

Stereo Review

FEBRUARY 1990 \$2.95

INCORPORATING HIGH FIDELITY

EQUIPMENT BUYING GUIDE
CD PLAYERS, SPEAKERS, AMPLIFIERS,
RECEIVERS, AND MORE

BEST RECORDS OF THE YEAR

TEST REPORTS: MAGNAVOX CD PLAYER;
POLK AUDIO SPEAKERS,
GRUNDIG TAPE DECK, KEF SPEAKERS



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890
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The RTA Series



RTA 11i

"They provide smooth, fast and incredibly well detailed sound."

“Polk’s RTA Tower Loudspeakers Combine Legendary Polk Performance with Contemporary Style.”

Big speaker performance with an efficient use of space.

RTA 11t

The RTA 11t is the finest conventional (non-SDA) speaker that Polk Audio manufactures. Its extremely high power handling (250 watts) and high efficiency (90dB) provide remarkable dynamic range from both large and small amplifiers. The RTA 11t utilizes the same technologically advanced fluid-coupled subwoofer design found in Polk’s flagship model. Dual 8” sub-bass radiators are coupled to two 6½” mid-bass drivers, resulting in a fast, powerful, deep, and ultra-accurate bass response, without the boomy, undetailed sound of large woofer systems.

RTA 8t

In a slightly smaller package, the RTA 8t offers the same driver complement as the larger, more expensive RTA 11t, and thus shares its benefits of superior imaging, musicality, and detail.

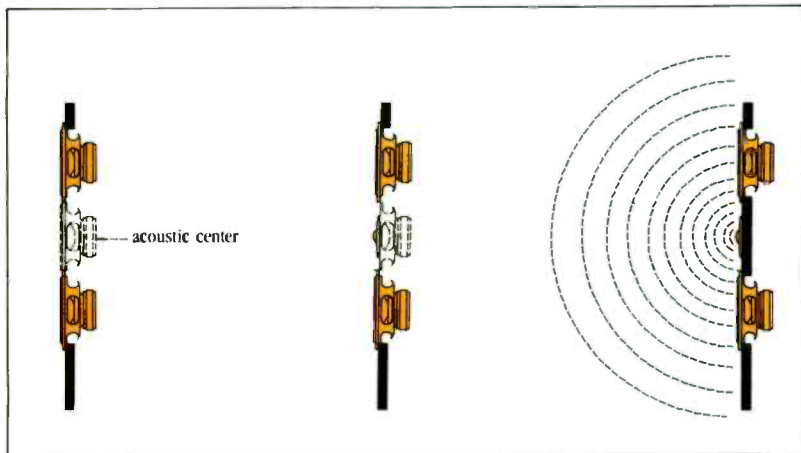
Both Polk RTA series loudspeakers achieve the extremely rare combination of good looks and state-of-the-art performance. The tall, elegantly slender and deep “tower” design cabinets allow for substantial internal volume for high efficiency and powerful bass, but only require less than one square foot of floor space! The small baffle surface area around each driver minimizes diffraction (sonic reflections), thereby insuring outstanding imaging and low coloration.

Positioning the 1” silver-coil dome tweeter between the two 6½” tri-laminate polymer bass/midrange drivers achieves what is called “coincident radiation.” This means that both the mid- and high-frequencies appear to radiate from the same place on the baffle resulting in perfect blending at the critical crossover point. (See illustration, below).

Polk RTA speakers have an uncanny ability to perfectly reproduce the human voice, pianos, guitars, and every other instrument whose faithful reproduction demands superlative midrange and high-frequency performance. Bass and percussion instruments are accurately reproduced with full visceral power and realism, without the heaviness, boominess, or lack of detail that plague lesser designs.

The discriminating listener who seeks state-of-the-art performance and design will find the quintessential combination of both in Polk’s RTA series loudspeakers.

THE PRINCIPLES OF COINCIDENT RADIATION



The perceived source of sound of two identical drivers is centered in the area between them.

In the Polk RTA loudspeaker, the tweeter is positioned at the acoustic center of the drivers.

Drivers and tweeter appear to operate together as an ideal point source resulting in precise imaging, uniform dispersion and startling midrange accuracy.



Polk Audio's RTA 8t and RTA 11t High Performance Tower Speakers

The Monitor Series



Monitor 10B

"The best-high performance speaker value on the market today." Off The Record

“Polk’s Remarkable Monitors Redefine Incredible Sound/Affordable Price”

“At their price, they’re simply a steal” Audiogram Magazine

Monitor 10B

Considered one of the world’s best sounding loudspeakers and, in the words of Audiogram magazine, “At the price they are simply a steal.” The Polk 10B utilizes dual trilaminate polymer drivers coupled to a built-in subwoofer for accurate bass response and superior dynamic range. A 1” dome tweeter perfectly complements the other drivers to insure outstanding reproduction of every type of music.

Monitor 7C

Basically a smaller, less expensive version of the Monitor 10B. By offering superlative performance whether mounted on a shelf or a speaker stand, the 7C is a highly versatile addition to any audio system. How good does it sound? Audio Alternative magazine said, “It is amazing.”

Monitor 5B

Similar in design and performance to the Monitor 7C, however it utilizes an 8” subwoofer (rather than 10”) and is more compact. The 5B represents one of the best values of the entire Monitor Series.

Monitor 5Jr. +

Called the best sounding speaker of its price in the world regardless of size. It achieves life-like three-dimensional imaging which 10 years ago was not available in any bookshelf speaker at any price.

Monitor 4.5

Shares most of the high technology components and rewarding musical performance of the larger Polk speakers at a surprisingly low price. A critically tuned bass duct insures high efficiency and great bass performance despite its convenient compact design.

Monitor 4A

Identical to the 4.5 in a smaller cabinet. Audio critic Lawrence Johnson called it, “an all around star of great magnitude.” The 4A’s affordable price means that no matter how small your budget, you can afford the incredible sound of Polk!

Matthew Polk’s Vision: Superior Sound for Everyone

Polk Audio is an American company that was founded in 1972 by three Johns Hopkins University graduates who were fanatical audiophiles with a common vision. They believed that it was possible to make speakers that performed as well as the most exotic and expensive systems at a fraction of the price. Starting with only \$200, they began by designing and manufacturing the Monitor Series loudspeakers. The Monitor Series combined the advantages of American high technology and durability with European styling and refinement. Over the years an unending stream of rave reviews, industry awards, and thousands of enthusiastic Polk customers have established the Monitor Series as the choice for those looking for both incredible sound and an affordable price. There is no better value in audio equipment today than a Polk Monitor series loudspeaker.

Uncompromising Standards at Every Price

A limited budget does not mean a limited ability to appreciate fantastic sounding music. That’s why we put our best engineering efforts and only the finest materials into every Polk product regardless of price.

Every Polk Monitor Series speaker uses the same trilaminate polymer cone technology as the flagship SDA-SRS 1.2. Every Polk Monitor utilizes a 1” polymer dome tweeter, and most use exactly the same tweeter found in the SRS 1.2. All Polk Monitors employ costly multi-component crossover networks and ¾” thick high density, non-resonant cabinets. Pick up a Polk Monitor 4A, then pick up a comparably priced but larger speaker from a different manufacturer. You’ll notice that the Polk is heavier, more solidly built, and sports a superior fit and finish. Now compare the sound. We are sure you’ll agree with Musician magazine, which said Polk Monitors are: “Vastly superior to the competition.”



Matthew Polk with his incredible sounding/affordably priced Monitor Series loudspeakers. Front row (L to R) Monitor 5Jr. +, Monitor 4A, Monitor 4.5 Back row (L to R) Monitor 10B, Monitor 7C, Monitor 5B

The Thrilling Sound of Polk Monitors

Polk Monitors achieve open, boxless, three-dimensional imaging surpassed only by the SDA’s. Their silky smooth frequency response assures natural, non-fatiguing, easy to listen to sound, while their fast transient response results in music that is reproduced with life-like clarity and detail. In addition, dynamic bass performance, ultra-wide dispersion, high efficiency and high power handling are all hallmarks of Monitor Series performance.

There is a Polk Monitor Perfect for You

Each time you advance through the six Monitor Series models, you’ll immediately hear a remarkable improvement in efficiency, bass response, and output volume. They are designed so that a smaller Polk played in a small room will sound nearly identical to a larger Polk played in a large room. A larger Polk in a small room will, of course, play that much louder with even better bass. No matter what price range fits your budget, there is a spectacular Polk Monitor Series speaker waiting to fulfill your sonic dreams.

Where to buy Polk Speakers?
For your nearest dealer, see page 160

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BULLETIN.....	7	TECHNICAL TALK.....	38
LETTERS.....	8	POPULAR MUSIC.....	143
NEW PRODUCTS.....	15	CLASSICAL MUSIC.....	153
AUDIO Q&A.....	28	RECORD MAKERS.....	166
GOING ON RECORD.....	35	THE HIGH END.....	168

EQUIPMENT

THE BASICS			23
The electronic control center	by Ian G. Masters		
HIRSCH-HOUCK LABS EQUIPMENT TEST REPORTS			43
Magnavox CDB630 Compact Disc Player, page 43			
KEF C55 Speaker System, page 48			
Grundig Fine Arts CCT-903 Dual Cassette Deck, page 54			
Polk Audio RM-3000 Reference Monitor Speaker System, page 58			
HOW TO CARE FOR CD'S			66
Proper handling will help your discs last	by Rebecca Day		
SHOPPING SURVIVAL SKILLS			69
Some tips on dealing with the dealers	by Warren Berger		
STEREO EQUIPMENT BUYING GUIDE			75
Features, specs, and prices of hundreds of hi-fi components			
Receivers, page 76			
Amplifiers, page 82			
Compact Disc Players, page 99			
Tuners, page 106			
Turntables, page 111			
Speakers, page 115			
Directory of Manufacturers, page 137			

MUSIC

RECORD OF THE YEAR AWARDS		63
The best of the year just past, and some very honorable mentions		
BEST RECORDINGS OF THE MONTH		139
Michelle Shocked, Wagner's <i>Tannhäuser</i> , It Bites, and Walton's <i>Symphony No. 1</i>		

Cover: *The Luxman T-117 tuner, Onkyo Integra A-8800 integrated amplifier, Sony CDP-X7ESD compact disc player, and Polk Audio RTA 111 speakers; see the Stereo Equipment Buying Guide for details, starting on page 75. Design by Sue Llewellyn, photo by James Porto.*



PAGE 166



PAGE 63



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THE END OF THE COMPACT RISK.

Most audiophiles think of CD changers as the station wagons of the digital world. Convenient to be sure. But certainly not exciting.

Until now.

Because Onkyo's new DX-C300 and DX-C500 CD changers will change your mind as well as your discs. And they'll put an end to the risk of sacrificing musical enjoyment for the ease of multi-disc operation.



Optional magazines allow your choice of single disc simplicity or multi-disc convenience.

Onkyo's AccuBit technology is the reason.

AccuBit insures that even the quietest musical passages and subtle nuances are reproduced with stunning clarity. How? AccuBit starts with high precision Digital-to-Analog converters. And individually calibrates each one for maximum accuracy. This critical adjustment allows all the music on your discs to reach your ears. And not get lost in the distortions that plague conventional CD changers.

Until the DX-C300 and DX-C500, only the finest single disc players could claim such extraordinary sophistication. But that's just what you expect from Onkyo, the company with an unparalleled reputation for making high end sound affordable.

Onkyo.

The End Of The Compact Risk.

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BULLETIN

by Christie Barter
and Rebecca Day

FORD FUTURES

The Ford audio division has introduced new, improved versions of the Ford JBL audio systems available as options for the new Lincoln Town Car, Ford Taurus, and Mercury Sable. A version of the system will also be available for the 1991 Explorer, a light truck described as a "compact sport utility vehicle" due in the spring of 1990. Between 1988 and 1989 sales of the Ford JBL system grew by nearly 70 percent.

PLATINUM ALBUMS

Record sales justifying the Platinum designation have been certified by the Recording Industry Association of America for, among others, Aerosmith's "Pump" (Geffen), Tracy Chapman's "Crossroads" (Elektra), Tears for Fears' "The Seeds of Love" (Fontana), Don Henley's "The End of the Innocence" (Geffen), and "New Kids on the Block" (Columbia).

PRODUCT NEWS

Memtek Products, the manufacturer of Memorex tape, plans to market speakers (\$300 to \$600 per pair) carrying the Memorex brand name in June. . . . Fujitsu Ten is introducing the first digital signal processor for cars. Price: \$1,000. . . Cambridge SoundWorks has introduced an easily portable three-speaker satellite/subwoofer sound system, the Model Eleven, which includes a small integrated amplifier. The carrying case, which can accommodate the owner's CD or tape player, functions as the subwoofer. Price: \$599 by direct mail. . . TDK, Maxell, and That's America are among the companies launching high-end metal-particle audio tape cassettes at premium prices (\$12 and up) to compete with Sony's metal line already on the market. All of them feature sophisticated high-quality shells. TDK claims that its MA-XG Pro is the first dual-layered metal tape. The

bottom layer is optimized for bass frequencies, and the upper level handles the highs. Price for a C-60, \$15; for a C-90, \$18. For details of That's America's Suono line, see New Products, page 15.

NEEDS OF THE NINETIES

Picture tubes compatible with a variety of high-definition television (HDTV) broadcasting systems will be produced at a new \$100-million factory for which North American Philips plans to break ground this spring. The HDTV tubes are for the United States market, and the plant will also produce standard color tubes for domestic use and export. The factory is expected to begin production before the end of 1992, and at press time location had been narrowed down to Kentucky, Michigan, Ohio, or Tennessee.

MUSICAL NOTES

RCA is reissuing its classic-film-score series in Dolby Surround beginning with the January release of *Gone with the Wind* and *Laura* (which also includes *Forever Amber* and *The Bad and the Beautiful*). . . . The Ramones, back from a world tour stretching from Scotland to Australia, are playing dates in the U.S. with a new bass player: C. J. Ramone. . . The Academy of St. Martin-in-the-Fields, which claims more recordings than any other orchestra, is celebrating its thirtieth anniversary this season and will play ten concerts in the United States in March and April. . . Look for March release of a new RCA album recently recorded by Cowboy Junkies in Toronto. . . *Pavarotti Plus!*, a recital by operatic tenor Luciano Pavarotti and his colleagues Carol Vaness, Leona Mitchell, and Harolyn Blackwell, will be broadcast in the PBS series *Live from Lincoln Center* on February 28. The series has a new underwriter, General Motors.

HI-FI GUIDANCE

A guide to home entertainment products, *Understanding Audio and Video* by Michael Riggs, has been published jointly by Pioneer

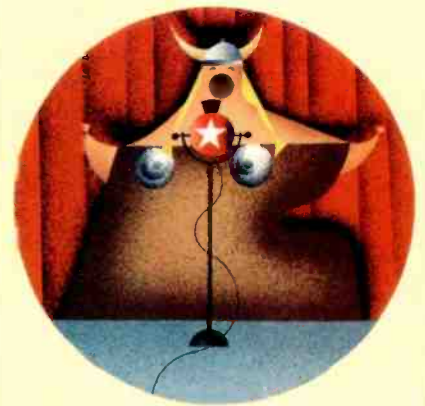
Electronics and STEREO REVIEW. The book is aimed at both enthusiasts and novice consumers and is designed to help them evaluate products as well as understand technology. The author is an Editor at Large for this magazine. The book is available through Pioneer retailers for \$5.95.

Maxell's *Audio Tape Recording Handbook* provides information on audio cassettes and recording techniques. To obtain a copy, send 75¢ postage to Maxell Audio Guide Offer, P.O. Box 4623, Monticello, MN 55363-4623.

OPERA ON THE AIR

This year marks the fiftieth anniversary of Texaco's sponsorship of the Saturday afternoon radio broadcasts of live matinee performances by the Metropolitan Opera. It is the longest continuous sponsorship in broadcasting history, and by the end of this season the total number of Texaco-Metropolitan radio performances will reach 990. The number of seductions, kidnappings, and murders enacted in those performances is not available, but the one star participating in all 990 is the Texaco star.

This month's performances include *La Gioconda* (February 3), *La Traviata* (February 10), *Samson et Dalila* (February 17), and *Rigoletto* (February 24). For a free broadcast guide with casts and stories of the operas, call 1-800-MET-1989 or write to the Met, Box 50, New York, NY 10023.



TERRY ALLEN

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LETTERS

The End of Audio History?

Julian Hirsch's December "Technical Talk" column, about the many irrelevant ideas in the audio industry, was excellent. Mr. Hirsch admitted to discriminating against differences that don't "make a difference." Although his honesty impressed me, the article left me with a serious question. As an electrical-engineering student with hopes of entering the audio industry after graduation, I would like to know if there is any point in continuing research on audio technology. It seems now that we have everything. With transistors, digital sound, and acoustic processors, is there any possibility of improvement?

Now that we have achieved perfection (I must also admit that I rarely distinguish quality between high-end systems), why continue researching acoustics and high-fidelity electronics? Are we really finished in our quest of the better mousetrap?

JAY KIRSCH
Binghamton, NY

Julian Hirsch replies: It is probably true that specific circuit details have less to do with a component's final performance than formerly; today's real improvements are more likely to come from the creators of the semiconductor devices that are the building blocks of the product designer. But it would be foolish to conclude that because most current hi-fi products perform so well, no further R&D efforts are justified. We are a long way from perfection!

I suspect that the really significant advances to come in audio will arise from acoustic and psychoacoustic research. Consider that the finest loudspeakers do not yet remotely begin to match the sound of a live performance. Despite the efforts of hundreds of designers, which have yielded considerable improvement over the past thirty-odd years, today's speakers are fundamentally the same as those of the 1920's. Surely there is room for talented researchers in the search for the audio Holy Grail (or "better mousetrap," if you prefer). I don't think we'll ever quite reach the goal, but let's keep trying.

Fourier Footnote

Ironically, Ken Pohlmann conveyed some misleading information in his December "Signals" column, "Just the Facts, Please." If you take the date that Fourier submitted his results on heat diffusion to the Institut de France, December 21, 1807, as the date of his theorem on the Fourier series, then it was twenty-two years before Dirichlet established the precise conditions under which a Fourier series could be used to

represent a periodic signal, not eighteen years as stated by Mr. Pohlmann.

RANDY YATES
San Jose, CA

Ken Pohlmann replies: You are correct—the origin of Fourier's theorem is properly placed in 1807 with his original draft paper. I was referring to his 1811 paper, a significantly revised and expanded version that won the prize offered by the Institut de France and was published and widely available in the Mémoires de l'Académie Royale des Sciences de l'Institut de France.

The Basic Repertoire

My copy of Richard Freed's "The Basic Repertoire on Compact Disc," which STEREO REVIEW published in 1987, is becoming rather worn. I'd certainly like to see an updated and expanded edition; reliable, basic criticism is even more important today as CD's continue the expansive phase.

TOM OLIVER
Amarillo, TX

Mr. Freed is currently at work on a 1990 edition of "The Basic Repertoire on Compact Disc," and we expect to announce its availability in the next few months.

CORE Remote Control

In the November "Systems" article describing the Duncans' house, Rebecca Day mentioned the CL-9 CORE universal remote control. After calling many hi-fi stores in town and nationally, I have been unable to find any that carries it. Can you shed some light?

PIERO FAVRETTI
Atlanta, GA

The inventor of the CORE remote control, Steve Wozniak, decided to sell the rights to the technology, but there has been no buyer to date, and production has ceased. Service on CORE remote units is still being done by the CL-9 Service Center, 120 Beachview Ave., Santa Cruz, CA 95060, which is also selling the few remaining units for \$100 each. To obtain one, send a check for \$100, made out to the CL-9 Service Center, to the above address—and be sure to request an instruction manual.

Saint-Saëns's Third

I was surprised to read in William Livingstone's "Going on Record" column in November his description of the Saint-Saëns Third Symphony as "in only two movements." It is true that the symphony is composed of two large parts, a form that Saint-Saëns used, in

ACHIEVEMENTS IN TECHNOLOGY.

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MODEL S SHOWN: 51ND798 TV, VCG990U VCR
SIMULATED PICTURE

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CIRCLE NO. 161 ON READER SERVICE CARD

ES

Seven years ago,
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obsolete.



Our Digital Signal
Processing is about to do
the same to the rest of
your system.

Sony proudly presents the TA-E1000ESD Preamplifier, incorporating the most advanced Digital Signal Processing in high fidelity.

Seven years ago, Sony engineers astonished the world with the Compact Disc, the first giant step for digital high fidelity. Now, the Sony ES Series is pleased to introduce the second step: bringing the digital technology of the Compact Disc to the rest of your system.

Sony's new TA-E1000ESD Preamplifier incorporates Digital Signal Processing (DSP) to maintain the integrity of Compact Disc sound from input to output. This incomparable



circuitry not only handles digital sources in the digital domain, it even converts analog sources to digital. So all your music can receive the full DSP treatment, including digital expansion, digital compression, digital parametric equalization, digital reverberation, digital delay, and digital surround sound encompassing ten digital soundfield parameters. Now you can heighten sonic performance digitally, obtaining optimum ambience and brilliance without enduring the veil of conventional signal processing.



Direct the Dynamics.

The numerical prowess of DSP puts you in full digital control of dynamic range, with nine discrete steps of compres-



sion or expansion. So you can finally do a proper job of fitting live music within the limitations of analog cassettes. Or use DSP expansion to bring your existing analog sources closer to digital standards.

Bass and treble controls were never like this.

Sony's DSP also accomplishes digital parametric equalization. It's simple, effective, and free from the distortion, phase shift, and noise of analog EQ. With any of 31 center frequencies and four slope settings, you have a choice of over three trillion EQ curves. Which is more than enough boosting, peaking, shelving and tweaking to overcome even quite severe acoustical deficiencies.

If you don't like your listening room, change it.

Because listening rooms were never designed to contain the Vienna Philharmonic, Sony's digital surround sound places you in your choice of symphony hall, movie theater, stadium, studio or small club. Unprecedented digital adjustments let you choose room depth, width, wall absorbancy, reflection times—even the row and number of your seat! You get acoustic environments so detailed, so authentic, they have a palpable presence. And for Dolby Stereo™ movies, our six-channel Dolby Pro Logic™ Surround Sound projects a more vivid soundstage than most sound stages.



After all these digital attainments, Sony didn't forget that the TA-E1000ESD is also a preamplifier. So we included five low-noise audio inputs, three digital inputs, seven A/V inputs, a programmable remote control and a three-year limited parts and labor warranty—the same one that covers ES power amps, CD players, cassette decks and receivers.*

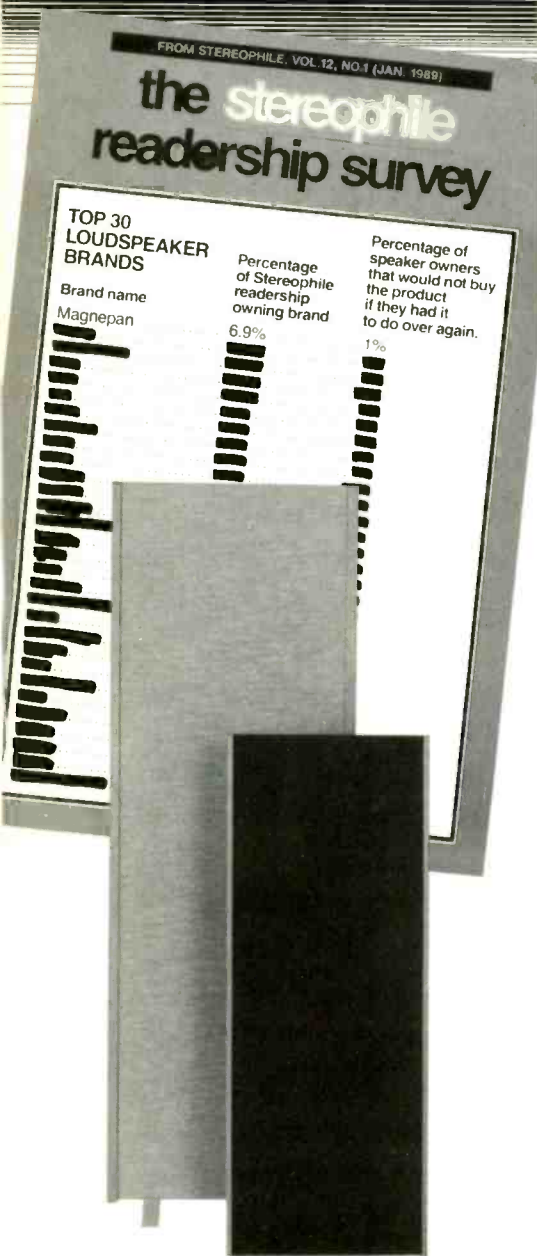
All of which leads to one simple conclusion. The company that wrote the book on digital audio has just inaugurated a whole new chapter.

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LETTERS

his words, to avoid "interminable repetition." All the "traditional" movements are accounted for, however. After a brief *adagio*, an *allegro moderato* in traditional sonata form (but without exposition repeat) follows; the second, slow movement, *poco adagio*, follows without pause. The third movement, *allegro moderato*, begins the second part; it is a traditional scherzo in ABA form, with a slow bridge passage to the triumphant fourth-movement finale. Although the third movement is marked "*allegro moderato*," the most effective performances of the symphony adopt tempos for it sounding anything but "moderate."

Incidentally, Saint-Saëns was anticipated by Schubert, who actually combined all four movements into one continuous part in two of his fantasies, the famous *Wanderer* and the F Minor Fantasy for piano four-hands.

PAUL MADURA
Yonkers, NY

William Livingstone replies: As Mr. Madura points out, Saint-Saëns followed essentially the traditional ground plan of the symphony, and for the reason Mr. Madura cites, he organized it to be played in two movements. There are a few symphonies by other composers that were written to be played as only one continuous movement.

CD Quality

I am getting fed up with the quality of CD's that are being put on the market. In the last two weeks I have purchased several CD's, and two have been defective. The first one didn't play at all, and the second one made sounds as if the CD were not aligned correctly with the spindle or laser. The worst thing is that it only happens on Tracks 1-3. Are there any good CD companies left, or was it all a joke to begin with?

EVAN S. CHAPKIS
Tampa, FL

Your experience is unusual and probably a coincidence rather than evidence of a widespread decline in the quality of compact discs. There may also be a problem with your CD player, especially if it exhibits such symptoms with well-maintained older discs that used to play properly.

Rock Studio Levels

I concur with Craig Patterson's letter in December regarding the October "Signals" column by Ken Pohlmann. I can assure Mr. Pohlmann that very few engineers in rock studios listen to playback at "very high sound-pressure levels." And it has been my experience that

you are most likely to find compression horn drivers in the studio itself but very rarely in the control booth.

Most near-field monitors use direct-radiator cones or domes for midrange and high-frequency reproduction. Recording engineers recognize that direct-radiator designs offer a smooth response and a wide dispersion pattern. You will find some compression driver/horn combinations in studio monitors, but generally they are used for tweeters in three-way systems. In any case, near-field monitors are seldom used for high sound-pressure levels in any studio. I also sincerely doubt that you will find a rock engineer who listens to his monitors 40 dB louder than home levels.

JAMES R. PIEL
Arcanum, OH

Ken Pohlmann replies: According to a spokesman for JBL, one of the largest makers of professional monitors, "Ninety percent of the main monitors in professional recording-studio control rooms use compression horn drivers because of the extreme sound-pressure levels required." Yes, near-field monitors in control rooms use cones, but they are loud too because of their proximity.

Alternate Takes

Concerning letters about unannounced "alternate takes" in Columbia jazz and popular-music CD's: Why not call them what they are? They are rejected takes that did not satisfy the performers.

RICHARD SEBOLT
Springfield, MA

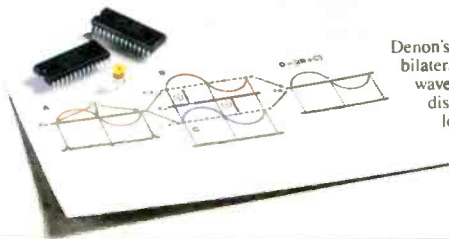
Computerized Cataloging

More than a year ago I offered to share with other STEREO REVIEW readers my computer program that organizes information about a collection of CD's or other recordings, and hundreds of readers took me up on the offer. I recently revised the program to make it faster and more visually appealing and to add more features. It runs on any computer using MS-DOS.

Once again, I am willing to share my program with other readers. I will also share my updated information base, which includes hundreds of classical CD's that have been favorably reviewed in STEREO REVIEW (this is not essential to the program, and readers who prefer other types of music can discard my list and create their own). If you'd like a copy, please send me \$3 to cover the cost of a computer diskette (5¼ inch) and mailing.

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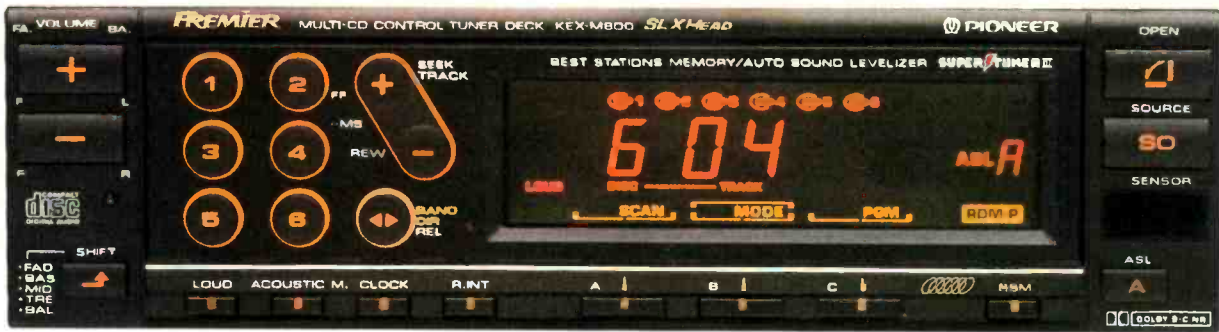
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DCD-1560 shown with the optional side panels available for most Denon models. Prices quoted are manufacturer's suggested retail prices and may vary.

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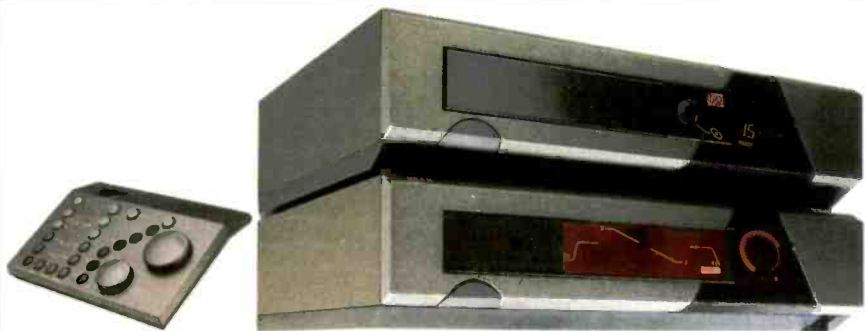
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CIRCLE NO. 31 ON READER SERVICE CARD

NEW PRODUCTS



QUAD

The Quad Model 66 preamplifier and the Quad CD player are designed for operational simplicity and reliability, with all functions remotely controlled. The preamplifier's accompanying table-top Model 55 Control Panel operates both components, as well as other Quad equipment; the CD player also comes with its own hand-held remote unit (not shown). The preamplifier has no front-panel controls at all, just a display, and the only controls on the player's chassis are for opening and closing the disc drawer and for starting play.

The Model 66 has seven line-level inputs, one of which can be matched to any phono cartridge by a plug-in circuit board. The audio/video input and one

auxiliary input feature floating-ground circuits to eliminate ground loops from connection to a TV set or VCR. Instead of tone controls, there is a "tilt" feature that can be used to slope the entire response curve up or down by various degrees. The "bass step" control cuts response at either 75 or 150 Hz to reduce the effect of room modes.

The CD player has a four-times-over-sampling digital filter and dual 16-bit digital-to-analog converters. Prices: Model 66 preamplifier with Model 55 Control Panel, \$1,500; CD player, \$1,200. Distributed by Tovil Distributors of America, Dept. SR, 14120-K Sullyfield Circle, Chantilly, VA 22021.

Circle 120 on reader service card

ADC

The three-piece Soundshaper 3025 speaker system from ADC includes two full-range satellite speakers and a subwoofer. The satellites and subwoofer can also be purchased separately. Frequency response of the system is rated as 45 to 20,000 Hz \pm 3 dB and sensitivity as 88 dB sound-pressure level at 1 meter with a 1-watt input. Dimensions are 11 $\frac{1}{4}$ x 7 x 5 $\frac{1}{2}$ inches for the satellites and 11 x 7 $\frac{1}{2}$ x 17 inches for the subwoofer. The subwoofer is available in a charcoal black finish, the satellites in charcoal black or "contemporary white." Prices: \$269.95 a pair for the Model 3010 satellite speakers; \$229.95 for the Model 3015 subwoofer.

Circle 121 on reader service card



PIONEER

Pioneer's SP-700D sound-field processor is a 50-bit digital signal processor with Dolby Pro Logic circuitry. It has seven programmed surround modes, including two theaters, a stadium, and a studio, as well as two simulated-stereo modes. There are sixteen pre-programmed sound-field parameters and sixteen user-programmable options, including initial delay, room size, live-

ness, reverb time, and high-frequency reverb, to customize a listening room's ambience. The SP-700D can be switched between four- and six-channel configurations, and it comes with a fifty-one-key remote control. Price: \$700. Pioneer Electronics, Dept. SR, 2265 E. 220th St., P.O. Box 1720, Long Beach, CA 90801-1720.

Circle 122 on reader service card

THAT'S AMERICA

Suono is the top brand in That's America's audio cassette tape line. It uses metal tape housed in a special domed shell made of high-density resin; together, the material and design are said to reduce modulation noise and vibration. An improved friction sheet is claimed to insure smoother rotation of the tape and hubs for less wow and flutter. The tape's magnetic material has a homogeneous structure for close, uniform contact with the recorder's heads, and a new binder system is used to improve durability and heat resistance. Suono cassettes are available in 90-, 46-, and 74-minute lengths, priced at \$11.99, \$8.50, and \$9, respectively. That's America, Dept. SR, 1983 Marcus Ave., Suite 201, Lake Success, NY 11042.

Circle 123 on reader service card



NEW PRODUCTS



TEAC

The Teac V-480 cassette deck has an IC logic-controlled transport, a bipolar power supply, two hard permalloy heads, and a DC servomotor. Operating features include Dolby HX Pro head-room extension, Dolby B and Dolby C noise reduction, bias fine-tuning, recording mute, auto tape selection, and a timer for recording and playback. It can be controlled remotely as part of a Teac Unified Remote (UR) system. Price: \$199.95. Teac America, Dept. SR, 7733 Telegraph Rd., Montebello, CA 90640. *Circle 124 on reader service card*

SPARKOMATIC

The Sparkomatic SR600 is an affordably priced car stereo CD receiver. The player uses a three-beam laser pickup and can be programmed for up to twenty tracks of a disc. The amplifier section is rated at 20 watts per channel with 0.1 percent distortion, 25 watts with 10%

distortion. Two RCA line-out jacks can connect the unit to external amplifiers for additional speakers. The tuner section has twelve FM and six AM presets. Price: \$399. Sparkomatic, Dept. SR, Milford, PA 18337.

Circle 125 on reader service card

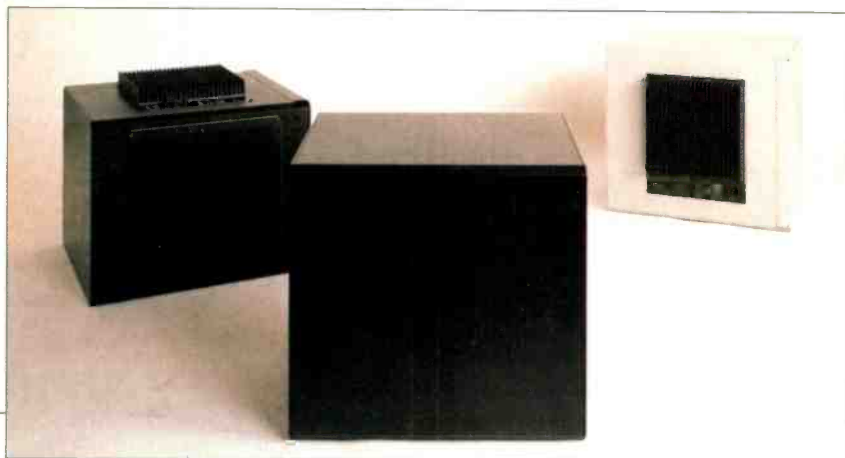


A/D/S/

The a/d/s/ SW5 powered subwoofer has an electronic crossover network based on Linkwitz-Riley topology, a 350-watt amplifier, and a long-exursion 12-inch driver. Crossover points and output level are variable so that users can match the SW5 to a variety of satellite speakers. It can be used with

any amplifier or with a receiver that has preamp-out/main-amp-in jacks, and it can be daisy-chained with additional SW5's. Dimensions are 17½ x 16½ x 14½. Finish is black or gray. Price: \$1,000. a/d/s/, Dept. SR, One Progress Way, Wilmington, MA 01887.

Circle 126 on reader service card



DAHLQUIST

The Dahlquist DQ-12 is a three-way Phased Array speaker system. Its 8-inch long-throw woofer operates in a sealed enclosure, and the 5-inch cone mid-range operates in a separate dual-cylinder structure with aperiodic loading. The 1-inch, aligned-fiber dome tweeter has magnetic fluid in its gap for high power handling. Frequency response is rated as 35 to 20,000 Hz and sensitivity as 86 dB. Power handling is given as 40 watts minimum, 125 watts maximum. Nominal impedance is 8 ohms. The DQ-12 is finished in black with a black cloth grille. Dimensions are 42 x 16 x 9 inches. Price: \$1,200 a pair. Dahlquist, Dept. SR, 601 Old Willets Path, Hauppauge, NY 11788.

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Light On, title song, etc. MCA 73667
Whitesnake: Slip Of The Tongue • Fool For
Your Lovin', etc. Geffen 01147
Madonna: Like A Prayer • Title smash, Ex-
press Yourself, etc. Sire 01029
Enuff Z'Nuff • New Thing, Fly High Michelle,
For Now, etc. Atco 64257*
Alabama: Southern Star • Song Of The
South, title song, etc. RCA 00914
L. A. Guns: Cocked And Loaded • I Wanna
Be Your Man, etc. Vertigo 64121
The Judds: River of Time • One Man Woman,
Young Love, etc. RCA 01027
Randy Travis: No Holdin' Back • It's Just A
Matter of Time, etc. Warner Bros. 34766
Ziggy Marley And The Melody Makers: One
Bright Day • Virgin 54093
Beastie Boys: Paul's Boutique • Hey Ladies,
Egg Man, etc. Capitol 53976*
Barry Manilow • Please Don't Be Scared, etc.
Arista 01049

Tom Petty: Full Moon Fever • I Won't Back
Down, Free Fallin', etc. MCA 53911
Roy Orbison: Mystery Girl • She's A Mystery
To Me, Virgin 00842
The Traveling Wilburys: Volume One • Han-
dle With Care, etc. Warner/Wilbury 00711
Debbie Gibson: Electric Youth • Lost In Your
Eyes, etc. Atlantic 00827
Pavarotti: Passione • Title song, Era de Mag-
glo, more. London Digital 15441
Ghostbusters II/Soundtrack • Bobby Brown,
Run-D.M.C., more. MCA 51964
Jerry Lee Lewis: Great Balls Of Fire
(Original Soundtrack) • Polydor 54320
Van Halen: OU812 • Feels So Good, Cabo
Wabo, etc. Warner Bros. 50913
The Empire Brass: A Bach Festival • Jesu,
Joy of Man's Desiring, etc. Angel Digital 64211
Great Love Songs of The '50s & '60s, Vol. 1
Original hits! Laurie 20768
Winger • Headed For A Heartbreak, Seven-
teen, more. Atlantic 00830
Rock, Rhythm & Blues • Rick James, Elton
John, Randy Travis, etc. Warner Bros. 92499

Elton John: Sleeping With The Past • Heal-
ing Hands, etc. MCA Digital 10469
Bobby Brown: Don't Be
Cruel • Don't Be Cruel, Roni,
etc. MCA 00621
The Statler Brothers: Live
And Sold Out
Mercury 70440
The B-52's: Cosmic Thing
Channel Z, Dead Beat Club,
etc. Reprise 14742*
The Doobie Brothers: Cy-
cles • The Doctor, One Chalm,
more. Capitol 73187
Perlam: French Violin Showpieces • New
York Phil./Mehta, DG Digital 15457
Starship: Love Among The Cannibals • It's
Not Enough, etc. RCA 44488
White Lion: Big Game • Atlantic 30143
Melissa Manchester: Tribute • Walk On By,
Tenderly, etc. MCA 70403*
Highway 101: Paint The Town • Who's Lonely
Now, etc. Warner Bros. Dig. 14820
Edie Brickell & New Bohemians: Shooting
Rubber Bands At The Stars • Geffen 00789
Def Leppard: Hysteria • Armageddon II,
Animal, Rocket, etc. Mercury 00927
Anne Murray: Greatest Hits, Vol. 2 • If I Never
Fall In Love Again, etc. Capitol 33332
10,000 Maniacs: Blind Man's Zoo • Trouble
Me, Headstrong, etc. Elektra 30236
Earl Klugh: Solo Guitars • It's Only A Paper
Moon, etc. Warner Bros. 63942*
Kiss: Hot In The Shade • Mercury 53475

DJ Jazzy Jeff & The Fresh Prince: And In
This Corner • Jive 01020



Richard Marx:
Repeat Offender
01118

Dirty Dancing/Organal Motion Picture
Soundtrack • RCA 82522
The Cult: Sonic Temple • Fire Woman, Sun
King, etc. Sire/Reprise 01015
Ronnie Milsap: Stranger Things Have Happened
• Houston Solution, etc. RCA 01028
Dolly Parton, Linda Ronstadt, Emmylou
Harris: Trio • Wildflowers, etc. Warner
Bros. 14804
Tora Tora: Surprise Attack • Walkin' Shoes,
28 Days, etc. A&M 44197*
Olivia Newton-John: Warm And Tender
Reach Out For Me, etc. Geffen 21993
Heifetz: Decca Masters, Vol. 2 • Summer-
time, more. MCA 00605
Neil Young: Freedom • Rockin' In The Free
World, more. Reprise Digital 54012*
Poco: Legacy Original • Call It Love, When It
All Began, etc. RCA 54060*

Anderson, Bruford,
Wakeman, Howe • Brother
Of Mine, etc. Arista 01115
Led Zeppelin IV (Runes)
Stairway To Heaven, etc.
Atlantic 12014
K.T. Oslin: This Woman
Hold Me, Money, title song,
more. RCA 00579
Horowitz Plays Mozart
Concerto No. 23 In A; more.
DG Digital 15436*



Janet Jackson's
Rhythm Nation
72386

Bon Jovi: New Jersey • I'll Be There For You,
others. Mercury 00516
ZZ Top: Afterburner • Sleeping Bag, Woke
Up With Wood, etc. Warner Bros. 64042
Billy Idol: Vital Idol • Mony Mony, White Wed-
ding, etc. Chrysalis 54038
Great White: Twice Shy • Once Bitten Twice
Shy, etc. Capitol 01100
Rickle Lee Jones: Flying Cowboys • Satel-
lites, etc. Geffen Digital 94110*
Love And Rockets • So Alive, I Feel Speed,
others. RCA 01083
The Duke Ellington Orchestra: Digital Duke
Satin Doll, etc. • GRP Digital 63356
George Strait: Beyond The Blue Neon • Title
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Prince: Batman/Sdtk. • Batdance, Electroc
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- Genesis: Invisible Touch • In Too Deep,
Tonight Tonight, etc. Atlantic 53740
- Phil Collins: Buster/Original Motion Picture
Sdtrk. • Big Noise, etc. Atlantic 00517
- Melissa Etheridge: Brave And Crazy • No
Souvenirs, title song, etc. Island 10503*
- Kathy Mattea: Willow In The Wind • Title
song, etc. Mercury 60075
- George Harrison: Best Of Dark
Horse 1976-1989 • Dark Horse 80307
- Tina Turner: Foreign Affair • The Best,
Steamy Windows, etc. Capitol 32900
- Raffi: In Concert With The Rise And Shine
Band • Shoreline 54361*
- Expose: What You Don't Know • When I
Looked At Him, etc. Arista 00937
- Fine Young Cannibals: The Raw And The
Cooked • Good Thing, etc. I.R.S. 01068
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Chicago London Digital 25179
- Kenny G: Silhouette • Arista 00603
- Jive Presents: • Yo! MTV Raps De La Soul,
Salt 'N' Pepa, etc. Jive 64407
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Mood • GRP Digital 43293
- The Cure: Disintegration • Lullaby, Plain-
song, Lovesong, etc. Elektra 01109
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more. Mercury 14780
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Title song, etc. Arista 43344*
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Daughter, title song, etc. I.R.S. Metal 50234
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- Dwight Yoakam: Just Lookin' • Long White
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- Pops in Space • The Boston Pops/Williams.
Close Encounters, etc. Philips Digital 05392
- Jody Watley: Larger Than Life • Real Love,
Friends, etc. MCA 01104
- Dion: Yo Frankie • King Of The New York
Streets, etc. Arista 00825
- R.E.M.: Green • Orange Crush, Pop Song 89,
etc. Warner Bros. 00715
- Classic Old & Gold, Vol. 1 • Chiffons, Guy,
others. Laurie 34627
- Kingdom Come: In Your Face • Do You Like
It, Who Do You Love, etc. Polydor 01093
- Kenny Rogers: Something Inside So
Strong • Planet Texas, etc. Reprise 82493
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The Rocks, etc. Capitol 32877
- Stevie Nicks: The Other Side Of The Mirror
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Next Week • Regina, etc. Elektra 73922*
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Warner Bros. 24450
- Soundgarden: Louder Than Love • Loud
Love, Ugly Truth, Gun, etc. A&M 54337*
- Dr. John: In A Sentimental Mood • Makin'
Whoopee, etc. Warner Bros. 42500*
- Allman Bros. Band: Eat A Peach • Melissa,
Blue Sky, etc. Polydor 63353*
- Beethoven, Sym. No. 9 (Choral) • /Nor-
rington conducts. Angel Digital 00467
- Holly Dunn: The Blue Rose Of Texas • Thunder
And Lightnin' etc. Warner Bros. 10461
- John Cougar Mellencamp: Big Daddy • Pop
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AIWA

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stores a programmed selection of tracks on a specific disc; memory for up to thirty random-access tracks; three-way repeat; index search; and auto blank. A remote control is supplied. Price: \$550. Aiwa America, Dept. SR, 35 Oxford Dr., Moonachie, NJ 07074.
Circle 128 on reader service card



AUDIO RESEARCH

The Audio Research LS1 preamplifier features a Direct Gain Path circuit so users can bypass the balance, mode, input, and tape-switching controls for a single input source. It is said to be as close to a "straight wire with gain" as the company has ever produced. There are six normal line-level inputs, including CD, tuner, video, tape, and two auxiliary inputs. The LS1 uses oxygen-free-

copper Litz wire in critical circuit paths and features Audio Research's hybrid tube/solid-state technology. Power requirements are 50 watts maximum. Price: \$1,495 in brushed-aluminum finish, \$1,595 in anodized black as shown. Audio Research, Dept. SR, 6801 Shingle Creek Parkway, Minneapolis, MN 55430.
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OPTONICA BY SHARP

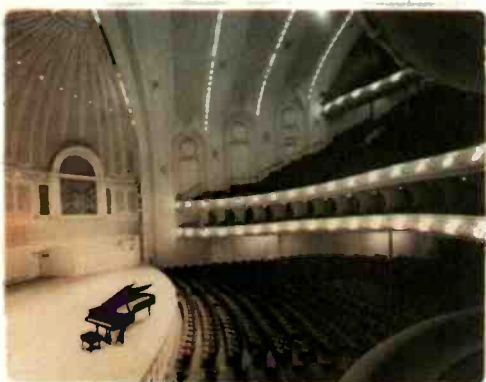
The VC-G990U Super VHS Hi-Fi VCR is part of Sharp's Optonica line. It includes a Voice Coach remote control, which has a synthesized fifty-phrase, five-hundred-word vocabulary to guide users through programming steps, and an index-search system that permits quick location of particular points in home-recorded tapes. Price: \$995.95. Sharp Electronics, Dept. SR, Sharp Plaza, Mahwah, NJ 07430-2135.
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PARADIGM

Paradigm's Control Monitor loudspeaker has a two-way bass-reflex design with a quasi-third-order resistive port. It features the company's LF210 bass/midrange drive unit, which has a die-cast aluminum chassis designed for minimal rear reflection. The 1-inch HF 26 tweeter is a highly damped treated-textile dome. Frequency response is rated as 55 to 20,000 Hz \pm 2 dB, sensitivity as 90 dB. Nominal impedance is 8 ohms. The cabinet is finished in natural oak, walnut, or black-ash veneer and measures 20 x 10 x 13½ inches. Stands like those shown are recommended. Price: \$700 a pair; stands, \$120. Made in Canada, Paradigm speakers are distributed by AudioStream, Dept. SR, Box 2410, Niagara Falls, NY 14302.
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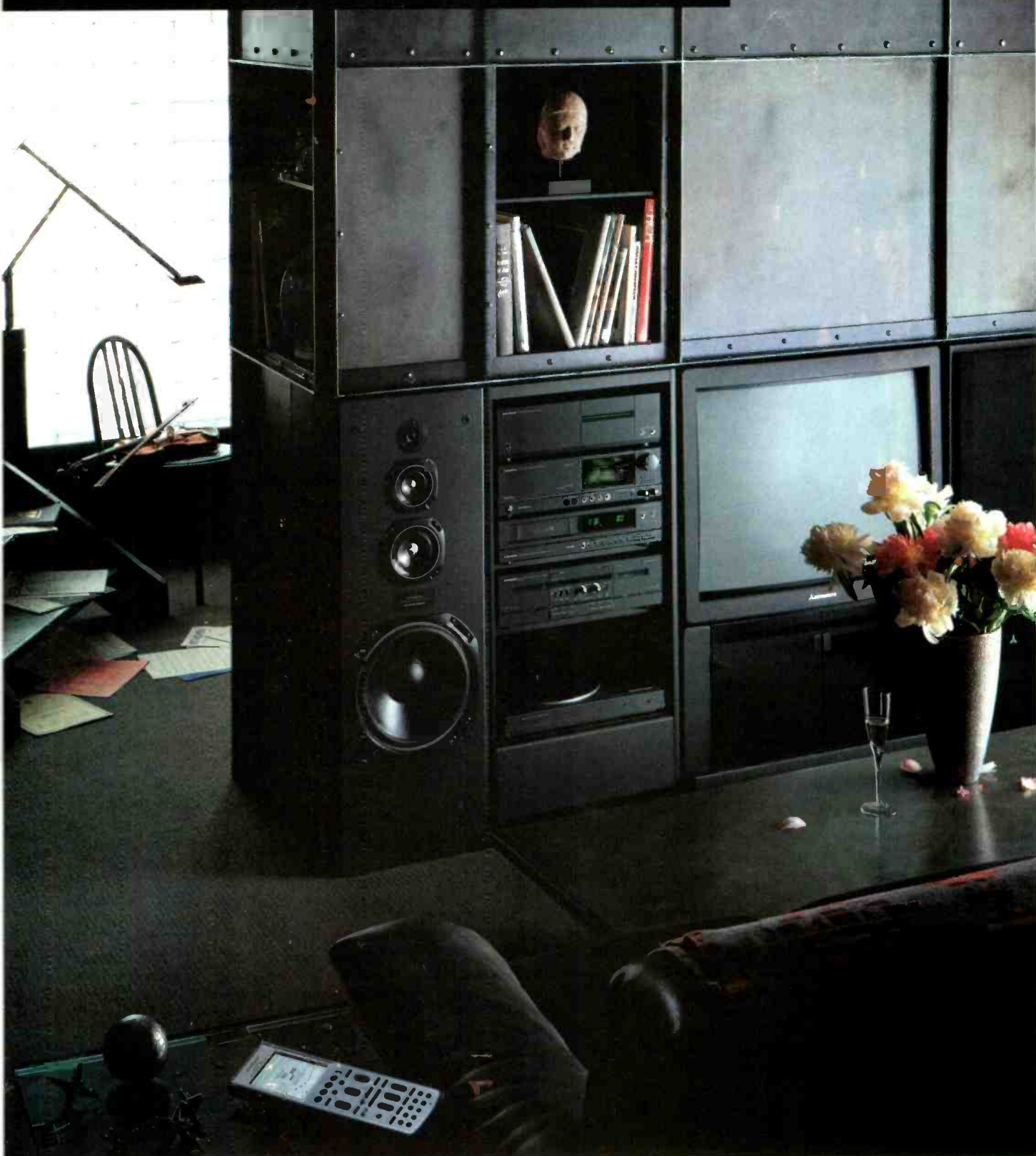
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The Signet SL230 three-piece speaker system consists of two 8 1/8 x 4 7/8 x 4 1/2-inch satellites and a 21 x 13 x 6 3/4-inch subwoofer. Each satellite has a 3/4-inch ferrofluid-cooled, titanium-dome tweeter and a 3 1/2-inch midrange, and the subwoofer has two downward-firing 6-inch, slot-loaded, long-throw drivers. System frequency response is rated as 50 to

20,000 Hz and sensitivity as 88 dB. Crossover frequencies are 200 and 3,000 Hz. The satellites are finished in hand-rubbed, oiled oak veneer, and the subwoofer is matte black on all sides except for the acoustic foam in the loading slot. Price: \$700. Signet, Dept. SR, 4701 Hudson Dr., Stow, OH 44224. **Circle 132 on reader service card**



PARSEC

Parsec's Stealth powered FM antenna was designed for optimal performance even when it is placed close to other electronic equipment. Reception is omnidirectional when the antenna is mounted vertically and directional when it is mounted horizontally. Its gallium-arsenide field-effect transistor, which boosts broadcast signals as much as 36 dB, is said to add less noise than silicon transistors. The variable-gain control knob enables users either to increase power so as to pull in weak or distant stations or to reduce power for lower noise from strong local stations. Price: \$44.95. Parsec of Delaware, Dept. SR, 400 W. 9th St., Wilmington, DE 19801.

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MUSEATEX AUDIO

The Melior Digital Center from Museatex includes separate 19-bit digital-to-analog converters with eight-times oversampling for each channel and switching facilities for as many as four digital source components. The correct sampling frequency and de-emphasis are selected automatically for each source. There are two sets of digital tape outputs for direct digital dubbing, and volume and balance for the analog line outputs can be adjusted digitally, making a separate preamplifier unnecessary. The supplied remote control duplicates all front-panel functions of the Digital Center; it can also be used to program the liquid-crystal display with names for source components and to invert the output signal's absolute phase. Price: \$1,995. Museatex Audio, Dept. SR, 6605 Thimens, Ville St. Laurent, Quebec H4S 1W2, Canada.

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THE HEART OF THE MATTER

Audio's electronic control center—fifth in a series on the basics of audio.

BY IAN G. MASTERS

AN audio system can be put together in a vast number of different ways, depending on what signal sources are chosen, how many and what kinds of output devices (speakers or headphones) are required, and what signal processors, if any, are included. But every system needs a central control unit to choose between the available sources, tailor the signal to individual tastes, and (usually) power the speakers that actually generate the sound.

In some systems, these functions are performed by two separate components. Input selection, level adjustment, equalization, and so forth are the job of a **preamplifier**, less commonly but perhaps more accurately called a **control amplifier**. The output of this device, like that of most of the sources feeding it, is at what is loosely termed **line level**. To increase this very small voltage to something strong enough to drive speakers, a **power amplifier** is needed. This may also be called a **main amplifier** or a **basic amplifier**. In many systems, the functions of preamp and power amp are combined in a single component called an **integrated amplifier**.

North Americans are unusual in



that most of us prefer to buy our central hi-fi electronics in the form of a **receiver**, which combines an integrated amplifier with an AM/FM tuner on a single chassis. A tuner is really an input device rather than a part of the central control, and some systems do use free-standing tuners, but because of the receiver's continuing popularity it makes sense to deal with the tuner along with the rest of the electronic core.

Out of the Air

Before we can consider the FM tuner itself, it is important to examine what sort of signal it will have to process; this is a function of the **antenna**. In many urban areas, where the stations are nearby and have strong signals, a small piece of wire attached to the tuner's antenna terminals is often enough to pull in an adequate signal. But tall buildings or a hilly landscape can make

FM signals bounce around, causing duplicate information to arrive at the antenna at slightly different times. This **multipath** reception can cause very annoying distortion.

Although the effects of multipath can be minimized by a low **capture ratio** in the tuner—its ability to respond only to the stronger of two signals on the same frequency—the best solution to multipath is usually a good antenna. Sometimes all you need is the T-shaped **dipole** antenna supplied with most tuners and receivers. A dipole is directional to some extent and can often be positioned in such a way that it favors one of the competing signals over the others. If you listen to stations from several directions, however, the dipole will usually work only for some of them, and you may need to step up to a small indoor antenna that can be aimed at whichever station you wish. If your multipath problem is really severe, or if you live in a “fringe” location, near the reception limits for the strongest stations, a rooftop antenna may be required; sometimes a television aerial can do double duty for FM. In some cases, only a feed from your local cable company will do.

One of the most basic things to consider when you are looking at FM tuners is **sensitivity**. The weaker an FM signal is, the noisier it will be, so sensitivity is specified as the signal strength required to achieve a particular **quieting** level. The original standard called for a rating based on the signal strength needed to obtain a signal-to-noise ratio (S/N) of 30 dB, and the much quieter mono figure was always quoted. Few people would want to listen to a signal that poor, however, so measurement standards now call for ratings based on the signal strengths at which total harmonic distortion

THE BASICS

(THD) plus noise is 50 dB below full output (**50-dB quieting sensitivity**) as well as 30 dB below full output (**usable sensitivity**). Sensitivity is important mainly when you want to listen to distant stations; most local signals are more than powerful enough for even the most modest tuner section.

In fact, the local stations may well be a nuisance if you want to hear distant ones. In that case, **selectivity** is often a consideration. Selectivity is the ability to reject signals on channels other than the one tuned. The FM band is divided up into channels 200 kHz wide; to minimize the opportunities for interference, broadcast regulations require at least one empty channel between stations in a particular area. The closest local stations can be is on alternate channels, 400 kHz apart. But a distant station might well be on an adjacent channel only 200 kHz from a local one. Almost all tuners offer good **alternate-channel selectivity**; fewer do well in terms of **adjacent-channel selectivity**.

Another relatively uncommon problem is interference between stations on the same frequency. Again, such stations are usually well spaced geographically, but if you are in range of two that operate on the same frequency and wish to listen to one of them, such interference could be annoying. If the competing signals have exactly equal levels, there's not much hope unless you have a good directional antenna; but if one is slightly stronger than the other, the tuner should be able to reject the weaker one. The level difference required for the tuner to respond only to the stronger signal and ignore the weaker is the **capture ratio**, which we mentioned earlier.

Distant stations are often weak and therefore noisy, but you may want to listen to some of them anyway; if so, your tuner should be switchable for mono operation, as this tends to be much quieter. A compromise solution provided in many tuners is **high blend**, which reduces channel separation at high frequencies to achieve some of the same effect. And if you do a lot of tuning back and forth, **FM muting** is important, as it squelches everything below a certain level, including interstation noise.

Switches and Knobs

The clearing house of an audio system is its preamplifier. Practically everything is connected to it, either internally (in the case of receivers and integrated amplifiers) or by means of external cables and jacks. The flexibility of a system—what it will do, as opposed to how well it will do it—is largely determined by the preamp.



A preamplifier's foremost function is to select which of the various signal sources at your disposal is to be fed to the rest of the system. The **input selector** is a rotary knob or a series of pushbuttons that simply routes the signal from the source you choose to the next stage in the proceedings. Three distinct types of inputs funnel through this part of the preamp: **high-level**, **phono**, and **video**. The most common type of input is for high-level signals, usually marked "aux" (for "auxiliary") or "tuner" or "CD." These signals need only to pass through the input switch and on to the next step; the positions are labeled for convenience, but there's no reason a CD player couldn't be connected to a "tuner" input, for example.

Some recent components—primarily integrated amplifiers—have a special input switch labeled **CD Direct** that bypasses all the preamplifier circuitry except the volume control and sometimes the balance. The idea is to put as few circuit elements as possible between the CD player's output and the power am-

plifier's input. Usually, however, the CD signal is also available from the normal input selector to enable dubbing CD's to tape and to permit use of tone controls and the like when that is desirable.

Normally, one or sometimes two inputs are dedicated to the signals from phono cartridges. In this case, not only does the input selector connect the phono input, but the preamp must also process the incoming signal. The output of a typical moving-magnet (MM) cartridge is much lower than that of other components, so the phono section must add a stage of amplification to bring this signal up to line level. In the case of moving-coil (MC) cartridges, the signal is lower still, and many preamplifier sections include either switchable phono gain or yet another stage of amplification to accommodate MC inputs. With both sorts of cartridge, **equalization** is necessary to reverse the RIAA curve applied in the production of every vinyl record; this is also a function of the phono-preamp section.

Occasionally, input selectors will include positions for tape machines, which are thus treated like any other high-level sources. But since a tape deck can also record, it is more commonly connected to a preamplifier's **tape-monitor loop**. One or more of these loops are usually inserted after the input selector but before the rest of the preamp's circuitry. Whichever input source has been chosen at the main selector is fed to a pair of **tape-out** jacks connected to the tape deck's inputs, so the selected program can be recorded at any time. The deck's outputs are fed to a pair of **tape-in** (or tape-monitor) jacks.

The tape-monitor circuit's control is usually a switch marked "source" and "tape." In the former position, the selected input signal is sent directly to the subsequent stages of the preamplifier for normal listening (although it is still being fed to the tape deck as well). In the monitor (tape) position, the later stages of the preamplifier are connected to whatever signal is coming from the tape deck while the tape deck continues to receive the signal from the main selector. This enables you to monitor the signal passing through the tape deck's electronics or, in the

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- Black Music**
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WS4/F6

WS5/59

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How the Club works: About every four weeks (13 times a year) you'll receive the Club's music magazine, which describes the Selection of the Month—plus many exciting alternates, new hits and old favorites from every field of music. In addition, up to six times a year, you may receive offers of Special Selections, usually at a discount off regular Club prices, for a total of up to 19 buying opportunities.

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The CDs you order during your membership will be billed at regular Club prices, which currently are \$12.98 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 bonus plan. It lets you buy one CD at half price for each CD you buy at regular Club prices.

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Selections with two numbers contain 2 CDs and count as 2—so write in both numbers.

CBS/COLUMBIA HOUSE, Terre Haute, IN 47811

THE BASICS

case of a three-head deck, the signal coming off the tape (as long as the source/tape switch on the deck is also in the "tape" position). Ordinarily, the tape-monitor switch is also used for regular tape playback, although a few models use the normal input selector for this; in such cases, there is usually a separate **record-out** switch that duplicates the input selector, enabling you to record one source while listening to another.

Most preamplifier sections provide more than one tape-monitor loop, permitting the use of more than one tape deck. In such cases, provision is also made for copying from one deck to another using the preamp's internal switching. Some models also offer a similar circuit called an **external-processor loop** for connecting equalizers, surround-sound decoders, and the like, although a tape-monitor loop can be used for that purpose as well.

A few integrated amps and receivers have a set of jacks marked **pre-out** and **main-in**, which provide access to the preamp outputs and the power-amplifier inputs. Normally these are connected together, but the jumpers linking them can be removed to permit the insertion of another component. And, naturally, the same thing can be achieved with a separate preamp and power amp.

Increasingly, preamplifier sections provide for the control of video as well as audio components. In most cases this is simply a switching function, although some models include video processing.

Besides switching, the other main function of a preamplifier is to offer a measure of control over the signal itself, both in level and frequency response. Although some high-end models make a point of omitting them, most preamplifier sections include **tone controls** for bass and treble, and occasionally for the mid-range as well. Tone controls are simple equalizers for adjusting minor spectral imbalances in recordings or speakers; in most cases the effects of the tone controls can be eliminated either by turning them to a center-detent position or by switching them out of the circuit altogether. Small left-right level differences caused by equipment or listener positioning can be similarly

corrected by means of a **balance control**, again usually provided with a center detent or some sort of defeat.

Finally, the overall program level is set by a **volume control**. In systems using separate components, this is occasionally duplicated on the power amplifier, but a power-amp level control is normally provided mainly to match one component to another.



The Power Plant

Most of the audio chain is concerned with very low levels, but when it comes to turning the electrical signals back into sound, more muscle is needed. A power amplifier uses the line-level audio signal it receives from the preamp to modulate the much greater voltage and current derived by its power supply from house current, ending up with a replica strong enough to drive a pair of speakers. A power amplifier has no other function than to take a small signal and turn it into a large one; any other features a separate power amplifier may offer, such as level controls or output meters, are merely embellishments.

The traditional audio virtues—flat frequency response, low distortion, good noise performance, and so forth—are as important for amplifiers as for other components, and it is rare to encounter one that doesn't excel in these respects. Where amplifiers do differ is in the

critical attribute of **output power**: the amount of work the unit is capable of doing, measured in watts. The way this characteristic is specified is rigorously standardized, at least for home equipment. The basic figure normally given is the amount of power the amplifier can put out continuously over a period of time. Most amplifiers can deliver considerably more power during brief musical peaks—how *much* more is called **dynamic headroom**. Power specifications must also include the maximum amount of **total harmonic distortion (THD)** and the **frequency range** that apply for the power level specified as well as the **impedance**, in ohms, of the load being driven. In addition, both channels must be driven simultaneously for stereo amplifiers, because this reflects the capacity of the power supply.

Practically all amplifiers sold today are stereo, although some allow the interconnection of the two channels to produce a higher-power mono signal, a process called **bridging** or **strapping**. For the average amplifier, however, a typical specification would be "60 watts per channel into 8 ohms from 20 to 20,000 Hz with no more than 0.01 percent total harmonic distortion, both channels operating." The amount of power required for any specific application is critical.

Another important consideration is the load impedance the amplifier will drive. Too low an impedance will increase the current flow in the amplifier's output stages, possibly to levels that could damage them. Most home speakers have a nominal (rated) impedance of 8 ohms, and virtually all amplifiers are happy with that, but a few are specified at 4 ohms, and the actual impedance of almost any speaker varies considerably with frequency, the rated value representing only an approximation. Using more than one set of speakers in parallel also reduces total impedance. Amplifiers vary widely in their ability to handle low impedances, and this must be considered when choosing both amplifier and speakers.

NEXT: The critical components that turn the audio into sound—speakers and headphones.



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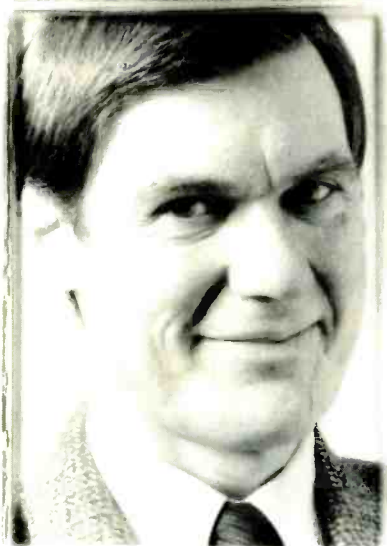
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CANTON

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by Ian G. Masters



Variable Output

Q My CD player has both fixed-level and variable-level output jacks, the latter adjustable either by a front-panel control or by the wireless remote. The manual instructs me to decide whether I prefer the simpler signal path of the fixed-output or the convenience of a volume-controlled output. Will the player's signal suffer if I choose convenience over simplicity?

JAMES P. WEBSTER
Newark, DE

A It may in theory, but you're unlikely to hear the difference. Direct connections of various sorts are becoming increasingly popular, on the principle that the fewer circuit elements there are between the source and the amplifier, the cleaner the sound, particularly with a signal as good as that provided by a CD player. Many amplifier and preamplifier makers now offer direct CD inputs that bypass most of the control circuitry, for instance. The benefits gained by such a practice may indeed be measurable, but they are rarely audible in normal listening circumstances.

On the other hand, an output level control can be extremely useful, particularly if it can be operated remotely. Because of the wide dynamic range of compact discs, it is not uncommon for potentially damaging musical peaks to catch us unawares. The ability to cut the level from the listening position, rather than having to walk across the room, can sometimes make the difference between a momentarily annoying level and a blown tweeter. Even if you never

use this feature, however, it is often helpful to be able to match the level of your CD player (or any other component) to your other signal sources to prevent unpleasant jumps in level when you switch from one input to another.

Video Recording Hook-Ups

Q Would I obtain better recording quality by connecting the output of my stereo television set to the inputs of my stereo VCR or by having the VCR connected directly to the cable feed? Also, when I'm dubbing from one VCR to another, should they be connected through the TV set or directly to one another?

RICHARD A. MASSO
Brownsville, TX

A There's no single answer when it comes to taping broadcasts. The main consideration is the quality of the tuner, and either your VCR or your TV set may have the edge. At one time, video recorders generally had tuners that outperformed most television sets, but that is not necessarily so today, particularly when it comes to "monitor/receiver" models. The only way you can really tell whether there is any difference, and which hook-up is better, is to find a program that will be broadcast more than once and record it both ways (check the listings for your local PBS station; PBS affiliates often show the same program several times during the same week).

As for dubbing, it is usually preferable not to put anything more in the signal path than you have to, so direct connection will probably yield the best results, although the difference may be so subtle that it can be ignored if patching through your TV set is more convenient. Again, try it both ways.

Combined Impedances

Q I have an amplifier that will accept loads from 1 to 8 ohms, driving several pairs of speakers. How do I figure out the overall load of the speakers when the various units have different impedance ratings?

DENISE ADAMS
Brooklyn, NY

A That's an important question, because the more speakers you connect in parallel to an amplifier, the lower the total impedance will be and the more difficulty the amplifier will have driving it. If you are running only two speakers per channel, you can get a close approximation of the total load by multiplying the two impedances together, then dividing the result by their sum. Thus, if you have an 8-ohm speaker and a 4-ohm speaker connected,

divide 32 (that is, 8×4) by 12 ($8 + 4$); the result is 2.7 ohms.

The arithmetic is slightly more complicated if you plan to use more than two speakers per channel. In that case, you must use the following formula:

$$\frac{1}{R_T} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} + \frac{1}{R_4} + \dots$$

where R_T is the total load and R_1, R_2 , etc. are the individual impedances. For instance, suppose you have four speakers, two rated at 8 ohms, one at 16 ohms, and one at 4 ohms. The sum of $\frac{1}{8} + \frac{1}{8} + \frac{1}{16} + \frac{1}{4}$ is $\frac{9}{16}$. Invert that fraction and convert it to a decimal, which gives a total impedance of 1.78 ohms. Bear in mind, however, that impedance ratings are *nominal* only. The actual impedance may well be much lower at certain frequencies.

Salt Damage

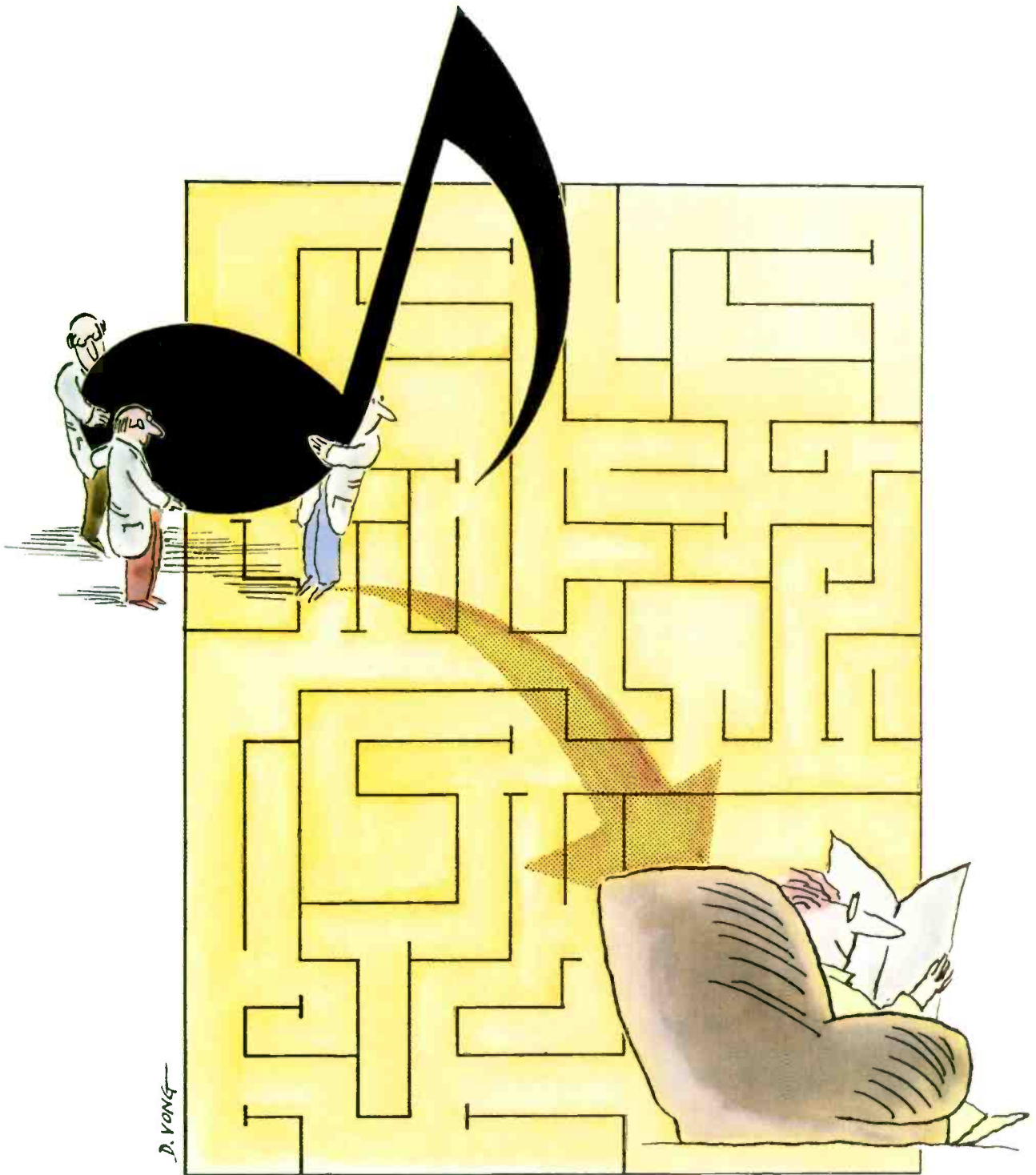
Q My wife and I are considering moving to the Virgin Islands. We are both disc jockeys and are concerned about the effects salt air might have on our equipment. Are there any parts of a system that are particularly susceptible to such damage? And are there any precautions we might take?

JIM ROVELLO
Portland, OR

A Short of hermetically sealing your components, there's no way to avoid the effects entirely. Eventually, the salt may cause corrosion of wiring and switch contacts within your equipment, particularly if there is also a lot of humidity. In most cases, this will take a long time to happen, perhaps only after years of operation. When the jacks and plugs show evidence of degradation, there will probably be some internal corrosion as well.

You can minimize the problems by making sure that the equipment comes into contact with salt-laden air as little as possible. If your home is air-conditioned, keep everything inside when it's not being used. And if the vehicle you use to transport the equipment has air conditioning, use it (but don't store your gear there—the air conditioning doesn't do much good when the car is not running). Also, regularly clean everything you can reach to prevent the salt from building up. With these precautions, you should be able to prolong the life of your system at least until you want to replace it.

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



In search of sonic perfection,
Adcom has taken the path of least resistance.

Introducing
the Adcom
GFP-565
direct-path
preamplifier.

Precision 1% tolerance Roederstein metal-film resistors and polycarbonate-film capacitors - For infinitesimally low distortion and long-term stability.

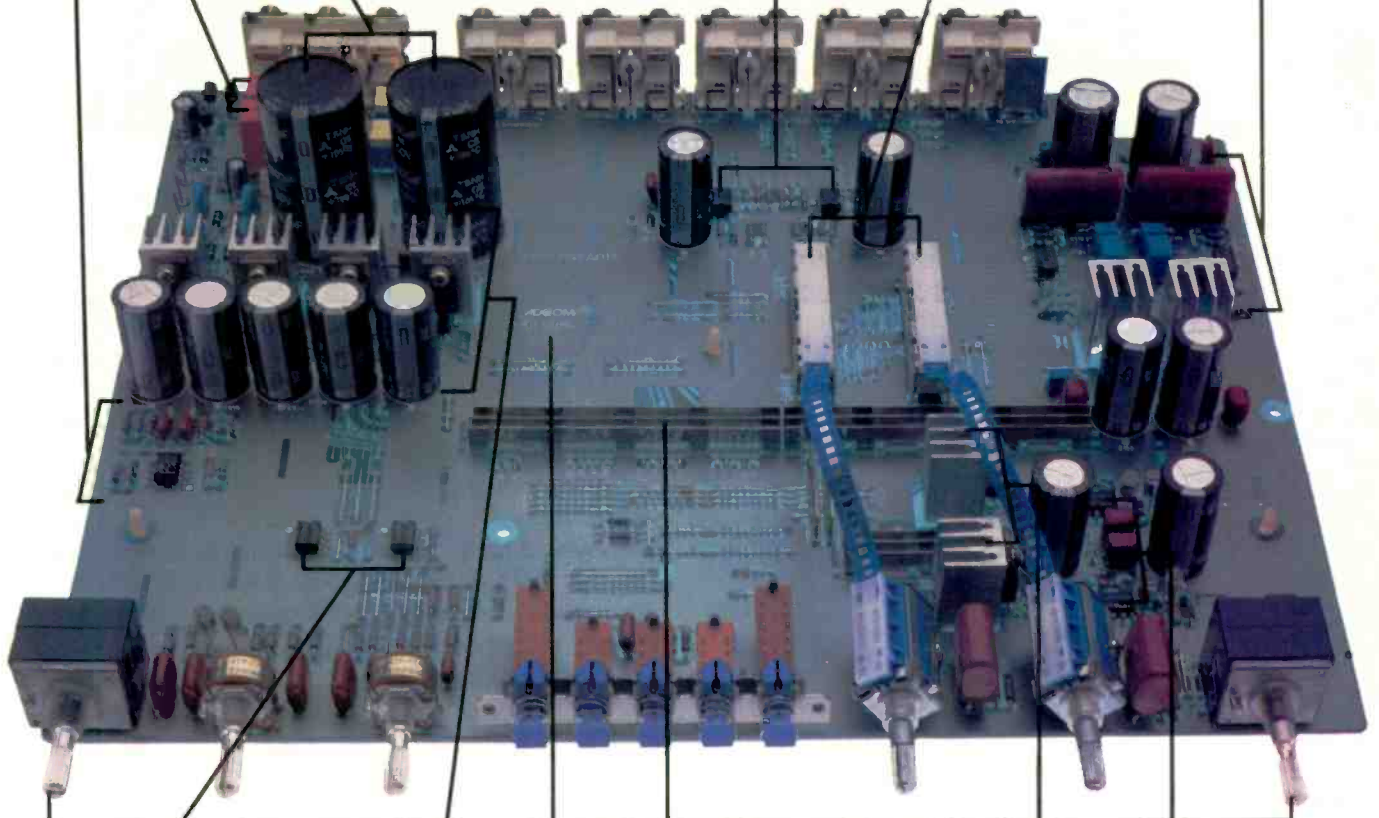
Buffered tape outputs - To prevent any degradation of source signals by tape recorders connected to the recording circuit.

Low-impedance RIAA network with Roederstein capacitors - For minimal noise and distortion; purest sound with highest RIAA accuracy.

Low ESR bypass capacitors - Insure purest DC to each stage and eliminates "crosstalk."

All gold-plated input and output jacks - Eliminates corrosion; direct mounting avoids unreliable wiring, hum and noise.

Direct, on-chassis switching - Switches audio signals close to their input source eliminating long signal traces and wires.



Separate and switchable tone-control amplifiers - Assures superior signal fidelity and maintains symmetry.

High-current, low-impedance regulated power supply - Uses programmable regulators and low ESR capacitors; avoids voltage drops and current losses.

High-grade potentiometers - For long-term accuracy and ideal channel balance.

Massive bus-bars - Carry DC to each stage without power loss; keeps source impedance low and current capability high.

High-speed linear gain amplifiers - The "heart" of the Adcom preamp, individually selected for low noise and DC offset. Assure peak performance (with no sonic deterioration) over a long period of time.

Glass epoxy board, copper-plated on both sides - Provides a shield/ground plane to block hum and interference.

High current output buffers - For superior dynamic performance and total isolation of circuits.



Audio designers have long known that the fewer circuits and electronic components a musical signal encounters on its way to your loudspeaker system, the greater its musical purity will be when it gets there. Ideally, if a signal could travel directly from its source (CD, tape, record or FM broadcast) through your preamplifier and your power amplifier without the need for amplification or tonal adjustment, it would sound exactly as it did when it was recorded. Now, through obsessive attention to detail and design ingenuity, Adcom creates the GFP-565—the world's first affordably priced preamplifier that boasts direct, linear gain path circuitry.

Direct Gain Path: Pure And Simple

From input to output, Adcom has made every effort to make the signal path as direct, pure and simple as possible. Starting by gold plating all input and output jacks, and then directly mounting all jacks, switches, potentiometers and other laboratory grade components on a double copper-plated, glass epoxy printed circuit board, signal losses and noise are greatly reduced.

Through a uniquely innovative approach which minimizes the number of components and wiring harnesses, waveform distortion is reduced while dynamic contrasts are preserved. All of this translates into superior, more lifelike sound.

Design Ingenuity You Can Hear

Having earned a reputation for providing high performance at reasonable cost with its power amplifiers, preamp/tuners and CD player, Adcom designers set out to establish a new reference standard in value among the very best preamplifiers on the market. In every area of design, a no-compromise approach was taken with respect to quality of components and construction. Its performance-to-cost

relationship marks a significant breakthrough into a whole new category of audiophile-grade components: super performance that doesn't cost a king's ransom.

All stages operate in pure Class-A mode. To prevent interaction and maintain absolute signal integrity, each stage is buffered and has its own individually bypassed source of power. This resolute design approach achieves complete decoupling between all stages for extraordinarily low distortion.

A high-current, very low impedance, regulated DC power supply delivers an abundance of reserve current for musical peaks with instantaneous recovery. To keep power supply source-impedances low, heavy bus-bars feed power to each individual stage rather than the usually thin "hook-up" wiring.

Direct coupling, which does not use capacitors in the signal path, eliminates the "veiling" of low-level detail and extends frequency response. To reduce the loading effects of connecting cables and associated equipment, an extraordinarily low impedance was developed for the outputs.

This combination of Class-A operation, linear gain path, very low-impedance power supply, direct coupling, buffered stages and low output impedance all add up to a preamp capable of maintaining absolute signal integrity with full dynamics.

Even the tape outputs are buffered to prevent the impedance of a tape recorder from loading down or otherwise distorting the signal through "diode" effects. Precision 1% Roederstein metal-film resistors and metallized-film capacitors are used throughout.

Perhaps most impressive of all is the application of Adcom's proprietary linear-gain amplifier circuits, which undergo a relentless testing and quality control procedure. Less than 6% of manufactured devices meet Adcom's stringent quality acceptance specifications. As an end result, every Adcom preamplifier produced not only sounds as good as its designers intended, but maintains its uniform standard of excellence.



These high-speed, state-of-the-art linear amplifiers are specially selected for the lowest DC offset voltage and lowest noise of any comparable components currently available. The virtual elimination of DC offset allows the GFP-565 to be direct-coupled, providing superior frequency response from 5 Hz to almost 100,000 Hz! Noise is astonishingly low, with a typical noise floor, even in phono, comparable only to the finest digital studio equipment.

Three Sets Of Outputs For The Perfect Balance Of Performance And Flexibility

Traditionally, audiophiles have had to choose between two opposing preamplifier designs. One offered the flexibility of tone, balance and input controls but with some inherent signal degradation; and the other, more purist approach, offered little more than an on/off switch and volume control. The GFP-565 resolves this dilemma and satisfies the needs of not only the most demanding perfectionists, but all other music lovers as well.

You can choose one or more of three sets of outputs: 1) **BYPASS**: direct-coupled output before tone controls, filters, etc. This provides the musical signal its most straightforward and direct path to your power amplifier while retaining control of volume and balance. 2) **LAB**: direct-coupled output with no output-coupling capacitors in the signal path. This mode provides in addition to volume and balance, switchable tone controls, filter, loudness contour and mono modes. 3) **NORMAL**: identical to LAB output but utilizing the highest quality metallized polycarbonate output-coupling capacitors for operation with amplifiers requiring the extra protection of low-frequency bandwidth limiting. Bi-amplified and tri-amplified systems are easily accommodated with this remarkably flexible arrangement.

Convenience Made Simple

At first glance, the minimalist style of the GFP-565 is deceptive in its simplicity. However, it is this carefully considered lack of complexity which makes the GFP-565 so convenient and user friendly. It will cosmetically and electronically match the rest of your Adcom components whether you're buying them now, or adding to an Adcom system you've started a couple of years ago.

Without unnecessary complications, you may listen to one input (phono, CD, tape, VCR) while recording from another. And for total system integration and control, there are five high level inputs (tuner, CD, tape 1, tape 2, video/aux) as well as a phono input with enough gain for any high-output moving-coil, moving-magnet, or induced-magnet cartridge.

A highly sophisticated loudness contour helps augment the bass range to compensate for perceived aural reduction of these frequencies at low listening levels, while maintaining musical integrity as the volume level is increased. And, when needed, separate bass, treble and hi-filter functions can be activated to provide adjustment for the often less than perfect characteristics of loudspeakers, program material and room acoustics.

To take advantage of today's new signal processors, a separate front panel switch allows processor in/out operation while leaving both tape circuits free for tape deck use. If you have an equalizer or surround-sound processor, for example, you can switch it into the sound path only when appropriate to the program.

And for optimum performance with today's superior headphones with impedances of 100 to 2000 ohms, a separate, high quality headphone amplifier has been incorporated into the GFP-565.

(over please)

Why Is Adcom Clearly Superior To Other Brands?



GFP-565/GFA-535 (60 watts/ch)*



GFP-565/GFA-545 (100 watts/ch)*



GFP-565/GFA-555 (200 watts/ch)*

Adcom stereo components have repeatedly won critical acclaim for offering audibly superior performance even when compared to components costing two and three times more. Indeed, Adcom's reputation has been built by offering exceptional quality at realistic, uninflated prices. How can this achievement of creating so much consumer value, year after year, be possible?

To begin with, Adcom has clearly identified its need to lead the market rather than follow it, concentrating on the development of a small number of highly innovative products, easily differentiated from the vast array of equipment generally offered. By choice, Adcom is not part of a larger multi-national conglomerate, nor does Adcom set out to produce redundant models for every taste and pocketbook.

Adcom's designers are free to imaginatively explore new and exciting ways of bringing great sound into the homes of more and more people, unrestricted by any rigid bureaucracy.

Adcom's philosophy that a well-engineered product should remain viable for years to come is common among premium priced manufacturers, yet rare among those companies making affordable components.

While other manufacturers were promoting their third and fourth generation of CD players with "features" which added little or no benefit in terms of musical enjoyment, Adcom painstakingly went about developing the one model which became the critically acclaimed GCD-575. Its Class-A analog circuitry is still unrivalled for sonic perfection.

Specifications

Output Impedance
Main Out: 100 ohms
Tape Out: 475 ohms

Output Level (Rated)
Main Out: 2.0 V

Output Level (Maximum)
Main Out: 10.0 V

Frequency Response (± 0.5 dB)
High Level: 5 Hz - 90 kHz
Phono: 5 Hz - 70 kHz

THD + Noise (@ Rated Output, 20 Hz - 20 kHz)
High Level: 0.0025%
Phono: 0.009%

IMD (SMPTE, @ Rated Output)
High Level: 0.0025%
Phono: 0.0025%

Signal-to-Noise (@ Rated Output, "A" Weighted)
High Level: >100 dB
Phono: >95 dB

Input Impedance
High Level: 22 kohms
Phono: 47 kohms

Input Sensitivity (@ Rated Output)
High Level: 205 mV
Phono: 23 mV

RIAA Accuracy (20 Hz - 20 kHz): ± 0.1 dB

Tape Output THD + Noise (@ 2.0 V, 20 Hz - 20 kHz): 0.003%

Tape Output IMD (SMPTE) @ 2.0 V: 0.002%

Tone Controls
Bass (20 Hz): ± 10 dB
Treble (20 kHz): ± 9 dB

Loudness (Volume Control @ 9:00 o'clock)
100 Hz: +5 dB
20 Hz: +10 dB

Crosstalk (1 kHz): -105 dB

Separation (1 kHz, @ Rated Output): >75 dB

Hi Filter (20 kHz): -2.7 dB

General

Power: 120 VAC/50-60 Hz (available in other voltages on special order)

Power Consumption: 10 watts

Chassis Dimensions: 17" (432 mm) \times 11 3/8" (289 mm) \times 3" (76 mm)

Maximum Dimensions: 17" (432 mm) \times 12 9/16" (319 mm) \times 3 1/4" (83 mm)

Weight: 11 lbs. (5 kg)

Weight, Packed: 14 lbs. (6.4 kg)

Adcom components also available with optional white front panel.

