5 g; length: 230 mm; max tracking error +0° 32' at inner groove and +2° 32' at outer groove.  
$170

**SL-DB1 Manual P-Mount Turntable**  
Belt-drive turntable with variable speed control; strobe; 33.33 and 45 rpm. W&F 0.004% w rms; rumble: 70 db; effective tonearm mass without cartridge: 7.5 g; length: 230 mm; max tracking error +0° 32' at inner groove and +2° 32' at outer groove.  
$125

**SL-DB10 Manual P-Mount Turntable**  
Belt-drive turntable with aluminum die-cast full-gimbals pivot with highly rigid lightweight aluminum tonearm. Features front-panel cueing control; TNRC vibration-isoilation base; pivoted arm; 33.33 and 45 rpm. Features aluminum alloy.  
$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 system; compatible with RS system remote control compatibility. Features straight tonearm; resonance absorbing turntable mat; disc clampers. Black: 13 lb.  
$519

**PF-800B Semiautomatic Turntable**  
Belt-drive pivoted-arm turntable with dynamic balance twin pipe tonearm. Features 4-position adjustment for RS FR system; 33.33 and 45 rpm speeds; variable speed control +6%, W&F 0.023% w rms; rumble: 80 db effective tonearm length: 87.5°; 35 lb.  
$519

**TT-500U Automatic Turntable**  
Direct-drive turntable with RS integrated remote system compatibility. Features straight tonearm; resonance absorbing turntable mat; disc clampers. Black: 13 lb.  
$519

**THORENS BY EPI**

**Phantasie Semiautomatic Single-Play Turntable**  
33.33 rpm; up to 35 rpm. Features: front-panel cueing error <0.1°/cm (<0.004 in.).  
$239

**TT-300U Semi-automat Turntable**  
Belt-drive; straight tonearm design; resonance absorbing turntable mat; EP adapter. Black finish; 10 lb.  
$149

**Yamaha**

**PF-800B Semiautomatic Turntable**  
Belt-drive pivoted-arm turntable with dynamic balance twin pipe tonearm. Features 3-programmable and 45 rpm speeds; variable speed control +6%, W&F 0.023% w rms; rumble: 80 db effective tonearm length: 87.5°; 35 lb.  
$519

**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 speeds; resonance absorbing mat; disc clampers/EP adapter. Overranging adjustment gauge. W&F 0.15% w rms; S/N 78 db, 9 oz.  
$229

**TT-400U Automatic Turntable**  
Belt-drive; compatible with RS system remote straight tonearm; resonance absorbing mat; disc clampers. Black: 15 lb.  
$179

**TT-300U Semi-automat Turntable**  
Belt-drive; straight tonearm design; resonance absorbing turntable mat; EP adapter. Black finish; 10 lb.  
$149

**Yamaha PF-800B**  
Belt-drive pivoted-arm turntable with dynamic balance twin pipe tonearm. Features 3-programmable and 45 rpm speeds; variable speed control +6%, W&F 0.023% w rms; rumble: 80 db effective tonearm length: 87.5°; 35 lb.  
$519

**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 unwindowed, -70 db windowed.  
$299

**TD 316 Manual Turntable similar to TD 318**  
No 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 unwindowed, -70 db windowed.  
$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 (+3%), stroke: W&F 0.05% w rms, S/N 68 db (DIN B) 17.38" x 4.5" x 14.63", 85 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; stroke: 87.5 lb.  
$100
TAKE OUT THE ELITE M-90 AND C-90 REFERENCE COMPONENTS

Hum, hiss, crosstalk, vibration: distortion in your audio signal.
Graininess, specks, flecks, jitter: extraneous noise in your video image.
Garbage.

The Elite C-90 pre-amp and M-90 power amp are no-compromise components designed to get rid of it. By keeping critical signal paths as short as possible. By offering you direct CD connection. By introducing motorized volume control, separate audio and video power transformers, and unique video processing controls like noise reduction, sharpness and detail. By giving you the purest possible audio and video that digital technology has to offer.

In the words of audio critic Julian Hirsch in Stereo Review, “The C-90’s signal to noise ratio is considerably better than that of any CD player...that makes the C-90 the true peer of any digital sound source—the only pre-amplifier we have tested that can make that claim.”

The C-90 also cleans up your video. Because it
not only controls up to six video components, its video-enhancing circuits actually improve your video image. Now, even rented videotapes take on a whole new look.

But what good is a complete A/V system without remote capabilities? The C-90's "SR" System Remote gives you complete control, plus a unique Motor-Drive Volume Control that eliminates the noise created by typical electronic volume controls.

Where the C-90 leaves off, the M-90 takes over. With 800 watts/channel into 2 ohm loads, 200 watts into 8 ohms,** and remarkably high current capability (47 amps) for low impedance driving, the M-90 delivers the kind of performance digital signals demand. And for unprecedented purity, the M-90 even includes its own volume control for direct connection to your CD player.

The Elite M-90 and C-90 working together. There's just no better way to take out the garbage. For more information, call 1-800-421-1404.
ACOUSTIC RESEARCH

MGC-1 Ambience-SubSystem Speaker
Floor-standing acoustical suspension speaker with delayed ambience subsystem built into enclosure plus MGC-1e control and amplification electronics. Speakers are mirror-imaged pairs consisting of a 3-way passive system and a 2-way active subsystem. Electronic unit controls electronics. Speakers are mirror-imaged pairs waterfall; 4 ohms; FR 30-20,000 Hz ±3 dB; imp 10 kilohms. Black aluminum finish. Triangular shape 10.5" x 6" 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 ±3 dB; sens 88 dB SPL/W/m. Die-cast aluminum case and endcap. 10.5" x 6" x 7.63" d; 6 lb ea. $280/pr.

A/D/S/

Monitor Series
M15 Floor-Standing 3-Way Speaker Vertically aligned "union" 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; 200 Hz; stainless-steel voice-coil former; magnetic cooling fluid in midrange and tweeter for high power handling and dynamic linearity; frameless perforated-steel grille; walnut veneer or black. FR 30-22,000 Hz ±3 dB; sens 89 dB SPL/W/m. 22.88" h x 10.88" d; 24.2 lb. $700/pr.

M12. Similar to M15 except 8" woofers; FR 30-22,000 Hz ±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 11" woofer; 33.7" h x 11.5" w x 13" d; 80 lb. $1,350/pr.

Compact Monitor Series
CM7 3-Way "Union" 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 fluid...
SPKERS

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; 3 dB; sens 87 dB SPL/W/m; imp 4 ohms; 16.4" x 0.8" x 0.6" d; 45 lb; $1,350/pr
CM6. Similar to CM7 except 2-way, with 6' woofer and 1" tweeter; 2,000-Hz crossover; FR 30-22,000 Hz; 3 dB; 12.7" x 0.7" x 0.5" 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" x 3.7" x 0.6" d; 22 lb $500/pr

L Series
L790 3-Way Tower Speaker Floor-standing speaker with drivers vertically aligned and positioned for optimum imaging and control of floor reflections. 10" Stiffle woofer, 1.5" woven soft-dome midrange, 0.75" woven soft-dome tweeter; 12"-per-octave all-pass crossovers at 700 and 4,000 Hz; Kapton voice-coil formers and magnetic cooling fins in midrange and tweeter; frameless perforated steel grille; black or oak veneer. FR 38-25,000 Hz; 3 dB; sens 87 dB SPL/W/m; imp 8 ohms; 34.7 x 11.7" x 6.5 lb; $975/pr

L780 3-Way Bookshelf Speaker Acoustic-suspension speaker with 8.25" compliance long-exursion Stiffile cone woofer, 1.5" soft-dome midrange, 0.75"-magnetic-cooling-fluid soft-dome tweeter and midrange; diaphragm-corrected and flush-mounted drivers. Black perforated-steel grille. FR 42-27,000 Hz ±3 dB; crossover 650 and 5 kHz; sens 88 dB SPL/W/m; max power 125 W; nominal imp 8 ohms; 20.88" x 12.25" x 10.5" d; walnut or black. $749/pr

L690 2-Way Tower Speaker Floor-standing speaker with drivers vertically aligned and positioned for lob-free wide dispersion. 8" Stiffile woofer, 0.75" woven soft-dome tweeter; 12"-per-octave all-pass crossovers 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 ±3 dB; sens 88 dB SPL/W/m; imp 8 ohms; 31.1" x 9.5" 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 ±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" x 16" x 9.75" d $700/pr

The Advent Legacy
Acoustic-suspension floor-standing liquid-cooled speaker with solid-pecan top and base with beveled edges. Features 10" high-exursion cone woofer with aluminum-coil form; 1" ferrofluid-filled soft-dome tweeter. FR 42-23,000 Hz ±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" x 16" 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 ±3 dB; imp 8 ohms; sens 87 dB SPL/W/m; max power >150 W peak, 11" x 16.5" 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, 4.35" convex midranges, 4 1" convex tweeters, relative balance of mids and tweeters on each panel can 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). FR 35-20,000 Hz; max power response (flat to conical horn); level 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 half-section bi-amp crossovers at 350 and 3,750 Hz; oak, walnut, or black. FR down 3 dB at 28.5 Hz; -8 dB at 21 Hz; imp 6 ohms nominal 8 ohms 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-diafragm midrange, 1" convex diafragm tweeter, designed for placement against single wall. LC half-section cross-over network; switches to select system acoustic power response (flat to concert-hall balance slope); walnut or oak veneer cabinets with hand-rubbed lacquer finish; steel base. FR 3, 5.5 kHz; 350 Hz, 3,750 Hz; max 600 W peak; 40.88" h x 15.94" w x 14.56" d $1,100/pr

CD8 3-Way Floor-Standing Speaker Stabilized-radiation-loading speaker with 8" woofer, 3.5" convex-diafragm midrange, 1" convex-diafragm 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% at floor/wall intersection; 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 ±3 dB; spr 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 woofers; 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" woofers. 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-clad woofer reinforced with epoxy and a 20-mm polyimide dome tweeter. FR 85-20,000 Hz ±3 dB; power range 40 W nominal, 80 W max; imp 4 ohms: 9.38" h x 7" w x 5.31" d $230/pr

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, 1.75" dome tweeter. FR 32-22,000 Hz; sens 95.5 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 woof er; 5" scaled 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 18.3" 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 80 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.

Oh, and the listening test. That's the most important. Compare several models with the hottest licks on your favorite CD. You'll know when you've turned on the speakers that deliver real dynamic range.

Check that brand again. We bet it reads KLIPSCH. Now that's performance.

For your nearest KLIPSCH dealer, look in the Yellow Pages. Or call toll free, 1-800-223-3527.
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” x 3” 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; integrated, coalescent midrange/tweeter ribbon that utilizes magnetic and electromagnetic constraints. SPL 110 dB, imp 4 or 4 ohms. 57” x 30” w x 3.5” d $3,780/pr

Seintilla Full-Range Ribbon Speaker
Full-range ribbon speaker with internal seamless crossover. Features trapezoidal woofer ribbon; integrated, coalescent midrange/tweeter ribbon; seamless crossover circuitry. SPL 105 dB; imp 3 ohms. Taupie or grey finish. 48” x 24” w x 2” d; 70 lb ea $1,995/pr

AUDIO SOURCE
A4-14 Biamplified Speaker System
Biamplified 3-way bass-reflex bookshelf speaker incorporates Acc-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, sensitivity control (100 ±50 V range), L/R signal pushbutton, bass-blend control, power on/off signal-saturated in automobile; walnut or black-ash finish; stands included. FR 30-20,000 Hz ± 2 dB, crossovers 300 and 2,500 Hz. 20.5” h x 2.12” w x 10.5” d $2,050/system

Caliper 2-Way Ribbon Speaker
Mini-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

B&O PoweR OuNSOURCEn
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. GRM case. FR 30-20,000 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 $1,150/system

3-4 Passive Speaker
Floor-standing 2-way speaker with two 8” cone woofers and 1” soft-dome tweeter. FR 43-20000 Hz ± 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

LS-Nine Speaker
Box speaker intended for bookshelf placement. Features L/C crossover at 3.5 kHz. Contains 8” polypropylene woofer; 1” tweeter. FR 65-20000 Hz ± 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

B&W Matrix 801 Series 2 Speaker
Floor-standing speaker with 4 5” woofers, 4 3” mids, 1” dome tweeter vertically aligned; dynamic clipping at -3 dB. APOC system; rosewood finish $1,098/pr

BeoVox S-80.2 Speaker
Full-range ribbon speaker with adjustable seamless crossover. Features computer-optimized drivers and cabinet; Audio Powered Overload Circuit; 4th-order Butterworth crossover; sensitivity 90 dB SPL/W/m; F range 20 Hz -20 kHz. 39.75” h x 17” w x 22” d; 275 lb $7,500/pr

Matrix Series Speakers
All Matrix speakers feature an acoustic suspension and feature an electronic time delay overload protection, homopolymer polypropylene bass/mid drivers, and ferrofluid-cooled tweeters. Matrix enclosure comprises of a honeycomb structure of fiberglass and a metal plate mounted on 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 70-25000 Hz ± 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

Matrix 801 Series 2 Speaker
Floor-standing speaker with two 100-mm polyamide cone midranges, 32-mm polyamide dome tweeter. Features computer-optimized drivers and cabinet; Audio Powered Overload Circuit; 4th-order Butterworth crossover; sensitivity 90 dB SPL/W/m; F range 20 Hz -20 kHz; 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. 10.25” w x 23.5” h x 12.25” d; 35 lb $1,998/pr

Matrix 1. Bookshelf speaker with 150-mm cone woofer, 26-mm polyamide dome tweeter. FR 80-25000 Hz ± 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 $1,998/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” woofers, 8” bass/midrange driver, 1” polyamide dome tweeter. FR 48-20000 Hz ± 3 dB; power range 10-250 W; sens 91 dB SPL/W/m; walnut or black ash finish; 11.5” w x 33.75” h x 12.62” d; 37.5 lb $720/pr

DM1100 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 70-20000 Hz; 3” w x 12.25” d; sens 90 dB SPL/W/m; walnut or black ash finish $570/pr

BANG & OLUFSEN
Beolab Penta Floor-Street 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” dome tweeter vertically aligned); dynamic clipping attenuation 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 40-30000 Hz; 8 ohms, 65” high x 5” wide x 5” deep, 53 lb $2,999/pr

RL 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 40-20000 Hz; +4 -8 dB, sensitivity 93 dB SPL/W/m; minimum power 10 W; imp 8 ohms. 28” x 20” x 9” $90/lb

Beovox S-80.2 Speaker
3-way speaker in infinite-baffle cabinet with 8” woofer, 3” dome phase-diaphragm 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.

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—with within a fraction of a 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.

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.

Advanced Technology
from

Canton North America, Inc. 254 First Avenue North Minneapolis, MN 55401 Telephone (612) 333-1150

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.
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 bass 2.6' 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 16 W. Satellite cube: 3.5' x 1' x 8' h. Bass module: 12' w x 20' 1 x 8' h. $699/system

901 series V Speaker System
Direct/Reflecting/matrix speaker system 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 60; 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-weighted). Max input 2.1 W rms at 35 Hz. Eq range 13' x 2.75' x 10'. Speaker 2' x 13.6' x 13.6' 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 3 2' tweeters mounted in Free Space arrays and a 10" long extensions woofer. Teak grain vinyl veneer finish. Crossover frequencies 1.5 and 2.5 kHz; power range 20-125 W continuous; imp 8 ohms. 25.5' w x 16.5' x 14' d. $750/pr.

201 Series II Speaker
Direct/Reflecting/bookshelf system with Free Field tweeter. Features dual-frequency crossover network; 6" woofer; 2.5" tweeter auto tweeter protection. Available in rosewood vinyl-veen 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 9.5' d. $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 IQ: distortion-limiting circuitry. AC powered. Power supply 25-W transformer; enclosure of structural polypolymer composite. Peak SPL 101 dB with 300-3,000 Hz pink noise at 1 meter. Each speaker 6" x 9" x 6.5". 10 lb. Black or white finish. $229/pr.

Point Two Series
10.2 Speaker
Floor-standing ported speaker with 2.8" cone woofers and two 3" cone tweeters. Features Stereo Everywhere technology: Stereo Targeting system; automatic system protection circuit; Syncom II computer quality control. Power range 10-180 W; sens 88 dB SPL/W/m; imp 4 ohms; genuine 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-channel design: Stereo Targeting system; Stereo Everywhere technology: ducted port enclosure; automatic system protection circuit: Syncom II computer 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.

705 White Full-Range Speaker
Compact dual-cone full-range speaker. Imp 4 ohms. Freq 58-17,000 Hz ± 3 dB. 5.88' h x 5.88' w; mounting depth 1.75". $90-150/pr.

4 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 Hz ± 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 ± 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-1998 woofers, 2.8" midranges, and 8.2" tweeters in array. Power range 60-350 W; imp 8 ohms. Matte walnut enclosure. 15.5' 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.

Boston Acoustics
7 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 folded-grille design to eliminate sonic diffraction; tall cabinet enclosure requires minimum floor space; oak and walnut veneers. Power range 13-150 W rms. Fr 38-25,000 Hz ± 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.

T230 3-Way Speaker
Floor-standing acoustic suspension speaker with 8" copolymer-cone woofer, 3.5" copolymer-cone midrange, and 1" Tweelite-dome tweeter. Features woodgrain vinyl finish with charcoal grille and black vinyl-towel finish with black grille. Power range 15-100 W rms; FR 45-20,000 Hz ± 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 ± 2 dB; imp 8 ohms. Sens 90 dB SPL/W/m; 12.08' h x 8.62' w; depth 3.25'. $350-400/pr.

Digital Music Series
DNIS-6000Wi Speaker
Floor-standing infinite-baffle speaker with 12" cone woofer, 6" midrange, 3" cone mid-tweeter, and 0.75" dome super tweeter. Fr 28-21,000 Hz ± 3 dB; minimum power 10 W rms. Max power 250 W, 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 ± 3 dB; minimum power 10 W rms. Max power 150 W rms; sens 95 dB SPL/W/m; imp 8 ohms; genuine oak or ash 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 ± 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 4" h x 11 d; 37 lb. $320/pr.