Specifications subject to change without prior notice.

Adcom has also been extremely selective in choosing its dealer network, limiting it to include only the nation's best, most professional audio retail organizations. By relying on the knowledgeable, intelligent presentation of its product and the enormous benefits of positive word-of-mouth advertising from enthusiastic music lovers, Adcom can optimize its marketing expenditures. These savings are important in keeping costs down to the end user of Adcom products.

Listen To The Difference

You are cordially invited to audition the new GFP-565 direct-path preamplifier at your Authorized Adcom Dealer. Don't hesitate to compare it to the most expensive preamp on your dealer's shelves. You'll echo the words of one perfectionist critic who, hearing the GFP-565 through a pair of GFA-565 amplifiers for the first time, said, "I've never heard my speakers 'sing' like this!"

In their search for the optimum preamplifier concept, Adcom took the path of least resistance. Why not do the same? Of course, you could spend more . . . but should you? Consider the new Adcom GFP-565. It's your best choice in preamplifiers. Pure and simple.

**Power output, watts/channel, continuous both channels driven into 8 ohms, 20 Hz - 20 kHz < 0.09% THD.*

ADCOM[®]
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JAPAN MEETS THE WEST

by William Livingstone

EUROPEAN and American musicians who have performed in Japan have often been surprised to find the Japanese public so enthusiastic and so knowledgeable about the standard classical repertoire. Experts on culture in Japan point out, however, that no one should be surprised, because European instruments were introduced in Japan at about the same time as the samisen in the sixteenth century. After the Meiji Restoration of 1868, the diffusion of Western music was actually encouraged by the government, and by the end of the nineteenth century in such cities as Tokyo and Osaka there were cultivated audiences for the music of the French Impressionists as well as Bach, Beethoven, and Brahms.

Although the Japanese did not produce many world-class performers of Western music until after World War II, they are catching up fast. Among the first to achieve international prominence was the conductor Seiji Ozawa. Trained in Japan, he later studied further with Herbert von Karajan in Germany and Charles Munch in the United States. He was the conductor of orchestras in Toronto and San Francisco before assuming his current post as music director of the Boston Symphony in 1973.

The delicacy, subtlety, and refinement usually associated with Japanese artists have made Ozawa a noted interpreter of French music. But Japanese art is not all moss gardens, miniature poetry, and woodblock prints. There is plenty of emotion in the Kabuki theater and no lack of blood and guts in Japanese films about the feudal warriors known as samurai. Perhaps it is this artistic strain that makes Ozawa also an outstanding interpreter of the big nineteenth- and twentieth-century showpieces of the German repertoire.

Recently Ozawa received raves in this magazine for his very exciting performance of Strauss's *Elektra* with the Boston Symphony (Philips 422 574-2, two CD's) and for his large-gestured, vital reading of Orff's *Carmina Burana* (Philips 422 363-2). I recommend both.

In the 1930's Shinichi Suzuki developed a radically different method for teaching young string players, which may account for the number of Japanese violinists now in symphony orchestras around the world. The Tokyo String Quartet (formed by four Japanese students at the Juilliard School in New York) is celebrating its twentieth anniversary this season. After a number of years on Deutsche Grammophon and CBS, the quartet is now under contract to RCA, recording music of Schubert.

No longer a child prodigy, the violinist Midori is now eighteen and well along in a dazzling international career, performing in Europe, America, and the Orient and recording for CBS Masterworks (now, officially, Sony Classical). Her first CBS release was a live performance of Dvořák's Violin Concerto in A Minor with the New York Philharmonic under Zubin Mehta (CBS MK 44923), which prompted John Rockwell, of the *New York Times*, to call her "an artist of inspiring gifts." Her next recording, Paganini's Twenty-four Caprices for Solo Violin (CBS MK 44944), leaves no doubt about her gifts.

The most prominent of Japanese pianists is Mitsuko Uchida, who won important competitions with her interpretations of Beethoven and Chopin but has become best known as a Mozart specialist. For Philips she is recording a cycle of Mozart's piano concertos with the English Chamber Orchestra conducted by Jeffrey Tate. All her Mozart recordings deserve serious attention, and I have particularly enjoyed her readings of Concertos Nos. 13 and 14 (Philips 422 359-2).

The guitarist Kazuhito Yamashita shows delicacy and charm in his recordings of Cimarosa and Debussy, and with the bravery of a samurai he has transcribed and

recorded Mussorgsky's *Pictures at an Exhibition* (RCA ARE1-4203, cassette only). It's an interesting (if not totally successful) venture. More pleasing is "Italian Serenade" (RCA 5679-2), recorded with flutist James Galway, and I recommend Yamashita's "Music of Spain" (RCA 5913-2), a lovely program that ends with José Viñas's *Fantasia Original*.

Although audiences in Japan love opera, the only singers from that country to perform much abroad have been sopranos who sang the title role in Puccini's *Madama Butterfly*. The current one is Yasuko Mayashi, who gives



INGRID V. PALFSKE/CAVI

Mitsuko Shirai, Hartmut Höll

a dramatic and moving portrayal in a performance of *Butterfly* videotaped in 1986 at La Scala in Milan. Available on videodisc (Pioneer Artists PA 87-203), it is a beautifully effective realization of this opera.

Perhaps the most exotic of Japanese performers of Western music is the mezzo-soprano Mitsuko Shirai, a specialist in French art songs and German lieder. Her warm voice, perfect intonation, and unmannered interpretations are well displayed in an album of Schubert lieder (Capriccio 10 171) in which she is accompanied by her husband, the pianist Hartmut Höll. East and West *can* meet in artistic collaborations like theirs and in the response of Western audiences to Eastern artists of Shirai's quality. □

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David Clark—*Audio Magazine* Sept. '89

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where the speaker is placed in the room. If you put a conventional speaker where the room can help the low bass, it may hinder the upper ranges, or vice-versa.

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“Very much in the Henry Kloss tradition... another hi-fi milestone.”

 **Review**

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No matter how well a speaker performs, at home the listening room takes over. Room acoustics emphasize and de-emphasize various parts of the musical range, depending on

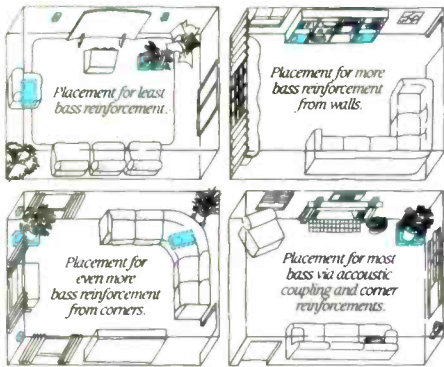
Unlike seemingly similar satellite systems which use a single large subwoofer, Ensemble uses two separate, compact bass units. They fit more gracefully into your living environment, and help minimize the effects of the listening room's standing waves.



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StereoReview

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by Julian Hirsch



BOXLESS SPEAKERS

HOME loudspeaker systems can be classified according to their physical structure (as distinct from the specific techniques and materials used in the construction of their drivers or cabinets). The great majority of speakers used in hi-fi systems consist of boxes, either sealed or ported and usually made of wood, in which are several drivers of different sizes that radiate different parts of the audio frequency range.

A relatively small number of speakers are planar or dipole radiators (it is possible for a given speaker to fall into both of those categories) employing either electrostatic or electromagnetic principles. A dipole radiates equally to the front and the rear and not at all from the sides; most full-range electrostatic speakers are dipoles. There is also a category consisting of only one speaker—the Klipschorn. This is a folded-horn system designed for use in a room corner, where the walls and floor form an extension of the complex internal structure of the speaker, resulting in very high efficiency in the bass range.

Within these groupings, there are as many configurations as there are

designers. Each has its advantages and disadvantages in respect to acoustic performance and compatibility with the acoustic environment and driving amplifier. There are also trade-offs in size and cost within each category, although full-range dipole speakers are normally both large and expensive. The common box speaker comes in every size and price range, from tiny accessories for portable tape and CD players to huge, multidriver systems that will not fit in an ordinary-size room or in the budgets of any but a few wealthy people.

In the last few years, another category of home speaker has appeared, and its popularity is growing by leaps and bounds. The incentive for its creation was the simple fact that many people who wish to enjoy good music reproduction lack the room for a pair of speakers—let alone two or three pairs in the case of a full-fledged audio/video installation. Also, difficult as it may be for a true audiophile to accept, not everyone finds a pair of wooden boxes, regardless of the quality of their finish, to be an attractive part of a room's decor. Small box speakers can sometimes be hidden successfully, but they cannot produce the caliber of sound that is desired. The three-piece systems currently manufactured by many established hi-fi companies can go a long way toward solving that problem, assuming that the bass module can be concealed successfully. Nevertheless, there are many cases where what is wanted is a speaker that takes up *no* room space but still sounds reasonably good.

The most promising end to this quest is the in-wall speaker, which takes advantage of the fact that the walls of almost every home or apartment are hollow, divided by 4-inch wooden studs at 16-inch intervals. Generally about 8 feet high, the walls themselves are usually made of plaster or gypsum board about 1/2 inch thick. Such walls provide, in effect, a large number of potential speaker enclosures at 16-inch intervals, the space between the studs being used to contain and conceal speakers and provide the necessary baffling for them.

Of course, not every speaker is suitable for wall installation. Some are too deep or too wide. The enclosed volume between a typical pair of studs is slightly less than 3 cubic feet, which mitigates against the use of large drivers that require a greater enclosure volume for best results. Also, there is little opportunity to use "cut-and-try" or other experimental methods of installation. Few people would be willing to have their living-room walls fall victim to an unskilled system designer or installer.

The obvious answer is a pre-designed and preassembled speaker system, optimized for the known constraints of the inter-stud wall space, that can be installed easily and will give reasonably predictable results. The first such products of which I am aware came from a California company, Sonance, which had specialized in custom installations and developed a line of in-wall speaker systems for more general use. Subsequently a number of companies, including many well-known speaker manufacturers, introduced competitive in-wall speakers.

Because of their specific installation requirements, these products tend to be very similar in their physical design. Typically, they consist of a baffle plate, designed to be installed through a cutout in the wall, containing, at a minimum, a small bass driver (6 to 8 inches in diameter) and a small dome tweeter together with the required crossover components. Since there is no tight constraint on the vertical dimension of the system, some companies provide two woofers that are vertically aligned.

Tested This Month

*Magnavox CDB630
Compact Disc Player
KEF C55 Speaker System
Grundig Fine Arts
CCT-903 Dual
Cassette Deck
Polk Audio RM-3000
Reference Monitor
Speaker System*

Say "No" To Oatmeal

I've been a studio drummer for eight years. So, I'm very critical about speakers, mostly because I know what drums are supposed to sound like. Most speakers make a kick drum sound like someone's playing a bowl of oatmeal. I don't even like the way oatmeal tastes, let alone how it sounds.

One day, a friend and I stopped at a hi-fi store to pick up some cassette tapes. Off in one of the listening rooms, I heard some music that sounded live. It was the drums I noticed first. Forget oatmeal, what I heard was a really tight, clean, punchy sound.

We strolled into the room halfway expecting to find a jam going on. But it was a recording. I looked at one of the speakers. It was a KLIPSCH® CHORUS®.

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TECHNICAL TALK

The speaker is usually provided with a removable grille that can be colored to match the wall or meet any other decorative requirements. Level adjustments for the tweeter, if provided, are located behind the grille. Wiring, of course, is in the wall. Obviously, installation of an in-wall speaker system is no job for an amateur. There is a world of difference between connecting a pair of box speakers to an amplifier (and moving them around for the best sound and imaging) and cutting a pair of highly visible holes in a wall for speakers whose sound qualities must be right the first time!

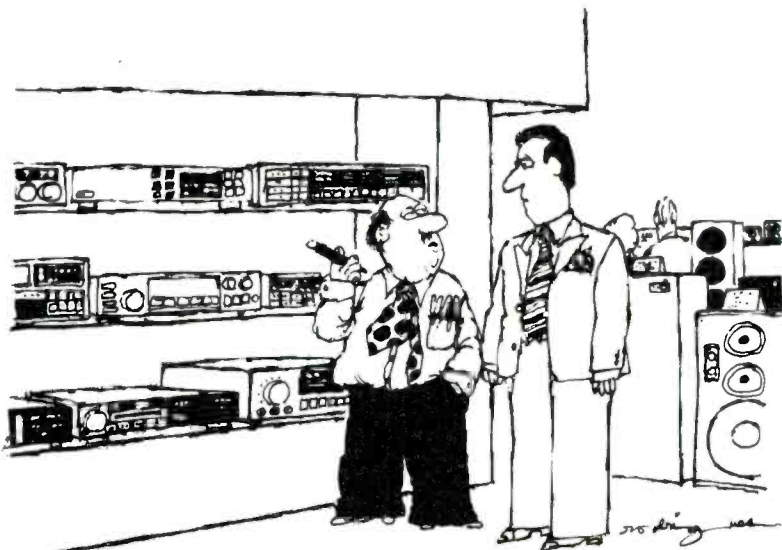
When the job is done correctly, the results can be highly satisfactory. No doubt a dedicated "high-end" enthusiast would not be satisfied with a system like this, but, almost by definition, he does not approve of 99 percent of the speakers on the market. Probably the most fundamental difference between the sound of a good in-wall system and that of a comparably priced conventional system is the inability to optimize the spatial qualities of the sound by moving the speakers away from the wall, adjusting their height from the floor, or angling them toward the listening area. On the other hand, many conventional systems don't benefit much from those procedures either.

What about the bass response of an in-wall system, with its limited enclosure volume and cone size, to say nothing of walls that certainly cannot match the rigidity of a well-built wooden cabinet? If you are a bass enthusiast, you will probably need some help from a subwoofer (the same goes for most conventional box speakers). But this compromises the system's invisibility, doesn't it?

Not necessarily. Several manufacturers also make subwoofers for their in-wall systems. One interesting design from Polk Audio manages to conceal the subwoofer in the wall, radiating its sound through a covered outlet about the size of a standard wall switch plate. Others use a more conventional approach, offering low-rise, standalone subwoofers that can be located anywhere without drawing attention to the concealed main speakers.

One unarguable limitation of in-wall speakers is that they cannot be tried out in your own home before making a purchase. But any dealer handling these speakers should have a demo room that can give you an idea of their capabilities.

There is no doubt in my mind that in-wall systems are here to stay. They are already very good and will probably get even better. And after all, what can be less conspicuous than no box at all? □



"... The 'rear apron'? Well, you lost me, pal."

INVESTING IN SOUND?



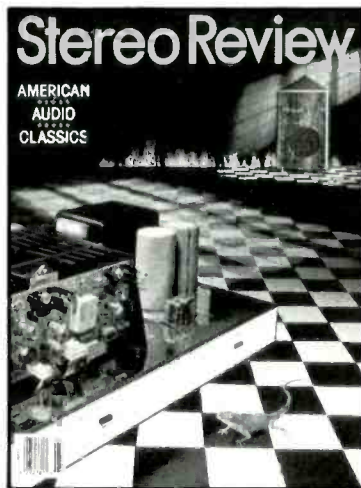
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MAGNAVOX CDB630 COMPACT DISC PLAYER

Julian Hirsch, Hirsch-Houck Laboratories

THE moderate-price Magnavox CDB630, manufactured in Belgium by Philips, is the most feature-laden CD player we have tested. Even a sketchy description of its special capabilities and how they are used would require more space than we have available. Its front panel carries thirty-six buttons, about twice the usual number for a CD player. Nevertheless, its basic operation is, if anything, more straightforward than that of most players today, so that a user need not master more procedures than are actually needed. Moreover, the instruction manual deals with the various features in logical groupings and enough detail that anyone should be able to master them with a little practice.

Basically, the CDB630 is a conventional player with quadruple-oversampling (176.4-kHz) digital filters and dual 16-bit digital-to-analog (D/A) converters. The disc trans-

port accommodates both standard CD's and 3-inch discs. The front panel has a fixed-level headphone jack, and the rear apron contains separate fixed-level and variable-level analog audio outputs, a coaxial digital output, and digital control jacks for interfacing with a compatible Philips cassette recorder.

When the CDB630 is used with a connected tape deck, its Record Sync feature provides precise synchronization for dubbing, including a pause for automatic end-of-tape reverse and continued recording in the reverse direction. The Edit feature automatically fits the maximum number of complete tracks on a cassette side.

The CDB630's operating controls are especially convenient. The play/replay button not only initiates playing the disc, for instance, but a second touch during play returns the laser pickup to the beginning of the current track. The familiar forward and reverse track-skipping

controls are marked PREVIOUS and NEXT, logical nomenclature for controls that return the pickup to the beginning of the previous track (not the current track, as most such controls do) and move it to the next track. The stop button is marked STOP/CM, referring to its added function of clearing the program memories on a second operation.

Many of the other control markings are self-explanatory, or at least similar to those on other CD players. The fast-forward and reverse scanning controls, however, marked CURSOR>> and <<CURSOR, are a bit unusual. They operate much like the scanning controls of other players, with audible sound, except that unlike most others they do not increase the rate of scan after a few seconds of operation. Instead, pressing the FAST button between them before pressing one of the scan buttons provides a greatly accelerated scan rate (without sound) that moves the pickup across the disc in a matter of seconds. A keypad provides direct access to any track, and the player can be programmed to play up to thirty tracks in any order.

The display window of the CDB630 provides considerably more information than most, with-

TEST REPORTS

out looking cluttered. Not only does it show the status of every operating mode and feature, the usual track and index numbers, and the elapsed or remaining time on track and disc, but it can show up to twelve alphanumeric characters across the top. This readout serves as an "Active Info" feature that not only describes the player's operating status but also presents messages to guide the user and warn of incorrect operation of the controls.

The CDB630 also has the Philips FTS (Favorite Track Selection) system, which allows the user to store preferred playback sequences for specific discs. This information remains in the player's nonvolatile memory, so that at any later time loading a programmed disc and pressing the FTS button will play

the same sequence of tracks. In fact, the CDB630 has two separate FTS memory banks, allowing two different programs to be stored for any given disc. If eight tracks per disc are programmed, the double FTS memory will store dual programs for up to sixty discs.

A Title Memory permits the user to store titles or other information of up to twelve characters for specific discs and tracks on discs so that the titles are displayed automatically during play. Another feature of the CDB630 is a Personal Presets memory that allows the user to customize the player, storing his own preferences in respect to display brightness, starting sound level, fade-in and fade-out times (up to 20 seconds each), and the default start-up playing mode (entire disc, FTS1

or FTS2 programs, or random play). The CDB630 comes with a compact wireless remote control that duplicates virtually all the front-panel controls. In addition, it has up and down volume buttons that control the player's variable analog outputs and index-stepping buttons as well as the track and search controls. The buttons are grouped by function and identified by different sizes, shapes, and colors.

The Magnavox CDB630 is finished in black with white markings. It measures 16½ inches wide, 11 inches deep, and 4 inches high, and it weighs just under 9 pounds. Price: \$400. Magnavox, Dept. SR, One Philips Dr., P.O. Box 14810, Knoxville, TN 37914-1810.

Lab Tests

The playback frequency response of the Magnavox CDB630 varied only 0.05 dB overall from 11 to 20,000 Hz (the variation consisted of cyclic ripples in the output above 1,000 Hz). The maximum level from either analog output was 1.921 volts from a 0-dB recorded track on a test disc; the channel levels differed by only 0.1 dB. The minimum level available from the variable outputs was 0.17 volt. The de-emphasis error was between 0.01 and 0.07 dB from 1,000 to 16,000 Hz. The channel separation was very good, reading 114 to 124 dB at low frequencies and still an excellent 95 to 100 dB at 20,000 Hz.

The low-level linearity of the D/A converters was good down to -70 dB, with increasing error at lower levels. At -80 dB the output was down about 1 dB from nominal, and the error increased to -4 to -5 dB at -90 dB. The total harmonic distortion (THD) plus noise at a 0-dB level was between 0.006 and 0.002 percent from 20 to 11,000 Hz, rising to 0.18 percent at 20,000 Hz, largely because of nonharmonically related image responses. At 1,000 Hz the distortion ranged from a maximum of 0.0053 percent at 0 dB to 0.00125 percent at -90 dB.

The A-weighted noise output was an excellent -112.3 dB. The dynamic range of the player was about 98.7 dB (EIAJ), and quantization noise while it was playing a 0-dB, 20-Hz test track was -95.3 dB. A

FEATURES

- Quadruple-oversampling (176.4-kHz) digital filters
- Dual 16-bit D/A converters
- Direct keypad track selection
- Direct access to indexed sections through remote control
- Programmable to play up to thirty tracks in any order
- Fast scan in both directions with sound, extra-fast scan without sound
- Track stepping in both directions
- Repeat of entire disc, programmed sequence, or selected passage
- Scan mode to play first 10 or 20 seconds of each track
- Double FTS (Favorite Track Selection) to store one or two independent programs per disc in nonvolatile memory
- Multifunction display with adjustable brightness; includes twelve-digit alphanumeric strip for titles and status messages; shows elapsed or remaining time on track and disc, all operating settings
- Personal presets for customizing display brightness, initial volume, fade-in and fade-out times (up to 20 seconds), play mode (whole disc, random, FTS-1, FTS-2)
- Record Sync output to control compatible Philips cassette deck for automatic copy of disc to tape without unfinished or interrupted tracks
- Wireless remote control duplicates most front-panel functions, plus index selection and volume control
- Front-panel headphone jack (fixed level)
- Fixed-level and variable-level rear analog outputs and coaxial digital output

LABORATORY MEASUREMENTS

Maximum output level: 1.92 volts
Total harmonic distortion at 1,000 Hz: 0.0053% at 0 dB, 0.0024% at -20 dB, 0.0012% at -80 dB
Signal-to-noise ratio (A-weighted): 112.3 dB
Channel separation: 120 dB at 100 Hz, 115 dB at 1,000 Hz, 97 dB at 20,000 Hz
Maximum interchannel phase shift (5,000 to 20,000 Hz): -0.35 degree at 5,000 Hz

Frequency response: +0.04, -0.01 dB from 11 to 20,000 Hz
Low-level linearity error (without dither): less than -1 dB down to -80 dB, -4 to -5 dB at -90 dB
Cueing time: 3 to 4 seconds
Cueing accuracy: A
Impact resistance: top and sides, B+
Defect tracking: tracked 1,000-micrometer defects on Pierre Verany #2 test disc

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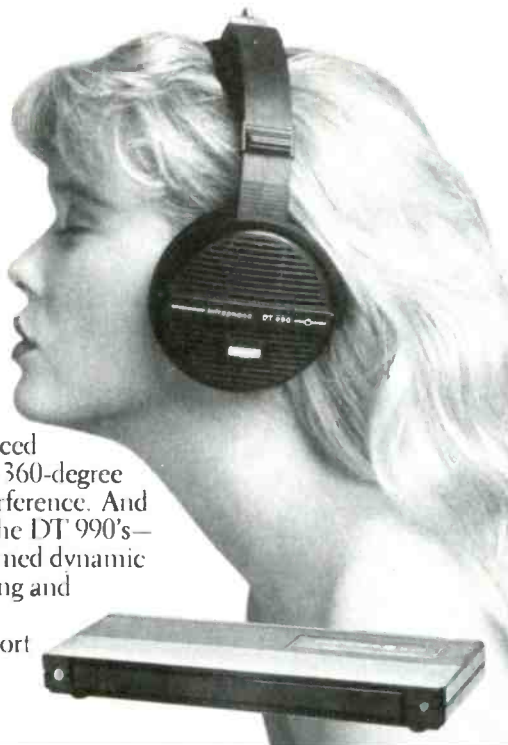
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spectrum analysis of the noise during an "infinity zero" (unmodulated) track showed a noise level between -120 and -130 dB. The interchannel phase shift varied a total of less than 0.5 degree from 5,000 to 20,000 Hz. The frequency (speed) error was +0.0015 percent.

The slew time of the tracking servo in the player was typically a maximum of 3 to 4 seconds between any tracks on a disc. Its cueing accuracy was excellent. There were no audible dropouts or noises while it was playing a 1,000-micrometer error on the Pierre Verany #2 test disc. Although there were one or two momentary dropouts at the onset of higher error levels on this disc, there was no sustained audible noise or mistracking at error levels as high as 2,400 micrometers, indicating an exceptional ability to cope with almost any error likely to be encountered in actual use.

The CDB630's ability to withstand physical impact without mistracking was quite good. A fairly hard finger tap on the top or side of the cabinet was required to induce a momentary dropout.

Comments

Even if you don't need many of its special features (and probably few people will use all of them), the Magnavox CDB630 is a first-rate CD player in its own right. Having direct access to specific tracks and indexed segments (the remote control is required for the latter) is an unusual feature that could be important to some people. (We found index access to be very convenient when using some of our test discs.) Although we tried almost all of the machine's operating features—which worked as claimed, though they were not always as easily mastered as we would have wished—we also enjoyed simply playing CD's. The more you use the CDB630's basic operating controls, the more comfortable and convenient it seems.

At its price, the CDB630 is certainly a good value in a CD player, offering a remarkable combination of operating features and playing performance. All in all, it is an impressive product.

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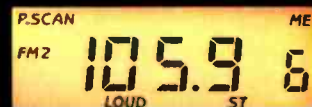
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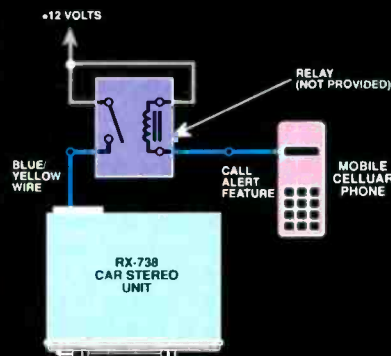
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KEF C55 SPEAKER SYSTEM

Julian Hirsch, Hirsch-Houck Laboratories

KEF refers to its Uni-Q loudspeaker driver as a "coincident drive unit" because its separate bass and treble drivers are mounted coaxially and are time-aligned so that their outputs are generated in the same plane and propagate acoustically in the correct time and phase relationship. The Uni-Q drivers also radiate symmetrically about their common center axis, maintaining the same 90- to 100-degree dispersion angle over their full frequency range. This property is the source of the driver's name, since "Q" is a measure of loudspeaker directivity.

The Uni-Q design was made possible by the availability of neodymium-iron-boron magnets, which are eight to ten times stronger for a given volume than conventional ferrite magnets. With the help of a computer-designed magnetic structure said to be 50 percent more efficient than conventional structures, KEF was able to create a powerful tweeter magnet in only one-tenth the volume of a ferrite equivalent.

The new tweeter, including its

magnetic structure, voice coil, and dome radiator, actually fits within the voice coil of the woofer; the tweeter's dome and the apex of the woofer cone lie in the same plane. Although the crossover frequency is not specified, it appears to be about 3,000 Hz. A protective mesh grille over the tweeter dome is located where the dust cap of a conventional cone driver is usually found.

Several models in the KEF C Series of speaker systems employ the Uni-Q driver. In respect to size and price, the C55 falls in the middle of the group. It is a bookshelf-size speaker measuring about 19 inches high, 9¾ inches wide, and 10 inches deep. Two 8-inch cones occupy almost all of the front panel, the upper one being the Uni-Q coincident driver. Below it is a passive radiator to extend the bass response and increase the system's efficiency. The two cones and the tweeter dome are made of polymers, and the supporting frames are die-cast. The tweeter voice coil is cooled by ferrofluid, which conducts heat to the magnet structure and eventually to the air surrounding the drivers.

The basic listening benefit claimed for the Uni-Q design is that the driver's sound quality is balanced and smooth and essentially independent of the loudspeaker angle or listening position. In addition, the smaller Uni-Q models, including the C55 and the C35, can be placed on their sides without affecting their sound, since the Uni-Q driver radiates symmetrically. Because of this property, they are among the very few bookshelf speakers that can actually be used on a bookshelf without a performance sacrifice.

The C55 has a rated sensitivity of 90 dB sound-pressure level (SPL) at 1 meter with an input of 2.83 volts. According to KEF, the tweeter portion actually has a sensitivity of 100 dB, so it is padded down to match the woofer's sensitivity. The rated frequency range at the -3-dB points is 60 to 20,000 Hz; bass response extends to 48 Hz at -6 dB. The nominal impedance is 4 ohms, and the C55 is recommended for use with amplifiers rated between 20 and 150 watts into 4 ohms.

The KEF C55's grille of black cloth on a light plastic frame is held in place by an unusual snap design that requires the use of a screwdriver blade or a similar object to pry it off. With the grille removed, however, there are no visible signs of the fasteners, and the speaker's appearance is exceptionally attractive. The cabinet is available in simulated walnut or black-ash finishes, and a pair of gold-plated binding posts on the rear accepts wires or banana plugs (either single or dual). Each C55 speaker weighs just under 16 pounds. Price: \$550 a pair. KEF Electronics of America, Dept. SR, 14120-K Sullyfield Circle, Chantilly, VA 22021.

Lab Tests

We installed the KEF C55's on 26-inch stands a couple of feet in front of a wall. Close-miked bass-response measurements (from both cones) were spliced to averaged room-response measurements to form a composite frequency-response curve, which sloped downward gently above 200 Hz, reaching -4 to -6 dB at the top of the audio range. The curve was notably free of

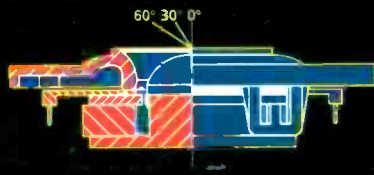
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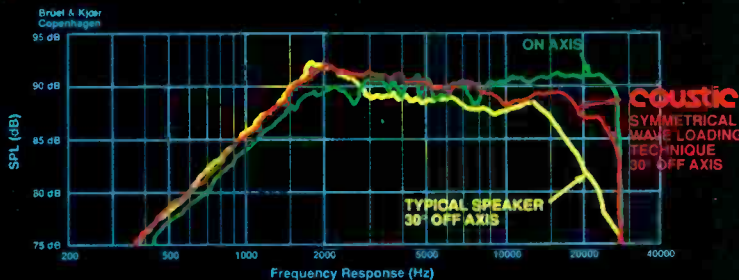
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MID WOOFERS: HT-604, HT-606, HT-603-HT-605

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TEST REPORTS

the usual variations caused by room-boundary effects. The woofer output was flat within 1 dB overall from 70 to 200 Hz, falling off to -3 dB at 51 Hz and -6 dB at 46 Hz referred to the average mid-band level.

Quasi-anechoic FFT response measurements were made at a 2-meter distance from the speaker (the same distance used by KEF for specifying the speaker's performance). The response on the axis of the tweeter was smooth up to 3,000 or 4,000 Hz, dipped a few decibels at 5,000 Hz, and showed what appeared to be a large resonance with a dip surrounded by two peaks at 11,000 to 12,000 Hz. Alarming as this resonance might seem, we were advised by a KEF representative prior to our testing the speakers that it was normal. The effect results from the change in radiation load on the tweeter because of the proximity of the round edge of the woofer cone to the adjacent square edges of the box, which introduces a comb-filter response above 10,000 Hz. It appears only in anechoic measurements on the axis of the speaker. We were further advised that the effect disappears rapidly a few degrees off-axis, and this was confirmed by our FFT measurements. Since a listener is rarely directly on a speaker's axis, and never in an anechoic environment, we consider this effect trivial for normal use of the speaker.

Our directivity measurements, both on-axis and 45 degrees off-axis, showed that the two response curves were spaced an almost uniform 6 to 7 dB apart from 1,500 to 9,000 Hz. Above 9,000 Hz there was the comb-filter response explained previously, followed by the usual divergence between the two curves beyond 13,000 to 14,000 Hz. In other words, the subjective frequency response of the system was relatively constant over a wide range of listening angles and across the full musical frequency range.

The group delay between 700 and 10,000 Hz varied less than 0.1 millisecond. Except for a couple of jogs between 10,000 and 13,000 Hz (measured on the tweeter's axis at 2 meters distance), the same variation tolerance extended to 20,000 Hz.

Clearly, the transition from woofer to tweeter took place without any significant time error, as would be expected from the design of the Uni-Q driver.

The system sensitivity was a relatively high 91.5-dB SPL at 1 meter with a 2.83-volt pink-noise input signal. Distortion was measured with a 2.38-volt input, corresponding to a 90-dB SPL. At the driven cone, it was 7.5 percent at 30 Hz, 1 percent at 65 Hz, and between 0.8 and 1.2 percent from 65 to 750 Hz. The passive cone, whose major contribution to the bass output was at frequencies below 100 Hz, produced 1 percent distortion at 36 and 130 Hz and a minimum of 0.55 percent at 60 Hz.

The impedance of the KEF C55 was about 4 ohms from 150 to 700 Hz, 5 ohms at 50 Hz, and a minimum of barely 3 ohms between 10,000 and 20,000 Hz. The maximum readings were 13 ohms at 20 and 80 Hz and 14 ohms at 1,600 Hz. Driven by a 1-cycle burst at 100 Hz, the woofer cone bottomed harshly at 200 watts into its 6.3-ohm impedance. At higher frequencies, however, the amplifier clipped before the C55 distorted, reading 1,100 watts into 6.5 ohms at 1,000 Hz and 2,000 watts into 3 ohms at 10,000 Hz.

Comments

Although the appearance of the KEF Uni-Q driver is reminiscent of the Tannoy coaxial speakers of thirty years ago, the differences are fun-

damental. For one thing, the Tannoy driver used a horn-loaded tweeter concentric with the woofer, placing its source several inches behind the woofer's. By all the tests we could apply, the drivers in KEF's Uni-Q design are coincident in their point of origin (time alignment) and direction of propagation and have radiation patterns that are symmetrical about their common axis.

The effect of these features on the C55's sound is hard to confirm, if for no other reason than that no two speakers ever sound identical in any case. Compared with other available speakers, the C55 had an unquestionably smooth sound, without any obvious colorations (the upper bass was notably free of emphasis), and an extended and somewhat forward-sounding upper midrange and high end. The bass was clean and surprisingly deep, although this is not a window-rattling speaker by any means. The spatial qualities of the system's sound were good but not unusual in any sense.

In other words, the KEF C55 does essentially what is claimed for it, having a wide range, excellent dispersion, high sensitivity, and low distortion, all with compact dimensions, attractive styling, and a very moderate price. That combination of qualities is not too common and would seem to justify KEF's efforts in designing the Uni-Q driver and this system. We found it a very easy speaker to listen to.

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Model shown: TZ-9. Also available: TZ-7.



JOOK LEUNG

GRUNDIG FINE ARTS CCT-903 DUAL CASSETTE DECK

Craig Stark, Hirsch-Houck Laboratories

AUTOREVERSE, two-speed tape copying, and both Dolby B and Dolby C noise reduction are the most notable features of the Grundig Fine Arts CCT-903 cassette deck. Designed to make cassette copying as convenient as possible, the CCT-903 houses two separate tape transports in a single case and provides the connections and level setting for deck-to-deck dubbing at the touch of a button. Since both transports are bidirectional, it is not necessary to turn cassettes over for side two.

Deck A in the CCT-903 is a playback-only unit. Deck B provides both recording and playback facilities, although since the same head is used for both functions, it is not possible to make instant comparisons between the signal input and the taped result. In both decks, when the tape direction is reversed the head assembly is physically rotated by 180 degrees. This positions its left- and right-channel head ele-

ments properly for the side-two tape tracks, which are, of course, recorded in the opposite direction and along the other tape edge.

Mechanically, the two tape transports are nearly identical. The chief difference between them is that in Deck A the autoreverse mechanism is triggered by the physical end of the tape, whereas Deck B has an optical detector that "sees" through the translucent leader and provides a much more rapid turnaround. Both transports embody a single-capstan drive design and use a belt-coupled DC motor. (There is a second capstan for each transport, but it is engaged only for reverse-direction drive, not to create a dual-capstan, closed-loop system.) A second motor controls the head assembly and brakes.

The tape type in use is sensed when a cassette is loaded, and the bias and equalization are set automatically. The cassette wells are not illuminated and do not provide la-

bel visibility, but they have a mirrored back that enables the user to see how much tape remains on a side. The cassette-well door panels are not removable, which makes it awkward to clean and degauss the heads.

Record levels are indicated on an eight-segment-per-channel fluorescent display, which is calibrated from +6 to -20 dB. The indicators read 0 dB with our IEC standard-level tapes, but since the minimum display increment is ± 3 dB, precise level setting is not possible. A three-digit fluorescent counter, calibrated in arbitrary units, can be switched to read the tape position in either deck. A MEMO (memory) button permits rapid relocation of a specific place on a tape during fast-forward or rewind. Either deck can be set to play both sides of a cassette sequentially, either once or continuously, and an AUTO position is provided to play both sides of the tape in Deck A followed by both sides of the one in Deck B.

A master control and two individual-channel controls are used to set recording levels, and there's a rear-mounted playback-level control. Record levels are automatically set in either the single-speed or the double-speed dubbing mode, but to

TEST REPORTS

monitor the tape in Deck A properly the relevant Dolby system should be selected. The front-panel headphone jack has its own level control. Besides Dolby selection, switches are provided for defeating the FM-multiplex filter and for timer-activated operation.

Overall, the Grundig Fine Arts CCT-903 measures 18¾ inches wide, 4½ inches high, and 14 inches deep, and it weighs a little over 18 pounds. Price: \$899. Grundig, Dept. SR, 3520 Haven Ave., Redwood City, CA 94063.

Lab Tests

Because of its double transport and bidirectional capabilities, we made many more measurements on the CCT-903 than on most cassette decks. In general, the performance of both decks and in both directions was quite consistent.

We obtained the flattest playback response with both our ferric and CrO₂ IEC-standard BASF tapes in the forward direction using Deck A, where the -3-dB points corresponded to the 31-Hz and 18-kHz limits of the tape. Deck B showed some playback treble loss (a little more than 3 dB at 14 kHz) in both tape directions with the ferric tape; the loss was less pronounced with the CrO₂ test tape.

The overall record-playback responses from our center-line samples of TDK AD (ferric), TDK SA (chrome equivalent), and TDK MA (metal) tapes can be compared in the graph at left. At the bass end, the -3-dB point was approximately 33 Hz throughout our tests. Only the metal tape could reach 18 kHz; the effect of the lower treble equalization used by Dolby C is clearly marked in the 0-dB curve for TDK MA. The -3-dB points for the SA and AD cassettes ranged from 13 to 16 kHz at the usual -20-dB recording level. Top-quality decks routinely exceed this performance, but they also lack the convenience of built-in dubbing facilities and bidirectional operation.

Signal-to-noise ratios were surprisingly high for both the ferric and CrO₂-type tape but somewhat disappointing for the metal-particle formulation. The latter may be unimportant, however, as few users

FEATURES

- Dual transport with dubbing facilities at normal and double speed
- Manual or autoreverse play in both transports: switchable for sequential playback and continuous loop
- Dolby B and Dolby C noise reduction
- Separate level controls for playback and headphone jack
- Three-digit fluorescent tape counter
- Multisegment fluorescent record-level indicators
- Switchable FM-multiplex filter
- Facilities for external timer operation

LABORATORY MEASUREMENTS

Fast-forward time (C-60): Deck A, 95 seconds; Deck B, 96 seconds

Rewind time (C-60): Deck A, 97 seconds; Deck B, 98 seconds

Speed error: Deck A, +1.3% forward, +0.46% reverse; Deck B, -1.1% forward, -0.99% reverse

Wow-and-flutter: Deck A, forward, 0.049% wrms, 0.095% DIN peak-weighted; Deck A, reverse, 0.045% wrms, 0.087% DIN peak-weighted; Deck B, forward, 0.048% wrms, 0.094% DIN peak-weighted; Deck B, reverse, 0.038% wrms, 0.080% DIN peak-weighted; normal-speed dubbing, 0.079% wrms, 0.132% DIN peak-weighted; double-speed dubbing, 0.063% wrms, 0.104% DIN peak-weighted

Line input for indicated 0 dB: 55 mV

Line output at indicated 0 dB: Deck A, 701 mV; Deck B, 670 mV

Meter indication at IEC-standard 0 dB: both decks, +0 dB

Tape: TDK AD (Type I, ferric)

IEC 0-dB distortion: 0.85%

Meter indication at 3% THD + noise: +6 dB

Signal-to-noise ratios (in decibels):

	Unwtd.	A-wtd.	CCIR/ARM
NR off	55.8	59.7	56.6
Dolby B	60.4	68.8	66.8
Dolby C	62.7	76.6	77.2

Tape: TDK SA (Type II, chrome equivalent)

IEC 0-dB distortion: 0.80%

Meter indication at 3% THD + noise: +6 dB

Signal-to-noise ratios (in decibels):

	Unwtd.	A-wtd.	CCIR/ARM
NR off	56.4	60.6	57.4
Dolby B	60.4	69.5	67.6
Dolby C	62.1	78.1	77.8

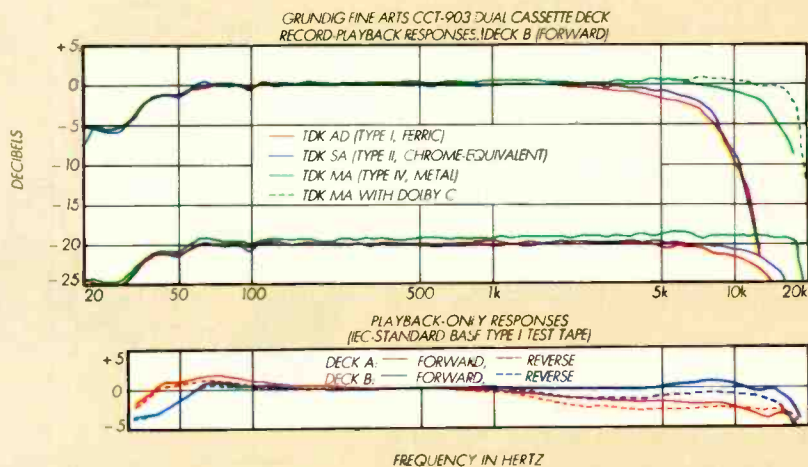
Tape: TDK MA (Type IV, metal)

IEC 0-dB distortion: 1.8%

Meter indication at 3% THD + noise: +3 dB

Signal-to-noise ratios (in decibels):

	Unwtd.	A-wtd.	CCIR/ARM
NR off	53.4	57.6	54.5
Dolby B	56.3	66.4	64.8
Dolby C	58.4	74.8	74.7



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will be tempted to use a premium-priced formulation for making tape-to-tape copies.

Wow-and-flutter is traditionally the most serious problem with dubbing decks, and the CCT-903 proved to be no exception. Both on a wrms and on a DIN peak-weighted basis the wow-and-flutter, in either direction and in either transport, was approximately twice as high as we would expect from a single-purpose deck in this price class. Mechanics far outweigh electronics in terms of manufacturing cost, and the need to put two bidirectional decks in one affordable package apparently dictated an inexpensive, single-capstan drive system. Basic tape speed accuracy was also only fair.

Comments

The Grundig CCT-903 is the first dubbing deck that we felt performed well enough to be seriously considered as part of a home taping system. It is well equipped with recording and playback features, and it is built extremely well considering all the moving parts it employs.

Listening to prerecorded tapes as well as tapes we recorded and copied on the CCT-903, however, did confirm most of the problems we found in our measurements. Wow-and-flutter, while not audible as distinct pitch variations, produced an overall gaininess, a somewhat

edgy-sounding quality in the upper midrange, and a lack of focus and depth in the sound image. Although hiss was not a problem, response at the extreme high frequencies was perceptibly lacking when compared with that of our reference deck. We could not judge tapes either recorded or dubbed on this machine to be fully satisfactory sonically.

We were, however, pleasantly surprised to find that the high-speed copying mode lost very little more in the way of high-frequency response than the normal-speed copying mode, and it even added slightly less wow-and-flutter.

If your purpose is copying tapes for use in the car, of course, these considerations may mean very little, but they do, in our judgment, debar the CCT-903 from consideration as an audiophile's *main* home deck. This is not to say that the CCT-903 is not an adequate music source for noncritical listening; it is a fair performer, better than other dubbing decks we've encountered. But to my mind, in terms of both detailed, high-quality sound and dollars spent, the cost of its conveniences is rather high.

Audiophile-quality dubbing decks are still a dream for many of us, but the Grundig CCT-903 is evidence of how good some of today's decks can be, and it bodes well for the future of this type of product.

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POLK AUDIO RM-3000 REFERENCE MONITOR SPEAKER SYSTEM

Julian Hirsch, Hirsch-Houck Laboratories

POLK Audio's three-piece Reference Monitor speaker system, the RM-3000, consists of two small satellite speakers and a subwoofer module. Although this general configuration is currently enjoying increased popularity, Polk's version differs from the others in many of its design details.

Each of the satellite speakers is a miniature two-way system with a 3½-inch "woofer" operating above 200 Hz and crossing over at approximately 4,000 Hz to a ¾-inch dome tweeter. The tweeter is protected against burnout by an internal auto-reset protection device that cuts off its signal until the power has been reduced to a safe level. The tweeter is stepped back about 1¼ inches from the plane of the woofer to provide proper time alignment of the outputs of the two drivers.

The satellite enclosure is made of

a high-density, nonresonant polymer aggregate similar to the material used for high-quality kitchen countertops. The smooth, glassy exterior is resistant to physical damage, and each of the satellites—which measure only 6¾ inches high, 4¼ inches wide, and 5 inches deep, including the molded plastic grilles—weighs a surprisingly heavy 4½ pounds. The crossovers contain second-order low-pass and high-pass sections designed to complement the time alignment of the drivers. In addition to its crossover network, each satellite also contains a 200-Hz high-pass filter that protects it from being damaged by high-level low-frequency signals.

The subwoofer, which is based on a ten-year-old Polk Audio patent, contains two 6½-inch cone drivers, each driven by one stereo channel. For each channel, the appropriate satellite, the subwoofer, and the am-

plifier are simply wired in parallel. The subwoofer enclosure, which measures 20¼ inches wide, 13 inches deep, and 10 inches high, is supported 2 inches above the floor on four rubber feet. Its interior is divided into two separate sections of different volumes, with the drivers mounted on the dividing partition. The rear surfaces of the two driver cones face the sealed volume, which provides the necessary stiffness for their proper operation. In the other section, the pressure generated by the drivers is coupled to a 10-inch passive radiator mounted on the bottom of the cabinet, facing the floor.

According to Polk, the passive-radiator coupling reproduces the low frequencies more efficiently than a simple port radiator, while the mass and size of the passive cone (called the "sub-bass" radiator) attenuate the higher frequencies, providing an 18-dB-per-octave rolloff matching the low-frequency rolloff of the satellites. Since each driver is connected to one of the stereo channels, the two channels are acoustically blended throughout the subwoofer's operating frequency range (which contains virtually no directional information). Although the subwoofer's response rolls off naturally above 170 Hz, the unit also contains a first-order low-pass filter to avoid wasting amplifier power above its operating range.

The specifications for the RM-3000 include a frequency response of 42 to 18,000 Hz at the -3-dB points, a nominal impedance of 6 ohms, and a sensitivity of 88 dB sound-pressure level (SPL) at 1 meter with an input of 2.83 volts. The system is recommended for use with amplifiers rated for 10 to 125 watts per channel.

Our test system was a prototype, but it is essentially representative of regular production models. The satellites were finished in a dark gray with white speckles and a black grille, but other colors may be offered in the future. The subwoofer is finished in black vinyl. The terminals on all the units are multiway binding posts spaced to accept dual banana plugs. Price: \$750. Polk Audio, Dept. SR, 5601 Metro Dr., Baltimore, MD 21215.

TEST REPORTS

Lab Tests

Measuring the frequency response of a three-piece speaker system is somewhat more complicated than measuring that of a conventional single-unit design. Since there is no fixed spatial relationship between the satellites and the subwoofer, it is not practical to specify an overall frequency response that will be realized in all environments. Fortunately, the technique we use to form a composite frequency response—involving measurement of the room response of the speakers from a few hundred hertz to the limits of audibility along with separate close-miked woofer measurements that are essentially independent of the speaker's surroundings—is well suited to three-piece systems. In fact, a variation of this method is used by Polk for measuring the response of the RM-3000.

We placed the satellites about 8 feet apart on 26-inch stands (not the Polk stands designed for them, which were not yet available), with the subwoofer midway between them and, like the satellites, about 2 feet from the back wall. The averaged room response of the two satellites, with the usual minor irregularities, was an excellent ± 3 dB from 350 to 19,000 Hz. At lower frequencies the room's standing-wave patterns produced larger variations.

Polk states that the subwoofer's response must be measured in its normal placement, with the microphone on the floor next to the edge of the box, since the proximity of the floor plays a strong role in determining the final bass response. In addition, to measure the combined satellite/subwoofer response in the crossover region, around 200 Hz, we also placed a satellite on the floor, with the microphone as before but equidistant from the center of the subwoofer's passive radiator and the front edge of the satellite.

This measurement produced a response curve with peaks at 65 and 180 Hz and a 7.5-dB dip at 110 Hz, rolling off at 6 dB per octave from 180 to 400 Hz. Splicing this to our room curve produced a composite response of ± 3 dB from 75 to 19,000 Hz, rising an additional 4 dB at 65 Hz and falling off steeply at

lower frequencies. The -3 -dB response frequencies were 45 and 19,000 Hz, approximately as rated.

Our quasi-anechoic FFT frequency-response measurements (and close-miked swept measurements as well) showed approximately the same pattern of frequency response as the room-response curves. They also revealed a large undamped tweeter resonance at 16,000 Hz that did not appear in the room-response measurement but was present in test curves provided by Polk. The horizontal dispersion of the tweeter was excellent up to 10,000 Hz over a 45-degree angle. The group-delay variation was less than 1 millisecond from 180 to 15,000 Hz and less than 0.1 millisecond over the tweeter's range above 4,000 Hz. In the range of 16,000 to 18,000 Hz, there were a couple of



jogs in the group-delay plot corresponding to the tweeter resonance.

The satellite's impedance was a minimum of 5.2 ohms in the 600- to 900-Hz range and rose to a maximum of 18 ohms at 2,800 Hz. Its high-pass filter (a series capacitor) produced a rising impedance below 170 Hz, reaching about 55 ohms at 20 Hz. With the satellite connected to the subwoofer, the combined impedance reached a minimum of 4 ohms at 170 Hz and averaged 5 to 6 ohms from 60 to 1,500 Hz. In addition to the 2,800-Hz peak, the impedance reached 15 ohms at 40 Hz; it returned to 6 ohms at 20 Hz.

The system's sensitivity, with a 2.83-volt pink-noise signal, was 88-dB SPL at 1 meter. With a 3.5-volt input, corresponding to a 90-dB reference SPL, the subwoofer's distortion was 4 percent at 40 Hz, 1 to 2 percent from 45 to 70 Hz, and between 0.5 percent and 1 percent in the octave from 100 to 200 Hz.

Peak-power tests produced a rattle from the subwoofer at 100 Hz with an input of 1,350 watts into its 4.5-ohm impedance. The satellite's woofer and tweeter outputs did not distort significantly up to the clipping point of our amplifier, 1,150 watts at 1,000 Hz and 860 watts at 10,000 Hz.

Comments

The Polk RM-3000 had an open, airy sound that compared very favorably with some much more expensive conventional speakers. Its spectral balance was excellent—smooth and seamless, and giving no hint of its three spatially separated sound sources. There was no audible brightness from the 16,000-Hz peak (much too high a frequency to affect the tonal qualities of music), but the peak was probably responsible for the slight crispness we heard on high-frequency transients, which we generally found to be an enhancement to the overall sound.

The subwoofer was not audible as a separate source with the central placement we used, though moving it completely to one side of the room sometimes produced a lateral shift in the apparent bass origin. For best results it should probably be located somewhere between the satellites. Moreover, although it was exceptionally free of upper-bass emphasis, it could deliver a potent output down to nearly 40 Hz.

Summing up, the Polk Audio RM-3000 is one of the best examples of a three-piece speaker system that we have yet heard. Its satellites are not only very small but are unusually attractive as well. Best of all, they sound excellent, and when you are listening to the system there is no clue that the sound is coming from the two tiny boxes, normally its only visible parts. The subwoofer, however, while not unusually large, is considerably bulkier than most others we've tested.

If you are considering a three-piece speaker system, or lack the space for a conventional system, try listening to the RM-3000. It might eliminate some common misconceptions about how large (and expensive) a speaker has to be to provide plenty of high-quality sound.

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STEREO REVIEW'S RECORD OF THE YEAR AWARDS

THE twelve recordings that the editors and critics of STEREO REVIEW have voted the best of 1989 are announced in the following pages, along with the two dozen runners-up selected for Honorable Mention. As in previous years, we have chosen these Records of the Year for their high degree of musical interest, for integrity of performance, and for exemplary recorded sound.

Only one of the six winners in the pop field is by a new or relatively new artist (Syd Straw, going solo for the first time), which is a switch from last year, when half of them were. The other five 1989 pop winners are seasoned

veterans who have clearly earned new stripes with their latest releases. And just about the same can be said for our top classical choices. American soprano Dawn Upshaw and British conductor Roger Norrington are relatively new to record buyers, while the more established artists, who are in the majority, have brought us fresh new insights in the records they produced last year. The six pop albums are available in the usual three formats, but it's a sign of the times that only two of the classical recordings are—the Upshaw and Norrington. The Hanson symphonies and Richard Strauss's *Elektra* are available on compact disc only.

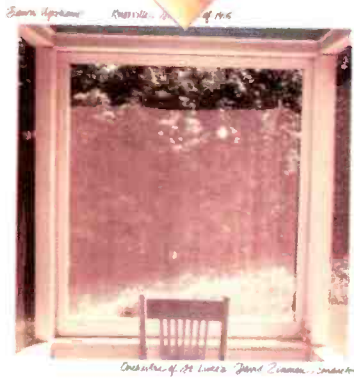
Christie Barter

ILLUSTRATION BY LIZ PYLE

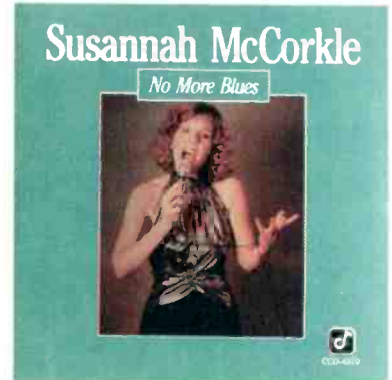
RECORDS OF THE YEAR



SYD STRAW: *Surprise*. VIRGIN. "A voice driven by a heart, informed by an attitude of artfulness, and reflecting an intelligent mind."



BARBER: *Knoxville: Summer of 1915*. **HARBISON:** *Mirabai Songs*. **MENOTTI, STRAVINSKY:** *Arias*. Dawn Upshaw; Orchestra of St. Luke's, David Zinman conducting. **NONESUCH:** "Imaginative repertoire, incredibly touching performances."



SUSANNAH MCCORKLE: *No More Blues*. CONCORD. "A glorious album from one of the finest jazz singers on the scene today."



NEIL YOUNG: *Freedom*. REPRISE. "A great album, even for Neil Young, who has recast his varied musical talents to say something about the way we are now."



HAYDN: *Keyboard Sonatas Nos. 33, 38, 58, 60*. Emanuel Ax. CBS. "Interpretations of four remarkable works combining freshness of spirit with an illuminating balance of warmth and humor."



LOU REED: *New York*. SIRE. "One of the angriest blasts in rock-and-roll memory, and the best-sounding Lou Reed record ever."

HONORABLE MENTIONS

BACH: *English Suites*. András Schiff. LONDON.

BARTÓK: *String Quartets Nos. 1-6*. Emerson String Quartet. DEUTSCHE GRAMMOPHON.

BEETHOVEN: *Piano Concertos No. 2 and 4*. Anthony Newman; New York Philomusica Antiqua, Stephen Simon cond. NEWPORT CLASSIC.

TRACY CHAPMAN: *Crossroads*. ELEKTRA.

CHÁVEZ: *Sinfonías*. **REVUELTAS:** *Caminos; Música para charlar;*

Ventanas. Royal Philharmonic, Mexico City Philharmonic, Enrique Bátiz cond. ASV/HARMONIA MUNDI USA.

ROSEMARY CLOONEY: *Show Tunes*. CONCORD.

MILES DAVIS: *Aura*. COLUMBIA.

K.D. LANG AND THE RECLINES: *Absolute Torch and Twang*. SIRE.

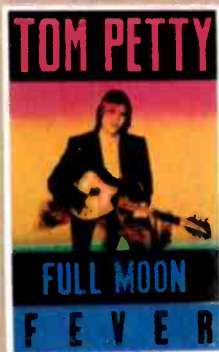
MARTINŪ: *Piano Sonata; Les Ritournelles; Fantaisie et toccata;*

Etudes and Polkas. Rudolf Firkušný. RCA.

BRANFORD MARSALIS: *Trio Jeepy*. COLUMBIA.

WYNTON MARSALIS: *Majesty of the Blues*. COLUMBIA.

MOZART: *Le nozze di Figaro*. Håkan Hagegård, Barbara Bonney, Petteri Salomaa, Alicia Nafé; Drottningholm Court Theatre Orchestra, Arnold Östman cond. L'OISEAU-LYRE.



TOM PETTY: *Full Moon Fever*. MCA. "Smart, tuneful, and witty rock-and-roll, the finest record Petty's made in ages, with some brilliant studio touches."



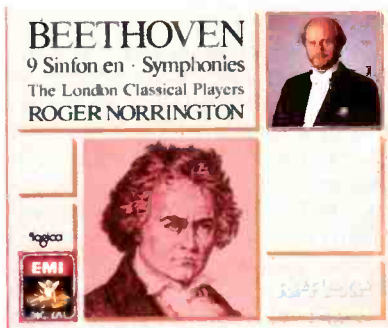
HANSON: *Symphonies Nos. 1 and 2*. Seattle Symphony, Gerard Schwarz conducting. DELOS. "Performances that stand up to the very best, resplendently recorded. A major achievement."



WILL THE CIRCLE BE UNBROKEN, VOLUME TWO. The Nitty Gritty Dirt Band, Emmylou Harris, Ricky Scaggs, Bruce Hornsby, Chet Atkins, others. UNIVERSAL. "Marked by heart, genius, innovation, generosity, and restraint."



GERSHWIN: *Porgy and Bess*. Willard White, Cynthia Haymon; London Philharmonic, Simon Rattle conducting. EMI/ANGEL. "*Porgy and Bess* completes its amazing ascent from show-biz to world-class opera."



BEETHOVEN: *Symphonies Nos. 1-9*. London Classical Players, Roger Norrington conducting. EMI/ANGEL. "Readings of exhilarating spirit and fabulous agility, a new and invigorating way to hear Beethoven."



R. STRAUSS: *Elektra*. Hildegard Behrens; Boston Symphony, Seiji Ozawa conducting. PHILIPS. "A fully realized performance of Strauss's mightiest score, unsurpassed by any other on discs."

RACHMANINOFF: *Piano Concerto No. 2; Études-tableaux*. Evgeny Kissin; London Symphony, Valery Gergiev cond. RCA.

BONNIE RAITT: *Nick of Time*. CAPITOL.

THE REPLACEMENTS: *Don't Tell a Soul*. SIRE.

MARCUS ROBERTS: *The Truth Is Spoken Here*. NOVUS.

ROSSINI: *La Cenerentola*. Agnes

Baltsa, Francisco Araiza; Academy of St. Martin-in-the-Fields, Neville Marriner cond. PHILIPS.

ROSSINI: *L'Italiana in Algeri*. Agnes Baltsa, Ruggero Raimondi; Vienna Philharmonic, Claudio Abbado cond. DEUTSCHE GRAMMOPHON.

DIANE SCHUUR: *Talkin' 'Bout You*. GRP.

MICHELLE SHOCKED: *Short, Sharp, Shocked*. MERCURY.

SHOSTAKOVICH: *Symphony No. 8*. St. Louis Symphony, Leonard Slatkin cond. RCA.

SHOSTAKOVICH: *Symphony No. 11*. Helsinki Philharmonic, James DePreist cond. DELOS.

SIBELIUS/NIELSEN: *Violin Concertos*. Cho-Liang Lin; Philharmonia Orchestra, Swedish Radio Symphony, Esa-Pekka Salonen cond. CBS.

TAKE 6. REPRISE.

HOW TO CARE FOR

CD'S

BY REBECCA DAY

IN the early days of the compact disc, the notes included with some discs said that proper handling and storage would make cleaning unnecessary.

If you store your discs safely inside their jewel boxes, away from extreme heat or cold, handle them exactly the right way, and never spill anything on them, you probably *won't* ever have to clean them. But we don't live in a perfect world, and your discs and CD players—especially portable and car players—are bound to attract dust and other impurities that could affect performance.

If a disc skips or won't play, look for dust on the playing surface. In many cases you can simply blow away any dust that impedes play. If the skipping or other malfunction occurs with many discs, there may be dust or dirt on the player's lens. Equipment manufacturers recommend using a dust blower such as those used for cameras, and some accessories manufacturers make cleaners specifically designed for a CD player's lens.

There are times when oily fingers leave their mark on a disc or a splash of Coke somehow lands on one side or the other. When that happens, clean the disc. Left alone, oils and other corrosive substances could eventually eat a hole in the label side's protective lacquer coating, oxidizing the aluminum data layer and making the CD unplayable. The polycarbonate surface on the playing side is tougher but still not invulnerable.

Do not use LP cleaners, solvents such as benzine or paint thinner, abrasives, or car polish to clean your CD's. Instead, first use a soft, dry, lint-free cloth to wipe off any contaminants. If that isn't enough, try mild soap and water or use one of the commercial CD cleaners sold by well-known accessories manufacturers.

If you follow a few guidelines, your CD's should last a lifetime.



Do not bend the disc when you remove it from the jewel box. Repeated bending could cause the protective lacquer to crack, thus ruining the disc. To get the disc out, put your thumb on the spindle of the jewel box and your index or middle finger on the edge of the disc. Pull gently on the disc until it is free.



Always handle a disc with your fingers around the edge or through the center hole. When you load a disc, place it gently into the player's tray, using only the inside hole and outer edges.

If you need to clean a CD, forget, for now, everything you know about cleaning LP's. Do *not* wipe in a circular motion; start at the center and move out to the edge in a straight line. Cleaning in a circle could etch a harmful groove in the CD. A player is less likely to be stopped by a radial scratch than by one that follows the spiral of recorded data.



If you suspect that the player's lens needs dusting, use a blower like the one shown and squeeze gently toward the lens. If that doesn't clean the lens, try one of the commercial lens cleaners.



When placing a disc back in its jewel box, be sure that it fits snugly around the center spindle so that it doesn't bounce around when you carry the box or fall out when you open the box the next time.





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SHOPPING SURVIVAL SKILLS



Some tips from the pros on dealing with the dealers

IN audio shopping, as in many other life experiences, there is a critical moment of truth, a time when you must summon knowledge, courage, and good judgment all at once, when you must end deliberation and just act. For the audio shopper, that moment arrives not on the high diving board or the top of the slope but in a stereo store, which is perhaps no less intimidating. Days, even weeks, of anticipation and preparation have passed; the magazines have been read, the friends consulted, the advertisements compared, the bank account checked and rechecked. Now all that remains is to act, finally to say, "I'll take it." Simple, right?

Not quite. Those somewhat irretrievable words are too often ut-

tered at the wrong time, in front of the wrong piece of equipment, to the wrong person, perhaps even in the wrong store—and this in spite of all the homework. Face to face with equipment and the people who sell it—in other words, at the moment of truth—even the most well-informed audiophile can collapse under the pressure of having to contend with all those features, all those prices, and all that smooth sales talk.

The solution? The audio shopper must develop in-store survival skills. Such skills—which include knowing what questions to ask, what personal information to share, how to sort through the retail clutter, how to size up a salesman, and how to spot a snow job—could easily be obtained by hanging around

by Warren Berger

an audio store for, say, ten years. But to save some time, we've picked the brains of a half-dozen people who've been hanging around audio stores even longer than that.

We asked sales pros from the Tweeter stores of Boston, Audio Craft of Cleveland, Florida's Absolute Sound, Minneapolis's Best Buy, Listen Up of Denver, and Oregon's Chelsea Audio/Video—all renowned for their quality and service—to put themselves in the shoes of their customers. The dealers did just that, and they offered STEREO REVIEW readers some “inside” tips on what they'd ask and how they'd shop in their own stores.



NOT surprisingly, there was considerable disagreement on some matters, such as what to ask about when buying a CD player. But on the larger issues, like matching equipment to personal needs, evaluating the reliability of a salesman and a store, and getting the straight scoop on brands, the pros tended to see eye to eye. And though you get the feeling that these guys would be their own toughest customers on the sales floor (they'd have no qualms, for instance, about asking for complicated special hook-ups during demonstrations or for a salesman's home phone number), you can also surmise that they'd never, ever leave a store with anything less than precisely the right piece of audio equipment.

The Right Person In the Right Place

Almost all of the dealers agreed that smart shopping begins with finding the right salesperson in the right store. Naturally, these dealers hold their own operations in high regard, but they advise you to ask an impartial source. Ask friends and co-workers about their audio shopping experiences: Good word of mouth is the best indicator of a dependable audio store. You can also check with the local chapter of the Better Business Bureau to find out how many complaints have been lodged against a particular dealer.

A good specialty audio store will tend to have a well-trained sales staff, though there are no guarantees. You'll have to evaluate the salesperson before you evaluate

equipment. Dealers say that the first thing to look for is a salesman who asks you the right questions. “If a salesman doesn't immediately ask you detailed questions about your personal listening needs, that's a bad sign,” said Dana Carlson, a veteran store manager at Tweeter. “Sometimes they go right into making a recommendation—but a recommendation doesn't make any sense if they don't understand your situation.”

Some of the questions a salesperson should ask include the following: What kind of equipment do you presently own? What's your listening room like? What type of music do you listen to? Which equipment features do you tend to find useful or important? What type of complete system do you plan to put together over the next few years?

Customers can, at times, grow wary or impatient when asked such questions—they may be anxious to start looking at equipment—but dealers say this “qualification” process is essential in enabling the salesperson to help you make the right purchase. And the process doesn't work unless you're fairly straightforward with the salesman about such matters as your budget and your knowledge of audio.

“Far too often, customers feel they need to be evasive—they try to hold back certain information from the salesman,” said Charles O'Meara, president of Absolute Sound. “This immediately breaks down the rapport with the salesman. You have to be honest and tell him what he needs to know. If he's a good salesman, you can trust him.”

And if he's *not* a good salesman, you can identify him by some of the tell-tale signs. One is a failure to listen. “If you tell him what you're looking for, and he then recommends something that just doesn't fit, you may have a problem,” said Ford Montgomery, president of Chelsea Audio/Video. As Montgomery pointed out, such a salesman is probably operating on his own agenda (he may, for example, be trying to push certain high-commission items) and cares little about yours.

Techno-babble from the salesman should raise a red flag. “If the salesman tries to, shall we say, inundate your aural sensibility with a plethora of polysyllabic terminology—watch out!” explained O'Meara. “Either he's trying to confuse you or

he's a techie who can't relate to other human beings. The salesman should talk technical only if the customer wants to talk technical—otherwise, he should be trying to simplify.”

Also, watch out for audio snobs and gossips. The snobs will tend to disparage all but the most elite brands; the point they're missing is that elite brands aren't for everyone (if they were, they wouldn't be elite). The gossips, meanwhile, like to tell sordid tales about brands that “always break down” or “are made with cheap parts.” They may even tell you that the company behind the brand is discontinuing a certain line or going out of business. The aim, of course, is to sour you on a brand they either don't carry or don't wish to sell. “A good salesman will never run down other brands,” said Chuck Zelig, product manager for Listen Up. “He'll talk about the strengths and weaknesses of the products he has available in the store, and that's all.”

Asking the Right Questions

Once you've latched onto the right salesperson, it's important to ask the right questions. It's not easy coming up with a comprehensive query list, however; different customers' concerns will naturally vary depending on the type of equipment they want and their personal needs and tastes. A sophisticated shopper in the market for a CD player might inquire about low-level linearity or ask for details about the player's digital-to-analog converters; on the other hand, the answers to such questions might serve only to confuse some shoppers.



FOR the most part, dealers advise ordinary shoppers—and, indeed, even experienced audiophiles—to concentrate more on fundamentals than technicalities. “A lot of times, customers get caught up in jargon,” said Wayne Puntel, president of Audio Craft. “When they're buying a CD player, they think they should ask about 18-bit or 20-bit oversampling, but they ought to concentrate on their application and needs. For instance, do they need a CD changer? How would they use random access? Are they looking for a remote capability that's interactive with the rest of their system?”

Charles O'Meara advises custom-



“The biggest mistake customers make is trying to save a few bucks on a deal. You’re going to have to live with this equipment long after you’ve forgotten you saved thirty bucks on it.”



ers to “make a conscious decision about whether you’re more concerned with sonic integrity or convenience features—you may have to lean toward one or the other. You can get both, but it will be costly.”

O’Meara said he’s found that customers “get too hung up on brand names and specs. If you’re buying from a high-quality dealer, you can be fairly confident that the brands are good. And you know that if there’s a problem, that quality dealer will take care of it—you won’t have to deal with the manufacturer at all. As for specs, they can be almost useless. You’re dealing with music, and it’s hard to qualify that with numbers. It’s much more important to listen.”

That’s why the in-store demonstration is so important. The dealers say you should not feel shy about

making special demands when it comes to the demo. “There’s nothing wrong with asking the dealer to hook up the equipment to other components that are similar to what you’ll be using at home,” said O’Meara. “They should even be willing to let you hook up your own amp from home when you want to try out speakers.”

The dealers also advise listening to a variety of music, both familiar and unfamiliar, during the demo. And the salesman “should allow you to get involved in the demo,” according to Tom Mack, corporate trainer for Best Buy. “You should be operating the controls to see if you’re comfortable with the design—after all, you’re the one who’s going to have to live with this equipment.”

Avoid demos involving compli-

cated switching systems and walls of speakers designed to compare ten items at once; with demos, less is more. The dealers say you should never compare more than two pieces of equipment at a time. Do a series of runoffs between two pieces; each time, take the winner and compare it with the next component. But don’t try to compare too many different pieces in one day; “demo overload” comes on quickly.

If you do care about specs, our dealers say that you should ask for proof that the equipment lives up to the manufacturer’s claims. Many high-end stores have test centers on the premises; hooking up an amplifier for a spec test is fairly easy. If you’re buying a turntable, ask the dealer if there’s an in-store calibration center for the tonearm and cartridge.



SHOPPING CHECKLIST

✓ Check out the store's reputation. Ask around, call the Better Business Bureau, or ask the dealer to refer you to customers. Word of mouth is everything in selecting a dealer.

✓ Make sure the salesman asks you the right questions. If he really cares about selling you the right equipment, he'll take the trouble to find out about your needs. If he's more interested in his own pitch than in your life story, walk away.

✓ Be honest. Don't try to "outfox" the salesman; give him all the information he needs to help you.

✓ Watch out for techies (who talk over your head), snobs (who sneer at anything costing less than \$3,000), and gossips (who like to tell nasty stories about brands they're not trying to sell).

✓ Talk features and applications over specifications. Numbers are only part of the story, and they won't tell you whether a component makes sense for you. If you do place emphasis on specs, ask the store to make sure equipment is up to spec before you buy it.

✓ Don't rush through the demo. This is the most important part of the selection process, so take it slow. Make sure the salesman uses components comparable with what you'll be using at home. Don't try to listen to more than a couple of models at a time. Trust your own ears to decide what's best for you.

✓ Beware of the "deal of the week." There's nothing wrong with looking for a bargain, but don't let price distract you from the other important issues: quality, compatibility, convenience, and reliability.

✓ Ask about service. Who'll fix the equipment if it breaks? How long will it take? How much will it cost?

✓ Think long-term. The component you buy today should fit in with your system of tomorrow. If you don't have a long-range plan, work one out before you buy.

Think About the Future

Our dealers say that audio shoppers often think short-term when they should be looking farther down the road. "The biggest mistake customers make is trying to save a few bucks on a deal of the week," said Ford Montgomery. "You're going to have to live with this equipment for a long time—long after you've forgotten that you saved thirty bucks when you bought it."

Shoppers should be looking for quality equipment that will stand the test of time. "Look for simplicity in design and quality of construction," said Chuck Zelig. "And keep in mind that brands with a solid, long-standing reputation for quality are the ones that are least likely to give you trouble."

To guard further against after-sale woes, make sure that the dealer provides reliable back-up service. As Montgomery cautioned: "If somebody tells you, 'We service everything, don't worry about it,' ask him about their service department. Is the service work done in the store, or is your component shipped to a factory where it may sit for six weeks?" Also, find out about extended-service contracts—they're particularly worthwhile for CD players, which have a relatively high breakdown rate compared with, say, amplifiers and speakers.

Forward-thinking hi-fi shoppers should also consider whether the components they're buying will satisfy future needs. "Don't just think about what you want right now—think about the kind of system you'd like to own a few years from now," O'Meara said. "You might eventually want to create a full surround-sound entertainment system. Make sure your purchase is adaptable to that. The beauty of component stereo is that you can take a building-block approach—as long as all your purchases make sense."

Sensible purchases are, of course, what all shoppers are really seeking, though they sometimes get distracted by fire sales, high-pressure salesmen, or seductive advertising. When the pressure's on, do the right thing: Find a salesman who'll listen, explain your needs (short-term and future), and choose the product that makes sense for you. □



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CIRCLE NO. 85 ON READER SERVICE CARD



RECEIVERS, PAGE 76



AMPLIFIERS, PAGE 82



CD PLAYERS, PAGE 99

1990 EQUIPMENT BUYING GUIDE

CHOOSING audio components is a juggling act. You must be able to balance the performance level and the features you want with prices you can afford and the size limitations dictated by your listening room. STEREO REVIEW's buying guide, providing specifications, features, and prices for a wide range of components, should be a helpful starting point for your shopping.

Many new audio components are introduced each month, and our guide is necessarily selective, concentrating on major categories of home audio equipment from companies whose products are generally widely distributed. If a particular model does not appear, that is not a reflection on its quality. Upcoming issues will provide guides to cassette decks, tape, and other categories.

All the information in the guide, including suggested retail prices, was provided by the manufacturers of the equipment. Although we have tried to make sure that models listed are current and that prices were correct as of press time, prices are subject to change because of currency fluctuations. Remember, actual retail prices are usually set by the individual dealer.

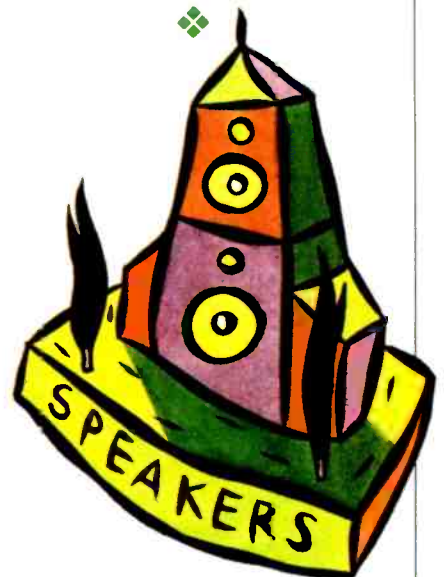
For more information about any product, contact an authorized dealer or the manufacturer. For manufacturers' addresses, see page 137.



TUNERS, PAGE 106



TURNTABLES, PAGE 111



SPEAKERS, PAGE 115

RECEIVERS

ACOUSTIC RESEARCH

X-07 70-W/ch Receiver

Receiver with infrared remote to control power, volume, tuning, input selection, and AR CD-player functions. Features audio and video dubbing; close-tolerance metal-film resistors and film capacitors; concealed bass, midrange, treble, balance, loudness, mono, tape, VCR, tuning, and speaker-switching controls; 8 AM/8 FM station presets; gold-plated phono inputs. Inputs for MM phono; MC phono; tape; AUX; CD player; video sound source; VCR 1; VCR 2; optional remote. Amp section: 70 continuous average W/ch from 20-20,000 Hz into 8 ohms with less than 0.03% THD, 80 W into 4 ohms; S/N 100 dBA. Tuner section: FM section 50-dB quieting sens stereo 40 μ V (37.2 dBf); FM S/N (at 65 dBf) 75 dB stereo, 80 dB mono; THD stereo 0.3%; capture ratio 1.0 dB; AM rejection 60 dB; all-ch sel 70 dB. 3 $\frac{3}{4}$ x 17 x 15 $\frac{1}{2}$ in; 25 lb. 2 oz. \$800
RC-03. Remote control for the above \$25

A/D/S/

R4 70-W/ch Receiver

Features alphanumeric display on front panel indicating input source or received radio station. Digital-synthesis tuner with 30 memory presets for AM or FM stations; digital volume and tone controls; optional remote control; RS-232 port allows control through personal computer; optional remote capable of multi-room control. Amp section: 70 W/ch into 8/4 ohms, <0.07% THD; FR 20-20,000 Hz +0, -0.5 dB. Tuner section: IHF sens 26 dBf stereo; signal strength for 50-dB quieting 35 dBf stereo; capture ratio 1.5 dB; all-ch sel 65 dB; max S/N 75 dB mono, 70 dB stereo. 2 $\frac{3}{4}$ x 17 $\frac{1}{2}$ x 14 $\frac{3}{4}$ in; 23 lb. \$1,000
RC1 Unified Remote. For use with the above and other a/d/s/ components \$150

BANG & OLUFSEN

Beomaster 6500 50-W/ch Receiver

Includes Master Control Panel remote control; presets for 20 AM/FM stations; Auto Power Handling Control; double-acting auto gain control in FM; volume, bass, treble, and balance controlled from knob on MCP remote; works with other Beosystem 6500 components for multi-room remote control; direct selection of any station by frequency; station search; silver and black finish. Amp section: FR 20-20,000 Hz, \pm 1.5 dB; THD <0.09%; S/N 80 dB. FM tuner section: 50-dB quieting sens 40 dBf stereo; FR 20-15,000 Hz, \pm 1.0 dB; S/N 65 dBf; capture ratio 1.7 dB. 16 $\frac{1}{2}$ x 3 x 12 $\frac{3}{4}$ in; 19 $\frac{1}{4}$ lb. . . . \$2,220

Beomaster 4500 20-W/ch Receiver

Remote controlled with Beolink 1000 terminal; digital tuner with 20 AM/FM presets; multiroom capability; optional wall-mounting brackets; programmable volume and tone levels; programmable inputs; integrates with B&O video

Bang & Olufsen Beomaster 4500



products. Black and silver finish. Amp section: FR 20-20,000 Hz, \pm 1.5 dB; THD <0.1%; S/N >77 dB. FM tuner 50-dB quieting sens 19 dBf mono, 40 dBf stereo; FR 20-15,000 Hz, \pm 1.0 dB; S/N 65 dBf; cap ratio 1.7 dB. 24 $\frac{3}{8}$ x 2 $\frac{3}{4}$ x 9 $\frac{5}{8}$ in; 15 lb. 6 oz. \$1,098

CARVER

HR-752 100-W/ch Receiver

AM/FM receiver with wireless remote and Sonic Holography. Features asymmetrical charge-coupled FM detection circuit; magnetic-field power amplifier section. A/B speaker outputs; B-speaker-system matrix surround-sound synthesizer, 20 AM/FM presets with preset scan; 5 audio inputs; CD direct; motorized volume control; 3-band tone controls; dual tape monitors with dubbing; pre/main outputs. 100 W/ch; 4.7 dB dynamic headroom; 0.5% THD; 85 dB MM phono S/N; 1.5 dB cap ratio; 0.2% FM stereo THD; 52 dB all-ch sel; 78 dB stereo FM S/N. 35 lb. . . \$650



Carver HR-752

HR-722 60-W/ch Receiver

AM/FM receiver with wireless remote and Sonic Holography. Features asymmetrical charge-coupled FM detection circuit; magnetic-field power amplifier section. 20 AM/FM presets with preset scan; 5 audio inputs; CD direct; motorized volume control; A/B speaker outputs; 3-band tone controls; dual tape monitors with dubbing. 60 W/ch; 4.7 dB dynamic headroom; 0.5% THD; 85 dB MM phono S/N; 1.5 dB cap ratio; 0.2% FM stereo THD; 52 dB all-ch sel; 78 dB FM S/N. 35 lb. \$550

DENON

DRA-1025R 120-W/ch Receiver

AM/FM receiver with remote control. Features inputs for turntable, 2 tape decks, CD player, and VCR; pre-out main jacks; 5-way speaker terminals; 16 station tuner preset; FL display; preset FM scan; variable loudness EQ; simulcast copy function; simulated stereo circuit. 120 W/ch into 8 ohms; THD 0.006% -3 dB; IM 0.005%;

FR 20-50,000 Hz \pm 1 $\frac{1}{2}$ dB; S/N 110 dB. 6 $\frac{3}{8}$ x 17 $\frac{1}{8}$ x 15 $\frac{1}{2}$ in; 26 $\frac{1}{2}$ lb. \$950
DRA-825R. Similar to above. 90 W/ch . . . \$800

DRA-625R 65-W/ch Receiver

AM/FM receiver with integral system remote control. Features liquid-cooled heat sinks; variable loudness EQ; 1-touch source selection; pre-out jacks; 3-way speaker terminals; 16-station random preset memory tuning; auto scanning; last-channel-tuned memory. THD 0.0095%; IM 0.025%; FR 20-50,000 Hz \pm 1.5dB; S/N: phono 88 dB, FM 82 dB, CD/tuner/tape 98 dB. 5 $\frac{3}{8}$ x 17 $\frac{1}{8}$ x 13 $\frac{3}{4}$ in; 21 lb. \$550
DRA-425R. Similar to above. 50 W/ch . . . \$450

DRA-325R 40-W/ch Receiver

Class A amplifier with integral system remote control. Features electronic input switching; non-switching amp. 16-station preset tuning; auto seek; variable loudness control; last-channel memory; A/V in/out. \$350

FISHER

RS627B 100-W/ch Receiver

AM/FM receiver with Class AII circuitry. Features quartz PLL synthesis tuner; 24 station presets; FM mute; source direct switch; CD record switch; remote-controlled motorized volume control; 5-band graphic equalizer. Includes 38-function wireless remote control. 100 W/ch min rms into 8 ohms; FR 20-20,000 Hz; THD <0.05%; S/N 55 dB. 17 $\frac{3}{8}$ x 5 $\frac{3}{4}$ x 10 $\frac{3}{4}$ in; 20 lb. \$500

RS625B 120-W/ch Receiver

AM/FM receiver with 38-function wireless remote control. Features 5-band graphic equalizer; motorized volume control; 24 AM/FM station presets; autoscanning tuning; FM muting; loudness switch; FL display. 120 W/ch rms into 8 ohms; FR 20-20,000 Hz; THD <0.09% \$450

RS615B 60-W/ch Receiver

AM/FM receiver with 37-function wireless remote control. Features 5-band graphic equalizer; motorized volume control; 24 AM/FM station presets; autoscanning tuning; FM muting; loudness switch; FL display. 60 W/ch rms into 8 ohms; FR 20-20,000 Hz; THD <0.09% \$350

HARMAN KARDON

hk990 Vxi 90-W/ch Receiver

AM/FM receiver with digital-synthesis quartz-locked tuning and remote. Features high-current/high-voltage design; Active-Tracking tuner circuitry. 6 AM/12 FM presets; seek tuning; LED signal-strength meter; two tape and two A/V monitors; interactive video switching; high-level CD inputs; ext. processor jacks; MC head amp; subsonic filter; mono and loudness buttons; tape-copy selector. Amp: 90 W/ch cont avg into 8 ohms from 20-20,000 Hz with <0.08% THD; S/N 98 dB (high-level inputs). Tuner: 50-dB quieting sens 36 dBf; AM rej 55 dB; cap ratio 1.0 dB; adj-ch sel 30 dB; all-ch sel 80 dB. \$1,099

hk880 Vxi 60-W/ch Receiver

AM/FM receiver with digital-synthesis quartz-locked tuning and remote control. Features high-current/high-voltage design. 6 AM/12 FM presets; seek tuning; LED signal-strength meter; two A/V tape monitors; interactive video switching; high-level CD inputs; external processor jacks; subsonic filter; mono and loudness

RECEIVERS

buttons; tape copy selector. Amp section: 60 W/ch cont avg into 8 ohms from 20-20,000 Hz with <0.08% THD; S/N 98 dB (CD, video). Tuner section: 50-dB quieting sens 36 dBf; AM rej 55 dB; cap ratio 1.0 dB; adj-ch sel 5 dB; alt-ch sel 70 dB. 17 $\frac{3}{8}$ x 5 $\frac{1}{4}$ x 14 $\frac{1}{2}$ in; 22 lb. \$799



Harman Kardon hk880 Vxi

hk550 Vxi 45-W/ch Receiver

AM/FM receiver with digital-synthesis quartz-locked tuning. Features high-current/high-voltage design. 6 AM/12 FM presets; seek tuning; two tape monitors; CD, video, and high-level aux inputs; loudness button. Amp section: 45 W/ch cont avg into 8 ohms from 20-20,000 Hz with <0.09% THD; S/N 98 dB (CD, video). Tuner section: 50-dB quieting sens 37 dBf; AM rej 55 dB; cap ratio 1.0 dB; adj-ch sel 5 dB; alt-ch sel 70 dB. 17 $\frac{3}{8}$ x 4 x 14 $\frac{1}{2}$ in; 15 lb. \$499

hk440 Vxi 30-W/ch Receiver

AM/FM receiver with digital-synthesis quartz-locked tuning. Features high current/high-voltage design. 6 AM/12 FM presets; seek tuning; two tape monitors; high-level CD and video inputs; loudness button. Amp section: 30 W/ch cont avg into 8 ohms from 20-20,000 Hz with <0.09% THD; S/N 98 dB (CD, video). Tuner section: 50-dB quieting sens 37 dBf; AM rej 55 dB; cap ratio 1.0 dB; adj-ch sel 5 dB; alt-ch sel 70 dB. 17 $\frac{3}{8}$ x 4 x 14 $\frac{1}{2}$ in; 14 lb. \$399

JVC

RX1010VTN 120-W/ch Receiver

AM/FM receiver featuring Dolby Pro-Logic with adjustable digital delay. Features 3 video inputs; digital tuning with 40 presets; auto memory; 7-band graphic EQ; MC and MM phono inputs; FL display; programmable A/V remote with LCD. 120 W/ch at THD 0.007% into 8 ohms; 360 W/ch into 2 ohms. \$1,500
RX901VBK 100-W/ch Receiver. Same as above with 48-key programmable remote. 100 W/ch at THD 0.007% into 8 ohms; 300 W/ch into 2 ohms. \$950

RX801VBK 100-W/ch Receiver

AM/FM receiver with digital Dolby Surround. Features 2 video inputs; digital tuning with 40 tuner presets; auto memory; 7-band graphic EQ; 2 pr of speaker connections; FL display; programmable A/V remote with 48 keys. \$630
RX701VBK 80-W/ch Receiver. Same as above with 80 W/ch. \$540

RX501BK 65-W/ch Receiver

AM/FM receiver with matrix surround sound. Features digital tuning with 40 presets; auto memory; 7-band graphic EQ; 2 pr of speaker connections; LCD display; full function A/V remote. \$430
RX401BK 50-W/ch Receiver. Same as above with 50 W/ch. \$380

KENWOOD

KR-V9010 130-W/ch Receiver

A/V receiver with 130 W/ch front and 20 W/ch rear, 7-band graphic EQ/spectrum analyzer, and video dubbing. Features Dolby Pro-Logic circuitry with Normal/Wide/Phantom modes, test-tone, center channel, and rear preouts; Theater/Hall surround-sound modes. Adjustable digital delay; programmable remote control; S-VHS connector; 4 video inputs; 20 AM/FM station/name presets; 10 EQ presets; on-screen display capability; digital input. FR (line to speaker) 10-200,000 Hz +0, -3 dB; THD 0.008%; S/N 100 dB. 50-dB quieting sens 37.2 dBf stereo; AM rej 62 dB; capture ratio 1.0 dB; sel 55 dB at 400 Hz. 17 $\frac{1}{4}$ x 6 $\frac{1}{4}$ x 16 $\frac{1}{2}$ in; 32.3 lb. \$850

KR-V8010 100-W/ch Receiver

A/V receiver with 100 W/ch front and 20 W/ch rear, 7-band graphic EQ, and video dubbing. Features Dolby Surround, Theater-Hall surround-sound modes. Remote control; 3 video inputs; rear preouts; 20 AM/FM station/name presets; 10 EQ presets; EQ recording switch; digital input. FR (line to speaker) 10-200,000 Hz +0, -3 dB; THD 0.008%; S/N 100 dB. 50-dB quieting sens 37.2 dBf stereo; AM rej 62 dB; capture ratio 1.0 dB; sel 55 dB at 400 Hz. 17 $\frac{1}{4}$ x 6 $\frac{1}{4}$ x 16 $\frac{1}{2}$ in; 27.5 lb. \$650

KR-V7010 80-W/ch Receiver

A/V receiver with 80 W/ch front and 10 W/ch rear, 7-band graphic EQ/spectrum analyzer, and video dubbing. Features Dolby Surround and digital-delay modes. 2 video inputs; rear preouts; 20 AM/FM station/name presets; 10 EQ presets; EQ recording switch. Includes remote control. FR (line to speaker) 10-200,000 Hz +0, -3 dB; THD 0.008%; S/N 100 dB. 50-dB quieting sensitivity 37.2 dBf stereo; AM rejection 57 dB; capture ratio 1.2 dB; selectivity 53 dB at 400 Hz. 17 $\frac{1}{4}$ x 5 $\frac{1}{4}$ x 12 $\frac{1}{2}$ in; 18.1 lb. \$499

KR-V6010 70-W/ch Receiver

A/V receiver with 70 W/ch front and 5 W/ch rear, 5-band graphic EQ, and video dubbing. Features Dolby Surround and digital-delay modes. Remote control; 2 video inputs; 10 AM/FM station/name presets. FR (line to speaker) 10-70,000 Hz +0, -3 dB; THD 0.009%; S/N 100 dB. 50-dB quieting sens 41.2 dBf stereo; AM rej 70 dB; capture ratio 1.2 dB; sel 53 dB at 400 Hz. 17 $\frac{1}{4}$ x 5 $\frac{1}{4}$ x 11 $\frac{1}{8}$ in; 15.9 lb. \$399

LUXMAN

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

Receiver with full-function system remote control. Features low-impedance drive capability; triple-shielded power transformer; 5-varactor, dual-gate MOSFET FM front end; Duo-Beta dual feedback-loop amp circuitry; STAR circuit topology to reduce noise and distortion. 20 AM/FM station presets; cable FM fine tuning (25 kHz steps); CD-direct, 3 video, MM/MC-phono inputs; 3-position loudness compensation; signal-strength/multipath indicators; subsonic filter; FM IF-bandwidth selector; pre-out/main-in and signal-processor jacks. Amp section: 160 W/ch from 20-20,000 Hz into 8 ohms with 0.03% THD; S/N: MC 70 dB, MM 88 dB. CD/tape/video 100 dB; IM 0.03%. FM section: 50-dB quieting sens 36.6 dBf (stereo); cap ratio 1.5 dB; alt-ch sel 75 dB (narrow IF). AM section: S/N 50 dB. 17 $\frac{1}{4}$ x 5 $\frac{1}{2}$ x 16 $\frac{1}{8}$ in; 35 lb. \$1,200
R-115. Similar to above except 75 W/ch; 2 video inputs; no MC phono input. S/N: phono 88

dB. CD/tape/video 98 dB. 25.5 lb. \$850
R-113. Similar to above except 35 W/ch and no remote control. THD 0.08%. \$480

McINTOSH

MAC 4300V 100-W/ch Receiver

Features MPX filter; 6 AM/FM station presets; signal-strength indicator; LED display of station frequency; 1 unswitched outlet; loudness control; 1, 2, and 1+2 speaker selector; 5-band equalizer; scan; headphone jack. Includes remote control. Amp: THD 0.02%; IM 0.02%; FR 20-20,000 Hz +0, -0.5 dB; SN 100 dBA. Tuner: S/N 75 dB stereo; FR 20-15,000 Hz +0, -1.0 dB stereo; THD 0.08% at 1,000 Hz. 18 $\frac{1}{2}$ x 6 x 14 in; 34 lb. 8 oz. \$2,995

MAC 4280 75-W/ch Receiver

Features MPX filter; 5 AM/FM station presets; signal-strength indicator; LED display of station frequency; Power Guard circuit; 1 unswitched outlet; loudness control; 1, 2, and 1+2 speaker selector; 3-band equalizer; scan; headphone jack. Amplifier section: total harmonic distortion 0.03%; intermodulation distortion 0.03%; frequency response 20-20,000 Hz +0, -0.5 dB; 100 dBA. Tuner section: signal-to-noise ratio 75 dB stereo; frequency response 20-15,000 Hz, \pm 0.5 dB stereo; total harmonic distortion 0.1% at 1,000 Hz. 18 $\frac{1}{4}$ x 5 $\frac{1}{4}$ x 15 $\frac{1}{2}$ in; 25 lb. \$1,995
MAC 4275. Similar to the above; without remote control. \$1,798



McIntosh MAC 4280

MARANTZ

SR3600BL 120-W/ch Receiver

Receiver with Dolby Surround Sound. Features remote control; 40 AM/FM presets; preset scan; VCR-to-VCR dubbing; 3 tone controls; speaker A/B switch; center channel output. \$879

SR3500BL 110-W/ch Receiver

Receiver with 40 AM/FM station presets. Features remote control; preset scan; VCR-to-VCR dubbing; 3 band tone control; speaker A/B switch; cable FM input; MM/MC phono input selector; matrix sound. \$749

TA-100 100-W/ch Receiver

AM/FM receiver with 16 presets. Features remote control; 5-band EQ; inputs for MM phono, tape, CD, 2 video sources; VCR dubbing; 100 W/ch; 0.1% THD. 16 $\frac{1}{8}$ x 5 $\frac{7}{8}$ x 12 $\frac{1}{2}$ in. \$500

SR3300BL 35-W/ch Receiver

Receiver with 32 AM/FM presets. Features VCR-to-VCR dubbing; 3-band tone control; speaker A/B switch; audio/video integration; matrix sound. \$449

Century Collection

RS 3559 125-W/ch Receiver

AM/FM receiver with five independent amplifiers and 64-key remote. Features thermal tunnel heat sink; oversized industrial power transformer; Dolby Surround; 6-sector alphanumeric information center; CD direct; 10-channel multi-scan AM/FM memory; 30 station presets; 3 video inputs. \$1,000

RECEIVERS

RS 3557 100-W/ch Receiver

AM/FM receiver with four independent amplifiers and 44-key remote. Features oversized industrial power transformer; Dolby Surround; alphanumeric information center; 30 station presets; 3 video inputs. \$700

RS 3555 50-W/ch Receiver

AM/FM receiver with four independent amplifiers and 36-key remote. Features oversized industrial power transformer; CD direct; 2-color alphanumeric information center; station character generator. \$500

MITSUBISHI

M-AVI 125-W/ch Receiver

4-channel AM/FM receiver with Dolby Surround and matrix circuitry. Features 125 W/ch front and 25 W/ch rear. Remote control; motorized-volume, bass, and treble controls; tone defeat; audio mute; preamp loudness; subsonic/high-cut filters; rec selector; on-screen displays of all functions; adjustable LCD display; 16 FM presets with scan; FM muting; headphone jack; 4 audio/video, 3 audio inputs; 1 video, 2 audio, and monitor outputs; pre-amp loop. 125 W/ch min rms into 8 ohms from 20-20,000 Hz; THD 0.05%. \$1,200

M-AV2 80-W/ch Receiver

4-channel AM/FM receiver with Dolby Surround and matrix circuitry. Features 80 W/ch front and 20 W/ch rear. Remote control; motorized-volume, bass and treble controls; tone defeat; audio mute; preamp loudness; subsonic/high-cut filters; rec selector; 16 FM presets with scan and menu switching; FM muting; on-screen display of all functions; adjustable LCD; headphone jack; 4 audio/video, 3 audio outputs; 1 video output; monitor outputs; pre-amp loop. 80-W/ch min rms into 8 ohms from 20-20,000 Hz; THD 0.05%. \$1,000
M-AV3. Similar to above except no rec selector, menu switching of tuner presets, on-screen display, and adjustable LCD. \$800



NAD Monitor Series 7400

NAD

Monitor Series 7600 150-W/ch Receiver

Bridgeable AM/FM stereo receiver with power envelope circuitry. Features high-current output stage; high-resolution phono preamp; MC preamp; close tracking soft-clipping circuitry. Bass EQ; semi-parametric tone controls; wide/narrow IF mode; speaker impedance selector. 150 W/ch rms; +4 dB dynamic headroom. Includes wireless remote control with motor-driven volume. Rack mountable. \$1,599

Monitor Series 7400 100-W/ch Receiver

Bridgeable AM/FM stereo receiver with power envelope circuitry. Features soft-clipping circuit. 14 random AM/FM presets; MM/MC switch on discrete 4 transistor phono preamp; semi-parametric tone controls; bass EQ; preamp out/main in. 100 W/ch rms; +5.7 dB dynamic headroom. Includes remote control with motor-driven volume. Rack mountable. \$999

Monitor Series 7100X 60-W/ch Receiver

Bridgeable AM/FM stereo receiver with power envelope circuitry. Features soft-clipping circuit. 14 random AM/FM presets; MM/MC switch on discrete 4 transistor phono preamp; bass EQ; preamp out/main in. 60 W/ch rms; +6 dB dynamic headroom. Rack mountable. \$749

7240PE 40-W/ch Receiver

AM/FM receiver featuring soft-clipping circuit; high-current output stage; low-noise phono preamp. Speaker imp selector; bass EQ. 40 W/ch rms; +6 dB dynamic headroom. \$499

7225PE 20-W/ch Receiver

AM/FM receiver featuring power envelope circuitry; soft-clipping circuitry. Preamp out/main in; bass EQ; 5-way speaker binding posts. 20 W/ch rms; +4.4 dB dynamic headroom. \$329



Nakamichi TA-3A

NAKAMICHI

TA-4A 100-W/ch Receiver

Features Stasis power amplifiers (two internal amplifiers). Multi-regulated isolated-ground power supply; four high-Q twin-varicap diode tuner; FET differential preamp. Tone, variable loudness and mute controls; MM/MC phono preamp with defeatable subsonic filter; quartz PLL tuner with 10 presets; 5 audio and 3 video inputs; system remote control with multi-room expansion capability. Amp section: 100 W/ch cont avg into 8 ohms (135 W/ch max); FR 20-20,000 Hz ± 0.5 dB; THD $< 0.1\%$ at 20-20,000 Hz; S/N > 100 dB. Tuner section: 50-dB quieting sens 37.5 dBf stereo; cap ratio 2.0 dB; alt-ch sel 65 dB, $\pm 400,000$ Hz. 17 x 5 x 14 1/2 in; 33 lb. \$1,295

TA-3A 75-W/ch Receiver. Similar to above but 75 W/ch; lacks remote multi-room expansion capability; 4 audio and 3 video inputs; 17 x 4 x 14 1/2 in; 24 lb, 4 oz. \$895

TA-2A 50-W/ch Receiver. Similar to above but 50 W/ch; 4 audio inputs; 17 x 4 x 14 1/2 in; 18 lb, 15 oz. \$595

NIKKO AUDIO

R-550 55-W/ch Receiver

AM/FM receiver with Class AB power amplifier. Features video image dubbing; automatic record out; optional rack mounting ears. Amplifier section: FR 5-100,000 Hz at 1 W; THD $< 0.06\%$; S/N 95 dB. Tuner section: 50-dB quieting sens 37.2 dBf stereo; capture ratio 2.0 dB; alternate-channel selectivity 75.8 dB. 17 3/8 x 5 1/2 x 13; 32 lb. \$500

R-400. Identical to R-550 except for 40 W/ch, processor feature, and single direction video dubbing. \$350

ONKYO

TX-SV7 40-W/ch Receiver

Audio/video AM/FM receiver with 40 W/ch front and 20 W/ch rear. Features MTS decoder for stereo TV broadcasts; processor with Dolby matrix, hall surround-sound effects, and simu-

lated stereo. Universal remote control that operates a variety of different brand audio and video components; 36 AM/FM station presets; FM mute; 4 speaker terminals; bass, treble, and balance controls; pre-out/main-in jacks; 2 video, 4 audio inputs. \$1,000

TX-860 80-W/ch Receiver

Receiver with discrete output circuitry and low-impedance drive capability. Features AM/FM tuner with 4-mode APR (Automatic Precision Reception) system: distant/local, IF bandwidth (wide/narrow), hi-blend (on/off), and stereo/mono. Video dubbing; 20 station presets with battery-free backup; Selective Tone Control with 50-Hz boost; digital input; simulated-stereo processor; stereo image, dynamic bass expander modes; sleep timer; RI remote compatible. Controller included. 80 W/ch min rms into 8 ohms; dynamic power 185 W/ch into 2 ohms. \$500

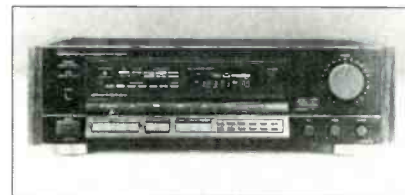
TX-840 60-W/ch Receiver

Receiver with discrete output circuitry and low-impedance drive capability. Features AM/FM tuner with 3-mode APR (Automatic Precision Reception) system: IF bandwidth (wide/narrow), hi-blend (on/off), and stereo/mono. Video dubbing; 20 station presets with battery-free backup; Selective Tone Control with 50-Hz boost; digital input; simulated-stereo processor; sleep timer; RI remote compatible. Controller included. 60 W/ch min rms into 8 ohms; dynamic power 155 W/ch into 2 ohms. \$380

Integra Series

Integra TX-890 125-W/Ch Receiver

Receiver with discrete output circuitry and low-impedance drive capability. Features FM tuner with 5-mode APR (Automatic Precision Reception) system to optimize reception: A/B antenna, RF (distant/local), IF bandwidth (wide/narrow/S-narrow), hi-blend (on/off), and stereo/mono; dual FM antenna inputs. 20 station presets with battery-free backup; cable FM fine tuning (25 kHz steps); dynamic bass expander; Selective Tone Control with 50-Hz boost; digital input; MM/MC phono inputs; simulated-stereo processor; video dubbing; alternate audio dubbing; rec out selector; sleep timer; pre-out/main-in jacks; RI remote compatible. Controller and side panels included. 125 W/ch min rms into 8 ohms; dynamic power 380 W/ch into 2 ohms. \$820



Onkyo TX-SV7

Integra TX-870 105-W/ch Receiver

Receiver with discrete output circuitry and low-impedance drive capability. Features AM/FM tuner with 4-mode APR (Automatic Precision Reception) system: distant/local, IF bandwidth (wide/narrow), hi-blend (on/off), and stereo/mono. 20 station presets with battery-free backup; Selective Tone Control with 50-Hz boost; cable FM fine tuning (25 kHz steps); digital input; simulated-stereo processor; video dubbing; alternate audio dubbing; sleep timer; pre-out/main-in jacks; RI remote compatible. Controller

RECEIVERS

included. 105 W/ch min rms into 8 ohms; dynamic power 310 W/ch into 2 ohms . . . \$680



Philips FR780

PHILIPS

FR980 4-Ch Receiver

4-ch A/V receiver with Dolby Surround. Features surround mode switch with matrix, spatial, stereo, mono; digital synthesis AM/FM tuner with 19 presets; 7-band graphic EQ with programmable acoustic memory; motor-driven rotary volume control for both channels; video split screen with video noise reduction; record selector with parallel recording capability; MM or MC phono settings; ambience control switch; 9 audio inputs; 4 audio outputs; 4 video inputs; 3 video outputs; AM and FM antennas; headphone jack; function display; pre-set scanning function for AM/FM tuner; re-modulator output jack for optional re-modulator. Includes fifty-key universal audio/video remote control with liquid-crystal display. 125 W/ch (front); 15 W/ch (rear); S/N 75 dB; THD 0.1%; 4 $\frac{3}{8}$ x 16 $\frac{7}{8}$ x 15 $\frac{1}{4}$ in; 35 lb. \$999

FR880 4-Ch Receiver

4-ch A/V receiver with Dolby Surround. Features surround mode switch with matrix, spatial, stereo, mono; digital-synthesis AM/FM tuner with 19 presets; motor-driven rotary volume control for both channels; 9 audio inputs; 4 audio outputs; 4 video inputs; 3 video outputs; AM and FM antennas; headphone jack; function display; preset scanning function for AM/FM tuner; re-modulator output jack for optional re-modulator. Includes forty-four-key universal A/V remote control with liquid-crystal display. 75 W/ch (front); 15 W/ch (rear); signal-to-noise ratio 75 dB; total harmonic distortion 0.1%. 4 $\frac{3}{8}$ x 16 $\frac{7}{8}$ x 15 $\frac{1}{4}$ in; 25 lb. \$649

FR780 70-W/ch Receiver

Features motorized volume control; 19 programmable station presets; alpha text mode display; separate bass EQ function; A/V tape-to-tape dubbing. Includes wireless remote control. 70 W/ch min rms into 8 ohms; FR 20-20,000 Hz; THD <0.05%. \$549

PIONEER

VSX-9500S 125-W/ch Receiver

A/V receiver with Dolby Pro Logic Surround processor and digital delay. Features type II non-switching amp rated at 125 W/ch front, 30 W/ch rear, 30 W/ch center; motor-driven volume control; 5 audio inputs; video adaptor loop; 6 video inputs; stadium sound; simulated surround sound; FL display; programmable multi-room remote control; video enhancer with split-screen monitoring; VCR noise filter; 5-position remote-operated acoustic tonal setting memory; pre-outs and main input terminals. 30 AM/FM presets; memory scan; manual, automati-

ic, and direct-access tuning; HITS (Hyper Intelligent Tuning System) enables memory display by radio-station call letters and user-selected categories \$1,050

VSX-7500S 125-W/ch Receiver

A/V receiver with Dolby Surround processor. Features type II non-switching amp rated at 125 W/ch front, 30 W/ch rear; programmable remote; 6 video inputs; 5 audio inputs; video adaptor loop; simulated stereo; split-screen video enhancer; video recording enhancer; VCR noise filter; 30 AM/FM presets; auto dimmer; 60/30-minute sleep timer \$900

VSX-5400 100-W/ch Receiver

A/V receiver with Dolby Surround processor and digital delay. Features type II non-switching amp rated at 100 W/ch front, 15 W/ch rear; 4 audio inputs; 3 video inputs; stadium sound; simulated surround sound; FL display; 30 AM/FM presets; video enhancer with split-screen monitoring. Includes programmable remote control. \$650

VSX-3300S 80-W/ch Receiver

A/V receiver with Dolby Surround processor, digital delay, and remote control. Features type III non-switching amp rated at 80 W/ch; 3 audio inputs; 2 video inputs; 5-band graphic EQ; FL display; programmable remote control; 24 AM/FM presets \$445
VSX-3300. As above with normal Pioneer SR remote control \$395

PROTON

AV-646 60-W/ch Receiver

Receiver with Dynamic Power on Demand circuitry. Features Apex Aural Exciter circuitry; Schotz II tuner; remote control; 18 FM and 9 AM presets; rotary tuning; PLL synthesis; 2-color LCD display. Amplifier section: 60 W/ch into 8 ohms; frequency response 20-20,000 Hz \pm 3 dB; total harmonic distortion 0.02% at rated power. Tuner section: 50-dB quieting sens 32 μ V mono, 30 μ V stereo; cap ratio 10 dB; AM rej 65 dB. 8 $\frac{1}{2}$ x 4 $\frac{3}{8}$ x 15 $\frac{1}{8}$; 15.5 lb. \$900

D940 40-W/ch Receiver

Receiver with Dynamic Power on Demand (DPD) circuitry and Schotz NR. Features 4-gang FM front end; 2-gang AM front end; selectable phono section for MM and MC phono; speaker EQ; separate low-noise MC amp; active volume control; infrasonic filter. Inputs for MM, MC phono; phono 2; tape; aux; extra aux; CD; video sound source. Amp section: 40 continuous average W/ch from 20-20,000 Hz with less than 0.02% THD into 8 ohms; dynamic headroom 6 dB; IHF IM 0.008%; FR 20-20,000 Hz \pm 0.2 dB. FM section: alt-ch sel 55 dB; adj-ch sel 90 dB; 50-dB quieting sens 33.2 dBf stereo; S/N 70 dB stereo; THD stereo 0.2%; sep 45 dB at 1,000 Hz; capture ratio 1.5 dB. 16 $\frac{1}{2}$ x 4 x 10 $\frac{1}{8}$ in; 20 lb. \$489

REALISTIC

STA-785 50-W/ch Receiver

Quartz digital tuning; search up or down; feather-touch controls; 6 AM/6 FM presets; FM muting; 5-LED signal-strength meter; loudness control. Inputs for MM phono; tape; aux; CD player. Amp section: 50 W/ch into 8 ohms. FM section: capture ratio 2 dB; FR 40-20,000; S/N 56 dB, 67 aux; AM rej 45 dB; alt-ch sel 50 dB \$200



Pioneer VSX-9500S

REVOX

B285 70-W/ch Receiver

AM/FM stereo receiver with two microprocessors for control of input sensitivities, output levels, and operating functions. Features alphanumeric multi-mode LCD display; 29 AM or FM presets; level and reception mode (mono/stereo, blend) separately programmable for each preset station; programmable volume limit; -20 dB mute button; subsonic filter; loudness contour; programmable output levels for A and B speaker pairs; comprehensive speaker protection circuits, serial data bus for external control devices; wireless infrared remote control (transmitter optional). Inputs for phono, tape, CD player, tape 2. Amp section: frequency response 20-20,000 +0, -0.3 dB; total harmonic distortion 0.005% (1,000 Hz, 90 W, 4 ohm); dynamic headroom 2.5 dB; S/N 96 dB line, 80 dB phono. FM section: 50-dB quieting sens 15.2 dBf mono, 36.8 dBf stereo; alt ch sel 96 dB; S/N 78 dB; capture ratio 0.8 dB. AM section: S/N 60 dB. 17 $\frac{3}{4}$ x 6 x 13 in; 33 lb. \$2,995

ROTEL

RX855 50-W/ch Receiver

AM/FM receiver with dual-mono power supply. Features direct signal paths: 8 AM and 8 FM presets; inputs for MM and MC phono, CD, tuner, video, tape 1, tape 2. Amp section: 50 W/ch into 8 ohms; FR 20-20,000 Hz; THD <0.03%; S/N 102 dB. Tuner section: 50-dB quieting sens 37.2 dBf stereo, 15.2 dBf mono; cap ratio 1.0 dB. 17 x 4 $\frac{3}{8}$ x 13 $\frac{3}{8}$ in; 25 lb. \$549

RX850A 30-W/ch Receiver

AM/FM receiver with 16 station presets. Features protection circuitry; remote mounted switches; hard-wired direct speaker terminals; direct signal paths; inputs for MM/MC phono, CD, tuner, video/aux, tape. Amp section: 30 W/ch into 8 ohms; FR 20-20,000 Hz \pm 3 dB; THD <0.3%; S/N 95 dB. Tuner section: 50-dB quieting sens 37.2 dBf stereo, 15.2 dBf mono; cap ratio 1.0 dB. 17 $\frac{1}{2}$ x 2 $\frac{3}{8}$ x 13 in; 26 lb. \$399

SANSUI

RZ-7000 70-W/ch Receiver

AM/FM receiver with quartz-PLL synthesizer tuner and 5-band graphic EQ with 5 factory-set patterns. Features 3 extra-large heatsinks; low-impedance capability; 30 random station presets; preset scan; station call memory; memory for 30 user-set patterns for tuner, and 5 other user-set patterns; VCR and cassette dubbing capability; connections for AM loop and indoor/outdoor FM antennas; inputs for CD, phono, tape, VCR 1, VCR 2/VDP, and processor; outputs for headphones, A, B, and A+B speakers; motorized volume control; pale-blue FL display. Includes 36-key multi-function integrated system remote control. Amp: 70 W/ch into 8 ohms; THD <0.02%; S/N 76 dB. Tuner: FM usable sens 11.2 dBf mono; S/N 70 dB; THD <0.2%. 5 x 17 x 13 $\frac{1}{4}$ in; 22 lb. Matte-black finish \$570

RZ-5000 60-W/ch Receiver

AM/FM receiver with quartz-PLL synthesizer tun-

RECEIVERS

er and 30 random station presets. Features preset scan; station call memory; extra-large heat-sink; low-impedance capability; VCR and cassette dubbing capability; connections for AM loop and indoor/outdoor FM antennas; inputs for CD, phono, tape, VCR 1, VCR 2/VDP, and processor; outputs for headphones, A, B, and A+B speakers; motorized volume control; pale-blue FL display. Includes 36-key multi-function integrated system remote control. Amp: 60 W/ch into 8 ohms; THD <0.05%; S/N 76 dB. Tuner: FM usable sens 11.2 dBf mono; S/N 70 dB; THD <0.25%. 5 x 17 x 13 1/4 in; 21 lb. Matte-black finish \$430

SCOTT

RS500 50-W/ch Receiver

Receiver with remote control. Features 7-band graphic equalizer; electronic volume control; power meter; loudness control; high filter; 8 AM/8 FM station presets. Inputs for MM phono, tape, CD/DAT, video sound source. Amp section: 50 W/ch into 8 ohms. FM section: usable sens 5 μ V (19.2 dBf) \$250

RS250 25-W/ch Receiver

Quartz digital-synthesizer tuning section; power-output meter; high filter; presets for 8 AM/8 FM stations. Inputs for MM phono; tape; CD/DAT. Amp section: 25 W/ch into 8 ohms. FM section: usable sens 5 μ V (19.2) \$150

SHARP

SA-R55AV 55-W/ch Receiver

Receiver with RCA type video input terminal and monitor output. Features 34-key infrared remote control; 30 presets (20 FM/10 AM); matrix surround sound; bass boost; 5-band graphic equalizer; LCD frequency display. 55 W/ch from 20-20,000 Hz; THD 0.08%. 17 x 5 x 11 in \$380

SHERWOOD

RV-1340R 100 W/ch Receiver

4-ch A/V receiver with Dolby Surround. Features dual-gate MOSFET; quartz-locked computerized tuning. 5-band graphic EQ; 2 video inputs; video enhancer; direct switch; 30 station presets; preset scan; auto tuning; tape monitor; headphone jack. Includes full-function infrared wireless remote control. Amp section: 100 W/ch into 8 ohms (front), 20 W/ch into 8 ohms (rear); FR 20-20,000 Hz; THD 0.04%; IMD 0.04%; S/N 79 dBA (phono), 100 dBA (aux). Tuner section: usable sens 9.8 dBf; 50 dB quieting sens 36.1 dBf (stereo), 17.2 dBf (mono); THD 0.15% (mono), 0.25% (stereo); 50 dB stereo sep at 1,000 Hz; altch sel 70 dB. 5 x 17 3/8 x 15 in \$499

RA-1240R 70-W/ch Receiver

A/V receiver with surround sound. Features dual-gate MOSFET; quartz-locked computerized tuning. 5-band graphic EQ; 30 preset stations; video sound input; preset scan; auto tuning; tape monitor; headphone jack. Includes full-function infrared wireless remote control. Amp section: 70 W/ch into 8 ohms; FR 20-20,000 Hz; THD <0.08%; IMD 0.05%; S/N 75 dBA (phono), 95 dBA (aux). Tuner section: Usable sens 10.8 dBf; 50-dB quieting sensitivity 19.2 dBf (mono), 36.8 dBf (stereo); total harmonic distortion 0.2% (mono); stereo sep at 1,000 Hz 45 dB; frequency response 10-15,000 Hz; cap ratio 2 dB; alt ch sel 60 dB. 5 x 17 3/8 x 15 in \$329

SONY

STR-D2010 130-W/ch Receiver

AM/FM receiver with digital signal processing and programmable remote control. Features digital parametric equalizer; Dolby Surround processor with digital delay and digital noise reduction; tuner EQ link; index tuning; direct comparator tuning with direct access tuning; 3 video inputs with 5-video capability; built-in demonstration mode. Tuner section: S/N 84 dB mono, 78 dB stereo; THD 0.2% mono, 0.4% stereo; sel 60 dB; sep 45 dB (at 1,000 Hz). 17 x 5 7/8 x 14 in; 26 lb, 7 oz. \$1,100

STR-AV1010 120-W/ch Receiver

Audio/video receiver with programmable remote control. Features 120 W/ch into 8 ohms; tuner EQ link; Dolby Surround-sound processor with digital delay and digital noise reduction; dynamic bass feedback; 7-band electronic graphic equalizer; spectrum analyzer display; index tuning. Tuner section: S/N 84 dB mono, 78 dB stereo; THD 0.2% mono, 0.4% stereo; sel 60 dB; sep (at 1,000 Hz) 45 dB. 17 x 5 1/8 x 13 3/8 in; 21 lb, 3 oz. \$700

STR-AV910 100-W/ch Receiver

Audio/video receiver with remote control. Features 100 W/ch into 8 ohms; Dolby Surround-sound processor with digital delay; 7-band electronic graphic equalizer; spectrum analyzer display; index tuning; direct comparator tuning with direct access tuning; tuner EQ link; dynamic bass feedback. Tuner section: S/N 80 dB mono, 74 dB stereo; THD 0.3% mono, 0.5% stereo; sel 60 dB; sep (at 1,000 Hz) 45 dB. 17 x 5 1/4 x 13 7/8 in; 21 lb. \$480

STR-AV710 55-W/ch Receiver

Audio/video receiver with remote control. Features 55 W/ch into 8 ohms; matrix surround sound; index tuning; direct comparator tuning with direct access tuning; tuner EQ link; dynamic bass feedback; 5-band electronic graphic equalizer; spectrum analyzer display. Tuner section: S/N 80 dB mono, 74 dB stereo; THD 0.3% mono, 0.5% stereo; selectivity 60 dB; separation (at 1,000 Hz) 45 dB. 17 x 5 1/8 x 11 3/8 in; 14 lb, 13 oz. \$350

ES Series

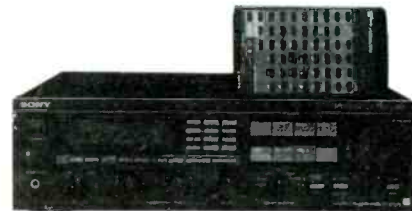
STR-GX10ES 150-W/ch Receiver

Audio/video receiver with programmable remote. Features 150 W/ch cont into 8 ohms, 20-20,000 Hz, with 0.007% THD; spontaneous twin drive power supply design; copper-plated G-Chassis design constructed with non-metallic compound; separate power supplies for system control and audio circuit stages; audio/video switching capability (3 video sources); video and tape dubbing capability; S-video terminals; defeatable subsonic filter; 3-band, low noise, high-gain negative feedback type tone controls; source direct switch; quartz frequency-synthesizer tuning; wave optimized digital stereo decoder; 20 station presets. Tuner section: S/N 84 dB; THD .08%; sel 90 dB; sep (at 1,000 Hz) 60 dB \$1,200

STR-GX9ES 130-W/ch Receiver

Audio/video receiver with programmable remote control. Features 130 W/ch continuous into 8 ohms, 20-20,000 Hz, with 0.008% THD; spontaneous twin drive power supply design; G-Chassis design constructed with non-metallic compound; separated power supplies for system control and audio circuit stages; audio/video switching capability (3 video sources); video

and tape dubbing capability; S-video terminals; defeatable subsonic filter; 3-band, low noise, high-gain negative feedback type tone controls; source direct switch; quartz frequency-synthesis tuning; wave optimized digital stereo decoder; 20 station presets. Tuner section: S/N 84 dB; THD .08%; sel 90 dB; sep (at 1,000 Hz) 60 dB \$1,000



Sony STR-GX7ESII

STR-GX7ESII 120-W/ch Receiver

Audio/video receiver with programmable Remote Commander. Features 120 W/ch continuous into 8 ohms, 20-20,000 Hz, with 0.008% THD; spontaneous twin drive power supply design; G-chassis design constructed with non-metallic compound; separate power transformers for the system control and audio circuitry; switching for three video sources; S-video terminals; low-noise, negative-feedback type tone controls; source-direct switch; quartz frequency-synthesis tuning; 20 station presets. Tuner section: S/N 76 dB; THD 0.2%; sel 65 dB; sep (at 1,000 Hz) 50 dB \$750

STR-GX5ESII 80-W/ch Receiver

Features 80 W/ch cont into 8 ohms, 20-20,000 Hz, with 0.08% THD; spontaneous twin drive power supply design; separate power transformers for the system control and audio circuitry; A/V switching capability; source direct switch; adaptor input/output; 30 station presets. Includes remote control. Tuner section: S/N 74 dB; THD 0.5%; sel 60 dB; sep (at 1,000 Hz) 45 dB \$500

TEAC

AG-75 75-W/ch Receiver

AM/FM receiver with quartz PLL synthesized tuning. Features high-current discrete circuit. Matrix surround; rec selector; variable loudness control; CD direct; motorized volume; CD/VCR and Tape/DAT inputs; 16-station memory; auto tuning; stereo/mono switch; FL display. Includes 28-key wireless remote control. Amp section: 75 W/ch rms into 8 ohms; FR 40-20,000 Hz; THD 0.05%; S/N 80 dB (phono), 92 dB (CD/aux, tuner, tape). FM tuner section: usable sens 11.2 dBf (mono); AM rej 55 dB; cap ratio 2 dB; image rej 47 dB; THD at 1,000 Hz 0.2% (mono), 0.5% (stereo); stereo sep at 1,000 Hz 40 dB; S/N 78 dB (mono), 72 dB (stereo) \$400

AG-55 55-W/ch Receiver

AM/FM receiver with 7-band graphic EQ with \pm 10 dB boost/cut. Features Quartz synthesized PLL tuner. LED power meters; CD, aux and TV/VCR inputs; high cut filter and bass boost EQ switch; dual speaker terminals; 8 AM/FM random access station memory; auto station search; LED frequency display. Amp section: 55 W/ch min continuous rms into 8 ohms; FR 20-20,000 Hz; THD 0.5%; S/N 70 dB (phono). Tuner section: FM usable sens 11.2 dBf (mono); image rejection 45 dB; THD at 1,000 Hz 0.25% (mono), 0.5% (stereo); stereo sep 40 dB \$300

TECHNICS

SA-R530 100-W/ch Receiver

A/V receiver with quartz digital tuner and Dolby-Surround processor. Features rear-mounted thermally triggered fan; 7-band graphic EQ/spectrum analyzer with 5 factory preset curves and 5 user assignable curve memories; 24 preset channel memory; auto-simulcast tuning; motor-driven volume control; 3 A/V inputs; 6 audio inputs; video output for monitor; full-function FL display; 6 digital A/V surround modes including Dolby and stereoplex simulated stereo. Includes 96-key intelligent remote control. 100 W/ch into 8 ohms; THD<0.007%; FR 20-20,000 Hz. \$695

SA-R477 100-W/ch Receiver

A/V receiver with quartz synthesizer tuner, Dolby Surround, digital delay circuit, and 7-band graphic EQ. Features 2-color FL display; 4 audio inputs; 2 VCR inputs; internal cooling fan; preamp out; main-amp in; A+B speaker terminals; loudness switch. Includes 45-key A/V remote control. Amp section (front ch): 100 W/ch min rms into 8 ohms; THD 0.008%; FR 20-20,000 Hz; S/N 70 dB. (Rear ch) 5 W/ch into 8 ohms; THD 0.8% at 1,000 Hz. FM tuner section: sens 11.2 dBf; 50 dB quieting sens 20.2 dBf (mono), 40.2 dBf (stereo); THD 0.2% (mono), 0.3% (stereo); S/N 75 dB (mono), 70 dB (stereo); FR 20-15,000 Hz +1/-2 dB; alt-ch sel 65 dB; cap ratio 1.0 dB; AM rej 50 dB; stereo sep 40 dB (at 1,000 Hz), 30 dB (10,000 Hz). 17 x 5 1/2 x 11 7/8 in; 18.1 lb. \$530

SA-R377 80-W/ch Receiver

A/V receiver with quartz synthesizer tuner and 7-band graphic EQ/spectrum analyzer. Features internal cooling fan. 2-color FL display; remote-controllable rotary type volume; 4 audio inputs; 2 VCR inputs; preamp out; main-amp in; A+B speaker terminals; loudness switch. Includes 42-key A/V remote control. Amp section: 80 W/ch min rms into 8 ohms; THD 0.008%; FR 20-20,000 Hz; S/N 70 dB. FM tuner section: sens 11.2 dBf; 50 dB quieting sens 20.2 dBf (mono), 40.2 dBf (stereo); THD 0.2% (mono), 0.3% (stereo); S/N 75 dB (mono), 70 dB (stereo); FR 20-15,000 Hz +1/-2 dB. \$380

SA-R277 60-W/ch Receiver

AM/FM quartz synthesis tuner with 7-band graphic EQ. Features internal cooling fan. 2-color FL display; 24-ch preset memory; remote-controllable rotary type volume; 4 audio inputs; 2 video inputs; A+B speaker terminals; loudness switch. Includes 32-key A/V remote control. Amp section: 60 W/ch min rms into 8 ohms; THD 0.05%; FR 20-20,000 Hz; S/N 70 dB. FM tuner section: sens 11.2 dBf; 50-dB quieting sens 20.2 dBf (mono), 40.2 dBf (stereo); THD 0.2% (mono), 0.3% (stereo); S/N 75 dB (mono), 70 dB (stereo); FR 20-15,000 Hz +1/-2 dB; alt-ch sel 65 dB; cap ratio 1.0 dB; AM rej 50 dB; stereo sep 40 dB (at 1,000 Hz), 30 dB (10,000 Hz). 17 x 4 1/2 x 11 7/8 in; 15.6 lb. \$330

VECTOR RESEARCH

VRX-9200R 120-W/ch Receiver

Features 8 discrete output transistors; Dolby Surround; quartz synthesis tuning. 4 x 40 W pre-out/main-in jacks; video signal routing; A/V processing loop; video monitor output; dedicated CD input; 20 station presets; preset scan; mono/stereo switch; motorized rotary volume control; A/B RF antenna inputs; FM autoscans; 2 tape monitors with dubbing in either direction;



Vector Research VRX-5200R

2 A/V monitors with dubbing; MC head amp; high and subsonic filters; parallel speaker switching; surround level, front/rear balance; remote control. Amp: FR 10-50,000 Hz; THD 0.03%; IM 0.03%; damping factor 120. Tuner: 50-dB quieting 14.6 dBf mono, 35.5 dBf stereo; cap ratio 1 dB; alt-ch sel 65 dB. 17 x 5 1/2 x 15 1/2 in; 26 lb. \$850

VRX-8200R 110-W/ch Receiver

Features 8 discrete output transistors. Pre-out/main-in jacks; video signal routing; A/V processing loop; video monitor output; dedicated CD input; quartz-synthesis tuning; 20 station presets; preset scan; mono/stereo switch; A/B RF antenna inputs; FM autoscans; 2 tape monitors with bi-directional dubbing; MC head amp; high and subsonic filters; parallel speaker switching; motorized rotary volume control; remote. Amp: FR 10-50,000 Hz; THD 0.03%; IM 0.03%; damping 120. Tuner: 50-dB quieting sens 14.6 dBf mono, 35.5 dBf stereo; cap ratio 1 dB; alt-ch sel 65 dB. 17 x 5 1/2 x 15 1/2 in; 24 lb. \$660

VRX-5200R 50-W/ch Receiver

Features discrete output transistors; quartz synthesis tuning. 20 random AM/FM presets; dedicated CD inputs; A/V processing loop; 2 switched/unswitched outlets; separate FM mute and mono; video monitor out; rotary volume control with LED; pre-out main-in jack; video signal routing; 75-ohm connector; AM/FM auto-scan. Amp: THD 0.07%; IM 0.07%; FR 10-50,000 Hz. Tuner: 50-dB quieting sens 15.6 dBf mono, 37.6 dBf stereo; cap ratio 1.3 dB; alt ch sel 60 dB. 17 x 4 1/2 x 13 1/2 in; 17 lb. \$370

YAMAHA

RX-1130Ti Receiver

4-ch AM/FM A/V receiver with 5-mode surround including Dolby, natural, hall, simulated stereo. live and continuously variable delay time (10 ms to 30 ms). Features computer servo lock tuning system; 24-segment signal-strength meter; high dynamic power low-impedance drive capability; 8 audio, 3 video inputs; rear level control; front/rear pre-main coupling terminals; banana plug compatible speaker connection terminals; center defeat bass, mid, and treble controls; 8-position rec out selector; 16-station random access preset tuning with multi-status memory; sleep timer; continuously variable loudness; motor driven volume control with LED indicator. Includes learning capable multi-function remote control with RS integrated system remote control pre-programmed. Front ch: 125 W/ch min rms into 8 ohms; FR 20-20,000 Hz; THD 0.015%. Rear ch: 30 W/ch into 8 ohms at 1,000 Hz; THD 0.08%. Titanium finish; 37 lb. \$1,199

RX1100U 125-W/ch Receiver

AM/FM receiver with RS integrated system remote control. Features digital tuner; absolute linear amplification; high dynamic power; low-impedance drive capability; 16-station random access preset tuning; digital fine tuning; continuously variable loudness control; dual tape moni-

tor inputs; pre-main coupling terminals; 3 video source inputs; audio and video rec out selectors; video enhancer with level and detail control; switching for 3 pairs of speakers; LED indicator on volume knob. 125 W/ch min rms into 8 ohms; FR 20-20,000 Hz; THD<0.015%. Black finish; 30 lb. \$999

RX-930Ti 4-Ch Receiver

4-ch AM/FM receiver with 3-mode surround sound including Dolby, natural, and simulated surround. Features direct PLL IF count synthesis tuning; 16-station random access preset tuning with multi-status memory; 12-segment signal-strength meter; center defeat bass, and treble controls; rear level control; 8-position rec out selector; front/rear pre-main coupling terminals; high dynamic power low-impedance drive capability; 8 audio. 3 video inputs; motor-driven volume control with LED indicator; sleep timer; continuously variable loudness. Includes learning capable multi-function remote control with RS integrated system remote control pre-programmed. Front ch: 85 W/ch min rms into 8 ohms; FR 20-20,000 Hz; THD<0.15%. Rear ch: 25 W/ch into 8 ohms at 1,000 Hz; THD 0.08%. Titanium finish; 26 lb. \$849

RX-930. As above, black. \$849



Yamaha RX-1130Ti

RX-830Ti 4-Ch Receiver

4-ch AM/FM receiver with 3-mode surround sound including Dolby, natural, and simulated surround. Features rear-level control; direct PLL IF count synthesis tuning; 16-station random access preset tuning with multi-status memory; 12-segment signal-strength meter; 6-position rec out selector; 6 audio. 2 video inputs; high dynamic power low-impedance drive capability; motor driven volume control with LED indicator; sleep timer; center defeat bass, and treble controls; continuously variable loudness. Includes learning capable multi-function remote control with RS integrated system remote control pre-programmed. Front ch: 70 W/ch min rms into 8 ohms; FR 20-20,000 Hz; THD<0.015%. Rear ch: 15 W/ch into 8 ohms at 1,000 Hz; THD 0.1%. Titanium finish; 20 lb \$599

RX-830. As above, black. \$599

RX-730 70-W/ch Receiver

AM/FM receiver with RS integrated system remote control. Features high dynamic power low-impedance drive capability; digital tuner; 16-station random access preset tuning; continuously variable loudness; 2 video source inputs; tone bypass switch; CD-direct switch; 12 segment signal-quality meter; high-gain AM loop antenna; 6 position rec out selector; sleep timer; A+B speaker selector; LED indicator on motorized volume control; pre-main coupler. 70 W/ch min rms into 8 ohms; FR 20-20,000 Hz; THD<0.02%. Black; 15.5 lb. \$499

POWER AMPLIFIERS

ACCUPHASE BY MADRIGAL P-102 50-W/ch Amplifier

Features two all-stage push-pull power units in bridged configuration, Class A MOSFET push-pull output stage; cascode push-pull differential input stage; twin mono construction using two mono amplifiers and two separate power supplies for L/R channels; direct-coupled amplifier with DC servo configuration; capable of driving 80 W into 4 ohms and 70 W into 2 ohms. Power meter; 40,000 ohm balanced input and 20,000 ohm unbalanced phono jack. FR 20-20,000 Hz +0, -2; THD <0.01%; S/N 120 dBA; IM 0.003%; damping factor 70. 18 $\frac{3}{4}$ x 6 $\frac{3}{4}$ x 16 in; 48 lb, 6 oz. \$4,400

ACOUSTIC RESEARCH A-07 70-W/ch Amplifier

Features switchable side-chain feedback tone control, filters and provision for moving magnet and moving-coil cartridges. Remote controllable when linked to the T-06/R tuner. Frequency response 15-20,000 Hz, -0.3 dB; THD 0.03%; signal-to-noise ratio 100 dBA; IM 0.03%; damping factor 100; 17 $\frac{1}{4}$ x 3 $\frac{1}{2}$ x 10 $\frac{1}{2}$ in; 25 lb, 2 oz. \$500
A-05. Similar to above but 40 W/ch \$400
A-03. Similar to above but 30 W/ch \$300
RC-03. Remote control for the A-07 \$25

AUDIO DESIGN ASSOCIATES PF-300 100-W/ch Amplifier

MOSFET power amplifier capable of driving 1/2-ohm loads continuously. Features front panel power switches, indicators and fuses; dual mono design with independent toroidal transformers. 100 W/ch from 20-20,000 Hz with no more than 0.09% THD into 8 ohms; 160 W/ch into 4 ohms; slew rate 15 V/ μ sec; IM 0.07%. 19 x 5 $\frac{1}{4}$ x 15 $\frac{1}{2}$ in; 37 lb \$1,695



Audio Research Classic 60

ADCOM

GFA-555 200-W/ch Amplifier

Able to drive 1-ohm loads. Features low-negative-feedback design; constant damping factor; toroidal transformer; instantaneous distortion alert when distortion produced higher than 1% at speaker outputs; direct-coupled design. 200 W/ch into 8 ohms; 350 W/ch into 4 ohms; THD <0.09% and IM <0.05%; constant damping factor >100. 20-20,000 Hz \$750

GFA-545 100-W/ch Amplifier

Able to drive 1-ohm load. Features low-negative-feedback design; constant damping factor; toroidal transformer; instantaneous distortion alert when distortion produced higher than 1% at speaker outputs; direct-coupled design. 100



W/ch into 8 ohms, THD <0.09%. 150 W/ch into 4 ohms; IM 0.008%. 5 $\frac{1}{2}$ x 17 x 12 $\frac{1}{2}$ in; 25 lbs \$500

GFA-535 60-W/ch Amplifier

Able to drive 1-ohm load. Features low-negative-feedback design; constant damping factor; hookup for 2 sets of speakers; instantaneous distortion alert when distortion products higher than 1% at speaker outputs; direct-coupled design; separate power transformers for each ch. THD <0.09%. 100 W/ch into 4 ohms; IM 0.008%. 3 $\frac{1}{4}$ x 17 x 12 $\frac{1}{2}$ in \$300

A/D/S/

PA4 150-W/ch Amplifier

Features all discrete transistors; polypropylene capacitors; metal-film resistors; 10 bipolar output devices per ch; open-loop bandwidth of <100 MHz to avoid rate limiting and stability with complex speaker 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; clipping LEDs. 150 W/ch into 4 or 8 ohms, <0.05% THD; bridgeable to 250 W in mono. FR 20-20,000 Hz +0,-0.2 dB; S/N >110 dBA at 1,000 Hz; dynamic headroom >1.5 dB; damping factor >100. 4 ohms; slew rate >30 V/ μ s. 2 $\frac{3}{4}$ x 17 $\frac{1}{2}$ x 14 $\frac{3}{4}$ in; 27 lb \$900

AUDIO BY VAN ALSTINE

Transcendence 200-W/ch Amplifier

Hybrid power amplifier with MOSFET's. Features low-imp drive capability. 200 W/ch into 8 ohms; THD<0.01%; 17 x 14 $\frac{1}{2}$ x 7 $\frac{1}{2}$ in; 38 lb \$1,995

Model 280D 160-W/ch Amplifier

Features low-impedance drive capability. 160 W/ch into 8 ohms; 0.01% THD. 17 x 10 x 5 in; 28 lb \$775

AUDIO RESEARCH

M300 MkII 300-W Amplifier

Hybrid mono design with FET (for front end) and vacuum tubes (in output stage); cross-coupled circuit; front-panel replaceable line and screen voltage fuses with LED indicators; 2 integral low-noise cooling fans (switchable for "Hi" or "Lo"); 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 min W cont avg 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/ μ sec; 10 $\frac{1}{2}$ x 19 x 16 in; 110 lb \$5,495

Classic 150 140-W Amplifier

Hybrid mono power amplifier with matched FET in front end and vacuum tubes in triode configuration in output. Features tube protection circuit; cross-coupled circuit. Standby switch; auto muting; balanced output. 140 min W cont avg into 1-2-4-8 ohms from FR 7-100,000 Hz -3 dB \$4,995

Classic 60 60-W/ch Amplifier

Stereo hybrid power amplifier with matched FET in front end and vacuum tubes operating in triode configuration in output. Features auto DC balance servo circuit; driver balance servo; automatic bias correction adjusts for incoming line voltage. Low noise fan; front-panel fusing for line and screen. 60 min W/ch cont avg from FR 12-40,000 Hz -3 dB. 7 x 19 x 15 $\frac{1}{4}$ in; 63 lb \$3,295

B&K COMPONENTS

Pro-600 250-W/ch Amplifier

Dual-mono power amplifier with 200 W/ch cont avg into 8 ohms and 350 W/ch cont avg into 4 ohms. Features Class A pre-driver circuitry driving a Class AB MOSFET output stage; toroidal transformers; digital audio compatibility; balanced inputs. FR 1-100,000 Hz; THD <0.09% at 1,000 Hz; S/N 95 dB; IM 0.09%; slew rate 24V/ μ sec; damping factor 600; dynamic headroom 1.1 dB \$1,698

ST-202 150-W/ch Amplifier

Power amplifier with gold-plated connectors for driving 8- and 4-ohm loads. 150 continuous W/ch from 20-20,000 Hz with no more than 0.09% THD into 8 ohms; frequency response 5-45,000 Hz \pm 3 dB; signal-to-noise ratio 95 dB; dynamic headroom 1.5 dB; slew rate 11 V/ μ sec; IM 0.09%; 200 W into 4 ohms. 6 x 19 x 15 in; 25 lb \$648

BEDINI

BA-803 200-W/ch Amplifier

Solid-state stereo amplifier. 200 W/ch rms into 8 ohms and 400 W/ch rms into 4 ohms; THD<0.15% 8 ohms rated power; IM<1%; FR 20-20,000 Hz; S/N 105-dB; dynamic headroom 3 dB; damping factor 500 min; slew rate 55 V/ μ sec. 7 $\frac{1}{2}$ x 19 x 18 $\frac{1}{2}$ in; 50 lb \$3,000

BA-801. Similar to above, 100 W/ch rms into 8 ohms; 140 W/ch rms into 4 ohms \$1,500



B&K Components ST-202

BELLES RESEARCH

450 200-W/ch Amplifier

Solid-state power amplifier with dual complementary bipolar transistor circuitry and power MOSFET's. All components are mounted on a



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SR-2

single circuit board. Features Van den Hul cable wiring; high-quality capacitors and resistors; toroidal power transformer. 200 W/ch cont from 20-20,000 Hz with <0.01% THD into 8 ohms; FR 0.2-60,000 Hz ± 3 dB into 8 ohms; damping factor >200. 3-year warranty. 10 x 17 x 13 in; 55 lb \$1,595

BERNING

EA-2101 100-W/ch Amplifier

All-triode stereo vacuum-tube power amp. Features high-frequency resonant regulated power supply; shutdown protection for low-line brown-out and improper bias conditions on tubes. 100 W/ch continuous from 20-20,000 Hz with <2% THD into 8 ohms; four output transformer output windings per channel. FR 10-60,000 Hz. ± 1.5 dB; S/N 100 dB. 5 1/4 x 19 x 19 in; 40 lb. \$3,500



Carver TFM-25

BOULDER AMPLIFIERS

Boulder 250AE 75-W/ch Amplifier

Balanced input stereo amplifier with clip detection circuitry. Features two-stage amplification, and ground referencing at the preamplifier. 75 W/ch into 8 ohms. 125 W/ch into 4 ohms. 250 mono into 8 ohms; FR 20-20,000 Hz; total harmonic distortion .005%; slew rate 25 V/ μ sec stereo. 50 V/ μ sec mono; imp 10,000 ohms; peak current 30 amps. 17 x 5 1/4 x 15 1/4 in; 30 lb. \$1,995

BRYSTON

6B 500-W/ch Amplifier

Mono power amp with 1,000 W into 4 ohms with avg current of 22 amps; 1,000 W into 1 ohm with 35 amps average; ground lift switch. 500 W/ch cont from 20-20,000 Hz; THD 0.005%; S/N 105 dB; slew rate 60 V/ μ sec; IM 0.005%; 5 3/4 x 19 x 12 in; 55 lbs \$1,895

4B 250-W/ch Amplifier

Class-AB power amp with bridging switch. Features 1,500-sq-in heat-sink area; regulated power supply to all voltage gain stages; ch sep back to line cord; red LED clipping indicator. Output power 200 W/ch. 800 W bridged into 8 ohms; FR 20-20,000 Hz; THD 0.01%; IM 0.01%; slew rate 60 V/ μ sec; power bandwidth 1-100,000 Hz; damping factor 500 at 20 Hz. 8 ohms. 5 1/4 x 19 x 13 1/2 in. \$1,695

CAMBRIDGE AUDIO

A100 100-W/ch Amplifier

Stereo power amplifier with power-on switch only. FR 5-50,000 Hz <1 dB; 100 W/ch into 8 ohms; S/N >100 dB; THD 0.5%. 2 1/2 x 17 1/2 x 11-in; 21 lb. \$699

A70 60-W/ch Amplifier

Separate power amplifier with power-on switch only. Can be connected for bridge mono operation by rear-panel switch. 60 W/ch into 8 ohms; mono 150 W into 8 ohms (clipping at 200 W); peak current capability of 35 amps; S/N >100 dB; THD >0.5%. \$499

CARVER

Silver Seven 375-W Amplifier

Mono amplifier with fully balanced circuit topology. Features 14 KT-88 power-output tubes; A-450 Ultra Linear output transformers with oxygen-free primary leads and pure silver secondaries; Wonder Cap capacitors; Van den Hul silver interconnects; pure silver internal wiring with Wonder Solder; polished granite anti-vibration base with Simms aluminum machined transformer end bells; 1, 4, 8-ohm taps. 375 W into 8 ohms; 20-20,000 Hz with THD <0.5%; peak current output 35 amps; FR 1.5 Hz to 100,000 Hz ± 0 dB. 150 lb \$8,750

Silver Seven-t 575-W Amplifier

Solid-state mono power amplifier with Transfer Function Calibration. Features magnetic-field power amplifier design; analog power meter. 575 W into 8 ohms; 900 W into 4 ohms; 1000 W into 2 ohms; THD 0.5%; slew rate 300 V/ μ sec; input impedance 100,000. 16 lb \$899

TFM-45 375-W/ch Amplifier

Stereo magnetic-field amplifier with Transfer Function Calibration. Features voltage into 2, 4, 8 ohms; analog power meters. 375 W/ch into 8 ohms; 500 W/ch into 4 ohms; 1000 W/ch bridged mono; THD 0.5%; slew rate 180 V/ μ sec; input impedance 100,000. 20 lb \$839

TFM-25 225-W/ch Amplifier

Stereo magnetic-field amplifier with Transfer Function Calibration. Features voltage into 2, 4, 8 ohms; analog power meters. 225 W/ch into 8 ohms; 350 W/ch into 4 ohms; 350 W bridged mono; total harmonic distortion 0.5%; slew rate 180 V/ μ sec; input imp 100,000. 20 lb \$650

CELLO

7000-00 200-W/ch Amplifier

Features two mono amps which employ 8 driver transistors and forty 250-W output devices per amplifier; two mono dual choke input design power supplies; two electrically conductive heat-sink tunnels cooled by two fans per chassis \$16,000

Encore 50-W/ch Amplifier

Dual mono amplifiers in independent chassis. Features dual choke power supply; copper, nickel-plated heat sink. Can be separated with mono kit \$6,000

CONRAD-JOHNSON

Premier One B 150-W/ch Amplifier

Low-noise parts in circuitry; LED bias indicators. 150 W/ch into 4, 8, or 16 ohms; S/N 90 dB \$5,750

Evolution 2,000 200-W/ch Amplifier

Hybrid stereo amplifier with zero-feedback design. Features tube driver with MOSFET output stage. 125 lb \$4,995

MV100 90-W Amplifier

Low-imp power supplies and extensive use of polystyrene capacitors; LED bias indicators. 90 W into 8 ohms; signal-to-noise ratio 94 dB; 9 x 19 x 20 1/2 in; 90 lb \$3,750
MV50. Similar to above. 45-W into 8 ohms; S/N 94 dB; 40 lbs. \$1,685

COUNTERPOINT

SA-220 220-W/ch Amplifier

Hybrid power amp with tube front end and

MOSFET output stage. Features non-audible circuit protection; no overall loop feedback; warm-up and shut-off auto speaker muting; internal switching to operate as a bridged mono amp for 3x power. Includes vacuum-tube rectification. 220 continuous average W from 20-20,000 Hz into 8 ohms with no more than 0.5% THD. 420 W into 4 ohms; FR 0.2-32,000 Hz; S/N 84 dB; slew rate 0.6 V/ μ sec; damping factor 60; IMD 0.02%. 19 x 6 3/4 x 19 in; 69 lb \$2,795/pr

SA-100 100-W/ch Amplifier

Hybrid power amp with tube front end and MOSFET output stage. Features no overall loop feedback; warm-up and shut-off automatic speaker muting. 100 continuous average W/ch from 20-20,000 Hz with no more than 1% THD into 8 ohms; FR 5-100,000 Hz. ± 0.2 dB; S/N 92 dB; damping factor 8.9 at 1,000 Hz dynamic headroom 2 dB; 19 x 4 3/8 x 12 1/2 in. \$1,295

DB SYSTEMS

DB-6A 40-W/ch Amplifier

Stereo power amplifier able to drive 1-ohm loads. Features 12-dB/octave infrasonic filter; peak-clipping LED's; electronic clamp. Output power 40 W/ch continuous into 8 ohms from 20-20,000 Hz at 0.003% THD; THD 0.0008% at 1,000 Hz; IM <0.002%; FR 20-40,000 Hz ± 0 dB; input sens/imp 1 V/50 kilohms; S/N 112 dB at 1 V A-wtd; slew rate 15 V/ μ s; damping factor >400. 20-1,000 Hz. 4 7/8 x 16 x 12 3/4 in. \$795

DBX

BX-3MKII 400 W/ch Amplifier

Configurable 2-/3-/4-channel power amplifier able to power 8 speakers at one time. Features DC configuration with a dual-FET input stage; separate volume controls for each channel. Power output into 2 channels: 400 W/ch into 8 ohms. 125 W/ch and 400 W into third channel with subwoofer output; 125 W/4 ch; 0.003% THD. Dark-cherrywood side panels. \$1,299



Cello Encore

DENNESEN ELECTROSTATICS

Antares II 75-W/ch Amplifier

75 W/ch into 8 ohms. MOSFET power amp. Frequency response 10-100,000 Hz ± 1 dB; THD < 0.1%; signal-to-noise ratio 90 dB; IM 0.1%; slew rate 30 V/ μ sec; 5 1/4 x 19 x 8-in; 30 lb. \$595
Orion. As above. 150 W mono. \$1,500

DENON

POA-2400A 200-W/ch Amplifier

Stereo amplifier with Denon optical design and twin pure current supply. Features high-speed protection circuits. Bar-line multi display; self diagnostic function. 200 W/ch into 8 ohms; THD <0.01%; IM <0.002%; frequency response 1-300,000 Hz ± 0 dB at 1,000 Hz; signal-to-noise ratio 123 dB. 7 3/8 x 17 1/8 x 16 7/8 in; 38.5 lb. \$750

POA-6600A 250-W Amplifier

Mono power amplifier with Dual Super Non-NFB circuit for high-speed signal transmission. Features pure current power supply; separate power supply block chassis; high-speed reset-type protection circuit. Cannon type balance input connector; conventional RCA input jack with selector switch; front-panel level control; extra-large speaker terminals; peak indicators; remote power on/off switching from DAP-5500/2500 or PRA-1200 preamps. 250 W min rms into 8 ohms; FR 20-20,000 Hz; THD<0.02%; IM 0.002%; S/N 123 dB; slew rate ± 500 V/ μ sec \$750

POA-800 50-W/ch Amplifier

Bridgeable stereo amplifier with discrete MOSFET output transistors. Features 3-way speaker terminals; peak-signal indicator; remote power control from Denon preamps. 50 W/ch into 8 ohms; 120 W into 8 ohms (bridged); THD<0.05% \$320

DISCRETE TECHNOLOGY

LS11a 140-W/ch Amplifier

Stereo amplifier with dual tracking, thermal coupled matched front-end transistors. Features cascode voltage section; 1% metal-film resistors; polystyrene and polypropylene capacitors; distech platinum interconnect cable. Power rating 140 W/ch rms into 8 ohms from 20-20,000 Hz >0.09% THD; FR 3-100,000 Hz -3 dB; S/N 90 dB below 10 W output; IM <0.09% using SMPTE method at any power level up to 140 W into 8 ohms; slew rate 45 v/ms; damping factor 100 at 50 Hz; dynamic headroom 3.2 dB at 8 ohms \$1,250

FORTÉ AUDIO

Model 1a 50-W/ch Amplifier

Dual-channel, non-inverting power amp using FET/bipolar front-end topology and operating in pure Class A throughout front-end and power output stages. Input stage is direct coupled and biased with regulated constant-current sources. Output stage employs 20 high-speed power devices and uses no active protection circuits. Custom toroidal power transformer. Rated power 50 W/ch at 0.1% THD into 8 ohms; FR 20-20,000 Hz; bandwidth -3 dB points of 7 and 100,000 Hz; slew rate 40 V/ μ sec; imp 75,000 ohms. 19 x 7 x 11 in; 36 lb \$1,100



Fosgate-Audionics T-100

FOSGATE-AUDIONICS

T-100 mkII 80-W/ch Amplifier

Amplifier designed for use with surround audio systems. Features discrete full complementary circuit. Input level control; defeatable bass filter. 80 W/ch x 3 into 8 ohms; 120 W/ch into 4 ohms; THD and IM <0.2%; FR ± 1 dB from 20-20,000 Hz. 17 1/4 x 2 3/4 x 12 in; 17 lb \$599

S-100 mkII 80-W/ch Amplifier

Stereo amplifier with discrete full complementary circuit. Features input level; defeatable bass filter. 80 W/ch into 8 ohms; 120 W/ch into 4 ohms; THD and IM <0.02%; FR ± 1 dB from 20-20,000 Hz. 17 1/4 x 2 1/4 x 12 in; 16 lb \$499

HAFLER

XL600 305-W/ch Amplifier

Excelinear near-zero-phase-shift circuit with J-FET double differential push-pull cascaded "tube-like" input and current-mirroring 2nd stage. 16 MOSFET outputs; direct coupled; stable into all loads; high capacitance (72,000 mfd); Excelinear speaker-tweaking adjustment; gold inputs and outputs; mono bridging switch; variable speed DC fan cooling. 305 W/ch into 8 ohms with <0.08% THD, 20-20,000 Hz; <0.04% IM from 1-305 W; 450 W/ch into 4 ohms; 900 W mono into 8 ohms; input sens 1.8 volts for 305 W at 8 ohms; FR 10-50,000 Hz ± 0.1 dB; signal-to-noise ratio >100 dB at 305 W; slew rate 100 V/ μ S; damping factor >200 at 1,000 Hz. 19 x 7 x 13 in; 51 lb \$1,195

XL280 145-W/ch Amplifier

J-FET double differential input and 12 MOSFET output. Excelinear speaker tweaking adjustment; gold inputs; mono bridging switch; speaker protection fuses. 200 W/ch into 4 ohms. 400 W/ch mono into 8 ohms. FR 10-50,000 Hz ± 0.1 dB; total harmonic distortion <0.05%; IM <0.04%; signal-to-noise ratio >100 dB; slew rate 75 V/ μ s; damping factor 300 at 1,000 Hz. 17 x 5 1/8 x 10 1/2 in; 27 lb; assembled \$675

HARMAN KARDON

Citation Twenty-Two 200-W/ch Amplifier

Amplifier with selectable high-current and high-voltage output. Features dual-voltage design; dual power transformers; gold-plated input jacks and speaker terminals; eight 130 W/ch power transistors per channel. Clipping indicators; LED power meters; anodized brushed aluminum blue/black finish with rubber trim. 200 W/ch into 8 ohms from 20-20,000 Hz with <0.08% THD; S/N 100 dB (at 1 W); slew rate 160 V/ μ sec; damping factor 120; current capability ± 120 amps. Bridged power 400 W into 8 ohms from 20-20,000 Hz with <0.12%. 17 3/8 x 6 1/8 x 15 3/4 in; 45 lb \$1,149
Twenty-Four. Similar to above except 100 W/ch; current capability ± 60 amps; four 130 W/ch power transistors per ch; damping factor 75; 33 lb \$699

HEATH

AAW-2500 100-W/ch Amplifier

Stereo power amplifier with four dual polarity power supplies and a protection circuit to shield speakers from turn-on transients and prevent short circuit by muting audio when a < 2-ohm load is placed across speaker terminals. Features toroidal power transformer; high-grade capacitors; high instantaneous current capability, up to 60 amps. 100 W/ch continuous into 8 ohms; FR 0.1-170,000 Hz; THD <0.06%; S/N 98 dB. 17 1/2 x 4 x 13 3/4 in; 30 lb \$499
AA-2500. Unassembled kit; 33 lb \$449

HEYBROOK BY D'ASCANIO AUDIO

P-3 100 W/ch 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 a heat sink over entire surface, equalizing temp within the case and maintaining a stable relationship between internal components. 100 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; IM 0.05%; instantane-

ous peak current ± 30 amps. 17 x 4 x 12 in; 18 lb \$1,398



Hafler XL600

KENWOOD

Basic-M2A 220-W/ch Amplifier

Features low-impedance drive capability; 616-W/ch into 2 ohms. Full circuit protection via thermostat-controlled fan cooling. FL peak-power meters with selectable peak-hold and 2 hold times; gold-plated inputs; headphone jack; power indicator; muting relay. 220 W/ch min rms into 8 ohms; frequency response 20-20,000 Hz; THD 0.004%; S/N 120 dB; damping factor 1,000 at 50 Hz. 17 1/4 x 6 1/4 x 14 3/4; 34.1 lb \$679

KINERGETICS

KBA-75 Gold Series 75-W/ch Amplifier

Features 1-kVA power supply; dual-coil toroidal transformer; auto servo-controlled DC offset adjustment; high-power output transistors with wide linear region; hysteresis-distortion cancelling circuit. 75 W/ch into 8 ohms; headroom 3 dB; input imp 100,000 ohms; slew rate 65 V/ μ sec; voltage gain 20 (absolute); power bandwidth 1-300,000 Hz \$1,495

KLYNE AUDIO ARTS

SKX 120 120-W Amplifier

Dual-mono power amplifier with balanced and unbalanced inputs. Features solid-state construction; separate power supplies for each channel; high-current complementary bipolar outputs; Class A/AB. 120 W into 8 ohms; FR 0.5-200,000 Hz. 17 x 4 3/4 x 18 1/2 in; 45 lb. Approx. \$4,000

LAZARUS ELECTRONICS

Model 50/50 50-W/ch Amplifier

Pure Class A amplifier. 50 W into 8 ohms; 100 W into 4 ohms; 200 W into 2 ohms. Wire both channels in parallel for 400 W into 1 ohm, monobloc \$1,920

Model 200/200 200-W/ch Amplifier

Features vacuum tubes in the driver stage with MOSFET in the final output stage; separate transformer and DC voltage regulator for MOSFET and tube stages; zero negative feedback. 350 watts into 4 ohms; sens 600 mV; input impedance 47,000 Hz; 35 lb \$1,750

LEXICON

525 105-W/ch Amplifier

Amplifier with 5-channel discrete circuitry. Features Class A, AB, and MOSFET in output stages. 105 W/ch; THD <0.1%; slew rate 11 V/ μ sec; headroom 1.5 dB. 38 lb \$1,295

LINN PRODUCTS

LK280 80-W/ch Amplifier

80 continuous average W/ch from 20-20,000 Hz; companion to LK1 preamp. 3 x 12 $\frac{3}{4}$ x 10 $\frac{1}{2}$ in; 19 lb. \$1,495

LUXMAN

M-117 200-W/Ch Amplifier

Bridgeable amplifier with low-impedance drive capability. Features dual-FET per channel input stage; high-current bipolar output transistors; Duo-Beta dual feedback-loop circuitry to widen bandwidth and improve transient response; STAR circuit topology to reduce noise and distortion; high-energy power supply. Peak-clip indicators; gold-plated speaker binding posts and input terminals; variable and fixed inputs. 200 W/ch from 20-20,000 Hz into 8 ohms; dynamic power 820 W/ch into 2 ohms; 550 W/ch into 4 ohms. 300 W/ch into 8 ohms; bridged output 700 W; THD 0.03% at rated power; signal-to-noise ratio 120 dB; intermodulation distortion 0.007%; slew rate 20 V/ μ sec; damping factor 130 (50 Hz, 8 ohms). 17 $\frac{1}{4}$ x 6 $\frac{1}{2}$ x 17 $\frac{1}{2}$ in; 52 lb. \$1,250

M-113 50-W/ch Amplifier

Amplifier with low-impedance drive capability. Features dual-FET per channel input stage; high-current bipolar output transistors; Duo-Beta dual feedback-loop circuitry to widen bandwidth and improve transient response; STAR circuit topology to reduce noise and distortion; high-energy power supply. Peak-clip indicators; gold-plated input terminals; 5-way speaker terminals; adjustable input sens. 50 W/ch from 20-20,000 Hz into 8 ohms; dynamic power 180 W/ch into 2 ohms; 140 W/ch into 4 ohms. 90 W/ch into 8 ohms; bridged output 700 W; THD 0.03% at rated power; signal-to-noise ratio 116 dB; intermodulation distortion 0.005%; slew rate 15 V/ μ sec; damping factor 100 (50 Hz, 8 ohms). 17 $\frac{1}{4}$ x 5 $\frac{3}{8}$ x 14 $\frac{1}{2}$ in; 19 lb. \$600



NAD Monitor Series 2400

MARK LEVINSON BY MADRIGAL

No. 23 100-W/ch Amplifier

Two separate mono amps in single chassis; AC mains filtering; film capacitors; surge limiting; 2 power supplies for each L/R channel; oxygen-free copper bars supply output stage with +84-V DC rails; triple bypassing; output supply capacitance of 146,000 μ farads and 2-1.2 KVA transformers produce 240 joules of stored energy; full-wave bridge rectifier; independent tracking for + and - rails; only bipolar devices in gain stages; inverting input for full balanced connection; 50-kilohm imp through audio bandwidth; output stage operates in class AB; controlled clipping; external line and internal fuses; thermal sensors. 100 W/ch into 8 ohms. 200 into 4. 350 into 2; gain 26 dB; damping factor >700 (50 Hz ref to 8 ohms) \$4,975

ML-11 50-W/ch 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 rec-

tifiers. 4 10,000 μ F filter capacitors, for separate rectification and 20 joules of energy storage for each ch. Six 200 W, 15 ampere power transistors per ch enable ML-11, when pulsed, to develop 25 volts peak, at peak currents up to 12.5 amperes (312.5 W peak) per ch. Optional externally programmable voltage-limiting circuit reduces voltage output to protect speakers; gold-plated binding posts for output connections and Camac input connectors; hand-brushed black anodized front plate. 50 W/ch into 8 ohms, 100 W/ch into 4 ohms, 140 W into 8 ohms bridged. 8 $\frac{3}{8}$ x 19 x 12 in; 25 lb. \$2,100



McIntosh MC-754

McINTOSH

MC-2500 500-W/ch Amplifier

Features Sentry Monitoring circuit which constantly monitors the signal to the output transistors to protect them from damage; bridgeable to 1,000 W mono; Left and right channel gain control; speaker on/off switch; peak-reading, peak-locking power meters; meter range selector; headphone jack. Power output: 500 W/ch both channels driven from 20-20,000 Hz with less than 0.02% THD; IM <0.02% if instantaneous peak power output is less than 1,000 W/ch both channels driven; FR 20-20,000 Hz +0, -0.25 dB; S/N 95 dB; damping factor >30; input imp 50,000 ohms; input sens 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. Standard 19-in rack mounting; 17 x 10 x 17 in; 129 lb. \$3,495

MC-7200 200-W/ch Amplifier

Features Power Guard circuitry to eliminate amplifier clipping due to overdrive; Sentry Monitor circuit constantly monitors the output signal and instantly reacts to prevent overload of the output transistors; thermal shut-down; turn-on delay; direct current failure protection; power line transient surge protection; bridgeable to 600 W mono. Peak responding power output meter; meter hold control; L/R gain control. Frequency response 20-20,000 Hz +0, -0.25 dB; total harmonic distortion 0.005%; S/N 105 dBA; IM 0.005%; damping factor >200. 14 $\frac{1}{4}$ x 5 $\frac{1}{4}$ x 15 $\frac{3}{8}$ in; 53 lb. \$2,595

MC-754 100-W/ch Amplifier

Features Power Guard to eliminate amplifier clipping due to overdrive; digital sonic overload corrector to prevent the amplifier from exceeding an average of 0.3% distortion for overload stresses up to 10 dB; bridgeable to 200 W mono. Frequency response 20-20,000 Hz +0, -0.25 dB; THD 0.02%; signal-to-noise ratio 110 dB; IM 0.02%; damping factor >90. 13 $\frac{1}{8}$ x 9 $\frac{3}{8}$ x 5 $\frac{1}{2}$ in; 21 lb. \$995

MELOS AUDIO

TM-90 ST 80-W/ch Amplifier

Stereo power amplifier with toroidal power transformer, regulated power supplies using

tubes and transistors. Wide bandwidth output transformers; triple triode driver tubes; LED indicators. 80 W/ch; THD <0.5%; FR 8-45,000 Hz \pm 1.5 dB; S/N 85 dB; sens at rated power 1.5 V. 17 $\frac{1}{2}$ x 7 $\frac{1}{2}$ x 13 $\frac{1}{2}$ in; 50 lb. \$1,595

MERIDIAN

205 Model 100-W Amplifier

Class AA mono amplifier with toroidal high current power supply. Features full complimentary circuit design; "music sense" which turns on amplifier when music is detected. 10 W into 8 ohms. 4 x 6 $\frac{1}{4}$ x 14 in ea; 13 lb ea. \$1,790/pr

MOTIF BY CONRAD-JOHNSON

Motif MS200 200-W/ch Amplifier

With MOSFET output stage; extensive use of large-value polystyrene capacitors. 200 continuous average W/ch from 20-20,000 Hz with no more than 0.1% THD into 8 ohms; FR 20-20,000 Hz \pm 0.10 dB; S/N 100 dB; 7 x 19 x 18 $\frac{1}{2}$ in; 45 lbs. \$5,000
MS100. As above with 100 W/ch \$3,250
MS50. As above with 50 W/ch \$2,350

NAD

Monitor Series 2600A 150-W/ch Amplifier

Bridgeable amplifier with power envelope circuitry. Features high voltage; high-current capacity; close tracking soft clipping circuit. Speaker impedance selector; input level controls; normal/lab inputs. 150 W/ch rms; +4 dB dynamic headroom. Rack mountable. \$799

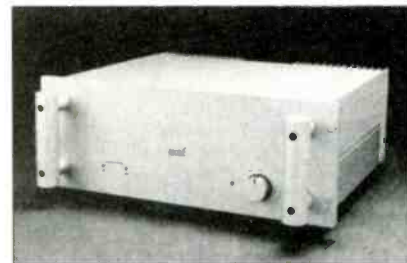
Monitor Series 2400 100-W/ch Amplifier

Bridgeable amplifier with power envelope circuitry. Features soft clipping circuit. Input level controls; normal/lab inputs. 100 W/ch rms; +5.7 dB dynamic headroom. Rack mountable. \$599

NAKAMICHI

PA-7AII 225-W/ch Amplifier

Features Stasis topology; utilizes two internal amplifiers. 700-W toroidal power transformer; bridge rectifiers; electrolytic filters; 18 transistors per ch; Rib Framework chassis. 225 continuous average W/ch from 20-20,000 Hz with no greater than 0.05% THD into 8 ohms; 340 max W/ch into 8 ohms; FR 20-20,000 Hz +0, -0.2 dB; S/N >120 dB; damping factor >60; dynamic headroom 1.7 dB; power bandwidth 5-50,000 Hz (8 ohms, 112.5 W, 0.05% THD). 17 $\frac{1}{8}$ x 7 $\frac{7}{8}$ x 16 $\frac{1}{8}$ in; 62 lb. 13 oz. \$2,195



Motif MS100

NEC

M-50 50-W Amplifier

Single-channel power amp with 3 switch-selected inputs. Features variable-frequency low-and

AMPLIFIERS

high-cut filters; vibration-free construction; large FI 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; frequency response 5-300,000 Hz; signal-to-noise ratio >115 dB (direct input). 8.3 x 4.7 x 15 in; 18 lb \$375

NHT

VA-1 20-W/ch Amplifier

Designed to accept audio signals from stereo TV's and drive stereo speakers. Features Class AB output; balanced line- and high-level inputs; stereo speaker outs; power and volume switches. Delivers 20-W/ch cont avg into 8 ohms, 30-watts per channel continuous average into 4 ohms from 20-25,000 Hz with 0.01% total harmonic distortion. High gloss black cabinet. 3½ x 17 x 8¾ in; 7 lb \$150

NIKKO AUDIO

Alpha-2000 330-W/ch Amplifier

Amplifier with XLR cannon connectors for direct connections with mixing boards and to eliminate noise generating converters. Features horizontal back-lit meters; gold-plated terminals; 4-way protection circuits that shut down amplifier when heat, shorting, clipping, and stray DC problems occur. Frequency response 5-100,000 Hz +0 dB, -0.5 dB; total harmonic distortion 0.001% at rated power at 1,000 Hz; signal-to-noise ratio 120 dB; damping factor 200; dynamic headroom 1.8 dB. 19 x 7¾ x 18½ in; 57¼ lb \$1,800

Alpha-600 180-W/ch Amplifier

Amplifier with Class AB circuits. Features magnetic-flux-ring; anoxic-copper coils. Frequency response 5-100,000 ± 0 dB; THD 0.004% at rated power at 1,000 Hz; signal-to-noise ratio 110 dB; damping factor 100; dynamic headroom 1.6 dB. 18¾ x 5½ x 14½ in; 30¾ lb \$760

ONKYO

M-5160 150-W/ch Amplifier

Amplifier with Delta power supply and A/B speaker selector. 150-W/ch min rms into 8 ohms; frequency response 20-20,000 Hz; total harmonic distortion 0.09%; signal-to-noise ratio 100 dB; intermodulation distortion 0.09%; damping factor 40. 17½ x 6½ x 11¼ in; 21 lb \$360

Integra Series

Grand Integra M-510 300-W/ch Amplifier

Dual-mono power amp with 1 ohm impedance drive capability. Features power supply with Real-Phase transformer to eliminate current fluctuations; high-current capability; 3 separate power supplies (left, right, aux for lights, meters etc.). Calibrated power meters w/ accuracy to 1 dB; adjustable meter sens. 300 W/ch min rms into 8 ohms; frequency response 20-20,000 Hz; total harmonic distortion 0.005%; signal-to-noise ratio 120 dB; intermodulation distortion 0.003%. 400 W/ch into 8 ohms; 500 W/ch into 4 ohms. Dynamic power 750 W/ch into 4 ohms, 1,300 W/ch into 2 ohms, 2,100 W/ch into 1 ohm. 20 x 10½ x 21 in; 165 lb \$4,500

Grand Integra M-508 200-W/ch Amplifier

Dual-mono power amp with low-impedance

drive capability. Features Linear Switching power supply with Real-Phase transformer to eliminate current fluctuations; high-current capability. Calibrated high-speed power meters; peak-power meters; variable inputs with left/right channel level controls. 200 W/ch min rms into 8 ohms; frequency response 20-20,000 Hz; total harmonic distortion 0.003%; signal-to-noise ratio 120 dB; intermodulation distortion 0.003%; damping factor 140. Dynamic power 460 W/ch into 4 ohms, 685 W/ch into 2 ohms, 860 W/ch into 1 ohm. 18¼ x 7¼ x 16¾ in; 55 lb \$1,200

Integra M-502 140-W/ch Amplifier

Dual-mono power amp with low-impedance drive capability. Features Linear Switching power supply; 4-way speaker selector. 140 W/ch min rms into 8 ohms; frequency response 20-20,000 Hz; total harmonic distortion 0.005%; signal-to-noise ratio 120 dB; IM 0.004%; damping factor 140. Dynamic power 290 W/ch into 4 ohms, 425 W/ch into 2 ohms. 17½ x 7¼ x 16¾ in; 41 lb \$650



Onkyo Grand Integra M-508

PARASOUND

HCA-800II 90-W/ch Amplifier

High-current discrete amplifier. Features 60-MHz outputs; gold-deposited 36,000 µF electrolytic capacitors; mono bridging with rear-panel switch; gold-plated RCA jacks; ¼-in phone jack; 5-way terminals; front panel level controls; speaker A/B terminals; headphone jack; relay protection 19-in rack mountable. Frequency response 20-20,000 Hz ± 0.5 dB; total harmonic distortion <0.1%; signal-to-noise ratio >104 dB; intermodulation distortion <0.1%; damping factor >120. 17¼ x 3¾ x 11¾ in. \$395

PIONEER

Elite M-91 200-W/ch Amplifier

Features honeycomb heat sink; film condenser; CD-direct input; 200 W/ch into 8 ohms; frequency response 20-20,000 Hz; total harmonic distortion 0.003%. \$1,400

PROTON

D1200 100-W/ch Amplifier

Stereo amplifier 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. 16½ x 4¼ x 9¾ in; 33 lb \$699

PS AUDIO

200CX 200-W/ch Amplifier

Stereo amplifier with Class AB outputs. Features large 5-way binding posts; gold-plated input jacks. 200 W/ch into 8 ohms, 400 W/ch into 4 ohms; total harmonic distortion 0.02%; signal-to-noise ratio -100 dB; slew rate 250 V/µsec;

damping factor 200. 19 x 6 x 19 in; 69.9 lb \$1,950

QUAD

Model 606 140-W/ch Amplifier

Power amp with feed-forward error correction (current dumping) combines clarity of Class A operation with efficiency of Class B. Protection circuitry uses a sensor on AC-input side of power supply to integrate current over time. No fuses or relays located in signal path; total harmonic distortion (continuous sine wave in 8 ohm resistive load any level up to 130 W) <0.01% at 20 Hz, <0.01% at 1,000 Hz, <0.03% at 20,000 Hz; frequency response 20-20,000 Hz -0.25 dB. 12¾ x 5½ x 9½ in; 27 lb \$1,295

Model 306 60-W/ch Amplifier

Power amp with feed-forward error correction (current dumping) combines clarity of Class A operation with efficiency of Class B. Protection circuitry uses a sensor on AC input side of power supply to integrate current over time. No fuses or relays located in signal path; total harmonic distortion (continuous sine wave in 8 ohm resistive load any level up to 50 W) <0.01% at 20 Hz, <0.01% at 1,000 Hz, <0.03% at 20,000 Hz; frequency response 20-20,000 Hz -0.25 dB. 12¾ x 2¾ x 8¼ in; 11 lb \$695

REVOX

B242-S 200-W/ch Amplifier

High-output power amp capable of driving loads from 2-8 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 continuous average W/ch from 20-20,000 Hz with no more than 0.03% total harmonic distortion, 300 W into 4 ohms; frequency response 20-20,000 Hz +0, -0.3 dB; dynamic headroom 2.5 dB into 8 ohms; signal-to-noise ratio 117 dB unbalanced, 114 dB balanced; damping factor 200 (at 1,000 Hz into 8 ohms); sep 80 dB at 1,000 Hz. 17¾ x 6 x 14¼ in; 37½ lb \$3,500

ROTEL

RB870BX 100-W/ch Amplifier

100 W/ch stereo amplifier bridgeable with RA870 (integrated amp) for 300 watts mono. Frequency response 4-100,000 Hz +0.5 dB, -3.0 dB; total harmonic distortion <0.03% from 20-20,000 Hz; signal-to-noise ratio 110 dB; intermodulation distortion <0.03%; damping factor 180. 17½ x 4¾ x 13¾; 20 lb \$499

SAE

A502 200-W/ch Amplifier

Stereo amplifier with automatic bridging circuit. Features dual-speaker system switching; peak and average LED power display; rack mountable. 200 cont avg W/ch from 20-20,000 Hz with no more than 0.025% total harmonic distortion into 8 ohms; 600 W mono operation; frequency response 20-20,000 Hz ± 0 dB; S/N 110 dB; dynamic headroom 1.2 dB; IM 0.025%. 19 x 5¼ x 14 in; 48 lb \$799

SANSUI

B-2102MOS 110-W/ch Amplifier

Features diamond differential circuit with a cas-

code configuration; X-balanced circuitry; MOSFET's; rapid switching speed; pure copper insulators; low output impedance. 5 pair of inputs (3 variable, 2 fixed): speaker A, B. 110 W/ch min rms into 8 ohms; total harmonic distortion < 0.008%; frequency response DC-300,000 Hz +0/-3 dB; signal-to-noise ratio >110 dB; damping factor 100 at 8 ohms; slew rate ± 150 V/ μ sec; rise time 0.5 μ sec. 17 $\frac{3}{4}$ x 6 $\frac{7}{8}$ x 18 $\frac{3}{4}$ in; 77 lb. Black-matte finish \$3,750

B-3000 120-W/ch Amplifier

Features DC servo circuit; separate heat sinks for left and right channels; short detection; zero voltage detection; thermal detection. 2 power meters; range control; headphone jack; outputs for 2 speaker systems. 120 W/ch into 8 ohms; frequency response 20-20,000 Hz; total harmonic distortion 0.05%; IM 0.01%; signal-to-noise ratio 120 dB \$260

SHERWOOD

AM-7040 200-W/ch Amplifier

Amplifier with high-speed MOSFET output stage with high-instantaneous-current capacity. Features complete relay protection; independent left and right power transformers; variable and fixed inputs; complementary symmetry input stage with matched transistor pairs; overload protection; heavy gauge conductors. Power-level indicator. 200 W/ch min rms into 8 ohms; frequency response 20-20,000 Hz; total harmonic distortion < 0.025%; IMD 0.015%; damping factor 170 dB; S/N 125 dBA; ch sep at 1,000 Hz 70 dB. 6 $\frac{3}{4}$ x 17 $\frac{3}{8}$ x 15 $\frac{3}{4}$ in \$699

SONOGRAPHE BY

CONRAD-JOHNSON

SA120 120-W/ch Amplifier

Features MOSFET output stage; 120 W/ch into 8 ohms; signal-to-noise ratio 100 dB; 5 $\frac{3}{4}$ x 18 x 12 in \$995

SONY

TA-N77ES 270-W/ch Amplifier

Features spontaneous twin-drive power supply; low-impedance drive capability; mono operation at 580 W into 8 ohms from 20-20,000 Hz with 0.007% total harmonic distortion; chimney-style heat sinks; fixed and variable inputs 2 independent protection circuits; peak-level power meters; 2 sets of speaker terminals. 270 W continuous into 4 ohms, 20-20,000 Hz with 0.006% THD; damping factor 100; slew rate 150V/ μ sec. 300V/ μ sec (inside) \$1,200

TA-N110 45-W/ch Amplifier

Features 45 W/ch into 8 ohms from 20-20,000 Hz with 0.08% total harmonic distortion; 3 built-in digital delay modes; variable delay times; built-in video switching capability; input attenuator; 3-way input switch; 2 sets of speaker terminals. 100 W continuous into 8 ohms, 20-20,000 Hz with 0.08% total harmonic distortion \$300

SOUNDCRAFTSMEN

A5002 250-W/ch Amplifier

Power amplifier with Class H Vari-Proportional circuitry and autobuffer for continuous operation into 2 ohms, 4 ohms, and 8 ohms. Features auto crowbar-protection circuit for output protection without current limiting; 20 LED/channel indicators; front-panel switching for 2 pairs

of speakers; clipping indicators; input level controls. Output power 250 watts per channel into 8 ohms, 375 watts per channel into 4 ohms continuous rms, 20-20,000 Hz at <0.09% total harmonic distortion; signal-to-noise ratio >105 dB; slew rate >50 V/ μ s; TIM <0.02%; dynamic headroom >2 dB \$949

Pro-Reference Two 100-W/ch Amplifier

MOSFET stereo power amp with 20-LED power meters. Features switching for 2 pairs of speakers; 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% total harmonic distortion; signal-to-noise ratio >105 dB; damping factor 200 \$699

Pro-Reference One. Same as above without LED meters \$599

SOUNDSTREAM

DA-1 200-W/ch Amplifier

System 1 component features fully discrete Darlington transistor circuitry to minimize need for current limiting; bridgeable to 600 W mono into 8 ohms. Drives up to 4 pairs of speakers simultaneously; dual front-panel overload indicators; optional RSS-2 speaker selectors can be used singly or daisy-chained, allowing up to 4 pairs of speakers to be controlled by the R-1 remote. Frequency response 20-20,000 Hz ± 0.1 dB; signal-to-noise ratio >110 dBA; total harmonic distortion <0.1%; slew rate >35 V/ μ sec. 17 x 5 $\frac{7}{8}$ x 14 in; 35 lb \$1,195