Canton
CA 30 Active Speaker
Quad-amplified floor-standing speaker with differential amp and motional feedback system for each driver section (120 W woofer, 100 W midrange, 100 W tweeter). Features four 260-
CANTON

CT 120 Floor-Standing Speaker
3-way bass-reflex speaker features 310-mm (12") woofer, 120-mm (5") midrange, and 25-mm (1") titanium-dome tweeter. Power handling 350 W rms; sensitivities 91 dB spl/W/m; crossover at 1,700 Hz; 12.6' w x 8.66' h x 3.15' d; 160 lb

$1,576/pr

SELENE

D.7 Tower Speaker
2-way tower speaker with 12" woofer, 6" cone midrange, and 1" VC horn-loaded dome tweeter. FR 25-20,000 Hz ± 3 dB; crossovers 700 and 3.5 kHz; 12.5' w x 25.5' h x 11.5' d; 65 lb

$340/pr

DAHLQUIST

DQ-20 Speaker
Three-way vertical-phase-array speaker intended for floor placement. Speaker contains 250-mm cone woofer; 120-mm midrange; 20-mm dome tweeter. Min power 70 W rms; max power 125 W rms; oak finish with black or white grille

$1,500/pr

Dynamic Tracking Studio Monitors
DQM9-9 Compact Speaker
Dual rear-firing tuned-port speaker features rigid die-cast zinc chassis drivers on anti-diffraction baffle in "unbox" enclosure. 11" woofer and 5" cone midrange feature flax-wound ribbon wire voice coil; tweeter is 1" soft dome. Power range 25-20,000 Hz; sens 95 dB spl/W/m; crosses 450 and 3.5 kHz; imp 8 ohms; 14.5' w x 25.5' h x 13.25' d; 55 lb. suede gray Nexiel vibration damping and oak or walnut sides with black lacquer top finishes

$1,350/pr
**SPEAKERS**

**id die-cast zinc 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 kHz, crossover point 3.5 kHz, in 8 ohms; 22.75" h x 14.36" w x 11.25" d; 43 lb; suede gray. Nextel vibration-damping finish $890/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 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-907 Acoustic-Suspension Speaker**
Genuine walnut enclosure, spaced grille with solid walnut trim. 2-way speaker with east-face 8" woofer and 1" dome tweeter: front-facing tuned port. Sens 91 dB, power range 20 W min/80 W max; 15" H x 12" W x 12" D; 37 lb, walnut veneer with dark brown grilles. 32" h x 14" w x 13" d $590/pr

**DBX Soundfield 1A Speaker**
Two-floor-standing enclosures, each with 4 10" woofers, 4.4" midranges, and 6.05" dome tweeters. Self-balancing phased arrangement produces both measurably flat axial and power response (20-20,000 Hz ± 2 dB) and stable and consistent impulse response in linear 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 frk and also features power amp monitor/speaker protector, rumble suppressor, adjustable HP/LF EQ and high-pass/low-pass filters for ends of audio band; auto ch balancing for out-of-balance phenomena. Consists of 2 PS-5 speakers. $1,999 to $2,299/pr

**Denisen Nine 3-Way Speaker**
Floor-standing bass-reflex electrostatic hybrid speaker designed for minimal edge refractions and reflections. Features electrostatic tweeter system; 10" baffle woofer, 6.5" baffle midrange; 3" electrostatic tweeter. 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 ± 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" 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-distortion design with 5" midrange, 1" soft-dome tweeter. PS-LF has 12" dual voice coil, long-throw woofer; power $549/pr

**PS-103 3-Way Bookshelf 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 W, nominal impedance 8 ohms; 38.25" high x 13.66" wide x 13.31" deep 55 lb ea $950/pr

**Electro-Voice Interface Series II Speakers**
Each interface 2-way fully balanced direct-radiator system uses 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 1. FR 40-18,000 Hz ±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. Interfaces 1 & 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 2. FR 47-18,000 Hz ±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.

Interface 3. FR 56-18,000 Hz ±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, 800 Hz electrical. Includes 12" low-frequency radiator.

Energy Reference Connoisseur
2-way bass-reflex mirror-imaged speakers, matched 0.12 dB left and right. 6 different exotic matched wood veneers available. 2" polypropylene cone woofer with PVC-stitched suspension; 1.5" dual hyperdome tweeter. FR 25-20,000 Hz ±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 ±1.5 dB off-axis; sens 89 dB SPL/W/m; 24.62" h x 10.5" w x 12" d. $800/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, lago walnut or black vinyl. FR 34-20,000 Hz ±1.5 dB off-axis; sens 89 dB SPL/W/m; imp 8 ohms. Power range 20-200 W; 34.62" h x 10.5" w x 12" d; 34 lb $1,500-$3,000/pr

EPI
Time/Energy Series II Speakers
All EPI Time/Energy Series II speakers have 2-way bass-reflex port monitors matched 0.5 dB left and right. 7" polypropylene cone woofer with PVC-stitched suspension; 1.5" dual hyperdome tweeter. Floor-standing speakers, 10" woofer, 4" midrange, 1" tweeter. Reference Connoisseur

Sentry 100A Monitor Speaker
Compact monitor with Super Dome tweeter and 8" direct-radiator woofer in an optimally-ventilated enclosure. Features front-mounted high-frequency control, 4th-order Butterworth tun-

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 8" 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.

Honesty 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.

Design Acoustics
An Audio-Technica Company
1225 Commerce Drive, Stow, OH 44224

CIRCLE NO. 4 ON READER SERVICE CARD

Stereo Review February 1988 147
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 38-20,000 Hz ± 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

T/E 250 Series II 2-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 ± 3 dB; crossovers at 300 and 2,500 Hz; power range 15-225 W; imp 6 ohms. 32.5" 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 ± 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. Crossovers 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 C24 2-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

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 radiator; 12" cone woofer. FR 35-23,000 Hz ± 3 dB; min power 35 W rms; max 400 W; sens 91 dB SPL/W/m; imp 6 ohms. 18.5" x 41" d $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. BR 35-23,000 Hz ± 3 dB; crossover 800 Hz; max power 400 W; imp 6 ohms. 18.5" x 16.25" w x 22.5" d; 65 lb $1,199/pr

AMT II 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. BR 38-23,000 Hz ± 3 dB; crossover 900 Hz; max power 160 W; music: 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 $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 h-temp woofer. BR 28-23,000 Hz ± 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. BR 28-23,000 Hz ± 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. BR 42-23,000 Hz ± 1 dB; sens 89 dB SPL/W/m; imp 4 ohm; power range 5-125 W; solid walnut finish $239/pr

Euphonic Audio
Precept Model 3 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. BR 35-18,500 Hz ± 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 $2,000/pr

Precept Model B 3 Way Speaker
Floor standing speaker with 18" polypropylene woofer, 4.5" TPX cone midrange, 0.75" treated linen dome tweeter. BR 36-19,000 Hz ± 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/pr

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-finned 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. BR 35-20,000 ± 2 dB; group delay better than ± 0.02 msec; nominal input 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 0x Pulp internally braced cabinet; 8" woofer; 1" dome tweeter; contoured port; hard-wired crossovers. BR 45-20,000 Hz; 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-7kHz, 12.5-mm-wide super tweeter with samarium-cobalt magnet. BR 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 super tweeter. BR 40-45,000 Hz; 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 $568/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 duocore drivers. Features full-free-flow transmission-line loading of midrange and aperiodic-design principles for linearity and dynamic range. 10" polypropylene duocore woofer; 6.5" midrange; 0.75" dome tweeter. BR 23-22,000 Hz ± 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 speaker; 12" woofer, 8" midrange, 1" dome tweeter; sensitivity 90.5 decibels SPL/W/m at 50 Hz; power rating 250 W; impedance 8 ohms. Walnut or oak finish. 25" wide x 52" high x 15.5" deep; 450 lb; $949/pr

Speakers
duocone drivers and series networks. Features 8" duocone woofer; 2" duocone midrange. 1.75" dome tweeter. FR 26-22,000 Hz ± 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-5/3 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 ± 3 dB; power range 10-250 W; 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 ± 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

GEOLOGY
Genesis 66/2 Floor Standing Speaker
3-way floor-standing speaker with ferrofluid cooled 1" inverted aluminum dome tweeter, 2.5" treated fabric dome midrange in tuned sub-enclosure, 2" cone woofers. FR 35-23,000 Hz ± 2 dB; power range 25-150 W; sens 91 dB SPL/W/m; nominal impedance 8 ohms. Walnut finish. 18.75" h x 11.5" w x 9.25" d; 19 lb $1,198/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 ± 3 dB; sens 91 dB W/m; recommended power 15 W min, 150 W max; 35 ohms average; 29" x 16" x 8"; oak $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 ± 3 dB; sens 91 dB W/m; recommended power 15 W min, 150 W max, 5 ohms average. 29" x 16" x 8"; oak $650/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 ± 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 5.5" d $200/pr

REUBEN GUS ENTERPRISES
System 1: Gass 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 ± 3 dB; power range 30-600 W; sens 92 dB SPL/W/m; $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; satellite. FR 30-22,000 Hz ± 3 dB; power range 30-300 W; sens 92 dB SPL/W/m; $370/pr

System 2: Concept II Speaker System
Floor-standing speaker system with 19 drivers in 4 enclosures. Features 4 12" cone woofers; 6 5" dome dual-diaphragm midranges. 4 1" dome tweeters; 8 custom piezo-electric supertweeters. Controls include midrange; tweeter; rear-ambience; satellite. FR 30-22,000 Hz ± 3 dB; power range 30-300 W; sens 92 dB SPL/W/m; $4,995/pr

SPEAKERS

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 25-350 W; 5-8 ohms; wood cabinet with removable 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 25-350 W; 5-8 ohms; wood cabinet with removable black grille. 41.5" high x 29" wide x 18" deep $3,850/pr

SPEAKERS

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 ± 4 dB; power range 5-50 W rms, unclipped; crossover 2,300 Hz; 21.5" h x 10.5" w x 10.5" d $650/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 ± 3 dB; power range 5-100 W; 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 ± 3 dB; power range 1-200 W; Real walnut, or gloss-black finish. 25.5" h x 13.36" w x 11.36" d; 46 lb $1,198/pr

HB-12C 2-Way Speaker
Hand-assembled reflex-tuned bookshelf speaker with 5.5" Bextrene dome tweeter, 1" dome tweeter, time-aligned crossover: FR 38-20,000 Hz ± 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 ± 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 ± 2 dB; sens 87 dB SPL/W/m, power range 35-150 W; 43" x 10" x 15"; 66 lb each $900/pr

Concert 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 ± 2 dB; sens 87 dB SPL/W/m; power range 35-100 W; 16" x 9" x 11"; 23 lb each $600/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 (2,1800-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; Monitor Cable wiring for midrange and woofer. FR 16-40,000 Hz ± 2 dB; crossovers 70 Hz nominal, 60-120 Hz at main control unit woofer/midrange, 5 kHz midrange/tweeter imp range 100-500 W/ch; either 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" woofer with servo-controlled polypropylene/graphite fiber injection

Infinity IRS Beta
tion molded cones; 2 upper bass/midrange (70 Hz-60 kHz) planar push-pull drivers which act as dipole; low-mass EMT with neodymium magnets for upper midrange; low mass/phonite EMT's from IRS V (in dipole configuration) for the lower treble; SEMIT (a smaller aperture EMT) which extends response beyond 44 kHz. The system operates in biamp mode and includes the IRS V servo control unit.

**1RS Gamma**. Similar to Beta with 2 woofers and 1 upper bass/midrange.

**1RS Delta**. Similar to Gamma with accelerometer servo system.

### SPEAKERS

#### Kappa Series

9 Kappa Reference Standard Speaker

- 5-way design features 2 12" cast-frame C/C-tuned woofers; EMIT K super tweeter; rear-facing EMIT K tweeter; 3" polydome rear radiator; polygraph K composite polypropylene/graphite 5' mid-bass dome; 3" edge-wound polydome K midrange; internal crossovers; biamplable; oak solid wood cabinet with high-density particle board with furniture-grade lacquer finish.
- FR 29-45,000 Hz ± 3 dB; crossover frequencies 80, 800, and 2,000 Hz; power rating 60-340 W rms; sensitivity 89 dB SPM/W/m; impedance 4-6 ohms.

**Digital Monitor Series**

- All Kappa Digital Monitor speakers feature Kappa's Center Bass Reflex technology for increased sound pressure at low frequencies and decreased sound coloration.
- Features front firing bass reflex, rear firing tweeter.
- FR 20-25,000 Hz ± 3 dB; crossover frequencies 340 and 3,800 Hz; imp 8 ohms; 32.5" x 13.75" x 13.75"; 53 lb.

**JAMO**

- Digital Monitor Series

**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 ± 3 dB; min power 10 W rms; max power 300 W rms; sens 89 dB SPM/W/m; imp 6 ohms; oak vinyl; 15" x 25.5" x 10.5" d.

**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 SPM/W/m; imp 8 ohms; rosewood vinyl; 14" x 29.5" x 12.5" d.

**RS Speaker Series**

**RS 6000 3-Way Speaker**

- Features 2 10" cone woofers, 2" dome midrange, EMIT planar tweeter. FR 41-44,000 Hz ± 3 dB; sens 89 dB SPM/W/m; min power 35 W rms; max power 200 W averaged root mean square.
- 15" wide x 37" high x 10" deep.

**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 ± 3 dB; min power 20 W rms; max power 150 W rms; sens 89 dB SPM/W/m; imp 6 ohms; oak vinyl; 15" x 24" h x 10.25" d.

**RS 3000 2-Way Speaker**

- Bookshelf acoustic-suspension speaker with 8" cone woofer and 1" polycell dome tweeter. FR 45-22,000 Hz ± 3 dB; min power 20 W rms; max power 100 W rms; sens 89 dB SPL/W/m; imp 6 ohms; oak vinyl; 12" x 20.75" h x 10.25" d.

**JBL**

**Elastic D55000 3-Way Speaker**

- Features constant-directivity design, 15" woofer in vented enclosure; defined-coverage horn; bi-amplification; bass-reflex mid-bass radiator; high-frequency slot-loaded ring radiator; mylar capacitors; polystyrene and polypropylene bypass capacitors.
- FR 20-20,000 Hz ± 3 dB; peak power 140 W; continuous power 120 W; sens 90 dB SPM/W/m; FR 20-25,000 Hz ± 3 dB; crossover frequencies 1,200 and 5,000 Hz; imp 8 ohms. Black or white finish.

**Digital 120. 3-way speaker with 8' woofer, 4" midrange, and 1" dome tweeter. Features treble sound pressure control, treble overload diode.**

**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" x 16" w x 13.25" d; 70 lb.

**L120T 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; crossover 2,500 Hz; sensitivity 89 dB sound-pressure level with input of 1 watt measured at 1 meter. Oiled hardwood veneer; 30.5" h x 12" wide x 10" deep; 38 lb.

**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 ± 3 dB; min power 10 W rms, max power 300 W rms; sens 94 dB SPL/W/m; imp 4 ohms; rosewood vinyl finish; 65 lb; 18.5" wide x 43.75" high x 10.25" deep.

**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 ± 3 dB; min 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.

**JBL 610 3-Way Speaker**

- Floor-standing bass-reflex speaker with 2 6.5" high-polymer-laminate cone woofers and 1" titanium-laminate dome tweeter. FR 42-25,000 Hz ± 3 dB; min power 150 W rms, max power 200 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.

**Ti Series**

**250 Ti 4-Way Speaker**

- Floor-standing speaker with 14" woofer, 8" low-midrange; 5" polypropylene midrange, and 1" titanium-diaphragm tweeter. Mirror-finished SFG magnetic structure. Max power 400 W; nominal impedance 8 ohms; crossovers 400 Hz, 1,400 Hz, and 5,200 Hz; sensitivity 90 dB SPL/W/m; polypropylene cone woofers, 5" dome tweeter.

**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. Oiled hardwood veneer. 52.5" h x 18" w x 12" d.

**120 Ti 3-Way Speaker**

- Features 12" woofer, polypropylene midrange; 8" high-treble dome tweeter; 4" midrange; 1" dome tweeter. 92 dB SPL/W/m; crossover 2,500 Hz; sensitivity 89 dB sound-pressure level with input of 1 watt measured at 1 meter. Oiled hardwood veneer; 40 lb; 18" wide x 11.75" x 53 lb.
 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 310 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. 29.6" 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 10.5" d; 24 lb $299/pr

JPW LOUDSPEAKERS
AP3 Infinite-Baffle Speaker Features wiring for biamp capabilities; 200-mm doped-papercone woofer; 19-mm soft- plastic dome tweeter with Ferrofluid damping. FR 55- 20,000 Hz ± 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. 33.36 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-papercone woofer; 19-mm soft- plastic dome tweeter with Ferrofluid damping. FR 60- 20,000 Hz ± 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 ± 3 dB; minimum power 20 W rms, maximum power 300 W rms; sens 90 dB SPL/W/m; imp 8 ohms. Walnut, black ash, rosewood, or black- ash veneers. 38 lb/pr; 14.56' w x 35.44' h x 10.69' d $3,990

104/2 KUBE, Active bass EQ with controls for contour and extension $200

104/3-3-Way Speaker Floor-standing speaker with cone woofers vertically aligned, coupled-cavity bass-loading technology, 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 ± 2 dB; power range 25-250 W; sensitivity 92 dB sound-pressure level with input of 1 watt measured at 1 meter; imp 4 ohms. 11' w x 35.44" h x 16.36" d $705 lb. Walnut or black ash finish $1,800/pr Rosewood finish $1,850/pr

Infinite Slope Model 2 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 ± 2 dB; power range 10-150 W; imp 8 ohms; sens 90 dB SPL/W/m; Imp 8 ohms. walnut or black ash finish $959/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 ± 2 dB; power range 50-350 W; sensitivity 90 dB SPL/W/m; nominal impedance 8 ohms; 47" h x 18.8" w x 16" d at top of enclosure, 11° deep at top, 150 lb $2,295/pr

Infinite Slope Model 6 Speaker Floor-standing 12½" powered speaker with infinite slope crossover (100 dB/octave). Features 8" cone woofer; 1" dome tweeter. FR 40-20,000 Hz ± 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 drivers for both audio and video use. Features 8" x 12" passive radiator; 8" cone woofer; 1" soft-dome tweeter. FR 35-23,000 Hz ± 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 front, 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; 1½" soft-dome tweeter. FR 25-23,000 Hz ± 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

KENWOOD
LS-P9100 4-Way Speaker Basic Series floor-standing speaker with 17" passive radiator. Features 10½" polypropylene woofer; 4" polypropylene midrange; flat-leaf super tweeter plus 2 cone tweeters in wide dispersion Toni-Saulé vertical array, high-grade crossover network; auto-resetting overload protector; high-ridgity enclosure; simulated rosewood finish. Features 2 10½" cone woofers, 4" polypropylene cone midrange; 1½" 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 ± 2 dB; min power 50 W rms; max power 300 W rms; sens 90 dB SPL/W/m; Imp 4 ohms. Simulated woodgrain finishes. 9.75" w x 20" h x 8.5" d; 16 lb $350/pr

LS-P1000 4-Way Speaker Basic Series floor-standing speaker with 17" passive radiator. Features 10½" polypropylene woofer; 4" polypropylene midrange; flat-leaf super tweeter plus 2 cone tweeters in wide dispersion Toni-Saulé vertical array, high-grade crossover network; auto-resetting overload protector; high-ridgity enclosure; simulated rosewood finish. Max input power 150 W; sens 90 dB SPL/W/m; crossovers at 800, 3,000, 10,000 Hz; imp 8 ohms. 17.31" w x 44.5" h x 13.25" d; 62 lb $720/pr

LSK-702W 3-Way Speaker Features acoustic-suspension enclosure; 12" woofer, 4½" midrange; 2" cone tweeter. Max input power 160 W; sens 91 dB/W/m; imp 8 ohms; simulated woodgrain finish. 14.81" w x 10.56" x 26.5 lb $285/pr

KINDEL AUDIO
PLS-2-A 2-Way Speaker Floor-standing line source speaker with vertical array of 6.5" woofers and 16½" dome tweeters. FR 35-22,000 Hz ± 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
**P-200 MKII 2-Way Speaker**
Sealed-box speaker with high-frequency control, binding posts, and low-diffraction grille. Features 2.5" polypropylene woofers (1 for low bass and 1 for mid bass), 2.5" cone tweeter, 0.75" dome super tweeter, FR 40-22,000 Hz, ±3 dB, power range 5-100 W; Sens 93 dB SPL/W/m, imp 4-8 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 super tweeter. FR 45-22,000 Hz, ±3 dB, power range 5-50 W; Sens 93 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 midwoofer, 2" textile-dome midwoofer, 1" 12.1" synthetic-dome tweeter, 1" .75" dome super tweeter. 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, ±1.5 dB, min power 35 W, max power 250 W; Sens 93 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

**Traperonid 4-Way Speaker**
Floor-standing ported speaker, 12" polypropylene cone woofer, 6.5" polypropylene cone midwoofer, 1.12" synthetic-dome tweeter with magnetically-cooled damping; 0.75" synthetic-dome super tweeter with magnetically-cooled damping. Crossover points 90, 200, 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, ±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 magnetically-cooled 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, ±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

**Kirsæter**

**Monitor Tower 260 4-Way Speaker**
Floor-standing acoustic-suspension speaker with 2" long-exursion woofers, 4.5" coated-cone lower midrange, 2" soft-midrange with 2.5 lb magnet, 0.75" titanium-dome super tweeter 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-exursion woofer, 2" soft-midrange, 0.75" titanium dome tweeter; crossover 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-exursion woofer, 2" suprnelodome 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; 11.1" W x 37" H x 11.1" D. $1,400/pr

**Monitor 121 3-Way Speaker**
Bookshelf infinite-baffle speaker. Features 8" long-exursion woofer; 2" suprnelodome midrange; 0.25" titanium dome tweeter with Ferrofluid magnet, FR 22-32,000 Hz, ±5 dB; power range 10-100 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

**Carrell 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, ±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" woofers mounted to a 96 oz magnet and 3" voice coil; woofer mounted on cast basket; two-port vented; comes with riser bar; sens 101 dB SPL/W/m, nominal imp 8 ohms; FR 45-20,000 Hz, ±3 dB, 100 W max power handling. 39" x 18½" x 15½". $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 Hz, ±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, 12" passive radiator in sealed enclosure. FR 50-20,000 Hz, ±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

**Kp 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, ±3 dB, max power 100 W; Sens 94 dB SPL/W/m. 24.25" W x 15.75" H x 10.75" D. Oak or walnut finish. From approx $598/pr

**Kp 2-Way Speaker**
Features rear-mounted passive radiator. Crossover frequency 1,800 Hz, FR 35-20,000 Hz, ±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

**JCK/5000**

**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, ±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, ±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 $1,700/pr

**Koss JCK/5000**

**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, ±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 30" 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 ±3 dB; min power 15 W rms; max power 150 W rms; sensitivity 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
OM998 3-Way Speaker
Omnidirectional-cabinet monitor system designed to deliver passive 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" 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 90 dB SPL/W/m; 15.9" w x 32.5" h x 11" d; 42 lb $1,190/pr

LT12 Tower Monitor Speaker
Features 12" poly woofer; 4.5" midrange and 1" 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 32-29,000 Hz ±3 dB; power range 30-150 W; sens 95 dB SPL/W/m; 14' w x 50' h x 14' d; 67 lb $2,490/pr

PM12 Acoustic-Suspension Speaker
3-way acoustic-suspension speaker with 12" poly cone woofer; 4.5" midrange and 1" dome tweeter; separate bass and midrange isolation chambers; computer-matched crossover network. FR 32-25,000 Hz; sensitivity 92 dB. Finished in traditional rosewood or teak finish; 32" h x 14" w x 6.5' h x 13' d; 55 lb/ea $489/pr

Linns by Audophile Systems
DMS Isobarik Floor-Standing Speaker
Isobarik-loading 3-way speaker with 12", 9" woofers, 5" midrange, 2 1/4" dome tweeters. Can be triamped. FR 25-20,000 Hz ± 1.5 dB; crossover at 175 and 3 kHz; instantaneous dynamic range 54 dB; imp 4 ohms; power range 50-1000 W; 30" h x 15" w x 16.5" d $3,290/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 ± 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 ±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 0.75" high-density particle board; 50-strand 20-amp cable. FR 60-20,000 Hz ± 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 1/2" soft-dome tweeters. Features 36 tonal balances through midrange; tweeter character switches. Walnut or oak finish with black grille. FR 75-20,000 Hz ± 3 dB; power range 7.5-40 W; imp 4 ohms. 21.5" 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 75-20,000 Hz ± 3 dB; power range 15-100 W. 10.5" h x 6.5" w x 7.5" d; 9 lb $525/pr

SX-4 2-Way Satellite Speaker
Acoustic-suspension speaker with 2 5" woofers and 2 1/2" soft-dome tweeters. Features selector for 4 tonal balances via multiple inputs. Black vinyl finish. FR 70-20,000 Hz ± 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 ± 3 dB; power range 15-100 W. 10.5" h x 7" w x 6.5" w x 9 lb Walnut veneer with black grilles $425/pr

Magnat
Magnasphere Series Speakers
Delta II; Gamma, and Beta speakers have Soft-Metal Dome Ribbon tweeters and cones of oxygen-free copper wound on aluminum core for better heat dissipation and power handling; baffle-free midrange and tweeter spheres designed for omnidirectional dispersion; black perforated steel grilles.

Delta II Floor-Standing Speaker
6-sided acoustic-suspension speaker with 6.5" long-throw woofers; gray or black enamel. FR 32-29,000 Hz ± 3 dB; power range 30-150 W; imp 4 ohms, sens 88.5 dB SPL/W/m; 13.8" w x 13.8" h x 13.8" d; 65 lb $3,290/pr

Gamma Floor-Standing Speaker
4-sided pyramidal-shaped speaker with 2 8" woofers, 2 2.5" midwoofer (1 front, 1 back), European mahogany or black-oak veneer. FR 32-29,000 Hz ± 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 pyramidal-shaped speaker with 8" woofer, 2 5.25" midwoofers (1 front, 1 back), Supronyl tweeter. FR 37-29,000 Hz ± 3 dB; power range 30-120 W; imp 4 ohms; sens 87 dB SPL/W/m; 13" w x 43.4" h x 13.4" d $1,990/pr

MSP Speakers
Acoustic-suspension speakers with Ribbon-Wire voice coils. Soft-Metal Dome tweeters; baffles electrically coated with flocking to reduce high-frequency resonance; two 2.75" cone midwoofers, 3.5" midwoofer-shaped speaker with black-oak veneer. FR 37-29,000 Hz ± 3 dB; power range 30-120 W; imp 4 ohms; sens 87 dB SPL/W/m; 13" w x 43.4" h x 13.4" d $1,990/pr

MSP Series Speakers
Acoustic-suspension speakers with Ribbon-Wire voice coils. Soft-Metal Dome tweeters; baffles electrically coated with flocking to reduce high-frequency resonance; two 2.75" cone midwoofers, 3.5" midwoofer-shaped speaker with black-oak veneer. FR 37-29,000 Hz ± 3 dB; power range 30-120 W; imp 4 ohms; sens 87 dB SPL/W/m; 13" w x 43.4" h x 13.4" d $1,990/pr

MSP 300 Speaker
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 field-finished black lacquer. FR 32-29,000 Hz ± 3 dB; power range 25-150 W; imp 4 ohms; sens 88 dB SPL/W/m; 11.5" w x 42.3" h x 11.5" d; 50 lb $1,690/pr

MSP 110 Speaker
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 field-finished black lacquer. FR 32-29,000 Hz; power range 25-120 W; imp 4 ohms; sens 88 dB SPL/W/m; 11.5" w x 42.3" h x 11.5" d; 50 lb $1,690/pr

MAGNEPLANAR
Beta Floor-Standing Speaker
Beta 1500. Floor-standing speaker with 2.8" long-fiber-pulp woofers, 3" cone/dome midrange, 1" tweeter; European walnut or black-oak veneer. FR 32-29,000 Hz; power range 25-120 W; imp 4 ohms; sens 88 dB SPL/W/m; 11.5" w x 42.3" h x 11.5" d; 50 lb $1,690/pr

Beta Monitor Speakers
Magneplanar MG 2.5/R Speaker
Floor-standing full-range bipolar panel speaker with planar-magnetic and ribbon-driver design. Can be biamped. Drivers are 1 planar-magnetic woofer (620' sq); 1 planar-magnetic midrange driver. Features 5-8-long, 2.5-microsecond black foil tweeter. 3 panels per side; 71" h x 18" w x 1" d $3,800/pr

Magneplanar MG 11A Speaker
Floor-standing full-range bipolar panel speaker with planar-magnetic and ribbon-driver design. Can be biamped. Drivers are 1 planar-magnetic woofer (620' sq); 1 planar-magnetic midrange driver. Features 5-8-long, 2.5-microsecond black foil tweeter. 3 panels per side; 71" h x 18" w x 1" d $3,800/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 fabric. oak side rails $1,550/pr
**SPEAKERS**

**Magneplanar MG-llC Speaker**  
Floor-standing 2-way speaker with Magneplanar woofer and tweeter. Features oak side rails; brown fabric grille. FR 40-18,000 Hz ± 3 dB; power range 25-200 W, RMS; imp 5 ohms resistive; crossover 400-1,600 kHz to 6 dB/octave; 71" h x 22" w x 2" d; 70 lb $1,225/pr

**Magneplanar SGMa 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 ± 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

**Martin-Logan Monolith**  
Electrostatic cell for 100-24,000 Hz and 12' dB/W/m; imp 8 ohms. Oak vinyl finish; 37.75" w x 17.5" h x 13.5" deep; 165 lb each $4,850/pr

**SP104 Tower Speaker**  
Sculptured furniture-style cabinet. Max power 135 W; sens 90 dB sPL/W/m; 18' w x 16.5' d; 47 lb $400/pr

**SP103 Tower Speaker**  
Same as above without passive radiator $300/pr

**MARTIN-LOGAN**

**XRT-22 Speaker System**  
2-piece speaker consisting of bass cabinet containing 2 12" woofers and 8" midrange drivers, and tweeter cabinet containing 23 1" tweeters. Bass cabinet: 40.75" h x 25.75" w x 12.75" d tweeter cabinet: 79.5" h x 10.5" w x 1.63" d; door finish $469/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, 300 W peak; min power 30 W; imp 8 ohms, crossover frequencies 350 and 1,500 Hz. Cabinet constructed of 0.75" high-density particle board with internal bracing and airtight finish. Walnut veneer protected by hand-rubbed lacquer finish. 37.5" h x 17.5" w x 11.88" d; 66 lb $1,250/system

**XC-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 finish. Walnut veneer protected by hand-rubbed lacquer finish. 37.5" h x 17.5" w x 11.88" d; 66 lb $1,250/system

**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 12" 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, 1" tweeter. Power supply, 2 power amps in low-resistance cabinet. 0.75" Al-Quality birch plywood cabinet; all-metal stand with resonance damping available. FR 38-20,000 Hz ± 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 ± 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 amplifiers $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 ± 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 ± 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 ± 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; 2 polypropylene cone woofers, 0.75" polymer-dome tweeter with ferrofluid; crossover frequency 2,400 Hz. FR 40-20,000 Hz ± 3 dB; nominal imp 8 ohms; power range 20-125 W/ch; sens 86 dB SPL/W/m, 10" w x 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 ± 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 amplifier 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.

The Carver Magnetic Field Car Amplifier is signal responsive. Highly efficient, it produces exactly the 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 oversized power supply components. Important considerations in the minuscule spaces which qualify car design allocations 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 micro-seconds 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 autosound 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 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 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.

<table>
<thead>
<tr>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Output Stereo Mode: (continuous RMS power output per channel) at 13.8 VDC input, 120 W into 4 ohms, 20 Hz to 20 kHz with no more than 0.15% THD.</td>
</tr>
<tr>
<td>Power Output Bridged Mono Mode: (Referenced to 13.8 VDC input) 240 W into 8 ohms, 20 Hz to 20kHz with no more than 0.15% THD.</td>
</tr>
<tr>
<td>Input Sensitivity: Variable 250mV to 4V</td>
</tr>
<tr>
<td>Signal to Noise Ratio: (Referenced to 120 W, A weighting) into 4 ohms, Senselot less than 100 db</td>
</tr>
<tr>
<td>Crossover: 115 Hz, 18 dB/octave</td>
</tr>
<tr>
<td>Weight: 4.7 lb</td>
</tr>
</tbody>
</table>

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.
MOREL ACOUSTICS

Duet 2-Way Double-Magnet Speaker

New MDT-33 tweeter. 28 mm soft-dome design with double-magnet structure. Hexatech technique wending (aluminum wire, wound hexagonally) and ferrofluid cooled. MW-164 6" double-magnet woofer also using the Hexatech voice coil. FR 40-22,000 Hz ± 2 dB; power handling 150 W rms; 8" w x 15" h x 12" d; 20 lb $995/pr

MPL-403-HF 3-Way Speaker

Ported floor-standing speaker with Variable. 9" free-edge/paper cone woofer; 3" dome midrange; 1" dome tweeter. FR 38-25,000 Hz ± 3 dB; min power 10 W, max power 125 W rms; sens 88 dB SPL/W/m; spec 4-ohms; finished in walnut, teak, or black. 21" h x 12" w x 10" d. 26 lb $750/pr

MPL-200 2-Way Speaker

Acoacoustic special bookshelf speaker with cabinet and woofer space similar to the smaller MPL-201 HF (below) with 33-litre volume. Features 9" coated-paper cone woofer; 1" soft-dome tweeter. FR 38-25,000 Hz ± 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

Model L2 Speaker

Features 8" woofer; 2" tweeter; 2" super tweeter; tweeter level control; oiled-walnut finish. FR 42-20,000 Hz ± 4 dB; crossover setting overlap protection. Features liquid-cooled Penta-Vented tweeter; 2.70 Hz Sub-Bass Active; vented enclosure (third-order Butterworth filter); press connectors; 0.62"/flakboard stock; oil-walnut finish; 21.5" x 11.5" x 7.25"; ipm nominal/minimum; 8/4 ohms; FR 48-17,000 Hz ± 4 dB; efficiency 0.73%; recommended power 7-73 W rms on music $395/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 Active; vented enclosure (third-order Butterworth filter); press connectors; 0.62"/flakboard stock; oil-walnut finish; 21.5" x 11.5" x 7.25"; ipm nominal/minimum; 8/4 ohms; FR 48-17,000 Hz ± 4 dB; efficiency 0.73%; recommended power 7-73 W rms on music $395/pr

ONYKO

S-70 4-Way Speaker

Bass-reflex speaker with 6" polypropylene cone woofer with high-power voice coil, 5" PVA-treated ferrofluid-cooled midrange, 1" polycarbonate-dome ferrofluid-cooled tweeter, and 0.5" poly-carbonate-dome ferrofluid-cooled super-tweeter. Features self-resetting auto overload protection. FR 65-20,000 Hz ± 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 midrange, 1" polycarbonate-dome ferrofluid-cooled tweeter, and 0.5" poly-carbonate-dome ferrofluid-cooled super-tweeter. FR 65-20,000 Hz ± 3 dB; power range 10-150 W rms; sens 93 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-440i Multi-Channel 4-Way Speaker

2-way speaker with 4" high-compliance carbon-fiber-reinforced polypropylene cone woofer and 1" ferrofluid-damped soft-dome tweeter with acoustic blanket. Non-diffraction cabinet; 4th-order network with polypropylene capacitor, 4th-order vented design. Simulated black oak finish. FR 70-20,000 Hz ± 4 dB; spec. power range 800-150 W rms; 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 ms. 9" w x 5.88" h x 6.5" d $235/pr

CMs330 Compact Monitor Speaker

Bookshelf speaker in die-cast aluminum enclosure. High-compliance polypropylene cone woofer, 1" soft-dome tweeter with phase plug and ferrofluid damping 12-dB/octave crossover includes separate choke for woofer. With mounting brackets. FR 60-22,000 Hz ± 4 dB; power range 10-80 W; sens 88 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-1 4-Way Speaker

Floor-standing phase-coherent passive-reflex speaker. Features met-polypolypropylene bypass capacitors; 10" solid-piston RFPP radiator; 8" solid-piston RPFW woofer; 5.25" solid-piston RFPP midrange; 1" soft-dome tweeter; accepts banana plugs. FR 30-20,000 Hz ± 3 dB; power range 25 W; sens 250 dB SPL/W/m; ipm 8 ohms; walnut and dark oak. 15.5" w x 38.25" h x 8.5" d. 70 lb $1,300/pr
**SPEAKERS**

**PC-800H 3-Way Speaker**
Floor-standing acoustic-suspension phase-coherent speaker with met-polypolypropylene 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 ±3 dB; min power 20 W rms; max power 150 W rms; sens 91 dB SPL/W/m; im 4 ohms. Walnut, dark-oak veneer finishes. 14.5" w x 36.25" h x 8.5" d; 57 lb $950/pr

**PC-682 2-Way Speaker**
Bookshelf phase-coherent acoustic-suspension speaker with met-polypolypropylene 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 ±3 dB; power range 15-100 W; sens 87 dB SPL/W/m; imp 4 ohms; walnut, stained-oak, light-oak finish; 6.5" x 4" x 9"; 12 lb $360/pr

**PC-665X BK 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" dome super tweeter 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" fabric-cone/midrange; 1.5" fabric-cone/baffle tweeter; .75" polycarbonate fluted super tweeter, 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 ±3 dB; min power 15 W rms; max power 150 W rms; sens 92 dB SPL/W/m; im 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" fabric-cone/midrange; 1" polycarbonate fluted 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 ±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 .75" polycarbonate fluted fibre tweeter; 5.25" polypolypropylene cone woofer. FR 65-21,000 Hz; sens 86 dB SPL/W/m; power range 10-50 W; im 6 ohms; 6.75" w x 11.25" h x 6.88" d; 17 lb/pr $149/pr

**535 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 ±3 dB; min power 15 W rms; max power 120 W rms; sens 93 dB SPL/W/m; im 4 ohms. 10" w x 35.25" h x 11.75" d $550/pr

**PC-680 Subwoofer/Satellite Set**
3-piece acoustic-suspension subwoofer system with down-firing floor-loaded woofer and 2-way compact phase-coherent satellites. Features met-polypolypropylene bypass capacitors; fest extenders for heavy carpet; tweeter level control; accepts banana plugs; solid hardwood and veneers; removable minimum-diffraction grille; speaker protection. 10" solid-piston subwoofer; 6.5" solid-piston midrange, 1" soft-dome tweeter. FR 30-20,000 Hz ±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 15" deep; subwoofer 13' wide x 14" high x 15" deep; 60 lb $790/set

**PHILIPS by NAP FB655XBK Digital World Speaker**
Features 140 W power capability; acoustically coupled 8" passive radiator, 8" woofer with POLK AUDIO

**SDA-SRS Signature Reference Speaker**
Floor-standing smaller-version SDA-SRS. Features Polk's SDA True Stereo Technology for 3-dimensional imaging. Features 15" planar passive radiator; 8.6" tri-laminate polymer midranges; 4' 1"-silver-coil soft-dome tweeters. FR 18-2,600 Hz ±3 dB; power range 10-1,000 W; sens 95 dB SPL/W/m; im 4 ohms. Oiled oak, walnut, or black-lacquer finish. 21" w x 63.75" h x 13" d $2,990/pr

**SDA-IC 3-Way Speaker**
Floor-standing speaker. Features 4 Polk MW 6600x tri-laminate polymer bass/midrange drivers; Stereol/Dimensional isophase crossover system for blending all 12 active drivers of 2 SDA-1s; SL 2000 1/2 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 Hz, 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 tweeters. 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 2.5" tri-laminate polymer bass/midrange drivers; 1' SL 2000 polymer dome/TAD tweeter; 12" semi-rigid 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" h x 12.5" 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, 2.65' 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

**Proton**

AL-300 Floor-Standing Speaker

Floor-standing speaker with 12' woofers; 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 Hz peak into 4 ohms for 250 ms repeated 10 times with 2 second intervals. FR 39-20,000 Hz ±2 dB, THD <1% at 85 dB SPL. $3,189/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, 2.5 cm rms, impedance 4 ohms; max bass power -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. ESL-65 Pro. Professional version with carrying handles. $3,600/pr

**RCA**

SFK-500 Dimensia 3-Way Speaker

Floor-standing bass-reflex speaker with Zero Magnetic Distortion for placement near to video monitor. Features 11" cross-carbon woofers, 4" pure copper dome tweeter. FR 35-20,000 Hz ±3 dB; max input power 160 W rms; imp 8 ohms. 12.75" x 16.25" d. $549/pr

**SFK-400**

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 ±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 impedance of Realistic speakers is 8 ohms. 5200/pr

Mach Two 3-Way Speaker

Vented Ferronfluid-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 ±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 ±3 dB; max power 100 W rms; 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" dome tweeter. FR 50-20,000 Hz ±3 dB; max power 100 W rms; sens 90 dB SPL/W/m; imp 8 ohms. Oiled-walnut finish. 29.75" w x 10.88" d. 33 lb. $300/pr

600. Bass-reflex speaker; 8" woofer; 2.5" cone midrange, 2.5" cone tweeter; removable cloth grille; recessed color-coded spring-loaded terminals. Max power 70 W; 8 ohms. 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 Schott 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 8 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-winder design with one woofer facing into enclosure to eliminate even-order harmonic distortion. 4.75" cone midrange; 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 ±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-11 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-11 3-Way Speaker

5-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 system. Satellites feature 4.19" cone woofer, 0.75" dome tweeter. Subwoofer features 10.19" cone driver. FR 48-22,000 Hz ± 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 electrotastics. Features two 8" cone woofers; 1.5" cone tweeter. FR 30-20,000 Hz ± 3 dB; min power 20 W; sensitivity 92.5 dB SPL/W/m; imp 4 ohms; black finish. Satellite 5.5" w x 8.75" h x 5.75" d; satellite 32 lb; subwoofer 15.36" w x 14.19" h x 14.62" d; 32 lb. Satellites $350/pr. Subwoofer $375 ea.