Sumo Andromeda II

SUMIKO

BA3 50-W/ch Amplifier

Amplifier with 50 W/ch into 8 ohms; 90 W/ch into 4 ohms; frequency response 20-20,000; total harmonic distortion < 0.1%; dynamic headroom 2 dB \$1,800

SUMO

Andromeda II 200-W/ch Amplifier

Class AB MOSFET amp, fully balanced from input to output. Operates as a pure Class A amplifier except at the Class AB output stage. 400 W/ch into 4 ohms; THD 0.05% into 8 ohms, 0.1% into 4 ohms; IM 0.05%; rise time 2 μ sec; slew rate 115 V/ μ sec; damping factor >500. 19 x 7 x 16 $\frac{3}{4}$ in; 55 lb \$1,499

The Nine Plus 65-W/ch Amplifier

Class A power amp without any active bias circuits or thermal tracking networks. Features balanced-bridge configuration; push-pull quadrature feedback circuits; discrete Darlington output stage; direct-coupled circuitry from input to output. Power output 65 W/ch into 8 ohms from 20-20,000 Hz with <0.1% total harmonic

distortion; 120 W/ch into 4 ohms from 20-20,000 Hz with <0.2% total harmonic distortion; intermodulation distortion 0.05% from 0.25 W to rated output; input sensitivity for rated output 1.0 V rms; damping factor >150. 19 x 8 $\frac{3}{4}$ x 7 in \$1,299

Polaris 100-W/ch Amplifier

Class AB amp that operates in Class A except at the Class AB output stage. MOSFET output devices. 175 W/ch into 4 ohms; total harmonic distortion 0.05% into 8 ohms, 0.1% into 4 ohms; intermodulation distortion 0.05%; rise time 2 μ sec; input imp 47,000 ohms; damping factor >500. 19 x 5 $\frac{1}{4}$ x 8 $\frac{3}{4}$ in \$749

TECHNICS

SE-A100 170-W/ch Amplifier

Features 1 voltage and 1 current amplifier per ch; Class AA bridge circuitry; massive power supply; 3 transformers (left-ch current amp, right-ch current amp, L/R voltage amps) using LC-OFC windings; 91,200- μ F filtering; magnetic isolation; vibration damping. 170 W/ch into 8 ohms; dynamic headroom 0.7 dB. 17 x 8 $\frac{1}{4}$ x 18 $\frac{3}{4}$ in; 70 lb \$1,900

SE-A5MK2 150-W/ch Amplifier

Features computer drive to neutralize transient crossover distortion; parallel 3-stage Darlington output; power-linear circuit to compensate for speaker imp variation; power-output meters. 150 W/ch into 8 ohms; frequency response DC-150,000 Hz +0/-3 dB; intermodulation distortion 0.002%; damping factor 100. 17 x 7 x 16 $\frac{3}{8}$; 40.6 lb \$1,100

THRESHOLD

S/1600e Stasis 800-W Mono Amplifier

Noninverting complementary-symmetry mono amp with J-FET in front-end signal path and proprietary Stasis output stage; binary topology in pure Class A voltage amp connected directly to the loudspeaker load and operated in conjunction with a high-amperage current-mirror amp operated in very high-bias Class AB, allowing for pure Class A operation to 20% of rated power; output-stage bias accuracy is maintained through Threshold's proprietary optical-bias technology. DC-coupled front-end gain stages are biased for Class A operation at all signal levels and are subject to cascode shielding and two stages of current regulation. Power supply: two 1,200-W toroidal transformers, 312,000 μ F capacitance. Output stage: 64 high-speed 250-W, 200-V, 20-amp rated devices. Inputs are switchable between 50,000 ohms unbalanced through RCA jacks and 600 ohms balanced through locking XLR connectors; thermal-protection circuitry. 800 W/ch into 8 ohms 20-20,000 Hz with 0.15% distortion. Bandwidth: direct current to -3 dB at 100,000 Hz. Slew rate: 100 V/ μ S. Current capability: 35 amperes continuous. 200 amps peak. Noise: <-100 dB. Output impedance: <0.1 ohms 20-20,000 Hz. 19 x 8 $\frac{3}{4}$ x 27 in., 120 lb \$7,200

SA/1 Stasis 160-W Mono Amplifier

As S/1600e except lower power and not DC-coupled. Power supply: single 1,000-W toroidal transformer, 120,000 μ F capacitance. Output stage: 40 high-speed 250-W, 200-V, 20-amp rated devices. Input impedance: 75,000 ohms unbalanced. Standard five-way output-terminal assemblies and illuminated peak-level output

AMPLIFIERS

meter. 160 W 20-20,000 Hz into 8 ohms with 0.15% distortion. Current capability: 40 amps continuous, 150 amps peak. 19 x 8 $\frac{1}{4}$ x 17 $\frac{1}{4}$ in; 79 lb \$4,400

S/500 Stasis 250-W/ch Amplifier

As S/1600e except lower power and dual channel and not DC coupled; no front-end specified decoupling. Power supply: single 1,000 toroidal transformer, 120,000 μ F capacitance. Output stage: 20 high-speed 250 W, 200 V, 20 amp rated devices/ch. 250 W/ch 20-20,000 Hz both ch driven into 8 ohms with 0.15% distortion; bandwidth -3 dB at 7 and 100,000 Hz; current capability 12 amps/ch cont, 100 amps/ch peak. Dimensions: 19 x 8 $\frac{3}{4}$ x 17 $\frac{1}{4}$ in. Weight: 79 lb \$4,200

SA/2 Stasis 100-W Amplifier

As SA/1 except lower power and no peak-level meter. Power supply: single 700 W toroidal transformer, 60,000 μ F capacitance. Output stage: 28 high-speed 250 W, 200 V, 20 amp rated devices. 100 W 20-20,000 Hz into 8 ohms with 0.15% distortion; current capability 30 amps cont, 100 amps peak. 19 x 8 $\frac{3}{4}$ x 13 $\frac{1}{4}$ in; 56 lb \$3,150

S/300 Stasis 150-W/ch Amplifier

As S/500 except lower power and power supply with single 700 W toroidal transformer, 30,000 μ F capacitance. Output stage: 8 high-speed 250 W, 200 V, 20 amp rated devices/ch. 150 W/ch 20-20,000 Hz both ch driven into 8 ohms with 0.15% distortion; current capability 10 amps/ch cont, 80 amps/ch peak. 19 x 8 $\frac{3}{4}$ x 13 $\frac{1}{4}$ in; 56 lb \$3,150

S/200 Stasis 100-W/ch Amplifier

As S/300 except lower power and power supply with single 400 W toroidal transformer, 30,000 μ F capacitance. Output stage: 8 high-speed 250 W, 200 V, 20 amp rated devices/ch. 100 W/ch 20-20,000 Hz both ch driven into 8 ohms with 0.15% distortion; current capability 8 amps/ch cont, 50 amps/ch peak. 19 x 8 $\frac{3}{4}$ x 9 $\frac{3}{4}$ in; 44 lb \$2,150

VECTOR RESEARCH

VA-1450 75-W/ch Amplifier

Features high-current design, 8-output transistors; dual transformers; bridgeable to 200 W mono; phase inverted line-out; 100 continuous average W/ch 20-20,000 Hz <0.08% total harmonic distortion into 4 ohms; frequency response 10-40,000 Hz \pm 1 dB; dynamic headroom 2.5 dB; IHF intermodulation distortion 0.08%. 17 x 3 x 12 in; 21 lb \$349

YAMAHA

MIX-10000 250-W/ch Amplifier

Power amplifier with dual-amp Class A operation. Features hyperbolic converting non-switching circuitry; power MOSFET's. High-precision analog dB scale peak-level meter. 250 watts per channel minimum rms into 8 ohms; frequency response 20-20,000 Hz; THD < 0.0005%. Titanium gray with high luster walnut end panels; 120 lb \$7,000

MX-1000U 250-W/ch Amplifier

Power amplifier with hyperbolic conversion amplification circuit. Features A+B+C speaker switching; 26-segment LED power-level meters; independent left and right level control; 4-digit numerical power-output display; LED meter and digital peak-hold display; meter display load se-

lectors; compatible with banana plugs. 260 watts per channel into 8 ohms; FR 20-20,000 Hz; THD < 0.003%. 600,000 μ F x 2 power-supply capacity \$1,199

MX-55/Ti 35-W/ch x4 Amplifier

Features independent left and right channel power supplies; vibration-resistant chassis construction. 70 W/ch x 2 into 8 ohms; frequency response 20-20,000 Hz; total harmonic distortion 0.003%. 35 W/ch x 4 into 8 ohms; frequency response 20-20,000 Hz; total harmonic distortion 0.005%. Ch sep 110 dB (2 ch), 90 dB (4 ch); 26 lb. Titanium finish \$599

PREAMPLIFIERS

ACCUPHASE BY MADRIGAL

C202 Preamplifier

Features four separate cascode Class A push-pull amplifiers for L/R channel and CD/line; 8 inputs with one balanced and two unbalanced sets of outputs for the CD section; logic control relay signal path; separate power transformer windings and rectifier circuits for L/R channels and separate voltage regulators for each amplifier unit. FR 20-20,000 Hz \pm 0, -0.2 dB; THD 0.005%; S/N 110 dBA. 18 $\frac{3}{4}$ x 5 $\frac{3}{8}$ x 14 $\frac{3}{4}$ in; 24.2 lb \$4,100



Audio Research SP-9

ADCOM

GFP-555 II Preamplifier

Features two-sided copper-plated circuit board for low noise and hum; switchable phono-input capacitance; switchable gain on phono input; tape dubbing; separate headphone amp; 2 sets of outputs (AC coupled, DC coupled); signal-processor loop; 5 pairs of high-level inputs. Can record from one input while listening to another input. Inputs for MM phono; MC phono; tape; tape 2; CD player; tuner; video. FR DC-400,000 Hz \pm 0.5 dB; THD 0.005%; MM phono sens 0.4 mV for 0.5-V output at 1,000 Hz; sens for line-level inputs 40 mV. 17 x 3 $\frac{3}{4}$ x 12 $\frac{3}{4}$ in \$500

GTP-400 Preamplifier/Tuner

Preamplifier with built-in tuner. Phono stages operate in full Class A operation; RIAA equalization circuit is use in high-output moving-coil or MM phono cartridges. Separate recording selector allows listening to one source while recording another; feedback tone control; eight FM stations and eight AM stations memory. Preamp section: THD <0.01%; IM 0.005%; FR 20-20,000 Hz, \pm 0.1 dB; S/N: phono 80 dB, line >95 dB. Tuner section: -50 dB quieting mono 13.5 dBf, stereo 37 dBf; IHF sens mono 11 dBf; cap ratio 1.7 dB; THD stereo 0.1% at 1,000 Hz; S/N mono 80, stereo 75 dB; FR 30-15,000 Hz, \pm 0.5 dB. 17 x 3 $\frac{3}{4}$ x 12 $\frac{3}{4}$ in; 15 lb \$400

AUDIO BY VAN ALSTINE

Transcendence Preamplifier

Features compound hybrid construction; toroi-

dal power transformer; regulated power supply. RIAA phono inputs; 2 sets of tape inputs with tape-to-tape monitoring; 3 sets of line-level inputs for digital and analog sources; volume/balance controls; separate bass and treble controls for each channel; 2 pairs of audio outputs; amp-driven headphone jack. Power bandwidth >800,000 Hz; 200 W rated speaker selector switch. 13 $\frac{1}{2}$ x 12 $\frac{1}{2}$ x 4 $\frac{1}{2}$ in; 11 lb \$1,195

AUDIO DESIGN ASSOCIATES

ADP-8 Preamplifier

Preamplifier with 8-input capability. Features 5 stereo source inputs; 3 stereo tape inputs; 1 stereo signal-processor loop input; input imp <47k ohms; max input level \pm 8 volts; 3 main outputs; 3 tape outputs; 1 processor loop output; volume, balance, bass, mid, treble, and source selection controls; 1 switched outlet. Output imp >100 ohms; max output level \pm 12 volts; frequency response 20-20,000 Hz \pm 0.25 dB; THD 0.05%; S/N -85 dB. 3 $\frac{1}{2}$ x 19 x 13 $\frac{1}{2}$ in; 9 lb \$995

AUDIO RESEARCH

SP-9 MkII Preamplifier

On-board power supply; auto mute circuit for warmup, voltage drop; switchable muting; 2 tape inputs, 2 tape outputs; 2-position tape-monitor switching; gold-plated input/output jacks connect ground before hot, disconnect hot before ground; shielded toroidal power transformer; internally adjustable phono-section imp; 2 6DJ8 vacuum tubes (1-in phono stage, 1-in line stage); compatible with many MC cartridges. FR (high level, \pm 0.5 dB) 5-50,000 Hz; magnetic phono, \pm 0.3 dB of RIAA, 30-40,000 Hz; max output 2 V rms; distortion <0.01% at 2 V rms out; input imp 50k ohms (all high level); phono 47k ohms (changeable) \$1,795

B&K COMPONENTS

Sonata Series MC-101 Preamplifier

MM/MC switchable preamp. 2 tape loops; 2 tone controls; MM sens 0.8 mV; MM S/N 80 dB; MC S/N 80 dB; FR 1-150,000 Hz -0, +0.5 dB; THD 0.02%; Tiffany balanced connectors \$1,098



B&K Components Pro-5

Pro-5 Preamplifier

Preamp features 5 high-level inputs. 1 phono stage with 59 dB gain; balance, volume, bass, treble controls; gold-plated RCA connectors; moving-coil capacity. Inputs for MM phono, tape, aux, CD player, tuner, video. FR 1-100,000 Hz \pm dB; S/N 100 dB; MM phono sens 0.7 mV for 0.5-V output at 1,000 Hz; MM phono input overload level 105 mV at 1,000 Hz; sens for line-level inputs 63 mV \$398

BEDINI

BC-866 Preamplifier

Class A flat preamp with inputs for phono, tuner, tape, CD, aux. Balance and volume controls. FR 1-110,000 Hz \pm 0, -3 dB; THD <0.15%; IM <0.05%; RIAA phono deviation 20-25,000 Hz

AMPLIFIERS

± .25 dB; S/N phono to rec out -90 dB, line in to preamp out -100 dB \$960

BELLES RESEARCH

Belles 55 Preamplifier

Stereo preamplifier with complementary circuitry and Class A power MOSFET outputs. Features phono section with internal DIP switch for MM and MC cartridges; 2 settings for gain; 2 settings for cartridge loading. External high-energy power supply with DIN connector in rear. 5 inputs; 2 tape monitors; volume; balance; subsonic filter. FR 10-100,000 Hz ± 3 dB \$649

CAMBRIDGE AUDIO

C70 Preamplifier

Stereo preamplifier with connections for 4 input sources plus tape. Features segmented passive RIAA EQ. Passive tone controls with tone bypass switch and two outputs, one being a passive direct output after the volume control and the other a normal output; MM or MC switchable phono inputs with discrete circuitry. THD 0.005%. Sold only as a combination with the A70 power amp, combination price \$999

C100 Preamplifier

Preamp with inputs for MM/MC phono (switchable), tape, tape 2. Features dubbing capabilities; straight-line design. FR flat within 0.1 dB 20-80,000 Hz; THD 0.005% from 20-20,000 Hz; max output 12 V; MM input 2.6 mV at 47,000 ohms; MC input 0.3 mV at 47,000 ohms; S/N MM 82 dB, line 96 dB. \$699

CARVER

C-19 Preamplifier

Stereo preamplifier with 5 inputs including MM and MC phono and CD direct. Features 6DJ8 tubes; Wonder Caps; wide circuit traces; no ICs in the primary signal path. Dual external processor loops; dual tape monitor loops with dubbing; Spectral Tilt overall frequency balance EQ; individual L/R tone controls with variable turnover; headphone output with speaker defeat switch; subsonic filter; absolute phase switch. FR 1-60,000 Hz -0.3 dB; THD 0.07%; MM phono sens 1.5 mV; MM phono S/N 86 dB; MC phono S/N; max output 7 V. 12 lb \$1,199

CT-17 Preamplifier/Tuner

Combination Asymmetrical Charge Coupled Detection AM/FM tuner and Sonic Holography preamplifier with remote. Preamplifier features Dolby Pro Logic 5-ch surround-sound processor with rear volume, hall and stadium ambient effects; 7 inputs including CD direct, 2 video sound; simulated-stereo synthesis for mono video; 3-way tone controls; dual tape monitors; high-cut filter; remote with separate input/record selector and extra remote volume control for room-to-room capability. Tuner features 20 AM/FM presets with preset scan; stereo/mono; auto/manual controls. Preamplifier section: Frequency response 1-60,000 Hz ± 0.3 dB; THD 0.01%; max output 7 V. Tuner section: stereo quieting sens 36.1 dB; stereo sens 20.1 dB; stereo cap ratio 1.4 dB; AM suppression 73 dB; atch sel 58 dB; FM stereo THD 0.02%; stereo S/N 79 dB. 16 lb \$800

C-11 Preamplifier

Preamplifier with Sonic Hologram Generator. Features video sound Precognition circuit; 5 inputs including MM and MC phono; external processor loop; dual tape monitor loops with dub-

bing. Individual L/R tone controls with variable turnover; loudness EQ; headphone output with speaker defeat switch; subsonic filter; adjustable MM phono capacitance. FR 1-60,000 Hz -0.3 dB; THD 0.05%; max output 7 V. 6 lb \$580



Carver CT-17

CELLO

Audio Suite

Open-architecture mainframe accepts up to 10 slide-in vertical modules for phono, tape, CD, video, DAT, and tuner inputs; houses pro modules including mic preamp/mixers, tape head recording and mastering amplification, digital-to-analog converters, monitor amps for headphones or speakers. Can control multi-room and multimedia systems.

P101. MC phono input module	\$3,500
P301. Output module	\$3,200
1002. Mainframe chassis	\$1,800
P100. MM phono input module	\$2,000
P201. CD input module	\$2,500
P201. DAT input module	\$2,500
P201. Digital processor input module	\$2,500
P100. High-gain MM phono module	\$2,000
B301. Output module	\$1,800
P200. Tape input module	\$1,500
P200. CD input module	\$1,500
P200. Tuner input module	\$1,500
P200. Aux input module	\$1,500
P200. Video input module	\$1,500
P200. DAT input module	\$1,500
B100. MM phono input module	\$1,500
B100. MC phono input module	\$1,500
B200. RCA line input module	\$800

CONRAD-JOHNSON

PV9 Preamplifier

With low-noise precision metal-film resistors; polystyrene capacitors in audio circuitry; facilities for 2 tape recorders; 2-way dubbing; phono, tuner, AUX inputs; 2 amp outputs; front-panel mute control. FR 20-20,000 Hz ± 0.25 dB phono; S/N 70 dB below 10 mV phono. 84 dB below 2.5 V output high level; THD and IM 0.05%; gain 40 dB phono, 29 dB high level; max output 25 V; phono overload 500 mV at 1 kHz; 4 3/4 x 14 x 1 1/4 in \$2,950

PV8 Preamplifier

With cathode follower outputs and solid-state voltage regulator designed for minimal AC imp; regulated filament supplies virtually eliminate infrasonic noise resulting from AC line fluctuations. Features 1% tolerance, mil-spec deposited tin-oxide audio circuit resistors; audio circuit capacitors are polystyrene dielectric; volume control tracks within 0.5 dB; auto muting at turn-on, turn-off; 2 tape-recorder loops with 2-way dubbing; 5-function mode switch; precision tracking volume control. Max output 40 V rms; FR 2-100,000 Hz; <0.5% THD and IMD; hum and noise (20-20,000 Hz): phono 72 dB below 10 mV input, high level 84 dB below 2.5 V output; output imp <200 ohms; 10 x 16 x 3 3/4 in; 15 lb \$1,685

PV10 Preamplifier

Stereo preamplifier with zero-feedback circuits

in both line and phono stages. Features 2 triode amplifiers separated by a passive RIAA EQ network; five vacuum tubes; discrete regulated power supply with polypropylene and polystyrene capacitors. Phono plus five line inputs; 1 tape loop; balance bypass switch. >.1% THD or IM; hum and noise (20-20,000 Hz): phono 72 dB below 10 mV input, line stage 84 dB below 2.5 V output; output imp <500 ohms. 16 x 3 3/4 x 1 1/2 in; 12 lb \$995

CONVERGENT AUDIO TECHNOLOGY

SL-1 Preamplifier

Preamplifier with all vacuum-tube design. Features twelve separate regulators, one for each stage; adjustable loading; external power supply; switched metal film resistors for volume and balance controls. Inputs for MM phono; MC phono; tape; aux; CD; tuner; video. FR 0.1-1 MHz ± 3 dB; S/N 90 dB; THD 0.0005%; MM phono sens 0.125 mV for 0.5 V output at 1,000 Hz; MM phono input overload level 250 mV at 1,000 Hz; sens for line-level inputs 25 mV. 19 x 5 1/4 x 12 1/2 in; power 1 1/8 x 4 3/8 x 6 in \$4,500

COUNTERPOINT

SA-11 Line-Level Preamplifier

Full-featured line-level control center includes industrial-grade stepper motors to control 2 custom-built 41-position attenuators. Features full vacuum-tube power supply and audio circuitry; wireless handheld remote control; Isolinear design for max isolation and linearity. Inputs for tape; tape 2; aux; CD player; tuner; video. FR 1.5-70,000 Hz; THD 0.02% max; S/N 82 dB at 500 mV. 1,000 Hz; 17 x 7 3/8 x 20 in; 55 lb \$6,995

SA-1000 Preamplifier

Features three-tube hybrid circuitry. Preamp with inputs for MM/MC phono, tape, CD player, tuner. FR 2-170,000 Hz. ± 0.1 dB; THD 0.065%; S/N 83 dBA at 10-500,000 Hz; 19 x 4 1/2 x 12 3/8 in; 20 lb \$835



Conrad-Johnson PV10

DB SYSTEMS

DB-1A & 2A Preamplifier System

Stereo preamplifier with separate DB-2A regulated power supply. Features gold-plated jacks; Alps 80 dB tracking volume control. THD ± 0.0008%, 20-20,000 Hz; IM ± 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 line; filters: low-cut flat, 20 Hz, 36 Hz at 6 dB/octave phono only, high-cut flat, 5 kHz, 10,000 Hz at 6 dB/octave; output imp 1 kilohm; max output voltage 6 V into 10 kilohms/3,000 pF; input sens for 1 V output: phono 2 mV into 50,000 ohms/100 pF, high-level 120 mV into 50 kilohms. 3-year warranty extension. 8 1/2 x 7 x 3 1/4 in \$495

DBX

CX-3MkII Preamplifier

Control center for a video or audio system with

2, 3, or 4 channels. Features isolated audio and video circuits; Dolby Surround, matrix. Hall surround; record output selector; simulated stereo for mono soundtracks; inputs for MM/MC phono. 2 tape decks, 2 VCR's, CD, tuner, video-disc player; remote control \$799

DENNESEN ELECTROSTATIC

Sirius Preamplifier

Straight-line preamp with split passive RIAA and FET input. Inputs for MM phono, tape, tape 2, aux. FR 5-100,000 Hz ± 0.1 dB; THD 0.01%; max output 10 V; IM 0.01%; sens for line level inputs 125 μ V. 19 x 2 x 8 in.; 7 lb. \$750



Hafler Iris with remote control

DENON

DAP-5500 Preamplifier

Preamplifier with 4x oversampling D/A converter. Digital section features 4 D/A push-pull Super Linear Converter system; separate digital and analog chassis; 3 digital inputs (one optical, 2 coaxial); coaxial digital tap-monitor loop; optical isolators; D/A converter output jacks. Audio section features Unity Gain Interface amplifier; Cannon-type input/output; 2 RCA line-in; 1 RCA line out; front-panel mounted RCA input/output jacks; two tape-monitor loops; source-direct switch; separate power supplies for digital and analog sections; nonresonant, vibration-resistant chassis. 5 1/4 x 17 1/8 x 15 in. \$1,500

PRA-1500 Preamplifier

Stereo preamplifier with MM and MC phono inputs. Features Unity Gain Interface amplifier. 2 tape-monitor loops; source-direct mode; balanced output connections; 2 video inputs; 1 video output; mono wideband and subwoofer outputs. Includes Denon Integral System remote control for full-system remote and remote power control for connected Denon power amps \$500

DISCRETE TECHNOLOGY

Pro-Reference Preamplifier

Solid-state preamplifier with high-current supply. Features aluminum rack-mountable enclosure; designed to be matched with one of 3 different amplifier modules; direct-coupled circuit; volume and power controls; switchable cartridge loading; switchable gain; Distech cable; modular construction; low impedance main outputs. With MC amplifier \$2,995

FORTÉ AUDIO

Model 2 Preamplifier

Dual-channel, non-inverting hybrid circuitry employs low-noise, matched integrated gain devices enhanced with discrete pure Class A bias-

ing, active constant-current sourcing, and imp buffering. Accepts direct input from high- and low- output MC and MM cartridges; 4 high-level sources and tape recorder. Record/monitor facilities for recorder allow listening to one source while recording another; internal selection of resistive and capacitive cartridge loading; selectable cartridge gain of +40, 50, 60 dB. External power supply in separate chassis; gold-plated signal connectors; glass-epoxy circuit boards. THD <0.02% at 3 V; noise <-100 dBA referenced to 1 V input; gain +20 dB; input imp 25,000 ohm; output imp 470 ohms. 19 x 1 3/4 x 7 in. \$990

HAFLER

Iris Preamplifier

Infrared remote integrated system with pure FET Class A design utilizing C-MOS switching and a passive cyber-optic volume/balance control. 5 high level inputs, two tape inputs; external-processor loop, and patented MM/MC phono stage; outputs: record 1, record 2, external-processor out. line; knob control remote. FR 20-20,000 Hz ± 0.1 dB; THD 0.005% line, 0.002% MM, 0.009% MC; S/N MM -87 dBA, MC -80 dBA, 94 dBA line; 17 x 3 x 8 1/2 in.; 9 lb. \$800
Without remote control \$650

HARMAN KARDON

Citation Twenty-Five Preamplifier

Preamplifier with remote control. Features passive equalization in open-loop mode; moving-coil head amp with resistance trim; moving-magnet capacitance trim. Inputs for CD, A/V1, A/V 2, tape 1, tape 2, VCR 1, VCR 2, and phono; high-cut filter; subsonic filter; switchable bass and treble turnover; tone defeat; mono switch; headphone jack. FR 0.25-250,000 Hz +0, -3 dB (aux at 0.5 V output); THD 0.002% (aux at 1 V output); slew rate 120 V/ μ sec; rise time 1.4 μ sec; S/N 91 dB (CD, video input); RIAA EQ (20-20,000 Hz) ± 0.2 dB; \$899

Citation Twenty-One Preamplifier

Preamplifier with fully discrete circuitry. Features low negative feedback; active/passive symmetrical RIAA EQ. Inputs for CD, CD-direct, video sound, tuner, phono, 2 tape decks; gold-plated jacks; mono switch; low-noise transistors; discrete MC head amp; subsonic filter (6-dB/octave, -3 dB at 15 Hz); phase-correct loudness (+10 dB at 50 Hz, +3 dB at 250 Hz); 10-dB bass and treble boost/cut; tone defeat. Max output 10 V \$629

HEATH

APW-2510 Preamplifier

Stereo preamplifier with dual RIAA equalization circuitry. Features MM/MC switch; subsonic and high cut filters; tape copy selector for dubbing between two tape decks or recording from another input; tone defeat; switchable bass and treble turnover frequencies; 6 inputs. Frequency response 0.1-180,000 Hz; THD 0.006%; signal-to-noise ratio 83 dB MM phono, 80 dB MC phono, 92 dB aux, 92 dB tape. 17 1/2 x 4 x 13 3/4 in.; 16 lb. \$399

HEYBROOK BY D'ASCANIO AUDIO

C-3 Preamplifier

Hand-assembled preamplifier features special circuitry for CD input to prevent overloading; aluminum chassis; rear-panel power switch. In-

puts for moving-magnet and moving-coil phono, tape, aux, CD player, tuner, and video. Frequency response 10-50,000 Hz ± 3 dB; MM phono sens 85 mV for 0.5-V output at 1,000 Hz; line-level sens 160 mV. 17 x 3 x 13 in. \$798

JRM

JRM Preamplifier

Stereo preamplifier with MM and MC phono inputs. Features all polypropylene capacitors; electromechanical devices gold-plated; 2-stage RIAA ± 0.1 dB conformity. Separate input select for main, record out; inputs for tuner, 2 tapes, aux; 18 dB infrasonic filter; 10 W/ch headphone amplifier. 10 V max output; S/N MM 87 dB, MC 76 dB; slew rate ± 20 V/ μ sec; THD 0.01%; FR 0-50,000 Hz -1 dB. 2 3/4 x 8 1/2 x 19 in. \$450

KENWOOD

Basic-C2 Preamplifier

Preamplifier with MM/MC phono and impedance selectors. Features phono EQ amplifier with single negative feedback loop; super-coupled volume control for low noise; 4-way filter system. 2-way tape dubbing with monitoring; source (rec out) tape selector; 2 aux/video inputs; loudness switch; mono/stereo switch; headphone jack with level control; LED indicators. FR 1-350,000 Hz +0, -3 dB; THD 0.001% at 1 V; S/N 110 dB (main), 94 dB (MM), 70 dB MC. 17 1/4 x 3 x 12 3/8 in.; 10 lb. \$329

KINERGETICS

KPA-2 Preamplifier

Line preamplifier with patented hysteresis distortion cancelling circuits. Features dual mono with 2 toroidal transformers; 1 processor loop; servo loop to eliminate DC offset; no capacitors in signal path. 7 audio inputs; 1 tape output; 1 positive and 1 inverted output. Slew rate 60 V/ μ sec; voltage gain 13 dB. 19 x 3 3/4 x 12 3/8 in.; 12 lb. \$895

KLYNE AUDIO ARTS

SK-5A Preamplifier

Full-function stereo preamplifier with control to invert absolute phase. Features balanced differential outputs. Inputs for tuner; CD/aux; tape; MM/MC phono. Output imp 600 ohms; input imp phono 0-47,000 ohms. 2 1/2 x 19 x 12 1/2 in.; 12 lb. \$3,250



Harman Kardon Citation Twenty-Five

LINN PRODUCTS

LK1 Preamplifier

Stereo microprocessor preamplifier with independently adjustable input-level matching. Features keyboard lockout; all switching and level adjustments electronic on board; remote control. Inputs for MM and MC phono; tape; tape 2; aux; tuner. 3 x 10 1/2 x 10 1/2 in.; 9 lb. \$1,050

LUXMAN

TP-117 Preamplifier/Tuner/Remote Controller
Dual preamps in one chassis provide source



AMPLIFIERS

selection and volume control for two sets of components. Features RF TV modulator; separate regulated power supply; AM/FM tuner with computerized tuning and 4-stage FM front end. 20 AM/FM station presets with auto-seek tuning; cable FM fine tuning (25 kHz steps); motor-driven volume controls with auto preset; multifunction remote control; pre-out/signal processor jacks; video switching with buffer amplifiers; CD-direct input. Amp section: FR 20-20,000 Hz ± 0.5 dB; THD 0.006%; S/N 86 dB (phono). 96 dB (CD/tape/video). FM section: 50-dB quieting sens 38 dBf (stereo); cap ratio 1.5 dB; alt-ch sel 68 dB. AM section: S/N 50 dB. 17 $\frac{1}{4}$ x 4 $\frac{3}{8}$ x 13 in.; 11.4 lb. \$1,250

LE-109 Phono Preamplifier

Features MC/MM inputs; variable gain and impedance switches; MC straight circuit; subsonic filter; 3-step attenuator selector. FR 20-20,000 Hz ± 0.3 dB; THD 0.005% (2 V at 1,000 Hz); S/N 100 dB. 17 $\frac{1}{4}$ x 2 $\frac{1}{2}$ x 12 $\frac{1}{4}$ in. \$500

MARK LEVINSON BY MADRIGAL No. 26 Preamplifier

High-gain preamplifier with matrix-style DC switching. Features relay hermetically sealed bifurcated contacts of silver with gold plating; 6-line level inputs; CD; tuner; aux-1; phono/aux-2; tapes 1 and 2; 2 tape inputs; non-buffered tape outputs; absolute phase of main outputs or stereo/mono operation selection on front panel; independently switchable gain for each channel; internal gain adjustment provided through PC mount switches for each channel providing gain of 6, 12, 18 at the unbalanced output or 12, 18, or 24 dB at the balanced output; custom-made Penny and Giles conductive plastic volume potentiometer; dual mono design with separate circuitry for each channel; two power supplies provide unregulated DC current for 2 audio channels, third power supply separately rectifies and filters power to relay control circuit; two toroidal transformers; Faraday shields reduce AC line coupled noise; 9 gold-plated contacts for connecting cable; pos, neg, and ground for each audio channel; 4 discrete, independent regulators; 3-pin Neutrik XLR connectors; all aluminum chassis. Output imp 40 ohms; line input imp 14,000 ohms; phono input imp MC 825 ohms, MM 47,000 ohms; line gain: single-ended 6/12/18 dB, balanced 12/18/24 dB; phono gain: MM 38/44 dB, MC 58/64 dB. 7 $\frac{3}{8}$ x 2 $\frac{3}{4}$ x 13 $\frac{1}{8}$ in.; 32 lb. \$4,995

McINTOSH

C-34V A/V Preamplifier

A/V control center with compander system for controlling sources' dynamic range. Features inputs for laser, tape 1-3, VCR 1 and 2, TV, tuner, and phono; 3 switched, 2 unswitched outlets in rear; provision for 2 sets of speakers; record and listen selectors; 5-band equalizer. Preamp section: FR 20-20,000 Hz ± 0.5 dB; THD <0.01%; S/N phono 90 dBA, high level 100 dB. Monitor amplifier section: 20 W/ch with 0.01% max total harmonic distortion; FR 20-20,000 Hz ± 0.5 dB; signal-to-noise ratio 100 dBA. 16 $\frac{1}{8}$ x 5 $\frac{1}{2}$ x 13 in.; 26 lb. \$2,195

C-35 A/V Preamplifier

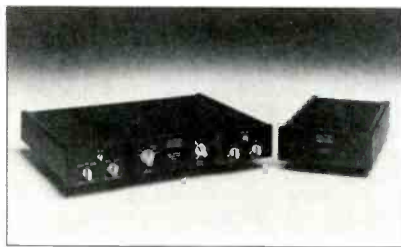
Features a pair of cascoded FET's to operate the inputs switching system; nine inputs for compact disc, laser disc, TV, tuner, phono, aux 1, aux 2, VCR/T1, VCR/T2; tape-monitor switches for two audio tape recorders; loudness control;

five-band equalizer; headphone jack. FR 20-20,000 Hz ± 0.5 dB; THD <0.007%; S/N phono 90 dB, high level 105 dB. 16 $\frac{1}{8}$ x 5 $\frac{1}{2}$ x 13 in.; 16 lb., 8 oz. \$1,995

MELOS AUDIO

CD-T/B Preamplifier

Preamplifier with Melos CD-T11/B CD player for systems using CD as the primary music source. Heavy aluminum chassis; toroidal transformer; Tiffany connectors; CD input, tuner, video aux, aux phono; tape monitor loop; 2 main outputs; remote. FR 20-20,000 ± 0.2 dB; THD 0.07%; S/N 90 dB. \$1,595



Mark Levinson No. 26 and power supply

MA-110 Preamplifier

Hybrid preamplifier with 1 processor loop. FR 2-300,000 Hz ± 1 dB; THD 0.07%; max output 22V. \$995

MERIDIAN

Model 201 Preamplifier

Features 6 inputs; tape-to-tape dubbing for 2 decks; full source monitoring capabilities; 64-step volume control; user-programmable mute level and volume offset between sources; MM/MC inputs. Can be externally controlled as a part of the Meridian Multiroom system. Includes remote control. 4 x 6 $\frac{1}{4}$ x 12 $\frac{1}{4}$ in.; 10 lb. ... \$1,090

Model 202 Multiroom Preamplifier.

As above, with 2 independent outputs for Meridian Multiroom systems. Each preamplifier can independently choose and distribute any of 6 inputs at its own volume. 4 x 6 $\frac{1}{4}$ x 12 $\frac{1}{4}$ in.; 11 lb. \$1,390

MOD SQUAD

Line Drive AGT Preamplifier

Passive system control center for line-level sources; advanced grounding topology (AGT) with star-center grounding throughout; non-ferrous, non-magnetic chassis. Five line-level inputs and two tape loops; two main outputs wired in parallel for bi-amplification; front panel input selector with mute position, volume and balance controls; switchable chassis shielding. FR DC-200,000 Hz ± 0.5 dB; THD 0.0001%; input imp 8200; output imp variable; ch sep 86 dB. 16 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x 10 $\frac{3}{4}$ in.; 3 lb. \$1,095

MOTIF BY CONRAD-JOHNSON

MC7 Preamplifier

Dual-mono all-FET preamp with remote power supply. Features precision-matched FET for ch-to-ch balance; exclusive use of polystyrene capacitors throughout audio circuits and power supply regulators. Inputs for MM/MC, tape, tuner. FR 5-100,000 Hz ± 0.5 dB; max output 10 V; THD 0.1%; IM 0.1% IHF; MM phono sens 0.35 mV for 0.5-V output at 1,000 Hz; MM phono input overload level 150 mV, sensitivity for line-

level inputs 50 mV; 3 $\frac{1}{2}$ x 19 x 12 in.; 15 lb. \$3,500

MC8 Preamplifier

Similar to MC7 except stereo with internal power supply. Inputs for MM/MC, tape; tape 2; CD player; tuner. FR 5-100,000 Hz ± 3 dB; THD 0.1%; MM phono sens 0.35 mV for 0.5-V output at 1,000 Hz; sens for line-level inputs 50 mV; MM phono input overload level 150 mV at 1,000 Hz. 3 $\frac{1}{2}$ x 19 x 12 in.; 15 lb. \$2,250

MC9 Stereo Preamplifier. Line-level only preamp. \$1,295

NAD

Monitor Series 1700 Preamplifier/Tuner

Features external processor loop. IF wide/narrow; 14 AM/FM random presets; motor-driven volume control; semi-parametric tone controls; bass EQ; 2-way tape dubbing. Stereo sep 50-dB; S/N >80 dB. Includes remote control. Rack mountable. \$799

Monitor Series 1300 Preamplifier

High-resolution phono preamp. Features MC preamp; external processor loop; infrasonic filter. Bass EQ; null switch; semi-parametric tone controls (bass switchable to 50, 100, 250 Hz, treble switchable to 3,000, 6,000, or 12,000 Hz; ± 12 dB boost/cut); 2-way tape dubbing. Max output 12V. Rack mountable. \$399

NAKAMICHI

CA-7A Preamplifier

Preamplifier with full-system wireless remote control of Nakamichi series 7 or 5 components. Features total isolation of digital and analog sections; isolated ground technology; acoustical fine-tuning system; motor-driven volume control; inputs for MM and MC phono, 2 tape, 2 aux, tuner, CD; 2 outputs; multi-room remote control with RS-7 remote sensor. Frequency response 1-100,000 Hz ± 0.5 dB; S/N >94 dBA; THD <0.002% at 20-20,000 Hz; 17 $\frac{1}{8}$ x 3 $\frac{3}{4}$ x 12 $\frac{1}{4}$ in.; 15 $\frac{1}{4}$ lb. \$2,595



Mod Squad Line Drive

CA-5AII Preamplifier

Features 5 high-level inputs; phono input; copies between 2 tape decks in either direction; recording deck monitors copying procedure; all inputs and 2-sets of output terminals are gold-plated; remote power connector optional (SPC-1 power strip); MM- or MC-cartridge phono input; output level; bass; balance; treble; low-noise FETs; bipolar transistors; multi-regulated isolated ground power supply; S/N >95 dBA; THD <0.002% at 20-20,000 Hz; FR 1-100,000 Hz ± 0.5 dB; 17 $\frac{1}{8}$ x 2 $\frac{1}{2}$ x 11 $\frac{1}{4}$ in.; 11 $\frac{1}{4}$ lb. \$1,095

NIKKO AUDIO

Beta 600 Preamplifier

Stereo preamplifier with two-band parametric equalizer with variable level, variable bandwidth, and selectable frequency turnover controls. Features CD direct circuit isolated from

AMPLIFIERS

other analog circuitry; 2-output terminals; gold-plated pin jacks; 2 record-out selectors; mechanical switches; MM/MC selector. THD 0.002%; S/N 100 dB; channel sep Hz 76 dB at 1,000 Hz; FR 5-100,000 Hz +0 dB, -1 dB. 19-in rack mountable with black diecast aluminum front plates. \$600
Beta 400 Preamplifier. As above with FR 5-100,000 +0 dB, -2 dB. \$440

ONKYO

Grand Integra P-308 Preamplifier

Preamp with independent, magnetically-shielded power supplies for each amplification block. Features short signal-path routing; subsonic feedback loop to cancel DC components; signal in-phase filters to reduce common-mode noise. Defeatable tone controls; switchable Contra-Bass control; high-cut sloping filter position on treble control; 8 inputs including MM/MC phono jacks and 2 front-panel jacks for portable components; dual record-output selector. FR 0.8-170,000 Hz +0, -3 dB; THD 0.0005% (CD); S/N 101 dB (CD). Wood side panels included. 18 1/4 x 4 x 15 7/8 in; 19 lb \$660

Integra P-304 Preamplifier

Preamp with independent, magnetically-shielded power supplies for each amplification block. Features Delta power supply with Real-Phase transformer. Dual record-output selector; adjustable phono gain and load imp; 8 inputs including MM/MC phono jacks. FR 0.8-170,000 Hz +0, -3 dB; THD 0.0005% (tuner, CD); S/N 92 dB (MM). 18 1/4 x 4 x 15 7/8 in; 17 lb \$530

PARASOUND

P/FET-900 Class A Preamplifier

FET Class A preamplifier. Features FET discrete transistors; electronic logic switching; polypropylene capacitors; regulated power supply; gold-plated jacks; muting relay; variable loudness contour; 10-amp power switch; 3 AC outlets; mono switch; 2-tape monitors; 2-direction dubbing; separate CD. video inputs; FR 10-80,000 Hz ± 0.5 dB; THD < .005%; IM < 0.005%; S/N 95 dB high, 80 dB phono; 17 1/4 x 2 1/2 x 9 1/2 in \$395

PIONEER

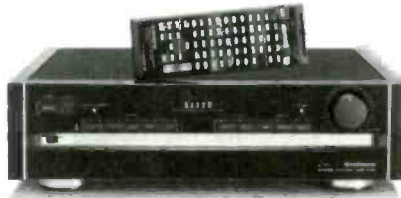
Elite C-91 A/V Preamplifier

Features wireless learning remote control; motorized rotary volume control; 5 audio inputs; 3 video input/outputs, 2 video inputs; 3 different power supplies for audio (left and right), and one video channel; copper-plated chassis; 2 video outputs; recording selector/tape-dubbing switch; subsonic and high/low filters; loudness, muting, and tone controls; video enhancer (detail, sharpness, and noise reduction). Includes S-connector. 18 x 5 1/4 x 16 in \$1,300

PROTON

AP-1000 Preamplifier

Stereo preamplifier with separate record and listen selectors. Features bass, presence, and treble controls with bypass circuitry; dual-mono construction with separate power supplies for both channels; two discrete preamplifiers; phono preamp section with FET's; selectable input capacitance for MM cartridges; multiple gain levels for MC cartridges; bass EQ switch; inputs for phono, tuner, CD, video, tape 1, tape 2; headphone jack. FR 20-20,000 Hz ± 2 dB; THD



Pioneer Elite C-91

0.003%; IMD 0.003%; video S/N 103 dB; tape play S/N 103 dB; MM phono S/N 91 dB; MC phono S/N 70 dB. 16 1/2 x 3 1/4 x 13 1/2 in \$399

1100 Preamplifier

Stereo preamplifier with separate MC phono input; built-in headphone amp; bass EQ switch; listen/record selector. High-level pre-out 18 V; FR 20-20,000 ± 2 dB; THD 0.003% (20-20,000 Hz, 2 V output). 16 1/2 x 2 1/2 x 13 in \$259

PS AUDIO

5.5 Preamplifier

Full-function preamplifier with all MOSFET circuitry. Features dual-mono power regulation; extra-large transformer; MM and MC phono sections; 5 gain selections for phono cartridge; cartridge loading; high-level bypass; remote power supply. THD < 0.01%; IMD < 0.01%; MM noise -82 dB; MC noise -78 dB. 19 x 2 1/4 x 12 1/2 in; 15 lb \$1,195

4.6 Preamplifier

Full-function preamplifier with MM and MC phono sections. Features 5 gain selections for phono cartridge; cartridge loading; high-level bypass; remote power supply. THD < 0.01%; IM < 0.01%; MM noise -82 dB; MC noise -78 dB. 19 x 2 1/4 x 8 1/2 in; 15 lb \$699

QUAD

Quad 44 Control Unit

Preamp/control system with lift/step bass control to boost low-frequency output of small speakers, attenuate bass output when operating as filter to give 5 dB drop at 2 frequencies; ± 2 dB tilt control that shifts tonal balance; variable filter slope control at 5,000, 7,000, 100,000 Hz; all tone controls have defeat positions; balance/mono switch; radio, aux, disc, tape 1, tape 2 input selectors with optional microphone or MC phono inputs available. Input sens/imp 1 mV at 35 mV in/47,000 ohms phono, 100 mV at 5 V in/39,000 ohms tape, 1,000,000 ohms radio and aux; FR 30-20,000 Hz ± 0.5 dB phono RIAA, 30-20,000 Hz -0, +1 dB; high-level distortion 0.02%; residual noise -104 dBA; 8 x 2 1/2 x 5 1/8 in \$995

Quad 34 Control Unit

Preamp control unit with tilt control; bass control; inputs for disc, tape, tuner, aux; 3 push-button filters; bass lift and step. Distortion worst case any input 0.5%. Residual noise A-vid volume control at minimum -105 dB; FR ± 0.3 dB any input except phono, FR phono RIAA ± 0.5 dB. \$795

QUICKSILVER AUDIO

Preamplifier

Preamplifier with on/off power switch. Bandwidth 1-650,000 Hz; max input 30 V rms from 20-20,000 Hz; max output 65 V rms from 20-20,000 Hz. 3 year warranty on parts and labor. 17 x 10 x 4 1/2 in; 21 lb \$1,495

REVOX

B252 Preamplifier

Microprocessor-controlled preamp with input sensitivities programmable into nonvolatile memory and infrared remote control. Inputs for MM phono; MC phono; tuner; tape; tape 2; aux; phono 2; CD player; external equalizer. FR 20-20,000 Hz +0, -0.2 dB; THD < 0.01%; S/N 96 dB (line input), 75 dB (phono input); MM phono sens 1.6-23 mV for 5-mV output; sens for line-level inputs 160 mV to 2.3 V. 17 3/4 x 6 x 13 in; 15 lb, 7 oz. \$1,750

ROTEL

RTC850 Tuner/Preamplifier

Tuner preamplifier with dual gate MOSFETS in tuner front end. Features 16 AM/FM station presets; direct signal paths; inputs for MM/MC, CD, tape, and video; full function remote; motorized volume control. Tuner section: 50-dB quieting sens, mono 14.8 dBf, stereo 37.2 dBf; AM rej 58 dB; cap ratio 1.0 dB; S/N 75 dB stereo, 80 dB mono; alt-ch sel 70 dB. Preamplifier section: FR 20-20,000 Hz ± 0.2 dB; total harmonic distortion < 0.004%; signal-to-noise ratio 100 dB. 17 1/2 x 3 3/8 x 13 1/8 in; 12 lb \$499

JEFF ROWLAND DESIGN GROUP

Coherece One Series II Preamplifier

Solid-state FET preamp with companion regulated power supply. Accepts all MM and MC cartridges directly. Direct-coupled design from input to output. Split-passive RIAA EQ. Provides inputs for 1 phono and 3 high-level inputs. Tape-rec outputs selectable from any input. Features phase reversal and full muting from front panel; separate R/L-ch balance controls; master volume; balanced outputs standard; outputs mute on power up or error. THD+noise < 0.04% at 1,000 Hz. Line stage: gain 20 dB; FR 0.2-500,000 Hz -3 dB; THD+noise < 0.015% at 1 kHz \$4,600

SAE

P102 Preamplifier

Computer direct-line preamplifier with 3 digital tone memories, electronic volume and balance controls. Features sequential audio muting for cross-fading between input sources. Inputs for MM phono, MC phono, tape, tape 2, aux, phono 2, CD player, tuner, external processor. FR 20-20,000 Hz ± 0.5 dB; THD 0.025%; IM 0.025% IHF; max output 7.5 V; MM phono sens 160 mV for 0.5-V output at 1,000 Hz; MM phono input overload level 240 mV \$449

SANSUI

C-1000 Preamplifier

Preamplifier with full-function remote. Features multiple audio inputs; 2 video inputs; motor-driven volume control; delay-line video enhancer; monitor output; keyboard instrument input; variable loudness; mute. Preamp output 1,000 mV/1.5 kilohms; FR 10-100,000 Hz. 17 x 3 3/8 x 9 1/8 in; 7.1 lb \$190

SHERWOOD

AP-7020 Preamplifier

Features discrete pure complementary flat amplifier; switchable MM/MC phono gain amplifier; active high and subsonic filter. Loudness switch; crossover frequency for subwoofer; gold-plated phono jacks; switchable tone control

AMPLIFIERS

turn-over frequency; direct switch (tone bypass); rec-out selector switch; 2 sets of pre-amp output jack; external processor in/out jack; muting switch; balanced in/out; 3 tape and processor loops; 2 tone controls. FR 20-150,000 Hz $\pm 0.5/-3$ dB; THD 0.005%; S/N 80 dB (MM), 75 dB (MC) 17 $\frac{1}{2}$ x 4 $\frac{1}{2}$ x 11 in. \$359

SONOGRAPHE BY CONRAD-JOHNSON SCI FET Preamplifier

All-FET preamplifier with matched-FET polypropylene and polystyrene capacitors for all audio circuits; discrete power-supply regulation; inputs for phono, tuner, CD, video, tape 1 and 2. FR 5-100,000 Hz ± 0.5 dB; max output 10 V; THD 0.1%; IM 0.1%; phono overload 150 mV; 3.5 x 18 x 12 in. \$649

SONY TA-E77ESD Preamplifier

Preamplifier with built-in D/A section featuring 4x-oversampling filter and dual D/A converters. Features 91-key programmable remote control; full A/V switching capability; S-video and composite video terminals; source direct switch; passive tone control; independent record/out selector; adaptor terminals; phono input selection. Intermodulation distortion 0.001%; THD 0.001%; separation >90 dB; FR 5-20,000 Hz ± 0.5 dB. \$1,000

SOUNDCRAFTSMEN DX 4200 Preamplifier/Equalizer

Combination preamp/equalizer with digital audio and video inputs. Features in/out balancing to 0.1 dB; phono preamp has variable cartridge loading (50-800 pF, 100/47,000 ohm) adjustable ± 20 dB gain moving coil or moving magnet cartridge inputs; 3-way tape dubbing; 2 external signal-processor loops; conventional line outputs plus separate autobridge line outputs for auto mono bridging of most amps; EQ signal-to-noise ration 114 dB; passive-coil filters with 15 dB boost or cut for each octave; differential/comparator circuitry for true 0.1 dB unity-gain equalizer balancing; 19-in rack-mount front panel; includes frequency spectrum analyzer test record and instant reset Computone charts. 9 x 5 $\frac{1}{4}$ x 11 in. \$749

Pro-Control Four Preamplifier

Digital C-MOS. Features five tape monitors for audio or video tape, CD, tuner, and phono inputs. Two signal processor loops, subsonic filter, and direct mode to bypass all processing. Headphone jack, auto-bridge circuit to triple amplifier output. Frequency response 20-20,000 Hz ± 0.1 dB; total harmonic distortion <0.005%; signal-to-noise ratio: phono 97 dB, high-level 116 dB. Rack mount front panel. 19 x 3 $\frac{1}{2}$ x 10 $\frac{1}{2}$ in. \$699

Pro-PT Two Preamplifier/Tuner

Combination tuner/preamplifier features C-MOS digital switching for phono, CD, tuner, video/audio, two tape monitors with dubbing; variable loudness control; high and low filters. FR 10-80,000 Hz ± 0.5 dB; THD <0.005%; S/N 95 dB high, 80 dB phono. Tuner section: FM sens 10.3 dBf; cap ratio 1.2 dB. \$449

SOUNDSTREAM C-1 A/V Preamplifier

System 1 component; dual mono Class A cir-

cuitry features discrete component signal path; each remote-controlled component has a separate power supply for audio and switching circuits to minimize noise in the audio signal; unique digital switching circuitry links Soundstream products. Audio/video dubbing: disc-to-tape or tape-to-tape; separate record and listen circuitry permits simultaneous recording and listening or viewing; audio connections include phono/aux, tape 1, tape 2, CD, tuner; audio/video functions include VCR 1, VCR 2, video-disc, TV (output only); optional accessories: plug-in dual mono phono preamp cards, remote-controlled AC power strip, and infrared remote; includes R-1 remote control: Controls all functions of the C-1, T-1, and DA-1, or control 11 separate components, 8K byte memory directs operation of all components, 6 additional unassigned user-selectable functions. Frequency response 20-20,000 Hz ± 0.1 dB; total harmonic distortion <0.05%; signal-to-noise ratio >100 dBA; input impedance 30,000 ohms; input sensitivity <100mV for 0.5V out. 17 x 3 $\frac{3}{8}$ x 11 $\frac{1}{2}$ in; 15 lb. \$1,495



Sumo Athena

SUMIKO YBA3 Preamplifier

Preamplifier with moving magnet phono input and optional moving coil input. FR 5-400,000 Hz ± 0.2 dB; THD 0.05%; S/N 83 dB. . . . \$1,800

SUMO Athena Preamplifier

Stereo preamp with built-in moving-coil head amp. Features discrete circuitry utilizing 1% metal-film resistors and metalized polypropylene capacitors; gold-plated input/output jacks; separate record/mode select functions; linear-phase subsonic filter; high-level bypass; laser-trimmed volume control. FR 20-20,000 Hz ± 0.1 dB; THD/intermodulation distortion <0.01% below 18 V output; S/N (moving coil) 80 dBA, (moving magnet) 85 dBA, high-level 100 dB. 19 x 1 $\frac{3}{4}$ x 8 $\frac{3}{4}$ in. \$729

SUPERPHON Revelation II Preamplifier

MOSFET preamp with J-FET phono, MOSFET current sourcing. Voltage regulated through 10 shunt regulators, adjustable bias setting for output stage. Input for 1 phono, 4 high-level inputs plus 2 complete tape loops; full muting from panel with automatic muting for line surge/drop protection. Frequency response 2-175,000 Hz; THD >0.5 at 3 V rms; signal-to-noise ratio 95 dB (line), 77 dB (phono); max output 5 V rms; 150 mV MM phono overload; MM phono input imp 47,000 ohms; phono gain 37 dB; line gain 20 dB. \$799

TECHNICS SU-A200 A/V Preamplifier

Features Class AA circuitry; active servo power supply; inputs for MM/MC phono, tape 1 and tape 2/VCR, aux; phono 2, CD player, tuner, and

video (AV 1). Switches video signals from A/V inputs as well as audio signals from 8 inputs with video output for monitor. FR 0.5-180,000 Hz $\pm 0/-3$ dB. 17 x 5 x 14 $\frac{1}{4}$ in; 20 lb. . . \$1,200

SU-A6MK2 Preamplifier

Stereo DC preamplifier with infrasonic filter. Features shelving tone controls; selectable turn-over frequencies; audio muting; inputs for MM/MC phono, tape 3, tape 2, aux 2, phono 2, CD player, tuner, computer, VCR, DAT recorder, TV. Max output 8 V. 17 x 3 $\frac{3}{8}$ x 14 $\frac{1}{4}$ in. . . \$800

THRESHOLD Model FET ten/hl Preamplifier

Dual-ch, high-level noninverting field-effect transistor 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 e series power supply in separate chassis. Input J-FETs operated in parallel, doubling transconductance and lowering noise and distortion. Secondary gain stages use cascoded MOSFETs to suppress voltage fluctuations, allowing low distortion even when driving loads less than 500 ohms. 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. Bandwidth response 1.5 Hz and 125,000 Hz at -3 dB points; THD 0.01% at 3 V rms from 20-20,000 Hz into 1,000-ohm load; crosstalk no greater than -75 dB at 20,000 Hz with 1,000-ohm source; noise no greater than -110 dBA referenced to 1 V input; input imp 25,000 ohms, nominal; output imp 100 ohms. Controls for program source selector; record signal routing; monitor signal selection; mode; balance; audio level. 19 x 1 $\frac{3}{4}$ x 6 $\frac{1}{2}$ in. \$2,500

YAMAHA CX-10000 Preamplifier

Digital preamplifier with hi-bit 4-times oversampling digital filter and digital-to-analog converter. Features digital direct input/output; integrated surround-sound processor; parametric equalizer; 16 memory presets combining surround-sound processor and/or parametric equalizer. Includes wireless remote control; Titanium finish with high luster walnut side panels. 65 lb. \$7,500

CX-1000U Preamplifier

Digital preamplifier with built-in 18-bit, 8-times-oversampling digital filter and hi-bit twin digital-to-analog converters. Features 4 digital (coaxial and optical) audio inputs and 4 video inputs; continuously variable loudness control; 5 audio rec outputs and 2 video rec outputs; 12-position rec out selector; provisions for simultaneous A/V recording on two VCR's; 1 optical, 2 coaxial digital audio rec outputs; auto sampling-frequency switching; 6-position moving-magnet or moving-coil phono cartridge load selector; source-direct switch; audio mute. Includes RS integrated system remote control. Black; 28 lb. \$1,199

CX-800U Preamplifier

Preamplifier with 8 audio and 3 video inputs. Features 4 audio and 2 video rec outputs; 9-position rec out selector; provision for simultaneous A/V recording on two VCR's; source-direct switch; phase invert switch; continuously vari-

AMPLIFIERS

able loudness control; 6-position moving-magnet and moving-coil cartridge load selector; bass and treble controls; subsonic filter. Includes RS integrated system remote control. Black; 15 lb. \$699

AVC-70Ti Preamplifier

A/V preamplifier with 4-mode digital surround including Dolby Surround. Features 4-position digital delay (15, 20, 25, 30 ms); 10 audio and 5 video inputs; 2 S-VHS inputs and 2 outputs; video monitor outputs; A/V inputs for camcorder; 2 sets of front channel outputs and 1 set of rear channel outputs; bass, midrange, treble, and balance controls; bass extension; separate rear channels volume control; 10 position rec out selector; motorized master volume control; Includes learning-capable 37-key multi-function remote control and RS integrated system remote control. Titanium finish; 13 lb. \$529
AVC-70. As above, black \$529

INTEGRATED AMPLIFIERS

ACCUPHASE BY MADRIGAL

E-205 80-W/ch Integrated Amplifier

Parallel push-pull output stage driven by MOSFET devices; direct-coupled circuitry with DC servo; high-gain equalizer; MC input imp selector; 9 inputs; turnover selector switch; tape monitor and dubbing switches; subsonic filter; outputs for 2 pairs of speakers; mono switch. Inputs for MM phono; MC phono; tape; tape 2; CD player; tuner; 3 line-level inputs. Champagne-gold or black-anodized finish. 80 W/ch into 8 ohms, 100 W/ch into 4 ohms. 17½ x 5¾ x 14½ in; 30 lb, 12 oz. \$2,275

ARCAM

Delta 90-2 70-W/ch Integrated Amplifier

Features toroidal power transformer. Aluminum casing; MM/MC, CD, tuner, 2 tape rec inputs; independent listen and rec controls; mono switch; headphone input. 70 W/ch into 8 ohms; THD 0.02% at 1,000 Hz. 17 x 11¾ x 3½ in; 18 lb. Black. \$750

AUDIO BY VAN ALSTINE

CA-150 Plus 75-W/ch Integrated Amplifier

Stereo integrated amplifier with Van Alstine FET Three Plus hybrid preamplifier circuitry. Features 240D full complementary power MOSFET amp circuits driven from high-current toroidal power transformer; 2-stage power supply with isolated regulated preamp sections. Volume/balance controls; phono, CD, and tuner inputs; dual tape-to-tape monitoring and dubbing capability; drives two pairs of speakers simultaneously or separately; headphone jack. 75 W/ch into 8 ohms; THD <0.01%. 13½ x 12½ x 4½ in; 15 lb. \$795

AUDIO DESIGN ASSOCIATES

MRA-808 40-W/ch Amplifier

Contains 8 integrated amplifier modules. Features each module with digitally controlled volume, bass and treble. 40 W/ch cont from 20-20,000 Hz into 8 ohms with no more than 0.03% THD; 60 W/ch into 4 ohms; slew rate 10 V/µsec; IM 0.02%. 19 x 12½ x 14½ in; 50 lb. \$8,295

AUDIO DYNAMICS

CA-2000E 100-W/ch Integrated Amplifier

Features CD-direct switch; infrasonic filter; CD, tuner, AUX, and 2 tape inputs; two phono preamps; separate low-noise Class A moving-coil preamp; dubbing capability; separate power-supply regulators; CD and phono jacks are gold-plated; wireless universal remote control for Audio Dynamics products. Frequency response 20-20,000 Hz, ±0.5 dB; signal-to-noise ratio MM phono 76 dB, line 83 dB; THD <0.1%; ch sep 65 dB at 1,000 Hz; damping factor 100 at 50 Hz; slew rate 50 V/µsec. 17 x 4 x 14¾ in; 22 lb. \$799

CAMBRIDGE AUDIO

P70 60W/ch Integrated Amplifier

Stereo amplifier with tone controls and direct/tone switch \$699

CREEK AUDIO BY MUSIC HALL

5050 80-W/ch Integrated Amplifier

80 W/ch. Multifunction amplifier with inputs for MM and MC phono, video, CD, tuner, 2 tape-to-tape in and outs. Features preamplifier out/preamplifier in; tape monitor; tape-to-tape dubbing; active/passive tone controls, 4-speaker switching (A, A and B, B). Amp also bridgeable to mono unit to provide 2 mono amps, 200 W/mono amp \$995

DENON

AVC-2000 75-W/ch Integrated Amplifier

Features Dolby Pro Logic decoder with 5 amplifier channels (stereo front and rear, mono center channel); line-level preamplifier outputs; hall and stadium ambience-enhancement effects; sharpness/detail video enhancement; adjustable rear-channel delay time (15-30 msec); 17 audio inputs for phono (MM), CD, tuner, aux, 3 audio tape decks, 3 VCR's; 2 VDP's; TV. Includes learning remote which controls other audio components. 75 W/ch into 2 ohms (front), 20 W/ch into 2 ohms (rear), 20 W/ch into 1 ohm (center); FR 20-20,000 Hz +0, -1 dB; THD 0.009% at 1,000 Hz; S/N CD 83.2 dBA, phono 75.5 dBA; sens CD 18.5 mV, phono 0.35 mV. 17½ x 6¼ x 15¾ in \$1,000



Audio Dynamics CA-2000E

PMA-1520 130-W/ch Integrated Amplifier

Optical Class A integrated amplifier with 4 push-pull super linear D/A converters and 4x-oversampling digital filter. Features pure-current power supply; compatibility with low-impedance speakers; digital multi-interface decoder. 7 sets of audio inputs; CD-direct switch provides shortest CD signal path. 130 W/ch into 8 ohms; FR 20-20,000 Hz; THD 0.005%; S/N aux 107 dB, MM 95 dB, MC 77 dB. 17½ x 6¼ x 15¾ in \$1,000
PMA-920. Similar to PMA-1520, 115 W/ch. No CD-direct switch or D/A converters \$600
PMA-720. Similar to PMA-920, 90 W/ch \$450
PMA-520. Similar to PMA-720, 70 W/ch \$350

DUAL

PA5060 60-W/ch Integrated Amplifier

60-W/ch integrated amplifier with high-current output capability and MC phono input. Black \$400



Creek Audio Model 5050

HARMAN KARDON

HE5900 170-W/ch Integrated Amplifier

High-voltage/high-current integrated amplifier with discrete components in signal path. Features electronic front-panel function switches that control analog switches at rear inputs to create short signal paths; selectable power-supply voltage; interactive A/V switching; active/passive phono section; MM/MC phono inputs; 2-way tape copy; 2 VCR/tape monitors; rec out selector; tone defeat; mono switch; subsonic and high-cut filters; separate preamp-out/main-in jacks. 170 W/ch from 20-20,000 Hz into 4/8 ohms with <0.08% THD; S/N 80/76 dB (MM/MC); slew rate 280 V/µsec; damping factor 70; negative feedback 12 dB; high-current capability ±90 amperes \$1,299
HE6800. Same as above except 120 W/ch. High-current capability ±70 amperes ... \$949

HE6600 90-W/ch Integrated Amplifier

High-voltage/high-current integrated amplifier with discrete components in signal path. Features selectable power-supply voltage; active/passive phono section; MM/MC phono inputs; 2-way tape copy; rec out selector; tone defeat; mono switch; subsonic and high-cut filters; separate preamp-out/main-in jacks. 90 W/ch from 20-20,000 Hz into 4/8 ohms with <0.08% THD; S/N 80/76 dB (MM/MC); slew rate 180 V/µsec; damping factor 65; negative feedback 12 dB; high-current capability ±50 amperes. \$699

JVC

AZX911BK 100-W/ch Integrated Amplifier

Digital stereo amp with Pure-A circuitry for Class-A operation. Features D/A converter with 4x-oversampling filter; separate layout for digital and analog circuits; gold-plated terminals; 3 digital connections: 1 optical, 1 coaxial, 1 input/output for DAT; high-gain phono EQ for MM/MC cartridges; bass-response control; wireless remote. 100 W/ch into 8 ohms from 20-20,000 Hz with <0.003% THD \$1,100

KENWOOD

KA-V7000 105-W/ch Integrated Amplifier

Features Dolby Pro-Logic, Theater, Stadium, and Synthetic Surround effects. Dolby Pro-Logic has normal/wide/phantom modes, test tone, center channel, subwoofer and rear preouts; Voltage Interface Gate (VIG); digital input; adjustable delay; 3 surround-sound memory presets; video dubbing; 6 video and 6 audio inputs; programmable remote control; S-VHS inputs and outputs; built-in visual enhancer with 3 memory presets; on-screen display capability. 105 W/ch min rms into 8 ohms (front), 20 W/ch (rear); FR 20-20,000 Hz; THD 0.05%; S/N 100 dB; IM 0.01% \$999

LINN PRODUCTS

Intek 50-W/ch Integrated Amplifier
Amplifier with MM and MC phono inputs. Features separate play and record paths; switchable speaker outputs; power amplifier driven headphone output. 50 W/ch into 8 ohms . . . \$995

LUXMAN

LV-117 110-W/ch Integrated Amplifier
Digital-direct integrated amplifier with dual 16-bit D/A converters and 4x-oversampling filter. Features low-impedance drive capability; 3 differential FET input and predriver stages per channel; dual-paralleled power transistor output stages; Duo-Beta dual feedback-loop to widen bandwidth and improve transient response; STAR circuit topology to reduce noise and distortion. Line-straight switch for all source inputs; video switching, signal processor/pre-out jacks; optical and coaxial digital inputs. 110-W/ch cont avg from 20-20,000 Hz into 8 ohms; dynamic output 300-W/ch into 2 ohms. 250-W/ch into 4 ohms; 160-W/ch into 8 ohms; THD 0.05%; S/N 97 dB (line-straight); IM 0.02%; slew rate 12 V/ μ sec; damping factor 50 (50 Hz, 8 ohms) . . . \$1,200

LV-112 55-W/ch Integrated Amplifier

Integrated amplifier with discrete driver/power-amp stages and bipolar output devices. Features low-impedance drive capability; high-energy power supply; Duo-Beta dual feedback-loop to widen bandwidth and improve transient response; STAR circuit topology to reduce noise and distortion. Line-straight, subsonic filter switches; 6 inputs including front-panel aux-input; DAT/tape select/dubbing. DAT/tape monitor, loudness compensation buttons. 55-W/ch cont avg from 20-20,000 Hz into 8 ohms; dynamic output 150-W/ch into 2 ohms, 120-W/ch into 4 ohms; 80-W/ch into 8 ohms; THD 0.05%; S/N 84 dB (MM phono), 95 dB (other analog inputs); IM 0.02%; slew rate 20 V/ μ sec; damping factor 30 (50 Hz, 8 ohms). . . . \$550

MARANTZ

PM-94G 100-W/ch Integrated Amplifier
100-W/ch integrated amp features Quarter-A design; AVSS (Automatic Voltage Supply Shift); matched complementary MOSFET output devices; CD/phono direct switch; tone-defeat switch; ceramic damped capacitors; copper-plated chassis; separate monitor/dubbing selectors for 2 tape decks plus VCR; built-in MC step-up transformer; switches for mono mode, subsonic filter, muting, speakers on/off; THD 0.015%; black with rosewood side panels. . . . \$1,360



NAD Monitor Series 3400

PM-74DBL 105-W/ch Integrated Amplifier

105 W/ch black integrated amp features Quarter-A design; AVSS (Automatic Voltage Supply Shift); CD/phono direct switch; tone defeat switch; ceramic damped capacitors; copper-plated chassis; separate monitor/dubbing selectors for 2 tape decks; tone defeat; switches for mono mode, subsonic filter, muting, speakers on/off; IM 0.03%; total harmonic distortion 0.03%. 8 1/2 x 19 1/2 x 16 1/2 in; 23.1 lb . . . \$699

McINTOSH

MA-6200 75-W/ch Integrated Amplifier
Features 100 W/ch into 4 ohms. 42 lb. . \$1,795

MISSION ELECTRONICS

Cyrus II 60-W/ch Integrated Amplifier
Stereo amplifier with high peak current delivery. Features nonmagnetic, precision-fabricated die-cast alloy case and chassis; metal-film resistors; polypropylene capacitors; polystyrene capacitors; separate listen and record selectors; inputs for CD, tuner, hi-fi, video, tape recorder, and MM and MC phono cartridges; direct-connected, front-panel-mounted headphone socket without loudspeaker switching; drives any loudspeaker load; fully compatible. 60 W/ch; FR 20-20,000 Hz; THD 0.003% at 1,000 Hz into 8 ohms; S/N 83 dB; slew rate 10 V/ μ sec; damping factor 100. Available in matte black and nextel gray. 8 1/2 x 3 x 13 1/2 in; 11 lb . . . \$799

Cyrus PSX External Power Supply. Optional power supply for Cyrus II integrated amplifier. Features VA custom toroidal transformer; 4 x 15,000 μ F Cyrus Slii-foil capacitors; electrically-transparent, die-cast magnesium chassis. Available in matte black and nextel gray. 8 1/2 x 3 x 13 1/2 in; 19 lb . . . \$699

NAD

Monitor Series 3400 100-W/ch Integrated Amplifier

Bridgeable stereo amplifier with power envelope circuitry. Features soft clipping circuitry. Preamp out/main in; semi-parametric tone controls; bass equalizer. Includes full-function remote control. 100 watts/channel rms; +5.7 dB dynamic headroom. Rack mountable . . . \$799

3240PE 40-W/ch Integrated Amplifier

Features power envelope circuitry; soft clipping circuitry; high current. Bass EQ; speaker impedance selector. 40 W/ch rms; +6 dB dynamic headroom . . . \$399

NEC

AVA-505 222-W/ch Integrated Amplifier
Integrated amplifier designed for dynamic surround-sound and Dolby Pro-Logic. Features 3- or 5-channel amplification; high dynamic power (222 W total); all IC construction; separate volume controls for front, surround, and center; built-in speaker protection relay. 5-channel amplification: 30 W x 4 and 60 W x 1 (center). 3-channel BTL-mode amplification: 60 W x 3; 0.03% THD; S/N 90 dB. 17 x 4 1/4 x 13 1/2 in; 20 lb, 5 oz . . . \$449

NIKKO AUDIO

IA-600 120-W/ch Integrated Amplifier
Integrated amplifier that permits any source to be routed to all 4 outputs and allow the listening to one source while recording from another. Features Class AB circuitry; gold-plated input jacks; anoxic copper coils; magnetic flux ring; RCA connectors for pre-out and main-in; subsonic filter; inputs for CD, tuner, MM or MC phono, aux, tape 1 and 2, video 1 and 2, signal processor, CD direct. 20-dB muting; stereo/mono switch; bass, treble and balance knobs are back lit. 1.76 dB headroom; 5-60,000 Hz power bandwidth; THD .003%; S/N 94 dB; FR 5-100,000, Hz +0, -1.5 dB. . . . \$660

IA-400. Similar to IA-600 but 80 W/ch into 8 ohms; power bandwidth 10-70 kHz . . . \$530



Onkyo A-8700

ONKYO

A-8800 100-W/ch Integrated Amplifier
Integrated amplifier with dual 18-bit linear D/A converters, 4x oversampling digital filter. Features oversized power-supply block to drive low-impedance loads; proprietary Opto-Drive D/A converters and current converter in differential amp stage; discrete output section; high-speed switching power supply with split chemical-capacitors. Optical and coaxial digital inputs; 10 inputs; pre-out/main-in terminals. 100 W/ch min rms into 8 ohms; FR 20-20,000 Hz; THD 0.008%; S/N 107 dB (CD); IM 0.005%; damping factor 100; dynamic power 310 W/ch into 2 ohms. 17 1/8 x 6 1/2 x 15 1/2 in; 32 lb. . \$850

A-8700 105-W/ch Integrated Amplifier

Integrated amplifier with Anti-Electromagnetic Interference (AEI) transformer. Features low-impedance discrete outputs; switching power supply with tri-terminal regulators; proprietary Opto-Drive current converter in differential amp stage; shielded four-block design; Super Servo power and equalizer stages. Source-direct mode to bypass preamp section; MM/MC inputs; switchable subsonic filter. 105 W/ch min rms into 8 ohms; FR 20-20,000 Hz; THD 0.008%; S/N 107 dB (CD); IM 0.005%; damping factor 150; dynamic power 305 W/ch into 2 ohms. 17 1/8 x 6 1/8 x 15 3/8 in; 29.7 lb . . . \$530

A-RV400 100-W/ch Integrated Amplifier

Integrated A/V amplifier featuring discrete output circuitry and switching power supply. Selective Tone Control with 50-Hz boost; 3 video inputs; source-direct mode to bypass preamp section; simulated-stereo switch for video soundtracks; FL panel display. 100 W/ch min rms into 8 ohms; FR 20-20,000 Hz; THD 0.08%; S/N 102 dB (CD); IM 0.08%; damping factor 40; dynamic power 190-W/ch into 4 ohms. 17 1/8 x 5 5/8 x 11 1/4 in; 20 lb . . . \$400

PARASOUND

C/HD650 65-W/ch Integrated Amplifier
High-current-discrete control amplifier. Features variable loudness contour; bass, treble turnover selectors; C-MOS switching for input, record out; 2 tape monitors; tone defeat; preamp output jacks; speaker A.B selector. FR 20-40,000 Hz; THD <0.1%; IM <0.1%; S/N 90 dB; dynamic headroom 1.5 dB; damping factor >120; phono overload 200 mV. 17 1/4 x 4 x 11 1/4 in . . . \$365

PHILIPS

FA960 100-W/ch Integrated Amplifier
Integrated amp with high current/low impedance drive capability. Features dynamic power supplies and heat sinks for each channel; high accuracy phono amplifier for either MC or MM cartridges; muting/protection circuit. CD direct and 6 other inputs; rec selector for parallel re-

AMPLIFIERS

ording; tone-defeat key to bypass bass and treble controls; gold-plated terminals for CD direct and phono inputs; EQ curve to IEC standard; active tone control; parallel, selectable loudspeaker outputs for each channel; source and tape selected display; metal cabinet; headphone jack; gold-plated speaker relays; loudness and mono switches; 2 tape monitors; tape copy keys; slide balance control; bipolar push-pull output stages. 100 W/ch into 8 ohms at 1,000 Hz; THD 0.008%; IM 0.03%; frequency response 18-70,000 Hz \pm 1.0 dB (line inputs); FR 40-20,000 Hz \pm 0.5 dB (phono input); S/N 106 dB (CD Direct). 5 $\frac{3}{4}$ x 16 $\frac{1}{2}$ x 13 $\frac{1}{4}$ in. \$549

PIONEER

Elite A-91D 120-W/ch Integrated Amplifier
Features digital circuit for CD's; line-direct switch; nonswitching type III circuit; separate voltage- and current-amplifying stages; 2 high-capacity, magnetically-shielded transformers; independent digital conversion circuitry; dual D/A converters; 4x-oversampling digital filter; analog low-pass filter; five digital inputs (two optical); three digital outputs (one optical). 120 W/ch cont avg min rms into 8 ohms; FR 20-20,000 Hz; THD <0.003%. \$1,600

A-757 100-W/ch Integrated Amplifier

Nonswitching integrated amplifier with separate voltage- and output-amplifying stages. Features line direct switch, honeycomb chassis, insulators, and heat sink; separate circuit blocks; nonswitching type III circuit; direct connection II; 6 inputs. 100 W/ch cont avg into 8 ohms; 135 W/ch cont avg into 4 ohms; FR 20-20,000 Hz; THD 0.003%. 16 $\frac{1}{2}$ x 6 $\frac{3}{8}$ x 1 $\frac{1}{8}$ in. \$750

PROTON

AM-656 60-W/ch Integrated Amplifier
Features Dynamic on Demand Power circuitry; Apex Aural Exciter circuitry; tone-bypass control; motorized volume control; 2-color LCD display; remote capability. FR 20-20,000 Hz \pm 0.3 dB; THD 0.02%; IM 0.01%; damping factor >150; dynamic headroom 6 dB. 18 $\frac{1}{2}$ x 3 $\frac{7}{8}$ x 15 $\frac{1}{2}$ in; 26.6 lb. \$700

D540 40-W/ch Integrated Amplifier

High-current, high-dynamic-power amplifier with Dynamic Power On Demand (DPD) circuitry. Features phono section with MC and MM phono selections; active volume control; anti-clipping circuit. 40 continuous W/ch from 20-20,000 Hz; FR 20-20,000 Hz \pm 0.2 dB; S/N 85 dB (unweighted). 105 dB (A-wtd); dynamic headroom 6 dB; dynamic power rating: IHF 20 ms at 8 ohms is 160 W, 4 ohms 280 W, 2 ohms 380 W; 100 ms duration 8 ohms is 150 W, 4 ohms 220 W, 2 ohms 230 W; 200 ms 8 ohms is 150 W, 4 ohms 190 W, 2 ohms 200 W. 16 $\frac{1}{2}$ x 3 $\frac{1}{2}$ x 12 $\frac{1}{2}$ in; 19.14 lb. \$319

REVOX

B250-S 150-W/ch Integrated Amplifier
Preamp section has 2 separate circuits for simultaneous listening and recording from 2 different sources. 6 inputs for tuner: tape 1 and 2, aux, CD and phono MM (moving coil input as an option). Each input level adjustable and can be stored in non-volatile memory. Optional video-switcher provides 4 video inputs (2 VCR, video-disc, TV) for both sound and picture, controlled via the B208 hand-held I.R. remote; Bright FL display varies in intensity with ambient light.



Sansui AU-X911DG

150 W/ch into 4 ohms; THD <0.015%; MM phono signal-to-noise ratio 80 dB. 17 $\frac{3}{4}$ x 4 $\frac{1}{4}$ x 13 in; 13 lb. \$2,500
B150. Similar to B250-S. 90 W/ch into 4 ohms. \$1,275

ROTEL

RA840BX3 50-W/ch Integrated Amplifier
50 W/ch amplifier with triple differential Class A front end. Features 3 gain stages in front end; protection circuitry; direct-signal paths; hard-wired speaker terminal; direct close tolerance selected components; inputs for MC/MM, CD, tuner, AV/aux, tape. Frequency response 20-20,000 Hz \pm 0.2 dB; total harmonic distortion <0.3%; signal-to-noise ratio 95 dB; IM <0.3%; damping factor 100. 17 $\frac{1}{2}$ x 3 $\frac{3}{8}$ x 13 $\frac{1}{8}$ in; 16 lb. \$399

SANSUI

AU-X911DG 100-W/ch Integrated Amplifier
Integrated amp with LDCS 1-bit D/A converter. Features independent circuitry for the left and right amplifiers; Alpha X-balanced and super feedforward circuits; direct-access rotary switching at the point of input; motor-driven remote switching; separate digital and analog transformers. Digital-direct and source-direct operation; separate record selector; 5 pair of gold-plated analog inputs; 4 pair of gold-plated digital inputs; record selector; subsonic filter; loudness; speaker A, B, A+B. 100 W/ch min rms into 8 ohms; FR 10-20,000 Hz; THD 0.005%. 17 x 6 $\frac{1}{2}$ x 17 $\frac{1}{8}$ in; 40 lb. \$1,250

AU-X611AV 80-W/ch Integrated Amplifier

Features low-impedance drive capability; high gain phono EQ; motor driven volume control; video inputs; signal processor loop; source-direct switch; separate transformer coil windings; rec selector; gold-plated headphone output. 80 W/ch min rms into 8 ohms; FR 20-20,000 Hz; THD <0.008%; damping factor (at 8 ohms) 100; S/N 87 dB (MM), 75 dB (MC), 95 dB (all other sources). Includes remote control. 17 x 6 $\frac{3}{8}$ x 17 $\frac{3}{8}$ in; 24.3 lb. \$750

SHARP

Optonica SM-A75 25-W/ch Integrated Amplifier
Features 11 surround effects; 3 user-programmable modes; 25 watts x 4; 2 monitor output controls; FL display; Super Bass; A/V cross playback; wireless remote control; adjustable time delay; adjustable feedback level; dubbing selection; 9 audio inputs/5 video inputs; 3 audio outputs/4 video outputs. S/N 89 dB (75 dB phono); IM 0.8%; CD FR 15-30,000 Hz (front), 15-17,000 Hz (rear). \$600

SHERWOOD

AI-1210R 100-W/ch Integrated Amplifier
Features surround sound; low-noise phono amplifier; subsonic filter. Video sound input; loud-

ness control; direct switch; headphone input jack; peak-power indicator; mute switch. Includes full-function wireless remote control. 100 W/ch; IM 0.04%; S/N 79 dB; frequency response 8-70,000 Hz. 5 $\frac{1}{8}$ x 17 $\frac{3}{8}$ x 13 in. \$349

SOUNDSTREAM

RA-100 50-W/ch Remote-Room Amplifier
Bridgeable to 100 W mono. Features include built-in remote electronic volume, balance, system on/off, bass and treble, and master level controls, variable line outputs; input for a local audio source. Wall-mounting brackets included. Frequency response 20-20,000 Hz; signal-to-noise ratio >95 dB; THD <0.1%. 9 x 12 x 1 $\frac{1}{8}$ in; 5 lb. \$650

TECHNICS

SU-V90D 100-W/ch Integrated Amplifier
Digital integrated amplifier with D/A converter and Class AA circuitry. Features four 18-Bit D/A converters; 4x-oversampling digital filter; auto switching between sampling frequencies; subsonic filter. Optical/coaxial digital inputs; loudness control; muting; direct digital operation mode. Amp section: 100 W/Ch into 8 ohms; THD 0.003%; FR 20-20,000 Hz; damping factor 60. Digital section: THD 0.003% at 1,000 Hz; S/N 110 dB; FR 2-20,000 Hz \pm 0.3 dB. Preamp section: FR 30-15,000 Hz (phono), 20-20,000 Hz \pm 0/-0.1 dB (other sources); S/N 79 dB (MM), 74 dB (MC), 91 dB (other sources). \$1,050

SU-AV55 50-W/ch Integrated Amplifier

A/V integrated amplifier with Dolby Surround-sound. Features digital low-bass synthesis with level control; S-VHS input/output terminals; 3 A/V inputs; 7 audio inputs; video out and S-VHS video out; FL display; stereoplex simulated stereo. Includes wireless remote control. Front section: 50 W/ch into 8 ohms; FR 20-20,000 Hz; total harmonic distortion <0.02%. Rear: 10 W/ch into 8 ohms; FR 20-20,000 Hz; THD <0.09%. \$800

TOSHIBA

NB-1000 125-W/ch Integrated Amplifier
Amplifier with A/V digital surround-sound processor and controller. Features 10 audio inputs; 4 video inputs; numerous A/V cross-play options; inputs include 2 tape decks, 2 VCR's, CD player, DAT deck, television; remote control; 12 digital sound effects including concert hall, night club, cathedral, stadium, and theater. 125 W/ch stereo, 50 W/ch Dolby Surround. \$949

YAMAHA

AX-900U 130-W/ch Integrated Amplifier
Integrated amplifier with independent preamp/power amp configuration. Features absolute linear amplification; high dynamic power; low-impedance drive capability. Continuously variable loudness control; preamp in/main amp out terminals; dual rec-out selectors. 130 W/ch min rms into 8 ohms; FR 20-20,000 Hz; THD <0.005%. Black; 42 lb. \$749

AX-700U 110-W/ch Integrated Amplifier

Features absolute linear amplification; high dynamic power; low-impedance drive capability. CD-direct position; continuously variable loudness control; rec-out selector; accessory output loop; 3 tape inputs. 110 W/ch min rms into 8 ohms; FR 20-20,000 Hz; THD <0.005%. Black; 29 lb. \$599

SETTLE FOR MORE!

Speakers are *the most important part* of your stereo system. It is the speaker that turns amplifier signal into sound and so ultimately determines what you hear. If your speakers do not perform well, your stereo system will simply not sound like music.