**ROKSAN ENGINEERING**
Darius Speaker with Integral Stand
2-way infinite-baffle speaker with dedicated cage frame on spike feet that clamps cabinet at 8 nodes. Features all panels of 1" Medite with treated 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. Walnut $3,000/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 radiator; 12" TCCF cone woofer; 4.75" cone midrange; 2" dome tweeter; 0.62" dome super tweeter. Max power 320 W; sens 93 dB SPL/W/m; imp 8 ohms. Available in walnut finish. 15" w x 40.56" h x 13.5" 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; 0.5" dome super tweeter 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 super tweeter $700/pr.

S-182SU 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" dome tweeter. FR 32-20,000 Hz ± 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-172SU 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 dome tweeter. FR 32-20,000 Hz ± 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 PLA-coated woofers.

**S1720 Multidirectional Speaker**
Floor-standing 6-driver speaker with 12" woofer, 2.5" ferrofluid-cooled midranges (1 front, 1 top), 1.75" ferrofluid-cooled tweeters (front, top, oak-vinyl finish. FR 42-20,000 Hz ± 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. S107S. Similar to S1726 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 ± 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. All have built-in switches for electronic crossover. Features two 8' cone woofers; 1.5' cone tweeter. FR 40-20,000 Hz ±3 dB; max power 200 W; sens 90 dB sPL/W/m; power range 10-112 W; 24' x 14' x 9' deep; 45 lb. $600/pr. Monitor One Speaker 12" woofer. FR 25-22,000 Hz ± 3 dB; sens 98 dB SPL/W/m; power range 13-125 W; 26" x 15" x 12"; 33 lb each. $500/pr. Monitor Two Speaker 10" woofer. FR 30-22,000 Hz ± 3 dB; sens 97 dB SPL/W/m; power range 10-112 W; 23" x 12" x 9"; 29 lb each. $400/pr.

Monitor One Speaker 8" woofer. FR 35-22,000 Hz ± 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 5" cone midrange, 1.75" ferrofluid-cooled tweeter. FR 28-20,000 Hz ± 3 dB; max power 100 W; sens 92 dB SPL/W/m; power range 20-100 W; 23" x 12" x 9"; 29 lb each. $500/pr.

**SPEAKERS**
**SCOTT**
**SONAB BY AUDIOSOURCE**
**STEREO REVIEW FEBRUARY 1988**
**SPEAKERS**

**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" x 26" x 12.62', 59 lb each; $700/pr.

**APM-22ES 2-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, 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" x 20.38" x 12.62', 500/pr.

**Sema 1000 Stereo Subwoofer**
2 side-firing magnetically shielded 10" woofers; 2 side-firing magnetically shielded 10" woofers in golden oak cabinet. FR 25-110 Hz ± 2 dB; power range 10-80 W; sens 90 dB SPL/W/m; imp 8 ohms, 10.5" x 14.5" x 10.5" d. $695/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 dome suspension; 10" woofer with high-gauss linear forced motor and epoxy potting. FR 32-23,000 Hz ± 3 dB; sens 101 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 dome suspension; 12" woofer with high-gauss linear forced motor and epoxy potting. FR 32-23,000 Hz ± 3 dB; sens 91 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 3,000 Hz ± 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.

**SPEARIT 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 acousticimp 8 ohms. Power range 25-50 W, 100 W peak; max power 200 W rms; imp 8 ohms. 33 lb ea; 14.5" x 25.5" x 10.5" d. $395/pr.

**208A Stand-Mount Speaker**
Thieleoptimized 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 ± 3 dB; sens 91 dB SPL/W/m; 33 lb ea; 14.5" x 25.5" x 10.5" d. $395/pr.

**Sigma S Speaker**
Acoustic-suspension speaker with 6.5" butiren cone woofer and 1" soft 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 ± 1 dB; 10" x 22" x 6', 20 lb; black cloth with oak or black top plate; computer-matched pairs. $1,795/pr.

**Sigma Opus 2**
Acoustic-suspension speaker with 6.5" butiren cone woofer and 1" soft 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 ± 1 dB; 10" x 22" x 6', 20 lb; black cloth with oak or black top plate; computer-matched pairs. $995/pr.

**Sona APM-22ES**

**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" x 12" x 11.5" d at base; top 9" x 7" d. Cherry finish. $1,295

**Ebony, rosewood. $1,495**

**Sound Dynamics**

**1500 Concert Monitor**
Computer-tuned 2-way bass-reflex, mirror-imaged 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 ± 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.

**2300 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 3,000 Hz ± 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.

**250 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 ± 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.

**SYKBAWOOP Bookshelf Speaker**
Acoustic-suspension bookshelf speaker with tri- angular 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 ± 3 dB; power range 25-50 W, 100 W peak; sens 83 dB SPL/W/m; imp 4 ohms. 13" x 48.5" x 13" d; 110 lb; black cloth with oak or black top plate; computer-matched pairs. $1,795/pr.

**Sigma Opus 2**
Acoustic-suspension speaker with 6.5" butiren cone woofer and 1" soft 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 ± 1 dB; 10" x 22" x 6', 20 lb; black lacquer finish. $995/pr.
Be the Boss

Whatever "instrument" you play, you'll be the Boss with American Acoustics Generation III loudspeakers. You can really feel the music! But watch out... when you crank up American Acoustics, you'll have the power to shake the room.

Get caught up in the experience with Generation III loudspeakers. You'll get excellent depth and sound separation, plus extraordinary wide dynamic range... a must for CDs. American Acoustics are among the top rated loudspeakers across the country according to the Audio Video International poll.

Listen to the Experts:
"Acoustic SPL (Sound Pressure Level) impressively high; octave-to-octave frequency balance exceptionally uniform and smooth."—Stereo Review.
"Low-frequency reproduction quite smooth and tight and extends well into the deep bass; imaging very good, wide dynamic range."—High Fidelity.
"Unusually high sensitivity; orchestral sound 'big' with a good sense of space; can play loud without any audible distress."—Digital Audio.

All this and an outstanding 10-year warranty... and built in the U.S.A.

For more information, contact your nearest authorized American Acoustics dealer. Or call us at (815) 367-3000.

American Acoustics
A Mitek Group Product
One Mitek Plaza
Winslow, IL 61089
815-367-3000
FAX: 815-367-3851
TELEX: 989 790 MTX INC UD
SYNTHESIS
by CONRAD-JOHNSON
Reference Speaker System
3-piece system with 2 subwoofer columns (each with 2 10" woofers), 2 midrange/high-frequency units (with 7" midranges, 1" dome tweeters, leaf super-tweeter); golden oak with rounded solid-hardwood edges, active electronic crossover supplied. FR 22-25,000 Hz +2 dB; power range 10-250 W; sens 93 dB SPL/W/m; imp 8 ohms; subwoofer columns 14" x 69" x 14°; satellite: 10" x 44" x 10°. $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 +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 +2 dB; power range 10-100 W; sens 91 dB SPL/W/m; imp 8 ohms; 12" x 39.5" x 11". $1,595/pr

LM 210 Floor-Standing 2-Way Speaker
Ported with 6.5" polypropylene woofer; 1" dome tweeter; oak cabinet with rounded solid-hardwood edges. FR 25-20,000 Hz +3 dB; power range 10-80 W; sens 90 dB SPL/W/m; imp 8 ohms; 10.5" square x 33.5". $950/pr

3D ACOUSTICS
3D610 Surround 5-Piece System
5-piece phase-conditioned speaker system with all matching built into 3D10 magnetically shielded subwoofer. Features 10" shield dual-wide-voice-coil woofer; 6" rubber-roll midrange; 1" cloth-dome foam-encased tweeter. FR 30-20,000 Hz +3 dB; min power 30 W rms; max power 150 W rms; sens 88 dB SPL/W/m; imp 8 ohms. $3,610/pr

3D610 System 3-Piece Speaker System
3-piece speaker system with built-in matrixing for multi-channel surround sound. Magnetically shielded for rear-video placement. Features 10" dual-wide-voice-coil woofer; 6" rubber-roll midrange; 1" cloth-dome foam-encased tweeter. FR 30-20,000 Hz +3 dB; min power 30 W rms; max power 150 W rms; sens 88 dB SPL/W/m; imp 8 ohms. $1,360/pr

TANNOY
PRESTIGE SERIES
Westminster. Floor-standing dual-concentric speaker with Syne-Source Time Alignment; compound horn enclosure; 15" cone woofer; 2" compression-horn tweeter. FR 18-20,000 Hz +2 dB; min power 10 W; max power 200 W; sens 96 dB SPL/W/m; imp 8 ohms. $31" x 43" x 19.3"; 136 lb each. Walnut finish $6,800/pr

STIRLING
Floor-standing dual-concentric speaker with Syne-Source Time Alignment; dual variable-distributed enclosure; 10" cone woofer; 2" compression-horn tweeter. FR 35-20,000 Hz +2 dB; min power 10 W; max power 150 W; sens 93 dB SPL/W/m; imp 8 ohms. $20" x 33.5" x 15.6"; 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 +3 dB; power range 25-120 W; sens 93 dB SPL/W/m; imp 8 ohms. $850/pr

Mercury II. Similar to Mercury II Gold except 16 lb each. $525/pr

Eclipse. Tuned-port bookshelf speaker; 6.5" woofer, dome tweeter. FR 53-20,000 Hz +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
Linear-phase honeycomb-disc speaker with mirror-image cabinets; tweeter and midrange attenuators; low-noise 18-db/octave mid/high; high-quality terminals for large-gauge speaker wires; resettable thermal relay protection. 13° woofer; 3.12" mid; 1.12" tweeter. FR 38-35,000 Hz +5 dB; max power 200 W music, 100 W DIN. sens 90 dB SPL/W/m; imp 6 ohms; 69 lbs; 15.75" square x 26.36" x 13.12". $1,800/pr

SB-RX50 Bass-Reflex Bookshelf Speaker
2-way speaker with 9.5" flat-diaaphragm woofer and coaxial 1.12" flat-diaaphragm 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" x 18.92" x 11.09". $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 +10 dB; max power 180 W; sens 90 dB SPL/W/m; imp 8 ohms, walnut finish; 15.33" x 27.33" x 12.88". $550/pr

SB-X300 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 +10 dB; max power 160 W; sens 90 dB SPL/W/m; imp 8 ohms, walnut-grain finish; 12" x 22.44" x 10.5". $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. FR 62 Hz-20,000 Hz ±3 dB; max power 25 W music; sens 89 dB SPL/W/m; imp 8 ohms. Oak or walnut finish. 5.5" x 8.5" x 5.4"; 20 lb. $525/pr

HSS-400 2-Way Speaker
Acoustic suspension speaker with unique shape to produce proper time-of-flight correction. Features 8" polypropylene cone woofer. 3.5" treated-cone midrange. 0.75" Ferrofluid-cooled dome tweeter. FR 45-20,000 Hz +4 dB; power range 25-100 W; sens 88 dB SPL/W/m; imp 8 ohms; oak or walnut finish. 5.5" x 8.5" x 5.4"; 20 lb. $525/pr

HSS-300 Bookshelf Speaker
Acoustic suspension speaker with time-offset-corrected design. Features 6.5" polypropylene cone woofer. 3.5" treated-cone midrange. 0.75" Ferrofluid-cooled dome tweeter. FR 70-25,000 Hz +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. 12.6" x 12.6" x 2.5-°. $325/pr

THIEL
CS 3.5 Coherent Source Speaker
Floor-standing electronic-bass-boosted speaker with 10" cone woofer 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. Power range 50-250 W rms; sens 89 dB SPL/W/m; imp 4 ohms. Teak, oak, walnut, black, rosewood finishes. 13" x 42" x 13.5". $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 +2 dB; power range 50-250 W; sens 87 dB SPL/W/m; imp 6 ohms. Oak, walnut, black, rosewood finishes. 12" x 39" x 12". $1,590/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 +2 dB; power range 40-150 W rms; sensitivity 87 dB SPL/W/m; impedance 6 ohms. Teak, oak, walnut, black, 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 +4 dB; power range 25-100 W; sens 88 dB SPL/W/m; imp 8 ohms; oak or walnut finish. 5.5" x 8.5" x 5.4"; 20 lb. $525/pr

STEREO REVIEW FEBRUARY 1988
162
**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 ± 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 14.75" 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 ± 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" $398/pr

**VANDERSTEEN AUDIO**

Model 4 5-Way Speaker
Floor-standing dynamically aligned scaled 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 super tweeter. FR 26-30,000 Hz ± 2 dB; power range 100-200 W; sens 89 dB SPL/W/m; imp 4 ohms. 18" w x 32" 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 ± 2 dB; power range 40-150 W; sens 89 dB SPL/W/m; imp 4 ohms. 16" w x 36" h x 10" d; 60 lb. Oak or walnut finishes $1,125/pr

**VELODANE 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 ± 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-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 = 2" at 15 Hz; walnut or oak veneer. FR 15-85 Hz ± 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 $550/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; 62.8 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 super tweeter. Features resonance-free enclosure with 3-way mitered construction. Music input power 160 W; sens 91 dB SPL/W/m. 12.35" w x 20.88" h x 10.88" d; 30.8 lb $398/pr

NS-10M 2-Way Speaker
Bookshelf speaker with 7" single-skin white-laminated 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

---

CRUTCHFIELD

1 Crutchfield Park, Dept. SR, Charlottesville, VA 22906

Full 30-day return privileges.

Discount prices on Sony, Pioneer, JVC, Teac, Proton, Advent, Jensen, Clarion, Concord, Sherwood, Canon, Bose, and many more!

You get more value shopping Crutchfield:

- Toll-free product advice, ordering, and customer service.
- 24 hour shipping.
- Absolute satisfaction guaranteed.
- Full 30-day return privileges.

Refer to the Crutchfield catalog before buying your next car stereo, home stereo, or video product:

- 108 pages of helpful articles, consumer tips, charts, and installation guides.
- Color photos, complete descriptions and technical specifications on hundreds of the finest brand name products.

Call or send this coupon now for your FREE Catalog

800-336-5566

Be sure to mention Stereo Review when calling.
**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 fitted 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 0-8 dB gain buffer amplifier output stage with push-pull IC servo direct coupling; metal shielding; passive elements and buffer amp in de-emphasis circuit; ceramic composite resin floating mounting; legs latched from pure brass bar; hairline-finish golden panel and natural persimmon sideboard; infrared remote needs 2 AA batteries. Pass-band ripple of digital filters +0.00005 dB with attenuation of <100 dB. 40.4 lb  $5,000

**ACOUSTIC**

CD-04 Remote-Controlled CD Player
Drawer-loading 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, elapsed time on disc, remaining time on disc, program in memory. 17" x 3.12" h x 11.75" d  $250

**A/D/S**

Atelier CDS 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; headphone 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, track index. 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**
Casst tape and transport assembly shock mounted with rubber isolators, aluminum and steel chassis/touring, 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; 16-key direct-access pads on front panel and remote, comprehensive Fi display. Oversamples at 176.4 kHz. 16.94" w x 3.9" h x 12.06" d  $999

**DX-1500 Remote-Controlled CD Player**
Drawer-loading CD player with 9-function remote control. Features programming of 16 tracks in any 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 of current track; disc, program in memory, remaining time on disc. 13" w x 2.89" h x 11.75" d  $295

**AKAI**

CD-A70-B Easy-Programmed 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; subwoofer terminal; stabilized servo control; independent left/right monaural amps. 17.3" w x 3.1" h x 10.2" d; 8.6 lb  $399

**AUDIOPHILE**

By VAN ALSTINE

Transcendence CD Player
Drawer-loading CD player with Class-A discrete FET filter circuits, line drivers, and separate 45,000 fF audio and filter-section power supplies. Features critically damped (Q=0.35) 18 dB/octave filters with half-amper drive capability at 200 V/step; 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

**AUDIQUEST**

AQP CD-1X 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  $999

**BANG & OLUFSEN**

Beogram 5500 Programmable CD Player
Integrated 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; sensor-touch controls; display of track number, index number, track time, track 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; clears keys 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’ x 3” x 12.25” d; 12.4 lb
$699

CALIFORNIA AUDIO LABS
Terrific 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). Displays track number, index number, total tracks, elapsed time of track, disc number, elapsed time of current track; indicates 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 and 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

CDT-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
DX3 Sound-Processing CD Player
Remote-controlled CD player with 3 processing circuits (compression, Digital Audio Impact Recovery [DAIR], and increased/decreased ambiance), each independently bypassable. Compression control is for background listening, making car cassettes, and easing taping of CD’s; DAIR adds impact to musical transients; ambiance 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-

hand 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

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; headphone jack, 20-track random programming, 10-key direct selection; index 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; 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 $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

DUAL
D-815 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 $350

DUAL
CD150 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; 8-digit FL display $300

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; dumped transport section $995

FISHER
DAC-205B CD Changer
3-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 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 $950

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, and digital and active index. THD 0.007%, dynamic range > 90 dB, S/N > 90 dB at 1 kHz, output 2 V rms, THD 0.03%. $250

**HITACHI**
DA005 Remote-Controlled CD Player
Direct PIT servo, 5-stage error correction; 128-channel digital filter; programs 15 tracks in any order; skip forward and back; fast forward and reverse; cancel; repeat track, disc, phrase, and program; cue by track number; 3-beam laser; 16-bit linear converter, 16-bit linear-conversion digital filter oversamples at 88.2 kHz, all discrete, gradual analog filter...

**AUX**
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...

**HARMAN KARDON**
HD300 Remote-Controlled CD Player
Wireless programming 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 I/s converter, 16-bit linear-conversion digital filter oversamples at 88.2 kHz, all discrete, gradual analog filter...

**JVC**
XLV1000BK Compact Disc Player
Drawing-player CD player with wireless remote control with numeric keypad for direct track access 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; independent suspension, digital filter, quadruple oversampling, GM deglitcher; 2-speed search; index search; intranet search; index play; index search; track skip, headphone jack with adjustable level; 2 output levels (variable). JVC Compu-Link remote compatible...

**KINERGETICS**
KCD-30 Gold Series Remote CD Player
Volume and balance controls on front panel to drive power amp directly; digital processing circuits; corrected-slope filter; hysteresis-distortion cancelling circuit; no capacitors in signal path; servo loop to eliminate jitter; 3-bit, 3-speed digital filter, 10-key input; track skip & search; total/time, track number, memory display; repeat; headphone jack. THD 0.007%, dynamic range 96 dB, sep 98 dB, S/N 98 dB. 17.31" x 3.69" x 12.31". $460

**KYOYERA**
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 ± 0.5 dB; 22 Ib. 17" x 5.5" x 13". $1,100

**KENWOOD**
DP-3300D Compact Disc 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 DAC 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" x 3.56" x 12.12". $800

**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 DAC 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"...

**DA-510cx Remote-Controlled CD Player**
Quadraple-oversampling digital filters; 2 discrete DAC 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...

**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; 15 tracks in any order, 99 tracks in sequential order; 1-beam laser; 10-key digital filtering; interactive menu, full-menu search; remote compatible. $850

**JVC**
XLV500BK Compact Disc Player
Drawing-player CD player with wireless remote control with numeric keypad for direct track access and volume control. Features 15-track random programming; 3-beam laser pickup; Opticalink; Y-servo; independent suspension; laser, vibration-damping base;...
### COMPACT DISC PLAYERS

<table>
<thead>
<tr>
<th>Model</th>
<th>Feature/Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CD650 FTS CD Player</td>
<td>Favorite Track Selection memorizes programs from various discs (up to 785 tracks). Extra altered output; music scan; single play; digital output for CD player. 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 time of disc. Headphone output 0-5 V. 16.5&quot; w x 3.5&quot; h x 11.75&quot; d; 9.75 lb.</td>
</tr>
<tr>
<td>CD473 FTS CD Player</td>
<td>Programs 20 tracks in any order; 16-bit D/A converter, headphone jack; 6-function remote; skip forward and back; speed search (audible at 2 slower speed; speed search; 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.</td>
</tr>
<tr>
<td>D-109 Remote Controlled CD Player</td>
<td>Programs 20 tracks in any order; 16-bit D/A converter, headphone jack; 6-function remote; skip forward and back; speed search (audible at 2 slower speed; speed search; 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.</td>
</tr>
<tr>
<td>MARANTZ CD-94 FS CD Player</td>
<td>Programs 20 tracks in any order; 16-bit D/A converter, headphone jack; 6-function remote; skip forward and back; speed search (audible at 2 slower speed; speed search; 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.</td>
</tr>
<tr>
<td>MEININGER AUDIO BY MUSEATEX CD-3 Remote-CONTROLLED CD Player</td>
<td>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.</td>
</tr>
<tr>
<td>MICRO SEIKI CD-2-Z2, CD Player</td>
<td>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 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 ± 0.1 dB. THD &lt;0.0015%. S/N &gt;104 dB, dynamic range &gt;96 dB; analog output 2 V rms; 167 lb.</td>
</tr>
<tr>
<td>Mission PC4000 Programmable CD Player</td>
<td>Features wireless remote control with volume control; direct-access track, index, and time selection; volume control through Mission Precision Control System; same error correction as MCID 7000 with additional 8-bit error correction; full 16-bit D/A converters with 4-times oversampling. 32 lb.</td>
</tr>
</tbody>
</table>

**Kyoce ra DA-410cx**

- 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...$500

**D. 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-time display programs; 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 (± 0.5 dB); THD 0.003% (± 1 kHz). S/N dynamic range 100 dB; 17.25" x 16.5" x 10.88" d; 24 lb. $1,399

**MEISTRANZ CD-94 FS CD Player**

- Programs 20 tracks in any order; 16-bit D/A converter, headphone jack; 6-function remote; skip forward and back; speed search (audible at 2 slower speed; speed search; 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. |

**MISSION PC4000 Programmable CD Player**

- Features wireless remote control with volume control; direct-access track, index, and time selection; volume control through Mission Precision Control System; same error correction as MCID 7000 with additional 8-bit error correction; full 16-bit D/A converters with 4-times oversampling. 32 lb. $1,599

**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 CD-2-Z2, 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 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 ± 0.1 dB. THD <0.0015%. S/N >104 dB, dynamic range >96 dB; analog output 2 V rms; 167 lb. $3,995

**STEREO REVIEW FEBRUARY 1988**

- Page dimensions: 568.3 x 762.2
- Image 0x0 to 568x762
- $17.23" w x 3.38" h
- Freeze frame; random access
- Include fast motion; slow motion; reverse play; ID of disc type; programming. Video features laser; track/index, track elapsed time and disc
- Remote-controlled combination player for CD - CDV474 CDV/CD/Videodisc Player
- 20,000 Hz (± 0.5 dB); THD <0.004%; S/N >96 dB. 30 lb...
- FR 5-20,000 Hz ± 0.5 dB; THD <0.003%; S/N >94 dB.
- 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...
- $749-$799
- $550
- $749-$799
- $1,599
- $1,399
- $2,195
- $1,795
- $3,995
- $1,500
- $350
- $379
- $330
- $280
- $1,500
- $400
- $500
- $650
- $1,399
- $330
- $300
- $480
- $400
- $500
### COMPACT DISC PLAYERS

<table>
<thead>
<tr>
<th>Model</th>
<th>Features</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEC CD-610</td>
<td>Features wireless remote control. Features programming of 24 tracks in any order: 3-way repeat, skip forward, skip back, audible fast forward and reverse; shuffle play; memory.</td>
<td>$650</td>
</tr>
<tr>
<td>DP-409R 5-Disc Compact Disc Changer</td>
<td>Auto-changer holds 5 discs; 3-beam laser; repeat track and disc; skip track; 30 segment programmable; 16-function remote control</td>
<td>$250</td>
</tr>
<tr>
<td>DP-311R Remote-Controlled CD Player</td>
<td>Features 3-beam laser; 36-selection programmable; skip function; repeat play; 10-function remote; adjustable headphone level</td>
<td>$300</td>
</tr>
<tr>
<td>ONKYO CD-500 Compact Disc Player</td>
<td>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.</td>
<td>$3,999</td>
</tr>
<tr>
<td>NEC CD-610</td>
<td>Features 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; shuffle play; memory.</td>
<td>$599</td>
</tr>
<tr>
<td>ONKYO DX-610 6-Disc Compact Disc</td>
<td>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.</td>
<td>$600</td>
</tr>
<tr>
<td>NEC CD-410</td>
<td>Features 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; shuffle play; memory.</td>
<td>$359</td>
</tr>
<tr>
<td>NEC CD-810</td>
<td>Features 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; shuffle play; memory.</td>
<td>$398</td>
</tr>
<tr>
<td>ONKYO DX-350 CD Player with Remote</td>
<td>CD player with opto-coupling that electrically separates digital and analog 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 play; disc eject; headphone jack with adjustable level; output CMN filter; digital filter; vibration damping; 3-beam laser; digital output terminal: printed circuit boards with specially designed insulation package.</td>
<td>$600</td>
</tr>
</tbody>
</table>

### Specifications

- **Headphone output**: 35 mW/40 ohms.
- **S/N**: >104 dB.
- **THD at 1,000 Hz**: 0.0025%.
- **Disc, program, cue by track number, index number, time remaining time, program in memory.**
- **Fast forward; fast reverse; cancel; repeat play.**
- **3-repeat discs; programming of up to 16 tracks.**
- **12.3 lb.**
- **17.12' w x 4.5" h x 13" d.**
- **12.69' d; 13 lb.**
- **19.4 lb, 3 oz.**
- **16.94' w x 3.95" h x 12.69' d; 15 lb.**
- **15 lb, 4 oz.**
- **16.94' w x 3" h x 12.95' d; 11.7 lb.**
- **16.94' w x 3.75" h x 11.41' d.**

---

**SITIREO REVIEW FEBRUARY 1988**
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; Own 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; digital filter; 8-digit FL display; 3-beam laser; vibration damping. 17.12" w x 3.44" h x 14.12" d; 10.6 lb $280

PIONEER
PD-9010X CD Player with Remote
Drawer-loading CD player with 3-beam laser and digital filter. Features programming of 32 tracks in any order; cancel; repeat track; disc; program; skip forward; skip back; audible fast forward and reverse; headphone jack with 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 19.12" d $600

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 19.12" 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; index search; 2-speed fast forward and reverse; quadruple oversampling digital filter; 3 glitch-free DAC converters; 16-bit resolution; 10-bit digital level control; 3-bit digital fader; anti-resonance design with honeycomb chassis and large insulators; headphone jack with magnetic clamp; direct digital output; headphone jack with adjustable level. 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; focus/focus laser; digital discriminator; magnetic clamp; headphone jack with adjustable level. Displays elapsed, total and remaining time $350

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; display: 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 hybrid laser pickup assembly; display: linear discriminator; magnetic clamp; 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; CD function display on remote; programming of 32 tracks in any order from a 6-disc magazine; random play; repeat track; 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; linear servo; linear servo control; side panels finished in genuine rosewood $800

PD-M40 Random-Play CD Changer
Features programming of up to 32 tracks in any order; random play; repeat track, disc, magazine, or program; skip forward; skip back; 2-speed audible fast forward and reverse; anti-resonance honeycomb chassis; linear servo; linear servo control; 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; random play; repeat track, disc, magazine, or program; 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

PD-M40 Random-Play CD Changer
Programmable CD player with 1-beam laser; digital filter; quadruple 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. Mains and mains elapse; repeat track, entire disc or program $349

PROTON

S325 CD Player with Remote
Programmable CD player with 1-beam laser; digital filter; quadruple 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. Mains and mains elapse; repeat track, entire disc or program $349

QUASAR

CD890 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; 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. Mains and mains elapse; repeat track, entire disc or program $349

RCA

MC2245 Programmable CD Player
Compact disc player with Dimensia remote-control operation and on-screen status indication. Power switch/remote control. Displays elapsed, total and remaining time on disc; 16.94" w x 3.03" h x 0.19" d $250

CD8995 Programmable 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 ±0.3 dB. 16.94" w x 3.03" w x 9.44" d $230

STEREO REVIEW February 1988 169
COMPACT DISC PLAYERS

THD 0.005% (at 1,000 Hz); sep 90 dB (at 1,000 Hz); sampling frequency 44.1 kHz. 16.63" x 3" 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-compatible features. 6-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 calendar-style programming by track number, elapsed time. 17.56" x 3.75" x 9.75" d; 41 Ib. $1,395

B226 Remote-Controlled CD Player
Drawer-loading CD player with wireless remote control that can set volume level and automatic power on/off. Features 16-bit quadruple oversampling; regulated digital/analog filtering; 3-beam laser; sound audible during fast scan. Cues by track number, elapsed 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" x 3.22" x 12.36" d. $370

ROTEL

RCD820BX Programmable CD Player
Programs 20 tracks; repeat track, disc, or program; 16-bit quadruple oversampling; regulated power supplies. FR 20-20,000 Hz ± 0.1 dB; S/N > 100 dB; cd sep > 90 dB; 17.7" x 4.3" x 13" d; 18.7 lb. $99

RCD850 Programmable CD Player
Drawer-loading CD player with 9 tracks in random or sequential order. Features skip forward, skip back, fast forward, reverse, cancel; repeat track, repeat disc, selectable by track; cue forward/reverse; sound audible during fast scan. Cues by track number; displays current track number, elapsed time of current track. 17" x 3.81" x 11.44" d; 9 lb. $375

SAE

DI102 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; audio music program search; repeats phrase, track, disc; index search; 4-disc auto spacing; elapsed/total time indicators; timer switch; remote control; S/N 110 dB; FR 5-20,000 Hz; 17.63" x 3.88" x 15.94" d; 23.1 lb. $1,300

CD-X701 Programmable CD Player
Features 3-beam laser, oversampling digital filter; 2-speed remote control; AM/FM; APSS; APLD; APSS; cue/review; play time display in seconds and minutes. 17" x 3.13" x 11.75" d. $280

SHARP

SCOTT

DA900 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 digital/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; repeat and continuous play. $200

SEARS ROEBUCK

Sears 9951 Programmable CD Player
Drawer-loading CD player with CD changer 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; 18-bit random function; remote control. $200

S799

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-functional CD player; internally damped suspension; multi-mixing; 3-way repeat operation; 3-beam laser; adjustable output level from remote and front panel: timer play. 16.75" x 4.5" 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" x 3.5" x 10.75" d. $200

S850

SANSUI

CDP-250R Oversampling CD Player
Programs 16 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" x 3.25" x 9.75" d; 11 lb. $300

CDP-250R Oversampling CD Player
Features multi-display function; remote control. $260

CDP-300R Remote-Controlled CD Player
Drawer-loading CD player remote compatible with Sherwood remote-controlled receivers. Features remote 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" x 3.25" x 9.75" d; 11 lb. $300

CDP-300R Oversampling CD Player
Features multi-function display; remote control. $260

D6000 Remote-Controlled CD Player
Drawer-loading CD player with wireless 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; 9-function remote; adjustable headphone; 3-beam laser; compatible with all SANSUI CD players. $999

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-breakpoint analog filter; single D/A converter; display of current track; program and reverse; display of elapsed time of current track; display of program in memory; sound audible during fast scan. Headphone output 5 V; 9 Hz, 11 oz; 16" w x 2.9" h x 10.6" d $399

SONOGRAF

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. 18.8 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; multiple power supply; 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 front and remote 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; monochrome-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 variable and fixed and variable outputs; power supply; 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; dual D/A converters; sound audible during fast scan; Cues by track and index number $800

Sony CDP-5F

CDP-5F 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, 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, program next track number, index number, program next track number, and program accumulation time. 17.5" 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 filter with double (88.2 kHz) oversampling; envelope error detection. LCD indicates elapsed time of track, remaining time of disc, program number, track number, index number, programs and next track number, and program accumulation time. 17" x 4" x 13.25" $260

TANBERG

TCP 3015A 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. Wooded side panels and remote control optional. 17.15" 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; multi-function: FL display; headphone jack with adjustable level; on-off switch; 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; 7th-order analog filter; D/A converter; digital filter, 2 D/A converters; timer compatible; repeats disc, program, track, phrase, vibration-damping hardware base; 3-beam laser; linear pickup; motor; no-capacitors between D/A converters; display of elapsed 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 ± 0.3 dB; s/N >95 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 >90 dB (at 1,000 Hz); output 2 V rms; 17.5" w x 3.8" h x 11.7" d; 13.3 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 (88.2 kHz); 7th-order analog filter; 2 D/A converters; timer compatible; repeats disc, program, track, phrase, vibration-damping hardware base; 3-beam laser; linear pickup; motor; no-capacitors between D/A converters; display of elapsed 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 ± 0.3 dB; s/N >95 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 >90 dB (at 1,000 Hz); faceplate 2 V rms; 17.5" w x 3.8" h x 11.7" d; 13.3 lb $749

ZD-880 Remote-Controlled CD Player

2D digital circuit; 3-beam laser; linear pickup motor; double-oversampling (88.2 kHz) digital filter; 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, scanning; volume control. 15.1" w x 4.0" h x 11.7" d; 11.1 lb $659

PD-600M 6-Disc CD Changer

Programs 32 tracks in random order; digital and analog filtering; infrared remote control; headphone 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 tracks in random order from unit or remote; number keypad on remote; repeats track, program, disc; scan; displays remaining time of track or disc. FR 2-20,000 Hz ± 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

SL-P1200 Disc/Audiofile CD Player

Top-loading CD player for discs or production cues to any point within track. Rocker control for momentary advance or retard. Features quartz-locked pitch control (± 8%); 2-speed cueing; rear-panel remote jack for mixer; infrared remote control; audio tape output. 17.1" w x 4.5" h x 11.7" d; 13 lb $1,000
COMPACT DISC PLAYERS

**SL-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; headphone jack with adjustable level; programmable music scan plays start of each track for up to 99 sec. 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, 10-key number, 10-key number, 10-key number, 10-key number, 10-key number, 10-key number, 10-key number, 10-key number, 10-key number, 10-key number, 10-key number, 10-key number, 10-key number.

$450

**SL-P120 Quick-Access CD Player**
1-second average access to any track, 20-track random programming; headphone jack with volume control; high-speed access with 2-purpose search/skip buttons; display of number of tracks, programmed tracks, current track, elapsed, remaining time of current track, disc, or program.

$500

**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 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. Over-scores at 88.2 kHz. Displays current track number, elapsed time of current track, 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 12.5 d; 11 lb

$350

**YAMAHA**

**CDX-5000 Hi-Byt 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 system compatible. Black. 55 lb

$2,200

**CDX-1100U Hi-Byt 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 programming; random play; index search; front-panel headphone jack; black. 35 lb

$1,099

**CDX-2000U Remote-Controlled CD Player**
Features Yamaha LSI technology; 3-beam laser, independent L/R by digital filters; vibration damping circuit assembly; 10-key direct access; 12-track programmable random-access play; in-digit 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 function; 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

**CDX-1000U Hi-Byt CD Player**
Features Hi-bit quadruple-oversampling digital filter; twin high-speed-12-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; Rs integrated system level control; Rs integrated system remote control compatibility. Black. 17 lb

$649

**CDX-400U Programmable CD Player**
Features 3-beam laser; independent L/R by 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 play; headphone jack; subwoofer output terminal; gold-plated jacks.

$799

**TOSHIBA**

**XR-9037 Remote-Controlled CD Player**
Remote with volume control; digital peak search; 20-track random-programmed tracks, 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 NiCd battery or 4 AA batteries; 16-track random memory with repeat (AC only)

$450

DIRECTORY OF MANUFACTURERS

Acoustar (Rockford Corp.), 613 S. Rockford Dr., Tempe, AZ 85281
Acoustic Research, 330 Turnpike St., Canton, MA 02021-2703
A.B.C. (Division of Pyle-USA), 71 Chapel St., Newton, MA 02195
Adcom, 11 Elkins Rd., E. Bruns-
wick, NJ 08816
a/d/s (Analog and Digital Systems), 3639 Pleasant Way, Wilmington, MA 01887
Advent (Division of Int'l Jensen), 4136 N. United Parkway, Schiller Park, IL 60176
Aero (Acoustic Engineering and Research Organization), Baltimore Washington Industrial Park, 8332 Bristol Ct., Jessup, MD 20794
Alwa, 35 Oxford Dr., Moonachie, NJ 07074
Akai, 225 Old New Brunswick Rd., Piscataway, NJ 08854
Allison Acoustics, 7 Tech Circle, Natick, MA 01760
Altec Lansing, Milford, MA 01837
American Acoustics (Mitek Group), Natick, MA 01760
Apogee Acoustics, 35 York Industrial Park, Randolph, MA 02368
Ariston Acoustics, 12 Rt. 17 North, Suite 309, Paramus, NJ 07652
Audio by Van Alstine, 2202 River Hills Dr., Burnsville, MN 55337
Audio Design Associates, 602-610 Mamaroneck Ave., White Plains, NY 10605
Audio Dynamics, 71 Chapel St., Newton, MA 02195
Audio Pro by Sonic Research, 180 Sunny Valley Rd., New Milford, CT 06876
Audioquest, 629 Camino de los Mares, #306, San Clemente, CA 92672
Audio Research, 6801 Shingle Creek Parkway, Minneapolis, MN 55430
Audiosoftware, 1185 Chess Dr., Foster City, CA 94404
Audio-Technica, 1225 Commerce Dr., Stone Mountain, GA 30083
B & K Components, P.O. Box 331, Orchard Park, NY 14127
B&W Loudspeakers, P.O. Box 653, Buffalo, NY 14240

172 Stereo Review February 1988
**RECORD MAKERS**

by Christie Barter & Steve Simels

The 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-

![Image of Ron Wood and Bo Diddley]

nial/Harpers & 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.