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- *Stereophile Magazine*

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- *Sound & Vision Magazine*

Sound & Vision



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ACOUSTIC RESEARCH

CD-06 CD Player
16-bit, 4x oversampling CD player. Computer-driven laser swing arm; dual D/A converters (analog circuitry employs a Gaussian filter for elimination of filter delay); random-access programming of up to 20 tracks in any order; scanning, play, pause and volume control can be performed by remote control. Fixed level and remote variable audio outputs as well as separate digital output. Frequency response 4-20,000 Hz, ± 0.5 dB; total harmonic distortion 0.007%; signal-to-noise ratio 105 dB; ch sep 92 dB. 17 1/4 x 3 3/8 x 9 7/8 in; 12 lb, 6 oz \$500

ADCOM

GCD-575 CD Player
Dual digital-to-analog, 4x oversampling, 16-bit linear converters. Selectable analog frequency/phase contouring circuitry; fixed and variable outputs: 3-beam laser; plays 3-in CD's. Programs up to 24 tracks in any sequence; repeats disc, track, program, or any selected sequence or phrase; audible fast scan and fast forward. Displays simultaneously total tracks up to 20. Timer display. Remote transmitter. Frequency response 5-20,000 Hz ± 0.1 , -0.5 dB; S/N 105 dB; THD 0.0025%; ch sep 95 dB; IM (SMPTE) 0.00018%; 17 x 3 1/2 x 11 1/4 in; 12 lb; black \$600
GCD-575. White front panel. \$650



Arcam Delta 170

A/D/S/

Atelier CD4 CD Player
Features 16-bit 2x oversampling D/A converters; 3-beam laser; multiple power supplies to isolate digital and analog stages for minimum interaction and noise generation; servo-laser intensity system 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. 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; optional remote control via RC1. FR 20-20,000 Hz, ± 0.25 dB; THD $<0.01\%$; 20-20,000 Hz, 0 dB; S/N >102 dBA, 1,000 Hz, 0 dB; ch sep >86 dB, 20-20,000 Hz. \$850

AIWA

XC-005 CD Player
8x oversampling and 18-bit D/A converter. 3-beam laser, compatible with CD-3 without adaptor. 30-second peak search, or real-time peak search during playback; memo file for 116 discs stores 10 characters/file, playback program, peak level; wireless remote 20-key track selection; 30-selection random programmable memory; index search; auto blank; time counter; optical and coaxial digital output; headphone jack with volume control. FR 4-20,000 Hz ± 0.3 dB; THD 0.0025%; S/N 110 dB; ch sep 100 dB. 17 x 4 3/8 x 14; 11.5 lb ... \$550



ARCAM

Delta 170 CD Transport
For use with outboard D/A converter. Features a fully-floating diecast single-beam laser mechanism mounted on a damped sandwich construction aluminum chassis; full 64K adaptive-error correction; master oscillator with a separate dedicated transformer and power supply that is optically isolated from the servo and micro-processor circuitry. Includes full-function remote \$1,295

AUDIO BY VAN ALSTINE

FET-Three-Plus CD Player
Drawer-loading CD player with 4x oversampling and dual 16-bit digital-to-analog converters. Features custom hybrid module output stages and film coupling capacitors; filter drivers with 1/2-amp current drive at 200 V/ μ sec; exact channel phase-gain tracking. 20-track (and index number) programming; repeat; skip forward/back; time/track display. Infrared remote control optional. 16 1/2 x 11 1/2 x 3 in; 9 lb. \$550

AUDIO DYNAMICS

CD-2000E CD Player
Slide-drawer-loading CD player with full-function remote control and advanced error-processing circuitry. Features 3-beam laser pickup; 16-track random programming; 16-bit D/A converter with 4x-oversampling digital filter. CD-single compatible. 16-track programmability. Frequency response 10-20,000 Hz, ± 0.5 dB; total-harmonic distortion 0.005% at 1,000 Hz; dynamic range 96 dB; ch sep 90 dB; S/N 96 dBA. 17 x 2 x 12 3/8 in; 8 lb, 3 oz \$399



Audio Dynamics CD-2000E

BANG & OLUFSEN

Beogram 4500 CD Player
Integrates with Beosystem 4500 for full remote control. 16-bit 4x oversampling; Bessel elliptical analog filter; 2 D/A converters; separate power supplies for digital and analog sections. Skip

forward and back; direct access by track number; plays 3-in CD without an adaptor. Black and silver finish. Frequency response 3-20,000 Hz, ± 0.3 dB; signal-to-noise ratio 110 dBA; total harmonic distortion 0.0025%; ch sep >101 dB; dynamic range >96 dB. 16 1/2 x 3 x 12 1/4 in; 9 lb, 14 oz \$800

CAMBRIDGE AUDIO

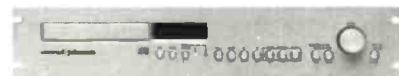
CD3 CD Player
16x oversampling and 16-bit D/A converter. Features 64k of error correction; power supplies for digital and analog stages. THD 0.0025%; dynamic range >100 dB. \$1,749

CARVER

TL-3300 CD Player
8x oversampling and dual 18-bit D/A converter with Digital Time Lens circuitry for AAD CD's to restore original ambient effects. Features 22-track programming with dedicated keypads on remote and panel; 3-in CD capability; 3-way repeat; skip and scan functions; remote compatible with Carver receivers. FR 5-20,000 Hz ± 0.2 dB; 0.002% THD at 1,000 Hz; 100 dB S/N; 90 dB ch sep; 100 dB dynamic range. 8 lb \$700

TL-3200 CD Player

8x oversampling and dual 16-bit D/A converter with Digital Time Lens circuitry for AAD CD's to restore original ambient effects. Features 32-track programming with dedicated remote keypad; remote volume control; shuffle play with delete option; intro-scan; 3-in CD capability; 3-way repeat; skip and 2-speed scan functions; remote compatible with Carver receivers. FR 2-20,000 Hz ± 0.2 dB; 0.005% THD at 1,000 Hz; 100 dB S/N; 90 dB ch sep; 100 dB dynamic range. 8.5 lb \$550



Conrad-Johnson DF1

CONRAD-JOHNSON

DF1 CD Player/Preamplifier
CD player with preamplifier and digital filtering. CD player features noise-shaping circuitry that yields 16-bit resolution; dual D/A converters. Preamplifier features discrete FET analog circuits with discrete regulated DC power supplies; level control; aux and tape inputs; tape output. CD player: output 1.1 V; FR 5-19,000 Hz ± 0.5 dB; hum and noise better than 85dB below 1.0 V; THD $<0.25\%$ at rated output. Preamplifier: gain 26 dB; max output 5V; frequency response 5->100,000 Hz; hum and noise better than 82 dB below 1.0V output; THD $>0.25\%$ at rated output. 2-year limited warranty. 19 x 3 3/4 x 12 in; 19 lb \$1,385

DENON

DCD-3520 CD Player
8x oversampling and dual 20-bit super-linear D/A converters. Features MSB; LC-OFC analog filter; optical isolator; 5-independent power supplies; separate digital and analog circuits; bulk molding compound 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; remote

COMPACT DISC PLAYERS

control; emphasis display; 8-digit FL display \$1,500



Harman Kardon HD7600

DCD-1520 CD Player

8x oversampling and dual 20-bit super linear D/A converters. Features MSB; OFC analog filters; optical isolation between digital and analog stages; pickup chassis made of non-resonant bulk molding compound; dual-construction chassis. Optical and coaxial digital outputs; 20-track programmability with normal and program random play; remote volume control; headphone jack with level control; direct track access; index/time search; 3-way repeat; auto space/edit; timer play; 8-digit FL display with music calendar; direct play of 3-in CD's. Includes Denon Integral System remote control for control from Denon IS receivers and preamps. FR 2-20,000 Hz ± 0.2 dB; S/N 115 dB \$750

DCD-1420 CD Player

8x oversampling and dual 20-bit super linear D/A converters. Features MSB; OFC analog filters; optical isolation between digital and analog stages; isolated pick-up chassis. Optical and coaxial digital outputs; 20-track programmability with normal and program random play; remote volume control; headphone jack with level control; direct track access; index search; 3-way repeat; auto space/edit; timer play; 8-digit FL display with music calendar; direct play of 3-in CD's. Includes Denon Integral System remote control for control from Denon IS receivers and preamps. FR 2-20,000 Hz ± 0.2 dB; signal-to-noise ratio 108 dB \$600

DCD-620 CD Player

20-bit, 8x oversampling digital filter and dual 16-bit super-linear D/A converters. Features MSB; noise shaping; active analog filters; isolated pick-up chassis. 20-track programmability with normal and program random play; headphone jack with level control; direct track access; 2-way repeat; auto space/edit; timer play; 6-digit FL display with music calendar; direct play of 3-in CD's. Includes Denon Integral System remote control for control from Denon IS receivers and preamps. FR 2-20,000 Hz ± 0.2 dB; S/N 100 dB \$300

DCM-777 CD Changer

6-disc magazine with 8x oversampling and dual 20-bit super linear D/A converters. Features MSB; optical isolation between digital and analog stages; isolated pick-up chassis. Optical and coaxial digital outputs; 32-selection programmability with normal, program, and disc sequential random play; remote volume control; headphone jack with level control; direct track access; 3-way repeat functions; timer play; 7-digit FL display. Includes Denon Integral System remote control for control from Denon IS receivers and preamps. Optional magazines for 3-in CD's. FR 2-20,000 Hz ± 0.2 dB; signal-to-noise ratio 103 dB \$700

FISHER

DAC199B CD Changer

5-disc capacity with 8x oversampling, 18-bit

digital filter and dual 16-bit D/A converters. Features 32-selection programmability; 31-function wireless remote; selection memory and title file memory; 3-in CD compatibility; random play; intro scan; scan, skip, repeat functions; headphone jack with volume control. signal-to-noise ratio > 90 dB; ch sep > 80 dB; total harmonic distortion $< 0.07\%$ at 1,000 Hz. 17 $\frac{3}{8}$ x 5 $\frac{3}{8}$ x 11 $\frac{7}{8}$ in; 12.1 lb. Black \$400

HARMAN KARDON

HD7600 CD Player

CD player with pulse-width modulated bit-stream D/A converter operating at 33.8 MHz to improve linearity and low-level accuracy. Features 3rd-order analog filter to improve S/N; discrete-component buffer stage, differential amp, and low-pass filter; separate transport, analog, and digital power supplies; 3-beam laser pickup; optical and coaxial digital input/output. 27-key remote control with intro scan and autospace; music calendar; A/B repeat; audible 2-speed cue and review; output-level controls; fixed and variable analog outputs; headphone jack. Frequency response 4-20,000 Hz ± 3 dB; THD 0.003%; S/N 106 dB; dynamic range 96 dB; ch sep 95 dB; overall linearity within 0.02 dB at -90 dB \$599

HD7500. Same as above without optical and coaxial digital input/output \$449

HD7400 CD Player

4x oversampling and dual 18-bit D/A converters. Features sample-and-hold processor; discrete analog-output section; direct coupling from D/A to audio output jacks; separate transport, analog, and digital power supplies; 3-beam laser pickup. 36-track programming; audible 2-speed cue and review; display shows track/program number and elapsed time or total number of tracks, total time, and time remaining; 19-key remote. Frequency response 4-20,000 Hz ± 0.02 dB; THD 0.008%; S/N 100 dB; dynamic range 96 dB; ch sep 88 dB \$349

HD7300. Same as above w/out remote control \$299



Kenwood DP-7010

HITACHI

DA8200SW CD Player

Features oversampling digital filter; 3-beam laser pickup; vibration-free floating suspension; 24-program track search system; random play; 4-way repeat; FL display. Includes remote control. Rosewood end caps \$280

DA6500 CD Player

Features floating suspension system; 24-program random memory; random play; skip search; 4-way repeat; scan automatically samples the first 10 seconds of each track; index search; 2-speed manual search \$170

DAC-70SW CD Changer

Twin cartridge CD changer with 2 six-disc magazines. Features oversampling digital filter. Direct program remote with volume; independent

magazine/disc exchange; 32-program random memory track search; direct, random, scanner, and repeat play; skip/manual search; real time counter; track time counter; programmable timer; sleep timer; resume play standby; clock. Rosewood end caps. Dynamic range 95 dB; total harmonic distortion 0.004% \$550

JVC

XLZ1010TN CD Player

8x-oversampling digital filter with four 18-bit D/A converters. Features coaxial and optical digital output. 32-track programming; 20-track calendar display; 4-way repeat; remote volume control; remote control \$700

XLZ611BK CD Player

4x-oversampling digital filter with dual 18-bit D/A converters. Features coaxial and optical digital output. Disc and track title memory; disc program memory; thirty-two-track programming; twenty-track calendar display; four-way repeat; remote control \$480

XLM701BK 7-Disc CD Changer

6-disc magazine changer with separate single-disc drawer, 4x-oversampling digital filter and dual 18-bit D/A converters. Features coaxial digital output; three-beam laser pickup; disc stabilizing clamp. Additional features: magazine and disc title memory with indicator for eleven magazines; magazine program memory; thirty-two-track programming; two-way editing; four-way repeat; timer play. 3-in-disc magazine available. Includes remote control \$570

KENWOOD

DP-8010 CD Player

8x oversampling and dual 18-bit D/A converters. Laser pickup features linear motor mechanism with low center of gravity; optical and coaxial digital outputs; multi-point vibration insulation; remote control with volume; random track memory; 20-track direct access. Frequency response 4-20,000 Hz; signal-to-noise ratio 112 dB; total harmonic distortion $> 0.0015\%$ at 1,000 Hz. 17 $\frac{1}{4}$ x 4 $\frac{3}{4}$ x 14 $\frac{1}{8}$ in; 21.2 lb. ... \$650

DP-7010 CD Player

8x oversampling and dual 18-bit D/A converters. Features optical and coaxial digital outputs; multi-point vibration insulation; remote control with volume; random track memory; 20-track direct access. Frequency response 4-20,000 Hz; S/N 108 dB; total harmonic distortion $> 0.0025\%$ at 1,000 Hz. 17 $\frac{1}{4}$ x 4 $\frac{3}{8}$ x 12 $\frac{1}{4}$ in; 13 lb. \$449

DP-M6010 CD Changer

8x oversampling, dual 16-bit D/A converters, and 6-disc magazine/single CD tray. Features computerized CD editing; one-touch disc selection; remote control; random play; 10-track direct access; FL display with music calendar and disc indicator. Frequency response 10-20,000 Hz ± 1 dB; S/N 102 dB; THD $> 0.006\%$ at 1,000 Hz. 17 $\frac{1}{4}$ x 4 $\frac{3}{4}$ x 13 $\frac{7}{8}$ in; 15 lb \$449

KINERGETICS

KCD-40 Gold Series CD Player

8x oversampling digital filter, 4 D/A converters, and 1-beam laser pickup. Features spring-isolated transport; patented hysteresis distortion cancelling circuit; no capacitors in signal path; servo loop used for eliminating DC offset. Program memory from 226 discs; volume and balance

COMPACT DISC PLAYERS

controls; 19-in rack mount. 19 x 3 $\frac{3}{4}$ x 12 $\frac{3}{8}$ in; 15 lb \$1,995

KRELL

MD-1 CD Player

Top-loading CD turntable with custom-designed toroidal transformers and 2-stage regulation limit. Features Philips single-beam CDM-3 swing arm motor drive mechanism and glass lens; 4-point suspension with solid-aluminum components and base play; optical and coaxial outputs \$4,000

LUXMAN

D-105U Hybrid CD Player

8x oversampling and dual 18-bit D/A converters. Features BRID hybrid-circuit design using twin-triode vacuum tube amplification in analog output stages; Duo-Beta dual feedback-loop amp circuitry to widen bandwidth and improve transient response; optical and coaxial digital outputs; metal chassis and component shielding; high-mass magnetic disc clamper; 3-beam laser pickup. 32-track programming; random play; auto edit/fade-out for CD taping; auto scan/pause; timer/power-off memory; 9-key remote control. FR 5-20,000 Hz, ± 1 dB; THD 0.05%; S/N 105 dB; dynamic range 92 dB; ch sep at 1,000 Hz 90 dB. 17 $\frac{1}{4}$ x 5 $\frac{1}{2}$ x 13 $\frac{1}{2}$ in; 18 $\frac{3}{4}$ lb... \$1,200

D-113D CD Player without D/A Converter

CD player with no D/A or analog circuitry. Designed for use with digital-direct amplifiers. Features optical and coaxial digital outputs; 3-beam laser pickup; high-density magnetic disc clamper. 16-track programming; 10-key direct access; 9-key remote control; fast-scan, skip, pause, and repeat buttons; multi-function display. Performance specifications depend on amplifier used. 17 $\frac{1}{4}$ x 3 $\frac{3}{8}$ x 12 $\frac{3}{8}$ in; 9 $\frac{3}{4}$ lb... \$550

DZ-111 CD Player

4x oversampling and dual 16-bit D/A converters. Features Duo-Beta dual feedback-loop amp circuitry to widen bandwidth and improve transient response; coaxial digital output; metal chassis and component shielding; high-mass magnetic disc clamper; 3-beam laser pickup. 32-track programming; random play; auto scan/pause; timer play; 9-key remote control. Frequency response 5-20,000 Hz, ± 0.5 dB; total harmonic distortion 0.005%; signal-to-noise ratio 106 dB; dynamic range 96 dB; ch sep at 1,000 Hz 100 dB. \$350



Luxman D-105U

MADRIGAL

Proceed CD Player

Burr-Brown 18-bit D/A converters featuring very fast settling, glitch-free current output; 8-times oversampling digital filter; two master power supplies feed into eleven distributed power supplies are electronically regulated; employs Phil-

ips CDM1 MkII transport mechanism, cast aluminum base plate, Hall-effect motor; separate transformer used for the digital and analog section to minimize grounding noise. Audio and balanced output; wireless remote control. Frequency response 10-20,000 Hz ± 0 , -0.2 dB; total harmonic distortion 0.004%; signal-to-noise ratio 105 dB; ch sep 120 dB; IM 0.006%. \$1,650



Krell MD-1

MAGNAVOX

CDB496 CD Changer

Features 6-disc changer; 30-track memory programming; repeat play; random play; next/previous track skip; 3-track memory; 3-speed music search with cueing; 5-digit LCD display. Includes 11-function remote control. Optional single-disc magazine and 6-disc magazine for 3-in CD's \$300

CDB492 CD Player

Features dual 16-bit digital-to-analog converters; random play; 3-in CD compatibility; 20-track memory programming; repeat play; next/previous track skip; 3-speed music search with cueing; headphone jack; 4-digit LED display. Includes 9-function remote control \$180

CDB490. As above, no remote control ... \$170

MARANTZ

CD 94 CD Player

CD player with 4x oversampling and dual 16-bit converters. Features digital outputs with optically coupled link to optional CDA-94 separate D/A converter; favorite track selection memorizes over 200 disc programs; shuffle play; random-track programming; intro scan; three independent power supplies for digital, analog, and mechanical sections; wireless remote with full programming capabilities; black rosewood side panels \$1,700

CD 3577 CD Player

CD player with dual D/A converters. Features 20-track music calendar; synchro dubbing capability; coaxial digital output; timer; 27-key remote control; 3-in and 5-in CD compatible. Frequency response 4-20,000 Hz; THD 0.005%; signal-to-noise ratio 100 dB \$450

CD 3587 CD Changer

5-disc top-loading CD changer with 4x oversampling and dual 16-bit D/A converters. Features high resolution digital filter; biaspheric glass lens in unitary laser; linear motor transport; 20-step random access programming; repeat; random play; 2-color FL display; 25-key remote. Frequency response 2-20,000 Hz; total harmonic distortion 0.05%; signal-to-noise ratio 95 dB. \$380

McINTOSH

MCD 7007 CD Player

Features 16-bit D/A converters with 4x oversam-

pling; D/A converter chip incorporates separate converters for L/R channels, eliminates multiplexing and delay time between channels; anti-jamming motorized front-loading tray. Programmability directly from a short scan of each track; three-speed search; remote control; damaged disc/mute error correction indicator; digital output jack; headphone jack with volume control. Frequency response 20-20,000 Hz ± 0 , -0.3 dB; total harmonic distortion 0.0012% at 1,000 Hz; S/N 107 dBA; ch sep 102 dB at 1,000 Hz. 16 $\frac{1}{8}$ x 5 $\frac{1}{2}$ x 13 in; 18 lb. \$1,995

MERIDIAN

207 CD Player/Preamplifier

16-bit 2-unit CD player with 3-input preamplifier. Features 4x oversampling; passive analog filter; high-mass suspended transport; physical and electrical isolation between all critical circuits. 64-step volume control; display of track, index, track/disc time, disc remaining time, and volume number; indicators for phase, EQ, mute, and errors. Optional remote control for all CD and preamp functions. Optional phono input for MM/MC cartridges. Two units, each one measures: 4 x 6 $\frac{1}{4}$ x 12 $\frac{1}{4}$ in; 22 lb \$1,990

206 CD Player

16-bit 2-unit CD player with 4x oversampling. The units are linked and provide physical and electrical isolation between transport, power supply, and digital and analog electronics. Features single processor; passive analog filter. Next/previous track and index; continue button which restarts CD to last location; display of track, index, track/disc time, disc remaining time; optical and coaxial digital outputs. 4 x 12 $\frac{1}{2}$ x 12 in; 20 lb \$1,650

MISSION ELECTRONICS

Cyrus PCM II CD Player

4x oversampling, dual 16-bit D/A converters with post-DAC filter. Features 5 separate internal power supplies for analog and digital circuits; analog stages can be driven externally by optional Cyrus PSX power supply; digital output with 100-ohm removable loading plug. 29 function remote with display shut down; absolute phase inversion; low loss 60 x 1 dB stepped volume control; 20 track random programming with recall; 3-speed search; 3-mode time display; scan; program; direct track access; index selection. Frequency response 20-20,000 Hz; S/N 96 dB; total harmonic distortion 0.003% at 0 dB. 17 x 3 $\frac{3}{4}$ x 12 in; 14 lb. \$999



Mission Cyrus PCM II

MITSUBISHI

DP-311R CD Player

4x oversampling and dual 16-bit D/A converters. Features 3-beam laser pickup. 36-track random-access programming; one-touch skip; forward/reverse search; repeat; wireless remote control. \$599

M-C4100 CD Changer

2x oversampling, dual 16-bit D/A converters, and 5-disc tray. Features single master-clock frequency for all digital circuits; anti-resonant

COMPACT DISC PLAYERS

chassis. 20-track programming; audible scan; intro-scan; random play; 3-in disc compatibility; headphone jack with level control; remote control. \$499

MOD SQUAD

Prism CD Player

Drawer-loading CD player with Philips 16-bit digital processing. Features internal disc damping system; 4x oversampling; wireless infrared remote control; digital data and clock lines timed for current synchronization and minimal jitter; fast settling, current summing amplifier stage; proprietary zero-feedback voltage regulators for analog section and for DA converter voltage reference; all direct-coupled circuitry; DC servo amplifier. 20-track random programming; repeats disc, track, program, and phrase (A-B repeat); digital time-domain alignment; fixed line outputs; output level 4 V rms; digital outputs. Frequency response 0.1-20,000 Hz, ± 0.05 dB; S/N 110 dB; THD 0.02%; 8 lb \$1,495

NAD

Monitor Series 5300 CD Player

4x-oversampling digital filter, dual discrete D/A converters, and 3-beam laser pickup. Features ambience circuit. Serial digital output; error display; skip/scan forward and back; displays track number and elapsed/remaining time; repeat; programmability. Includes wireless remote control with volume control. \$899



Nakamichi CDC-4A

Monitor Series 5100 CD Player

Features 16-bit D/A conversion; 4x oversampling; dynamic range circuit; 8 separate analog, digital, and mechanical power supplies. Variable and fixed outputs; normal and delete mode programming. Includes remote control with volume control. Rack mountable. \$499

Monitor Series 5170 CD Changer

CD changer with 6-disc magazine and single play drawer. Features 16 bit D/A conversion; 4x oversampling. Multiple play; serial digital output; intro scan; random play of all discs; 32-track programmable memory. Includes remote control with volume control. Rack mountable. \$699

NAKAMICHI

OMS-7AII CD Player

Drawer-loading CD player. Features 3-beam laser; 4x-oversampling digital filter; dual 16-bit, glitch-free D/A converters. Programming of 24 tracks in random order; display of current track number, elapsed time of current track, remaining time on disc, program stored in memory; sound audible during fast forward and fast reverse; skip forward; skip back; fast forward; fast reverse; cancel; repeat disc, program; cue by track number, index number; 7-function remote control; headphone jack with adjustable level.

Max line output 2 V; headphone output 35 mW; total harmonic distortion at 1,000 Hz 0.0025%; S/N > 104 dBA; ch sep > 100 dB; Frequency response 5-20,000 Hz, ± 0.5 dB. 17 $\frac{1}{8}$ x 3 $\frac{3}{8}$ x 12 $\frac{1}{8}$ in; 16 lb. 5 oz. \$1,995
OMS-5AII. Similar to OMS-7AII without remote and programming functions. \$1,650

CDP-2A CD Player

Mid-level CD player featuring 16-bit 4x oversampling with digital filtering; dual D/A converters; third order bessel analog filter; multi-regulated isolated-ground power supplies. 24-memory programming function; wireless remote control with 24-key transmitter; headphone jack with level control; 3-beam laser pickup; frequency response 20-20,000 Hz ± 0.5 - 1.0 dB; signal-to-noise ratio > 100 dBA total harmonic distortion 0.0025% at 1000 Hz. 16 $\frac{7}{8}$ x 2 $\frac{7}{8}$ x 10 $\frac{1}{8}$ in; 11 lb. 4 oz. \$549

CDC-4A CD Changer

6-disc changer with single-disc tray. Features 8x oversampling; dual 16-bit D/A converters; 3-beam laser; 3rd-order high-cutoff bessel output filters; multi-winding multi-regulated power supply with isolated ground topology; floating disc-drive mechanism; coaxial digital output; fixed and variable analog outputs. 50-program memory; memory/time data backup; 3-way random play of programmed selections; headphone output with adjustable level; gold-plated output and headphone jacks. Includes RM-4CDC 37-key wireless remote. FR 5-20,000 Hz, ± 0.5 dB; S/N > 103 dBA; THD 0.002% at 1,000 Hz. 17 x 4 x 13 $\frac{3}{8}$ in; 15 lb. 10 oz. \$1,195

CDC-3A CD Changer

6-disc changer with single-disc tray. Features quadruple-oversampling; dual 16-bit D/A converters; 3-beam laser; 3rd-order high-cutoff bessel output filters; multi-winding multi-regulated power supply with isolated ground topology; floating disc-drive mechanism; coaxial digital output. 50-program memory; memory/time data backup; 3-way random play. Includes RM-3CDC 32-key wireless remote. Frequency response 5-20,000 Hz, ± 0.5 dB; S/N > 102 dBA; THD 0.0025% at 1,000 Hz. 17 x 4 x 13 $\frac{3}{8}$ in; 13 lb. 4 oz. \$795

NEC

Renaissance Series

CD-830 CD Player

Features 16x transversal filtering circuit; four uni-polar D/A converters; digital servo-tracking system; optical D/A coupling; A/D separate power supplies; digital output. Disk/tape edit function; auto/manual edit; digital auto fade out; auto space; tape remaining time indication; 24-track random programming; 3-way repeat; variable intro scan; random play; 2-speed search; wireless remote control and headphone output with volume control. Frequency response 5-20,000 Hz, ± 0.5 dB; signal-to-noise ratio 105 dB; total harmonic distortion 0.0025% at 1,000 Hz; ch sep 103 dB at 1,000 Hz. 17 x 4 $\frac{3}{8}$ x 13 in; 25 lb, 6 oz. \$999



NEC CD-730

CD-730 CD Player

Features 16x transversal filtering circuit; four uni-polar, 16 bit D/A converter; optical D/A coupling; A/D separate power supplies; two digital outputs; plays 3-in CD without an adaptor; auto/manual edit; digital auto fade out; auto space; 24-track random programming; 3-way repeat; variable intro scan; 2-speed search; random play; headphone output with volume control; wireless remote control. Frequency response 5-20,000 Hz, ± 0.5 dB; S/N 105 dB; THD 0.0025% at 1,000 Hz; ch sep 103 dB at 1,000 Hz. 17 x 4 $\frac{3}{8}$ x 12 in; 12 lb, 6 oz. \$399



NAD Monitor Series 5170

CD-530 CD Player

Features 4x oversampling; digital filter; dual D/A converters. 24-track random programming; two-way repeat function; wireless remote control. \$229

ONKYO

Grand Intro DX-G10 CD Player

8x oversampling, dual 18-bit Opto-Drive D/A converters with absolute level and 4 MSB calibration. Features five-element opto-coupling; cast-steel anti-vibration chassis; high-speed linear-motor laser transport; 3rd-order GIC-type analog output filters; separate transformers for digital and analog stages. Variable-speed disc scan and cue; 4-mode repeat; 16-track programming; 10-key direct play; time-search function; phase-reverse switch; coaxial and optical digital outputs; fixed and variable analog outputs; variable intensity display; full-function remote control. \$2,500

Integra DX-7500 CD Player

8x oversampling, dual 18-bit Opto-Drive D/A converters with 4MSB calibration. Features opto-coupling; separate power transformers for digital and analog stages; 3rd-order GIC-type analog output filters; Poly-Sorb spacers for vibration damping. 20-track random music calendar; shuffle/timer play; optical and coaxial digital outputs; fixed and variable analog outputs; remote control. \$700

DX-3500 CD Player

8x oversampling, dual 16-bit Opto-Drive digital-to-analog converters. Features 3-beam laser pickup; opto-coupling. 20-track random music calendar; 10-key direct play; shuffle/timer play; 3-in CD compatibility; optical and coaxial digital outputs; remote control. \$420

DX-C500 CD Changer

18-bit 8x oversampling, dual 16-bit D/A converters with individual MSB calibration, and 6-disc magazine. Features Opto-Coupling; 3-beam laser pickup. 40-track programming with editing capability; Music File memory for up to 340 discs; 3-mode random music calendar; 4 repeat modes; 10-key direct play; 3-in CD compatibility; remote control. \$530

COMPACT DISC PLAYERS

DX-C-300 CD Changer

18-bit 8x oversampling, dual 16-bit D/A converters with individual MSB calibration, and 6-disc magazine. Features 3-beam laser pickup, 40-track programming with editing capability; 3-mode random music calendar; 4 repeat modes; 3-in CD compatibility; remote control. . . \$430



Pioneer Elite PD-71

PANASONIC

SL-P3800C CD Changer

4x-oversampling, dual 16-bit D/A converters, and 6-disc magazine. Features high-speed linear access system. Direct access system; 36-track programming; skip and search; 2-way random play; independent disc selection; multifunction 10-key remote control. . . \$380

SC-SLPS352 CD Player

4x oversampling and dual D/A converters. Features high-speed linear access system; large insulation feet. Music matrix; 20-track programming; skip and search; track/disc/program repeat; FL display; 3-in CD compatibility; auto cue; multi-function time mode. . . \$230

PHILIPS

CD960 CD Player

4x oversampling, 16-bit D/A converter. Features single-beam pickup; optical coupler; diecast aluminum nonmagnetic main- and subchassis. Favorite-track selection; fast track access; copy pause; 2-motor front-loading drawer; keypad track selection; 20-track random-access programming; information display; search forward/reverse keys with 3-speed search; repeat key; scan key. Includes infrared full-function remote control. FR 2-20,000 Hz; S/N > 105 dB; dynamic range > 96 dB; ch sep 105 dB; THD 0.0015%. 4 x 16 7/8 x 15 1/8 in; 21.1 lb. . . \$949

CD60 CD Player

4x oversampling, dual 16-bit D/A converters. Features Philips' exclusive Radialinear drive mechanism; motorized volume control; digital audio output terminal; optical digital output terminal; headphone jack with volume control; favorite-track selection; auto music scan. Includes full-function remote control. . . \$429

CDC875 CD Changer

Six-disc changer with single-disc tray, 4x oversampling, and 16-bit D/A converter. Features aluminum-front, metal chassis. 40-track programming with calendar-type display; favorite track selection; shuffle play; A-B repeat; scan-play remote volume control; headphone jack with volume control. Includes LCD remote. Optional six-disc magazine for 3-in CD's. . . \$499

PIONEER

Elite PD-91 CD Player

CD player with 8x-oversampling digital filter

and dual 18-bit D/A converters. Features 3rd-order low-pass analog Butterworth filter; laser pickup with integral buffer amplifier; 24-track random-access programming; music window search; random play; digital fader with variable fading time; auto program edit; time edit; digital output jacks; coaxial and optical outputs; headphone jack with adjustable level; FL display; 4 separate power supplies; laminated iron plate coated with polyacetal and copper-plated honeycomb plates; coil springs with rubber dampers to support subchassis. . . \$1,400

Elite PD-71 CD Player

CD player with 8x-oversampling digital filter and dual 18-bit D/A converters. Features fluorescent display; 24-track random access programming; random play; direct wire connections; bi-filar power transformer; multi-floating system; remote control. . . \$850

PD-7300 CD Player

Features digital output. Frequency response 2-20,000 Hz; signal-to-noise ratio 106 dB; ch sep 110 dB. 16 1/8 x 4 3/4 x 12 1/2 in. . . \$550

PD-T503 Dual-Tray CD Player

Double-disc CD player; can remove one disc while other is playing. Features honeycomb chassis; magnetic-clamp disc stabilizer; non-repeating random play; 24-track programming; 3-way repeat; timer start; dual 15-track music calendars; status memory; 3-in CD compatible; remote control; headphone output with volume control. . . \$330

PD-M710 CD Changer

Magazine-type CD changer with 6-disc capacity and remote control. Can play CD-3's with optional magazine. Features 8x oversampling; dual D/A converters; magnetic clamp disc stabilizer; 40-track non-repeating random play; multi-memory for up to 20 magazines; 15-track calendar; index search; status memory; time-fade editing; four-way repeat; digital level control; random play; delete play; headphone output jack with volume control. . . \$650

PD-M510 CD Changer

Magazine-type CD changer with 6-disc capacity and remote control. Features 4x oversampling; dual D/A converters; honeycomb chassis; 32-track programming; 4-way repeat; non-repeating random play; optional magazine for 3-in CD's. . . \$390

PROTON

AC-620 CD Player

Dual-16 bit D/A converters and programming capabilities. Frequency response 20-20,000 Hz \pm 0.3 dB; THD 0.003%; S/N 100 dB. 18 1/2 x 3 1/8 x 15 1/8 in; 17.2 lb. . . \$700

AC-300 II CD Player

4x oversampling with wireless remote control. Features one-beam laser pickup; 20-track programmable memory; 3-speed music search; precise audible cueing at two lower speeds; real-time digital display of total tracks, total playing time, track number, and elapsed time of each track; repeat disc, track, and program; headphone jack with adjustable level. Frequency response 20-20,000 Hz \pm 3 dB; dynamic range 96 dB; S/N 96 dB; ch sep (at 1 kHz) 94 dB; THD (at 1 kHz) 0.003%; IM 0.003%. 16 1/2 x 3 3/8 x 11 1/4 in; 7.9 lb. . . \$430

REALISTIC

CD-6000 CD Player

CD changer with 2x oversampling. Plays up to 6 discs automatically; 32 tracks; 3-beam laser; 3-way repeat; remote control; dual-mode LED display; autosearch; bi-directional audible search. . . \$360

CD-1600 CD Player

CD player with 3-beam laser features skip forward and back; floating disc tray. 2-speed search forward and reverse; programs 16 tracks; 3-way repeat; index search; repeat tracks; music calendar to show program contents; wireless remote needs 2 AA batteries. . . \$250

REVOX

B226-S CD Player

Drawer-loading CD player with Revox system-remote compatibility. Features 4x oversampling 16-bit dual D/A converters; display shows track number, time remaining, time elapsed for both track and disc; fixed and variable outputs; 2-digital outputs; 19-step programming by track/index access from 1-99; audible forward/reverse search; locate function; headphone jack with adjustable level; FR 20-20,000 Hz \pm 0.1 dB; S/N > 100 dB; THD < 0.005%; ch sep > 90 dB; 17 3/4 x 4 1/4 x 13 in; 18 lb, 11 oz. . . \$1,895

B126 CD Player. As above, cosmetic differences. . . \$1,275



Revox B226-S

ROTEL

RCD-855 CD Player

4x-oversampling, dual 16-bit D/A converters. Features digital filter; standard line output and digital output; servo processor circuits; remote control; shuffle play; scan; repeat; 3 speed search; automatic CD ROM switch; CD-3 compatibility. Frequency response 20-20,000; THD + noise 0.0025% at 1,000 Hz; S/N 100 dB. 17 1/2 x 3 3/8 x 13 1/8 in; 15.4 lb. . . \$349

SANSUI

CD-X711 CD Player

Features 4 of Sansui's exclusive LDCS 1-bit D/A converters with third-order noise shaping. Features FL display shutoff switch to eliminate any excess electronic noise; free-floating suspension made up of 4 oil-damped coiled-spring insulators; 1 optical and 1 coaxial digital output; 20-track random programming; 20-track program calendar; random play; variable-time music scan; auto spacing; 4-way repeat; auto music program search; timer start; index search. Includes full-featured remote control. Frequency response DC-200,000 Hz \pm 0.3 dB; THD 0.003% at 1,000 Hz; S/N 103 dB. 17 x 5 x 15 3/4 in; 22 lb. Black finish. . . \$1,100

CD-X311 CD Player

Features 4 of Sansui's exclusive LDCS 1-bit D/A converters with third-order noise shaping. Features FL display shutoff switch to eliminate any excess electronic noise; 4-sec space between programs; program edit; time edit that will automatically scan the disc being copied and select

COMPACT DISC PLAYERS

music matching the selected time; headphone output with volume control; 20-track music calendar; 10-key direct selector/programmer; auto music program search; music scan; coaxial digital output. Includes 28-key wireless remote control. Frequency response 4-20,000 Hz; signal-to-noise ratio 100 dB; total harmonic distortion 0.006% at 1,000 Hz. 17 x 4 x 11 in; 12 lb \$500

CD-X510M CD Changer

2x oversampling, dual D/A converters, two 6-disc magazines, and a single-play tray. 3-in CD compatibility; random programming; variable music/intro scan; 3 repeat modes; remote control. Frequency response 5-20,000 Hz; dynamic range > 95 dB; S/N 100 dB; THD 0.004% at 1,000 Hz. 5¾ x 17 x 12¾ in \$630

SHARP

DX-R830 CD Player

CD player with 8x-oversampling; dual D/A converters; FL multi display with music schedule; 3-beam laser pickup; 10-key direct program; search up/down; auto program search; auto program-locate device; repeat; digital time counter and mode indicator; infrared remote control with 10 keys \$430

DX-C5000 CD Changer

Magazine-type compact disc changer with 6-disc capability. Features 32-track random-access programming; memory backup function; single and all repeat function; 2x-oversampling digital filter; FL display; APSS (Auto Program Search System); monitor search; cushioned floating mechanism; remote control. \$460

SHERWOOD

CD-1182R CD Player

8x oversampling with 16-bit digital-to-analog converter. Features 16-track programmability; random play; disc/track elapsed-time display; four-way repeat; headphone jack with level control; Digi-Link remote control. Frequency response 2 to 20,000 Hz ± 0.5 dB; signal-to-noise ratio > 95 dB; total harmonic distortion 0.004%. 11 lb \$299

CDM-1260R CD Changer

6-disc CD changer with 4x oversampling and 16-bit digital-to-analog converter. 32-track programming; disc/track elapsed-time display; 4-way repeat; remote control. Frequency response 20-20,000 Hz ± 0.5 dB; signal-to-noise ratio 91 dB; total harmonic distortion 0.001% \$349

SONOGRAPHIE BY CONRAD-JOHNSON

SD-1B 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 filtering; dual digital-to-analog converters; sound audible during fast scan. Cues by track and index number. 4x oversampling at 176.4 kHz. Displays current track number, program in memory; elapsed time of current track. 3¾ x 18 x 12 in; 8½ lb. \$795

SONY

CDP-970 CD Player

CD player with remote. Features Unilinear con-

verter/digital filter; dual digital-to-analog converters; envelope differential detection system; noise shaping; 5 power supply stages; aspheric optical pickup; 16-bit digital filter with 4x oversampling; 20-key direct music selector and delete shuffle play capability; 20-selection music calendar; Custom File; variable line output; optical outputs; CD-3 capability \$500

CDP-770 CD Player

Features 18-bit 8x-oversampling digital filter; dual 16-bit digital-to-analog converters; noise shaping; optical digital output; 20-key direct access; servo stabilizer circuit; 20-track musical calendar; shuffle play; repeat play; search; program edit; full function remote control. 17 x 3¾ x 10¾ in; 7 lb, 5 oz \$350



Sony CDP-C8ESD

ES Series

CDP-RI CD Player and DAS-RI Converter

CD player with twin optical link between the two components. Features 45-bit 8x-oversampling digital filter; noise shaping; 4 16-bit digital-to-analog converters; optical and coaxial digital outputs; servo stabilizer circuit; frame and beam construction; linear motor; aluminum diecast optical transport base; left/right twin-mono circuit configuration; multiple stage power supply; Custom File; 20-key direct access remote control; 20-selection random music sensor; high-speed search; index search; shuffle play; delete option; 5 repeat modes. Player: 18½ x 5 x 16¼ in; 37 lb, 7 oz; Converter: 18½ x 5 x 16¼ in; 37 lb, 7 oz. \$8,000

CDP-X7ESD CD Player

CD player with digital sync. Features 45-bit 8x-oversampling digital filter; noise shaping; dual 18-bit linear digital-to-analog converters; optical and coaxial digital outputs; balanced outputs; servo stabilizer circuit; frame and beam construction; linear motor; discrete left and right twin-mono circuit; multiple-stage power supply; twenty-selection random music sensor; high-speed search; index search; six repeat modes; shuffle play; delete option; music calendar. Includes 20-key remote control. 18¾ x 5 x 14¾ in; 37 lb, 8 oz. \$2,000

CDP-608ESD CD Player

CD player with digital sync. Features 45-bit 8x-oversampling digital filter; noise shaping; dual 18-bit linear digital-to-analog converters; optical and coaxial digital outputs; servo stabilizer circuit; frame and beam construction; linear motor; left/right twin-mono circuit configuration; Custom File; 20-key direct access remote control; 20-selection random music sensor; automatic music sensor; high-speed search; index search; 6 repeat modes; shuffle play; delete option; music calendar. 18¾ x 5 x 14¾ in; 25 lb, 6 oz. \$900

CDP-508ESD CD Player

Compact disc player with digital sync. Features 45-bit 8-times-oversampling digital filter; noise shaping; dual 18-bit linear digital-to-analog converters; optical digital outputs; servo stabilizer circuit; monocoque chassis; linear motor; left

and right twin-mono circuit configuration; Custom File; 20-selection random music sensor; automatic music sensor; high-speed search; index search; five repeat modes; shuffle play; delete option; music calendar. Includes 20-key direct access remote control. 18¾ x 4¾ x 13½ in; 14 lb, 5 oz. \$550

CDP-C15ESD CD Changer

10-disc magazine CD changer with DiscJockey cartridge-loading system. Features 18-bit 8x-oversampling digital filter; dual 18-bit linear digital-to-analog converters; optical and coaxial digital outputs; error prediction logic; L/R twin mono circuit configuration; multi-stage power supply; Custom File; 10-disc/10-track direct access remote control; 60-selection random music sensor; automatic music sensor; high-speed search; shuffle play; 4 repeat modes. 18¾ x 4¾ x 14¾ in; 14 lb, 9 oz. \$800

CDP-C8ESD CD Changer

5-disc carousel CD changer. Features 18-bit 8x-oversampling digital filter; noise shaping; dual 18-bit linear digital-to-analog converters; optical digital outputs; servo stabilizer circuit; monocoque chassis; Custom File; 5-disc/10-track direct access remote control; 32-selection random music sensor; automatic music sensor; shuffle play; 5 repeat modes; music calendar. 18¾ x 5 x 15¼ in; 15 lb, 7 oz. \$500

CDP-C800 CD Changer

5-disc carousel CD changer with DiscJockey cartridge-loading system. Features 18-bit 8x-oversampling digital filter; dual 18-bit digital-to-analog converters; noise shaping; servo stabilizer circuit; optical digital output; variable line output; Custom File; 5 + 10 key direct access playback; music calendar display; shuffle play; repeat play; search; 32-track programming; full function remote control. 17 x 5 x 15¼ in; 13 lb, 4 oz. \$500

CDP-C900 CD Changer

Ten-disc magazine compact disc changer with DiscJockey cartridge-loading system. Same magazine can be used in car compact disc changers. Features 18-bit 8-times-oversampling digital filter; dual 16-bit digital-to-analog converters; noise shaping; servo stabilizer circuit; optical digital output; ten-key direct access playback; shuffle play; repeat play; search; 32-track programming; full function remote control. 17 x 4¾ x 14¾ in; 14 lb, 2 oz. \$470

SOUNDCRAFTSMEN CD750 CD Player

CD player with differential/compander circuitry. Features high dynamic range; optional tening; spectral gradient circuit; both circuits bypassable; indexing; digital filter; all-metal chassis; audible scan; random; passage-repeat; 3-beam laser; full function infrared remote; oversampling; multi-function fluorescent display; headphone jack; gold-plated output jacks; shock-resistant disc-handling \$599

TEAC

PD-480 CD Player

8-times-oversampling and dual digital-to-analog converters. Features 20-selection random memory programming; three-way repeat; program delete; ten-key pad on front panel; memory program calendar; auto space; multi-function eight-

COMPACT DISC PLAYERS

digit fluorescent display. Includes 30-key full function remote control. Frequency response 20-20,000 Hz \pm 0.5 dB; signal-to-noise ratio $>$ 100 dB; total harmonic distortion 0.008%; channel separation $>$ 98 dB. 17 $\frac{1}{8}$ x 3 $\frac{1}{2}$ x 11 $\frac{1}{8}$ in; 8.4 lb. \$400

PD-700M CD Changer

Six-disc compact disc changer with 4-times-oversampling, dual digital-to-analog converters, and three-beam laser pickup. Features 32-track multi-disc random playback; multi-function fluorescent display; three-way repeat; front-loading disc cartridge. Includes ten-key remote control. Frequency response 5-20,000 Hz \pm 1 dB; signal-to-noise ratio 93 dB; total harmonic distortion 0.01% at 1,000 Hz. 17 $\frac{1}{8}$ x 4 x 13 $\frac{1}{4}$ in; 11.4 lb. \$499



Vector Research VCD-420R

TECHNICS

SL-P1300 CD Player

8-times-oversampling digital filter and four 18-bit digital-to-analog converters. Features separate digital and analog power supplies; Class AA sample-and-hold circuitry; high-speed linear-motor access system. 10-button keypad; auto-cue; A/B repeat; \pm 8% pitch control; optical and coaxial digital outputs; 2-speed search dial; audible pause; rocker switch for mixing; cueing by direct CD time code; balanced outputs; skip keys; 2-speed audible search; repeat track, disc, and program; headphone jack with adjustable level; line out via unbalanced (phono) pin connectors; subcode output; full-function fluorescent display; cue search. Includes remote control. 6 $\frac{3}{4}$ x 16 $\frac{7}{8}$ x 14 $\frac{1}{8}$ in. \$1,800

SL-P999 CD Player

Four 20-bit D/A converters and 8x-oversampling digital filter. Features Class AA circuitry; discrete low-noise active servo power supply; anti-vibration/resonance multi-layer chassis construction; high-speed linear motor access system; dual aspheric glass lens. 32-track random access programming; skip and index skip; 20-key direct-access system; auto cue; auto space; optical digital output; sample-and-hold noise suppression; edit guide; random play; search play; window search; peak-level search; FL display; timer play; 3-in CD compatibility. Includes 43-key remote control. Frequency response 2-20,000 Hz \pm 0.3 dB; signal-to-noise ratio 113 dB; THD 0.0013%. 17 x 5 x 13 $\frac{3}{8}$ in; 13.2 lb. \$600

SL-P770 CD Player

4x-oversampling digital filter and four 18-bit D/A converters. Features separate digital and analog power supplies; OFC wiring; high-speed linear-motor access system. Optical and electrical digital outputs; auto-cue; signal output meters; full-function FL display; linear matrix track and programming indicator; 20-key direct access; random play; headphone jack with adjustable level; disc window; 2-speed audible search;

peak-level search for taping; CD edit; music scan; A/B repeat; track repeat; dimmer switch; gold-plated output jacks; 32-track programming; timer play; remote control. \$580

SL-PC20 CD Changer

5-disc CD changer with revolving disc platform. Features 4x oversampling digital filter; dual 16-bit D/A converters. Sequential play; 20-step random access programming; direct-disc access; repeat; random play; 2-color FL display. Includes 25-key wireless remote control. Frequency response 2-20,000 Hz \pm 1 dB; S/N ratio 96 dB; THD 0.05%. 17 x 3 $\frac{3}{4}$ x 14 $\frac{1}{4}$ in; 8 $\frac{1}{2}$ lb. \$330

TOSHIBA

XR-9037 CD Player

2x oversampling and remote control with/volume. Features digital peak search; 20-program random memory; digital filter. \$359

XR-9058 CD Changer

CD changer with 6-disc capacity and single-play drawer. Features 2x oversampling; 3-beam laser pickup; 32-track random programming; 32-key wireless remote control; intro scan; random play; 9-digit multi-function display; cumulative time display; 10x audible search; fast forward and reverse; integrated system remote capability. \$499

VECTOR RESEARCH

VCD-420R CD Player

Features 4x oversampling, dual D/A converters; digital filter. Music calendar; CD-3 compatible; 5-way repeat; shuffle play; 28-function remote control. Frequency response 20-20,000 Hz \pm 0.5 dB; S/N $>$ 100 dB; THD $<$ 0.004%; ch sep $>$ 90 dB; dynamic range $>$ 95 dB. 17 x 3 $\frac{1}{4}$ x 12 in; 9 lb, 15 oz. \$350

VCD-610R CD Changer

CD changer with 4x oversampling, dual D/A converters, and 6-disc capacity. Shuffle play; audible cue & review; 4-way repeat; 18-function remote control. Frequency response 20-20,000 Hz \pm 0.5 dB; S/N $>$ 96 dB; THD $<$ 0.009%; ch sep $>$ 86 dB; dynamic range $>$ 92 dB. 17 x 4 $\frac{3}{8}$ x 12 $\frac{1}{2}$ in; 13 lb. \$400

YAMAHA

CDX-2020 CD Player

Hi-bit 8x-oversampling digital filter and 4 hi-bit, MSB digital-to-analog converters; this produces 22-bit linearity. Features hi-bit switchable direct output; digital de-emphasis circuitry; current isolation system; shunt-regulated power supplies and independent transformers; microcomputer controlled 2-way servo system; heavy-duty chassis with pinpoint damping system; high-speed linear motor; floating suspension system; glass lens 3-beam laser pickup with built-in head amplifier in high-precision die-cast aluminum chassis. 20-bit digital volume control; optical and coaxial digital output connectors; 3-in CD compatibility; 5-way repeat play; 24-track random access programmable play; direct track access; 3-way music search; index search; calendar display; random play; gold-plated terminals; RS integrated system remote control compatibility. Includes 46-key wireless remote control. Titanium finish with wood side panels. 39 lb. \$1,499

CDX-920Ti CD Player

Hi-bit 8x oversampling 18-bit digital filter and

twin hi-bit D/A converters which produce 22-bit linearity. Features hi-bit switchable direct output; digital de-emphasis circuitry; current isolation system; microcomputer controlled 2-way servo system; heavy-duty chassis with ballpoint damping system; glass lens 3-beam laser pickup with built-in head amplifier in high-precision diecast aluminum chassis. 20-bit digital volume control; optical and coaxial digital output connectors; auto/manual tape edit program; 3-in CD compatibility; 5-way repeat play; 24 track random access programmable play; direct track access; 3-way music search; index search; calendar display; random play; gold-plated terminals; RS integrated system remote control compatibility. Includes 47-key wireless remote control. Titanium finish. 22 lb. \$699

CDX-920. As above, black. \$699

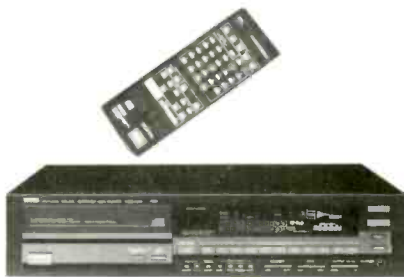
CDX-820Ti CD Player

Hi-bit 8x oversampling 18-bit digital filter and twin hi-bit D/A converters. Features hi-bit switchable direct output; current isolation system; microcomputer controlled 2-way servo system; glass lens 3-beam laser pickup with built-in head amplifier in high-precision diecast aluminum chassis. Coaxial digital output; auto/manual tape edit program; 3-in CD compatibility; 5-way repeat play; 24 track random access programmable play; index search; calendar display; 4-mode program (random, tape edit, delete, manual); 8-digit multi-function fluorescent display; headphone jack with level control; anti-resonance, anti-vibration design; RS integrated system remote control compatibility. Includes 45-key wireless remote control. Titanium finish. 15 lb. \$599

CDX-820. As above, black. \$599

CDX-420 CD Player

Double-resolution 16-bit digital filter and twin high-speed 16-bit D/A converters. Features microcomputer controlled 2-way servo system; glass lens 3-beam laser pickup with built-in head amplifier in high-precision diecast aluminum chassis. 4-way repeat play; 24 track random play; 3-in CD compatibility; auto/manual tape edit program; 3-mode program (random, tape edit, manual); three-way music search; calendar display; six-digit multi-function LCD; headphone jack; direct track access. Black. \$279



Yamaha CDX-920

CDX-610U CD Changer

CD changer with 10-disc magazine. Features 18-bit, 4x-oversampling digital filter; D/A converter; three-beam laser pickup; microcomputer-controlled 2-way servo system; 3rd-order low-pass analog filter. 36-track random access programming; memory play; random play; disc scan; music scan; three-way repeat; index search; headphone jack with adjustable level. Includes wireless remote control. Black; 20 lb. \$599

TUNERS

ACCUPHASE BY MADRIGAL

T-106 AM/FM Tuner

Quartz-locked synthesis; 14-station random memory; pulse tuning; double-tuned front end; FM stereo demodulator; AM synchronous detector; signal-strength meter; peak-modulation meter; MPX filter; sel switch; muting switch. FM section: 50-dB quieting sens mono 17 dBf, stereo 17 dBf; S/N 83 dB stereo, 79 dB mono (at 80 dBf A-wtd); FR 10-60,000 Hz ± 0 , 0.5 dB; capture ratio 1.5 dB; sep 50 dB at 1,000 Hz; AM sup 80 dB at 65 dBf. AM section: sens 20 μ V/m at 20 dB S/N; 17 1/2 x 5 x 14 1/2 in. \$2,750

T-107 FM Tuner

Electronic tuning; 12-station random memory; auto sweep for FM reception; double-tuned front end to reject interference and IM; differential-gain linear FM detector; IF filters with flat group-delay characteristics; resonator-controlled stereo demodulator; multipath and signal-strength meter; MPX filter; muting switch; champagne-gold or anodized-black finishes. FM section: 50-dB quieting sens 17 dBf; S/N stereo 85 dB; FR 10-16,000 Hz, ± 3 dB; capture ratio 1.5 dB; sep 50 dB at 1,000 Hz; AM sup 80 dB; adj-ch rej 30 dB. 17 1/2 x 4 3/8 x 13 in.; 12.8 lb. \$1,800

ACOUSTIC RESEARCH

T-06/R AM/FM Tuner

Features a built-in infrared receiver which can be linked to the A-07 and/or RD-06. FM section: 50 dB quieting sens. mono 14.6 dBf, stereo 37.2 dBf; AM rej 60 dB; cap ratio 1.5 dB; S/N 78 dB mono, 73 dB stereo (at 65 dBf A-wtd); FR 30-15,000 Hz, ± 1.0 dB; sep 45 dB. AM section: S/N 50 dB. 17 1/4 x 3 1/2 x 10 3/8 in.; 13.5 lb. \$330

T-06 AM/FM Tuner. Same as above, without remote control facility. \$400
RC-03. Remote control for the T-06/R. \$25

ADCOM

GFT-555 II AM/FM Tuner

Features quartz-referenced digital-synthesis tuning; auto up/down scan; instant-recall preset tuning; fluorescent digital-frequency display; 8 AM/FM presets; 5-LED signal-strength display; switchable high-blend circuit; mono/mute switch; tuning accuracy of 0.00025%. THD stereo 0.07% at 1,000 Hz; 50-dB quieting sens stereo 35.5 dBf; S/N 78 dB stereo; FR 30-15,000 Hz ± 3 dB; capture ratio 1.5 dB; sep 53 dB at 1,000 Hz; AM suppression 70 dB. 17 x 3 3/4 x 12 1/2 in. \$300

A/D/S/

CC4 AM/FM Tuner/Preamp

Features microprocessor operating system for remote-control operation, digital volume and tone controls, and alphanumeric display. Remote IR receiver capability for multi-room remote control; digital-synthesis tuning with 30 AM or FM stations; optional remote control via RC1. Preamp section: max output > 7 V rms into 10,000 ohms/1,000 pF; volume and balance control range 80 dB in 1-dB steps; bass and treble control range ± 10 dB in 2-dB steps; low bass 0 to $+6$ dB in 1-dB steps. FM section; sens < 13 dBf mono; 50-dB quieting sens < 40 dBf stereo; capture ratio < 1.5 dB; sel > 65 dB; spurious rejection > 100 dB; stereo S/N > 70 dB; sep at 1,000 Hz > 47 dB. AM section; sens for 6-dB S/N < 10 μ V; IF rejection > 50 dB; S/N 44 dB. 2 3/4 x 17 1/2 x 14 3/8 in.; 15 lb. \$850



Atelier T2 AM/FM Tuner

AM/FM synthesized tuner with 16 station 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 μ V (11.0 dBf) stereo 5.5 μ V (26.1 dBf); stereo 50-dB quieting sens 15 μ V (34.8 dBf); S/N mono > 70 dB, stereo > 65 dB; FR 10-14,500 Hz. ± 0 , -1 dB; ch sep > 38 dB at 10,000 Hz; capture ratio < 1.8 dB; AM quieting sens < 5 μ V for 6 dB S/N; image rejection > 55 dB; S/N (with 1,000-Hz 5-mV signal) > 44 dB; 2 3/4 x 17 1/2 x 14 3/8 in.; 13.2 lb. \$539

ARCAM

Delta 80 AM/FM Tuner

Analog tuner with digital frequency display and 6 AM/FM presets. Features flywheel-assisted rotary knob; 3-color FM tuning indicator and logarithmically-scaled signal strength meter; automatic frequency control (AFC) switch; mono switch. FM section: sens 1.4 μ V; tuning range 87.5-108 MHz; stereo S/N 70 dB; stereo S/N 68 dB; cap ratio 1.5 dB. AM section: MW, 5300-16,000, LW, 1,600-2,700 Hz; signal-to-noise ratio 50 dB ref 30% modulation. 17 x 10 3/8 x 2 3/8 in.; 10 lb. Black. \$600

Alpha 2 AM/FM Tuner

Features birdie filter single glass-fiber Printed Circuit Board. MW/LW reception; automatic-frequency-control (AFC) switch; mono switch; red LED beacon; rotary flywheel tuning control with analog tuning scale. FM section: sens 1.4 μ V; stereo S/N 68 dB; FR 20-12,000 Hz ± 0.5 dB, -2 dB at 15,000 Hz; ch sep at 1,000 Hz > 40 dB; cap ratio 1.5 dB; alt-ch sel > 60 dB; AM suppression > 50 dB. AM section: MW, 5300-16,000, LW, 1,600-2,700 Hz; signal-to-noise ratio 50 dB reference 30% modulation. 17 x 9 x 3 3/8 in.; 5 lb. Charcoal finish. \$330

AUDIO BY VAN ALSTINE

Transcence Series Two FM Tuner

FM tuner with discrete audio stage. Features isolated active output circuits; all metal-film resistors and capacitors; Class A current-sourced predrivers; separate shunt-regulated and filtered power supply. Electronic signal seeking; digital readout; 5 nonvolatile station presets; mono/stereo switching; variable tuning with between step capability. 17 x 9 x 3 in.; 10 lb. \$825

FET Three FM Tuner

FM tuner with Overload-Immune FET integrated circuitry in the audio stages. Features film coupling capacitors; optimized power supply decoupling circuits. Electronic signal-seeking; tuning; digital readout; nonvolatile station presets; mono-stereo switching; variable tuning; head-phone jack. 17 x 9 x 3 in.; 9 lb. \$525

AUDIO DESIGN ASSOCIATES

FM-600A FM Tuner

Analog FM tuner with 6 presets and digital frequency readout. Features servo-lock circuitry; 15-pole IF filter; AFC tuning; muting; stereo-blend noise filter; stereo/mono mode all front panel switchable; signal strength/multipath LED meter; rear-panel left- and right- output-level controls; standard EIA rack-mountable. FM section: 1HF usable sens stereo 14.5 dBf, mono 8 dBf; 50-dB quieting sens stereo 34 dBf, mono 13 dBf; THD 0.15% at 1,000 Hz; S/N 65 dB; FR 15-15,000 Hz ± 3 dB; capture ratio 1.4 dB; sep 47 dB at 1,000 Hz; adjacent-ch rejection 90 dB. 19 x 5 1/4 x 13 in.; 12 lb. \$2,395

AUDIO DYNAMICS

T2000E AM/FM Tuner

Programmable AM/FM tuner. Features remote-control capability; Schotz noise reduction; interference rejection; 10 AM/10 FM station presets. 50-dB quieting sens: mono 16.2 dBf, stereo 40 dBf; S/N: FM 70 dB, AM 40 dB; FR 20-15,000 Hz, ± 1 dB; alt-ch sel 67 dB, capture ratio 1.5 dB. 17 x 2 1/8 x 12 3/8 in. \$349

CAMBRIDGE AUDIO

T50 AM/FM Tuner

Analog tuner with FM and two AM wavebands. Features dual MOSFET tuning head; dual FM demodulator with linear IF strip; pilot tone cancelling stereo decoder; linear-phase birdie filter. \$449

CARVER

TX-11b AM/FM Tuner

Digital-quartz-synthesized tuner with asymmetrical charge coupled FM detector circuit to reduce multi-path distortion. Features AM stereo section with separation 35 dB and S/N 77 dB. LED signal-strength meter; 13 random AM/FM presets; wide/narrow bandwidth selector; indoor AM/FM antenna included. Stereo sens 16.3 dB 1HF; cap ratio 1.0 dB; AM suppression 75 dB; stereo alt-ch sel 110 dB; stereo THD 0.02% at 1,000 Hz; stereo signal-to-noise ratio 82 dB. 11 lb. \$750

TX-12 AM/FM Tuner

Quartz-synthesis tuner with asymmetrical charge coupled FM detector circuit to reduce multipath distortion. Features 20 random AM/FM presets with preset scan; analog signal-strength meter; wireless remote; indoor AM/FM antenna included. Stereo sens 18.6 dBf 1HF; cap ratio 1.45 dB; AM suppression 72 dB; alt-ch sel 60 dB; THD 0.02% in stereo at 1,000 Hz; stereo S/N 76 dB. 10 lb. \$400

CREEK AUDIO BY MUSIC HALL

T40 FM Tuner

FM tuner with auto mute. Features AFC, local/DX; narrow/wide switching. \$475

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TUNERS

DBX

TX-3MkII AM/FM Tuner

Tuner with Schotz NR for superior reception in difficult conditions. Features 8 AM and 8 FM presets; auto hi-blend eliminates excessive noise; seek. FR 20-15,000 Hz \pm 0.35 dB; 0.07% THD. \$599

DENON

TU-800 AM/FM Tuner

Features twin-drive PLL circuits; digital-synthesis tuning; low-impedance output. 3-step IF bandwidth selection; 30-station random preset memory; MPX/NR switch; auto-scan tuning; manual tuning; step manual tuning; last-channel-tuned memory; FL display. FM 50 dB quieting sens 20 μ V (37.2 dBf) stereo. 1.6 μ V (15.3 dBf) mono; S/N 96 dB mono, 86 dB stereo; capture ratio 1.2 dB; AM sup 70 dB. 3 1/2 x 17 1/8 x 12 3/8 in. \$500

TU-550 AM/FM Tuner

Features digital-synthesis tuning. 2-step IF bandwidth selection; 20-station random preset memory; MPX filter; auto-scan tuning; quick manual tuning; manual step tuning; last channel memory; FL display. Low imp of approximately 600 ohms; FM section: sens 0.9 μ V (10.2 dbf); THD stereo 0.15%, mono 0.08%; S/N stereo 78 dB, mono 84 dB; FR 20-15,000 Hz \pm 0.5/-1.0 dB; stereo sep 45 dB at 1,000 Hz. AM sens 18 μ V. 17 1/8 x 2 3/8 x 11 1/2 in; 6.8 lb \$300

TU-460 AM/FM Tuner

Quartz-lock digital tuner with 30 station presets. Features last-channel tuned memory; auto-scan tuning; quick manual tuning; manual step tuning; RF attenuator switching. Includes Denon Integral System remote control for control from Denon IS receivers, preamps, and A/V amps. FM 50 dB quieting sens 38.5 dBf stereo, 15.3 dBf mono; S/N 82 dB mono, 78 dB stereo; cap ratio 1.5 dB; sep 45 dB at 1,000 Hz \$240

HAFLER

Iris FM Tuner

Digital-synthesis PLL tuning system. 3 dual-gate MOSFET; 5 tuned front end circuits; triple-tuned RF stage; auto DX; Hafler handshake system. 5 station memory; auto-search; digital readout; allows remote operation with Iris preamp. usable sens 11.3 dBf; 50-dB quieting sens 17.2 dBf mono, 37.2 dBf stereo; THD 0.1% mono, 0.18% stereo; cap ratio 1.5 dB; alt ch sep 60 dB; S/N 72 dB mono, 68 dB stereo. 17 x 3 x 8 1/2 in . . . \$450

HARMAN KARDON

Citation Twenty-Three AM/FM Tuner

Digital-synthesis quartz-locked tuner with Active Tracking high-selectivity (Hi Q) circuit. Features 16 AM/FM presets; seek and manual tuning; mono and mute buttons; LCD readout; analog fine-tuning; flywheel-stabilized tuning knob; remote control; anodized brushed aluminum blue/black finish with molded rubber trim; heavy-gauge metal chassis. FM specs (w/ Hi Q): 50-dB quieting sens 40.4 dBf (stereo); AM rej 70 dB; capture ratio 1.75 dB; alternate-channel selectivity 75 dB; adjacent-channel selectivity 30 dB; S/N 75 dB (stereo); stereo separation 35 dB at 1,000 Hz. AM section: S/N 55 dB. 17 3/8 x 2 3/4 x 14 1/8 in; 15 lb \$699

TU920 AM/FM Tuner

Digital-synthesis quartz-locked tuner with Ac-

tive Tracking high-selectivity (Hi Q) circuit. Features 16 AM/FM presets; muting; 2-way seek; manual up/down tuning; 5-LED signal-strength meter; tuned indicator; metal chassis. Available in black or champagne. FM specs (w/ Hi Q): 50-dB quieting sens 37.3 dBf (stereo); AM rej 55 dB; cap ratio 2.0 dB; alt-ch sel 75 dB; adj-ch sel 30 dB; S/N 74 dB (stereo); stereo sep 50 dB at 1,000 Hz. AM section: S/N 53 dB. 17 3/8 x 2 3/4 x 14 1/8 in; 10 lb \$399

TU911A. Similar to above except lacks Active Tracking circuitry. 3-LED signal-strength meter. FM specs: 50-dB quieting sensitivity 37 dBf (stereo); AM rej 55 dB; cap ratio 1.3 dB; alt-ch sel 60 dB; adj-ch sel 5 dB; S/N 74 dB (stereo); stereo sep 50 dB at 1,000 Hz \$299

JVC

FX1010TN AM/FM Tuner

Computer-controlled quartz-PLL digital-synthesis tuner with Opticalink system for reduced digital noise. Features 40 AM/40 FM station presets; auto memory; preset scan; variable stop level; dB signal-strength indicator; 6-column alphanumeric display; 2 antenna inputs; program memory and monitor for recording off the air unattended; record calibration signal generator; titanium finish \$480

FX1100BK. Same as above in black \$470



Harman Kardon Citation Twenty-Three

KENWOOD

KT-990D AM/FM Tuner

Quartz-synthesis AM/FM tuner with Direct Linear Loop Detector (DLLD) to preserve dynamic range. Features Direct Linear Reception Circuit (DLRC) to reduce digital noise; Direct Pure Decoder (DPD) to increase stereo separation; pentacle power supply; digital rotary tuning. 20 station presets; auto quieting control; manual/auto FM/IF bandwidth selectors; RF selector; rec calibrator; 3-station timer programming. FM: 50-dB quieting sens 38.8 dBf stereo; AM rej 76 dB; capture ratio 1.0 dB; alt-ch sel 60 dB. AM: sel 30 dB. 17 1/4 x 3 x 13 in; 8.8 lb \$375

KINERGETICS

KBT-1 AM/FM Tuner

AM/FM tuner designed to correct for hysteresis errors in electronics of broadcast station (adjustable correction). Features 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. FM specs: 50-dB quieting sens 36.0 dBf (stereo); THD 0.05% (wide), 0.10% (narrow) at 1,000 Hz; S/N 75 dB (mono), 70 dB (stereo); ch sep 40 dB (wide), 45 dB (narrow); cap ratio 1.5 dB; alt-ch sel 70 dB (narrow), 50 dB (wide); image rej 75 dB. Black or silver anodized brushed aluminum. \$795

LUXMAN

T-117 AM/FM Tuner

Digital-synthesis tuner with twin FM detectors; high S/N pulse-count detector for strong signals and PLL detector for weak signals. Features computer-analyzed tuning system that continuously samples radio signal-levels to optimize reception; dual-gate MOSFET front-end circuitry. 24 AM/FM presets; selectable FM/IF bandwidth; record-calibration button; cable FM fine tuning (25 kHz increments); unattended program recording; timer-program button; auto-seek/manual tuning button with indicator; IF wide/narrow indicators. FM section: 50-dB quieting sens 36 dBf; AM rej 70 dB; cap ratio 1.5 dB; alt-ch sel 80 dB (narrow); S/N 78 dB (stereo). AM section: S/N 48 dB. 17 1/4 x 2 1/2 x 12 1/4 in; 10 lb. . . . \$600

T-111 AM/FM Tuner

Digital-synthesis tuner with computer-analyzed tuning system that continuously samples radio signal-levels to optimize reception. Features 20 AM/FM presets; memory scan; cable FM fine tuning (25 kHz increments); unattended program recording; auto-seek/stereo mute button with indicator. FM section: 50-dB quieting sens 38 dBf; AM rej 68 dB; cap ratio 1.3 dB; alt-ch sel 60 dB; S/N 70 dB (stereo). AM section: S/N 52 dB. 17 1/4 x 2 3/8 x 8 3/8 in; 5.1 lb \$300

MAGNUM DYNALAB

Etude FM Tuner

Features analog tuning; isolated power supply switching; dual AGC stage monitors. Digital display; high-/low-level audio outputs; auto-blend circuit with manual defeat; panel meters for continuous monitoring of RF signal input, multipath interference level, and center tune condition; stereo/mono switch; noise-activated muting system with manual defeat; switchable wide/narrow IF bandwidth. Usable sens 10.3 dBf (mono), 11.2 dBf (stereo); 50-dB quieting sens 13.2 dBf (mono), 34.0 dBf (stereo); cap ratio <1.5 dB; alt ch >70 dB (wide), >80 dB (narrow); adj ch 12.0 dB (wide), adj ch 30 dB (narrow); stereo sep 60.0 dB; AM rejection -70 dB. 19 x 13 x 3 1/2 in; 14 lb \$1,195

FT-101A FM Tuner

Features MOSFET front end; group-delay ceramic filtering; analog tuning; sequential blend circuit adjusts stereo separation automatically. Switchable wide/narrow IF bandwidth; noise-activated muting system with manual defeat; stereo/mono switching; manual auto frequency control switching; panel meters for continuous monitoring of RF signal input, multipath interference level, and center tune condition; rotary tuning. Usable sens 10.3 dBf (mono), 11.2 dBf (stereo); 50-dB quieting sens 13.2 dBf (mono), 34.0 dBf (stereo); cap ratio 1.5 dB; alt ch 55.0 dB (wide), 75.0 dB (narrow); adj ch 6.0 dB (wide), 20.0 dB (narrow); stereo sep 60.0 dB; AM rej -70 dB. 19 x 13 x 3 3/4 in; 12lb. Optional remote control. Black, champagne gold, or brushed silver \$805

MARANTZ

ST 54 AM/FM Tuner

Quartz-locked digital-synthesis tuner. Features 24-station preset memory (16 FM/8 AM plus bandwidth setting for each preset); retains memory for 2 weeks without AC or battery; switchable wide/narrow bandwidth. \$780

ST 54 CG AM/FM Tuner

Features dual-gate MOSFET/analog priority;

TUNERS

wide/narrow if bandwidth sw; 16 AM/FM presets. Gold color with rosewood side panels \$500
ST 54 BL. As above, black with rosewood side panels \$420



NAD Monitor Series 4300

MCINTOSH MR-7082 AM/FM Tuner

AM/FM tuner with Signal Locked Loop tuning system. Features electronic memory for 7 AM and 7 FM stations; digital frequency readout; CMOS-FET RF amplifier; double-balanced mixer; PLL MPX decoder; audio-output suppression circuits for 19 kHz and 38 kHz carrier; LED tuning meter; electronically regulated power supply; internal audio processor; memory search; wide-band AM; remote control interface. FM section: sensitivity mono 13 dBf (1.3 V) for 30 dB of quieting; signal strength for 50 dB of quieting, 18/36 dBf mono/stereo; capture ratio 1.5 dB; IM 0.08% from 20-15,000 Hz with 100% modulation or less; alt ch sel 55 dB; sep 50 dB at 1 kHz; FM suppression 60 dB; image rejection 90 dB. AM section: sensitivity 35 V; signal-to-noise ratio 55 dB IHF, 65 dB at 100% modulation; total harmonic distortion 0.2% at 30% modulation; sel 40 dB IHF; IF response 90 dB. 16 x 5½ x 13 in; \$1,499

MERIDIAN 204 FM Tuner/Timer

FM tuner with quartz synthesis tuner and 18 preset memories. Features built-in timer compatible with entire Meridian system; battery backup. Search/step tuning in 50 kHz steps; numerical signal-strength meter; sliding separation stereo decoder that maintains 50 dB min signal-to-noise ratio on weak signals. Can be controlled by multiroom system. 4 x 6¼ x 12¼ in. 10 lb \$1,090

MISSION ELECTRONICS Cyrus AM/FM Tuner

Digital-synthesis, quartz-PLL tuner with 59 AM and 59 FM presets. Features magnesium diecast chassis; aluminum diecast cover and front; toroidal transformer. Full-function remote; programmable 15 dB volume control; display off direct station accessing; scan; handset disable; 2-mode operation; automatic storing; flip and browse facility. 8½ x 3½ x 13½ in \$649

NAD

Model Monitor Series 4300 AM/FM Tuner
 Features digital frequency synthesis tuning; 8 AM/FM presets; IF wide/narrow; FM NR. Stereo separation 55 dB; selectivity 80 dB; image rej 120 dB; S/N > 80 dB. Rack mountable... \$499

Model 4225 AM/FM Tuner

Features ultralinear IF filters; switchable blend circuit. 14 AM/FM presets. S/N 75 dB \$249

NAKAMICHI ST-7 AM/FM Tuner

Tuner with Schotz noise reduction. Features 5-segment signal/multipath meter; PLL circuitry;

16 station presets; output level controls (R + L independent). FM IHF sens mono 1.7 µV (10 dBf), stereo 3.9 µV (17 dBf); FM usable sens mono 1.7 µV (10 dBf), stereo 3.9 µV (17 dBf); 50-dB quieting sens mono 2.7 µV (14 dBf), stereo 14 µV (28 dBf); THD stereo 0.08%, mono 0.06% at 1,000 Hz; S/N 76 dB stereo, 80 dB mono; FR 20-15,000 Hz, ±1 dB; capture ratio 1.9 dB; sep 55 dB at 1,000 Hz; AM suppression better than 60 dB; alt-ch rejection > 60 dB. 17½ x 2½ x 11¾ in; 10.3 lb \$795

NIKKO AUDIO

Gamma-600 AM/FM Tuner

Tuner with IF detection changing circuitry to assure minimum tuning deviation. Features MPX hold circuitry; oversized display; ceramic filter; differential IF amplifier circuitry. Variable high blend; memory can; stereo muting switch; IF band selector. 50 dB quieting sens, mono 13.5 dBf, stereo 38.2 dBf; AM rej 70 dB; cap ratio, wide 1.0 dB, narrow 2.0 dB; alt-ch sel, wide 40 dB, narrow 80 dB; S/N 79 dB stereo, 86 dB mono; FR 30-15,000 Hz ± 1 dB. 19 x 3¾ x 13¾ in; 9¼ lb \$440
Gamma 400. Similar to above. 17¾ x 3¾ x 13¾ in \$420

ONKYO

Grand Integra T-G10 FM Tuner

FM tuner with 5-mode APR (Automatic Precision Reception) system that can be operated automatically or manually to optimize reception: A/B antenna, RF (distant/local), IF bandwidth (wide/narrow/S-narrow), hi-blend (on/off), and stereo/mono. Battery-free memory backup; high sensitivity and selectivity; chassis damping. Dual antenna inputs; 20 station presets with scan; cable FM fine tuning; timer preset programming; RI remote compatible. Controller included. Wood side panels \$850

Grand Integra T-9090II FM Tuner

FM tuner with dual-mode PLL circuit and SFR (Sonic Filter Circuit) to improve tuning accuracy. Features same APR reception system offered in T-G10 tuner; power-supply filter. Dual antenna inputs; 31-key remote control; 20 station presets with scan; auto strong-station memory; multi-function digital display; digital signal-strength readout; timer preset programming; adjustable output-level; cable FM fine tuning. Wood side panels. 50-dB quieting sens 37.2 dBf (stereo); cap ratio 1.0 dB; S/N 85 dB (stereo); stereo sep 55 dB (at 1,000 Hz). 18¼ x 4 x 15¼ in; 18.7 lb \$750

Integra T-4087 AM/FM Tuner

AM/FM tuner with 4-mode APR (Automatic Precision Reception) system: distant/local, IF bandwidth (wide/narrow), hi-blend (on/off), and stereo/mono; all modes except distant/local can be overridden. Features PLL demodulator; separate power supplies/ground wiring for all major sections; RF amp with dual-gate MOSFET. 5-segment signal-strength indicator; 20 AM/FM station presets with scan; battery-free memory backup. Black finish. FM: 50-dB quieting sens 36 dBf (stereo); cap ratio 1.0 dB; S/N 77 dB (stereo); stereo sep 45 dB (at 1,000 Hz). AM: S/N 40 dB. 17½ x 3 x 14¾ in; 9.5 lb \$420

PIONEER

Elite F-91 AM/FM Tuner

Digital-synthesis AM/FM tuner. Features ARTS (Active Real-Time Tracing System) with active

IF filter; digital decoding; 4-gang tuning capacitor; MOSFET circuit; 24 AM/FM station presets; 3-position muting level; remote compatible; honeycomb chassis. THD 0.02%; alt ch sel 85 dB; S/N 92 dB \$600

F-656 AM/FM Tuner

FM section: 50-dB quieting sens, mono 15.9 dBf, stereo 37.3 dBf; cap ratio 1.0 dB; S/N (at 80 dBf) mono, 86 dB, stereo, 81 dB; FR 20-15,000 Hz, +0.4, -1 dB. 16½ x 3¾ x 12½ in \$325

PROTON

AT-670 AM/FM Tuner

PLL synthesis AM/FM tuner with Schotz II tuning. Features rotary knob; 2-color display; 18 FM and 9 AM presets; remote capability. 50-dB sens 32-µV mono, 30-µV stereo; AM rejection 65 dB; cap ratio 1.0 dB; S/N 83 dB mono, 74 dB stereo. 18½ x 4¾ x 15¾ in; 15.5 lb \$400

QUAD

FM4 FM Tuner

FM stereo tuner designed to be used with Quad 44 preamp. Features 8 pushbuttons to store/recall station presets, tuning knob, power switch; bar-graph meter to indicate signal strength, center-channel tuning; dedicated microprocessor that recalls desired station from memory, tunes it, automatically sets muting, automatic-frequency-control levels. Stations stored in memory remain there for up to 5 years, even with power disconnected. Available in grey. Mono/stereo 50-dB quieting sens 2.7/25 µV; mono/stereo signal-to-noise ratio 76/70 dBA at 1 kHz, 1 mV; mono/stereo distortion 0.05%/0.10% stereo; capture ratio 2.5 dB; sel 53 dB; image/IF rejection 80/100 dB; frequency response 20-15,000 Hz +0, -1 dB; crosstalk 40 dB at 1 kHz; pilot-tone suppression 60 dB; de-emphasis switchable 50/75 µsec; 8 x 1¾ x 5½ \$695

REALISTIC

TM-150 AM/FM Mini Tuner

PLL tuning; stereo/mono switch; FM stereo LED; illuminated tuning dial; built-in AM and FM antennas; terminals for external antenna. 9 x 2½ x 6 in \$60



Revox B260-S

REVOX

B260-S FM Tuner

FM stereo tuner stores 60 preset stations with reception modes in non-volatile memory, allows user to arrange stored stations into separate groups for scanning. Maximum S/N > 80 dB; THD 0.07%; alternate-channel selectivity; FR 20-15,000 Hz ± 0.5 dB; 17¼ x 4¼ x 13 in; 15.5 lb \$2,500
B160 FM Tuner. Similar to B260-S but stores up to 30 preset stations \$990

ROTEL

RT870 AM/FM Tuner

Quartz-PLL tuner with 16 AM or FM presets. Fea-

TUNERS

tures 4 regulated power supplies; active filter networks; shielded dual gate MOSFET front end; FM noise filter selector. 50-dB quieting sens 37.2 dBf stereo, 14.8 dBf mono; AM rej 58 dB; cap ratio 1.0 dB; alt-ch sel 60 dB wide, 80 dB narrow; S/N 75 dB stereo, 80 dB mono; FR 30-15,000 \pm 0.5 dB; sep 48 dB at 1,000 Hz. 17½ x 2¾ x 12¾ in.; 8.5 lb. \$399

RT850A AM/FM Tuner

Quartz-synthesis tuner with microprocessor circuitry. Features dual-gate MOSFET front-end; 6 AM/6 FM presets, manual and autotune tuning. FM section: usable sens mono 2 μ V (11.2 dBf), 50-dB quieting sens mono 3 μ V (14.6 dBf), stereo 40 μ V (37.2 dBf); THD stereo 0.2%, mono 0.08% at 1,000 Hz; S/N 73 dB stereo, 75 dB mono; FR 30-15,000 Hz \pm 0, -2 dB; capture ratio 1.0 dB; sep 48 dB at 1,000 Hz; AM suppression 58 dB; AM section: sens 300 μ V/m; S/N 50 dB. 2½ x 17 x 11½ in.; 8.5 lb. \$299



Sansui TU-X711

SAE

T102 AM/FM Tuner

Computer direct-line digital tuner with 16 station presets. Features auto and manual tuning; IF narrow; high blend. FM section: 50-dB quieting sens 34 μ V; cap ratio 1.2 dB; alt-ch rejection -100 dB narrow; adj-ch rejection -15 dB narrow; IHF sens stereo 4.1 μ V; THD stereo 0.08% at 1,000 Hz; S/N 70 dB stereo; FR 30-18,000 Hz \pm 1, -2 dB; sep 55 dB at 1,000 Hz. 19 x 3½ x 12½ in. \$349

SANSUI

TU-X711 AM/FM Tuner

Quartz PLL synthesis tuner with Super Linear Digital decoder. Features RF-mode selector; IF-bandwidth selector; record calibrator; 2 separate antenna inputs; 30 random presets and a numeric keypad for instant station recall; preset scan. Usable sensitivity 10.8 dBf; 50 dB quieting sensitivity 16.2 dBf (mono), total harmonic distortion at 85 dBf < 0.009% (mono), 0.02% (stereo); signal-to-noise ratio 98 dB (mono), 91 dB (stereo); alternate channel selectivity 60 dB (wide), 75 dB (narrow). 17¾ x 3¾ x 12½ in.; 11.2 lb. Black finish. \$625

TU-X301i AM/FM Tuner

Quartz PLL digital synthesis tuner with 30 AM/FM station presets. Features numeric keypad for instant recall; 5-sec preset station scan; pale blue indicators. FM section: 50-dB quieting sensitivity 18.0 dBf (mono), 38.0 dBf (stereo); signal-to-noise ratio 79 dB (mono), 73 dB (stereo); total harmonic distortion 0.1% (mono), 0.15% (stereo). 17 x 2¾ x 10½ in.; 6.2 lb. Black-matte finish. \$250

SHERWOOD

TD-7010R AM/FM Tuner

Quartz PLL synthesis tuning system. Features 3 pairs of IF ceramic filters; MOSFET front end. Digi-Link remote system; digital display; auto/manual scan; 30 station presets; preset scan switch; 10-segment signal-strength meter; hi-

blend switch; FM mute switch; AM bar antenna. Usable sensitivity 9.8 dBf; 50 dB quieting sensitivity 36.1 dBf (stereo), 17.2 dBf (mono); frequency response 10-15 Hz \pm 3 dB; total harmonic distortion 0.25% (stereo), 0.15% (mono); 50 dB stereo sep at 1,000 Hz; capture ratio 1.5 dB; alternate-channel selectivity 70 dB. 3¼ x 17¾ x 8¾ in. \$200

SONY

ST-S730ES AM/FM Tuner

Features radial power-supply design; automatic microprocessor exclusion circuit master clock; SST Super Sound Tracking; Wave Optimized IF system; Wave Optimized direct detector; Wave Optimized digital stereo decoder; direct comparator circuitry. Signal-to-noise ratio 92 dB stereo, 100 dB mono; total harmonic distortion 0.0075% stereo, 0.004% mono; sensitivity 10.3 dBf/0.9 μ V; selectivity (at 400 kHz) 70 dB; stereo separation 70 dB at 1,000 Hz. 3¾ x 18½ x 14¾ in.; 12 lb, 6 oz. \$550

SOUNDCRAFTSMEN

Pro-Tuner Four AM/FM Tuner

Digital quartz-PLL tuner with 16 station presets, 5-digit station readout, auto-scan tuning, and active high-blend filter. 19-in rack-mount front panel. IHF sensitivity 1.6 μ V; S/N 75 dB; distortion 0.08%. 19 x 2¾ x 12 in. \$379

SOUNDSTREAM

T-1 AM/FM Tuner

System I component features full frequency defeatable blend circuit to reduce stereo background noise by 9 dB; knob moves in 50,000 Hz steps for tuning off frequency stations; separate audio and switching power supplies. Flywheel-assisted manual tuning knob for fine reception adjustment; 16 presets and complete station search; strength indicator; R-1 remote accesses major tuner functions. 50-dB quieting sensitivity 14.8 dBf; AM rejection 60 dB; capture ratio 1.5 dB; alternate channel selectivity 65 dB; signal-to-noise ratio > 82 dB mono; > 79 dB stereo; total harmonic distortion at 6,000 Hz: 0.12% mono; 0.2% stereo. AM section: sensitivity, 20 dB signal-to-noise ratio 30% modulation 10 mV; max quieting, 30% modulation 50 dB; total harmonic distortion at 1,000 Hz 0.5%. 17 x 3¾ x 11½ in.; 15 lb. \$795

SUMO

Aurora AM/FM Tuner

Digital synthesis AM/FM tuner with rotary tuning. Features auto seek forward/reverse; 8 presets for both AM/FM; tunes FM in ¼ increments (50,000 Hz spacing), allowing fine tuning; dynamic impulse noise reduction system; linear-phase IF filters. Auto seek forward/reverse; 8 preset for both AM/FM; gold-plated output jacks. 50-dB quieting mono 16 dBf, stereo 34 dBf; usable sensitivity 11 dBf mono; alternate-channel selectivity 75 dB; capture ratio 1.0 dB; signal-to-noise ratio mono 85 dB, stereo 82 dB. 19 x 8¾ x 1¾ in. \$729

TECHNICS

ST-G70 AM/FM Tuner

Stereo tuner with 39 AM/FM station presets. Features class AA circuitry; DC twin quartz circuitry; DC linear switching MPX filter; auto IF-bandwidth selection; twin tuner design. 10-key

random access; auto-scan; FM signal-strength display. \$380

ST-G460 AM/FM Tuner

Quartz-synthesis tuner with 39 AM/FM station presets. Features DC circuit construction; DC linear switching MPX filter; advanced FM front-end circuitry; 19,000 Hz pilot signal auto canceller; wide-band quadrature detector. Multi-function FL display; auto-scan tuning and auto memory; FM-mode switch (auto/mono). FM specs: sensitivity 10.8 dBf; 50 dB quieting sensitivity 18.1 dBf (mono), 38.1 dBf (stereo); total harmonic distortion 0.05% (mono), 0.1% (stereo); signal-to-noise ratio 80 dB (mono), 73 dB (stereo); frequency response 4-18,000 Hz \pm 0.5/-1.5 dB; alternate-channel selectivity 65 dB; cap ratio 1.0 dB; image rej 55 dB; AM rej 55 dB; stereo sep 50 db (at 1,000 Hz), 40 dB (at 10,000 Hz) \$240

TOSHIBA

ST-5528 AM/FM Tuner

Features 16 presets; digital display; preset memory recall; preset scan; automatic digital tuning lock-in for each available station; system remote control. \$170

YAMAHA

TX-2000 AM/FM Tuner

AM/FM tuner with 24 station presets. Features computer servo lock tuning; digital fine tuning; multi-status station memory; two-mode station display; RS remote control compatibility; four tuning modes; two position IF-mode selector. Includes remote control. Titanium finish with side panels. Channel selectivity 90 dB. \$749

TX-1000U AM/FM Tuner

Digital AM/FM stereo tuner with computer-servo-lock tuning. Features absolute linear phase IF amplifier "Alpha" circuitry. Digital fine tuning; 2-position IF-mode selector; 4 tuning modes; antenna-selector switch; 24-station random access memory presets; multi-status memory; 4-letter station name display; 24-segment signal-quality meter; remote control; RS optical integrated system remote compatible. Channel selectivity 90 dB. 14 lb. \$549



Yamaha TX-530Ti

TX-900U AM/FM Tuner

AM/FM tuner with 20-station presets. Features integrated system remote compatibility; digital fine tuning; 3-position auto/manual IF-mode selector; 4-way station memory; high blend; integrated multi-function LCD display. Black finish. 9 lb. \$399

TX-530Ti AM/FM Tuner

AM/FM tuner with PLL IF count synthesis tuning. Features 20 station presets; 4-way multi-status station memory; high blend switch; 24 segment signal quality meter; 2 position IF-mode selector with indicators; low impedance, high gain AM loop antenna; auto search and manual tuning; RS remote control compatibility. Titanium finish. 9 lb. \$329

TX-530. As above, black. \$329

TURNTABLES

ACOUSTIC RESEARCH ES-1 Manual Turntable

Manual belt-drive turntable with 24-pole synchronous motor. Features 33 and 45 rpm speeds. w&F 0.04% wrms; rumble -78 dB; effective tonearm mass without cartridge 14.5 g; effective tonearm length 229 mm; max tracking error 2.6°. 7 x 18 1/8 x 15 1/4 in (dustcover down); 18 lb. Natural cherry finish, with tonearm \$725
Natural cherry, without tonearm \$550

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 1/3 and 45 rpm. Features 12-pole synchronous motor (500 rpm at 50 Hz, 600 rpm at 60 Hz); 3.9 lb platter; detachable carbon-fiber headshell with clamping screw on arm; base finished in oiled walnut veneer. w&F 0.05% DIN; rumble -72 dB DIN; effective tonearm mass without cartridge 12 g; cartridge weight range 3-9 g; effective tonearm length 229 mm; overhang 16 mm; vertical and horizontal friction <100 mg; 7 x 18 1/4 x 15 1/4 in (dustcover down); 13 1/2 lb. \$500



Acoustic Research ES-1

A/D/S/

Atelier P4 Automatic Turntable

Features quartz-crystal-controlled direct drive; pivoted arm; ultra-low-mass tonearm; 33 1/3 and 45 rpm; variable speed control with strobe; holds platter and tonearm on a subchassis that floats on 4 tuned mounts. Optional remote control if connected to a/d/s/ R4 receiver or CC4 tuner/preamp. w&F ±0.025% wrms, ±0.035% DIN; rumble -75 dB DIN B, 53 dB DIN A; effective tonearm length 8% in max tracking error 2.2°. \$600

BANG & OLUFSEN

Beogram 6500 Automatic Turntable

Short tangential tonearm; 33 and 45 rpm; silver and black; remote controlled by B&O Master Control Panel; built-in phono preamp; leaf-spring suspension; compatible with B&O Microcross cartridges; auto record-size sensing; auto interior light. Black and silver finish. Wow & flutter no more than 0.06% DIN, ±0.03% wrms; tracking error no more than ±0.05%; DIN-weighted rumble >80 dB; 16 1/2 x 3 x 12 3/4 in; 11 lb, 12 oz. \$499

Beogram 4500 Automatic Turntable

Integrates with Beosystem 4500 for full remote control; built-in phono preamp; 3-point leaf-spring suspension; tangential tracking; accepts B&O MMCI-5 cartridges. Black and silver finish. w&F 0.06%; DIN weighted rumble >80 dB. 16 1/2 x 3 x 12 3/4 in; 11 lb, 11 oz. \$499



Beogram 9000 Automatic Turntable

Turntable with tangential tracking tonearm; 33 1/3 and 45 rpm; Optimum Pivot Point tonearm suspension; 3-point leaf-spring and pendulum suspension system; integrated low-mass tonearm/cartridge combination; accepts all B&O MMCI-5 cartridges; servo-controlled DC motor. Wow & flutter <0.03% wrms. 16 1/2 x 3 x 12 3/4 in; 11 lb, 12 oz. \$450

Beogram TX-2 Automatic Turntable

Tangential-tracking, belt-drive turntable; 33 and 45 rpm; fixed headshell. Recommended tracking force 1-1.5 g; wow & flutter 0.03% DIN; rumble -80 dB. Dimensions: 16 1/2 x 3 x 12 3/4 in; 11 pounds, 10 ounces \$399

DENON

All Denon turntables employ servo speed control and are noncontact, microprocessor controlled. Motor servo by magnetic speed detection.