The Woods, Richie Havens

Last month, when the Seattle Opera mounted its new production of *Orfeo* (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.

Is 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.

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?

You can't keep a good man down, and English guitarist, songwriter, and musician's musician Richard Thompson is no exception. Dropped by PolyGram re-
Ken Russell's operatic visions: Puccini in outer space?

Recently 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.

Thompson: Capitol musician 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 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.

Although she was born in Rome, the violinist Nadja Salerno-Sonnenberg 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 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.

Grace Notes. 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 from Empire Entertainment: Assault of the 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.
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 Spot to fail. We wanted to hear a difference." They drove the product of Bob's round-the-clock modifications and their nominees for 'test 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 hear 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 discriminating audiophiles in the world, Bob's new design is their sonic equal.

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/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.

Specifications: Power, 200 watts/channel into 8 ohms 20Hz to 20kHz, both channels driven with no more than 0.15% THD. Long Term Sustained RMS power, 500 watts into 4 ohms, 350 watts into 8 ohms. Bridged Mono power, 1000 watts into 8 ohms. Noise, -120dB LHIA-weighted. Weight, 20 lbs.
BEST RECORDINGS OF THE MONTH

Stereo Review’s critics choose the outstanding current releases

IMPRESSION JAZZ FROM BRANFORD MARSLIS

To 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 Alberston

BRANFORD MARSLIS: 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, CK 40711 (57 min).

MOZART BY SERKIN AND ABBADO

In 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

Branford Marsalis: one of the brightest young stars on the jazz scene today
What a joy to play it!" And perhaps about it—What a joy to listen to it!—anything you or I might find to say interpretation, it is simply, "This music says anything at all about inter-
or "This is my Mozart." If his play-

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 accom-


Horowitz's magic 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


If Horowitz's magic 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


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 "slow-

MOZART'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 re-

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


Giulini and Horowitz: magic


Giulini and Horowitz: magic


Giulini and Horowitz: magic


Giulini and Horowitz: magic


Giulini and Horowitz: magic


Giulini and Horowitz: magic


Giulini and Horowitz: magic


Giulini and Horowitz: magic


Giulini and Horowitz: magic
THE ULTIMATE PERFORMERS!
Radio Shack's Newest Compact Disc Players

Remote-Control Performer! Realistic CD-1500 combines state-of-the-art digital stereo sound and the convenience of a wireless remote. You can program up to 24 selections to play in any sequence. Without leaving your chair, you can search, pause, fast-forward, replay a cut or an entire disc. Only $259.95

Great-Value Performer! Our Realistic CD-2300 is everything you'd expect in a top-quality compact disc player. You get random-sequence programming for up to 15 selections, auto-search music system and 4-digit fluorescent display. High-speed forward/reverse search lets you find your favorite selections fast. Our proven Tri-Spot laser pickup system and new "floating" disc tray assure precise, accurate tracking. And it's only $219.95

Portable/Home Performer! Enjoy magnificent headphone stereo anywhere with the Realistic CD-3100 compact disc player. It's lightweight and really compact for easy carrying. Only 6 1/2 x 5 1/2 x 1 3/16" with battery pack attached. Access tracks fast with 16-selection memory and auto-search. And, since it includes an audio output cable, you can also play it through your home stereo. With carry strap and battery pack. Only $279.95

Extended Service Plan Available. We offer extra buyer protection at low cost to take the worry out of maintaining your CD player. Come in today and hear the superb sound of Radio Shack's new compact disc performers—they're as close as you can get to live music without being at the actual performance.

Radio Shack
A DIVISION OF TANDY CORPORATION

Send for Your FREE Catalog!
Mail to Radio Shack, Department 88-A-1198
300 One Tandy Center, Fort Worth, TX 76102

Restore your appreciation of music with Radio Shack Compact Disc players!
ROBBIE ROBERTSON’S COMEBACK

Robbie 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 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 fragmentary, 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 “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 a crazily evocative 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

NOW ON CD
Compact Discs of previously released LP’s

POPULAR

- CULTURE CLUB: This Time—The First Four Years. VIRGIN/Epic FK 40913 (plus bonus tracks). Recordings dating from 1982 to 1986.
- 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: Low All the Hurt Away. ARISTA ARCD 8368. “Sensational” (Best of Month, December 1981).
- THE ZOMBIES: Odyssey and Oracle. RHINO RNCD-70186. The band’s swan song of 1968 and “one of the loveliest albums of the British Invasion.”

CLASSICAL

- DELIUS: Songs of Farewell: Idyll; A Song of Summer; Cynara; Caprice and Elegy; other short works. Lot.
Come to where the flavor is.

Marlboro Red or Longhorn 100's—
you get a lot to like.

SURGEON GENERAL'S WARNING: Smoking Causes Lung Cancer, Heart Disease, Emphysema, And May Complicate Pregnancy

16 mg "tar," 1.0 mg nicotine avg. per cigarette, FTC Report Feb '85
Yamaha introduces
four wheel drive.

The new Yamaha CDV-1000 breaks new ground in home audio-video entertainment. It starts with those four discs up there. Together, they represent the highest quality source material on the market today.

And the CDV-1000 plays each and every one of them flawlessly. So now you can watch rock concerts and movies on 8" and 12" laser discs. Listen to a symphony on a regular compact disc. Or watch your favorite music videos on the new 5" CD Video discs.

The CD Video disc is a combination of audio and video. So when you play one on the CDV-1000, you not only get an incredible 425-line horizontal resolution of the video, but also the clear, clean audio that can only come from digital technology.

Of course, we wanted to keep the CDV-1000 simple and easy to use. That's why we gave it fast access. And a super-tracking tilt servo laser head for accurate tracking. All of which makes the CDV-1000 an incredibly versatile, high performance component. And one that no home theatre environment should be without. Just ask your Yamaha audio dealer for a demonstration. Then hear, and see, for yourself what we're driving at.

Yamaha Electronics Corporation, P.O. Box 6660, Buena Park, CA 90622.
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 0 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. Machines can’t do everything.

M.P.

HEAVY YELLO

THE CARPENTERS have just finished propelling 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 revolution, 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 brass 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; Santiago; Goldrush; Oh Yeah; Dr. Von Steiner; Si Señor the Hairy Grill. MERCURY 832 675-1, © 832 675-4, © 832 675-2 (49 min).
song wafts past you in a haze of overproduction, 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, instrumetals); instrumental accompaniment. Just One Kiss; Shelter from the Night; My Heart’s in Good Hands; Fly on the Wall; Feel Like Foolin’ Around; She’s Already Gone; Hands; Fly on the Wall; Feel Like Fool -&-r-b, and all-American pop and coun-

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 &-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 &-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 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 Desire 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 trashy hotel rooms. In any case, producer Jim-my 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.
JESSE'S GANG: Center of Attraction. Jesse's Gang (vocals and instrumental), other musicians. Love's No Mystery; Center of Attraction; Real Love; A Fantasy; Your Way; Noiz Without Words; and four others. GEFFEN 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.

THE NEIGHBORS: Welcome Wagon. The Neighbors (vocals and instrumental). 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 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 that of the past was really all about.

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 where 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.

THE RED HOT CHILI PEPPERS: The Uplift Mofo Party Plan. The Red Hot Chili Peppers (vocals and instrumental). Fight Like a Brave; Funky Crime; Me and My Friends; Backwoods; Skinny Sweaty Man; and seven others. MANHATTAN ELT-48036, © EAT-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

---

Radar detectors: Which are really best?

These days every maker says their radar detector is best. Who's telling the truth?

Freedom of the press

If you read movie ads, you know how each one finds a short phrase from a review that makes it sound like "the year's best!" Well, some detector makers play the same game.

But we won't play games. Below are the overall results of the three most recent independent tests of radar detectors.

<table>
<thead>
<tr>
<th>Car and Driver</th>
<th>Roundel</th>
<th>Popular Mechanics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passport (Escort not tested)</td>
<td>Escort</td>
<td>Escort</td>
</tr>
<tr>
<td>Passport</td>
<td>Escort</td>
<td>Escort</td>
</tr>
<tr>
<td>Cobra</td>
<td>Whistler</td>
<td>BEL Quantum</td>
</tr>
<tr>
<td>Uniden</td>
<td>Radio Shack</td>
<td>Maxon</td>
</tr>
<tr>
<td>BEL</td>
<td>Cobra</td>
<td>Fox</td>
</tr>
<tr>
<td>Whistler</td>
<td>BEL Vector</td>
<td>Maxon</td>
</tr>
<tr>
<td>Sparkomatic</td>
<td>Snooper</td>
<td>Fuzzbuster</td>
</tr>
<tr>
<td>Fox</td>
<td>Sparkomatic</td>
<td>GUL</td>
</tr>
<tr>
<td>GUL</td>
<td>Sunkjong</td>
<td>BEL</td>
</tr>
</tbody>
</table>

Here's the proof

Call us toll-free (1-800-543-1608) and we'll send you the complete, unedited tests. Read exactly what the experts say.

How to order

We sell direct to you. Orders in by 3:00 pm eastern time go out the same day, and we pay for UPS shipping. Overnight Federal Express delivery is only $10 extra. If you're not completely satisfied within 30 days, return your purchase. We'll refund all your money, including return postage.

For top-rated protection, just call us toll-free.

---

For Information, call toll free 1-800-543-1608
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 and 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 sharp and piercing next to each other, Nelson's taut, nasal delivery sounding especially unappealing, while Haggard's rich, leisurely baritone. Then 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 a companionate and the bourbonッグ. For one thing, 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 steelly suffering, but it is Haggard who really shines, pouring himself across the lines, reveling in his capacity for tenderness and pain, and creating the sensation of being seventeen and drunk on cheap wine.

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 Errol Hickey stance, describes his music as "countrybilly" and "rockgrass." What that really means is that Springfield offers a mishmash 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 bravado 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 Sned 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.

SQUEEZE: Babylon and On. Squeeze (vocals and instrumental). Hourglass; Footprints; Tough Love; The Prisoner;
KEEPING A HIGH-TECH HELICOPTER IN THE AIR STARTS ON THE GROUND.

Every Army helicopter is thoroughly inspected by a small army of highly trained specialists.

Avionics technicians test thermal imaging sights to make sure they turn night into day.

Systems repairers check laser rangefinders to see if they're on target.

Crewchiefs and mechanics adjust turbine engines and double-check powershafts.

With more than 8,600 aircraft, the Army needs intelligent, highly motivated young people to train in dozens of skills. Some of these specialties offer a young man or woman the opportunity to fly as part of the crew.

So if you're interested in learning a skill that could lead to a high-flying career, check into Army Aviation. You could end up with the tools to build a brighter, more rewarding future.

For more information, contact your local Army Recruiter today. Or call this toll-free number: 1-900-USA-ARMY.

ARMY. BE ALL YOU CAN BE.
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. Is a: Windmill; White Water; Route 17; and six others. GRF @ 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 unmistakable.

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 talents of Count Basie and Sarah Vaughan 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.
Deceptive Engineering

Obvious but very deceptive...
You'll probably notice our 50-watt RX-533 offers obvious features such as Digital AM/FM cassette/radio with Dolby® B & C noise reduction, 24-preset stations, preset scan, tape program search, separate bass & treble tone controls, etc., and of course, it's removable!

But you'll probably overlook the not-so-visible but specially engineered features such as FM optimizer II circuitry designed for superior FM reception and built-in Automatic Radio Monitor for filling the void with music while you are fidgeting with your tape. Special cassette features such as "Auto Azimuth Correction System" rotates the tape head 180 degrees whenever tape direction changes to keep perfect azimuth alignment, Keyoff Pinch Roller Release minimizes wear and tear of tape pinch roller and DC servo motor accurately controls tape movement thus minimizing wow and flutter.

Plus pre-amp outputs and CD/AUX input capability designed for flexible system expansion, two-tone illuminated control panel guarantees easy viewing and identification and replaceable Lithium back-up battery helps protect and store information in the microprocessor.

Though not in plain view, these state-of-the-art engineering innovations are obviously what you have come to expect from a company with over 11 years of manufacturing experience. Coustic...a sound investment.

Coustic
4260 Charter Street
Vernon, CA 90058-2596
(213) 582-2832
BECAUSE ALL CD'S ARE NOT CREATED EQUAL, THE NEW CARVER DTL-200 MK II COMPACT DISC PLAYER IS INTRIGUINGLY DIFFERENT.

The Carver DTL-200 MK II answers the audiophile's demand for a CD Player which provides not only the greater dynamic range and richer bass expected from compact disc technology, but also the musicality, spectral balance and spatial qualities of well executed analog high fidelity recordings.

The new remote control Carver DTL-200 MK II represents the next logical evolutionary step towards marrying the awesome technology of digital playback with Bob Carver's commitment to the recreation of the live performance. It embodies the latest digital/analog conversion circuitry with oversampling, sophisticated laser system and a wealth of operating features. And it possesses unique Carver circuitry that solves real-world sonic problems associated with commercial CDs.

TIME DOMAIN CORRECTION. The Carver DTL-200 MK II incorporates an important new computer logic innovation that monitors the incoming digital signal for imperfections and "glitches" caused in recording and production. Such errors are immune to conventional error-correction processes because they are actually data anomalies. Yet they can add overall harmonic distortion and cause audible changes in sound quality.

The DTL-200MK II's Time Domain Correction circuit constantly performs a complex, 25-bit digital calculation on passing data. This high-speed error correction algorithm, in conjunction with a 121-pole digital filter, terminates distortion-causing high harmonics as they occur in the bit stream. The result is frequency response within 1/1000 of a dB of the original, with significant reduction of distortion to less than 0.007%.

PLUS THE DIGITAL TIME LENS. On top of this unerring ability to produce natural, real-sounding music from the CD's digital bits, the Carver DTL-200 MK II has the remarkable Digital Time Lens circuit to ensure your listening enjoyment.

When Bob Carver obtained his first compact disc player, he was surprised at the sound derived from most of the compact discs he purchased. The three-dimensional musical perspective which his analog system provided in lush abundance on phono discs evaporated into a flat, brittle wasteland. After extensive testing, Bob uncovered two fundamental flaws in almost all compact discs: 1) An unpleasant, harsh spectral energy balance. The overall octave-to-octave energy balance was shifted on the CD towards more midrange above 400Hz. 2) The amount of L-R signal (which carries the special detail of the music) on the CD was inexplicably, but substantially, reduced when compared with the amount of L-R signal found on the corresponding analog disc. The difference is obvious in these two oscilloscope photos.

A. Lissajous pattern showing spatial detail (L-R) (L+R) ratio from an LP record.
B. The same instant of music but taken from the CD version. Note the decreased (L-R) content, as shown by the narrowed trace.

Carver's circuitry corrects the ratio of L-R to L+R by performing one extra, but important mathematical operation on the signal stream that all other CD players fail to perform. This final operation makes all the difference.

The result is a natural sound with more of the three-dimensional information that places us in the same space with performers. You won't need the Digital Time Lens on all CDs. But it is there when you need it.

In the beginning, Carver hoped, indeed he expected, that once recording artists and engineers became more experienced with CD technology fewer and fewer CDs would require the Digital Time Lens. But both laboratory and listening tests reveal that the majority of even the most recently released CDs benefit significantly from the Digital Time Lens.

PACKED WITH USEFUL FEATURES. The Carver DTL-200 MK II makes enjoying Compact Discs a simple exercise in button pushing from your favorite listening chair. You can program any combination of up to twelve tracks from a single CD, repeat a specific track or a whole Compact Disc for uninterrupted enjoyment.

Along with the ability to skip forward or backwards song-by-song, a touch of a key allows you to audibly review a disc backwards or forwards at many times normal speed. An A-B Specific Phrase Repeat lets you carefully analyze one section of a performance or simply provide a point of reference in a long, un-indexed symphonic movement.

All functions are displayed on an easy-to-read but subtle LCD display including programming sequence, current selection number, individual and total playing times plus indexing cues.

HEAR THE CARVER DIGITAL DIFFERENCE. Just as all CDs are not created equal, neither are Compact Disc Players. Of all the models currently available, only the new DTL-200 MK II (and DTL-50) have the innovative and exacting Bob Carver touches that can substantially enhance your enjoyment of the digital medium.

Audition the new DTL-200 MK II today at your Carver dealer, using a variety of discs. You will be surprised at how audibly it can improve on what is already the best playback medium ever offered.

SPECIFICATIONS. Frequency Response, 5Hz-20kHz @ 0dB. THD -0.03%. Total Harmonic Distortion, 0.007%. S/N, -100db. Channel Separation, 90dB. Dynamic Range, 96dB. Wow & Flutter, unmeasurable. Programming, 12-track remote and manual.

BECAUSE ALL CD'S ARE NOT CREATED EQUAL, THE NEW CARVER DTL-200 MK II COMPACT DISC PLAYER IS INTRIGUINGLY DIFFERENT.
CLASSICAL MUSIC

Discs and tapes reviewed by
Robert Ackart, Richard Freed,
David Hall, Stoddard Lincoln

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’Oiseau-Lyre 0 417 621-1, 0 417 621-4, 0 417 621-2 (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 Beznosuk’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 0 33C0-1586 (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 Rosenberg (piano); Scottish Chamber Orchestra, Eric Pritchard, Kate Ransom, Sandy Wilson, and Paul Yarbrough.

ALEXANDER STRING QUARTET

Despite 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


EXPLANATION OF SYMBOLS
○ = DIGITAL-MASTER LP
© = TAPE CASSETTE
© = COMPACT DISC (TIMINGS ARE TO NEAREST MINUTE)
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. Recommened.

S.L.

MONTEVERDI: Vespro della Beata Vergine. Solos; 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.

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 Schauspiellektor (see SALIERI)


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 titles 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.

192 STEREO REVIEW FEBRUARY 1988
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 Stefanowska-Lukowicz (harpsichord); Helga Bohnstedt (electric guitar); 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 fuzzy 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.