DP-59L Semiautomatic Turntable

Features massive wood base with isolation; 5.5-lb platter with high-torque direct-drive AC motor. Lift only. \$695

DP-47F Semiautomatic Turntable

Features dynamic servo tracer; flat-twin direct drive design; fully-automatic locate function; thick wood base \$450

DP-23F Automatic Turntable

Full-size automatic turntable with dynamic servo tracer. Black \$275

DP-7F Automatic Turntable

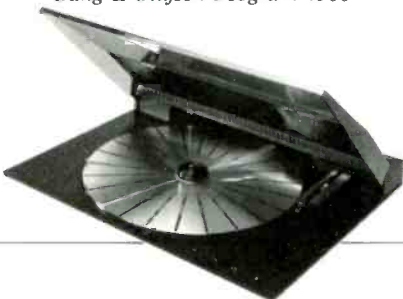
P-mount automatic turntable with dynamic servo tracer. Black \$200

DUAL BY ORTOFON

CS 7000 Semiautomatic Turntable

Belt-drive turntable with 24k gold-plated finish.

Bang & Olufsen Beogram 4500



Features Optimum Pivot gyroscopic gimbal tonearm system; carbon-fiber headshell; metal feet; full-floating subchassis; resonance-damped die-cast aluminum platter; auto stop; 33 1/3, 45, or 78 rpm play speeds. w&F <0.025%; S/N 80 dB. 17 1/2 x 5 1/4 x 15 1/4 in; 25 lb \$875

CS 5000 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 1/3, 45, and 78 rpm. w&F 0.015% wrms; rumble <56 dB DIN unwt'd. Black or walnut wood base \$500

CS 505-3 Semiautomatic Turntable

Belt-drive, heavy mass platter, and acoustic mat. Features floating chassis design, variable pitch; carbon-fiber headshell on ULM tonearm. Walnut or black wood base \$360

CS 455 Automatic Turntable

Belt-drive automatic turntable with four-point suspension. Features adjustable tracking force; detachable 1/2-inch headshell; floating subchassis; viscosity-damped cueing device. Wooden base with a black satin finish \$300



Dual CS 7000

HEYBROOK BY D'ASCANIO AUDIO TT-3 Series II Manual Turntable

Hand-assembled belt-drive 33 1/3 and 45 rpm arm-less manual turntable with removable armboard. Features on-board electronic power supply; low-speed synchronous motor to drive large 2-piece platter; adjustable 3-point spring-suspension subchassis of cast aluminum; laminated armboard; large wood base. Finished in real walnut or gloss black. Wow & flutter <0.1% DIN peak wtd; rumble -73 dB wtd DIN-B. Dimensions: 6 1/4 x 17 1/2 x 14 1/4 in; 26 lb. \$898

JVC

ALFQ555BK Automatic Turntable

Direct-drive turntable with coreless DC servo direct-drive motor. Features automatic record size and speed selector; low-mass straight tonearm; high-stability cabinet support system; large insulators; arm cueing control; double-servo quartz control; illuminated strobe on platter perimeter; plug-in cartridge connector \$240

ALF353BK Automatic Turntable

Turntable with automatic record size and speed selector. Features DC servo motor; arm cueing control; plug-in cartridge connector system; low-mass straight tonearm \$175

KENWOOD

KD-5010 Automatic Turntable

Automatic quartz PLL direct-drive turntable

TURN TABLES

with plug-in phono cartridge. 33½ and 45 rpm; straight tonearm. Wow & flutter no more than 0.05%; rumble 75 dB (DIN-weighted); effective tonearm length 8¾ in; tracking error 0-3°. Cartridge: frequency response 20-20,000 Hz; output 2.5 mV. 17¼ x 5 x 14½ in; 10.8 lb. \$249

LINN PRODUCTS

Linn Sondek LP12 Manual Turntable
Belt-drive 33½-rpm turntable with manual tonearm; 24-pole synchronous motor; 12-in zinc-aluminum alloy die-cast platter with felt mat; hardened tool-steel spindle; adjustable 3-point spring-suspension subchassis; heavy-gauge stainless-steel base plate; solid hardwood base; optional 45 rpm adapter. Wow & flutter 0.04% wrms; rumble -60 dB unwt; speed accuracy ±0.04%. 5½ x 17½ x 14 in. \$1,165

Axis Manual Turntable

Belt-drive manual turntable with pivoted arm. Plays 33½-rpm LP's and 45 rpm singles. Speed accuracy 0.1%; wow & flutter 0.05%; rumble -75 dB DIN; effective tonearm length 284 mm; 16 lb. \$795

Basik Turntable

Two-speed turntable with tonearm. \$495

MARANTZ

TT-285CTBL Automatic Turntable

Belt-drive fully automatic turntable features linear tracking; P-mount cartridge \$279

TT 275CTBL Semiautomatic Turntable

DC-servo direct-drive semiautomatic turntable with P-mount cartridge \$199

TT-185CTBL Semiautomatic Turntable

Belt-drive turntable features semiautomatic DC-servo motor; damped cueing; P-mount cartridge; straight low-mass tonearm; front panel controls. 3¾ x 16½ x 13½ in; 9.5 lb. \$139

NUMARK

TT3000 Manual Turntable

Direct-drive DC motor with S-shaped, 4-way ball-bearing tonearm. 17½ x 5½ x 14½; 27 lb. \$880



Numark TT1600

TT1600 Manual Turntable

Direct-drive DC motor with S-shaped, static balanced tonearm, 9-in effective length. Features 2 speeds (33 and 45 rpm); quartz lock and lock defeat switch; pitch-control slider; headshell with light. W&F 0.007% wrms; rumble 56 dB; tracking force 0-6 g. 17½ x 5 x 14½; 26 lb \$709

ONKYO

Integra CP-1057FB Automatic Turntable

Computer-controlled, direct-drive turntable with quartz-locked PLL motor. Features single-

band stroboscope for 33½ and 45 rpm speeds; Triple-Stage Isolation system with shock-absorbent feet, floating chassis, and dense cabinet; separate tonearm motor; gimbal tonearm sup-



Linn Sondek LP12

port; Polysorb record mat and cabinet feet; gold-hued, diecast aluminum platter. Front-panel controls; anti-skating mechanism with dial control; 2-speed search; repeat play; remote-control connector. Black finish. Wow and flutter 0.023% wrms; signal-to-noise ratio 80 dB (DIN B); max tracking error +3°, -1°; effective tonearm length 8¾ in \$360

CP-1500F Automatic Turntable

Direct-drive, quartz-servo turntable with 2 speeds. Features straight tonearm; Triple-Stage Isolation system; diecast aluminum platter. Front panel controls; RI remote compatible. \$259

CP-1200A Semiautomatic Turntable

Direct-drive, quartz-servo turntable with Triple-Stage Isolation system, and diecast aluminum platter. Features front-panel controls. Smoked dust cover \$130

ORACLE AUDIO

Premiere Mark IV Manual Turntable

Belt-drive turntable without tonearm. Remote control power drive module, 33½ and 45 rpm; variable-speed control; strobe; high-torque AC motor; adjustable spring-suspension system; record-coupling system; tonearm cartridge protractor, strobe disc included. 20 x 6½ x 15 in; 33 lb. \$2,995
Gold Plated. Premiere Mark III aluminum and 24k gold plating. 43 lb. \$3,495

Delphi MK IV Manual Turntable

Belt-drive turntable without tonearm. Available in dual speed (33½ and 45 rpm) and single speed (33½ rpm only); hi-torque AC motor; adjustable spring-suspension system; record-coupling system; tonearm/cartridge protractor and strobe disc included. 19 x 6 x 14½ in; 28 lb. Dual speed \$1,895
Single speed \$1,595
Delphi Aluminum. Aluminum/24k gold plating. Dual speed \$2,395
Delphi Black. 24k gold plating. Dual speed \$2,595

Alexandria Mark III Manual Turntable

Belt-drive turntable without tonearm. Features 33½ and 45 rpm; hi-torque AC motor; adjustable spring-suspension system; record-coupling system. Black piano finish. 19¼ x 6 x 14¾ in \$995

Paris Turntable

Belt-drive turntable without tonearm. Features 33½ and 45 rpm play speeds; AC type motor; tri-point suspension. White finish. 15 lb. \$550

PIONEER

Elite PL-90 Automatic Turntable

Direct-drive turntable with coreless, quartz PLL DC servo motor with stable hanging rotor. Features straight aluminum/ceramic tonearm 33½ and 45 rpm play speeds; 14¾-inch platter. W&F 0.018%. 8½ x 23½ x 17 in. \$950

PL-910 Automatic Turntable

Belt-drive turntable with DC servo-motor. Features statically balanced linear tracking tonearm with DRA; 33½ and 45 rpm play speeds; 0.6 mm diamond stylus. Wow & flutter 0.06%. 16½ x 4 x 14 in; 6.2 lb. \$400

PL-L550 Automatic Turntable

Direct-drive turntable with stable hanging rotor. Features dynamic resonance absorber; T4P-mount plug-in cartridge connector; linear tracking; 8-times repeat. Wow & flutter 0.025%. 16½ x 4¼ x 14¾ in; 10.5 lb. \$270

REALISTIC

LAB-89 Turntable with Phono Preamp

Semiautomatic turntable with switchable stereo preamplifier for compatibility with moving-magnet inputs, ceramic phono inputs, or high-level tape or aux inputs. Features Realistic/Audio-Technica cartridge; straight tonearm; belt drive; neon strobe. Pitch control; damped cueing; rubber mat; auto changer stacks 4 records; 45 adaptor; 33½ and 45 rpm. Rumble -55 dB; wow & flutter <0.1% \$90

REVOLVER BY MUSIC HALL

Revolver Turntable

Split-plinth belt-drive turntable with plinth and platter of medium-density fiberboard and self-damping material. Features AC synchronous motor with 2-speed stepped pulley; ethylene propylene drive belt; 3 molded non-adjustable feet. Includes Precision Instant Grip clamp, Starmat, lubricating oil; Revolver tonearm. Redwood high-gloss finish. \$595
Black-ash veneer \$545



Revolver Turntable

Revolver Rebel Turntable

Includes tonearm and cartridge. Black-satin finish \$399

REVOX

B291 Automatic Turntable

Quartz-controlled direct-drive turntable with patented Revox Linatrack system. Features short linear-tracking tonearm; pitch control regulation of ±9.9% in precise 0.1% steps, with LED display showing the variation; P-mount cartridge adaptor; channel balance; automatic start; front-panel-mounted controls. W&F

TURNTABLES

<0.05%; rumble >50 dB (DIN 45539 A), >52 dB (DIN 45539 A with 20 Hz high-pass filter), >72 dB (DIN 45539 B); tracking error <0.5%; tracking force 3/4-2 g, 17 3/4 x 5 3/8 x 15 5/8 in.; 20 lb. \$1,500



Sansui P-900E

SANSUI

P-2000 Automatic Turntable

Cartridge stylus 0.6 mil diamond. Features DC servo motor; 1-touch start/stop. Remote control compatibility. Signal-to-noise ratio 72 dB. 17 x 4 3/8 x 14 in.; 7.3 lb. \$180

P-900E Semiautomatic Turntable

Belt-drive turntable with low-mass straight tonearm. Features auto return and power on/stop; cue; cut; pitch control and strobo-scope. No cartridge. w&F <0.1% wrms; s/N >72 dB. 3 3/8 x 16 1/2 x 13 in.; 8.8 lb. \$90

SCOTT

PS70C Semiautomatic Turntable

Semiautomatic belt-drive turntable with low-mass P-mount tonearm. Features frequency-governed DC motor; strobe light; pitch control; fully damped cueing; shock absorbing feet; auto return and shutoff; hinged, adjustable dustcover. 16 1/2 x 13 x 4 3/8 in.; 7 1/2 lb. \$100

SHERWOOD

PF-1170R Turntable

Direct-drive turntable featuring DC servo motor and pitch control with strobe. Features front-panel operating controls; fully automatic start, stop, and return; repeat; die-cast alloy platter; 45 rpm center adaptor; 2-speeds. Max tracking error +2.6°, -1°; w&F 0.06%. 4 3/8 x 17 3/8 x 15 in. \$159

SONOGRAPHE BY CONRAD-JOHNSON

SG-3A Manual Turntable

Belt-drive turntable with Sumiko tonearm. Tuned suspension, resonance-free polymer platter. w&F <0.02% wrms; rumble -65 dB; 6.75 x 18.25 x 14.5-in (dustcover down); 23 lb. . \$795
SG-3. Same as above without tonearm . . \$595

SONY

PS-F17II Automatic Turntable

Front-loading linear-tracking automatic turntable. Features direct drive, PLL quartz-lock operation; P-mount compatibility; 33 1/3 and 45 rpm; remote control capability, stackable top. w&F 0.03%; s/N 75 dB; effective tonearm length 3-in; max tracking error ±0.1°; 17 x 3 3/8 x 15 1/8 in; 16 lb. \$350

PS-LX520 Automatic Turntable

Fully automatic linear-tracking turntable. Features direct drive, PLL quartz-lock operation; P-mount compatibility; 33 1/3 and 45 rpm; gel-filled feet; remote control capable. w&F 0.035%; s/N 75 dB; effective tonearm length 3 inches; max tracking error ±0.1°. 17 x 3 3/8 x 14 3/8 in; 11 lb. \$270

SOTA INDUSTRIES

Cosmos Turntable

Belt-drive turntable with 12 lb platter on 22 lb subassembly. Features inverted Sapphire bearing, 4-point corner weights and matching 4-spring design; regulated DC-drive, fully damped, fully isolated motor; vacuum hold-down; rigid arm support; one-piece-design platter block; motor hard-mounted to subassembly. Comes with vacuum, reflex clamp, electronic flywheel, and deluxe tonearm board. w&F 0.03 wrms; rumble -88.2 dB; speed accuracy ±.02%; speed adjustment 5%. 20 1/4 x 16 1/2 x 7 1/2 in. Gloss matrix. \$4,000
High-gloss black. \$4,500

Deluxe Star Sapphire Turntable

Manual 2-speed belt-drive turntable with variable speed control and strobe. Features heavy-weight (22 lb) subassembly for maximum isolation; exclusive inverted bearing with sapphire disc; single piece (11 lb) platter, rim drive; vacuum hold-down system; low-level pressure, continuous through play, adjustable vacuum; acrylic vacuum supermat; all-wood top; speed control panel; heavy-duty dustcover with oak finish. w&F 0.03 wrms; rumble -88.2 dB; speed accuracy ±.02%; speed adjustment 5%. 20 1/4 x 16 1/2 x 7 1/2 in; 44 lb. Oak, black wood . . \$1,795
African rosewood. \$2,095
Ebony, Brazilian rosewood. \$2,200
Black-satin finish. \$2,200

Deluxe Sapphire Turntable

Turntable with inverted Sapphire bearing. Features 12-lb platter on 22-lb subassembly; 4-point corner weights and matching 4-spring design; regulated DC drive, fully damped, fully isolated motor. w&F 0.03 wrms; rumble -88.2 dB; speed accuracy ±0.02%; speed adjustment 5%. 20 1/4 x 16 1/2 x 7 1/2 in. Oak finish, black wood. \$1,350
African rosewood. \$1,650

SYSTEMDEK

Model IV E Turntable

Belt-drive turntable with 33 1/3 and 45 rpm; pivoted tone-arm; anti-skate adjustment; fixed cartridge mount. Wow & flutter 0.06%; rumble -78 dB; speed inaccuracy ±0.01%; speed adjustment range ±2%; cable capacitance 300 pF. Dimensions: 19 1/2 x 6 x 15 3/4 in. \$899

TECHNICS

SL-1200MKII Manual Disco Turntable

Direct-drive quartz-controlled manual turntable with 33 1/3- and 45-rpm speed control. Features gimbal-suspended tonearm with height adjustment; brushless DC motor; ±8% quartz-locked pitch control; quick start and stop; pop-up stylus light; aluminum die cast cabinet; anti-resonant viscoelastic main base. Wow & flutter 0.025%. \$530

SL-MA1 Automatic Turntable

Direct-drive turntable with P-mount cartridge and phase-locked loop quartz lock. 33 1/3 and 45 rpm speed control; wow & flutter 0.012% wrms;

rumble -80 dB; effective tonearm length 230 mm; max tracking error +0°32' (inner groove), +2°32' (outer groove). Dimensions: 17 1/4 x 6 3/4 x 16 in (dustcover down). Weight: 19.8 lb . \$490

SL-J33 Automatic Turntable

Direct-drive linear tracking turntable with P-mount cartridge. Allows up to 8 tracks to be played in any order. Indicates number of tracks on album side and which track is playing. Features programmable phase-locked loop quartz-lock front-panel feather-touch controls; cueing; auto stylus muting. Remote controlled through some Technics receivers. 33 1/3 and 45 rpm; wow & flutter 0.012%; rumble -78 dB; effective tonearm length 105 mm; max tracking error ±0.1°. 12 1/4 x 4 x 12 1/4 in (dustcover down); 9 lb. \$250



Technics SL-1200MKII

SL-L20 Automatic Turntable

Belt-drive linear-tracking turntable with P-mount cartridge. Features front-panel soft-touch controls; cueing; 2-speed search; auto disc-size/speed detection to prevent tonearm from lowering on empty mat. Remote-control compatible through some Technics receivers. 33 1/3 and 45 rpm; w&F 0.045% wrms; rumble -70 dB; effective tonearm length 105 mm; max tracking error ±0.1°. 17 x 3 3/4 x 13 3/4 in (dustcover down); 8 lb. \$190

Turntables without Tonearms

SP-10MK3 Turntable

Quartz-synthesis direct-drive turntable with high torque for full speed in 30° of rotation. Features electronic, mechanical braking for speed change in 0.3 sec; high-precision integral rotor-platter quartz motor; quartz-locked pitch control (0.1% steps to ±9.9% all speeds); separate power supply in remote-control unit with numeric LED speed, pitch displays; soft-touch switches (start/stop duplicated on turntable). 33/45/78-rpm; w&F 0.015% wrms ±0.001%. 14 1/4 x 14 1/4 x 4 1/2 in. Turntable weight: 40 lb. Power supply/control unit: 13.2 lb. \$2,700
SH-10B7. Optional turntable base. \$950

SP-15 Turntable

Quartz-synthesis direct-drive turntable that reaches full speed in 0.4 sec (40° of rotation) and stops in 0.4 sec (40° of rotation) at 33 1/3 rpm. Features ±9.9% quartz-locked pitch control. 33/45/78-rpm w&F 0.025% wrms; rumble 56 dB (DIN A), 78 dB (DIN B). \$900
SP-25. Similar to SP-15, no 78-rpm speed, ±6% pitch control. \$570

THORENS BY EPI

All Thorens turntables are belt-driven, single-

TURNTABLES

play units with straight tubular tonearms for maximum rigidity; gimbal suspension; antiskate control; 9% effective tonearm length; tracking error <math>< 0.18^\circ/\text{cm}</math> (<math>< 0.46^\circ/\text{in.}</math>).

TD 520 Semiautomatic Turntable

Belt-drive with automatic tonearm lift, motor shut-off. Features 33 $\frac{1}{3}$, 45, 78 rpm; electronic speed selection; $\pm 6\%$ pitch control; stroboscope; velocity-sensing auto shut-off trigger; frictionless magnetic antiskating; twin solid-core chassis and 3-point leaf-spring suspension. W&F 0.035%; rumble -72 dB unwt'd. . . \$1,100
TD 521. Same without tonearm. . . . \$1,000

TD 320 Semiautomatic Turntable

Belt-drive 33 $\frac{1}{3}$ and 45 rpm turntable with solid-core chassis. Features 16-pole synchronous motor; twin solid-core chassis and 3-point leaf-spring suspension; friction-free velocity sensing auto shut-off triggering. W&F 0.35%, rumble -52 dB unwt'd. -72 dB wt'd; 6 $\frac{3}{4}$ x 17 $\frac{3}{8}$ x 13 $\frac{7}{8}$ in. . . \$600
TD 321. Armless version of TD-320. . . \$500

TD 318 Semiautomatic Turntable

Belt-drive 33 $\frac{1}{3}$ and 45 rpm turntable with 16-pole synchronous motor. Features twin solid-core chassis; 3-point leaf-spring suspension; frictionless velocity-sensing auto shut-off trigger. Wow & flutter 0.04%; rumble -50 dB unwt'd. -70 dB unweighted; 6 x 17 x 14-in. . . \$450
TD 316. Manual turntable similar to TD 318 without auto lift and shut off. . . . \$350

TD 280 Semiautomatic Turntable

Belt-drive 33 $\frac{1}{3}$ and 45 rpm with 24-pole synchronous motor. Features 1-piece solid-core chassis and spring damping elements in feet; frictionless velocity-sensing auto shut-off trigger. Wow & flutter 0.045%; rumble -48 dB unwt'd, -70 dB wt'd; 5.3 x 17 x 14-in. . . \$275

TOSHIBA

SR-5638 Automatic Turntable

Automatic, belt-driven turntable. Features front-panel cueing; power select; speed select; T4P magnetic cartridge; 45 and 33 $\frac{1}{3}$ rpm play speeds. . . . \$129

VECTOR RESEARCH

VT-320 Automatic Turntable

2-speed, belt-drive fully automatic turntable features platter drive DC servo motor; Platter 11 $\frac{1}{2}$ -in diam. die-cast; speed 33 $\frac{1}{3}$ and 45 rpm; linear-tracking tonearm w/cartridge; automatically switched record size, manual override, 15-track programming; random and access play; tonearm muting. Wow & flutter 0.05 wrms; S/N >65 dB (DIN B). 16 $\frac{3}{8}$ x 3 $\frac{3}{8}$ x 14 $\frac{1}{8}$ in; 9 lb. . . . \$200

WELL-TEMPERED LAB

Well-Tempered Arm and Table

Belt-drive turntable with Fountainhead base

and platter. Features separate damping and azimuth controls and adjustments for vertical-tracking, anti-skating, and tracking-force. 19 x 15 $\frac{1}{2}$ x 7 in; 43 lb. . . . \$1,795
Well-Tempered Table \$1,075
Well-Tempered Arm \$825
Dustcover \$100

The Well-Tempered Record Player

Belt-drive turntable with fluid-damped arm. Features three-layer board base construction; arm with vertical tracking adjustment and azimuth; zero-clearance damped turntable bearing; zero-clearance damped arm bearing; isolated, damped motor assembly. . . . \$895
Well-Tempered Record Player Arm . . . \$525
Well-Tempered Record Player Table . . \$460
Dustcover \$100

YAMAHA

TT-500U Automatic Turntable

Direct-drive turntable with RS integrated remote system compatibility. Features straight tonearm design; resonance absorbing turntable mat; disc clasper. Black; 15 lb. . . . \$269

TT-400U Automatic Turntable

Belt-drive turntable with RS integrated remote system compatibility. Features straight tonearm design; resonance absorbing turntable mat; disc clasper. Black; 15 lb. . . . \$199

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SPEAKERS

ACOUSTAT

Spectra 33 Electrostatic Speaker

Speaker utilizing three electrostatic elements and Symmetric Pair Electrically Curved Transducer (SPECTRA); each speaker contains a narrow-line source sector operating at all frequencies, adjacent sectors handle midrange and low frequencies, and the remaining panel area reproduces bass only. Compatible with the SPW-1 woofer, crossover at 100 Hz. Recommended amplifier power > 100 W/ch; nom imp 4 ohms. Dark oak finish and black, beige, or gray grille; natural oak or black oak finish at additional cost. 33 1/4 x 66 x 17 in. \$2,250/pr

Spectra 22 Electrostatic Speaker

Speaker utilizing two electrostatic elements and Symmetric Pair Electrically Curved Transducer (SPECTRA); each speaker contains a narrow-line source sector operating at all frequencies, adjacent sectors handle midrange and low frequencies. Compatible with the SPW-1 woofer, crossover at 100 Hz. Recommended power > 100 W/ch; nom imp 4 ohms. Dark oak finish and black, beige, or gray grille; natural oak or black oak finish at additional cost. 23 x 66 x 17 in. \$1,850/pr

ACOUSTIC RESEARCH

TSW-A Series

TSW 710-A 3-Way Speaker

Floor-standing acoustic-suspension column speaker with Tetra-Helix tweeter mounting plate. Features two 8-in filled polypropylene cone long-throw woofers; 6 1/2-in filled polypropylene cone midrange in its own subenclosure; 3/4-in titanium-dome liquid-cooled tweeter. Power range 15-175 W; imp 4 ohms; FR 40-40,000 Hz. -3 dB; crossover point 250, 5,000 Hz; sens 90 dB SPL with a 2.83 V rms drive level input at 1 meter on axis. Solid American hardwood top and bottom (walnut or oak) with black-vinyl-veneer cabinet and black cloth space frame grille. 38 1/2 x 14 1/8 x 13 3/8 in; 46 lb. \$1,300/pr

TSW 510-A 3-Way Speaker

Floor-standing acoustic-suspension speaker with Tetra-Helix tweeter mounting plate. Features 10-in woofer; 6 1/2-in midrange; 3/4-in titanium-dome liquid-cooled tweeter with acoustic lens. Power range 15-150 W; imp 4 ohms; FR 44-40,000 Hz. -3 dB; sens 90 dB with 2.83 V rms input at 1 meter on axis. Solid walnut or oak top and bottom with black-vinyl-veneer cabinet and black cloth grille. 30 1/8 x 14 x 13 1/4 in; 49 lb. \$800/pr

TSW 315-A 3-Way Bookshelf Speaker

Bookshelf acoustic-suspension speaker with Tetra-Helix tweeter mounting plate. Features 6 1/2-in woofer; 6 1/2-in woofer/midrange; 3/4-in titanium-dome liquid cooled tweeter with Tetra-Helix mounting plate. Power range 10-100 W; imp 4 ohms; FR 48-40,000 Hz. -3 dB; crossover point 450, 3,800 Hz; sens 89 dB with 2.83 V rms input at 1 meter on axis. Solid walnut or oak top and bottom with black-vinyl-veneer cabinet and black cloth grille. 22 1/2 x 12 1/4 x 11 3/4 in; 30 lb, 8 oz. \$550/pr

Spirit Series

Model 162 3-Way Speaker

Acoustic-suspension, three-way with dual coupled woofer. Features carbon-loaded polypropylene woofer and 1-in treated-cloth dome liquid-cooled tweeter; dual-density baffle; lami-



nated iron-core chokes crossover to minimize distortion and DC resistance; frameless grille; walnut or black-ash woodgrain vinyl finish. Power handling 10-175 W; FR 45-22,000 Hz. -3 dB; sens 91 dB; imp 4 ohms. 36 1/8 x 9 1/8 x 13 3/8 in; 43 lb, 5 oz. \$1,200/pr

Model 142 3-Way Speaker

Features carbon-loaded polypropylene woofer and liquid-cooled tweeter; direct-coupled woofer and mid/woofer; dual-density baffle; frameless grille; acoustic-suspension enclosure. Walnut or black-ash woodgrain vinyl finish. Power handling 10-100 W; FR 52-25,000 Hz. -3 dB; sens 90 dB; imp 4 ohms. 25 3/8 x 9 1/8 x 11 in; 23 lb, 5 oz. \$800/pr

Model 122 2-Way Speaker

Features carbon-loaded polypropylene woofer and liquid-cooled tweeter; direct-coupled woofer; dual-density baffle; frameless grille; acoustic-suspension enclosure. Walnut or black-ash woodgrain vinyl finish. Power handling 10-80 W; FR 62-25,000 Hz. -3 dB; sens 90 dB; imp 4 ohms. 15 1/8 x 7 1/2 x 8 3/4 in; 11 lb, 4 oz. \$350/pr



Acoustic Research TSW-A Series

STC 666 Subwoofer/Satellite System

New STC (Series Tuned Cavity) system. The STC subwoofer is small enough to be hidden leaving only the satellites visible. AR's proprietary enclosure uses two tuned cavities in a series configuration. Uses a newly developed set of enclosure parameters to eliminate unwanted high frequencies that would allow the ear to pinpoint the position of the subwoofer. The first

cavity works to increase efficiency of the loudspeaker in the bass frequencies and minimizes distortion by limiting woofer excursion near resonance. The second cavity acts as a high-frequency output from the two 6-in woofers. The satellites feature a black cabinet with a choice of oak or walnut wood trim. Satellites are shielded for use in video systems. \$580/system

ADC

Soundshaper 3025 Subwoofer/Satellite System

2-way model 3010 bookshelf size speaker and model 3015 subwoofer. Model 3010 features 4-in woofer and 1/2-in dome tweeter; ferrofluid-cooled tweeter; wall-mounted bracket. FR 85-24,000 Hz ± 3 dB; sens 88 dB ± 1 dB SPL W/m; imp 6 ohms; power handling 50 W rms, 150 W max; crossover point 5000 Hz. Model 3015 subwoofer features 8-inch bass enhancement. FR 41-165 Hz ± 3 dB; sens 88 dB ± 1 dB SPL W/m; imp 4 ohms ± 10%; power handling 50 W rms, 150 W max; crossover point 110 Hz. Satellites 11 x 7 5/8 in. 5 1/2 lb; subwoofer 11 x 7 1/2 x 17 in. 15 1/2 lb. \$500

A/D/S/

M15 3-Way Speaker

Vertically aligned "unison" drivers (two 10-in woofers and 5 3/4-in midrange in separate subenclosure, 1-in dome tweeter); woofers near floor, midrange at top, to control boundary effects; copolymer diaphragms; 4th-order (24 dB per octave) Linkwitz-Riley crossovers at 200 and 2,000 Hz; stainless-steel voice-coil former; magnetic cooling fluid in midrange and tweeter for high power handling and linearity; frameless perforated-steel grilles; walnut veneer or black finish. Power handling 300 W max; FR 26-22,000 Hz, ± 3 dB; sens 87 dB SPL/W/m; imp 4 ohms. 47 1/4 x 11 1/2 x 15 3/4 in. \$2,600/pr

M12. Similar to M15 except 8 1/2-in woofers. Power handling 250 W max; FR 34-22,000 Hz, ± 3 dB; sens 87 dB SPL/W/m; 43 1/4 x 10 1/2 x 14 1/4 in; 83 lb. \$1,600/pr

M9. Similar to M12 except 1 1/2-in midrange and one 8 1/2-in woofer; crossover at 700 Hz and 6,000 Hz. Power handling 150 W max; FR 38-22,000 Hz, ± 3 dB; sens 88 dB SPL/W/m. 33 3/4 x 11 1/2 x 13 in; 40 lb. \$1,100/pr

CM7 3-Way Speaker

Features 7 3/4-in woofer, 1 1/2-in dome midrange, 1-in 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 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 grey finish. Power handling 150 W max; FR 40-22,000 Hz. ± 3 dB; sens 88 dB SPL/W/m; imp 4 ohms; 16 3/8 x 8 3/4 x 10 7/8 in. \$1,400/pr

CM16. Similar to CM7 except 2-way, with 6-in woofer and 1-in tweeter; power handling 100 W max; 2,000-Hz crossover. FR 50-20,000 Hz. ± 3 dB; 12 3/4 x 7 1/4 x 8 7/8 in; 22 lb. \$900/pr

I9e 3-Way Bookshelf Speaker

Vertically aligned "unison" drivers (8 1/2-in Stifflite woofer, 1 1/2-in midrange and 1-in soft-copolymer dome tweeter); woofer is driven by wet wound, two layer, oxygen-free copper voice coil wound on stainless-steel former; tweeter is driven by oxygen-free copper voice coil wound on

S P E A K E R S



a/d/s/ L8e

Kapton former, high magnetic cooling fluid for efficient thermal transfer; Linkwitz-Riley crossover at 2,000 Hz. Glass fiber damping, acoustic suspension enclosure with diffraction-corrected front baffle and flush driver mounting construction; black fabric ABS grille; walnut veneer or matte black laminate finish. Power handling 125 W max; frequency response 38-22,000 Hz, ± 3 dB; sens 88.5 dB SPL/W/m; imp 4 ohms; 21 $\frac{3}{8}$ x 11 $\frac{3}{8}$ x 10 $\frac{1}{4}$ in; 40 lb. \$800/pr

L8e 2-Way Bookshelf Speaker. Similar to above, lacks midrange driver. Walnut or matte-black laminate finish. Power handling 125 W max; FR 44-22,000 Hz, ± 3 dB; sens 88.5 dB SPL/W/m; imp 4 ohms; 19 $\frac{3}{4}$ x 11 $\frac{3}{8}$ x 10 $\frac{1}{4}$ in; 25 lb. \$600/pr

L7e 2-Way Bookshelf Speaker. Similar to above except 7 $\frac{3}{4}$ -in woofer. Matte-black finish. Power handling 100 W max; FR 46-22,000 Hz, ± 3 dB; sens 89 dB SPL/W/m; imp 4 ohms; 17 $\frac{1}{8}$ x 10 x 9 $\frac{1}{8}$ in; 19 lb. \$500/pr

ADVENT

Maestro 3-Way Speaker

Acoustic-suspension floor-standing speaker with 10-in black cone and surround woofer, 2-in mica-filled black polypropylene-dome midrange in subenclosure, and 1-in ferrofluid-filled soft-dome tweeter. Features solid-pecan top and base with beveled edges, anti-diffraction baffle cover, and grille with rounded side edges. Power range 150-750 watts rms; frequency response 40-23,000 Hz ± 2.5 dB; sens 90 dB SPL/W/m; imp 6 ohms. 33 $\frac{1}{4}$ x 16 x 9 $\frac{3}{4}$ in; 50 lb. \$700/pr

Prodigy Tower 2-Way Speaker

Floor-standing speaker with 8-in high excursion woofer and 3 $\frac{1}{2}$ -in polyamide ferrofluid-filled tweeter. Min power 75 W rms. Finished in an oiled solid pecan wood top and base. 28 $\frac{1}{2}$ x 10 x 8 $\frac{3}{4}$ in; 25 $\frac{1}{2}$ lb. \$350/pr

Baby II 2-Way Bookshelf Speaker

Bookshelf speaker with 6 $\frac{1}{2}$ -in woofer and 1 $\frac{1}{2}$ -in polycarbonate ferrofluid-filled hard dome tweeter. Min power 50 W rms; FR 60-21,000 Hz ± 3 dB; imp 6 ohms. Cabinet with oiled solid wood top with black texture vinyl over dense fiberboard. 16 $\frac{1}{2}$ x 11 x 6 $\frac{1}{4}$ in; 13 lb. \$250/pr

ALLISON ACOUSTICS

CD9 3-Way Speaker

Stabilized-radiation-loading speaker with 10-in woofer, 3 $\frac{1}{2}$ -in convex-diaphragm midrange, 1-in convex-diaphragm tweeter, designed for placement against single wall. LC half-section crossover network; switches to select system

acoustic power response (flat to concert-hall balance slope); walnut or oak-veneer cabinet with hand-rubbed lacquer finish; steel base. FR down 3 dB at 35.5 Hz; crossovers 350 and 3,750 Hz; imp 4 ohms; efficiency 0.7% at floor/wall intersection; power range 30-200 W; 37 $\frac{1}{2}$ x 12 $\frac{1}{2}$ x 10 $\frac{3}{4}$ in. \$1,300/pr

CD8 3-Way Speaker

Stabilized-radiation-loading speaker with 8-in woofer, 3 $\frac{1}{2}$ -in convex-diaphragm midrange, 1-in convex-diaphragm tweeter. LC half-section crossover network with switches to select acoustic response from flat to concert-hall slope. Walnut or oak-veneer cabinet with hand-rubbed lacquer finish. Crossover frequencies 450 and 3,750 Hz; efficiency 0.7%; power range 30-200 W; response -3 dB at 39 Hz; 28 $\frac{1}{8}$ x 10 $\frac{1}{2}$ x 10 $\frac{1}{2}$ in. \$950/pr

MS-205 Subwoofer/Satellite System

Acoustic-suspension system with two satellites with 4-in long-throw woofer, 1-in convex-diaphragm tweeter and one separate bass unit with 8-in woofer and 1 $\frac{1}{2}$ -in dual-winding voice coil. Impedance 4 ohms nom, 3.5 min; low frequency performance -3 dB at 55 Hz; sens 90 dB SPL/2.83 V/m; suggested amplifier power 10-100 W/ch; crossover points at 150 Hz, 2,500 Hz. Satellites 10 x 5 x 5 $\frac{3}{4}$ in; woofer 11 $\frac{1}{4}$ in. \$500

AL Series

AL-130 3-Way Speaker

Acoustic-suspension speaker with two 8-in push-pull woofers, 3 $\frac{1}{2}$ -in midrange, 1-in convex-diaphragm tweeter. Power handling up to 200 W with clipping 10% of the time; sens 90 dB SPL/2.83 V/m; imp 6 ohms; crossover points at 100 Hz, 450 Hz, and 4,000 Hz; suggested amplifier power 15-200 W. 37 $\frac{1}{8}$ x 12 $\frac{1}{2}$ x 14 $\frac{1}{8}$ in; 57 lb. Oak, walnut, black vinyl \$1,100/pr

AL-125 3-Way Speaker

Acoustic-suspension speaker with two 6-in push-pull woofers, 3 $\frac{1}{2}$ -in midrange, 1-in convex-diaphragm tweeter. Power handling up to 200 W with clipping 10% of the time; sens 90 dB SPL/2.83 V/m; imp 6 ohms; crossover points at 100 Hz, 450 Hz, and 4,000 Hz; suggested amplifier power 15-200 W/ch. 30 $\frac{3}{8}$ x 11 $\frac{1}{8}$ x 11 $\frac{1}{2}$ in; 40 lb. Oak, walnut, black vinyl \$900/pr

AL-120 2-Way Speaker

Acoustic-suspension speaker with two 6-in woofers, 1-in convex-diaphragm tweeter. Power handling 200 W clipping 10% of the time; sens 90 dB SPL/2.83 V/m; imp 6 ohms; crossover points at 100 Hz and 2,000 Hz; suggested amplifier power 15-200 W/ch. 23 $\frac{7}{8}$ x 11 $\frac{1}{8}$ x 11 $\frac{1}{2}$ in; 33.2 lb. Oak, walnut, black vinyl \$600/pr

AL-115 2-Way Speaker

Acoustic-suspension speaker with 8-in woofer and 1-in convex-diaphragm tweeter. Power handling 150 W clipping 10% of the time; sensitivity 90 dB SPL/2.83 V/m; imp 4 ohms; crossover point 2,000 Hz; suggested amplifier power 15-150 W/ch. 20 x 11 $\frac{1}{8}$ x 10 in; 22 lb. Oak, walnut, black vinyl \$440/pr

ALTEC LANSING

Model 511 4-Way Speaker

Acoustic-suspension speaker with two 10-in long-throw woven carbon-fiber woofers, 6 $\frac{1}{2}$ -in woven carbon-fiber mid-bass, 2-in polyimide/diamond coated dome midrange, and 1-in diamond-coated dome tweeter with ferrofluid cooling. Features single/bi/tri/quad amplifier capa-

bility. FR 24-20,000 Hz ± 3 dB; sens 92 dB SPL/W/m; power handling cont 150 W, max 300 W. 57 x 13 x 13 $\frac{1}{2}$ in; 110 lb. \$3,000/pr

Model 510 3-Way Speaker

Acoustic-suspension speaker with bi-amp capability and adjustable crossover with two 10-in carbon-fiber woofers, 2-in midrange, 1-in dome tweeter, each with polyimide vacuum-deposited titanium. Power range 150 W nom, 300 W max; sens 93 dB SPL/W/m; imp 4 ohm; 46 x 12 x 13 $\frac{1}{2}$ in. \$1,600/pr

AMERICAN ACOUSTICS

D9550E 5-Way Speaker

12-in polymer foam surround woofer, two 5-in sealed-back ferrofluid-cooled midranges, 1-soft-dome polymer tweeter, 3-in cone tweeter. Power handling 205 W rms; FR 32-22,000 Hz; sens 99.5 dB W/m; imp 8 ohm; crossover at 600 Hz. Warm oak or black-ash finish. 40 $\frac{7}{8}$ x 15 x 14 $\frac{1}{2}$ in. \$880/pr

DS 1010 3-Way Speaker

Bass-reflex speaker with two 10-in woofers, 5-in ferrofluid-sealed midrange, and 1-in soft-dome tweeter. Power handling 200 W rms; FR 34-22,000 Hz; sens 94 dB SPL/W/m; imp 4 ohms. 14 x 37 $\frac{1}{4}$ x 14 $\frac{1}{8}$ in. \$750/pr

D5550E 4-Way Speaker

Vented speaker with 15-in polymer-coated woofer, 5-in sealed-back ferrofluid-cooled midrange, soft-dome polymer ferrofluid tweeter, 3-in dome ferrofluid cooled tweeter. Power handling 120 W rms; FR 43-22,000 Hz; sens 96.5 dB W/m; imp 4/8 ohm; crossover frequency 1,700 Hz, 6,000 Hz. 27 x 15 $\frac{1}{2}$ x 10 $\frac{1}{4}$ in. \$520/pr

DS 88 2-Way Speaker

Bass-reflex speaker with two 8-in woofers and 1-in soft-dome tweeter. Power handling 125 W rms; FR 38-22,000 Hz; sens 93 dB SPL/W/m; imp 4 ohms. 12 x 26 $\frac{1}{4}$ x 12 $\frac{7}{8}$ in. \$500/pr



Allison Acoustics AL Series

ANALOG ONE

Audio Mirrors Subwoofer/Satellite System

A 3-speaker set with controller, using 3 Monitor 2-D speakers and a dipole subwoofer. Specifications of controller not available \$2,400

Monitor One 3-Way Speaker

28-mm liquid-cooled dome tweeters in a floor standing speaker. 3-in midrange voice coils with hexagonal windings. Power handling 180 W cont. \$1,800/pr

APOGEE ACOUSTICS

Diva 3-Way Ribbon Speaker

Full-range ribbon speaker with adjustable seamless crossover. Features trapezoidal woofer ribbon; separate midrange and tweeter ribbons. Anthracite, taupe or custom finishes. Frequency

S P E A K E R S

response 30-25,000 Hz; impedance 4 ohms. 73 x 31 x 3 in; 150 lb ea \$8,250/pr

Duetta Signature 2-Way Ribbon Speaker

Midsized 2-way full-range ribbon speaker. Utilizes ribbon transducers for both midrange/tweeter and woofer; trapezoidal woofer ribbon; combination midrange/tweeter ribbon; internal seamless crossovers. Anthracite, taupe or custom finishes. Frequency response 30-20,000 Hz; imp 4 ohms. 58 x 26 x 3 in. \$3,750/pr

Caliper Signature 2-Way Ribbon Speaker

Midsized 2-way full-range ribbon speaker. Features trapezoidal woofer ribbon; narrow-canted combination midrange/tweeter ribbon; seamless crossover circuitry. Anthracite, taupe or custom finishes. Frequency response 30-20,000 Hz; imp 3 ohms. 48 x 24 x 2 in; 100 lb ea. \$2,745/pr

ARCAM

One+ 2-Way Speaker

Reflex-loaded cabinets with medite front baffles. Features genuine wood veneers; polymer coned midbass drivers; proprietary dome tweeters. Element crossovers may be biwired using separate cable runs from the amplifier to the bass/midrange and treble sections to improve imaging. FR 35-20,000 Hz; 100 W power handling; imp 8 ohms. Optional walnut or black finish. 10 $\frac{1}{8}$ x 12 $\frac{1}{2}$ x 20 $\frac{1}{4}$ in. \$800

Two+ 2-Way Speaker

Reflex-loaded cabinets with medite front baffles. Features genuine wood veneers; polymer coned midbass drivers; proprietary dome tweeters. Element crossover may be biwired using separate cable runs from the amplifier to the bass/midrange and treble sections to improve imaging. FR 42-20,000 Hz; 70 W power handling; imp 8 ohms. Optional walnut or black finish. 8 $\frac{3}{4}$ x 11 x 14 $\frac{1}{8}$ in. \$600

AUDIOSOURCE

IS-Twelve 2-Way Speaker

Floor-standing/bookshelf speaker with 6 $\frac{1}{2}$ -in polypropylene woofer and 1-in soft-dome ferrofluid-cooled tweeter. FR 40-20,000 Hz; sens 93 dB SPL/W/m; imp 4 ohms; power handling 90 W; crossover frequency 3,000 Hz. Available in oak, walnut, veneer, black or white enamel over high-density particle board with metal grille; 8 $\frac{3}{8}$ x 22 $\frac{7}{8}$ x 7 $\frac{7}{8}$ in; 17 lb, 8 oz \$360/pr

IS-Eleven 3-Way Shielded Speaker

Compact acoustic-suspension speaker with two 4-in polypropylene woofers and 1-in ferrofluid-cooled soft-dome tweeter. Video shielding for hi-fi video applications. FR 60-20,000 Hz; sens 89 dB SPL/W/m; imp 4 ohms; power handling 80 W; crossover frequency 600/3,000 Hz. Available in oak or walnut veneer, or black or white enamel over high density particle board with metal grille. 5 x 14 $\frac{1}{2}$ x 5 $\frac{3}{4}$ in; 8 $\frac{1}{2}$ lb. \$230/pr

AXIOM AUDIO

AX 5 2-Way Speaker

Dual-enclosure speaker with 10- and 5-in woofers, and 1-in dome tweeter. FR 29-22,000 Hz \pm 2 dB; sens 87 dB; imp 6 ohms; crossover at 3,000 Hz. Dark, natural, or black oak finish with black knit grille. 12 x 36 x 12 in; 80 lb/pr. \$1,699/pr

AX Sub Center-Channel 4-Way Speaker

Subwoofer and center channel speaker with two 10- and one 5-in woofer, and 1-in dome tweeter.

FR 29-22,000 Hz \pm 3 dB; sens 87 dB; imp 6 ohms; crossover at 120, 250, and 3,000 Hz. Dark, natural, or black, oak finish with black knit grille. 33 x 15 x 16 in; 90 lb/ea. \$1,449/ea

AX 3 2-Way Speaker

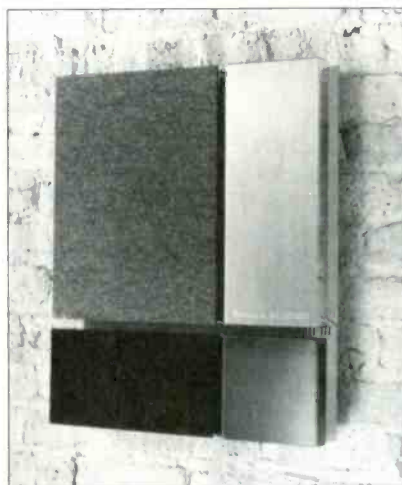
Dual-enclosure speaker with 8- and 5-in woofer, and 1-in dome tweeter. FR 36-22,000 Hz \pm 2 dB; sens 88 dB; imp 6 ohms; crossover at 3,000 Hz. Dark, natural, or black oak finish with black knit grille. 10 x 36 x 10 in; 66 lb/pr. \$849/pr

AX 1 2-Way Speaker

Tuned port speaker with 5-in woofer, and 1-in dome tweeter. FR 70-22,000 Hz \pm 2 dB; sens 87 dB; imp 6 ohms; crossover at 3,000 Hz. Dark, natural, or black oak finish with black knit grille. 6 x 11 x 6 in; 30 lb/pr. \$599/pr

AX 1.5 In-Wall 2-Way Speaker

Wall-mounted speaker with 6 $\frac{1}{2}$ -in woofer, and $\frac{3}{4}$ -in dome tweeter. FR 45-22,000 Hz \pm 2 dB; sens 89 dB; imp 8 ohms; crossover at 3,500 Hz. Black knit grille. 19 x 14 x 1 in. \$339/pr



Bang & Olufsen Beolab 3000

B&W LOUDSPEAKERS

Matrix 801 Series 2 Speaker

Floor-standing 6th-order Butterworth vented system with vertically aligned drivers to minimize time delays. Features a 12-in polymer cone bass, 5 $\frac{3}{8}$ -in Kevlar cone midrange and a 1-in metal-dome high frequency. Electronic bass-alignment filter. Walnut or black-ash finishes. Power handling 600 W. FR 20-20,000 Hz. \pm 2 dB; sens 87 dB (2.83V, 1 m); crossover point 380 and 3,000 Hz; imp 8 ohms. 39 $\frac{3}{8}$ x 17 x 22 in; 110 lb ea. \$5,000/pr

Matrix 802 Series 2 3-Way Speaker

Floor-standing 6th-order Butterworth vented system with vertically aligned drivers. Features two 8-in polymer cone bass, one 5-in Kevlar cone midrange, one 1-in metal-dome high frequency; electronic-bass alignment filter. Walnut or black-ash finishes; power 500 W; FR 27-20,000 Hz. \pm 2 dB; sens 90 dB (2.83V, 1 m); crossover point 400 and 3,000 Hz; imp 8 ohms. 11 $\frac{3}{4}$ x 41 x 14 $\frac{1}{2}$ in; 70 lb. \$3,600/pr

CM2 Matrix Mini 2-Way Speaker

Floor-standing 4th-order Butterworth vented system consisting of CMI head unit crossing

over at 150 Hz into subwoofer section forming the stand. B&W matrix enclosure is employed in both stand and head module. Overload protection circuit. Column finish in black, white, Nextel gray, walnut. Power handling 200 W; imp > 4 ohms. 39 $\frac{1}{4}$ x 6 $\frac{3}{8}$ x 8 $\frac{1}{2}$ in; base 10 in wide, 9 $\frac{1}{2}$ in deep \$1,750/pr

Matrix 2 2-Way Speaker

Bookshelf speaker with 8-in cone woofer; 1-in polyimide-dome tweeter. Walnut and black ash finishes. No upper power limit due to overload protection; FR 80-25,000 Hz. \pm 2 dB; sens 87 dB SPL/W/m; imp 4 ohms. 23 $\frac{1}{2}$ x 10 $\frac{1}{4}$ x 12 $\frac{1}{4}$ in; 35 lbs. \$1,600/pr

Matrix 1 2-Way Speaker

Bookshelf speaker with 6-in cone woofer, 1-in polyimide-dome tweeter. Walnut and black ash finishes. No upper power limit due to overload protection; FR 80-25,000 Hz. \pm 2 dB; sens 85 dB SPL/W/m; imp 4 ohms. 16 x 9 x 12 $\frac{1}{4}$ in; 35 lbs. \$1,200/pr

BANG & OLUFSEN

Beovox Penta 3-Way Speaker

Five-sided bass reflex speaker. Features four 5-in woofers, four 3-in midranges, one 1-in dome tweeter (vertically aligned). Finished in brushed stainless steel with black grille. FR 40-20,000 Hz +4, -8 dB. 5 x 59 x 5 $\frac{3}{8}$ in; 37 $\frac{1}{2}$ lb. \$2,200/pr

Beolab 3000 2-Way Wall-Hanging Speaker

Bass-reflex speaker with 55-W amplifier in each cabinet. Features one 5-in woofer and one 1-in dome tweeter. Automatic bass-level switching; auto turn on and off when use with B&O Beolink system; digital display shows source, volume, recording status. Finished in brushed stainless steel and blue or gray grille cloth. Speaker section: power handling 45 W cont; FR 75-20,000 Hz; sens 87 dB SPL/W/m; crossover frequency 3,500 Hz; imp 8 ohms. Amp section: FR 20-20,000 Hz; THD < 0.1%; S/N > 97 dB. 17 $\frac{3}{4}$ x 21 $\frac{1}{4}$ x 3 in; 20 lb/ea. \$1,695/pr

RL 140 3-Way Speaker

Floor-standing bass-reflex speaker with two 6 $\frac{1}{2}$ -in woofers, 5-in midrange, 1-in dome tweeter in gray plastic enclosure with black grille. FR 40-20,000 Hz +4, -8 dB; sens 93 dB SPL/W/m; power handling 140 W cont; imp 8 ohms; crossover frequency 800/3,000 Hz. 28 x 20 x 9 $\frac{1}{2}$ in; 33 lb/ea. \$990/pr

RL 60.2 2-Way Speaker

Floor-standing speaker with 1-in dome tweeter, two 5-in cone woofers, tuned port; charcoal black finish. Frequency response 45-20,000 Hz +4, -8 dB; power handling 60 W cont; sens 93 dB SPL/W/m; imp 8 ohms; crossover frequency 2,500 Hz. 21 $\frac{1}{4}$ x 16 x 7 in; 19 $\frac{1}{2}$ lb. \$550/pr

BOSE

Model 901 Series VI Speaker

Direct/Reflecting acoustic-matrix speaker with active EQ and 8 rear-facing, 1 front-facing 4 $\frac{1}{2}$ -in full-range drivers. Features pentagon-shaped cabinet with multi-cell injection-molded core panels of hardwood veneer and walnut finish; active equalizer with fixed EQ; midbass and midtreble shelf control; tape monitor switch; five-year warranty. Power handling unlimited; imp 8 ohms; dynamic range 106 dB. Equalizer: 13 x 2 $\frac{3}{4}$ x 4 $\frac{7}{8}$ in. Speaker: 21 x 12 $\frac{3}{8}$ x 13 in; 35 lb/ea. Price includes EQ. \$1,499/pr

The most powerful expression of unique technology.

The Bose® 10.2™ Series II Direct/Reflecting® system with Acoustimass® speaker technology.

Inside and out, it's a speaker unlike any other.

The Bose 10.2 Series II speaker successfully harnesses a series of audio technologies, taking the listener one step closer to the goal for all speakers: the realism of live music. The 10.2 Series II speaker combines the most powerful Acoustimass speaker designed for the home with the proven, critically-acclaimed benefits of a Bose Direct/Reflecting® system. The result: a musical listening system with *no* compromises—one that's at home in any environment.

Technology in harmony with home aesthetics.

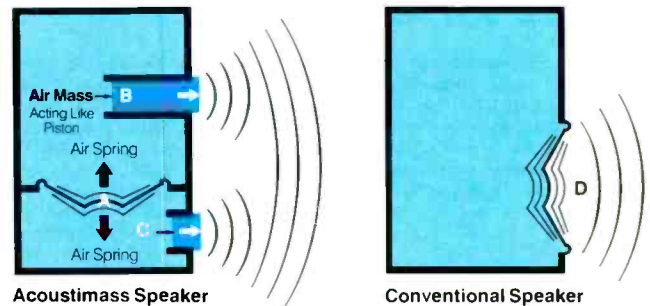
The 10.2 Series II system brings lifelike sound into the living environment without overwhelming it. Each speaker's genuine wood veneer, hand-crafted enclosure produces the bass necessary to make even the most demanding music come to life, yet requires just one square foot of floor space. The system's Stereo Targeting® arrays precisely shape and control sound, providing listeners—regardless of where they stand or sit—with full, balanced stereo sound from both speakers. Where the speakers look best is also where they sound best.

Greater musical realism with any sound source.

Like all Bose Direct/Reflecting® speakers, the 10.2 Series II system is designed to accurately reproduce much of the clarity and spaciousness of live music. This strict attention to sonic detail is carried through to the lowest notes, where Acoustimass speaker technology provides much of the realism and impact normally experienced *only* in the concert hall. The system provides the dynamic range and high power capability required for optimum results with any audio or video system and software—especially digital.



How an Acoustimass® speaker works.



Improving speaker performance means first reducing distortion. The design of an Acoustimass® speaker *substantially* reduces distortion (see diagrams and graph). The benefits of this patented speaker technology are purer sound and an increase in the dynamic range of bass performance.

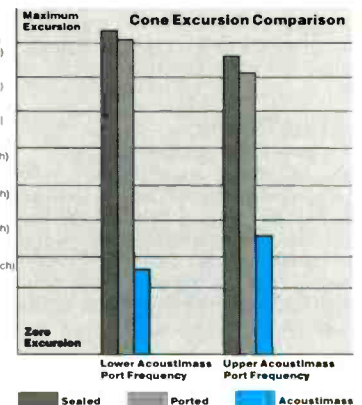
Left: An Acoustimass speaker *launches* sound into the room using two masses of air working like pistons (B&C, darker blue), rather than by a surface vibrating directly into the room. *The sound launched into the room by the Acoustimass speaker's air pistons is the purest sound that can be produced by present technology.*

Right: A vibrating cone radiating directly into the room (D) produces unfiltered sound.

Cone Excursion Comparison.

(lower excursion means lower distortion)

Graph: The distortion produced by any speaker rises dramatically with its cone motion, or excursion. At port-tuned frequencies, a typical Acoustimass speaker's cone (A) has less than 1/16 the maximum distortion-producing excursion* of sealed and ported cones. Inside an Acoustimass speaker, the interaction of the air springs with the air masses in the ports produces a very high pressure at the surface of the cone. This greatly reduces the cone's excursion, and therefore reduces distortion. The air springs act with their respective masses to form low-pass filters, removing any small distortion components generated by the cone.



*based on cone travel measurements at 128 watts input

Judge for yourself.

Ask your authorized Bose dealer to demonstrate the Bose 10.2 system with Acoustimass speaker technology against any other speaker—and hear the difference for yourself. For more information or a product brochure, call 1-800-444-2673 between 9 AM and 5 PM EST.

"If music is important in your life, sooner or later you will own a Bose system."

BOSE
Better sound through research.



S P E A K E R S

Model 10.2 3-Way Speaker

Floor-standing ported speaker with an 8-in midrange driver, two 2-in tweeters and an 8-in subwoofer. Features Acoustimass system technology; Stereo Everywhere; Stereo Targeting; automatic system protection; Syncom II computer quality control. Hardwood veneer finish; five-year warranty. Recommended power 10-360 W/ch; sens 88 dB; imp 8 ohms. 38 $\frac{3}{4}$ x 11 $\frac{3}{4}$ x 11 $\frac{3}{4}$ in; 46 lb/ea \$1,299/pr

Model 601 Series III 3-Way Speaker

Floor-standing Direct/Reflecting speaker system with all tweeters and one woofer mounted above main enclosure in free-space-array configuration for lifelike stereo imaging. Features two 8-in Digital Dynamic Range cone woofers; four 3-in cone tweeters; subport enclosure system with slotted port. Hardwood veneer with walnut finish; five-year warranty. Crossover points at 1,500 and 2,500 Hz; recommended power 10-400 W/ch; imp 8 ohms. 12 $\frac{1}{2}$ x 30 x 12 $\frac{1}{2}$ in; 45 lb/ea \$999/pr

Model 401 3-Way Speaker

Floor-standing Direct/reflecting speaker system with two 6 $\frac{1}{2}$ -in woofers and a 2-in magnetic liquid-cooled tweeter. Features Stereo Space array design; column-design enclosure; thermal-system protection circuit. Vinyl veneer with walnut or black finish; five-year warranty. Recommended power 10-200 W/ch; nominal imp 4 ohms. 12 x 12 x 30 in; 31 lb/ea \$599/pr

Model 6.2 2-Way Speaker

Bookshelf speaker with controlled-dispersion-pattern design with Direct/Reflecting speaker technology. Features 8-in woofer; two 3-in tweeters; Stereo Targeting system; dual-chamber sub-ported bass venting system; interactive crossover network. Hardwood veneer with teak finish; five-year warranty. Recommended power 10-200 W/ch; imp 4 ohms. 20 x 10 x 9 $\frac{3}{8}$ in; 19 lb. 8 oz ea. Optional speaker stand (AS-1) available at extra cost \$599/pr

Acoustimass 5 Subwoofer/Satellite System

Compact modular system with Acoustimass bass module and Direct/Reflecting cube speaker arrays. Each array features 2 separate cube enclosures that can be adjusted for direct or reflecting configuration. The bass module has two 6 $\frac{1}{2}$ -in drivers and a patented Acoustimass enclosure. Features positive-temperature coefficient resistor to compress overloading input signals. Scratch-resistant black satin finish for the acoustimass module, black polymer finish for the cube speaker arrays; five-year warranty. Power handling 200 W max rms. Cube speaker array: 3 $\frac{1}{2}$ -in per side plus grille. Bass module: 12 x 20 x 8 in; 33 lb. \$799

BOSTON ACOUSTICS

T Series

T1000 Series II 3-Way Speaker

Floor-standing acoustic-suspension speaker with 2 active 8-in copolymer-cone woofers, 6 $\frac{1}{2}$ -in copolymer-cone midrange in an internal sub-enclosure, and 1-in CFT5 ferrofluid-cooled tweeter. Features tapered-grille design to eliminate sonic diffraction; tall slender enclosure for minimum floor space; genuine walnut veneer, black-ash vinyl, or woodgrain vinyl. Power range 15-150 W rms; FR 46-20,000 Hz \pm 3 dB; sens 87 dB SPL/W/m; imp 8 ohms; crossover frequencies 250 and 2,500 Hz. 10 $\frac{1}{4}$ x 42 $\frac{1}{2}$ x 12 $\frac{1}{8}$ in. Wood veneer \$1,200/pr
Vinyl \$1,000/pr

T930 3-Way Speaker

Floor-standing acoustic suspension speaker with 10-in copolymer cone woofer, 6 $\frac{1}{2}$ -in copolymer cone midrange, and 1-in CFT5 dome tweeter. Features genuine walnut veneer, hand finished on 5 sides, woodgrain vinyl, or black-ash vinyl. Power range 15-150 W/ch rms; FR 40-20,000 Hz \pm 3 dB; sens 90 dB SPL/W/m; imp 8 ohms; crossovers at 250 and 2,500 Hz. 10 $\frac{1}{2}$ x 36 $\frac{3}{4}$ x 12 in \$800/pr
Vinyl \$700/pr

T830 3-Way Speaker

Floor-standing acoustic-suspension speaker with 8-in copolymer-cone woofer, 3 $\frac{1}{2}$ -in copolymer-cone midrange, and 1-in dome tweeter. Features woodgrain or black-ash vinyl finishes. Power range 15-100 W rms; FR 45-20,000 Hz \pm 3 dB; sens 88 dB SPL/W/m; imp 8 ohms; crossover frequencies 800 and 4,000 Hz. 9 $\frac{3}{4}$ x 32 $\frac{1}{2}$ x 10 in \$500/pr



Bose 901 Series V

Model 360 2-Way In-Wall Speaker

Flush-mount speaker with 6 $\frac{1}{2}$ -inch copolymer-cone woofer and 1-inch CFT4 ferrofluid-cooled soft-dome tweeter. Woofer is specially designed to provide full bass without needing a special enclosure. Power range 5-60 watts rms; frequency response 58-20,000 Hz \pm 2 dB; impedance 8 ohms; sensitivity 90 dB SPL/W/m. 12 x 8 $\frac{3}{8}$ in; mounting depth 3 $\frac{1}{4}$ inches \$450/pr

SubSat Six Subwoofer/Satellite System

Three-piece system with 2 small satellite speakers and 1 compact subwoofer. Each satellite features a 3 $\frac{1}{4}$ -in ferrofluid-cooled tweeter and a 4-in midrange with copolymer diaphragm. Subwoofer features two bass drivers with both sealed and vented chambers. Power range 15-150 W rms; frequency response 46-20,000 Hz \pm 3 dB; imp 8 ohms; sensitivity 87 dB SPL/W/m. Satellite 5 x 8 x 4 in; Subwoofer 16 $\frac{1}{2}$ x 13 $\frac{1}{2}$ x 7 $\frac{1}{4}$ in \$500/system

A120 2-Way Speaker

Bookshelf speaker in vented enclosure with 10-in passive radiator, 6-in midrange, 1-in CFT 3 ferrofluid-cooled dome tweeter. Features tapered grille design to eliminate sonic diffraction; woodgrain and black-ash vinyl finishes. FR 39-20,000 Hz \pm 3 dB; imp 8 ohms; sens 87 dB SPL/W/m; power range 15-75 W rms. 24 $\frac{1}{2}$ x 9 $\frac{3}{8}$ x 12 $\frac{1}{2}$ in \$420/pr

A70 Series II 2-Way Speaker

Acoustic-suspension bookshelf speaker with 8-

in copolymer-cone woofer and 1-in CFT5 ferrofluid-cooled soft-dome tweeter. Power range 15-75 W rms; frequency response 45-20,000 Hz \pm 3 dB; crossover at 2,500 Hz; sensitivity 90 db SPL/W/m; imp 8 ohms. Woodgrain vinyl finish with charcoal grille. 23 x 12 $\frac{1}{2}$ x 8 $\frac{7}{8}$ in \$320/pr

CAMBRIDGE SOUNDWORKS

Ensemble by Henry Kloss Subwoofer/Satellite

Full speaker system consisting of 2 subwoofers and 2 satellite units. Each satellite features 3 $\frac{1}{2}$ -in ferrofluid-cooled cone midrange (170 Hz to 2,300 Hz), and 1 $\frac{3}{4}$ -in direct radiator with an integral 3 $\frac{1}{8}$ -in ferrofluid-cooled dome tweeter (2,300 Hz to 20,000 Hz); cabinet is high-density particle board finished in dark gray Nextel; metal grilles. Each low-frequency unit features 8-in long-throw acoustic-suspension driver; cabinet is made of high-density particle board with internal bracing, and is finished in black high-pressure laminate with metal grilles. Nom imp 6 ohms; power range 25-100 W. Subwoofer: 12 x 21 x 4 $\frac{1}{2}$ in. Satellite: 5 $\frac{1}{2}$ x 8 x 4 in \$499

Ambiance by Henry Kloss 2-Way Speaker

Acoustic-suspension speaker with 6 $\frac{1}{2}$ -in long-throw woofer and a 1-in ferrofluid-cooled tweeter. Crossover at 1,800 Hz; sens 83 dB SPL/W/m; nom imp 8 ohms; min power 15 W/ch. Available in Nextel, solid oak, or primed for painting. 7 x 11 x 5 $\frac{1}{2}$ in \$109-\$129 ea

CANTON

CT 100 4-Way Speaker

Bass-reflex speaker features 10-in woofer; 6-in bass/midrange; 1 $\frac{1}{2}$ -in midrange; 1-in aluminum/manganese-dome tweeter. Power handling 180 W continuous/300 W peak; imp 4 ohms; FR 24-30,000 Hz; sens 94.8 dB SPL/W/m; crossover frequencies 250/1,100/4,600 Hz. Black and white ash, matte mahogany, oak or walnut finish. 12 $\frac{3}{8}$ x 41 $\frac{1}{4}$ x 13 $\frac{3}{8}$ in; 79 lb. 6 oz \$3,500/pr

CT 80 3-Way Speaker

Bass-reflex speaker features 8 $\frac{1}{2}$ -in woofer; 5-in midrange; 1-in aluminum/manganese-dome tweeter. Power handling 100 W continuous/150 W peak; imp 4 ohms; FR 24-30,000 Hz; sens 93.4 dB SPL/W/m; crossover frequencies 450/4,000 Hz. Black and white ash, matte mahogany, oak or walnut finish. 11 x 22 $\frac{7}{8}$ x 11 $\frac{1}{4}$ in; 41 lb. 14 oz \$1,650/pr

Karat 60 3-Way Bookshelf Speaker

Bass-reflex speaker featuring 10-in woofer; 5-in midrange; 1-in aluminum/manganese-dome tweeter. Power handling 100 W continuous/150 W peak; imp 4 ohms; FR 24-30,000 Hz; sens 93.9 dB SPL/W/m; crossover frequency 450/4,000 Hz. Oak, walnut, mahogany, white or black finish. 12 $\frac{3}{8}$ x 22 $\frac{7}{8}$ x 12 $\frac{1}{4}$ in; 36 lb. 6 oz. \$1,590/pr

Karat 40 3-Way Bookshelf Speaker

Bass-reflex speaker featuring 9-in woofer; 5-in midrange; 1-in aluminum/manganese-dome tweeter. Power handling 90 W continuous/130 W peak; imp 4 ohms; FR 24-30,000 Hz; sens 92.6 dB SPL/W/m; crossover frequency 450/4,000 Hz. Oak, walnut, mahogany, white or black finish. 10 $\frac{3}{8}$ x 20 $\frac{1}{8}$ x 10 $\frac{3}{8}$ in; 28 lb. 11 oz. \$1,290/pr

Karat 20 2-Way Bookshelf Speaker

Bass-reflex speaker featuring 8-in woofer; 1-in aluminum/manganese-dome tweeter. Power handling 50 W continuous/80 W peak; imp 4

S P E A K E R S

ohms. FR 36-30,000 Hz; sens 91.9 dB SPL/W/m; crossover frequency 2,500 Hz. Oak, walnut, mahogany, white or black finish. 8 $\frac{3}{8}$ x 13 $\frac{3}{8}$ x 7 $\frac{7}{8}$ in; 12 lb, 2 oz. \$690/pr

CARVER

The Amazing Loudspeaker, Platinum Edition
1 $\frac{1}{2}$ -in-thick planar design speaker with 60-in full-range ribbon driver and integral subwoofer section consisting of 4 long-throw 12-in cone woofers. FR 23-40,000 Hz -3 dB; sens 89 dB; max SPL 121 dBA; power handling 800 W. Available in piano-lacquer black and genuine oak finishes. 30 x 66 x 10 in (at base); 110 lb/ea. \$2,195/pr

The Amazing Loudspeaker, Silver Edition
1 $\frac{1}{2}$ -in-thick planar design speaker with 40-in full range ribbon driver and integral subwoofer section consisting of 3 long-throw 12-in cone woofers. FR 23-40,000 Hz -3 dB; sens 89 dB; max SPL 119 dBA; power handling 600 W. Available in piano-lacquer black and genuine oak finishes. 22 x 54 x 10 in (at base); 75 lb/ea. \$1,795/pr

CELESTION

SL700 2-Way Speaker
Sealed-box design speaker with metal-dome tweeter and 2-part roll surround on the woofer. Features Aerolam cabinet with integral stand; 12-liter volume. Power handling 120 W. 8 x 15 x 9 in; 14 lb. \$3,300/pr

SL600Si 2-Way Speaker
Speaker with metal-dome tweeter and a 6-in plastic bass unit. Features cabinet made from Aerolam, an aluminum honeycomb construction. 8 x 14 x 9 in. \$2,000/pr

SL12Si 3-Way Speaker
Speaker with metal-dome tweeter, 6-in bass/midrange, 6-in woofer. Features cabinet with a complete figure-8 bracing; bass units with separate enclosures. 8 x 21 x 11 in. \$1,500/pr

DL12 Series 2 2-Way Speaker
Floor-standing speaker with two 8-in woofers and 1-in pure-titanium tweeter. Features Transfer Bass Loading enclosure. \$850/pr

DL8 Series 2 2-Way Speaker
Sealed-cabinet, stand-mountable speaker with 8-in celophene cone woofer and 1-in metal tweeter. Uses a figure-8 cabinet brace. Available in simulated American walnut or black finishes. \$570/pr

Celestion 3 2-Way Speaker
Bookshelf speaker with 5-in woofer and 1-in pure-titanium tweeter. \$269/pr

CERCA

Classic 120 3-Way Speaker
Floor-standing speaker with 6 $\frac{1}{2}$ -in cobex woofer, 5-in polypropylene midrange, 1-in metal-dome tweeter. Features bi-ampable, gold-plated binding posts; 12 element hard-wired crossover. Power range 20-180 W; FR 42-20,000 Hz \pm 3 dB; sens 86 dB SPL/W/m; crossover pts at 500 and 2,500 Hz. Lead free glazes in black, gray, and silky white. 34 $\frac{1}{2}$ x 13 $\frac{3}{8}$ in. \$1,700/pr

CERWIN-VEGA

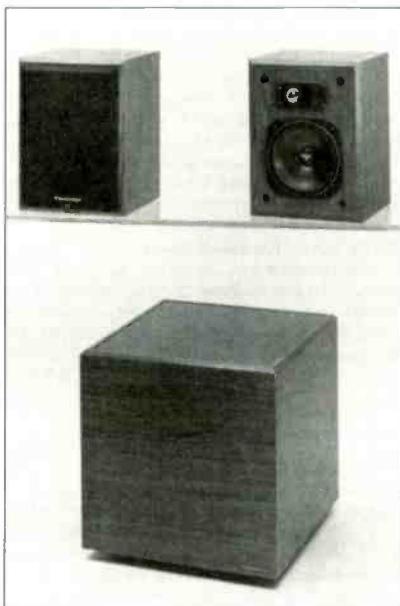
380SE 3-Way Speaker
Floor-standing bass-reflex speaker with 15-in

cone woofer. Features two 7-in cone midranges; 1-in VC elliptical tweeter. Power handling 5-405 W; FR 29-20,000 Hz \pm 3 dB; sens 102 dB SPL/W/m; imp 4 ohms. Finished in black vinyl. 36 x 17 $\frac{1}{2}$ x 19 $\frac{1}{2}$ in; 90 lb. \$1,080/pr

D-9 3-Way Speaker
3-way, 4-driver, floor-standing speaker with 15-in woofer, dual 6-in midrange and 1-in tweeter. Features Helmholtz/Thiele enclosure fabricated from high-density pressed board with woodgrain vinyl finish and brown stretch grille. Power range 5-350 W; FR 29-20,000 Hz; sens 101 dB; imp 4 ohms; crossover frequencies 500 and 3,500 Hz; 18 x 35 $\frac{1}{2}$ x 17 $\frac{1}{4}$ in; 85 lb. \$1,050/pr

D-5 3-Way Speaker
Floor/shelf 3-way speaker with 12-in woofer, 6-in cone midrange, 1-in horn tweeter. Features circuit protection; tweeter level controls. Max power 150 W; frequency response 32-20,000 Hz \pm 3 dB; crossovers 700 and 3,500 Hz; sensitivity 96 dB SPL/W/m; impedance 8 ohms. \$660/pr

250SE 3-Way Speaker
Floor-standing bass-reflex passive speaker with



Cerwin-Vega Sat-6 System

10-in cone woofer. Features Hemholtz Thiele enclosure with sound-absorbent baffle; circuit breaker protection; 6-in cone midrange; 1-in VC horn-loaded elliptical dome tweeter. Power handling 5-125 W; FR 32-20,000 Hz \pm 3 dB; sens 95 dB SPL/W/m; imp 6 ohms; Finished in black vinyl. 28 x 12 $\frac{1}{2}$ x 11 $\frac{1}{2}$ in; 41 lb. \$600/pr

D-3 3-Way Speaker
3-way shelf speaker with 10-in woofer, 6-in cone midrange, 1-in horn tweeter. Features circuit protection; midrange, tweeter level controls; FR 30-20,000 Hz \pm 3 dB; crossovers 700 and 3.5 kHz; sens 94 dB SPL/W/m; imp 8 ohms; finished in hickory woodgrain vinyl w/brown stretch cloth grille. \$580/pr

Sat-6 Subwoofer/Satellite System
6 $\frac{1}{2}$ -in 2-way satellites, with a 10-in dual voice-coil bass driver. CT3 dome tweeter; 6 $\frac{1}{2}$ -in cone

midrange. Power handling 200 W; FR 40-20,000 Hz; sens 96 dB; imp 8 ohms. Woodgrain vinyl fabric grilles. Satellites 9 $\frac{1}{2}$ x 12 $\frac{3}{4}$ x 8 $\frac{1}{2}$ in, woofer 17 x 17 x 17 in. \$850

CLEMENTS

RB-8.0 2-Way Speakers
Speakers feature 8-in polypropylene cone woofer and 7-in direct-inductance planar-ribbon midrange. Features compression-line bass loading; frequency-tilt control. 200 W/ch; FR 32-40,000 Hz \pm 3 dB; sens 88 dB/W/m; max power rating 200 W; imp 6.5 ohms; crossover frequency at 1,575 Hz. High density fibre wood with oak veneer and walnut. 26 x 13 $\frac{1}{2}$ x 15 $\frac{1}{2}$ in. \$1,600/pr

RB-6.5 2-Way Speakers
Speakers with 6 $\frac{1}{2}$ -in high power polypropylene cone woofer and 7-in direct-inductance planar-ribbon midrange. Features compression-line bass loading; frequency-tilt control. FR 38-40,000 Hz \pm 3 dB; sens 80 dB/W/m; max power rating 150 W; imp 6.5 ohm; compression line bass loading; crossover frequency at 1,575 Hz. High density fiber wood with oak veneer. 24 $\frac{1}{2}$ x 13 $\frac{1}{2}$ x 13 $\frac{1}{4}$ in. \$1,200/pr

DAHLQUIST

DQ-20 3-Way Speaker
Vertical-phase-array speaker intended for floor placement with 10-in cone woofer, 8 $\frac{3}{8}$ -in cone midrange, $\frac{3}{4}$ -in dome tweeter. Min power 70 W rms; imp 4 ohms. Oak with black or white grille. \$2,000/pr

M-909 3-Way Speaker
Floor-standing speaker with dual cast-frame woofer, 5-in midrange, and 1-in dome tweeter. Features quasi-phase array; genuine wood enclosure, spaced grill with solid wood trim, flocked anti-diffraction baffle. Sens 92 dB; power range 20-250 W; FR 30-24,000 Hz. 39 $\frac{1}{4}$ x 13 $\frac{1}{2}$ x 10 $\frac{3}{8}$ in. \$1,500/pr

DQ-12 3-Way Speaker
Vertical-phase-array speaker with long-throw 8-in woofer, 5-in cone midrange, and 1-in aligned-fiber dome tweeter. Features woofer operating in sealed enclosure and midrange operating in aperiodic cylinder. Min power 40 W rms; imp 8 ohms. Black grille. \$1,200/pr

M-907 3-Way Speaker
Acoustic-suspension speaker with 10-in woofer, 5-in midrange, 1-in dome tweeter, damped enclosure. Sens 88 dB; power range 40-150 W; FR 30-24,000 Hz. Real-wood walnut enclosure, spaced grille with solid walnut trim. 28 x 14 $\frac{1}{2}$ x 12 $\frac{1}{2}$ in. \$1,000/pr

M-905 2-Way Speaker
Front-firing tuned-port speaker with cast frame 8-in woofer and 1-in dome tweeter. Sens 91 dB; power range 20 W min to 125 W max; imp 8 ohm. Real wood walnut or oak enclosure, spaced grille with solid walnut trim. 24 x 13 $\frac{1}{2}$ x 12 in. \$680/pr

DANA AUDIO

Model 1 Bookshelf Speaker
Acoustic-suspension speaker with 6 $\frac{1}{2}$ -in woofer, $\frac{3}{4}$ -in titanium tweeter. Features gold binding posts. Power handling 80 W cont; FR 63-20,000 Hz \pm 3 dB; imp 8 ohms; crossover at 3,150 Hz. Finished in black, scratch-resistant vinyl. Three-year warranty. 8 $\frac{3}{4}$ x 14 $\frac{3}{4}$ x 7 $\frac{1}{2}$ in. \$155/pr

DBX

Soundfield 50 5-Way Speaker

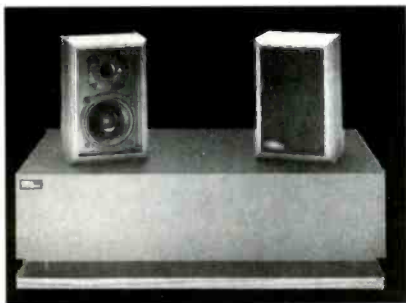
Two vented, floor-standing enclosures each with 10-in woofer, 6½-in midrange, 4-in upper midrange, and 3 wide-dispersion ½-in tweeters. Phased arrangement produces both measurably flat response (34-20,000 Hz ± 2.5 dB) and consistent stereo imaging throughout room. Sens 91 dB SPL/2.83 V/m; imp 4 ohms nominal, 2.5 ohms min; power range 40-400 W; phased-arranged crossover 200 Hz, 800 Hz, 3,150 Hz, main axis. Walnut or black base and top with matching grilles \$2,000/pr

Soundfield 150 3-Way Speaker

Vented, floor-standing speaker with 10-in woofer; 4½-in midrange; 2½-in tweeters. Features phased-arrangement; 360° imaging; wrap-around speaker grilles. FR 39-20,000 Hz ± 3 dB; sens 91 dB; nom imp 4 ohms; power range 30-250 W/ch; 20½ x 16 x 39½ in; 60 lb. Available in gray/black or beige/walnut \$1,500/pr

Soundfield 2500 3-Way Speaker

Vented, floor-standing speaker with 6½-in woofer; 2½-in midrange; two ½-in tweeters. Features phased-arrangement; 360° imaging; wrap-around speaker grilles. FR 49-20,000 Hz; sens 90 dB; nom imp 6 ohms; power range 25-150 W/ch at 4 ohms. 12 x 8 x 29 in; 21 lb. Available in charcoal gray/black or beige/walnut \$580/pr



Design Acoustics PS-3

DCM

Time Window 1A 2-Way Speaker

Hybrid transmission-line speaker intended for floor placement with two 6½-in cone woofers with acoustic lens; 2¾-in soft plastic-dome tweeter with acoustic lens. Features wide-angle sound distribution; pinpoint imaging properties; with cylindrical back and triangular-prism front; optimized for min time-dispersion error. Min power 10 W, max power 200 W; sens 91 dB; imp 8 ohms; dark oak with dark brown fabric. 15 x 36 x 11¾ in; 32 lb. \$949/pr

Time Frame TF500 2-Way Speaker

Mirror-imaged floor-standing loudspeaker with 6½-in cone woofer; ¾-in soft-plastic-dome tweeter with acoustic lens. Features folded, tapered transmission-line bass loading. FR 34-20,000 Hz; power range 10-100 W; sens 90 dB SPL/W/m; imp 8 ohms. Dark oak finish with dark brown fabric grille. 17 x 41 x 6¾ in; 42 lb. \$649/pr

Time Frame TF275 2-Way Speaker

Floor-standing coaxially mounted speaker with 6½-in cone woofer and ¾-in dome tweeter. FR 50-20,000 Hz ± 3 dB; min power 10 W rms; max power 50 W rms; sens 91 dB SPL/W/m;

imp 8 ohms. Dark oak with dark brown grille. 34 x 13 x 6 in. \$399/pr

DENNESEN ELECTROSTATICS

Dennesen Nine 3-Way Speaker

Floor-standing bass-reflex/electrostatic hybrid speaker with 8-in bextrene woofer; 6½-in midrange; six 3-in electrostatic tweeters. Phase corrected and time aligned. Includes electronic crossover for bi-amping in stereo. Power handling 50-200 W; FR 20-35,000 Hz ± 3 dB; sens 89 dB SPL/W/m; imp 8 ohms. Oiled walnut finish. 35 x 11 x 15 in; 60 lb. \$1,800/pr

DESIGN ACOUSTICS

PS-3 Subwoofer/Satellite System

Consists of 2 oak veneer satellites and a slot-loaded bass module. Satellite has ¾-in polycarbonate dome tweeter and 3½-in midrange. Bass module has two downfiring 6½-in high-compliance, long-throw woofers. Crossovers are housed in each cabinet with frequencies at 200 Hz and 3000 Hz. Sens 88 dB SPL/W/m; FR 50-20,000 Hz; power handling 20-100 W ... \$600

PS-10 3-Way Bookshelf Speaker

Acoustic-suspension 3-way speaker with downward-firing 10-in long-throw woofer, 5-in mid-woofer, 1-in soft-dome tweeter. Features tweeter-level control; mirror-image driver placement; acoustically treated baffle; walnut-vinyl finish; brown cloth grille. FR 48-20,000 Hz; crossovers 190 and 2,000 Hz; sens 90 dB SPL/W/m; power range 15-200 W; imp 8 ohms; 14 x 13½ x 11 in. \$520/pr

PS-8b 2-Way Bookshelf Speaker

Acoustic-suspension speaker. Features 8-in woofer; 1-in soft-dome tweeter; mirror-image drivers; acoustically treated baffle; crossover at 2,000 Hz; FR 50-20,000 Hz; sens 90 dB SPL/W/m; power range 15-200W; 9½ x 13 x 11½ in. \$370/pr

DESKTOP LOUDSPEAKER SYSTEMS

DLS-2b Satellite/Subwoofer System

4-piece satellite speaker system. 2 DM-1 satellites with 3¾-in cone woofer, 7/8-in dome tweeter; 2 BMW-2 subwoofers house 6½-in cone driver and 2 6½-in passive radiators. Power handling 20-250 W; FR 39-19,000 Hz ± 3 dB; sens 87 dB SPL/W/m; imp 4½ ohms. Black or walnut finish. Satellites 7½ x 4½ x 3½ in; subs 12½ x 10 x 8½ in; 38 lb. \$899/system

EMINENT TECHNOLOGY

LFT-V1 Planar Doublet Speaker

Single-diaphragm Linear Field Transducer; diaphragm remains within constant magnetic-flux field over entire displacement range; push-pull operation; soft-foil/mylar diaphragm with very thin traces and narrow gaps between each trace driven directly by amplifier; recommended placement at least 2 ft from rear wall; diaphragm area 410-in; peak-to-peak displacement 0.3-in. FR 38-20,000 ± 4 dB; power range 100-250 W; sens 83 dB SPL/W/m; imp 6 ohms. 78 x 18 x 2 in; 75 lb ea \$2,900/pr

ENERGY

Reference Connoisseur 2-Way Speaker

2-way bass-reflex speakers, matched 0.12 dB left

and right. 7-in polypropylene cone woofer with PVC-stitched suspension; 1½-in dual hyperdome tweeter. Power range 20-200 W; FR 25-20,000 Hz ± 1½ dB off axis; sens 86 dB; imp 8 ohms. 35½ x 11 x 14 in; 80 lb. Prices vary depending on finish; 6 matched wood veneers available \$1,600-\$3,300/pr

Reference 2-Way Speaker

Bass-reflex front-port monitors matched within 0.12 dB left and right. 7-in polypropylene cone woofer with PVC-stitched suspension; 1½-in dual hyperdome tweeter; includes stands; black vinyl veneer finish. power range 20-200 W; FR 34-20,000 Hz ± 1½ dB off axis; sens 86 dB; imp 8 ohms. 24¾ x 10½ x 12 in; 34 lb. \$1,200/pr

ESM-1s 2-Way Speaker

Bass-reflex speaker pair with 8-in woofer; 1 in ferrofluid-dome tweeter; phase-corrected crossover at 2,000 Hz; walnut or black ash vinyl. Power range 1½-120 W; FR 30-22,000 Hz ± 3 dB; sens 86 dB; imp 8 ohms; 24 x 10½ x 11 in; 35 lb each \$500/pr

EPICURE

Model 1 System 4-Way Speaker

System consists of Model 1 speakers and a Speaker Placement Equalizer (SPEQ). Floor-standing speakers have an electronically reinforced 8-in woofer in a vented cabinet, an 8-in midbass in an isolated chamber. Two 4-in midranges and a 1-in tweeter are mounted in a separate narrow baffle cabinet. The air mass loaded vent is integrated into the cabinet base. Internally wired with Monster Cable. FR 32-20,000 Hz ± 3 dB; crossovers at 160, 500 and 2,500 Hz; recommended amplifier power 20-200 W; imp 6 ohm. 42¾ x 12 x 13 in \$1,400

Model 2 4-Way Speaker

Floor-standing speaker with an 8-in woofer in a vented cabinet, 8-in mid-woofer in an isolated chamber, 4-in midrange and 1-in tweeter. The air mass loaded vent is integrated into the cabinet base. Internally wired with Monster Cable. FR 38-20,000 Hz ± 3 dB; crossovers at 190, 500 and 2,500 Hz; recommended power 10-175 W; imp 6 ohm. 35¼ x 12 x 13 in \$900/pr