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 transferred 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.
**Stereo Headphones**

- **Beyerdynamic DT-990**
  - Audiophile Stereo Headphones
  - Open style headphones with an unbeatable frequency response of 3-30,000 Hz
  - Unique moving coil assembly
  - Exceptional detail
  - Sale: $159.95
  - List: $199

- **Beyerdynamic DT-880**
  - Studio Pro quality flat response
  - Sale: $179.95

- **Beyerdynamic DT-770**
  - Closed ear headphones
  - Sale: $149

- **Beyerdynamic DT-220**
  - Closed ear headphone
  - Sale: $199

- **Beyerdynamic DT-330**
  - Semi-open lightweight
  - Sale: $169

- **Koss JCS-200**
  - New wireless headphones
  - Sale: $117.95

- **Koss Pro4AAA**
  - Closed ear headphone
  - Sale: $149.95

- **Sennheiser HD-414SL**
  - Open air digital ready
  - Sale: $154.95

- **Sennheiser HD-430**
  - Wide response open air
  - Sale: $184.95

- **Sony MDR-6**
  - New lightweight digital ready
  - Sale: $189.95

- **Sony MDR-V6**
  - Closed ear digital ready
  - Sale: $189.95

- **Sony MDR-A60**
  - Lightweight digital ready
  - Sale: $164.95

- **Sony MDR-31A**
  - Lightweight on-ear style
  - Sale: $199

**Audio Specials**

- **Terk FM-9500**
  - Indoor FM Electronic Antenna
  - Perfect for the apartment or office
  - Modern high-tech design
  - 24-bit digital sound
  - Digital clock
  - Sale: $79.95
  - List: $99

- **Koss JCS-200**
  - New wireless headphones
  - Sale: $117.95

- **Sennheiser HD-414SL**
  - Open air digital ready
  - Sale: $154.95

- **Sennheiser HD-430**
  - Wide response open air
  - Sale: $184.95

- **Sony MDR-6**
  - New lightweight digital ready
  - Sale: $189.95

- **Sony MDR-V6**
  - Closed ear digital ready
  - Sale: $189.95

- **Sony MDR-A60**
  - Lightweight digital ready
  - Sale: $164.95

- **Sony MDR-31A**
  - Lightweight on-ear style
  - Sale: $199

**VHS Video Movie Specials**

- **Back To The Future**
  - Sale: $24.95
  - Each

- **A Star Is Born**
  - Sale: $24.95
  - Each

- **All Quiet On The Western Front**
  - Sale: $24.95
  - Each

- **The Bank Dick**
  - Sale: $24.95
  - Each

- **Destry Rides Again**
  - Sale: $24.95
  - Each

- **Palm Beach Story**
  - Sale: $24.95
  - Each

- **The Invisible Man**
  - Sale: $24.95
  - Each

- **The Bank Dick**
  - Sale: $24.95
  - Each

- **The Plainsman**
  - Sale: $24.95
  - Each

- **She Done Him Wrong**
  - Sale: $24.95
  - Each

- **A Connecticut Yankee In King Arthur’s Court**
  - Sale: $24.95
  - Each

**J&R Audio Specials**

- **Sony D-10**
  - Portable Compact Disc Player
  - Random access programming
  - Shuffle play
  - LCD display
  - Sale: $319.95
  - List: $389

- **Teac PD-410**
  - Remote Programmable CD Player
  - Double oversampling digital filter
  - 32-track random programming
  - Index search
  - Sale: $179.95
  - List: $249

- **Technics SL-P420**
  - Programmable Compact Disc Player
  - High speed transport
  - Antivibration construction
  - Sale: $259.95
  - List: $329

**Audio Specials**

- **dbx 18X-DS**
  - Dynamic Range Controller
  - Special impact recovery system
  - 24-bit/44khz sound
  - Stereo focus & ambience control
  - Overeasy compression
  - Sale: $79.95
  - List: $99

- **JVC XLV-450**
  - Remote Programmable CD Player
  - 32-track random programming
  - Pressure sensitive
  - Sale: $249.95
  - List: $325

- **Teac PD-660M**
  - Multiplay Compact Disc Changer
  - Now you can enjoy your own private compact disc without interruption
  - Sale: $279.95
  - List: $329

**Sony Audio Tape Specials**

- **Sony UX-ES90**
  - High Bias Audio Cassettes
  - Magnetic insulation
  - Sale: $179.95
  - List: $229

- **Sony UX-PRO 90**
  - High Bias Audio Cassette Special
  - Professional reference tape
  - Sale: $23.90
  - Each

**Stereo Receiver Specials**

- **Technics SA-929**
  - Digital AM/FM Stereo Receiver
  - 160 watts/channel
  - LCD digital display
  - Sale: $159.95
  - List: $199

- **Akai AAV-205B**
  - Remote Audio/Video Receiver
  - 65 watts/channel
  - Advanced A/V control
  - Sale: $249.95
  - List: $299

- **JVC RX-950VBK**
  - High Power Audio/Video Receiver
  - 320 watts/channel
  - PLL with crystal lock
  - Sale: $299

**VOICES OF THE INVISIBLES**

- **Palm Beach Story**
  - The Invisible Man
  - Destry Rides Again
  - Sale: $35.95
  - Each
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 ground, 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; Kristzina Laki (soprano), Made moiselle Silberklang; Thomas Hamp son (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 (vaudev ille 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 performances 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. Interplay 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.


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 poignant 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.
ILLINOIS AUDIO
12 EAST DELAWARE PLACE, CHICAGO 60611
312-664-0020 • 800-621-8042

SAVE MONEY • TIME • FREIGHT

TECHNICS CASSETTE DECKS

RSB-915 Soft touch controls w/Dobly B C $ 95.00
RST-922 Dobly B C w/Hi-Speed Dubbing $145.00
RST-55R Dobly B C & dbx dbx Deck w/Reverse Edit. CALL

TEAC CASSETTE DECKS
R-68X 3 Mtr. 3 HD. B C $99.00
R-616X Dobly B C & dbx w/Auto-Reverse $234.00
V-770 3 HD. 2 Mtr. with Dobly B C & MX PRO. $289.00

SONY CASSETTE DECK
TCW-223 Hi-Speed Dubbing $149.95

JVC CASSETTE DECK
DDVR773 Quick Rev. Dobly B C & dbx $239.00

TEAC VIDEO
MV-350 HD Circuity mono. w/Remote $239.95

RECEIVERS/TUNERS/AMPS/PROCESSORS

TECHNICS ST-240 (100x2) 75eq w/Remote. $360.00
TECHNICS ST-G40 AM/FM Q不利于 Tuner w/16 Presets. $119.00
TECHNICS SU-V50 (90x2) Class AA Integrated Amp. Video & CD Inputs $247.00

TECHNICS SA-R410 (100x2) 75eq w/Remote $360.00

SURROUND SOUND DECODER
SHURE AV200 Video-HiFi system expander w/Dolby surround sound $389.00

SOLID STATE AMPLIFIER

TECHNICS SA-8045 14 Bd. w/Analyzer $150.00
TEAC-EDA-208 10 Bd. per Channel w/Tape Dubbing $99.95

TECHNICS SA-415X 10 Bd. per Channel w/Computer Memory $169.95
TECHNICS SS-52XK NEW! Computerized, 12 Bd per Ch., w/Spectrum Analyzer & Remote $399.95

EQUALIZERS

KENWOOD KR-V56R (55x2) AM/FM Audio-Video receiver 20 Inputs, 5 Bd. CD Ready w/Remote CALL
KENWOOD KR-V56R (80x2) w/Remote CALL
SONY STR-AS31 (40x2) AM/FM Digital & Remote CALL

TECHNICS SA-290 (50x2) Quartz Digital Receiver, Video & CD Inputs, 16 Presets $155.00
TECHNICS SA-R310 (55x2) Audio/Video Receiver w/Remote $255.00

TECHNICS SL-2803X Fully Auto, Belt Drive $99.00
SL-0033X Above w/Quartz Direct Drive $121.00
SL-0033X Fully-Auto, Quartz Direct Drive $128.00

SL-2803X Fully-Auto, Linear Tracking $124.00

PORTABLES/AUTOS

TECHNICS SB-L35 10" 2-WAY $41.00 ea.
TECHNICS SB-L55 10" 3-WAY $57.00 ea.

SONY PORTABLES

WM-F100 II Programmable CD CALL
WM-F100 II Super Walkman w/AM-FM, Dolby & Auto-Rev. $125.00
WM-F77 AM/FM, Cassette w/doby $84.95
DD-100 Famous "Bodo Khan" cassette player CALL

AIWA PORTABLES

HST-260 AM/FM, Cassette w/Doby $49.95
CA-W75 AM/FM, Dubbing W/Doby $115.00

SHARP PORTABLE

WQ-C200 AM/FM, Cassette w/CD $219.95

PANASONIC PORTABLES

RX-F7000 AM/FM, Cassette w/CD $305.00
RX-HD10 Mini-AM/FM, Dubbing Cassette w/HD $155.00

JVC PORTABLE

PC-377KJ AM/FM Cassette w/Auto-Tune, 5 Bd. Eq. & 2-way Spp. $99.95

SONY AUTO.

ES-R12 Hi-Powered, Dobly In-Dash $159.95

JVC AUTO.

XLC-30 AM/FM, CD, 15 TK Prog. CALL
KS-RX305 AM/FM Cass. W/Doby, Auto Reverse $219.95

JENSEN AUTO.

JTX-300 6x9 Tr-axial Speakers (pr.) $59.00
JS-8200 12 Preset Digital AM/FM Cassette Player w/Auto-Reverse, Seek & Scan Tuning & CD Input $145.00

SHERWOOD AUTO.

CRD-210 Digital AM/FM w/Doby B C $165.00
CRD-350 AM/FM w/Doby B C & Tape Scan $185.00

HEADPHONES/TAPE/ CARTRIDGES

SONY MDR-CD6 CD $59.00
KOSS SST-7 Digital Ready $44.95

HEADPHONES

Koss SS-7 Digital Ready $44.95
SONY MDR-CD6 CD Monitors $79.00
SONY MDR-M33 Designed for Portable CD's $39.00
Shure SR-415S Light Weight, Open Air $49.50
Shure SR-222 Light Weight, Closed Design $59.00

TURNABLES/CDs

SONY CD PLAYER
CDDP-21 $199.95
ADC CD PLAYER
CD-162 Remote $165.95
SHURE CD PLAYER
SV-430 3-Beam, 15 TK $229.95
TECHNICS CD PLAYERS
SLP-800C 6-Disc Changer $360.00
SL-PS20 Remote Programmable w/Remote $299.00
SL-320 Black, Programmable w/Remote CALL
SL-120 Black, Programmable CALL

CASSETTE CASES

BASF CRE II-10 CR02 $16.00/10
SHURE CD PLAYER $120.00

HEADPHONES

BASF CRE II-10 CR02 $16.00/10
TDK SA-90 Hi-Bias Cassette $16.50/10
Fujifilm Metal $30.00/10
MAXELL XLII-90 High Bias $16.90/10
MAXELL XLII-90 Premium High Bias $19.50/10
MAXELL MX-90 Metal $25.50/10
SONY UDX-90 High Bias $14.00/10
SCOTCH KSM IV-90 Metal $23.50/10
SCOTCH KS-90 Hi-Bias $2 Mail-in Rebate $14.40/10

SHURE V15 Type VMK $129.00
SHURE M-110M P and Standard Mount $36.50
AUDIO TECHNICA AT-155LC w/Linie Contact $79.95
AUDIO TECHNICA AT-132EP $59.95

SPEAKERS

Audio-Technica AT-155LC $44.95
SONY MDR-CD6 CD Monitors $79.00
SONY MDR-M33 Designed for Portable CD's $39.00

16 YEARS OF MEETING THE NATION'S STEREO NEEDS!
10 to 5 MONDAY—SATURDAY
312-664-0020 • 800-621-8042

Price & Availability Subject to Change
Clearance Time Required on Personal & Company Checks
Freight charges not included in these prices.
Why Pay More? Compare Price and Service. We Carry Most Major Brands of Electronics—At The Lowest Discount Price. Why Pay More?

Your Satisfaction Means Everything To Us!

1. BEST DISCOUNTS On National Brands.
2. SPEEDY SERVICE—Shipped Within 48 Hours.
3. FULL WARRANTY—Factory Fresh.
4. FREE BUYER PROTECTION PLAN.
5. A FAIR APPROACH To Solving Any Problem.

It’s Easy To Save!

Just Do Your Shopping First (Getting Brand and Model Numbers). Then call us to save $$.

### SOME EXAMPLES OF OUR SPECIAL PRICING

<table>
<thead>
<tr>
<th>Brand</th>
<th>Model</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SONY</strong></td>
<td>D-10</td>
<td>$259</td>
</tr>
<tr>
<td><strong>KOSS</strong></td>
<td>JCK200S</td>
<td>$97</td>
</tr>
<tr>
<td><strong>VHS</strong></td>
<td>CAMCORDER</td>
<td>$589</td>
</tr>
<tr>
<td><strong>TOSHIBA</strong></td>
<td>XR9437</td>
<td>$239</td>
</tr>
<tr>
<td><strong>TEAC</strong></td>
<td>V550X</td>
<td>$185</td>
</tr>
<tr>
<td><strong>VHS VCR</strong></td>
<td></td>
<td>$169</td>
</tr>
<tr>
<td><strong>TEAC</strong></td>
<td>MV600</td>
<td>$399</td>
</tr>
<tr>
<td><strong>TOSHIBA</strong></td>
<td>4-HEAD</td>
<td>$279</td>
</tr>
<tr>
<td><strong>SHURE</strong></td>
<td>V15 V MR</td>
<td>$128</td>
</tr>
<tr>
<td><strong>TECHNICS</strong></td>
<td>SLQD33</td>
<td>$189</td>
</tr>
<tr>
<td><strong>EPI</strong></td>
<td>T/E 360</td>
<td>$139 ea.</td>
</tr>
<tr>
<td><strong>WIRELESS</strong></td>
<td>100</td>
<td>$199 pr.</td>
</tr>
</tbody>
</table>

- **SONY D-10** is the smallest portable Discman, with 16-Track Program.
- **KOSS JCK200S** are wireless headphones, advanced technology.
- **VHS CAMCORDER** has 10 Lux, CCD with pan focus system.
- **TOSHIBA XR9437** is an AM/FM CD Walkman with 12 presets, 16 program.
- **TEAC V550X** is a Dolby B+C+dbx and 2-Motor, auto bias cassette deck.
- **VHS VCR** has electronic tuning and HQ circuitry.
- **TEAC MV600** has VHS, MTS, HiFi, VCR with direct access tuner.
- **TOSHIBA 4-HEAD** is a 4-Head, Full HQ with 117 Ch., 4 / 7 Day VHS VCR.
- **SHURE V15 V MR** is a Shure M104 $26, Stanton 681 EEE $48.
- **TECHNICS SLQD33** has a Quartz DD turntable with a Shure V15 included.
- **EPI T/E 360** is a giant floor-standing speaker at Below Dealer Cost.
- **WIRELESS 100** extends your stereo to any room in the house.

---Some Items Limited Quantities---

Please call for quotes on items not listed.

Discount Hotline 1-800-356-9514

OR CALL 1-608-271-6889

Wisconsin Discount Stereo, 2417 W. Badger Rd., Madison, WI

**Hours**
- M-Thurs 8-8
- Fri 9-8
- Sat 9-5
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 Bumby. 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 instrumentalists). 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

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 concept 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 heart-warming 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).

Characters who have become virtual members of the family

STAR TREK IV
AKAI AAV205 Receiver
AKAI AAV305 Receiver
AKAI VS5254 VCR
AKAI VS930U VCR
JVC PCV2 Disc Boom Box
JVC RX750 Receiver
JVC XLM500 Disc Changer
JVC XLM700 Disc Changer
CANNON PC25 Copier
BEL 300 Radar Detector
PANASONIC PV4760 VCR
PANASONIC PV4720 VCR
PANASONIC PV330 Camcorder
PANASONIC PV320 Camcorder
PANASONIC PVS4764 Camcorder
JVC RX111 Receiver
JVC RX750 Receiver
JVC PCV2 Disc Boom Box
JVC RX111 Receiver
PANASONIC PV5764 Camcorder
PANASONIC PV520 Camcorder
PANASONIC PV330 Camcorder
PANASONIC PV700 Camcorder
PANASONIC PV720 Camcorder
PANASONIC PV700 Camcorder
PIONEER VSX5500 Receiver
PIioneer CT3580W Tape Deck
PIioneer PDM70 Disc Changer
PIioneer PDM60 Disc Changer
RCA VM769 VCR
RCA CPR750 Camcorder
RCA CPR350 Camcorder
RCA CPR300 Camcorder
RCA CPR200 Camcorder
RCA CPR100 Camcorder
RCA CPR570 Camcorder
RCA CPR570 Camcorder
SHR OWOD S2730 Receiver
SHERWOOD S2750 Receiver
SHERWOOD S2750 Receiver
SHERWOOD S2770 Receiver
SHERWOOD S2770 Receiver
SHERWOOD S770 Receiver
SHERWOOD S770 Receiver
SHERWOOD S770 Receiver
SHERWOOD S770 Receiver
SHERWOOD S770 Receiver
TOSHIBA DX680 VCR
TOSHIBA DX900 VCR
TOSHIBA DX680 VCR
TOSHIBA DX900 VCR
TOSHIBA DX900 VCR
TOSHIBA DX900 VCR

GUARANTEED PRICES AS SHOWN, OR LOWER
IF YOU DON'T SEE WHAT YOU WANT LISTED GIVE US A CALL. GUARANTEED
WE'LL SAVE YOU BUCKS AND DELIVER ANYWHERE IN THE MAINLAND USA.
ORDERS PROCESSED IN 24 HOURS  SHIPMENTS DELIVERED TO YOUR DOOR

CHECK OUR DEALS!
1-301-290-1788
Mon thru Fri 9am-6pm
Sat 10am-3pm Sun 12pm-5pm
Checks/Money Orders Accepted

FREE
A DIFFERENT KIND OF RECORD CLUB

TREMENDOUS SAVINGS INCLUSIVE COMPACT DISCS
no “agreement” obligation of any kind.

DISCOUNTS 20% TO 73%
omgfl. suggested list... special catalog features hundreds of titles and artists.

MOST LABELS AVAILABLE
including most imports through special custom ordering service—guaranteed satisfaction

DISCOUNT DIVIDEND COUPONS
redeemable immediately for extra discounts.

MUSICLETTERS
informational news and happenings in the world of music... special super sale listings.

DISCOUNT NEEDLE GUIDE
most mfg. replacements available

QUICK SERVICE
same day shipping on many orders... rarely later than the next several days.

100% IRON-CLAD GUARANTEES
on all products and services—your total satisfaction is unconditionally guaranteed

Discount Music Club is a no-obligation membership club that guarantees discounts on all stereo records, tapes and CDs and let you buy what you want when you want... or not at all if you choose. These are just a few of the money-saving reasons to write for free details. You can’t lose so why not fill out and mail the coupon below for immediate information.

DISTRIBUTOR PRICES
TOP BRANDS OF AUDIO & VIDEO

NEW WEST COAST SERVICE
UP TILL 11 pm (EST) [ 8 pm (PST) ]

NO-RISK, NO DEPOSIT
Telephone ordering, Nothing to pay till you receive merchandise

SAME DAY SHIPPING
on orders called in before 1 P.M.

90 DAY LEMON-PROOF
exchange policy

CALL OR WRITE
For Free CD or Equipment Catalog

OPEN 14 HOURS A DAY
DAILY 9 to 11 SAT. 10-5
(301) 488-9600

INTERNATIONAL
HI FI
DISTRIBUTORS
MORAVIA CENTER
INDUSTRIAL PARK
BALTIMORE, MD.
21206

NOLICLY, BEAT OUR DEALS!
1. All merchandise is factory fresh USA goods backed by full USA warranty. No grey goods.
2. Integrity—write and call us for a NASDAQ publicly traded company in business since 1945 with over 130,000,000 in sales.
3. Courteous knowledgeable sales professionals
4. Returns graciously accepted within 30 days.

SHOSTAKOVICH: The Golden Age
Natalia Bessmertnova, Gedinimas Taranda, Erek Moukhamedov, Tatiana Gulikova (principal dancers); Yuri Grigorovich (choreography); Orchestra of the Bolshoi Theatre, Alexander Lavrenyuk cond. HOME VISION GOL01 VHS Hi-Fi, GOL01 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 videocassette 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. Hero Rita, a foxy nightclub 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 nor heard his Tea for Two served so deliciously as when the patrons of the decaying 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 naughtily Lysuka, and Gediminas Taranda's Yashka is a most charming villain. Both exhibit a wonderful sense of drama, playing out Grigorovitch'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 Erek 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 instrumentalists). 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, neither better nor 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 priceless pool-ball 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 that 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.