Model 3 3-Way Speaker

Floor-standing speaker with an 8-in woofer in a vented cabinet, a 4-in midrange and a 1-in tweeter. The air mass loaded vent is integrated into the cabinet base. FR 42-20,000 Hz ± 3 dB; crossovers at 500, 2,500 Hz; recommended power 10-150 W; imp 6 ohm. 30 x 12 x 13 in. \$700/pr

Model 4 2-Way Speaker

Bookshelf speaker with an 8-in woofer in a vented cabinet and a 1-in tweeter. The flared cabinet vent is integrated into the cabinet base. FR 48-20,000 Hz ± 3 dB; crossover at 2,000 Hz; recommended power 10-100 W; imp 8 ohm. 20 x 11¾ x 12 in \$450/pr

ESS

AMT-Monitor Speaker

Floor-standing passive radiator speaker with 21½ x 21½-in Heil air-motion transformer with mylar articulated diaphragm. Features 12-in cone passive rad; 12-in cone woofer. Power handling 35-400 W; FR 35-23,000 Hz ± 3 dB; sens 91 dB SPL/W/m; imp 6 ohms. Oiled walnut finish. 18½ x 41 x 12 in; 82 lb \$1,140/pr

S P E A K E R S

AMT 1D 2-Way Speaker

Floor-standing passive-radiator 2-way speaker with 12-in polypropylene woofer, 12-in passive radiator. Features 2 1/2 x 2 1/2-in Heil air-motion transformer with mylar articulated diaphragm; brilliance controls; maximum power handling 400 watts; frequency response 35-23,000 Hz \pm 3 dB; crossover 800 Hz; impedance 6 ohms; sensitivity 91 dB SPL/W/m. Oiled-walnut finish; black-brown grille. 35 1/4 x 16 1/4 x 16 1/4 in. 85 lb. \$1,040/pr

PS-1220 3-Way Speaker

Floor-standing passive radiator speaker with 12-inch woofer. Heil air-motion transformer tweeter with 10 7/8 x 10 7/8-inch radiating area. 4-inch midrange with hi-temp voice coil. Power handling 10-200 watts; frequency response 28-23,000 Hz \pm 1 dB; sensitivity 93 dB SPL/W/m; impedance 4 ohms. Solid walnut finish. 14 1/4 x 12 x 34 in. 65 pounds \$420/pr

FISHER

STV-440M 3-Way Shielded Speaker

Bass-reflex with 15-in woofer, 5-in ferrofluid midrange, 3-in ferrofluid tweeter. Magnetic-field compensated. 150 W/ch rms into 8 ohms; sens 93 dB SPL/W/m; FR 38-20,000 Hz. Baldwin oak vinyl veneer finish. 17 7/8 x 38 3/8 x 12 7/8 in. \$600/pr

STV-410M 3-Way Shielded Speaker

Bass-reflex with 10-in woofer, 4-in midrange, 3-in tweeter. Magnetic-field compensated. 60 W/ch rms into 8 ohms; sens 90 dB SPL/W/m; FR 50-20,000 Hz. Baldwin oak vinyl veneer finish. 12 3/8 x 25 3/4 x 10 7/8 in. \$200/pr

FOCUS SPEAKER SYSTEMS

High-Definition 2-Way Speaker

Floor-standing speakers 8-in woofer, 1 1/4-in tweeter. Features cabinets constructed from 14-layer Pox-Pulp sleeve braced inside, wrapped with 3/4-in foam on outside and capped with solid-oak end pieces; phase-aligned drivers in separate sub-enclosures to improve imaging; adjustable and removable spiking system couples speakers to any type of floor. FR 32-20,000 Hz \pm 2 dB; sens 89 dB SPL/W/m; imp 8 ohms; amp power 30-200 W/ch. 47 x 12 x 12 in. \$1,450/pr

Model .7 2-Way Speaker

Contoured-port speaker with 8-in woofer and 1-in dome tweeter. Features computer-matched time-alignment; Pox-Pulp internally braced cabinet; hard-wired crossovers. FR 37-19,000 Hz \pm 2 dB; nominal imp 8 ohms; power range 30-150 W/ch; sens 90 dB SPL/W/m. 12 x 28 x 12 in; 37 lb. \$880/pr

FOSGATE-AUDIONICS

AS-802 2-Way In-Wall Speaker

Sealed, flush-mount speaker with 8-in polypropylene woofer and 1-in ferrofluid-coupled soft-dome tweeter. Features 18 dB/octave crossover with air-core inductor; 250 V low-loss film capacitors. Variable tweeter control. FR 40-22,000 Hz; imp 8 ohms; sens 89 dB SPL/W/m \$995/pr

LF-212 Subwoofer

Subwoofer with dual-voice coil 12-in polypropylene woofer. Features direct input or crossover; internal crossover for use with AS-602,

AS-802, or DS-802. FR 22 Hz; imp 4 ohms. 20 x 18 x 18 in; 48 lb. \$595

FOSTEX

H-3 2-Way Speaker

Bookshelf speaker system with patented regular phase (RP) tweeter which operates in piston motion and two 8-in woofers. 30 x 11 x 10 in. \$499

FRIED PRODUCTS

G/3 3-Way Speaker

Floor-standing transmission-line speaker with 10-in polypropylene-duocone woofer, 6 1/2-in midrange; 3/4-in dome tweeter. Features series crossover networks and duocone drivers; full-free-flow transmission-line loading of midrange and aperiodic-design principles for linearity and dynamic range. FR 23-22,000 Hz \pm 3 dB; power range 10-200 W rms; sens 91 dB SPL/W/m; imp 8 ohms. Walnut and oak finishes. 16 x 44 x 18 in. 100 lb. \$2,400/pr

Studio IV 2-Way Speaker

"Flow-resistance" floor-standing speaker with 8-in duocone woofer; 2-in duocone midrange; 1 3/4-in dome tweeter. Features series networks. FR 26-22,000 Hz \pm 3 dB; power range 10-1,000 W; sens 91 dB SPL/W/m; imp 8 ohms. Walnut finish. 12 x 39 x 18 in; 75 lb. \$1,400/pr

A/3 2-Way Speaker

Speaker with 8-in polypropylene woofer, 1-in soft-dome tweeter. Features edge-on free-flow filters; line tunnel. FR 45-20,000 Hz \pm 3 dB; power range 25-100 W; imp 8 ohms; crossover frequency 2,000 Hz; sens 89 dB SPL/W/m. 23 x 13 x 10 1/2 in. \$650/pr

GOODMANS OF ENGLAND

H.I.M. 880 3-Way Speaker

Bass-reflex speaker with 15-in woofer, 8-in midrange and 1-in soft-dome tweeter. Features an infinite baffle; separate level controls for the woofer and midrange. Min pwr 10 W; FR 30-20,000 \pm 5 dB; sens 100 dB SPL/W/m; imp 8 ohms; crossover pts at 500 and 4,000 Hz. Black finish. 40 x 18 x 17 in. \$1,149/pr

H.I.M. 440 3-Way Speaker

Bass-reflex speaker with 12-in woofer, 4-in midrange, and 1-in tweeter. Features an infinite baffle; separate level controls for the midrange and tweeter. Min power 10 W; FR 30-20,000 Hz; sens 98 dB SPL/W/m; imp 8 ohms; crossover points at 1,000 and 4,000 Hz. Black finish. 35 x 15 x 17 in; 66 lb/ea. \$749/pr

The Maxamp Remote 2-Way Powered Speaker

Bass-reflex, 25 W powered speaker with 5-in woofer and 3/4-in dome tweeter. FR 65-20,000 Hz; sens 86 dB SPL/W/m; imp 8 ohms. Black. 10 x 7 x 7 in. \$475/pr

B-Max Subwoofer

Subwoofer with two 6-in drivers. FR 30-150 Hz; impedance 8 ohms; crossover 150 Hz. 24 x 8 x 9 in; 22 lb/ea. \$225/ea

HAFLER

Model 400 3-Way Speaker

Floor-standing speaker with tuned transmission line design; mirror image array consisting of 1-in soft dome tweeter, two 6 1/2-in midrange woof-

ers, and 8-in rear mounted woofer; sloping baffle; rear mounted ports; pedestal base; gold 5-way input jacks; spike feet. FR 30-20,000 Hz; sens 92 dB SPL/W/m; nom imp 8 ohm; min power 20 W/ch. Dark oak veneer, black grille. 10 1/2 x 40 3/4 x 12 in; 58 lb. \$1,095/pr

Model 300 2-Way Speaker

Floor-standing speaker with tuned transmission line design; mirror image array consisting of 1-in soft dome tweeter, and two 6 1/2-in midrange woofers; sloping baffle; rear mounted port; pedestal base. Gold 5-way input jacks; spike feet included. FR 35-20,000 Hz; sens 91 dB SPL/W/m; nom imp 8 ohm; min power 20 W/ch. Dark oak veneer w/black grille. 9 1/2 x 36 x 11 1/2 in; 45 lb ea. \$795/pr

HEYBROOK BY D'ASCANIO AUDIO

HB-200 2-Way Speaker

Dual-reflex-tuned speaker with 6 1/2-in woofer and metal-dome tweeter. Black ash or walnut finish. FR 34-22,000 Hz; sens 88 dB; nom imp 8 ohms; power range 15-100 W. 18 x 11 x 9 in. \$999/pr

HB-100 2-Way Speaker

Infinite-baffle speaker with 8-in woofer and metal-dome tweeter. Features black or wood-grain finish. FR 50-20,000 Hz; sens 89 dB; nom imp 8 ohms; power range 15-100 W. 19 x 11 x 10 in. \$599/pr



Heybrook HB-200

HITACHI

HSW50 3-Way Speaker

3-way slimline acoustic-suspension speaker with 8-in woofer, 5-in midrange, and 3/4-in dome tweeter. Power handling 70 W. Matte-black finish. 30 x 9 3/8 x 9 3/8 in. \$500/pr

IMAGE

Concept 200 2-Way Speaker

Ported speaker with two 6 1/2-in woofers; 3/4-in damped hyperbolic cotton-dome tweeter; crossover at 2,100 Hz; Italian black-walnut vinyl. Power range 35-200 W; FR 30-23,000 Hz \pm 2 dB; sens 87 dB SPL/W/m. 43 x 10 x 15 in; 66 lb each. \$1,000/pr

Concept 100 2-Way Speaker

Ported speaker with 6 1/2-in woofer; 3/4-in damped hyperbolic cotton-dome tweeter; crossover at 2,100 Hz; Italian black walnut vinyl. Power

S P E A K E R S

range 35-100 W; FR 45-23,000 Hz ± 2 dB; sens 87 dB SPL/W/m. 16 x 9 x 11 in.; 23 lb. \$650/pr

Reference Two 2-Way Speaker

Ported speaker with 8-in polypropylene damped woofer; 1-in polyester soft-dome tweeter; crossover at 2,100 Hz; lagos-hickory vinyl. Power range 20-100 W; frequency response 35-20,000 Hz ± 3 dB; sensitivity 88 dB SPL/W/m. 24 x 11 x 12 in.; 31 lb each \$450/pr

INFINITY

IRS Beta 5-Way Speaker

Includes (per side) four 12-in woofers with servo-controlled polypropylene/graphite fiber injection molded cones; 2 upper bass/midrange planar push-pull drivers which act as a dipole; low-mass EMIT with neodymium magnets for upper midrange; low mass/neodymium EMIT's from IRS V (in a dipole configuration) for the lower treble; SEMIT (a smaller aperture EMIT) which extends response beyond 44 kHz. The system operates in a bi-amp mode and includes the IRS V servo control unit; active and passive crossover control. Monster Cable for all internal wiring. Power handling 75-300 W cont (mid/tweeter), 150-500 W cont (Bass); imp 4 ohms; FR 15-45,000 Hz, ± 2 dB; crossover frequency 100/750/4,500/10,000 Hz. Woofer module: 16 1/2 x 6 3/4 x 1 1/2 in; midrange/tweeter module, 17 x 6 3/4 x 1 in, base footprint: 18 x 17 in; 215 lb \$11,950/system

IRS Gamma. As above, but only two woofers and 1 bass driver, accelerometer, and servo system \$6,950/system

IRS Delta. Similar to Gamma with accelerometer; can be updated to Gamma with addition of servo unit (below) \$5,500/system

IRS Servo Control Unit. \$1,450

9 Kappa Reference Standard 5-Way Speaker

Features two 12-in cast frame L/C tuned woofers; SEMIT k supertweeter; rear-firing EMIT k tweeter; 3-in polydome rear radiator; polygraph k composite polypropylene/graphite 5-in mid-bass dome; 3-in edgewound polydome k midrange; internal crossovers; bi-ampable. Monster Cable for all internal wiring. Oak solids and veneer with high-density particle board with a furniture-grade lacquer finish. FR 29-45,000 Hz, ± 3 dB; crossover frequencies 80, 800, and 4,500 Hz; power rating 60-340 W/rms; sens 89 dB SPL/W/m; imp 4-6 ohms. 21 1/2 x 59 1/2 x 8 in \$2,898/pr

8 Kappa Reference Standard 4-Way Speaker

Similar to 9 Kappa without supertweeter and radiator, and 1 woofer. Monster Cable for all internal wiring. FR 33-45,000 Hz, ± 3 dB; power rating 50-250 W/rms; sens 89 dB SPL/W/m; imp 4-6 ohms. 20 1/2 x 47 1/2 x 8 in \$1,998/pr

7 Kappa Reference Standard 3-Way Speaker

Similar to 8 Kappa with 12-in woofer, 3-in polydome k midrange, and EMIT k tweeter. Monster Cable for all internal wiring. Power rating 40-200 W rms; imp 4-6 ohms; FR 37-45,000 Hz, ± 3 dB; crossover frequency 800/4,500 Hz; sens 88 dB SPL/W/m. 17 x 37 x 12 in \$1,498/pr

SM 152 3-Way Speaker

Floor-standing bass-reflex speaker with 15-in cone woofer, two 4-in midranges, and 1-in poly-cell dome tweeter. Power handling 300 W; FR 44-25,000 Hz, ± 3 dB; sens 101 dB SPL/W/m; imp 8 ohms; crossover frequency 500/5,500 Hz. Rosewood vinyl finish. 17 3/4 x 40 x 13 1/4 in \$1,198/pr

SM 122 3-Way Speaker

Floor-standing bass-reflex speaker with front-mounted high- and mid-level controls. 12-in cone woofer; 4 1/2-in cone midrange; 1-in poly-cell-dome tweeter. Power handling 200 W; FR 49-25,000 Hz; sens 98 dB SPL/W/m; imp 8 ohms; crossovers 750 and 5,500 Hz. Rosewood vinyl finish. 14 3/4 x 35 1/4 x 13 1/4 in \$918/pr

RS 4001 3-Way Speaker

Features 8-in graphite woofer, 2-in polyspherite midrange, and a 3/4-in polyspherite tweeter. Power handling 125 W; FR 44-22,000 Hz, ± 3 dB; sens 89 dB SPL/W/m; imp 6 ohms; crossover frequency 600/4,000 Hz. Chatsworth oak vinyl or black oak vinyl. 11 1/2 x 22 1/2 x 9 3/8 in \$538/pr

RS 3001 2-Way Speaker

Features 8-in graphite woofer and a 3/4-in polyspherite tweeter. Power handling 100 W cont; FR 45-22,000 Hz, ± 3 dB; sens 89 dB SPL/W/m; imp 6 ohms; crossover frequency 4,000 Hz. Chatsworth oak vinyl or black-oak vinyl. 11 1/2 x 20 3/4 x 9 3/8 in \$398/pr

ERS 800 2-Way In-Wall Speaker

Features 8-in graphite woofer and EMIT k tweeter; independent tweeter control \$552/pr

Modulus 2-Way Speaker

Modulus speakers can be used as bookshelf speakers, wall-mounted speakers, pedestal-mounted system, or a satellite/subwoofer system. Features a 5 1/4-in graphite woofer and EMIT k tweeter. Triangular "iso-tip" feet; wall bracket/self-damping isolation mounting plate; high-gloss black or white finish. \$1,000/sys
Pedestal, 25-in pedestal for the Modulus speaker system \$129/pr

Modulus Powered Subwoofer

Integrates with Modulus system. Features 12-in graphite woofer; 250 W servo-driven amplifier; separate subwoofer control box includes variable low-frequency cut-off, rumble filter, low-frequency-level control, absolute-phase switch, and active high-pass satellite control. Bass response to 22 Hz. High-gloss black or white finish \$2,000 ea

JAMO

Concert VII 3-Way Speaker

3-way speaker with 1-in dome tweeter. FR 24-23,000 Hz ± 3 dB; impedance 8 ohms. 11 x 36 x 12 in; 62 lb \$1,698/pr

Concert V 3-Way Speaker

3-way bass reflex speaker with 6 1/2-in woofer and 1-in dome tweeter. Continuous power 110 W; peak power 160 W; sens 93 dB SPL/W/m; FR 30-22,000 Hz ± 3 dB; crossover frequencies 150/3,500 Hz; imp 6 ohms; overload protection; 24K gold-plated binding posts. Mahogany or stained black ash finish. 31 1/2 x 14 x 11 in \$1,198/pr

Concert II 2-Way Bookshelf Speaker

2-way bass-reflex speaker with 6 1/2-in woofer and 1-in dome tweeter. Continuous power 80 watts; peak power 120 watts; sensitivity 91 dB SPL/W/m; frequency response 40-20,000 Hz ± 3 dB; crossover frequency 2,000 Hz; impedance 8 ohms; overload protection; 24 gold-plated binding posts. Mahogany or stained black ash. 16 x 9 1/2 x 10 in; 20 lb \$750/pr

Art 2-Way Wall Speaker

2-way, flat panel, wall-hanging loudspeaker which works as full-range or satellite unit. Features 5-in woofer, 1-in dome tweeter; peak power 90 W; continuous power 60 W; sens 88 dB/W/m; FR 40-20,000 Hz, ± 3 dB; crossover frequencies 3,000 Hz; imp 8 ohms; overload protection. Neutral-black and white lacquer finishes. 13 3/4 x 15 3/4 x 3 1/2 in; 10.6 lb \$500/pr

SW-3 Subwoofer Satellite System

Features 4-in midrange and includes S-3 satellites. FR 35-20,000 Hz; crossover frequency 200/4,500 Hz; imp 8 ohms. 13 3/8 x 8 x 19 in; 29 lb \$499
SW-3. Without S-3 satellites \$349

Magic 14 3-Way Speaker

3-way bass-reflex system with 10-in woofer, 3 1/2-in midrange, and 1-in dome tweeter. Max power 200 W; FR 40-20,000 Hz; crossover frequencies 1,200/1,400 Hz; imp 8 ohms; 20 3/4 x 12 x 8 3/8 in \$499/pr

JBL

L100t3 3-Way Speaker

Floor-standing speaker with 12-in aquaplas-laminate woofer, 5-in high-polymer-laminate midrange, and 1-in pure-titanium-diaphragm tweeter. Power handling 400 W cont; FR 35-27,000 Hz; crossovers 800 and 4,500 Hz; sens 91 dB SPL/W/m; imp 8 ohms. Oak or walnut veneer finish. 14 1/2 x 36 1/4 x 15 3/4 in; 58 lb/ea \$1,398/pr



JBL L40t3

L180t3 3-Way Speaker

Floor-standing speaker with 10-in aquaplas-laminate woofer; 5-in polymer-laminate midrange; 1-in pure-titanium-diaphragm tweeter. Power handling 300 W cont; FR 40-27,000 Hz; crossovers 800 and 4,500 Hz; sens 90 dB SPL/W/m; imp 8 ohms. Oak or walnut veneer finish. 12 3/4 x 32 x 14 1/4 in; 44 lb ea \$1,098/pr

S P E A K E R S

L40t3 2-Way Bookshelf Speaker

Features 8-in polymer-laminate woofer and 1-in pure-titanium dome tweeter. Power handling 250 W cont; FR 45-27,000 Hz; sens 88 dB SPL/W/m; imp 8 ohms; crossover frequency 2,500 Hz. Oak or walnut veneer finish. 11 $\frac{1}{4}$ x 21 x 9 $\frac{3}{4}$ in; 24 lb ea \$798/pr

L20t3 2-Way Bookshelf Speaker

Features 6 $\frac{1}{2}$ -in filled-polypropylene woofer and 1-in pure-titanium-diaphragm tweeter. Power handling: 100 watts continuous; frequency response 55-27,000 Hz; crossover 3,000 Hz; sensitivity 88 dB SPL/W/m; impedance 8 ohms. Oak or walnut veneer finish. 9 $\frac{1}{4}$ x 15 $\frac{1}{2}$ x 8 $\frac{1}{8}$ in; 14 lb ea \$598/pr

Pro VIII 2-Way Shielded Speaker

Wall-mount speaker with 1-in titanium-dome tweeter, 6 $\frac{1}{2}$ -in high-polymer-laminate woofer; spatial identification dividing network; optional wall and ceiling-mounting hardware; magnetically shielded to prevent video interference. Power handling 120 W cont; sens 90 dB SPL/W/m; FR 55-27,000 Hz; imp 6 ohms; crossover 3,000 Hz. 9 $\frac{1}{2}$ x 15 x 9 in; 26 lb \$429/pr
MTC-S1. Wall-mounting system \$195/pr

S-4 2-Way Wall-Mount Speaker

Features 1-in titanium dome tweeter and 6 $\frac{1}{2}$ -in high-polymer-laminate woofer. Can be flush-mounted; designed for use with an external subwoofer. Power handling 100 W cont; imp 8 ohms; sens 88 dB SPL/W/m; FR 125-22,000 Hz; 100 W max power. 8 $\frac{3}{4}$ x 12 x 3 $\frac{3}{8}$ in; 16 lb \$299/pr

LX Series

LX55 3-Way Speaker

Floor-standing speaker with 10-in high-polymer-laminate woofer, 5-in high-polymer-laminate midrange and 1-in pure-titanium dome tweeter. Power handling 200 W cont; FR 40-20,000 Hz; sens 92 dB SPL/W/m; imp 8 ohms; crossover frequency 800/4,000 Hz. Walnut or black finish. 13 $\frac{3}{4}$ x 26 $\frac{1}{4}$ x 12 in; 62 lb. \$798/pr

LX44 3-Way Speaker

Floor standing speaker with 8-in high polymer laminate woofer, 5-in high-polymer-laminate midrange and 1-in titanium dome tweeter. Power handling 150 W cont; FR 45-20,000 Hz; sens 91 dB SPL/W/m; imp 8 ohms; crossover frequency 800/4,000 Hz. Walnut or black finish. 11 $\frac{3}{4}$ x 23 $\frac{1}{2}$ x 12 in; 33 lb ea \$558/pr

LX22 2-Way Bookshelf Speaker

Features 6 $\frac{1}{2}$ -in high-polymer-laminate woofer and 1-in titanium dome tweeter. Power handling 125 W cont; FR 50-20,000 Hz; sens 90 dB SPL/W/m; imp 8 ohms; crossover frequency 3,000 Hz. Walnut or black finish. 10 x 15 $\frac{3}{4}$ x 8 $\frac{3}{4}$ in; 42 lb ea \$358/pr

JBL Series

JBL3800 3-Way Speaker

Floor-standing speaker with 8-in high-polymer-laminate woofer, 5-in high-polymer-laminate midrange and 1/2-in titanium dome tweeter. Power handling 150 W cont; FR 50-23,000 Hz; sens 89 dB SPL/W/m; imp 8 ohms; crossover frequency 800/4,500 Hz. Oak. 11 x 32 x 9 $\frac{1}{2}$ in; 29 lb ea \$558/pr

JBL2800 2-Way Bookshelf Speaker

Features 8-in high-polymer-laminate woofer and a 1/2-in pure-titanium dome tweeter. Power handling 125 W cont; FR 55-23,000 Hz; sens 89

dB SPL/W/m; imp 8 ohms; crossover frequency 2,500 Hz. Oak finish. 11 x 22 $\frac{1}{2}$ x 9 $\frac{1}{2}$ in; 20 lb ea \$338/pr

JENSEN

Model 3150 Concert Series 3-Way Speaker

Speaker with 15-in woofer, 5-in midrange, and 3-in cone tweeter. FR 33-21,000 Hz; imp 8 ohms. 32 x 18 $\frac{1}{2}$ x 11 $\frac{1}{2}$ in \$350/pr

Model 3120 3-Way Speaker

Features 12-in cone woofer, 5-in midrange, and 3-in tweeter. FR 48-21,000 Hz; max power 150 W, 60 W continuous; imp 8 ohms. 29 x 15 $\frac{1}{2}$ x 10 $\frac{1}{2}$ in; 30 lb \$280/pr

JPW LOUDSPEAKERS

AP3 2-Way Speaker

Infinite-baffle speaker with 8-in doped-paper-cone woofer and 3/4-in soft-plastic dome tweeter with ferrofluid damping. Features wiring for bi-amp capabilities. FR 55-20,000 Hz \pm 3 dB; min power 10 W rms; max power 100 W rms; sens 100 dB SPL/W/m; imp 8 ohms. Available in walnut, black ash, blonde ash or teak finishes. 10 $\frac{1}{4}$ x 20 $\frac{1}{2}$ x 11 $\frac{1}{2}$ in; 53 $\frac{3}{8}$ lb/pr \$549/pr



KEF Model C95

JRM

Monitor Powered Subwoofer/Satellite System

Powered 3-piece system with 4-way stereo configuration. Subwoofer has two 12-in polypropylene drivers; Satellite has three 6 $\frac{1}{2}$ -in polypropylene midbass, 3-in polypropylene midrange, and two piezo-horn tweeters. Subwoofer features 7-way mono bass electronic crossover with 7 level controls; 7 amplifier modules at 350 W rms into 2 ohms. Satellite features time-align drivers; protect mechanism. FR 18-20,000 Hz. Optional cabinet finish and grille \$2,500

Transparency Satellite Tower 3-Way Speaker

Scaled, vertical-line-source speaker with six 6 $\frac{1}{2}$ -in polypropylene midbass, 3 x 27-in diffraction-horn midrange; 1 $\frac{1}{8}$ -in horn-tweeter. Features user-adjustable time-align driver; uniform 140 degree horizontal dispersion. Requires external

crossover and subwoofer. FR 20-20,000 Hz; min amplifier power 1 at 200 W, 2 at 50 W. Optional finish and grille. 66 x 16 x 8 in. \$1,300 ea

J. S. ENGINEERING

Infinite Slope Model 1.8A 3-Way Speaker

Phase-shift bass-loading speaker with 8-in and 10-in cone woofers 6-in, cone midrange, and 1-in dome tweeter. FR 35-20,000 Hz \pm 3 dB; minimum power 20 W rms, max power 300 W rms; sens 90 dB SPL/W/m; imp 8 ohms. Oak, walnut, black gloss. 16 x 38 x 16 in; 100 lb . \$1,795/pr

Infinite Slope Model 8 2-Way Speaker

Floor-standing speaker with two 8-in cone woofers and 1-in dome tweeter. Features patented phase-shift bass loading and Infinite Slope crossover. Imp 8 ohms. Walnut, oak, black-lacquer finish \$899/pr

Infinite Slope Model 6 2-Way Speaker

Floor-standing ported speaker with 8-in cone woofer; 1-in dome tweeter. Features Infinite Slope crossover 100 dB octave. FR 40-20,000 Hz \pm 3 dB; power range 5-150 W; sens 91 dB SPL/W/m; imp 8 ohms. walnut, oak, black lacquer. 11 x 23 x 13 in; 35 lb. \$599/pr

JVC

SX911WD 3-Way Speaker

Floor-standing speaker with 12-in cross-carbon woofer; 4 $\frac{1}{2}$ -in cross-carbon midrange; 1.2-in amorphous-diamond coated tweeter. Features 3-part crossover network; low-resonance/vibration diecast aluminum speaker frames; high-density particle-board enclosure; round-cornered front baffle. 300 W max power handling \$720 ea

KEF

Reference Series

Model 107 3-Way Speaker

Floor-standing coupled-cavity bass-loading speaker uses 2 woofers operating into a resonant chamber vented at top of enclosure to combine sensitivity of bass reflex with accuracy and bass-extension of acoustic suspension. Features two 10-in cone woofers; 4-in polypropylene-cone midrange; 1-in 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 active bass EQ with controls for contour, damping, and extension. Conjugate load-matched passive crossover presents amp with uniform imp at all frequencies. Power handling 300 W cont; FR 20-20,000 Hz, \pm 2 dB; sens 90 dB SPL/W/m; imp 4 ohms. Walnut, black-ash, or rosewood finish. 13 x 46 x 17 $\frac{1}{8}$ in; 99 lb ea \$4,800/pr

Model 104/2 3-Way Speaker

Floor-standing speaker with cone woofers vertically aligned, coupled-cavity bass loading technique, chassis-less drivers, conjugate load matching. Two 8-in cone woofers, two 4 $\frac{1}{2}$ -in cone midranges and 1-in ferrofluid-cooled dome tweeter. Power handling 200 W max; FR 35-20,000 Hz, \pm 2 dB; sens 92 dB SPL/W/m; imp 4 ohms; 11 x 35 $\frac{1}{2}$ x 16 $\frac{3}{8}$ in; 70 $\frac{1}{2}$ lb; walnut, rosewood or black ash \$2,200/pr
104/2 KUBE. Active bass EQ with controls for contour and extension \$200

S P E A K E R S

Model 102 2-Way Bookshelf Speaker

Features 6-in polypropylene-cone woofer and 1-in ferrofluid-cooled soft-dome tweeter; hybrid crossover network with built-in passive crossover and outboard active bass EQ with controls for contour and extension. Conjugate load-matched passive crossover presents amp with uniform imp at all frequencies. Power handling 200 W cont; FR 65-20,000 Hz, ± 2 dB; sens 92 dB SPL/W/m; imp 4 ohms. Walnut, black-ash, or rosewood finish available. 8 $\frac{1}{4}$ x 13 x 10 $\frac{1}{4}$ in; 15 lb/ea. \$890/pr

C Series

C95 3-Way Speaker

Floor-standing speaker features KEF Uni-Q 2-way driver; 8-in woofer and 1-in polymer-dome tweeter; coupled cavity bass loading; 8-in unit mounted vertically inside cabinet is loaded at the front by a tuned cavity; conjugate load matching; separate set of connecting terminals allows to bi-amplify driving the bass unit separately. Power handling 250 W cont; frequency response 50-20,000 Hz; sensitivity 90 dB SPL/W/m; impedance 4 ohms. Grain-match real walnut or black ash finish. 9 $\frac{3}{4}$ x 34 $\frac{3}{8}$ x 12 $\frac{3}{8}$ in; 41 lb, 10 oz ea. \$1,290/pr

C75 3-Way Speaker

Floor-standing loudspeaker just over $\frac{1}{2}$ a square foot; uses the same KEF Uni-Q driver as C95; second 8-in bass unit on matching diecast chassis; sealed enclosure. Power handling 150 W cont; FR 57-20,000 Hz, ± 3 dB; sens 91 dB SPL/W/m; imp 4 ohms. Simulated walnut or simulated black ash finish. 9 $\frac{3}{4}$ x 28 $\frac{3}{8}$ x 10 $\frac{1}{8}$ in; 28 lb, 7 oz ea. \$750/pr

C55 3-Way Speaker

Small enough for bookshelf or free standing. Features KEF Uni-Q driver with polymer cone 8-in passive radiator which extends bass to 48 Hz -6 dB and a $\frac{3}{4}$ -in polymer-dome tweeter. Passive radiator enclosure; clip-on injection molded grille made to minimize 'tunnel' effects. Power handling 150 W cont; FR 60-20,000 Hz, ± 3 dB; sens 90 dB SPL/W/m; imp 4 ohms. Simulated walnut or simulated black ash finish. 9 $\frac{3}{4}$ x 18 $\frac{7}{8}$ x 10 $\frac{1}{8}$ in; 15 lb, 13 oz ea. \$550/pr

Custom Series

CR250SW In-Wall Subwoofer

Features 10-in subwoofer extends bass response of CR200 or CR160 by 1 octave. Power handling 150 W cont; FR 32-150 Hz, ± 2 dB; sens 90 dB SPL/W/m; imp 4 ohms. 13 x 13 x 3 $\frac{3}{4}$ in. Price not including installation. \$550

CR200F 2-Way In-Wall Speaker

Features 8-in bass driver mounted to 1-in soft-dome tweeter with fluid cooling; self-resetting tweeter protection circuit; power handling 100 watts continuous; frequency response 55-22,000 Hz, ± 2 dB; sensitivity 90 dB SPL/W/m; impedance 4 ohms. 13 x 10 x 3 $\frac{1}{2}$ in. Price not including installation. \$450/pr

CR160R. As above but round frame. \$400/pr

KENWOOD

LS-P9100 4-Way Speaker

Floor-standing 5-driver system with 17-in passive radiator. Features 10 $\frac{1}{2}$ -in polypropylene woofer; 4-in polypropylene midrange; 1 $\frac{1}{4}$ -in flat-leaf-diaphragm supertweeter; 2 cone tweeter. Max power handling 250 W; FR 20-48,000 Hz; sens 91 dB/W/m; imp 8 ohms; crossover points 900, 5,500, 10,000 Hz. woodgrain finish. 17 $\frac{1}{4}$ x 44 $\frac{1}{2}$ x 13 $\frac{1}{4}$ in; 62 lb ea. \$700/pr

KINDEL AUDIO

Purist LT 2-Way Speaker

Floor-standing speaker using a 2 pi/4 pi configuration with two 6 $\frac{1}{2}$ -in polypropylene cone woofers and 1-in dome tweeter. Features bass loading via an 8-in passive radiator in a loaded-line configuration. FR 35-20,000 Hz ± 2 dB; imp 4 ohms. 13 x 43 x 6 $\frac{1}{2}$ in; 60 lb. \$895/pr

KINETIC AUDIO

Trapezoid 4-Way Speaker

Floor-standing, ported speaker with 12-in polypropylene-cone woofer, 6 $\frac{1}{2}$ -in polypropylene-cone mid-range, 1 $\frac{1}{8}$ -in synthetic-dome tweeter with magnetic-liquid cooling/damping, $\frac{3}{4}$ -in synthetic-dome supertweeter with magnetic-liquid cooling/damping. Features interconnecting harness of color-coded high-performance speaker cables; 5-way heavy-duty binding posts. Linear-phased driver arrangement in mirror-image pairs; front-mounted fuse and noninductive level controls. Crossover points 90, 2,000, 7,000 Hz; FR 18-22,000 Hz ± 1.5 dB; min power 20 W, max 200 W; sens 92 dB SPL/W/m; imp 8 ohms; Mirror-matched high-grade walnut veneer. Black grille with non-resonant frame. 16 x 40 x 14 in; 115 lb. \$2,000/pr

KIRKSAETER

Monitor 141 3-Way Bookshelf Speaker

Acoustic-suspension speaker with a 10-in long-exursion polypropylene woofer, 5-in polypropylene midrange in an acoustic-sealed aluminum chamber, and $\frac{3}{4}$ -in titanium-dome tweeter with ferrofluid. Power handling 10-140 W; sens 93 dB SPL/W/m; imp 4-8 ohms; FR 25-32,000 Hz. 13 x 10 $\frac{3}{4}$ x 21 $\frac{3}{4}$ in; 30 lb. 4 wood finishes. \$1,299/pr

Omega Satellite/Subwoofer System

Includes 2 lacquered acoustic-suspension speakers each with a 5 $\frac{1}{2}$ -in polypropylene woofer/midrange and 2 polypropylene 2 $\frac{1}{2}$ -in tweeters; ported subwoofer has two 7-in polypropylene lower bass drivers (made of fiberboard). Power handling 20-100 W; sens 89 dB SPL/W/m. Subwoofer frequency range 40-180 Hz, satellites 180-20,000 Hz. Satellites 5 $\frac{1}{8}$ x 8 $\frac{3}{4}$ x 3 $\frac{3}{8}$ in; 4 lb/ea. Subwoofer 11 $\frac{1}{2}$ x 19 x 8 $\frac{3}{4}$ in; 21 lb. Black or white finish. \$799/system

Concept 100 2-Way Bookshelf Speaker

Ported enclosure speaker with a 7-in long-exursion polypropylene woofer and 1-in textile-dome tweeter. High-class fiberboard with front trim panels of black oak, walnut, or antique oak. Power handling 10-100 W; sens 90 dB SPL/W/m; imp 4-8 ohms; FR 29-22,000 Hz. 8 $\frac{3}{8}$ x 10 $\frac{3}{8}$ x 17 $\frac{3}{8}$ in; 19 lb. \$599/pr

KLH

Model 7700 3-Way Speaker

Tuned-port speaker with 12-in copolymer/fiber woofer, 4-in midrange, and 1-in dome tweeter. Features 12-in passive radiator. Power 5-175 W rms; FR 22-22,000 Hz ± 6 dB; sens 92 dB SPL/W/m; imp 8 ohms; crossover pts 900 and 3,500 Hz. \$578/pr

1203D 3-Way Speaker

Tuned-port speaker with 12-in copolymer/fiber woofer, 4-in hemi-dome midrange, 1-in soft-dome tweeter. Pwr range 3-150 W; FR 24-22,000 Hz ± 6 dB; sens 94 dB SPL/W/m; imp 8 ohms;

crossover points 900 and 4,000 Hz. 15 $\frac{1}{4}$ x 31 $\frac{1}{4}$ x 10 in. \$498/pr

Model 1500 3-Way Speaker

Tuned-port speaker with 12-in woofer, 5 $\frac{1}{4}$ -in midrange, and 3-in tweeter. Power range 5-85 W rms; frequency response 42-22,000 Hz ± 8 dB; sensitivity 91 dB SPL/W/m; impedance 8 ohms; crossover points 900 and 4,000 Hz. Oak vinyl finish. 31 x 15 $\frac{1}{4}$ x 10 $\frac{3}{4}$ in. \$438/pr



Klipsch Chorus

Model 602 2-Way Speaker

Tuned-port speaker with 6 $\frac{1}{2}$ -in polypropylene woofer and 3-in ferrofluid-cooled tweeter. Features shielded magnets for positioning next to a TV without disrupting the picture. Power range 8-65 W rms; FR 50-22,000 Hz ± 6 dB; sens 90 dB SPL/W/m; imp 8 ohms; crossover point at 4,000 Hz. 9 x 16 $\frac{1}{2}$ x 9 $\frac{1}{8}$ in. \$258/pr

KLIPSCH

Klipschorn 3-Way Speaker

Fully horn-loaded floor standing speaker features K-33-E woofer, K-55-M midrange and K-77-M tweeter. Power handling 100 W cont; FR 35-17,000 Hz, ± 3 dB; sens 104 dB SPL/W/m; imp 8 ohms. 31 $\frac{1}{4}$ x 52 x 28 $\frac{1}{2}$ in; 167 lb. Priced depending on finish, from approx. \$3,598/pr

Chorus 3-Way Speaker

Floor-standing speaker featuring 15-in woofer (K-48-E), horn-loaded compression drivers for midrange (K-57-K) and tweeter (K-79-K). Vented box enclosure; built-in riser base. Power handling 100 W cont.; FR 45-20,000 Hz, ± 3 dB; sens 101 dB SPL/W/m; imp 8 ohms. Walnut or oak finish. 18 $\frac{1}{2}$ x 39 x 15 $\frac{1}{2}$ in; 89 lb ea. Priced according to finish, from approx. \$1,630/pr

Forte II 3-Way Speaker

Floor-standing speaker featuring horn-loaded compression drivers for midrange (K-61-K) and tweeter (K-75-K); 12-in woofer (K-25); 12-in passive radiator (KD-15) mounted on rear of cabinet. Vented box enclosure; built-in riser base. Power handling 100 W cont; FR 32-20,000, ± 3 dB; sens 99 dB SPL/W/m; imp 8 ohms. 16 $\frac{1}{2}$ x 35 $\frac{3}{8}$ x 12 in; 56 lb ea. Priced according to finish, from approx. \$1,180/pr

SPEAKERS

Heresy II 3-Way Speaker

Features 12-in woofer (K-24-K), horn-loaded compression midrange (K-53-K) and tweeter (K-76-K). Sealed enclosure. Power handling 100 W continuous; FR 50-20,000 Hz, ± 3 dB; sensitivity 96 dB SPL/W/m; impedance 8 ohms. Available in exotic woods. 15 $\frac{1}{2}$ x 21 $\frac{3}{8}$ x 13 $\frac{1}{4}$ in; 37 lb ea. Priced depending on finish, from approximately. \$930/pr

Kg⁴ 2-Way Speaker

Floor-standing speaker with 12-in rear-mounted passive radiator (KD-12), two 8-in polymer-cone woofers (K-8), and horn-loaded tweeter (K-74). Vented box enclosure; built-in riser base. Power handling 100 W cont; FR 38-20,000 Hz, ± 3 dB; sens 94 dB SPL/W/m; imp 6 ohms. Oak or walnut finish. 15 $\frac{3}{4}$ x 24 $\frac{1}{4}$ x 10 $\frac{3}{4}$ in; 40 lb ea. From approx. \$672/pr

KOSS

M/100 Plus Powered Speaker

Built-in 20-watt amp allows amplification from the headphone jack of TV, portable tape, or CD player. FR 50-30,000 Hz; S/N 80 dB; THD <5% at 1 kHz; 4 ohm imp. 27 lb/pr. \$260/pr

M/90 Plus 2-Way Speaker

Features two 4 $\frac{1}{2}$ -in woofers and 1-in dome tweeter. FR 50-30,000 Hz; sens 88 dB SPL/W/m; 4-6 ohm imp; max power 20 W continuous, 100 W peak. 12 $\frac{7}{8}$ x 5 $\frac{1}{4}$ x 5 $\frac{1}{2}$ in; 30 lb/pr. \$220/pr

LINN PRODUCTS

DMS Isobarik 3-Way Speaker

Isobarik-loading 3-way floor-standing speaker with 12-in, 9-in woofers, 5-in midrange, two 3 $\frac{1}{4}$ -in dome tweeters. Can be triamped. FR 25-20,000 Hz ± 1.5 dB; crossovers at 375 and 3 kHz; instantaneous dynamic range 54 dB; imp 4 ohms; power range 50-500 W; 30 x 15 x 16 $\frac{1}{2}$ in. \$5,385/pr

Kaber 2-Way Speaker

Floor-standing tower speaker with two 5-in woofers and 3 $\frac{1}{4}$ -in tweeter. Woofers operate at different enclosure resonance and crossover points. Can be tri-wired, or passively tri-amped. Includes integral base stand. Walnut or black ash finish. \$1,995/pr

Nexus LS 250 2-Way Speaker

Ported 2-way system, 8-in carbon-loaded polypropylene woofer, 3 $\frac{1}{4}$ -in soft-dome tweeter. Molded front baffle and port of structural foam polymer. Built-in 14-in pedestal stand. 4th order Linkwitz-Riley crossover, phase aligned, at 2,500 Hz. Frameless grill cloth stretches over baffle. Can be bi-wired. sens 88 dB SPL/W/m. 10 x 22 x 12 in. \$1,095-\$1,295/pr

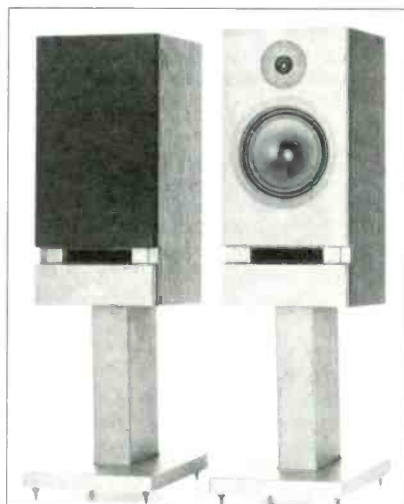
Helix 2-Way Speaker

Bookshelf or floor mounting, ported speaker with 8-in woofer and 3 $\frac{1}{4}$ -in dome tweeter. Can be bi-wired or passively bi-amped. 20 x 10 x 11 in. Simulated black ash finish. \$795/pr

LUXMAN

S-505 2-Way In-Wall Speaker

Flush-mount system designed for custom installation in walls or ceilings. Features 8-in woofer with long-throw 1 $\frac{1}{2}$ -in voice coil and graphite/polypropylene cone; 1-in soft-dome tweeter with auto-resetting overload protector. Tweeter-level control; mounting provision for optional



Linn Nexus LS 250

RC-501 remote control sensor; integral clamps and mounting brackets. FR 50-22,000 Hz ± 2.5 dB; sens 89 dB SPL/W/m; nom imp 8 ohms. Outside frame: 14 $\frac{1}{2}$ x 10 $\frac{1}{2}$ x 3 $\frac{3}{16}$ in. \$500

MAGNEPAN

Magneplanar Tympani-IVa 3-Way Speaker

Combination planar-magnetic and ribbon tweeter with bi-amplification option. FR 30-40,000 Hz ± 3 dB; power handling 300 W max; sens 87 dB SPL/W/m; imp 4 ohms bass, 3 ohms midrange/tweeter; crossover frequency 400/3,000 Hz. Off-white, black, or brown panel with oak trim. Bass section, 1254 sq. in planar magnetic; midrange section, 168 sq. in planar magnetic; tweeter section, 1 $\frac{1}{4}$ x 55 in ribbon; 260 lb/pr. \$3,800/pr

Magneplanar MG-IIIa 3-Way Speaker

Combination planar-magnetic and ribbon tweeter with bi-amp option. FR 37-40,000 Hz ± 3 dB; power handling 200 W max; sens 85 dB SPL/W/m; imp 4 ohms bass, 3.4 ohms midrange/tweeter; crossover pts 500/3,000 Hz. Off-white, black, or brown panel with oak trim. Bass section, 620 sq. in planar magnetic; midrange section, 170 sq. in planar magnetic; tweeter section, 1 $\frac{1}{4}$ x 55 in ribbon. \$2,195/pr

Magneplanar MG1.4 2-Way Speaker

Floor-standing 2-way speaker with planar magnetic woofer and tweeter. Features oak side rails; off white fabric grille. Power handling 200 W cont; FR 40-18,000 Hz, ± 3 dB; crossover frequency 1,000 Hz; sens 87 dB SPL/W/m; imp 5 ohms purely resistance. 22 x 60 x 2 in. \$980/pr

Magneplanar SMGa 2-Way Speaker

Full-range speaker with 0.5-mil diaphragm driven by Magneplanar magnetic field. Power handling 100 W cont; FR 50-18,000 Hz ± 4 dB; sens 85 dB SPL/W/m; imp 4 ohms; crossover 2,400 Hz. Bass, midrange section, 370 sq. in; tweeter section, 58 sq. in. 19 $\frac{1}{4}$ x 48 $\frac{3}{8}$ x 1 $\frac{1}{4}$ in. \$495/pr

M&K

MX-1000 Pedestal Powered Subwoofer

Magnetic-shunt powered pedestal acoustic-suspension with two 12-in drivers. Magnetically shielded design and pedestal shape allow use as

stand for large monitor television sets. 26 x 28 x 22 in; 115 lb. \$1,495

Satellite 1B 2-Way Speaker

2-way acoustic-suspension speaker with two 5-in polypropylene woofers and two 1-in soft-dome tweeters. Features 36 tonal balances through midrange; tweeter character switches. FR 70-22,000 Hz ± 3 dB; power range 7 $\frac{1}{2}$ -400 W; imp 4 ohms. Walnut or oak finish with black grille. 21 x 7 $\frac{3}{4}$ x 7 $\frac{3}{8}$ in; 19 lb. \$725/pr

Satellite 2B 2-Way Speaker

Acoustic-suspension speaker with 6 $\frac{1}{2}$ -in polypropylene woofer and 1-in soft-dome tweeter. Features selector for 36 tonal balances; midrange, treble character switches. FR 65-20,000 Hz ± 3 dB; power range 15-100 W. Walnut or oak finish with black grille. 10 $\frac{1}{2}$ x 6 $\frac{1}{2}$ x 7 in; 9 lb. \$550/pr

MARANTZ

SP 1515 3-Way Speaker

Ported, floor-standing speaker with 15-in woofer; 5-in ferrofluid cone midrange; 3-in ferrofluid cone tweeter; sculptured furniture-style cabinet. Max power 165 W; sens 92 dB SPL/W/m; imp 8 ohms. Bartonwood vinyl finish. 18 x 32 $\frac{1}{2}$ x 16 $\frac{1}{2}$ in; 47 lb. \$400/pr

MARTIN-LOGAN

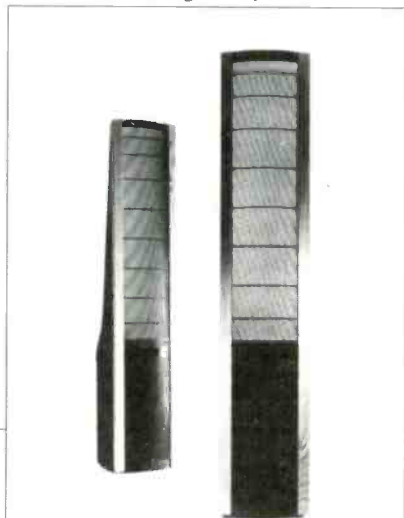
Monolith III Hybrid Electrostatic Speaker

Floor-standing curvilinear electrostatic panel speaker mounted atop a tuned subwoofer box. Designed for wide dispersion without the use of delay lines of lenses. Features 2-ft x 4-ft electrostatic cell for 100-24,000 Hz and a 12-in high-speed subwoofer with 2-in voice coil that is down 3 dB at 16 Hz. Power handling 250 W cont; FR 28-24,000 Hz, ± 2 dB; sens 90 dB SPL/W/m; imp 4 ohms. Available in a variety of finishes. 25 x 75 x 13 $\frac{1}{2}$ in. \$6,500/pr With electronic crossover. \$7,000

CLS II Electrostatic Speaker

Floor-standing curved electrostatic speaker. Features wide-dispersion format for full-range reproduction; 2-ft x 4-ft electrostatic cell to reproduce all frequencies from 50-22,000 Hz; 30 degrees seamless horizontal dispersion; 4-ft line-source vertical; arc-free diaphragm; see-through appearance. Power handling 150 W cont; FR 35-22,000 Hz ± 2 dB; sens 85 dB SPL/W/m; imp 4 ohms. Available in a variety of finishes. 26 x 48 x 2 in; 75 lb ea. \$3,500/pr

Martin-Logan Sequel II



S P E A K E R S

Sequel II Hybrid Electrostatic Speaker

Floor-standing electrostatic/subwoofer system. Features visually transparent electrostatic transducer that operates from 200-24,000 Hz; 30° seamless horizontal dispersion in a vertical line-source format; 1-ft x 4-ft electrostatic cell; super-low-mass 10-in subwoofer. Power handling 200 W cont; FR 26-24,000 Hz \pm 3 dB; sens 89 dB SPL/W/m; imp 6 ohms. Oak and black finish. 14½ x 74 x 13½ in; 110 lb ea. \$2,500/pr

MB QUART

MB 650S 3-Way Speaker

3-way acoustic-suspension column loudspeakers. Features 1-in multilayered, compressed wood; ceramic magnets; fluid cooled tweeter; computer optimized bass response; 1-in titanium-dome tweeter; 2-in supronyl dome mid-range; 8-in butyl suspension, long-throw woofer; power handling 100 W cont; FR 39-32,000 Hz; sens 88 dB/W/m; crossover frequency 400/2,900 Hz; imp 4 ohms. 10¾ x 33¾ x 10¼ in; 38 lb 10 oz ea. Genuine walnut or oak, white, black or gray lacquer. \$1,499/pr



MB Quart 390

MB 390 3-Way Bookshelf Speaker

Acoustic-suspension speaker. Features 1-in titanium-dome tweeter; 4-in butyl suspension midrange; 10-in butyl suspension, long-throw woofer. Power handling 130 watts continuous; frequency response 40-32,000 Hz; sensitivity 88 dB SPL/W/m; impedance 4 ohms; crossover frequencies 400 Hz/1,800 Hz. 12 x 20½ x 12 in; 28 lb 10 oz ea. Genuine walnut or oak, matte lacquer white or black finishes. \$939/pr

MB 220 2-Way Bookshelf Speaker

Acoustic-suspension speaker. Features 1-in titanium-dome tweeter; 6½-in butyl suspension, long-throw woofer; power handling 60 W cont; FR 60-32,000 Hz; sens 87 dB SPL/W/m; crossover frequency 1,500 Hz; imp 4 ohms. 9 x 12 x 8 in; 11 lb ea. Genuine walnut or oak, matte lacquer black or white finishes. \$499/pr

MCINTOSH

NR 1052 4-Way Speaker

Features 10-in woofer with copper voice coil; 5-in midrange isolated from woofer; 1-in dome tweeter with copper-wire voice coil centered and suspended with custom surround; 15-in passive radiator with accurately adjusted moving mass; built-in crossover with points at 55, 450, and 1,300 Hz; cabinet made of high density particle board; imp 8 ohms. FR 30-20,000 Hz; power handling 250 W max. Walnut finish. 16 x 47½ x 11½ in; 94 lb. \$2,504/pr

XD 717 3-Way Speaker

3-way speaker with 12-in woofer, 6½-in midrange, and 1-in dome tweeter. Sens 87 dB SPL/W/m; power handling 100 W max; imp 8 ohms;

crossover frequencies 350 and 1,000 Hz. Cabinet constructed of ¾-in high-density particle board with internal bracing and airtight assembly. Walnut veneer protected by hand-rubbed lacquer finish. \$1,598/pr

XL 10 3-Way Speaker

Features 1-in dome tweeter, 8-in woofer, and a 10-in controlled-mass passive radiator. Tweeter is protected by an 0.6-amp fuse. Power handling 100 W max; imp 8 ohms; FR 45-20,000 Hz; sens 89 dB SPL/W/m; crossover frequency 90 and 1,000 Hz. Walnut finish. 14¼ x 25 x 7¾ in; 27 lb, 8 oz. \$858/pr

MERIDIAN

D600 3-Way Powered Speaker

Tri-amplified vented-box active loudspeaker with 6½-in woofer, 6½-in bass/midrange, and 1-in metal-dome tweeter. Features select between digital and analog inputs; 2 analog, 2 digital, and 1 digital/optical input. Display gives information about source and volume number, and when connected to Meridian 200 series components, also shows CD track number and FM preset number and frequency. Includes infrared remote control that controls D600 loudspeakers and other Meridian components. Remote unit controls frequency shaping and tilt controls to optimize loudspeaker response. 70 W x 3; FR 36-20,000 Hz; SPL 110 dB. 35½ x 8¼ x 11¾ in; 70 lb ea. Rosewood, walnut, or black ash finishes. \$5,490/pr

MIRAGE

M1 3-Way Speaker

Floor-standing speaker with two 8-in polypropylene woofers (1 front 1 rear) with 38-oz magnets crossing over to two 4-in cone midranges (1 front, 1 rear) at 300 Hz; 2 ¼-in soft-dome tweeters (1 front, 1 rear); black lacquer, white, or oak finish. Power range 100-400 W; FR 20-22,000 Hz \pm 3 dB; sens 86 dB SPL/W/m; imp 6 ohms; 60 x 19½ x 9 in; 120 lb ea. \$5,000/pr

Model 760 2-Way Speaker

Bass-reflex speaker with two 8-in carbon-filled polypropylene midbass units with butyl surround; crossover pt 2,200 Hz; 1-in ferrofluid-cooled soft-dome tweeter. Black vinyl or walnut finish. Power range 30-200 W; FR 30-20,000 Hz \pm 3 dB; sens 89 dB SPL/W/m; imp. 6 ohms; 37 x 11 x 14 in; 62 lb ea. \$1,000/pr

Model 460 2-Way Speaker

8-in woofer; 1-in dome tweeter; black vinyl or walnut finish. Power range 15-120 W; FR 35-20,000 Hz \pm 3 dB; sens 88 dB SPL/W/m; 25 x 10 x 11 in; 32 lb ea. \$600/pr

MISSION ELECTRONICS

Mission 765 2-Way Speaker

Reflex speaker with two 8-in polypropylene midbass drivers and 1-in super elliptical imp transformer tweeter with ferrofluid cooling. Features bass-reflex loading; flared spikes; full time alignment; flared, tuned port; 5-way terminal posts. Power handling 200 W rms; FR 40-20,000 Hz \pm 3 dB; nom imp 4 ohms; crossover point at 3,200 Hz. Available in natural walnut and black ash wood veneers. 10¼ x 37¾ x 13¾; 50.6 lb ea. \$1,299/pr

Mission 764 2-Way Speaker

Reflex speaker with 8¼-in mineral-loaded homopolymer midbass driver and 1-in dome su-

per elliptical imp transformer tweeter with ferrofluid cooling. Features bass-reflex loading; flared tuned port; bi-amping and bi-wiring connectors; 5-way terminal posts. Power handling 200 W rms; FR 38-20,000 Hz \pm 3 dB; nom imp 8 ohms; crossover frequency 3,200 Hz. Available in natural walnut and black ash wood veneers. 9¾ x 33 7/8 x 13¼ in; 44 lb ea. \$999/pr

Cyrus 782 2-Way Speaker

Sealed speaker with two 6½-in mineral-loaded polypropylene midbass drivers and ¾-in ferrofluid-cooled fabric dome tweeter. Features flared reflex-port; 1-in medium-density fiber board; floor spikes; 5-way binding posts; bi-amping and bi-wiring. Power handling 25-150 W rms; FR 49-20,000 Hz \pm 3 dB; sens 91.5 dB SPL/W/m; nom imp 4 ohms; crossover frequency 3,200 Hz. Walnut, black ash, and rosewood finishes. 10 x 20¾ x 13 in; 31 lb ea. \$799/pr

Cyrus 781 2-Way Speaker

Reflex speaker with 6½-in mineral-loaded polymer midbass driver and ¾-in ferrofluid-cooled fabric-dome tweeter. Features ¾-in medium-density fiber board; 5-way post; bi-amping and bi-wiring; flared tuned-port. Power handling 25-100 W; FR 47-20,000 Hz; sens 90.5 dB SPL/W/m; nom imp 6 ohms; crossover point 3,500 Hz. Available in walnut and black ash finishes. 9 x 17 x 11 in; 20 lb ea. \$499/pr

MONITOR AUDIO

MA952 Gold 2-Way Speaker

Floor-standing, tuned cabinet speaker with two 6-in polypropylene woofers and 1-in gold metal-dome tweeter. Features infinite baffle. FR 45-30,000 Hz \pm 3 dB; imp 8 ohms; sens 89 dB SPL/W/m; power range 15-120 W. Black ash, Kenya black oak, and walnut finishes available. 9 x 31 x 13 in. \$1,599/pr

R352/MD 2-Way Speaker

Reflex speakers with 8-in woofer and ¾-in metal-dome tweeter. Feature foam-lined cabinet. FR



Mission Cyrus 782 (left) and 781

50-20,000 Hz \pm 3 dB; imp 8 ohm; sens 91 dB/W/m; power range 15-120 W. Walnut, oak, black ash. 25¼ x 10 x 12½ in; 57 lb. \$799/pr

R100 2-Way Speaker

Sealed-enclosure speakers with 8-in woofer and 1-in soft-dome tweeter. FR 60-20,000 Hz \pm 3 dB; imp 8 ohm; sens 89 dB/W/m; amp power 15-60

HELP US HELP YOU!

PARTICIPATE IN THE STEREO REVIEW BUYER POLL

Stereo Review wants to know more about our readers. How much equipment you buy (and how often), how much you spend on it, what sort of product features you like. That will help us create a better, more informative magazine, specially geared to your tastes and preferences.

To gather this important information, we've created the Stereo Review Buyer Poll. And we need your help to make it work.

If you've bought any equipment within the past 30 days, we'd like you to participate (see instructions below). We'll use the information you give us to keep manufacturers up to date on the buying habits of stereo enthusiasts—the most knowledgeable group of audio buyers in the country. And in the long run, that will mean better service for you.

HOW TO PARTICIPATE

You can participate in the Stereo Review Buyer Poll by sending in the Reader Service Card appearing next to this page. We've provided space for you to list any equipment purchased in the past 30 days. Any kind of audio/video equipment qualifies.

For example:

Home Audio Components

- Amplifier
- Receiver/Tuner
- Speakers
- Turntable
- Cassette Deck
- Equalizer
- CD player

Portable Stereo

- Portable Cassette Player
- Portable CD Player
- Headphones

Car Stereo

- Tuner
- Cassette Deck
- Speakers

Home Video

- VCR
- Camcorder
- Videodisc Player
- Stereo TV

Fill in the type of equipment, manufacturer, model number, and price you paid. Include all the equipment you bought this month. Then print your name and address and drop it in the mail (we pay the postage). It's that simple!

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STEREO REVIEW BUYER POLL

1. In the past 30 days, have you purchased any audio or video equipment or accessories?
A. YES B. NO → Thank You!

2. Which type(s) of equipment did you purchase in the past 30 days?
A. Home audio B. Portable stereo
C. Car stereo D. Video

3. In the space below, please write in the type (speakers, car CD player, stereo VCR, etc.), the make, the model number and the price paid for each item purchased in the past 30 days.

TYPE	MAKE	MODEL	PRICE PAID
CD player	Smiley	AA-5923	\$379.00
Speakers	Blanco	BS3-10	\$450.00
car radio/cassette deck	Speaker	KT 9372 (4)	\$1029.00

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LOOK FOR THE BUYER POLL EVERY MONTH

The Stereo Review Buyer Poll will appear in every issue—just check the Table of Contents for that month's location. You can participate in any month in which you purchased audio/video equipment. Of course, even if you don't join our Poll, you can still send in the Reader Service card to get information about products advertised in that month's issue.

We hope you'll participate regularly in the Stereo Review Buyer Poll. Your answers are important to us—and you'll find the resulting benefits important to you.

Thanks for helping us out!

Stereo Review

S P E A K E R S

W. Black ash or walnut finish. 15 $\frac{3}{4}$ x 10 x 7 in.; 25 $\frac{1}{4}$ \$319/pr

MORDAUNT-SHORT

System 442 3-Way Speaker

Reflex speaker with two 7-in woofers and a 1-in titanium-dome tweeter. Power range 40-300; FR 50-20,000 Hz \pm 5 dB; sens 87 dB SPL/W/m; imp 6 ohms; crossover points at 250 and 5,000 Hz. Black ash, mahogany, walnut or light ash finishes. 37 x 10 x 15 in.; 55 lb/ea \$2,900/pr

MS 3.50 2-Way Speaker

Transmission-line speaker with 8-in woofer and 1-in aluminum-dome tweeter. Min power 15 W; FR 45-22,000 Hz \pm 5 dB; sens 90 dB SPL/W/m; imp 8 ohms; crossover point at 4,000 Hz. Black ash finish. 35 x 9 x 15 in.; 40 lb/ea. \$899/pr

MS300G 2-Way Speaker

Sealed speaker with two 6 $\frac{5}{8}$ -in woofer/midranges and a $\frac{3}{8}$ -in ferrofluid-cooled and damped titanium-dome/cone tweeter. Features a $\frac{5}{8}$ -in high-density board cabinet with full circumference brace. Power range 30-150 W; FR 70-20,000 Hz -3 dB; sens 89 dB SPL/W/m; imp 8 ohms; crossover point at 5,000 Hz. Mahogany, black ash, or walnut finishes. 9 x 21 $\frac{3}{8}$ x 9 $\frac{3}{4}$ in.; 19.1 lb ea \$725/pr

MS100G 2-Way Speaker

Sealed speaker with 6 $\frac{5}{8}$ -in woofer/midranges and a $\frac{3}{8}$ -in ferrofluid-cooled and damped titanium-dome/cone tweeter. Features a $\frac{5}{8}$ -in high-density board cabinet with full circumference brace. Power range 20-80 W; FR 77-20,000 Hz -3 dB; sens 87 dB SPL/W/m; imp 8 ohms; crossover point at 5,000 Hz. 9 x 13 x 8 in.; 10 lb ea \$425/pr

Series 2

MS55Ti 2-Way Speaker

Sealed speaker with two 7 $\frac{3}{4}$ -in woofer/midranges and a $\frac{3}{4}$ -in ferrofluid-cooled and damped titanium-dome/cone tweeter. Features a $\frac{5}{8}$ -in high-density-board cabinet with full-circumference brace. Power range 25-150 W; FR 50-20,000 Hz -3 dB; sens 90 dB SPL/W/m; imp 8 ohms; crossover at 4,000 Hz. Black-ash/walnut finishes. 10 $\frac{3}{8}$ x 32 $\frac{3}{4}$ x 11 $\frac{3}{4}$ in. \$769/pr

MS45Ti 2-Way Speaker

Sealed speaker with two 7 $\frac{3}{4}$ -in woofer/midranges and a $\frac{3}{4}$ -in ferrofluid-cooled and damped titanium-dome/cone tweeter. Features a $\frac{5}{8}$ -in high-density board cabinet with full circumference brace. Power range 25-150 W; FR 55-20,000 Hz -3 dB; sens 90 dB SPL/W/m; imp 8 ohms; crossover at 4,000 Hz. Black ash or walnut finishes. 10 $\frac{3}{8}$ x 25 $\frac{1}{4}$ x 11 $\frac{3}{4}$ in. \$569/pr

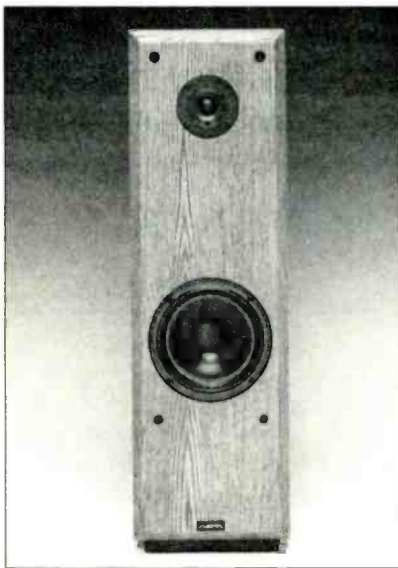
MOREL ACOUSTICS

Duet 2-Way Speaker

Speaker with 6-in woofer and 1 $\frac{1}{8}$ -in ferrofluid cooled soft-dome tweeter. Features the Hexatech technique winding in tweeter; double-magnet woofer also using the Hexatech voice coil. Power handling 150 W rms; frequency response 40-22,000 Hz \pm 2 dB. 8 x 15 x 12 in.; 20 lb \$995/pr

MLP-403-II 3-Way Speaker

Ported floor-standing speaker with 9-in free-edge paper-cone woofer, 3-in dome midrange, and 1 $\frac{1}{8}$ -in dome tweeter. Power range 10-125 W rms; FR 38-25,000 Hz \pm 3 dB; sens 88 dB SPL/



Near Model 40M

W/m; imp 4-8 ohms. Finished in walnut, teak, or black. 21 x 12 x 10 in.; 26 lb. \$795/pr

NEAR

Symphony No. 1 CS-4000 CL 3-Way Speaker

Speaker with 2 woofers, a 6 $\frac{1}{2}$ -in midrange and eight 2-in tweeters in an array. Features an infinite baffle. Max power 250 W; imp 8 ohms; crossover points at 400 and 2,500 Hz. Classic styling. 44 $\frac{1}{2}$ x 26 $\frac{1}{4}$ x 15 $\frac{3}{8}$ in. \$4,200/pr

Concerto V CS-302 M 3-Way Speaker

3-way speaker with 12-in woofer, 6-in midrange, and two 2-in tweeters. Features an infinite baffle. Maximum power handling 150 watts; nominal impedance 8 ohms; crossover points at 400 and 2,500 Hz. Walnut finish. 28 x 26 x 15 in. \$2,200/pr

NEAR-60 3-Way Speaker

Ported speaker with 12-in woofer, 4-in metal-alloy midrange, and a 1-in soft-dome tweeter. Power range 25-100 W; FR 35-22,000 Hz \pm 3 dB; imp 8 ohms; crossover points at 800 and 3,000 Hz. Vinyl. 15 $\frac{1}{4}$ x 27 x 11 in.; 48 lb \$898/pr Dark oak. \$998/pr

NEAR-40M 2-Way Speaker

Tuned-port, floor-standing speaker with 8-in metal-cone woofer and 1-in metal-dome tweeter. Power range 20-150 W; FR 32-28,000 Hz \pm 2 dB; crossover at 2,500 Hz. Dark oak finish. 10 $\frac{1}{2}$ x 34 $\frac{3}{4}$ x 11 $\frac{1}{4}$ in.; 36 lb. \$898/pr

NHT

Model Two 3-Way Speaker

Sealed speaker features two 6 $\frac{1}{2}$ -in woofers, 6 $\frac{1}{2}$ -in midrange, 1-in dome tweeter, angled front baffle; video shielding. FR 40-22,000 Hz \pm 3 dB; nom imp 8 ohms; min power 35 watts. Black, white, or oak finish; black or white grilles. 37 x 7 x 12 in.; 45 lb ea \$850/pr

Model One 2-Way Speaker

Sealed speaker features 6 $\frac{1}{2}$ -in woofers, 1-in dome tweeter; angled front baffle; video shielding. Frequency response 63-22,000 Hz \pm 3 dB;

nom imp 8 ohms; min power 20 watts. Black or white and grille. 12 x 7 x 10 in. \$350/pr

OHM ACOUSTICS

Walsh 5 Vented Speaker

Features coherent-line source (CLS) Walsh driver, 3 controls for lows, perspective (midrange), and highs, each with 3 positions; gold-plated 5-way binding posts; gold internal connectors; Monster Cable internal wiring. Power handling 500 W cont; FR 25-25,000 Hz \pm dB; imp 4 ohms. Available in walnut, oak and rosewood finishes or teak/white/black lacquer. 17 $\frac{1}{2}$ x 17 $\frac{1}{2}$ in at bottom tapering to 15 x 15 in at top; 43 in tall; 95 lb ea \$5,800/pr

3XO Inverted-Cone Speaker

Bass-reflex speaker features CLS inverted conical surface driver; press-connector inputs accept banana plugs or up to 12-gauge wire; lead-lined cabinet; casters; ferrofluid cooled; protection circuits. Standard finish walnut and oak, available in Scandinavian rosewood, black, or white lacquer. Power handling 200 W cont; FR 36-22,000 Hz \pm 4 dB; imp 8 ohms. 13 $\frac{1}{2}$ x 36 x 13 $\frac{1}{2}$ in. at base \$1,500/pr

SCT+ Inverted Cone Speaker

Features inverted-cone, coherent line source (CLS) controlled-directionality driver; ferrofluid cooled drivers; protection circuits; 5-way post. Power handling 225 W peak; FR 37-20,000 Hz \pm 4 dB; sens 91 dB SPL/W/m; imp 8 ohms. Finished in Scandinavian light oak. New England walnut and black matador vinyl veneer. 11 $\frac{3}{4}$ x 42 x 11 $\frac{3}{4}$ in \$1,100/pr

SCS Inverted Cone Speaker

Features inverted-cone, coherent line source (CLS) controlled-directionality driver; ferrofluid cooled drivers; protection circuits; 5-way post. Power handling 125 W peak; FR 44-20,000 Hz \pm 4 dB; sens 90 dB SPL/W/m; imp 8 ohms. Finished in Scandinavian light oak. New England walnut and black matador vinyl veneer. 11 $\frac{3}{4}$ x 31 $\frac{1}{2}$ x 11 $\frac{3}{4}$ in. \$650/pr

CAM 42 SBA 2-Way Bookshelf Speaker

Two-way bookshelf speaker. Features rotatable egg-shaped $\frac{3}{4}$ -in polycarbonate dome tweeter system; 8-in polypropylene woofer; ferrofluid-cooled tweeter; 12-in passive radiator and Ohm's patented sub-bass-activator; lower handling 300 watts peak; FR 39-20,000 Hz \pm 4 dB; sensitivity 90dB SPL/W/m; impedance 8 ohms. Brushed bronze vinyl finish. 14 $\frac{3}{4}$ x 11 x 26 $\frac{1}{2}$ in. \$575/pr

CAM 32 SBA 2-Way Bookshelf Speaker

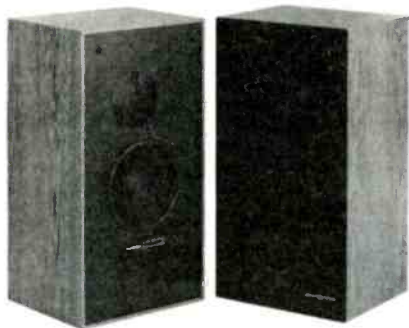
Two-way bookshelf speaker. Features rotatable egg shaped $\frac{3}{4}$ -in polycarbonate-dome tweeter system; polyswitch circuit breakers; protection circuits; 6 $\frac{1}{2}$ -in woofer; 10-in passive radiator; and patented sub-bass activator. Power handling 175 W peak; FR 39-20,000 Hz \pm 4 dB; sens 90 dB; imp 8 ohms. Brushed bronze vinyl. 12 $\frac{3}{4}$ x 11 x 22 $\frac{1}{4}$ in. \$450/pr

ONKYO

S-91 4-Way Speaker

Bass-reflex system with 12-in polypropylene woofer, 5-in midrange, 1-in ferrofluid-cooled polycarbonate dome tweeter, and $\frac{1}{2}$ -in dome super-tweeter. Features auto overload protection. Max power 150 W; FR 32-22,000 Hz; sens 93 dB SPL/W/m; imp 8 ohms. Oak veneer. 15 $\frac{3}{8}$ x 39 $\frac{3}{4}$ x 10 $\frac{1}{8}$ in; 40 lb \$480/pr

SPEAKERS



Phase Technology 435-ES

PARADIGM

Studio Monitor 3-Way Speaker

Features dual 8-in woofers; 6-in midrange; 1-in ferrofluid-cooled tweeter. FR 28-20,000 Hz \pm 2 dB; sens 91.5 dB. Triampable. Walnut, oak, or black-ash wood finish. 11½ x 42½ x 16½; 90 lb. \$1,900/pr

Export Monitor 2-Way Speaker

Features 8-in woofer; 1-in ferrofluid-cooled tweeter. FR 28-20,000 Hz \pm 2 dB; sens 88.5 dB. Biampable. Walnut, oak, or black-ash wood finish. 10¾ x 24 x 14; 35 lb. \$840/pr

Control Monitor 2-Way Speaker

Features 8-in woofer; 1-in ferrofluid-cooled tweeter. FR 39-20,000 Hz \pm 2 dB; sens 90 dB. Biampable. Walnut, oak, or black-ash wood finish. 10 x 20 x 13½; 28 lb. \$700/pr

Model 5se 2-Way Speaker

Features 8-in woofer; 6-in midrange; 1-in ferrofluid-cooled polyimide-dome tweeter. FR 38-20,000 Hz \pm 2 dB; sens 90 dB. Walnut or black-ash vinyl. 10 x 20½ x 11¾; 24 lb. \$360/pr

Model 3se 2-Way Speaker

Features 8-in woofer; 1-in ferrofluid-cooled polyimide-dome tweeter. FR 45-20,000 Hz \pm 2 dB; sens 91 dB. Walnut or black-ash vinyl finish. 9½ x 19¾ x 10¾; 22 lb. \$300/pr

PHASE TECHNOLOGY

PC-60/50 Subwoofer/Satellite System

3-piece satellite/subwoofer system consists of PC60 satellite and PC50 subwoofer. Power handling 25-150 watts; frequency response 30-20,000 \pm 3 dB; sensitivity 87.5 dB SPL/W/m; impedance 8 ohms; crossover points 150 and 1,200 Hz. \$830/system

730-ES 3-Way Tower Speaker

Tower speaker with 10-in bass/midrange driver, 5¼-in cone midrange, 1-in ferrofluid-cooled soft-dome tweeter. Features asymmetrically mounted tweeter and midrange. Power handling 120 watts; frequency response 36-20,000 Hz \pm 3 dB; sensitivity 93 dB SPL/W/m; nominal impedance 8 ohms; crossover points at 250 and 3,000 Hz. Black-ash or dark-oak vinyl veneer. 34 x 12½ x 10¾ in. \$630/pr

PC-40 2-Way Speaker

Bookshelf acoustic-suspension phase-coherent speaker with 5¼-in solid-piston woofer; 1-in soft-dome tweeter. Accepts banana plugs. Power range 15-80 W; FR 70-20,000 Hz \pm 3 dB; sens 89 dB SPL/W/m; imp 4 ohms. Walnut, stained-oak,

and light-oak finishes. 6½ x 9¾ x 5¼ in; 10 lb. \$380/pr

435-ES 2-Way Bookshelf Speaker

Bookshelf speaker with 8-in bass/midrange and 1-in ferrofluid-cooled soft-dome tweeter. Features asymmetrically mounted tweeter. Power handling 80 watts; frequency response 45-20,000 Hz \pm 3 dB; sensitivity 92 dB SPL/W/m; nominal impedance 8 ohms; crossover point 2,500 Hz. Black-ash or dark-oak vinyl veneer. 22½ x 12 x 10¾ in. \$300/pr

PINNACLE

PN 8+ 2-Way Bookshelf Speaker

Acoustic-suspension bookshelf speaker with dual patented front-mounted Diaduct ports. 8-in black polypropylene woofer, and 1-in high gloss polymer, double-chamber, liquid-cooled dome tweeter. Power handling 10-125 W rms cont, 375 W peak; FR 30-21,000 Hz; sens 90 dB SPL/W/m; imp 6 ohms; crossover points 120 and 6,000 Hz. Black-oak veneer with contrasting solid oak wood trim. 19½ x 11½ x 11¾ in; 35 lb/pr. \$399/pr

PN 7+ 2-Way Bookshelf Speaker

Vented bookshelf speaker with dual patented front-mounted Diaduct ports, 6½-in black polypropylene woofer and a 1-in polymer-dome, liquid-cooled tweeter. Power handling 10-80 W rms cont, 240 W peak; FR 38-21,000 Hz; sens 91 dB SPL/W/m; imp 6 ohms; crossover frequency 3,300 Hz. Black-oak veneer with solid oak trim. 15½ x 9¾ x 8¾ in; 35 lb/pr. \$309/pr

Sub + Subwoofer

Tuned-passive subwoofer with patented Diaduct port, two 6½-in down-firing woofers. Features rigidly braced, partitioned enclosure with non-parallel internal walls; switchable first-order crossover; compatibility with 4-8 ohm bookshelf speakers. Power handling 100 W rms. 2 year warranty. 13¾ x 19½ x 11½ in. \$229/ea

PIONEER

Elite TZ-9 Speaker

Integrated twin-bass drive system with horizontally opposite-mounted twin woofers. Features ceramic graphite diaphragm in dome midrange and dome tweeter. \$2,000 ea

Elite TZ-7 Speaker

Features ceramic carbon dome tweeters; integrated twin-bass drive system with horizontally opposite-mounted twin woofers. \$1,800/pr



Pinnacle PN 7+

POLK AUDIO

SDA-SRS 1.2tl 3-Way Speaker

Incorporates Polk's proprietary Stereo Dimen-

sion Array technology for 3-dimensional imaging. Features 15-in planar sub-bass radiator; eight 6½-in trilaminate polymer bass/midrange drivers; four SL3000 1-in trilaminate polymer dome tweeters. FR 10-26,000 Hz; power handling 1,000 W cont; imp 6 ohms. Oiled oak, or walnut finish. 21 x 63½ x 13¾ in; 185 lb ea. \$3,400/pr



Pioneer Elite TZ-9

SDA-SRS 2.3tl 3-Way Speaker

Floor-standing smaller-version SRS 1.2tl. Features Polk's proprietary Stereo Dimension Array technology for 3-dimensional imaging. Features 15-in planar sub-bass radiator; six 6½-in trilaminate polymer bass/midrange drivers; three SL3000 1-in trilaminate polymer dome tweeters. Power handling 750 W cont; FR 12-26,000 Hz; nom imp 6 ohms. Oiled oak or walnut finish. 20¾ x 55 x 13¾ in; 155 lb \$2,500/pr

SDA-1C 3-Way Speaker

Floor-standing speaker. Features four 6½-in trilaminate polymer bass/midrange drivers; two 1-in silver-coil polymer-dome tweeters; 12-in planar sub-bass radiator. Power handling 500 W cont; FR 15-26,000 Hz; nom imp 6 ohms. Oiled walnut or oak cabinet. Black studio version at lower cost. 16½ x 43½ x 12 in; 95 lb \$1,800/pr

SDA-2B 3-Way Speaker

Similar to SDA-1B except two 6½-in trilaminate polymer bass/midrange drivers; 1-in silver-coil polymer-dome tweeters; 12-in planar sub-bass radiator. Power handling 350 W cont; FR 20-26,000 Hz; nom imp 6 ohms. Oiled walnut or oak cabinet. Black studio version at lower cost. 16½ x 39½ x 12 in; 87 lb. \$1,300/pr

RTA 11t Monitor 3-Way Speaker

Real-Time-Array speakers with two 8-in low-resonance subwoofer, two 6½-in trilaminate polymer bass/midrange drivers, and 1-in polymer-dome tweeter. Power handling 350 W cont; FR 22-26,000 Hz; nom imp 6 ohms. Black-ash, walnut, and oak vinyl finish. Genuine walnut and oak veneer finish available at extra cost. 10½ x 39 x 14½; 58 lb. \$950/pr

Monitor 10B 3-Way Speaker

Sub-bass radiator/sealed floor-standing speaker with 10-in fluid-coupled subwoofer, two 6½-in trilaminate polymer bass/midrange drivers, and 1-in polymer dome tweeter. Power handling 250 W cont; FR 25-26,000 Hz; nom imp 6 ohms.

S P E A K E R S

Black-ash, walnut, and oak vinyl finish. Genuine walnut and oak finish available at extra cost. 16 x 28 x 11 1/2 in \$740/pr

RTA 8t Monitor 2-Way Speaker

Real-Time-Array floor-standing speaker with two 6 1/2-in trilaminate polymer bass/midrange drivers, and 1-in silver-coil polymer-dome tweeter. Power handling 250 W cont; FR 30-26,000 Hz; nom imp 6 ohms. Black-ash, walnut, and oak vinyl finish. Genuine walnut and oak veneer finish available at extra cost. 16 x 28 x 9 3/4 in; 48 lb \$650/pr

Monitor 7C 3-Way Speaker

Sub-bass radiator/sealed bookshelf speaker with 10-in fluid coupled subwoofer, 6 1/2-in trilaminate polymer bass/midrange driver, and 1-in polymer dome tweeter. Power handling 150 W cont; FR 25-26,000 Hz; nom imp 6 ohms. 14 x 24 x 9 1/4 in \$580/pr

AB-800 Architectural Reference 2-Way Speaker

In-wall speaker features two 6 1/2-in trilaminate polymer bass/midrange drivers, and 1-in silver-coil polymer-dome tweeter. Power handling 150 W cont; FR 28-26,000 Hz; nom imp 6 ohms. Off-white finish. 6 1/4 x 15 1/2 x 3 in \$550/pr

AB-700 Architectural Reference 2-Way Speaker

In-wall speaker features 6 1/2-in trilaminate polymer bass/midrange driver, and 1-in silver-coil polymer dome-tweeter. Power handling 125 W cont; FR 30-26,000 Hz; nom imp 6 ohms. Off-white finish. 6 1/4 x 9 3/4 x 3 in \$400/pr



Precise Monitor 10

PRECISE ACOUSTIC LABORATORIES

Monitor 10 3-Way Speaker

Bass-reflex speaker with 10-in woofer, 6 1/2-in midrange, and 1-in soft-dome tweeter. Features tuned-port design. FR 20-35,000 Hz; power handling 250 W max. Natural-oak-veneer finish \$1,800/pr

Monitor 9 2-Way Speaker

Floor-standing speaker with 8-in woofer, 1-in tweeter, and 10-in passive radiator. Power han-

dling 150 W max; sens 91 dB SPL/W/m; nom imp 6 ohms \$700/pr

Monitor 7 Speaker 2-Way Speaker

Bass-reflex speaker with 8-in woofer and 1-in tweeter. FR 28-35,000 Hz; power handling 100 W max; sens 91 dB SPL/W/m; nom imp 6 ohms \$500/pr

PSB

Stratus Tower 2-Way Speaker

2-way speaker with 8-in woofer with focused magnetic gap and cloth-dome tweeter. Power handling 30-200 W; crossover at 1,800 Hz; FR 40-20,000 \pm 1.5 dB; sens 91 dB; imp 6 ohms. Light/dark oak or black finishes. \$1,500/pr

CS 180W 2-Way Speaker

2-way speaker with 8-in polypropylene woofer and 1-in treated cloth-dome tweeter. FR 40-20,000 Hz \pm 1.5 dB. Black or dark oak finish \$800/pr

50 MKII 2-Way Speaker

2-way speaker with 8-in polypropylene cast basket woofer and 1-in textile-dome tweeter. Imp 6 ohms. Black or brown finish. \$500/pr

QUAD

ESL-63 US Monitor Electrostatic Speaker

Full-range electrostatic double speaker with dipole source. Features 2 protection circuits. Power handling 150 W; sensitivity 86 dB SPL/W/m; impedance 8 ohms; axis band limits -6 dB at 35 Hz, third-order. -6 dB at 20,000 Hz. Black finish. 28 x 36 x 11 in; 46.5 lb \$3,995/pr

REALISTIC

Mach Two 3-Way Speaker

Vented ferrofluid-cooled speaker with 15-in woofer, 5-in cone midrange, 4-in dual-radial superhorn tweeter. Level controls for midrange and tweeter. Max power 160 W; sens 94 dB SPL/W/m \$520/pr

RECOTON

Wireless 100 Powered Speaker System

System consisting of transmitter and 2 powered speakers enabling listening to stereo in any room in house. Transmitter plugs into any audio component or AC outlet, speakers plug into that room's AC outlet. Features 4 1/2-in full-range driver; volume control; FR 60-15,000 Hz; sep 90 dB, S/N 80 dB; 12 W/ch amp. Available in black or white. \$270

REVOX

Duetto Speaker

Single-enclosure speaker with two sets of three drivers mounted on either side of wedge shape enclosure. May be used with Power Cube or Piccolo Bass. Features two 4-in midranges; 1-in dome tweeter. Frequency response 90-22,000 Hz; sens 89 dB SPL/W/m; nominal impedance 4 ohms. Black lacquer finish. 14 x 14 x 14 in \$1,095
Black or white matte finish \$795

Piccolo Satellite/Subwoofer System

Satellite speakers may be used with or without companion subwoofer. Satellites feature 4 1/4-in midrange driver; 3/4-in dome tweeter. Subwoofer features 10 1/4-in subwoofer. Power handling 70



Revox Duetto

W cont; frequency response 48-22,000 Hz \pm 3 dB; sensitivity 86 dB SPL/W/m; imp 4 ohms; black finish. Satellite: 5.5 x 8.75 x 5.75 in, 5 lb. 8 oz. Subwoofer: 15.25 x 14.25 x 14.5 in, 32 lb.