THE EMPEROR
Claudio Arrau Triumphs in
Video Artists International Series
Volumes I and II of the Claudio Arrau Signature Performance Series are available now.

Vol. I—80th Birthday Recital:
Videotaped "live" at Lincoln Center, Maestro Arrau performs Beethoven's "Appassionata" and "Waldstein" Sonatas plus works by Chopin, Liszt and Debussy. Color, Stereo Hi-Fi, $49.95
□ 69040 VHS □ 29040 Beta

Vol. II—The Emperor Beginning with a documentary tracing the life and career of this remarkable artist, the program ends with a majestic performance of Beethoven's "Emperor" Concerto taped before 6000 wildly enthusiastic Chileans. Color Stereo Hi-Fi, $49.95
□ 69041 VHS □ 29041 Beta

"Arrau's 'Emperor' is one of four or five concertos in which he is Emperor and King combined."
—The Times of London

Watch for Volume III (Arrau & Brahms: The Two Romantics) and Vol. IV (The Maestro & The Masters), coming soon.
The Claudio Arrau Signature Performance Series has never been shown on U.S. broadcast television.

A co-production of Classical Music Video Productions, Inc. and Peter Rosen Productions, Inc.

ALSO NEW FROM VAI

A COMPOSER'S NOTES: PHILIP GLASS AND THE MAKING OF AKHNATEN A remarkable portrait by award-winning film maker Michael Blackwood featuring extended scenes from the opera and other Glass works. A vivid study on a work in progress by one of today's most gifted and popular composers. Color, Hi-Fi, $49.95
□ 69049 VHS □ 29049 Beta

LOCKING AT MUSIC WITH ADRIAN MARTHALER
Swiss film maker Adrian Marthaler has gone MTV one better with imaginative, exhilarating, and frequently hilarious music video treatments of Rhapsody in Blue, Brandenburg Concerto No. 2, Dance Macabre, and more. Color, Hi-Fi, $29.95
□ 69047 VHS □ 29047 Beta

For fastest delivery, use our handy toll-free number (outside New York) or send a cashier's check or money order include $2.75 shipping and handling for first title and $1.75 for each additional title. New York residents add appropriate sales tax. New York residents call 1-800-338-2566. Elsewhere, call TOLL FREE 1-800-338-2566. Make checks payable and mail to Video Artists International, Inc. Box 153, Ansonia Station, Dept. S, New York, N.Y. 10023.

Amount enclosed $ □ Visa □ M/C □
Exp. date
Day phone
Signature
Name
Address
City, State, Zip

CIRCLE NO. 53 ON READER SERVICE CARD.
FREE Get a free Denon HD-8-100, the new 100 minute audiophile cassette tape. Just stop in to one of our stores and present this coupon. One per person.

AUTHORIZED DEALER FOR:
- NAD
- VENOM
- ENERGY
- MONSTER
- ALPINE
- SIGNET
- SOUNDFIELD
- KLOSS
- DCM
- TALISMAN
- PULSAR

Mail Order MART

Music Lovers! Only!

Audiophiles love TAS, but musicians swear by it. That’s because our name, The Absolute Sound, is the sound of live music, and our goal is current-ball realism in your living room. Award-winning newspaperman Harry Pearson and his staff are in their 15th year as overseers of audio’s High End, telling the truth—and nothing but—the state of the art.

What do you get for signing up? Equipment reports that tell more about how components really sound than mere specs ever could. CD and record reviews that define the beauty and the beasts of audiophile software. Investigative articles that put the man behind the machine. All this, from witty writers who say what they want—because they’re protected from the heavy hand of advertisers by stringent editorial policies.

A six-issue subscription costs just $533 in the US or Canada. Single back issues are $75.

MAKE CHECKS PAYABLE TO
the absolute sound

PO BOX L 1, SEA CLIFF NY 11579
Or call and charge it to your MasterCard, Visa or American Express at (516) 671-6342 or (516) 671-6342.

The Speaker Exchange®
We Repair Speakers

e.V. • JBL • Infinity • AR • Advent
KLH • C.V. • OHM • ALTEC

And Many More!

1-800-782-1288
804 W. Fletcher Avenue, Tampa, Florida 33612

Rental MOVIES ON THE BLINK?

$5.95

Give copied tape. No stop following, editorial & backup. VHS-90 books between VCRs. Fully automatic (no tape handling). 100% effective. 30 day money back guarantee.

NATIONAL ELECTRONIC DIST INC.
SERVICE THAT SPANS THE NATION!

CALL NOW!!!
(212) 575-1840

7 DAY DEFECTIVE EXCHANGE
FULLY PROTECTED
ASK ABOUT 3 YEAR EXTENDED
WARRANTIES SERVICED NATIONWIDE
* NO DEPOSITS ON C.O.D. ORDERS
* PROFESSIONAL STAFF FOR PLANNING FULL SYSTEMS

TORECEIVERS

PIONEER VSX5000

NAKAMICHI DR-7000

YAMAHA RX400

SAMSON T1000

FREE MAIL ORDER MART

UNITED STATES

8601 HIGHWAY 7

MINNEAPOLIS, MN 55431

PHONE: 763-549-3200

FAX: 763-549-3201

SOUND STAGE VERS.

in Manhattan in Queens

173 Broadway 184-10 Horace Harding Exp.

N.Y.C., NY 10007 Fresh Meadows, NY 11365

(1/2 block from World Trade) (LIE, exit 25 - Uphala Pkwy.)

212-227-6738 (718) 961-9688

SOUND STAGE VERS.

in Manhattan in Queens

173 Broadway 184-10 Horace Harding Exp.

N.Y.C., NY 10007 Fresh Meadows, NY 11365

(1/2 block from World Trade) (LIE, exit 25 - Uphala Pkwy.)

212-227-6738 (718) 961-9688

FREE MAIL ORDER MART

SOUND STAGE VERS.

in Manhattan in Queens

173 Broadway 184-10 Horace Harding Exp.

N.Y.C., NY 10007 Fresh Meadows, NY 11365

(1/2 block from World Trade) (LIE, exit 25 - Uphala Pkwy.)

212-227-6738 (718) 961-9688

FREE MAIL ORDER MART

SOUND STAGE VERS.

in Manhattan in Queens

173 Broadway 184-10 Horace Harding Exp.

N.Y.C., NY 10007 Fresh Meadows, NY 11365

(1/2 block from World Trade) (LIE, exit 25 - Uphala Pkwy.)

212-227-6738 (718) 961-9688

FREE MAIL ORDER MART

SOUND STAGE VERS.

in Manhattan in Queens

173 Broadway 184-10 Horace Harding Exp.

N.Y.C., NY 10007 Fresh Meadows, NY 11365

(1/2 block from World Trade) (LIE, exit 25 - Uphala Pkwy.)

212-227-6738 (718) 961-9688

FREE MAIL ORDER MART

SOUND STAGE VERS.
DIRECT SIGHT AND SOUND, America's best kept audio and video secret, continues to please...For five years and over 40,000 customers later, we still offer the best in audio, video, and auto sound including stereos at incredible prices! We sell and service only U.S. warranty merchandise! Our staff is not only knowledgeable, but helpful and courteous in choosing the right component for you. Become one of the ELITE! Call (404) 351-6772. Direct Sight and Sound, 3095 Boling Way, Dept. S, Atlanta, GA 30305. MC/VISA/AMEX. COD with deposit.

AFFORDABLE STUDIO MONITORS!!
Clear, Clean and Efficient for Rock, Jazz, Classical, Digital. Sparkling Highs, Crisp Mid-Ranges and Thunderous Bass all in one.

- Model 415-4 Way Ported
- One 5¾" Midrange
- Dual 3 x 5 Tuned Ports
- 15" Rolled Edge Woofer
- 10-125 Watts - 90 db
- 5 year warranty
- Made with pride in USA

$495.00 Pair - Freight Included
Money back guarantee - 30 day trial
TO ORDER CALL: 1-800-443-8366
Visa - Mastercard Accepted

For DENKO RESEARCH
Info 1200 NW 78 Ave. Suite 112
Write: Miami, FL 33126

STereo WOrLD is your discount mail order source with super deals on audio and video and car stereo lines including: TECHNICS, PANASONIC, JVC, TEAC, MAGNAVOX, SONY, STANTON, AUDIO TECHNICA, PYLE, PIONEER, PHILIPS, CLARION, SHERWOOD and more! CALL or WRITE for your FREE CATALOG FREE UPS in 48 STATES! FAST SERVICE! CALL FOR CLOSE OUT SPECIALS! 10AM-6PM MON-FRI: WEDNESDAY CLOSES AT 2PM. SELLTRADE! STEREO VIDEO EXCHANGE. 485 Route 1, Edison, NJ 08818. (201) 494-0099. (201) 494-0099.


IMPENDING MATCHING PROBLEM???? SOLUTION: RUSSELL SOUNDSYSTEMS FM 5.6 - Connects up 6 pairs of 4.8 or 16 ohm speakers! Built-in impedance matching and level control transformers never allow impedance to fall below 4 ohms. -5 year warranty Dealer Inquires. RUSSELL SOUNDSYSTEMS Inc. 135 McDonough St., Portsmouth, N.H. 03801. (603) 431-5282.

CALL TOLL FREE! 1 (800) 826-0250 for NAD, Proton, H. K., Hafler, B&W, Tandberg, Audiocontrol, dbx, Nitty-Gritty, 3D, CWD, STAX, M.K., Belles, Fried, Audioquest, Thorens, Monster, Oracle, Pro-Ac, Grace, Grado, DCM, Talisman, Tiptoes, Duntech, Sumiko. Acoustat, Dahlquist. SOUNDBINDER, 1706 Main, Marinette, WI 54143. (715) 735-9002.

STereo Express
For Catalog & Price
CALL NOW
(714) 594-5749

FOR SALE
ARE YOU INTERESTED in Quality Preowned Audio Equipment? Subscribe to "The Sound Trek", published 6 x annually, your listings of items for sale or wanted. $10 y. Call or write: Play It Again Sam. 12511 R Madison Avenue, Lakewood, Ohio 44107. (216) 228-0940. MC/Visa.

CASH PAID FOR Quality Stereo/Video Equipment. Buy-Sell-Trade! STEREO VIDEO EXCHANGE. 485 Route 1, Edison, NJ 08818. (201) 985-1615.


The BEST IN HIGH END Audiophile equipment available. 100 + brands. SOUNDSHOP. TO ORDER CALL: (702) 645-9242.

50% OFF! Replacement parts, amplifiers, and speakers at wholesale! For information catalog: $3.00 refundable. CHAD-MODIFICATIONS, DEPT. SR, 1925 Mass. Ave., Cambridge, MA 02140. (617) 354-8853.

RECORDS
COLLECTORS' SOUNDTRACKS: Mint Top titles, speedy service. List $1.00 (refundable). Jemm's, P.O. Box 157, Glenview, IL 60025.

FREE RECORD, CASSETTE AND COMPACT DISC CATALOG. Features a tremendous selection of rare, limited LP releases at discount prices. Many imports and smaller labels offered. Prompt delivery. Rose Records, Dept SR 214 So Wabash Ave., Chicago, IL 60616.

FREE PRINT-OUT OF PRINT RECORDS ALL CATEGORIES & NOSTALGIA VIDEO TAPES. Spectacular Catalog! $2.00 USA. $3.00 Foreign. Spectrally Records, 4775 Durham Road, Guilford, CT 06437 USA.


From Edison to Elvis and Beyond LP's 75s & 45s also. Visit or mail-in orders. The Old Time Music Scene. 915 Main Street, Huntington, WV 25701. (304) 725-5040. Tuesday-Sunday. RECORD COLLECTOR SERVICES. Replacement JEWELS, inner sleeves, 78 RPM sleeves, opera boxes, etc. COMPLETE CATALOG. Cabco, Box 8212, Room 640, Columbus, Ohio 43202.


ELECTRON TUBE SALES major brands matched sets, since 1947. ARS Electronics, 7100 DeCals PI., Dept SR. VAN NUYS, CA 91405. (818) 422-4277.

INSTRUCTION
LOOK GREAT WITH PERSONALIZED FITNESS BOOK. Self-defense, nutrition, weight-lifting, more. Guaranteed! $10.00 to: FEELIN GOOD, Box. 474, Birmingham, M148012.

LOOK GREAT WITH PERSONALIZED FITNESS BOOK. Self-defense, nutrition, weight-lifting, more. Guaranteed! $10.00 to: FEELIN GOOD, Box. 474, Birmingham, M148012.

LOOK GREAT WITH PERSONALIZED FITNESS BOOK. Self-defense, nutrition, weight-lifting, more. Guaranteed! $10.00 to: FEELIN GOOD, Box. 474, Birmingham, M148012.

LOOK GREAT WITH PERSONALIZED FITNESS BOOK. Self-defense, nutrition, weight-lifting, more. Guaranteed! $10.00 to: FEELIN GOOD, Box. 474, Birmingham, M148012.

LOOK GREAT WITH PERSONALIZED FITNESS BOOK. Self-defense, nutrition, weight-lifting, more. Guaranteed! $10.00 to: FEELIN GOOD, Box. 474, Birmingham, M148012.

LOOK GREAT WITH PERSONALIZED FITNESS BOOK. Self-defense, nutrition, weight-lifting, more. Guaranteed! $10.00 to: FEELIN GOOD, Box. 474, Birmingham, M148012.

LOOK GREAT WITH PERSONALIZED FITNESS BOOK. Self-defense, nutrition, weight-lifting, more. Guaranteed! $10.00 to: FEELIN GOOD, Box. 474, Birmingham, M148012.

LOOK GREAT WITH PERSONALIZED FITNESS BOOK. Self-defense, nutrition, weight-lifting, more. Guaranteed! $10.00 to: FEELIN GOOD, Box. 474, Birmingham, M148012.
COMPACT DISCS—At low warehouse prices. Now in our 4th year! FREE catalog! 02 WAREHOUSE, 3245 Memorial Dr., Stone Mountain, GA 30083. (404) 292-5451.

USED CDs $0.95 UP. We pay $0.25-10.00 FREE TRADE! 1 Free catalog. CCM, 105 Webster, Sandy, Utah 84070-3151 (801) 571-9767.


FREE CD/RECORD OFFER! FREE CATALOG! “World’s Best Brass Catalog” (Fantale). CRYSTAL RECORDS, Sedro-Woolley, WA 98284.

COMPACT DISCS & ACCESSORIES. CALL TOLL FREE 1 (800) ALL-DISC to be placed on mailing list. ALL-DISC MUSIC, 41 Monroe 275 Columbus St., Elyria, OH 44035.

WE’VE SLIPPED OUR DISC PRICES TO FIT YOUR BUDGET. PRICES START AT $8.99 WRITE. LASER LOCKER BOX 8611 SOMERVILLE, NJ 08876.

DISCORDER transforms your CD collection into wall displayable art. Frames available in assorted colors and sizes to display 3, 6, 12, 24 CD’s. CALL today, HOMESOUND ENTERPRISES, (317) 743-2300.

WINDY CITY COMPACT DISCS. ON sale thru 2/29/88, all CBS CD’s-$12 per disc, $2.00 shipping and handling per order. (IL residents add 7% sales tax). ORDER TOLL FREE 1 (800) 426-4775 (outside IL) or send for free catalog: PO Box 2327, Des Plaines, IL 60017-2327, 1 (312) 952-8442.

CBS CD’S- $12.49 per disc. 52.00 shipping and handling (IL residents add 7% sales tax). ORDER TOLL FREE 1 (800) 338-5565. In Massachusetts or Canada call (413) 568-3753.

FOR INVENTORS Inventors! Can you patent and profit from your idea? Call AMERICAN INVENTORS CORPORATION for free information. Over a decade of service 1000. 338-5565. In Massachusetts or Canada call (413) 568-3753.


INDEX TO ADVERTISERS

READER SERVICE NO. ADVERTISER PAGE NUMBER

6 Acadia 74-75
21 Alisters 42-43
24 Bose Corp. 15, 35
39 Canyon 143
49 Carver Corp. 83, 129, 155, 176, 196
CBS CD Club 96-97
Cincinnati Microwave 185
38 Component Guard 44
68 Coax 189
175 Crutchfield Corp. 183
63 DBX Audio Products 75
67 Delco Electronics 87
74 Design Audiences 147
71 Discount Music Club 200
128 EPI 6
128 Harman Kardon 122-123
170 Illinois Audio 197
154 International Hi-Fi 200
19 Music World 194-195
11 BL
69 KEF 109
2 Klipsch & Associates 141
52 Luxman 114-115
56 Magnat 49
57 Marantz 19-32
62 Micro 161
68 NAD USA 41
69 Onkyo 90
70 Philip Morris-Marlboro 181
70 Pioneer Electronics 53-68
135 Pioneer Electronics 156-137
137 Pioneer Electronics 158
37 Polk Audio 1-5
37 Proton Corporation 50
48 Radio Shack 6, 179
48 RCA 16-17
48 R. J. Reynolds -Winston 47
53 Sherwood Electronics Labs 187
53 Video Arts International 187
54 We "R" Electronics 200
55 Wisconsin Discount 198
14 Yamaha 182

258 FEBRUARY
Gremlins

If your system is like most of the ambitious, temperamental ones that are the concern of this column, it gets the wobblies 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, hoping 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 ½ 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.
You probably already have most of what you need to build your own home video theater: a TV set, a VCR and a pair of speakers. Then, you need to add a second pair of speakers and a Sherwood stereo receiver with built-in surround-sound. Those are the basics that let you enjoy the dramatic realism of four-corner stereo that wraps all around, just like it does in a movie theater.

You see, most Sherwood receivers have the unique ability to "read" the rear channel information present in most stereo programs, including stereo cable and broadcast TV, as well as video tapes you buy or rent that were made from films originally shown in theaters. Even with mono video, you can enjoy stereo—or even surround sound—thanks to Sherwood's built-in stereo synthesizer.

To complete your theater, you may wish to add a Sherwood CD player, Sherwood tape deck and Sherwood turntable.

Now, you've got it all. A complete surround-sound home theater. From Sherwood, the people who more than 30 years ago made the tuner for the very first FM stereo broadcast ever.
CAN YOUR SPEAKERS HANDLE THE EXTREMES?

It takes sophisticated engineering and pure craftsmanship to produce speakers that deliver the extremely wide dynamic range of digital recordings. The new EPI Time/Energy Series II speakers deliver everything that digital recordings have to offer: their quiet solos, thunderous finales and lightning quick transient response.

All this is made possible by the Time/Energy technology which involves making speaker cones and domes from special two layer materials. The combined physical properties of the two layers provide the performance that gets the most from any recording.

A case in point is the new EPI model T/E 280 Series II. It exemplifies the EPI tradition of achieving high levels of performance by using imaginative engineering and precision manufacturing, not complex designs and exotic, expensive materials. Its efficiency, power capacity, wide range response and just plain beautiful sound will make even the most diehard technophile forget the graphs and specs and sit back to revel in the sound. And, with a suggested retail price of $199.95, forget about what it cost to get it.

There is an EPI Time/Energy speaker for everyone regardless of their listening habits, their electronics or their budget. Each one gives dedicated music lovers the kind of performance, quality and reliability that will keep them listening for years to come. With the Time/Energy speakers you can literally hear today what you'll listen to in the future.