Satellites \$390/pr
Subwoofer \$450 ea

ROGERS

PM510a 2-Way Reflex Speaker

Features bi-wireable crossover network. Power handling 200 W; imp 8 ohms; FR 40-16,000 Hz \pm 3 dB; sens 92 dB SPL/W/m. 30 x 18 x 15 1/8 in; 78 lb. Walnut, teak, or black. \$3,495/pr

LS7t 2-Way Speaker

Features titanium-dome tweeter and bi-wireable crossover. Power handling 200 W; FR 55-22,000 Hz \pm 2 dB; imp 8 ohms; sens 88 dB SPL/W/m. 22 x 10 3/4 x 11 in; 38 lb. Walnut, teak, or black \$949/pr

LS6a 2-Way Speaker

Features bi-wireable crossover. Power handling 150 W; FR 50-20,000 Hz \pm 2 dB; imp 8 ohms; sens 89 dB SPL/W/m. 20 x 10 3/4 x 11 in; 45 lb. Walnut, teak, or black \$699/pr

LS2a 2-Way Bookshelf Speaker

Power handling 100 W; FR 60-20,000 Hz \pm 2 dB; imp 8 ohms; sens 87 dB SPL/W/m; 29 lb. 14 x 9 x 8 in. Black/walnut vinyl \$399/pr

SANSUI

SP-X5U 3-Way Speaker

6 1/2-in low woofer, 5 1/4-in midbass with a carbon-filled polypropylene cone with butyl rubber surround and an aluminum diecast frame, and a 1-in liquid-cooled tweeter with a silk diaphragm dome. Features rounded baffle edges; gold-plated 5-way binding posts. FR 45-23,000 Hz \pm 3 dB; power handling 75 W/ch rms; sens 88 dB SPL/W/m; imp 6 ohms; crossover freq at 350 and 7,000 Hz. 37 1/2 x 11 1/2 x 11 1/2 in. Oak or black wood-grain finish \$500/pr

SW-S7.7U 3-Way Subwoofer/Satellite System

2 SP-XO.7U acoustic-suspension satellites and 1 SP-W7U tunable acoustic post subwoofer. The subwoofer (SP-W7U) is a 6 1/2-in twin drive mechanism mounted in a cabinet with a tuneable port. The 5-in midrange in the satellites has a carbon-filled polypropylene cone. The satellite tweeter is a 1/2-in ferrofluid cooled polycarbonate soft-dome. Power handling 60 W/ch rms

S P E A K E R S

into 6 ohms; FR 55-22,000 Hz; sens 88 dB SPL/W/m. Crossover frequencies at 200 and 6,000 Hz. Satellites: oak grain or black wood grain. 7 x 11 $\frac{3}{4}$ x 7 $\frac{7}{8}$ in; 10 lb. Subwoofer: black textured finish. 19 x 9 $\frac{3}{4}$ x 11 $\frac{3}{4}$ in; 26 lb. . . \$380/system

SCOTT

Model 10.3a 3-Way Bookshelf Speaker

Acoustic-suspension speaker with 10-in woofer; ferrofluid-cooled 4 $\frac{1}{2}$ -in midrange; 1 $\frac{3}{4}$ -in center-mounted ferrofluid-cooled tweeter; hickory vinyl finish. FR 45-20,000 \pm 4 dB; power range 10-100 W rms; sens 92 dB SPL/W/m; imp 8 ohms; 23 $\frac{1}{4}$ x 12 $\frac{1}{2}$ x 8 $\frac{7}{8}$ in; 20 lb ea. \$260/pr

SHAHINIAN ACOUSTICS

Obelisk 3-Way Speaker

3-way folded double-prism 50-inch hybrid transmission line speaker with 8-inch asymmetrically placed high-temperature voice-coil poly woofer, 10-inch mass-loaded-membrane viscous damped polypropylene passive radiator, two 1 $\frac{3}{8}$ -inch cambric ultra light exposed dome midranges, four $\frac{3}{8}$ -inch W-shaped polymid-dome tweeters. Minimum power handling 50 watts; maximum power handling 500 watts; impedance 4 ohms nominal. Walnut and oak standard finishes; finishes available. 29 x 14 $\frac{1}{2}$ x 12 $\frac{1}{2}$ in; 55 lb \$2,050/pr

Arc 3-Way Speaker

Vertical transmission-line speaker with 8-inch high-temperature voice coil polypropylene woofer, 10-inch mass-loaded-membrane viscous-damped passive radiator, 1 $\frac{3}{8}$ -inch cambric ultra-light exposed dome midrange, and 1-inch titanium super-tweeter. Features time-aligned phase-correct driver placement. Minimum power 30 watts; maximum power 350 watts; impedance 4 ohms nominal. Natural, medium or dark oak finish on $\frac{3}{4}$ -inch fiberboard. 27 $\frac{1}{2}$ x 14 x 9 $\frac{3}{4}$ in; 42 lb. \$1,200/pr

Lyre 2-Way Speaker

Forward-firing speaker with 8-inch high-temp voice coil poly-woofer, 1-inch titanium-deposit poly dome super-tweeter, and 10-inch passive radiator. Frequency response 30-18,000 Hz \pm 3 dB. Dark or light oak veneer; 23 $\frac{1}{2}$ x 11 $\frac{1}{4}$ x 11 $\frac{1}{4}$ in; 43 lb. \$950/pr



Shure HTS50CF

Elf 2-Way Speaker

Forward-firing small monitor with tuned-damped vent enclosure. 5 $\frac{3}{4}$ -inch polypropylene woofer with rubber edge, 1-inch polypropylene-

dome tweeter. Frequency response 55-18,000Hz \pm 3 dB; minimum power 25 watts; maximum power 150 watts; impedance 6 ohms nominal. Natural medium or dark oak finish. 12 $\frac{1}{2}$ x 6 $\frac{5}{8}$ x 7 $\frac{1}{4}$ in; 26 lb/pr \$450/pr

SHURE

HTS50CF Center-Channel Speaker System

Acoustic suspension speaker for use as center front speaker in surround system setup with two 6 $\frac{1}{2}$ -inch woofers and 1-inch dome tweeter. Features curved polymer diaphragm; magnetically shielded, polypropylene drivers; fluid-cooled, fused tweeter. Frequency response 55-18,000 Hz; sensitivity 88 dB SPL/W/m; impedance 5.6 ohms. Walnut-veneer finish; molded plastic grille. 20 x 13 $\frac{1}{2}$ x 8 $\frac{5}{8}$ in; 37 lb \$750

HTS50SW Subwoofer

Subwoofer for use in surround system setup with heavy damped cone, shielded double magnet structure, and 12-inch transducer. Features curved polymer diaphragm; polypropylene drivers. Frequency response 33-80 Hz; sensitivity 91 dB SPL/W/m; impedance 8 ohms. Walnut veneer finish. 18 x 23 x 14 in; 65 lb. \$625

HTS50LRS Surround-Sound Speaker

Acoustic suspension speaker for use as front left, right, and/or surround speaker in surround system setup with 6 $\frac{1}{2}$ -inch woofer and 1-inch dome tweeter. Features curved polymer diaphragm; magnetically shielded, polypropylene drivers; fluid-cooled, fused tweeter. Frequency response 60-18,000 Hz; sensitivity 85 dB SPL/W/m; impedance 5.6 ohms. Walnut-veneer finish; molded plastic grille. 13 $\frac{1}{2}$ x 10 x 8 $\frac{5}{8}$ in; 24.2 lb. \$500

SIGNET

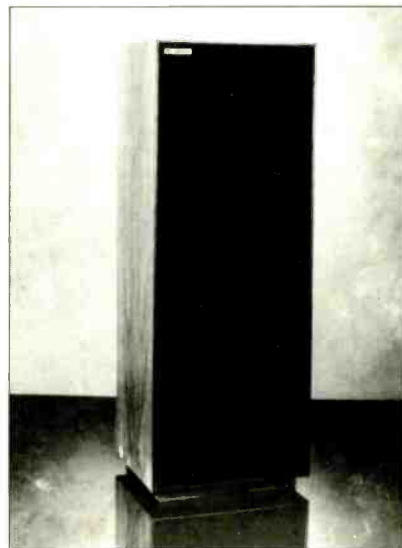
SL230 3-Way Subwoofer/Satellite System

Satellite contains a 3 $\frac{1}{2}$ -inch injection-molded midrange driver and a $\frac{3}{4}$ -inch ferrofluid-cooled dome tweeter; subwoofer utilizes two down-firing, slot-loaded 6-inch drivers. Power handling 100 watts continuous; frequency response 50-20,000 Hz; sensitivity 88 dB SPL/W/m; crossover frequency 200/3,000 Hz. Satellites are finished in oak veneer and the subwoofer in black vinyl. Satellites: 4 $\frac{7}{8}$ x 8 $\frac{1}{8}$ x 4 $\frac{3}{8}$ in, subwoofer: 13 x 21 x 6 $\frac{3}{4}$ in; 35 lb/system \$700/system

SNELL ACOUSTICS

Type A-III 3-Way Speaker

Floor-standing acoustic-suspension speaker with curved baffle to eliminate diffraction, mechanically isolated midrange enclosure, floor-loaded woofer, and rear-loaded supertweeter for accurate room response. Hand-adjustment of crossover values for specific drivers assures acoustic performance virtually identical to reference speaker. Features 12-inch high-power long-excursion mass-loaded mechanically-isolated cone woofer; 5-inch mechanically-isolated cone midrange; 1-inch individually adjusted dome tweeter; $\frac{3}{4}$ -inch low-mass ferrofluid-cooled dome supertweeter. Dual gold-plated inputs allow bi-wiring or bi-amping with or without electronic crossover. Power handling 250 watts rms; frequency response 24-26,000 Hz \pm 3 dB. 38-18,000 Hz \pm 1 dB; nominal impedance 8 ohms; crossover frequency 275/2,700/10,000 Hz. Hand-sanded, hand-rubbed matching oak, dark oak, walnut, or black-finished veneers. 23 $\frac{1}{2}$ x 50 $\frac{3}{4}$ x 14 in; 160 lb each \$4,680/pr



Snell Type E/III

Type C-III 3-Way Speaker

Floor-standing bass reflex speaker system. Features 10-inch long-throw woofer; 5-inch midrange; 1-inch ferrofluid-cooled metal dome tweeter; $\frac{3}{4}$ -inch switchable rear tweeter; 4th-order 24 dB/octave filters; bi-wirable or bi-ampable. Power handling 250 watts rms; frequency response 34-22,000 Hz \pm 3 dB; sensitivity 88.5 dB SPL/W/m; nominal impedance 8 ohms; crossover frequency 275/2,700 Hz. Hand-sanded, hand-rubbed matching oak, dark oak, walnut, or black-finished veneers. Includes tweeter level control. 14 $\frac{1}{2}$ x 46 x 11 $\frac{3}{4}$ in; 95 lb each \$1,990/pr

Type E/III 2-Way Speaker

Floor-standing bass-reflex speaker with 8-inch polymer-treated woofer, 1-inch soft-dome tweeter, and ultra-low-mass $\frac{3}{4}$ -inch ferrofluid-cooled rear-loaded dome supertweeter designed for flat early-arrival of sound and accuracy of listening-room response. Hand-adjusted crossover for specific drivers assures acoustic performance virtually identical to reference speaker. Dual gold-plated inputs allow bi-wiring or bi-amping. Features rear-loaded port for optimum low-frequency room loading. Power handling 150 watts rms; frequency response 39-20,000 Hz \pm 1.75 dB; sensitivity 91 dB SPL/W/m; nom imp 6 ohms; crossover frequency 2,700 Hz. Hand-sanded, hand-rubbed matching oak, dark oak, walnut, and black-finish veneer. Includes tweeter level control. 13 x 35 x 11 in; 50 lb/ea. \$990/pr

Type K-II 2-Way Speaker

Bookshelf acoustic-suspension speaker with 8-inch polypropylene cone woofer and 1-inch ferrofluid cooled soft-dome tweeter. Hand-adjusted crossover values for specific drivers assures acoustic performance virtually identical to reference speaker. Dual inputs for optional bi-wiring or bi-amping. Power handling 100 watts rms; frequency response 70-20,000 Hz \pm 2 dB; sensitivity 90 dB SPL/W/m; nominal impedance 8 ohms; crossover frequency 2,700 Hz. Oak, dark oak, walnut, or black-finish veneer. Includes tweeter level control. 11 x 18 x 9 in; 26 lb each \$465/pr

S P E A K E R S

SONANCE

S45 2-Way In-Wall Speaker

Speaker with 8-inch polypropylene cone woofer and 1-in polycarbonate dome tweeter. Features woofer with butyl rubber surround and special compliant dust cap; tweeter with acoustic chamber and bored pole piece; crossover with solid capacitors, polypropylene bypasses, and heavy-gauge chokes. Power handling 5-100 watts; frequency response 35-22,000 Hz ± 2 dB; sensitivity 90 dB SPL/W/m; nominal impedance 8 ohms; crossover point at 2,500 Hz. Available in white with cloth or metal grille. 16 x 12 x 3 $\frac{1}{2}$ in; 11 lb \$675/pr

PSW2 In-Wall Subwoofer

Subwoofer with 2-channel dual-voice coil 8-inch driver. Features crossover with 3 position level control. Frequency response 20-125 ± 3 dB; sensitivity 87 dB SPL/W/m; nom imp 6 ohms; crossover 125 Hz. White with cloth or metal grilles. 16 x 12 x 3 $\frac{1}{2}$ in; 14 lb ... \$450 ea

S3C 2-Way In-Wall Speaker

Speaker with 6 $\frac{1}{2}$ -inch polypropylene cone woofer and 1-inch soft dome tweeter. Features woofer with treated urethane surround and protective screens on basket windows; tweeter with two positions: flat and +2.5 dB; crossover with solid dielectric capacitors, air core choke on HP, and ferrite core on LP circuit. Power handling 5-75 watts; frequency response 45-20,000 Hz ± 2 dB; sensitivity 89 dB SPL/W/m; nom imp 8 ohms; crossover point 2,500 Hz. Available in white with cloth or metal grilles. 12 x 9 x 3 $\frac{1}{2}$ in; 9 lb \$375/pr

M30 2-Way In-Wall Speaker

Speaker with 4-inch polypropylene cone woofer and 1-in polycarbonate, ferrofluid-damped proprietary dome tweeter. Power handling 5-75 watts; frequency response 70-20,000 Hz ± 2 dB; sensitivity 86 dB SPL/W/m; nominal impedance 8 ohms; crossover point at 4,500 Hz. Available in white with metal or cloth grille. 9 $\frac{1}{8}$ x 6 $\frac{1}{2}$ x 2 $\frac{1}{2}$ in \$300/pr

SONOGRAPHIE BY CONRAD-JOHNSON

SW 1000 Stereo Subwoofer

Two side-firing magnetically shielded 10-inch woofers in golden oak cabinet. FR 25-110 Hz ± 2 dB; power range 10-200 watts; sensitivity 90 dB SPL/W/m; impedance 8 ohms; 19 $\frac{1}{2}$ x 36 x 18 in \$849 each

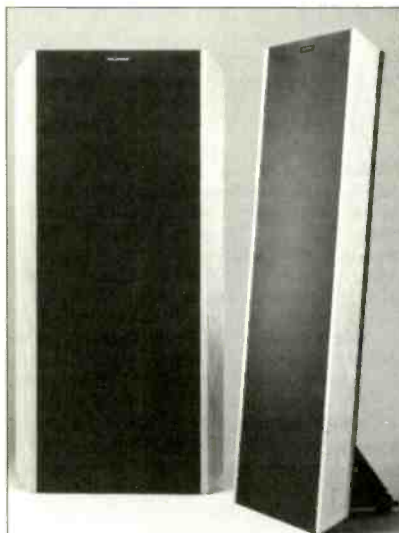
SL 21 Mini-Monitor Satellite Speaker

Vented; 6 $\frac{1}{2}$ -inch polypropylene woofer; 1-inch dome tweeter; golden oak cabinet with brown grille. Frequency response 52-20,000 Hz ± 2 dB; power range 10-80 watts; sensitivity 90 dB SPL/W/m; impedance 8 ohms; 14 $\frac{1}{8}$ x 10 $\frac{1}{2}$ x 10 $\frac{1}{2}$ in \$695/pr

SONY

APM-22ES 2-Way Speaker

Bass-reflex speaker with APM (Accurate Pistonic Motion) driver technology that incorporates a light, rigid, flat-diaphragm design. Features 45 sq-inch APM woofer; 1.4 sq-inch APM tweeter; built-in circuit breaker for tweeter protection; heavy-duty cabinet construction with rounded edges. Includes speaker cord. Frequency response 40-20,000 Hz; sensitivity 88



Sumo Aria

dB SPL/W/m; power capacity 80 watts nominal; 11 $\frac{1}{2}$ x 20 $\frac{3}{8}$ x 12 $\frac{3}{8}$ in \$500/pr

SOTA INDUSTRIES

Panorama 2-Way Speaker

Time-Domain speaker with 7-inch woofer; 1-inch hard-dome tweeter. Features bass extension of 45 Hz ± 3 dB; truncated pyramid enclosure; 1 $\frac{1}{4}$ -inch walls; hard/soft structural damping on woofers. Maximum power handling 150 watts/ch; frequency response 45-22,000 Hz ± 3 dB; sensitivity 90 dB SPL/W/m; nominal impedance 6 ohms; crossover at 3,200 Hz. 12 x 18 x 6 in; 35 lb. Oak ... \$1,595

SOUND DYNAMICS

Model 700 2-Way Speaker

Computer-tuned bass-reflex pair with matched parts. 1 in horn-loaded soft-dome tweeter with free-floating suspension; 12-inch woofer with high-gauss linear forced motor and epoxy potting; black ash vinyl veneer. Power handling 15-200 watts; frequency response 30-22,000 Hz ± 3 dB; sensitivity 101 dB SPL/W/m; nominal impedance 8 ohms. 27 $\frac{3}{4}$ x 14 $\frac{1}{2}$ x 12 in; 45 lb each \$750/pr

SPICA

Angelus 2-Way Speaker

2-way mirror-imaged speaker system with 8-inch plastic cone bass/mid driver and 1-inch soft-dome tweeter. Features computer optimized crossover; built-in adjustable spikes. Frequency response 35-17,500 Hz ± 3 dB (90-15,000 Hz ± 1.5 dB); recommended power 50-200 watts; nominal impedance 8 ohms; crossover 3,400 Hz (-6 dB). Walnut or oak finish. 21 x 46 x 10 $\frac{1}{4}$ in; 57 lb each \$1,275/pr

SPL

Model 4000 2-Way Speaker

Bass-reflex speaker with two 10-inch woofers; 1-inch tweeter; crossover at 2,200 Hz. Power range 20-150 W; frequency response 25-22,000 Hz ± 3 dB; sensitivity 98 dB SPL/W/m. 43 x 13 x 15 in; 65 lb each \$1,000/pr

Model 2000 2-Way Speaker

Passive-radiator speaker with 8-inch woofer; 1-inch tweeter; crossover at 2,200 Hz. Power range 10-100 watts; frequency response 35-22,000 Hz ± 3 dB; sensitivity 95 dB SPL/W/m. 33 x 12 x 9 in; 33 lb each \$500/pr

Model 1000 2-Way Speaker

Bass-reflex speaker with two 5 $\frac{1}{4}$ -inch woofers; 3 $\frac{1}{4}$ -inch tweeter; crossover at 3,000 Hz. Power range 10-100 W; FR 40-20,000 Hz ± 3 dB; sensitivity 90 dB SPL/W/m. 21 x 10 x 12 in; 21 lb each \$350/pr

SUMO

Aria Planar Speaker

Floor-standing panel speaker. Full-range, dipole, single-element, point-source design; utilizes tensioned mylar as the membrane; no crossover components; no equalization; no delay lines. Power handling 200 watts continuous average; frequency response 40-20,000 Hz ± 3 dB; sensitivity 86 dB SPL/W/m; nominal impedance 4 ohms. Medite construction. 30 x 60 x 3 $\frac{1}{2}$ in; 65 lb \$3,000/pr

Samson Bass-Reflex Subwoofer

Floor-standing subwoofer with 15-inch composite-cone woofer. 18.5-lb magnet assembly. 4-inch edgewound copper voice coil; symmetrical magnetic-field motor structure. Solid 1-inch butcher-block oak top. Frequency response 20-120 Hz ± 1 dB; power handling 1,000 watts continuous; sensitivity 91 dB SPL/W/m; impedance 8 ohms. 29 x 22 x 19 in; 140 lb \$749 each

SYNTHESIS BY CONRAD-JOHNSON Reference Speaker System

Five-piece speaker system with two subwoofer columns (each with two 10-inch woofers), two midrange/high-frequency units (with 7-inch midranges, 1-inch dome tweeters, leaf support tweeter); golden oak finish with radiused solid-hardwood edges; active electronic crossover supplied. Frequency response 22-32,000 Hz ± 2 dB; power handling 10-250 watts; sensitivity 91 dB sound pressure level/W/m; nominal impedance 8 ohms. Dimensions: subwoofer columns 69 x 14 x 14 inches; satellite speakers 44 x 10 x 10 inches. \$6,800/system

LM 310 3-Way Speaker

10-inch woofer; 7-inch midrange; 1-inch dome tweeter. Light or dark oak cabinet with radiused solid hardwood edges. Frequency response 25-20,000 Hz ± 2 dB; power range 10-200 watts; sensitivity 91 dB SPL/W/m; impedance 8 ohms; 45 $\frac{1}{2}$ x 13 $\frac{3}{4}$ x 14 $\frac{1}{2}$ in; 70 lb \$3,250/pr

LM 260 2-Way Speaker

Ported; 8-inch polypropylene woofer; 1-inch dome tweeter. Light or dark oak cabinet with radiused solid-hardwood edges. Frequency response 41-20,000 Hz ± 2 dB; power range 10-100 watts; sensitivity 91 dB SPL/W/m; impedance 8 ohms; 39 $\frac{1}{2}$ x 12 x 11 in; 50 lb \$1,695/pr

LM 210 2-Way Speaker

Ported speaker with 6 $\frac{1}{2}$ -inch polypropylene woofer; 1-in dome tweeter. Light or dark oak cabinet with radiused solid-hardwood edges. Frequency response 46-20,000 Hz ± 2 dB; power range 10-80 watts; sensitivity 90 dB SPL/W/m; impedance 8 ohms; 33 $\frac{1}{2}$ x 10 $\frac{1}{2}$ x 10 $\frac{1}{2}$ in \$1,195/pr

S P E A K E R S

TANNOY

DC3000 3-Way Speaker

Floor-standing speaker with coupling spikes. Features 8-inch dual concentric DMT driver; 8-inch bass unit, driven below 400 Hz; slotted-port system. Bi-wired, gold terminals; cross-braced driver and cabinet; wired with Van den Hul cable. Power handling 175 watts rms; frequency response 30-25,000 Hz \pm 3 dB; sensitivity 92 dB SPL/W/m; nominal 6 ohms; crossover frequency 400/2,300 Hz. Black-ash or rosewood veneers. 6½ x 22¾ x 7½ in; 58 lb, 14 oz ea. \$1,900/pr

DC2000 3-Way Speaker

Floor-standing speaker with coupling spikes. Features 8-inch dual concentric DMT driver; 8-inch bass unit, driven below 400 Hz; closed box system. Bi-wired, gold terminals; cross-braced driver and cabinet. Power handling 150 watts rms; frequency response 44-25,000 Hz \pm 3 dB; sensitivity 92 dB SPL/W/m; nominal 6 ohms; crossover frequency 400/2,300 Hz. Black-ash veneers. 6½ x 17¾ x 6¾ in; 43 lb, 14 oz each. \$1,300/pr

M20 2-Way Speaker

Floor-standing speaker with 8-inch polyolefin co-polymer bass driver, and 1-inch DMT aluminum-dome tweeter; ducted-port system. Bi-wired, gold terminals; cross braced drivers and cabinet; wired with Van den Hul cable. Power handling 100 watts rms; frequency response 48-20,000 Hz \pm 3 dB; sensitivity 89 dB SPL/W/m; nominal impedance 8 ohms; crossover frequency 3,000 Hz. Black-ash or rosewood veneers. 6¼ x 12¾ x 5½ in; 18 lb, 8 oz each. \$900/pr

C-10 2-Way Speaker

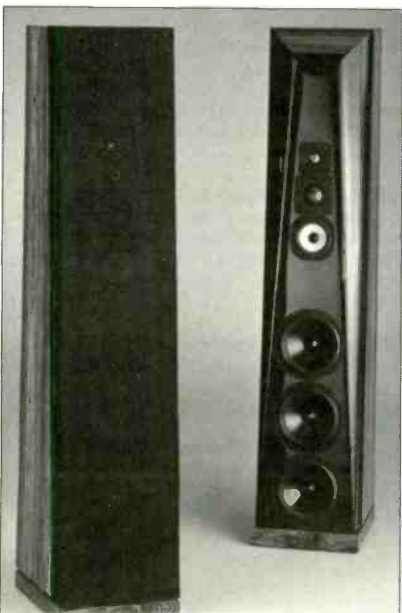
Features 10-inch polycone woofer; 1-inch dome tweeter; high-density particle-board cabinet. Power handling 125 watts rms; frequency response 47-20,000 Hz \pm 3 dB; nominal impedance 8 ohms; sensitivity 91 dB SPL/W/m; crossover frequency 2,300 Hz. 12 x 24 x 11½ in; 27 lb each. \$569/pr

TDL

Studio 3 2-Way Speaker

Transmission-line speakers. Feature two doped Cobex cone, 8-inch vented pole woofers; 1-inch magnesium alloy, suspended metal-dome, ferrofluid tweeter with separate rear chamber. Fre-

Thiel CS 5



quency response 20-20,000 Hz; minimum power 30 watts; nominal impedance 8 ohms; sensitivity 87 dB/W/m; crossover frequency 3,000 Hz. Walnut or black finish. 7½ x 24¾ x 10¾ in; 59 lb, 9 oz each. \$1,995/pr

Studio 2. Similar to Studio 3 except 1 Cobex cone woofer; frequency response 24-20,000 Hz; 6¾ x 22½ x 9¾ in; 44 lb, 9 oz each. \$1,545/pr

Studio 1. Similar to Studio 2. 6¾-inch bass/midrange unit. Frequency response 28-20,000 Hz; sensitivity 86 dB SPL/W/m. 5½ x 18½ x 8¾ in. \$1,445/pr

TEAC

ST-X5 3-Way Speaker

3-way floor-standing acoustic-suspension speaker with 10-inch polypropylene, carbon-filled cone woofer, 5-inch polypropylene, carbon-filled cone midrange, and ¾-inch titanium dome ferrofluid-cooled tweeter. Power handling 90 watts; impedance 6 ohms; SPL 90 dB/W/m; crossover frequencies at 1,200 and 6,000 Hz; frequency response 45-22,000 Hz \pm 3 dB. 13¼ x 29½ x 8¼ in; 29 lb. \$480/pr

TECHNICS

SB-CX700 3-Way Speaker

3-way speaker with composite Mica cone-type 12-inch woofer, pure Mica cone-type 4-inch midrange, pure Mica 1-inch dome tweeter, and 13-inch cone-type passive radiator. Features rigid non-diffractive cabinet; vertical in-line speaker unit alignment; tweeter attenuator; auto reset thermal relay protection for the tweeter. Power handling 200 watts, 100 watts DIN; sensitivity 90 dB SPL/W/m; frequency response 25-45,000 Hz (at 16 dB below average level); nominal impedance 6 ohms; crossover frequencies 400 Hz and 3,500 Hz. 14¾ x 35½ x 12¼ in; 51.8 lb. \$700/pr

SB-CX500 3-Way Speaker

3-way speaker with composite Mica cone-type 10-inch woofer, pure Mica cone-type 4-inch midrange, pure Mica 1-inch dome tweeter, and 11-inch cone-type passive radiator. Features vertical in-line speaker unit alignment. Power handling 150 watts, 75 watts DIN; sensitivity 89 dB SPL/W/m; frequency response 28-45,000 Hz (at 16 dB below average level); impedance 6 ohms; crossover frequencies 500 Hz and 3,500 Hz. 12¾ x 32¼ x 12¼ in; 37 lb. \$600/pr

SB-RX30 2-Way Bookshelf Speaker

Bass-reflex speaker with 9-inch flat-diaphragm woofer and 1½-inch flat-diaphragm coaxial tweeter. Features magnetic shielding for placement near TV's. Power 120 watts; frequency response 44-30,000 Hz at 16 dB below average level; sensitivity 88 dB SPL/W/m; impedance 6 ohms. 10¾ x 15 x 9 in; 16.5 lb. Wood finish. \$550/pr

SB-CX300 2-Way Speaker

Bass-reflex speaker with 8-inch composite Mica cone-type woofer and 1-inch pure Mica cone-type dome tweeter. Features in-line speaker unit alignment. Power handling 120 watts, 60 watts DIN; sensitivity 88 dB SPL/W/m; frequency response 38-45,000 Hz (at 16 dB below average level); impedance 6 ohms; crossover frequency 1,500 Hz. 10¾ x 18½ x 10 in; 17.2 lb. \$400/pr

THIEL

CS 5 Coherent Source 5-Way Speaker

Floor-standing speaker incorporates the coher-



Triad System Six

ent source design, utilizes a sloping baffle and electronic correction to achieve proper time alignment and a synthesized first-order acoustic crossover system; three 8-inch woofers, 5-inch midrange driver, 2-inch upper midrange metal-dome driver, and a tweeter; three-dimensional marble/polymer composite casting baffle; driver diaphragms are made of either aluminum Kevlar or Kevlar/foam sandwich. Power handling 400 watts rms; frequency response 20-22,000 Hz \pm 1 dB; sensitivity 87 dB SPL/W/m; impedance 2 ohms. Teak, gloss-black laminate, rosewood, walnut or oak finish. 13 x 64 x 17 in; 180 lb each. \$9,200

CS 3.5 Coherent Source 3-Way Speaker

Floor-standing electronic-bass-equalized speaker with 10-inch cone woofer, 4-inch cone midrange, and 1-inch 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. Power handling 250 watts rms; frequency response 23-20,000 Hz \pm 2dB; sensitivity 89 dB SPL/W/m; impedance 4 ohms. Teak, oak, walnut, black, rosewood finishes. Dimensions: 13 x 42 x 13 in. Weight: 75 lb each. \$2,450/pr

CS 2 Coherent Source 3-Way Speaker

Floor-standing ported speaker with 8-inch cone woofer, 3-inch cone midrange, and 1-inch 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. Power handling 250 watts rms; frequency response 38-20,000 Hz \pm 2 dB; sensitivity 87 dB SPL/W/m; impedance 6 ohms. Oak, walnut, black, rosewood, teak finishes. 12 x 39 x 12 in; 62 lb each. \$1,650/pr

CS 1.2 Coherent Source 2-Way Speaker

2-way floor-standing speaker with sloping baffle. Features metal dome tweeter. Woofer features cast magnesium chassis; polypropylene diaphragm; sculpted speaker grille; Power handling 150 watts rms; frequency response 52-18,000 Hz \pm 2 dB; sensitivity 87 dB sound pressure level/W/m; impedance 8 ohms; heavy internal bracing. Finished with teak, walnut, oak, rosewood, or black laminate. Dimensions: 11 x 37 x 11 in. Weight: 47 lb each. \$1,090

TRIAD DESIGN

System Four Woofer/Satellite System

System consisting of two System Four satellite

S P E A K E R S

units and two System Four woofer units. Designed for floor placement with satellites on top of woofers. Features 1-inch ferrofluid-cooled dome tweeter and 8-inch polypropylene-cone woofer for each satellite, two 8-inch polypropylene-cone drivers and a built-in 100-watt (into 4 ohms) amplifier for each woofer unit. Satellite units: power handling 100 watts continuous; frequency response 70-18,000 Hz ± 3 dB; sensitivity 90 dB SPL/W/m; impedance 8 ohms; crossover frequency 2,000 Hz. Woofer units: frequency response 39-110 Hz ± 3 dB; impedance of speaker input 1,000 ohms; impedance of line-level input 47,000 ohms; magnetic shielding available at extra cost. Available finishes: light or medium oak, walnut, rosewood, teak, or zebrawood veneers; black or white. Satellite units: 11 x 18 x 10 in. Woofer units: 14½ x 14 x 13 in. \$1,550/system

System Seven In-Wall Woofer/Satellite System
System consisting of two in-wall System Seven satellite units and one in-wall System Seven woofer unit. Features 1-inch ferrofluid-cooled, fabric-dome tweeter, 5-inch cast basket, treated paper-cone midrange for the satellites; 12-inch polypropylene-cone driver with a built-in 70-watt amplifier for the woofer unit. Satellites: power handling 100 watts continuous; frequency response 120-20,000 Hz; sensitivity 89 dB SPL/W/m; nom impedance 6 ohms; crossover frequency 2,500 Hz. Woofer: frequency response 38-120 Hz ± 3 dB; nom impedance 8 ohms. Satellite units: 7¼ x 10¾ x 4 in. Woofer unit: 14¼ x 19¾ x 6 in. \$975/system

System Six Woofer/Satellite System
System consisting of two System Six satellite units and one System Six woofer unit. Features ¾-inch ferrofluid cooled mylar dome tweeter and 3½-inch treated paper-cone midrange for each satellite, 8-inch polypropylene-cone driver for the woofer unit with a built-in 70-watt (into 8 ohms) amplifier. Satellite units: power handling 70 watts continuous; frequency response 165-20,000 Hz ± 2 dB; sensitivity 89 dB SPL/W/m; impedance 8 ohms; crossover frequency 3,200 Hz. Woofer unit: frequency response 40-140 Hz ± 3 dB; impedance of speaker input 1,000 ohms; impedance of line-level input 47,000 ohms. Light-oak, medium-oak, or walnut veneer or black, white, red, yellow, blue, or green finish; rosewood, teak, zebrawood and other exotic veneers are available at extra cost. Satellite units: 4 x 7 x 4 in. Woofer unit: 10¼ x 10¼ x 10¼ in. \$675/system

VECTOR RESEARCH

VSP-124 4-Way Speaker
Features 12-inch woofer; 5-inch midrange; 1-inch tweeter; 12-inch passive radiator. Power handling 250 watts continuous; sensitivity 92 dB SPL/W/m. 14½ x 39¼ x 12½ in.; 47 lb ea. \$520/pr

VSP-123 3-Way Speaker
Features 12-inch woofer; 5-inch midrange; 1-inch tweeter. Power handling 250 watts continuous; sens 92 dB SPL/W/m. 14¾ x 27½ x 11½ in. \$400/pr

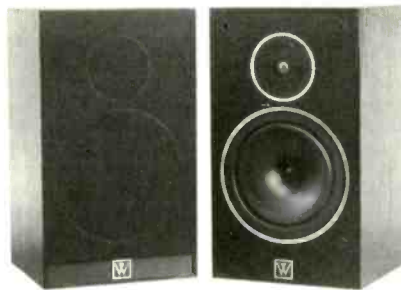
VELODYNE ACOUSTICS

ULD-18 Powered Subwoofer
Floor-standing subwoofer with servo-controlled long-throw 18-inch driver with ¾-inch peak-to-peak linear travel; 400-W amplifier. Level con-

trol to match subwoofer output to satellite speaker output. Frequency response 15-85 Hz ± 3 dB; crossover at 85 Hz. Walnut, oak, or black finish. Cabinet: 23 x 31 x 22 in; amp: 17 x 3½ x 11 in. \$2,595
ULD-15. As ULD-18 but with 15-inch driver and 17 x 22 x 18 in cabinet, output capability 109 dB at 32 Hz. \$1,795

ULD-12 Powered Subwoofer
12-inch servo-controlled down-firing driver with 100-W rms Class B amplifier. Passive crossover at 85 Hz. Line- or speaker-level connection; subsonic filter -3 dB at 15 Hz; frequency response 18-85 Hz ± 3 dB. Walnut, oak veneer or black finish. Cabinet: 16 x 17 x 21 in; controller 8 x 1½ x 6 in; 32 lb. \$1,195

VA-1012 Powered Subwoofer
Powered subwoofer features integrated Class A/B amp; 12- and 10-inch drivers. Passive crossover, power handling 100 W cont; FR 25-100 Hz; THD < 0.5%; crossover at 45 Hz. Black or vinyl woodgrain finish. 18¼ x 16 ¼ x 18¼; 40 lb. \$645



Wharfedale Model 505.2

VENTURI BY BIC AMERICA

Venturi V830 3-Way Speaker
Speaker with 8-inch carbon-impregnated polypropylene woofer, 6-inch cast-frame polycarbonate midrange, and a 1-inch ferrofluid cooled poly laminate soft-dome tweeter. Features a segmented cabinet with 1½-inch high-density dividing plate; spikes for floor coupling. Power handling 30-250 watts; frequency response 40-22,000 Hz ± 3 dB; sensitivity 91 dB SPL/W/m; impedance 8 ohms; crossover points 1,000 and 5,000 Hz. 10¼ x 40 x 11½ in; 45 lb. \$799/pr

WHARFEDALE

Model 512.2 4-Way Speaker
Features two 8-inch woofers, 4-inch midrange woofer, and ¾-inch metal-dome tweeter; tuned-port enclosure. Power handling 150 watts continuous; frequency response 30-22,000 Hz ± 3 dB; sensitivity 90 dB SPL/W/m; crossovers at 1,000 and 5,000 Hz; nom impedance 8 ohms. Mahogany or black-ash veneer. 11 x 35 x 11 in; 53 lb, 14 oz each. \$1,900/pr

Coleridge 2-Way Speaker
Features 8-inch mineral filled homogenous of polypropylene 2 (MFHP 2) woofer in two moving coil in alloy housing, 1-inch titanium-dome in alloy housing; cast-aluminum chassis; sandwich mounted bass units; down firing flared reflex port. Gold plated 4-way speaker terminal

with bi-wiring option. Power handling 100 watts continuous; frequency response 45-20,000 Hz; sensitivity 89 dB SPL/W/m; nom impedance 8 ohm. Black ash and real wood veneers. 10 x 18¾ x 10½ in. \$1,400/pr

Model 510.2 3-Way Speaker
Features 8-inch woofer, 4-inch midrange woofer, and ¾-inch metal-dome tweeter; tuned-port enclosure. Power handling 100 watts continuous; frequency response 35-22,000 Hz ± 3 dB; sensitivity 90 dB SPL/W/m; crossovers at 1,000 and 5,000 Hz; nom impedance 4 ohms. Mahogany veneer or black finish. 11 x 24 x 11 in; 30 lb, 13 oz each. \$1,400/pr

Delta 90 3-Way Speaker
Features 10-inch woofer, and 4-inch cone midrange, and ¾-inch polyimide, soft-dome tweeter; tuned-port enclosure. Power handling 100 watts continuous; frequency response 35-20,000 Hz ± 3 dB; sensitivity 89 dB SPL/W/m; crossovers at 1,000 and 5,000 Hz; nom impedance 8 ohms. Black oak vinyl finish. 12 x 27 x 9 in; 33 lb each. \$700/pr

Model 505.2 2-Way Speaker
Features 8-inch woofer, and ¾-inch metal-dome tweeter; acoustic suspension enclosure. Power handling 100 watts continuous; frequency response 42-22,000 Hz ± 3 dB; sensitivity 87 dB SPL/W/m; crossover at 5,000 Hz; nom impedance 8 ohms. Black finish. 10 x 17 x 9 in; 12 lb each. \$560/pr

Ritz Diamond 2-Way Speaker
Features 6½-inch woofer, and ¾-inch polyimide, soft-dome tweeter; tuned-port enclosure. Power handling 100 watts continuous; frequency response 40-22,000 Hz ± 3 dB; sensitivity 90 dB SPL/W/m; crossover at 5,000 Hz; impedance 8 ohms. Black-oak vinyl finish. 9 x 14 x 8 in; 17 lb, 10 oz each. \$450/pr

Delta 50 2-Way Speaker
Features 8-inch woofer, and ¾-inch polyimide, soft-dome tweeter; infinite-baffle design. Power handling 100 W; frequency response 45-20,000 Hz ± 3 dB; sensitivity 89 dB SPL/W/m; crossover at 5,000 Hz; nom impedance 8 ohms. Black-oak vinyl finish. 10 x 18 x 8 in; 13 lb, 3 oz each. \$350/pr

YAMAHA

NS-1 2-Way Speaker
2-way acoustic-suspension speaker with aluminum, nickel, cobalt magnets used in both woofer and tweeter. 6¼-inch mica impregnated polypropylene woofer and 1¼-inch soft, resin-coated, cotton-dome tweeter. Features magnetic shielding; tweeter-level control. Polyurethane coated natural birch cabinet. Power handling 60 watts. \$998/pr

YST-S1 2-Way Speaker
Two-way field-isolation system with 6-inch polypropylene multirange driver, 1-inch soft-dome tweeter; features Active Servo Technology. Frequency response 28-20,000 Hz. Black. \$700/pr

NS-10M 2-Way Bookshelf Speaker
Bookshelf speaker with 7-inch singlesheet white-cone woofer, 1¾-inch soft-dome tweeter, acoustic-suspension enclosure, high-efficiency maximum-dispersion design. Power handling 100 watts; sensitivity 90 dB SPL/W/m. 8½ x 15 x 7¾ in; 30 lb. \$398/pr

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Belles Research, 1237 E. Main St., Rochester, NY 14609
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Boulder Amplifiers, 4850 Sterling Dr., Boulder, CO 80301
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Cambridge Audio, 89 Doug Brown Way, Holliston, MA 01746
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Cambridge SoundWorks, 154 California St., Newton, MA 02158
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Cello, 315 Peck St., New Haven, CT 06513
(203) 865-1237

Cerca, 5816 Corporate Ave., Suite 170, Cypress, CA 90630
(714) 821-3875

Cerwin-Vega, 555 E. Easy St., Simi Valley, CA 93065
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Dahlquist, 601 Old Willets Path, Hauppauge, NY 11788
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Dana Audio, P.O. Box 1, Austin, TX 78767
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DCM, 670 Airport Blvd., Ann Arbor, MI 48108
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Denon, 222 New Rd., Parsippany, NJ 07054
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Design Acoustics, 1225 Commerce Dr., Stow, OH 44224
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Desktop Loudspeaker Systems, 3300 E. 10th St., Kansas City, MO 94124
(816) 231-1983

Discrete Technology, 3395 Long Beach Rd., Oceanside, NY 11572
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Energy, 3641 McNicoll Ave., Scarborough, Ontario MIX 1G5
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Epicure Products/EPI, 25 Hale St., Newburyport, MA 01950
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ESS, 2575 El Presidio St., Long Beach, CA 90810
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Focus Speaker Systems, 1101 E. Second St., Dayton, OH 45403
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BEST RECORDINGS OF THE MONTH

Stereo Review's critics choose the outstanding current releases

MICHELLE SHOCKED COMES OUT SWINGING

ANYONE familiar with Michelle Shocked's first two Mercury albums knows that the Texas feminist-anarchist-picker-poet is anything but predictable and that each new record from her is likely to be an Olympic-size broad jump from the last one. And yet, I came away from her latest record, "Captain Swing," wide-eyed and a bit unsteady on the feet: Who would have thought she would move so quickly away from her roots in folk and oral tradition and electric roadhouse rock? And who would have guessed that underneath her spiky haircut Shocked was a jazz baby after all?

But, of course, jazz takes many forms, from the swing bands of the 1930's to the fusion performers of the past several decades. In Shocked's vocabulary, "swing" incorporates both pre-World War II jazz—with the ambience of an old 78 recording—and the beatnik folk of Maria Muldaur and Rickie Lee Jones. And when things run the risk of sounding camp, Shocked employs a modern turn on Fifties rock-and-roll and country/Delta blues (augmented by Bonnie Raitt's old tuba player, Freebo) to frazzle up the edges.

Even within these stylistic confines, Shocked, working again with imaginative producer Pete Anderson and his reliable, elastic rhythm section, remains her joyously eccentric self, floating along in free-form creativity and projecting with ease. If "Captain Swing" is yet another attempt to explore the roots of native American music, it is in some ways her most diffuse album to date, yet clearly her most ambitious and important one.

Still, those early fans who were mesmerized by Shocked's Southern

story songs, political conscience, and plaintive folkie acoustic-guitar framework will be surprised here to find big-band horns and clarinets and full-bodied arrangements fleshing out her songs, as well as a lyrical sidestep from her usual personal mythology and her favorite themes of racism, the environment, and housing. In an upbeat album of unabashedly romantic emotions and comic lyric and instrumental flourishes, only one song, *Streetcorner Ambassador*, which offers a modern-jazz, peephole view of the community of the homeless, inflames an angry heart.

Instead, Shocked busies herself with a variety of pastimes, from the

whimsical musings of *God Is a Real Estate Developer* to a psychoanalysis of the Mona Lisa (in *Looks Like Mona Lisa*)—who, in Shocked's view, would let it be a photograph with a wide grin, and not a painting with a strange smile, if she had it to do over again. But as amusing as these lyrical portraits may be, Shocked is more compelling musically in songs like *Sleep Keeps Me Awake*, *The Cement Lament*, and (*Don't You Mess Around with*) *My Little Sister*.

In a sense, of course, Shocked is concerned with eradicating musical dividing lines, or at least the kind that pigeonhole an artist as many-sided and starkly original as she. If



BEST RECORDINGS OF THE MONTH



Sinopoli: involved

anyone can do it, Shocked may be the one, as long as she keeps expanding her goals and turning out records as consistently fascinating as "Captain Swing." "I'm taking/The liberty to/Liberate myself," she sings in *Too Little Too Late*. She is, after all, the Captain of her album's title. And of her own considerable fate. *Alanna Nash*

MICHELLE SHOCKED: *Captain Swing*. Michelle Shocked (vocals, acoustic guitar); Pete Anderson (electric guitar); Freebo (tuba); Zachary Richard (accordion); other musicians. *God Is a Real Estate Developer*; *On the Greener Side*; *Silent Ways*; *Sleep Keeps Me Awake*; *The Cement Lament*; (*Don't You Mess Around with My Little Sister*; *Looks Like Mona Lisa (Smells Like Tuna Fish)*; *Too Little Too Late*; *Street-corner Ambassador*; *Must Be Luff*. MERCURY 838 878-1, © 838 878-4, © 838 878-2 (31 min).

A PASSIONATE, DRAMATIC NEW "TANNHÄUSER"

THE new Deutsche Grammophon recording of Wagner's *Tannhäuser* conducted by Giuseppe Sinopoli is his most successful opera recording to date. He brings to the score his usual high degree of preparation, attention to detail, and emotional involvement, but in allowing Wagner's lyrical drama to sing for itself he eschews the overdriven intensity

that mars some of his other opera recordings. The result is that the opera moves with passion and drama and at the same time with pointed musical effect.

Sinopoli is aided in this accomplishment by a fine cast of artists who sing with both beauty and accuracy. They perform, too, as if they have given uncommon attention to the dramatic facets of their roles—something that's not always true of Wagner performances, in which the very length of individual passages tends to obscure for listener and performer alike the personality of the "speaker."

To the role of Tannhäuser, Plácido Domingo brings a free and seemingly well-rested tenor, musical authority, and a rounded characterization, at once sensual and devout, caught between physical demand and idealistic quest. His performance makes Wagner's difficult and self-contradictory creation believable, and while his handling of the German text is not totally idiomatic, it is expressive, well articulated, and readily understandable.

Cheryl Studer's Elisabeth is youthful and noble, deeply caring and affectingly vulnerable. The heroine is here delineated by a soprano whose instrument is right for the part—neither too small for Wagner's scoring nor too large to convey convincingly a maiden-like quality. It is a clear and expressive voice. As Studer sings it, the joy of Elisabeth's

It Bites: fun and fireworks



entrance is in poignant contrast to her disillusionment following Tannhäuser's paean to physical love, and her Prayer in Act III is equally moving. As Venus, Agnes Baltsa, too, achieves a high level of performance, one that is musically secure, vocally limpid, and dramatically telling, from her opening passages as amorous siren through her scenes as jealous and imperious goddess to her final defeat and womanly sorrow as she feels herself abandoned.

Matti Salminen is sonorously noble-voiced as the Landgraf, and he brings to his role a warm humanity that contributes materially to the effectiveness of the drama. Andreas Schmidt delivers Wolfram's celebrated apostrophe to the evening star with telling simplicity and beauty of tone. The other members of the accomplished cast acquit themselves handsomely.

A word must be added in praise of the Chorus of the Royal Opera House. Its singing throughout, but especially in Act II, is no less than thrilling, as is the sensitive, glowing performance of London's Philharmonia Orchestra. *Bravi tutti!* This is a *Tannhäuser* recording that opera enthusiasts will long esteem.

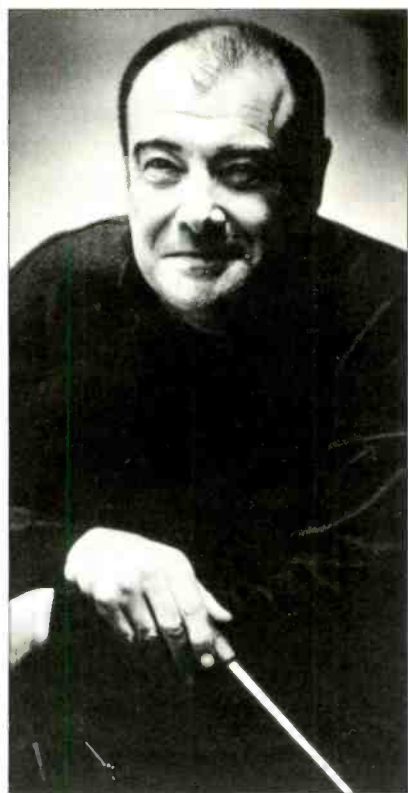
Robert Ackart

WAGNER: *Tannhäuser*. Plácido Domingo (tenor), Tannhäuser; Cheryl Studer (soprano), Elisabeth; Agnes Baltsa (mezzo-soprano), Venus; Matti Salminen (bass), Landgraf Hermann; Andreas Schmidt (baritone), Wolfram; Kurt Rydl (bass), Biterolf; Barbara Bonney (soprano), Junger Hirt; others. Chorus of the Royal Opera House, Covent Garden; Philharmonia Orchestra, Giuseppe Sinopoli cond. DEUTSCHE GRAMMOPHON © 427 625-2 three CD's (206 min).

PROGRESSIVE ROCK FROM IT BITES

PROGRESSIVE rock, that maligned stepchild of the Seventies, gets a face lift from a British foursome called It Bites. Think positive (as in Yes, the most obvious comparison), and you will find their "Eat Me in St. Louis"

BEST RECORDINGS OF THE MONTH



Handley: a splendid achievement

as thrilling and as much fun as a bobsled ride down an icy mountain. The operative concept in progressive rock is instrumental reach. For some reason, well-thought-out guitar solos, bracing keyboard chases, and impeccably coordinated meter changes annoy many critics, who seem to prefer word play to instrumental fire, but *It Bites* has such a fine melodic touch that there's no reason not to sit back and enjoy the fireworks.

There's a powerful emotional undercurrent to the music, from the pulsating sense of longing and desire coursing through *Underneath Your Pillow* to the raw-throated outrage of *Murder of the Planet Earth*. Such songs as *Calling All the Heroes* and *Still Too Young to Remember* have a fabulistic quality, unfolding in suite-like sections that build to rich instrumental crescendos. *Midnight* imagines the terror of a kid drafted into battle with the repeated chant "living on the edge of my nerves."

Leader Francis Dunnery speaks commandingly through his guitar,

vocally, he recalls Peter Gabriel in Genesis's early days, with a touch of Steely Dan's Donald Fagen. As an instrumental ensemble, *It Bites* shines like chromium and dazzles with the fire of a cut diamond.

"Eat Me in St. Louis," incidentally, reprises four songs from two earlier records—probably because no one was paying attention the first time around. Here's your chance to redress that oversight.

Parke Puterbaugh

IT BITES: *Eat Me in St. Louis*. *It Bites* (vocals and instrumentals). *Calling All Heroes*; *All in Red*; *Kiss Like Judas*; *Midnight*; *Positively Animal*; *Underneath Your Pillow*; *Sister Sarah*; *The Ice Melts into Water*; *Still Too Young to Remember*; *Murder of the Planet Earth*. GEFEN GHS-24261. © MSG-24261, © 24261-2 (47 min).

VERNON HANDLEY'S WALTON

OVER the past decade or so, the conductor Vernon Handley, recording with a variety of British orchestras and labels, has created a solid reputation as one of the foremost interpreters of his country's mainstream twentieth-century repertoire—notably the works of Vaughan Williams, Elgar, Bax, Walton, and, among the more recent names, Robert Simpson. The latest Handley offering is again top drawer in terms of both repertoire and interpretation, not to mention sonic splendor.

In his new EMI recording of William Walton's richly Neoromantic First Symphony of 1935, Handley not only far surpasses his own previous recording of the work (issued here by Nonesuch in 1981), but he fully measures up to the wonderful recording made in 1967 by André Previn. The response of the Bournemouth Symphony players is alert and passionate, and the warm and spacious recorded sound benefits from an acoustic surround that comfortably accommodates the huge climaxes of the symphony's

first and last movements. (The engineers used a medium-distant microphone pickup in a hall that provides finely focused orchestral detail together with a sense of space for the blockbuster climaxes.)

Handley's reading particularly excels in the two central movements—the *con malizia* scherzo, which communicates all the spite and savagery one could wish for, and the deeply poignant *con malinconia* slow movement. In the expansive outer movements, which can seem too much of a good thing at times, the conductor keeps everything under unerring rhythmic and dynamic control while letting the melodies sing out in strong, unsentimental fashion.

Fine as the symphony is, my greatest pleasure in this disc came from the coupler piece, Walton's seldom-heard *Variations on a Theme by Hindemith*, a 1963 tribute to the fellow composer who in 1929 played the world première of Walton's early masterpiece, the *Viola Concerto*. The stately theme comes from the slow movement of Hindemith's 1940 *Cello Concerto*, and around it Walton has woven a set of nine variations and a finale that are sparkling, solemn, tender, and majestic by turns. That the theme also shares elements with the "St. Anthony" movement of Hindemith's *Mathis der Maler* Symphony is subtly exploited by Walton. A high point is the moving *lento molto* variation, which echoes a bit of the Britten *War Requiem* as well as the slow-movement dirge of Hindemith's *Symphony in E-flat*. Walton's finale, with its elaborate fugue, sounds as though it might end in a blaze of fireworks, but instead we get an exquisite valedictory coda. The orchestral texture and coloration represent Walton at the top of his form. In short, the piece is a gem—and would in itself be ample justification for purchase of the disc. But the whole recording is a splendid musical, interpretive, and sonic achievement. *David Hall*

WALTON: *Symphony No. 1, in B-flat Minor*; *Variations on a Theme by Hindemith*. Bournemouth Symphony Orchestra, Vernon Handley cond. EMI/ANGEL © CDC 49671 (66 min).

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ANIMAL LOGIC. Animal Logic (vocals and instrumentals); instrumental accompaniment. *There's a Spy (in the House of Love)*; *Someday We'll Understand*; *Winds of Santa Ana*; *I'm Through with Love*; *As Soon as the Sun Goes Down*; and five others. I.R.S./MCA IRS-82020. © IRSC-82020, © IRSD-82020 (39 min).

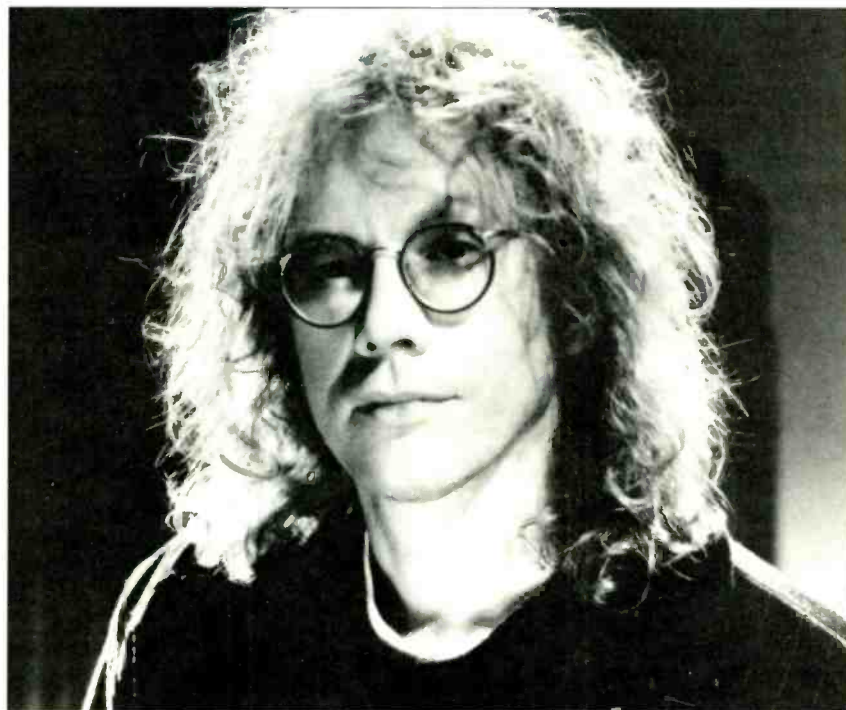
Performance: *Irresistible*
Recording: *Excellent*

Animal Logic is further proof that you cannot create a rock band according to a formula—musical chemistry doesn't follow textbook logic. Who would have thought to combine a reggae-rocking drummer, a jazz-fusion bassist, and an unknown country-folk singer-songwriter? Whoever it was, I'd like to thank him. "Animal Logic" is a terrific debut, full of great energy and fresh ideas.

Two members of the trio have impeccable credentials. Stewart Copeland was the relentless drummer for the Police, and since that group dissolved, he has written movie and TV scores as well as an opera, *Holy Blood and Crescent Moon*, that had its premiere at the Cleveland Opera last fall. Stanley Clarke was the revolutionary bassist of the fusion supergroup Return to Forever and has made a number of solo albums while also performing regularly with keyboardist George Duke.

But who is Deborah Holland? Well, she's a former piano teacher and club singer who has a bell-clear voice and a crisp vision of life and love. Imagine Loretta Lynn singing the thoughts of Edie Brickell, and you'll have a rough approximation. Holland, who is also the band's songwriter, has a tough, melodramatic way of phrasing her vividly sketched lyrics. She may be the least-known member of the band, but she is the one most on display here. Holland makes it clear, in *I'm Through with Love* and *I Still Feel for You*, that she can't live with romance but can't live without it. In *Someday We'll Understand* she sings, "Love is not a constant state/It has to ebb and flow/One

WARREN ZEVON



WARREN ZEVON is a splendid rocker, but you cannot appreciate the guy fully on strictly musical terms. His songs go far beyond the traditional subject matter of rock: falling in and out of love. His songs even go far beyond the traditional subject matter of *smart* rock: how bad things have become and what we can do about it. Warren Zevon writes about this world, and alternative worlds, with savage humor, fed-up wit, a crooked smile. He is a visionary who can kick out the jams. If Jonathan Swift were alive today, and musically inclined to an informed backbeat, he might be nearly this good.

The new "Transverse City" is, to my mind, Zevon's best album since "Excitable Boy." Its lyrics plunge into such diverse territory as cyberpunk, evolutionary dissolution, Russian imperialism, computer heads, gridlock, and love. And his music has the snap and crackle to make his narratives pop.

Take the title cut. Zevon evokes a techno-nightmare, a not-very-distant world in which artificial ingredients have taken over. In a headlong rush, he slams through one excruciating detail after another: "Here's the hum of desperation/Here's the test-tube mating call/Here's the latest carbon cycle/Here's the clergy of the mall." The description goes on and on, past the point where you'd think even Zevon must run out of breath. He is proclaim-

ing the end of humanity and the new era of technocracy—and he's not happy about it. Pushing him further into the rant is the insistent noodling of Jerry Garcia's guitar, a sweet sound that replicates like a synthesized double helix out of control. On other tracks, the guitars of David Gilmour, Neil Young, and Waddy Wachtel punch out the lights.

But they never overpower the words. Who else but Zevon looks at the world from such a sardonic perspective? *Turbulence* gives us the viewpoint of a Soviet soldier in Afghanistan: "Well, you can talk about *perestroika*/And that's all right for you/But, Comrade Schevardnadze, tell me/What's a poor boy like me to do?" Zevon takes networking to its ultimate bit-byte extreme and rails against gridlocked traffic. He uses the word "entropy," and it doesn't sound a bit forced. You get the feeling that Warren Zevon could produce good short stories or riveting novels if he wanted to. Instead, he writes good songs and sings them. Rock-and-roll needs more people like him. *Ron Givens*

WARREN ZEVON: *Transverse City.* Warren Zevon (vocals, keyboards, guitar); other musicians. *Transverse City: Run Straight Down; The Long Arm of the Law; Turbulence; They Moved the Moon, Splendid Isolation; Networking; Gridlock; Down in the Mall; Nobody's in Love This Year.* VIRGIN 91608-1, © 91608-4, © 91608-2 (42 min).

EXPLANATION OF SYMBOLS:

- = DIGITALLY RECORDED LP
- Ⓢ = TAPE CASSETTE
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NEILS ISRAELSON/VIRGIN

of us will pull/And the other one they must let go." Even *Elijah*, which seems to be about a pet, describes a one-sided relationship.

All of this might have been maudlin if not for Copeland and Clarke. They make a splendid rhythm section: Copeland's straight-ahead pounding and Clarke's dazzling pointillism gallop together with abandon. Playing on all of the tracks, but not officially a member of the band, is Michael Thompson, whose silvery guitar and clucking banjo provide a needed release from some of the tension created between Holland's ennui and the dynamism of Copeland and Clarke. R.G.

KATE BUSH: *The Sensual World*. Kate Bush (vocals, piano, keyboards); Trio Bulgarka (background vocals); Dave Gilmour (guitar); Dave Spillane (uilleann pipes); vocal and instrumental accompaniment. *The Sensual World*; *Love and Anger*; *The Fog*; *Reaching Out*; *Heads We're Dancing*; *Deeper Understanding*; and five others. COLUMBIA OC 44164, © OCT 44164, © CK 44164 (46 min).

Performance: *Histrionic*
Recording: *Excellent*

On the cover of her sixth studio album, Kate Bush, wide-eyed as a waif and with naked shoulders, peers out from behind a flowering rose to find a world that is clearly more confusing than sensual. Neither New Wave nor art rock, the thirty-one-year-old English songstress has been confounding and enthralling audiences since her first album, in 1977, and "The Sensual World," with eleven songs that alternately shimmer with invention and sink with pretension, follows that pattern. Bush, who wrote and produced the album with the same unrestrained license that leads her to combine music, dance, mime, and magic in concert, could have used a more disciplined hand at the wheel. It is one thing to write a seductive, if sexually explicit song (*The Sensual World*) based on James Joyce's *Ulysses*. But it is quite another to record a lonely-hearts love song to a computer (*Deeper Understanding*), and still another to chronicle dressing up as a rocket ("with my tail on fire") to please your boy friend. With a host of ear-tweaking foreign instruments, the otherworldly Trio Bulgarka chanting in the background, and at least two songs that seem to start in the middle of a confrontation—the listener's nose pressed against the window—Bush knows how to seek and keep our attention. Whether she knows how to communicate, in what she calls "my most personal and female album so far," is yet another question. A.N.

DAVID BYRNE: *Rei Momo*. David Byrne (vocals, guitars); vocal and instrumental accompaniment. *Independence Day*; *Make Believe Mambo*; *The Call of the Wild*; *Dirty Old Town*; *The*



Animal Logic: Deborah Holland, Stanley Clarke, Stewart Copeland

Rose Tattoo; *The Dream Police*; and six others. SIRE 25990-1, © 25990-4, © 25990-2 (52 min).

Performance: *Schizoid*
Recording: *Very good*

David Byrne plays tourist in "Rei Momo," and the vacation is one of those do-it-all excursions. From the Caribbean to South America, Byrne covers a lot of ground musically and stylistically, including a loping merengue, a soft cha-cha, and an effervescent samba. Over these relaxed, exotic instrumental tracks, Byrne sings his usual discursive lyrics in a tight, squeaky voice, close to the chirpy vocal style of "Talking Heads '77," that clashes with the sweet-and-easy music behind him. In a couple of instances, *Make Believe Mambo* and *The Call of the Wild*, he sings in English, and a chorus responds in Spanish—a kind of Pan-American antiphony in which the vocals do mesh with the syncopation behind them. But elsewhere Byrne seems at odds with his

musicians. That may have been intentional; he may have thought it aesthetically dishonest to pretend to be a Latin musician. If so, he's succeeded too well. "Rei Momo" sounds like the work of a man on holiday who can't wait to get home. R.G.

IT BITES: *Eat Me in St. Louis* (see Best of the Month, page 140)

JEFFERSON AIRPLANE. Marty Balin, Grace Slick (vocals); Jorma Kaukonen (vocals, guitar); Paul Kantner (vocals, guitar); other musicians. *Planes*; *Freedom*; *Solidarity*; *Madeleine Street*; *Ice Age*; *Summer of Love*; *The Wheel*; and six others. EPIC OE 45271, © OET 45271, © EK 45271 (55 min).

Performance: *Nat so hot*
Recording: *Okay*

According to usually reliable sources, the recently reunited Jefferson Airplane gave the most interesting performances of any of the veteran rock acts that hit

the road in 1989. Speaking as somebody who frequently saw God during late-Sixties Airplane shows, that wouldn't surprise me particularly. But on the other hand, however heartening it may be to have them back, their new album is pretty lame. Superficially, at least, these oldsters still sound like the Airplane of yore, with their signature three-lead-vocals-in-search-of-a-harmony apparently unscathed by time. But the rest of what made the band unique and exciting—the interplay of a thundering rhythm section, stinging psychedelic guitar leads, and ominous twelve-string—has been smothered here beneath a host of faceless guest musicians and a production job tailored to somebody's idea of what's acceptable for radio play. Meanwhile, the songs are in equal measure generic and mediocre: With few exceptions—the self-consciously soaring *Planes* and Jorma Kaukonen's bluesy *Ice Age*—they inhabit an aesthetic space somewhere between obvious throwaways and clumsy agit-prop. A major disappointment. S.S.

JETHRO TULL: *Rock Island*. Jethro Tull (vocals and instrumentals). *Kissing Willie*; *The Rattlesnake Trail*; *Ears of Tin*; *Undressed to Kill*; *Rock Island*; and five others. CHRYSALIS F1-21708, © F4-21708, © F2-21708 (50 min).

Performance: *Sui generis*
Recording: *Exemplary*

Tull honcho Ian Anderson claims not to have understood the fuss over his band's beating out Metallica for last year's Heavy Metal Grammy. "Tull has always been a sort of heavy-metal band with mandolins," he's said, and he's got a point, although he might have been more accurate if he'd said "heavy metal with flute." "Rock Island," the band's first post-Grammy album, finds them still dispensing their inimitable mixture of Teutonic guitars and Celtic folk styles, with the usual vague smuttiness (*Kissing Willie*) and pseudomysticism (everything else) thrown in for good measure. For what it is, it's very skillfully done (kudos, as usual, to bassist Dave Pegg), and to give Anderson and company their due, they sound as if they mean the music they're making. Mostly, though, this is fodder for "classic rock" stations that want to play something current without throwing their listeners too big a curve. S.S.

BILLY JOEL: *Storm Front*. Billy Joel (vocals, keyboards); vocal and instrumental accompaniment. *That's Not Her Style*; *We Didn't Start the Fire*; *The Downeaster "Alexa"*; *I Go to Extremes*; *Shameless*; and five others. COLUMBIA OC 44366, © OCT 44366, © CK 44366 (45 min).

Performance: *Has its moments*
Recording: *Good*

For years, Billy Joel has been a sort of musical equivalent of Woody Allen's

Zelig, changing styles from album to album as an actor changes wardrobe. This time, it seems, he wants to rock. For "Storm Front," he chose Mick Jones, Foreigner's guitarist, as his producer, and they've come up with a hard-edged set, the subtleties of Joel's Tin Pan Alley songwriting often yielding to a big, beefy backbeat. The drums have never been louder or the beat more metronomic in a Billy Joel album.

Not surprisingly, the rocking mannerisms seem a mite strained, particularly

when Joel growls like Jagger in *That's Not Her Style* or inserts swaggering brass into the title track. As a whole, "Storm Front" is less unified than a typical Joel album; taken song by song, though, it has its moments. One of the best is the hit *We Didn't Start the Fire*, which effectively uses an accumulation of headline-making buzzwords from 1949 to the present to illustrate that the world has always been a messed-up place.

When Joel drops the rock mask, he



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MICHAEL PENN



MICHAEL PENN is a thinking person's pop musician who has seemingly digested all that's good about the music of the past twenty-five years and processed it through his own very interesting perceptive filters. In his debut album, "March," on RCA, there are echoes of the adventurous but controlled spin the Beatles put on conventional forms in "Revolver" and "Rubber Soul," along with a dash of fun-house-mirror pop à la Big Star.

Penn writes elliptically of love and loss, couching his fatalistic thoughts in tantalizingly obscure metaphors that scan well even when the meanings aren't exactly clear. He is part of a generation that never had a shot at innocence, the way the baby boomers of the Beatles-bred Sixties did. Consequently, "March" is full of disillusionment and yearning. As he sings in *Brave New World*, a driving track whose lyrics hit with Costello-esque bile, "This may not be my best day/But this ain't no golden age/You looked pretty on the freeway/Let's drive into the brave new world." In other words, get it when you can, while you can.

"March" is a musical treat, with mint-fresh melodies and nifty, limber arrangements that surprise at every crooked turn. *Half Harvest* has the open, bluesy feel of vintage Traffic (compare it with *Feelin' Alright*), but it's given a baroque turn through the use of marimba, stumbly rhythms, and some delightfully off-the-wall guitar. *Bedlam Boys* sounds like a Bowie/Mott/T. Rex glam-rock homage, and *Evenfall* celebrates and laments nighttime's call of the wild with a Fifties jukebox groove. Yes, Michael Penn is in control of what he's doing, but his technical mastery is supported by real soul and enlivened by real daring.

Parke Puterbaugh

MICHAEL PENN: *March*. Michael Penn (vocals, guitar, bass, drum programs); Patrick Warren (keyboards); vocal and instrumental accompaniment. *No Myth; Half Harvest; This & That; Brave New World; Innocent One; Disney's a Snow Cone/Bedlam Boys; Invisible; Cupid's Got a Brand New Gun; Big House; Battle Room; Evenfall*. RCA 9692-1-R, © 9692-4-R, © 9692-2-R (43 min).

can put across a ballad with the best of them. *Leningrad*, a poignant number about a man he met in Russia, and *The Downeaster "Alexa"*, about a Long Island fisherman whose livelihood is threatened from all sides, are sung with tenderness and passion. The album closes with Joel alone at the piano in *And So It Goes*. The honesty and integrity of such performances, in contrast with the overreaching ardor of the rockier numbers, serve to underscore where Billy Joel's real strengths lie. P.P.

THE KENTUCKY HEADHUNTERS: *Pickin' on Nashville*. The Kentucky Headhunters (vocals and instrumentals); instrumental accompaniment. *Walk Softly on This Heart of Mine; Dumas Walker; Rag Top; Rock 'n' Roll Angel; Smooth*; and five others. POLYGRAM 838 744-1, © 838 744-4, © 838 744-2 (34 min).

Performance: *Blues to bluegrass*
Recording: *Good*

The folks at PolyGram are calling the Kentucky Headhunters "the country band of the Nineties," and whether or not that prophecy proves correct, the five-man group, made up of two sets of brothers and a cousin, has distinguished itself in this major-label debut as one of the most seamless and naturally integrated hybrid bands in the history of country-rock—a timeless mixture of blues, jazz, bluegrass, and soul. It's a sound, the band is fond of saying, that falls somewhere between "Bill Monroe Meets Cream" and "Psycho-Billy Blues."

In truth, both tags come fairly close to the mark, capturing not only the band's musical influences but the wit that permeates its work. A cover version of Bill Monroe's *Walk Softly on This Heart of Mine*, for example, becomes less of a plea than a threat, kicking off with churning rhythm guitar followed by Fred Young's hard-pounding drums and Greg Martin's searing Eric Clapton-style guitar solo.

No matter what they do for, or to, the Father of Bluegrass, though, the Headhunters will likely forge their reputation on their original tunes, on the Southern Boogie Meets Country approach of *Dumas Walker* and the Everly Brothers Do Z.Z. Top approach to *Rag Top*.

But where the band truly shines is in its classic white-trash anthems. *My Daddy Was a Milkman* and the braggadocious *High Steppin' Daddy*, where Doug and Ricky Lee Phelps let fly twangy vocals like, "I'm a high-steppin', home-wreckin', low-down daddy/I like the feelin' when the women get to squealin' in the back of my Caddy." Wanton heathenism has never sounded so good.

Doubtless, some will still argue that the Kentucky Headhunters isn't a country band at all. "It's country because we're country," insists rhythm guitarist Richard Young. And a guy who calls his

publishing house Head Cheese Music really ought to know. *A.N.*

CYNDI LAUPER: *A Night to Remember*. Cyndi Lauper (vocals); vocal and instrumental accompaniment. *I Drove All Night*; *Primitive*; *My First Night Without You*; *Like a Cat*; *Heading West*; *A Night to Remember*; and five others. EPIC OE 44318. © OET 44318. © EK 44318 (40 min).

Performance: *Iconoclastic*
Recording: *Very good*

Back in 1983, Cyndi Lauper hit the music scene like a thrift-shop dynamo. Singles from her album "She's So Unusual" took MTV and the charts by storm. The album was one of the best-selling debuts ever, and it made Lauper an overnight icon. But three years later her follow-up, "True Colors," was greeted with less enthusiasm. Maybe people were tired of Lauper after the media onslaught for "She's So Unusual," or maybe "True Colors" was a little too different, a little too subtle. Or maybe it simply didn't have another *Girls Just Want to Have Fun*.

Well, "A Night to Remember" may not have a megahit either, but it has the same quirky mix of rock riffs, dance rhythms, and vocal mannerisms that

made Lauper a success the first time out. For an iconoclast, Lauper seems perversely consistent, always drawing from the same well of influences. A little hard rock here, a little drum machine there, a few heart-on-sleeve lyrics here, a few skewed observations there. Nevertheless, she puts everything together in a way that no one else has. You won't mistake Cyndi Lauper for another singer. "A Night to Remember" offers a mix of moods and a modest variety of different sounds, but all within a certain narrow range. Even while you enjoy what you're hearing, you get a mild sense of *déjà vu*.

Sailing above it all is that voice. In *Primitive*, her Kewpie-doll vocals swoop along to a steady rocking groove. In *Like a Cat*, her offbeat delivery fits neatly into a crazy-quilt arrangement. The fever-pitch singing in *A Night to Remember* cuts like a razor. Of course, Lauper occasionally pushes her instrument too far—she goes too quickly from a whisper to a scream in *My First Night Without You*—but few other performers in pop music can do what she does so well. *R.G.*

MICHELLE SHOCKED: *Captain Swing* (see Best of the Month, page 139)

WESLIA WHITFIELD: *Nobody Else But Me*. Weslia Whitfield (vocals); Mike Greensill Quartet. *If I Had You*; *Give Me the Simple Life*; *But Beautiful*; *Not a Care in the World*; *In the Wee Small Hours of the Morning*; *I'm Shooting High*; *This Could Be the Start of Something Big*; *Confessin'*; and six others. MYOHO WW 3797, © WW 3797, © WW 3797 (53 min). From Myoho Records, 128 Bayview Circle, San Francisco, CA 94124.

Performance: *Stardom-bound*
Recording: *Bright and clean*

Weslia Whitfield has been building a fiercely devoted following on the West Coast, and it's easy to see why. The generous fourteen tracks here showcase Whitfield's warm, clear voice in intimate ballads as well as swinging, up-tempo songs. This is a lady who clearly means every word she sings and who (unlike some other young, so-called jazz singers) won't sacrifice *any* of them for the sake of a dubious stylistic effect. She gets right to the heart of such goodies as Fats Waller's *Confessin'*, the Van Heusen-Burke *But Beautiful*, the Duke-LaTouche *Not a Care in the World*, and, best of all, the Kern-Hammerstein song that gives the album its title and sums up Whitfield's winning style. *R.H.*



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Don Cherry: keeping the tradition

DON CHERRY: *Art Deco*. Don Cherry (trumpet); James Clay (tenor saxophone); Charlie Haden (bass); Billy Higgins (drums). *Art Deco*; *When Will the Blues Leave*; *Body and Soul*; *Bemsha Swing*; *Maffly*; and five others. A&M SP-5258, © CS-5258, © CD-5258 (58 min).

Performance: *Mellow mainstream*
Recording: *Very good*

Although Don Cherry was a musical revolutionary thirty years ago when he helped Ornette Coleman introduce "free jazz," this new album presents him in a comfortably mainstream quartet setting. While Cherry has always been known for his unpredictability and his affinity for non-Western musical concepts, his respect for traditional jazz comes through clearly in his treatment of selections ranging from the standard *I've Grown Accustomed to Your Face* to Thelonious Monk's classic *Bemsha Swing* and modified versions of Coleman's *Compute* and *When Will the Blues Leave*. Playing his tiny, high-pitched pocket trumpet, Cherry punches out whimsical solos that sometimes state the melody explicitly but more often toy with it in keeping with the tradition. Similarly, bassist Charlie Haden and drummer Billy Higgins, who are also known for their venturesome natures, restrain themselves, holding to the straight line but with no sacrifice of imagination. Tenor saxophonist James Clay, however, all but steals the show with his inspired and sensitive interpretation of the unforgettable *Body and Soul*. It takes courage for any tenorman to tackle this anthem of his instrument given the definitive treatments of the past, but Clay is fully up to the challenge. This is a very satisfying set. *P.G.*

ROBIN EUBANKS AND STEVE TURRE: *Dedication*. Robin Eubanks (trombones, keyboards, bells); Steve

Turre (trombone, synthesizers, percussion); Mulgrew Miller (keyboards); other musicians. *The New Breed*; *V.O.*; *Red, Black and Green Blues*; *Trance Dance*; and four others. POLYGRAM JMT 834 433-1, © 834 433-4, © 834 433-2 (50 min).

Performance: *Smooth*
Recording: *Quite good*

Although the trombone played an important role in traditional jazz bands and fostered its share of Swing Era heroes, as a solo instrument it seems to have been relegated to a kind of twilight zone since the late Fifties and early Sixties. But for the past three years, Steve Turre and Robin Eubanks (brother of guitarist Kevin) have been, as they put it, working to "help improve the perception of the trombone in contemporary music." Turre, who just turned forty, owes his flexible style to a career that has taken him through a wide range of musical experiences, ranging from stints with Van Morrison and Ray Charles to Art Blakey and the Thad Jones-Mel Lewis orchestra. Eubanks also played in Blakey's Jazz Messengers group, but he grew up listening to rock; groups like the Mahavishnu Orchestra and individuals like McCoy Tyner helped turn him toward jazz.

The new Eubanks-Turre album derives its title from the fact that it is dedicated to the late Woody Shaw, in whose group both leaders played. It serves splendidly to remind us of how well the mellifluous, versatile trombone plays in a duet mode and of how thoroughly contemporary it can sound. Discreetly used synthesizers help somewhat to give the album an up-to-date feel, but the overall sound owes more to straight jazz than to fusion, and the set's most striking attribute is its high level of musicianship from start to finish. Eubanks and Turre are a champion duo, and if their tasteful efforts don't bring the jazz trombone back into proper focus, nothing will. *C.A.*

THE KINGDOM OF SWING & THE REPUBLIC OF OOP BOP SH'BAM. Warren Vaché (cornet); Joe Wilder (trumpet); Urbie Green (trombone); Buddy Tate (clarinet and tenor saxophone); Derek Smith, Dick Hyman (piano); Milt Hinton (bass); Butch Miles (drums). *Lester Leaps In*; *On Green Dolphin Street*; *Blue Creek*; *You'd Be So Nice to Come Home To*; and four others. MUSICMASTERS © MC 40200, © CIJD 60200A (60 min).

Performance: *Superb*
Recording: *Fine remote*

The idea of pitting Swing against Bop is not new. The "hot versus cool" concept was considered a novelty a few decades ago, but it was then, and remains, a gim-

mick. With this new album, however, pianist Dick Hyman brings the idea successfully into the Nineties, even though time has all but obliterated the vast differences that once seemed to divide the two jazz styles. This concert set, organized by Hyman, is not so much a battle as it is an affirmation of compatibility, and if the title is somewhat contrived, the music is the real thing—a thoroughly delightful, swinging romp.

Against a solid rhythmic foundation laid down by veteran bassist Milt Hinton and drummer Butch Miles, such star soloists as saxophonist Buddy Tate, trombonist Urbie Green, and trumpeter Joe Wilder make individual statements that stunningly reflect the beauty and fervor that is inherent in all good jazz. Pianist Derek Smith and cornetist Warren Vaché are two relative newcomers whose stylistic flexibility underlines the folly of placing jazz in little boxes. Hyman also performs here, with characteristic skill and taste, but it's his work as organizer that deserves the highest praise. Don't miss this loving tribute to Swing and Bop. *C.A.*

PAUL MOTIAN: *On Broadway, Vol. 1*. Paul Motian (drums); Joe Lovano (tenor saxophone); Bill Frisell (guitar); Charlie Haden (bass). *Liza*; *Somewhere over the Rainbow*; *They Didn't Believe Me*; *What Is This Thing Called Love*; *My Heart Belongs to Daddy*; and four others. POLYGRAM JMT 834 430-1, © 834 430-2 (44 min).

Performance: *Excellent*
Recording: *Very good*

Drummer Paul Motian has always been an interesting musician, and part of the appeal is his versatility. Here he leads a superb quartet through a program of standards first heard on the Great White Way, though not necessarily in a musical stage production (*Somewhere over the Rainbow* didn't hit the boards until 1987, and that was in London). The tunes are all familiar enough, but the quartet approaches them with a wonderful freshness and varies its style from one track to the next. It's evident that these four musicians relish playing together and, more important, enjoy a strong rapport. They could have played it safe and just played it straight with songs like *They Didn't Believe Me*, *I Concentrate on You*, and *So in Love*, but that would have been out of character for this superb group.

Kicking things off, tenor saxophonist Joe Lovano gets *Liza* off the ground and soaring with a rhythmic velocity that clearly inspires guitarist Bill Frisell, bassist Charlie Haden, and Motian. The rest of the album is a smooth ride through different styles, ranging from the hauntingly beautiful to the intriguingly intellectual. *C.A.*



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 • Dolby B, series play, feather-touch . . . **\$169⁹⁵**
- Teac W-660R**
 • Dual auto-rev, Dolby B/C, continuous play . . . **\$249⁹⁵**
- Technics RS-TR355**
 • Dual auto-rev, Dolby B/C & HX-Pro . . . **\$269⁹⁵**
- JVC TDW-901**
 • Dual auto-rev, Dolby B/C & HX-Pro, remote . . . **\$349⁹⁵**

Home Speaker Specials



- Pinnacle PMS+ Two Way Speaker System**
 • Patented ductwork port for supertwo bass response from a very compact enclosure • 5 1/4" polypropylene woofer • 50 watt power handling • Beautiful oak trim
 Our Low Price **\$149⁹⁵** Pair (PIN PMS+ /OAK)
- Technics SBL-56**
 • 10" 3-way bass-reflex speakers . . . Pair **\$129⁹⁵**
- Technics SBL-96**
 • 15" 3-way bass-reflex speakers . . . Pair **\$199⁹⁵**
- Gemini MB-420**
 • 15" woofer & 15" X 7" horn, disco . . . Each **\$199⁹⁵**
- Celestion DL-411**
 • 6.5" 2-way, black or walnut . . . Pair **\$249⁹⁵**
- Bose Freestyle**
 • Twin 4.5" drivers, curved flared port . . . Pair **\$299⁹⁵**
- Bose AM5 Acoustimas System**
 • Acoustimas subwoofer & two modules . . . **\$749⁹⁵**

Turntables and Mixers



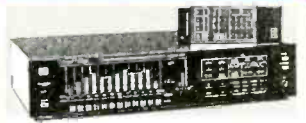
- Dual CS-5000/X3-MC Turntable with Orton Cartridge**
 • A turntable for the serious record collector combining auto-stop convenience with high performance • 33, 45 & 78 speeds • Belt drive • High output moving coil cartridge
 Our Low Price **\$449⁹⁵** (DUA CS5000/X3MC)
- Scott PS-60C**
 • Semi-auto, belt-drive, includes cartridge . . . **\$59⁹⁵**
- Ahus AM-100**
 • Mixer/preamplifier, 2 phono, 2-Aux, cueing . . . **\$79⁹⁵**
- Gemini MX-3300**
 • Mixer, 3-phono inputs, 19" rack-mount . . . **\$139⁹⁵**
- Technics SLJ-33K**
 • Direct drive, fully-auto, programmable . . . **\$179⁹⁵**
- Gemini MX-5500SE**
 • Mixer, 7-band EQ, 3-phono, 5-line . . . **\$239⁹⁵**
- Gemini XL-1800Q**
 • Manual, direct-drive, standard-mount . . . **\$299⁹⁵**

Phono Cartridges



- Shure V-15 Type V-MR Deluxe Micro Ridge Phono Cartridge**
 • Micro-ridge stylus tip • Excellent trackability • Dynamic stabilizer • Side-guard stylus protection • Duo-point alignment gauge • Top rated design
 Our Low Price **\$129⁹⁵** (SHU V15-VMR)
- Audio Technica AT-211EP**
 • Bi-radial stylus, universal-mount . . . **\$19⁹⁵**
- Stanton 500AL**
 • Spherical-stylus, standard-mount . . . **\$19⁹⁵**
- Shure ME-95ED**
 • Elliptical-stylus, standard-mount . . . **\$19⁹⁵**
- Audio Technica AT-231LP**
 • Linear-contact stylus, universal-mount . . . **\$39⁹⁵**
- Shure M-111HE**
 • Hyperelliptical-stylus, standard-mount . . . **\$49⁹⁵**
- Stanton 680EL**
 • Elliptical-stylus, standard-mount . . . **\$54⁹⁵**

Equalizers



- ADC SS-525X Computerized Graphic Equalizer**
 • Custom tailor your sound the professional way • Automatic analyzer equalizes room for precise flat response • 12-bands/channel • Microphone • Pink noise • Wireless remote
 Our Low Price **\$359⁹⁵** (ADC SS525X)
- Technics SH-8017**
 • 7-bands per channel, input selector . . . **\$79⁹⁵**
- ADC SS-100SL**
 • 10-bands/ch, real-time analyzer display . . . **\$99⁹⁵**
- AudioSource EQ-811**
 • 10-bands/ch, LED spectrum analyzer . . . **\$99⁹⁵**
- ADC SS-310**
 • 10-bands/ch, real-time analyzer w/mic . . . **\$159⁹⁵**
- ADC SS-325X**
 • 12-bands/ch, analyzer, 5 memories . . . **\$279⁹⁵**
- AudioSource EQ-10**
 • Computerized remote control equalizer . . . **\$349⁹⁵**

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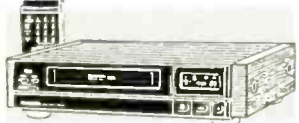
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Video Recorder Specials



Panasonic PV-2900
VHS Video Cassette Recorder
 • On-screen display • Cable ready • Hi video recording system • One touch recording • 1-month/4-event timer • 38-function remote control • Audio/video muting system
 Our Low Price **\$299⁹⁵** (PAN PV2900)

Samsung VP-2309
 • VHS 3 speed player, mid-size, search . . . **\$179⁹⁵**

Samsung VR-3309
 • Picture-search, 20-key remote . . . **\$229⁹⁵**

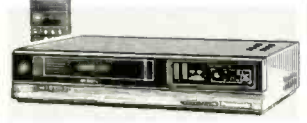
Sharp VC-210
 • On-screen, multi-function remote . . . **\$239⁹⁵**

RCA VR-290
 • 2-heads, on-screen, remote, picture search **\$249⁹⁵**

Toshiba M-220
 • On-screen, remote, 1-year/8-event . . . **\$289⁹⁵**

Panasonic PV-4920
 • 4-heads, bar-code, unfilled-remote . . . **\$349⁹⁵**

Hi-Fi Video Recorders



Panasonic PV-4860
4-Head VHS Hi-Fi Video Recorder
 • Four video heads for great special effects • MTS stereo cable ready tuner • Hi-Fi stereo sound • 30-Day/8-event timer • 44-function remote control
 Our Low Price **\$399⁹⁵** (PAN PV4860)

Sony SL-HF360
 • Superbeta, beta playback, remote control **CALL**

General Electric VG-7980
 • 4-heads, remote, flying erase head . . . **\$399⁹⁵**

Panasonic PV-4960
 • 4-heads, flying erase head, remote . . . **\$499⁹⁵**

JVC HRD-750
 • 4-heads, unfilled-remote, on-screen . . . **\$499⁹⁵**

RCA VR-640HF
 • SuperVHS, 4-heads, MTS/SAP tuner . . . **\$499⁹⁵**

Toshiba SV-970
 • SuperVHS, 4-heads, digital-effects . . . **\$899⁹⁵**

Camcorders & Televisions



Panasonic PV-460
E.I.S. VHS HiQ Camcorder
 • Electronic Image Stabilization • High-speed shutter (1/1000th, 1/500th, 1/250th sec.) • 10:1 power zoom with macro • Flying erase head • Auto date/time generator
 Our Low Price **\$1049⁹⁵** (PAN PV460)

Sony KV-13TR30
 • 13" color TV, remote, A/V input . . . **\$299⁹⁵**

JVC GR-40U
 • VHS-C camcorder, digital superimposer **\$749⁹⁵**

Panasonic PV-500
 • VHS camcorder, flying erase head . . . **\$849⁹⁵**

Sharp VLL-250
 • VHS camcorder, 12:1 zoom, editing . . . **\$849⁹⁵**

Toshiba CF-3048
 • 30" stereo TV/monitor, free stand . . . **\$999⁹⁵**

Sony CCD-170
 • 8mm camcorder, 4-page superimposer **CALL**

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 (CD-CPR 10920, CASS-CPR 27920)
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Surround Sound Processor
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 Our Low Price **\$129⁹⁵** (ASO SS-ONEII)

Recolon V-623
 • Stereo TV decoder, MTS/SAP & cable . . . **\$49⁹⁵**

Video Link Copycam
 • A/V enhancer for camcorder to VCR . . . **\$49⁹⁵**

AudioSource SS-TWO
 • Dolby Surround Sound processor, remote **\$199⁹⁵**

Videonics Direct-Edit +
 • Home editing system with graphics . . . **CALL**

JVC JX5-900
 • A/V selector, 7-inputs & outputs, remote **\$649⁹⁵**

Sony XVC-900
 • Color corrector, video art effects . . . **\$849⁹⁵**

Calculator Specials



Royal 210OPD
Heavy Duty Printing Calculator
 • Designed for heavy duty office use • 12-digit display • 2-color printing • Fast-3 lines per second • Gross profit margin key • 4-key memory system • LED display
 Our Low Price **\$79⁹⁵** (RYL 210OPD)

Royal CLF-5
 • Solar powered, 8-digit, battery back-up . . . **\$79⁹⁵**

Sharp EL-557
 • Scientific, 252 functions, 8-memories . . . **\$22⁹⁵**

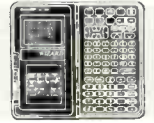
Sharp EL-1611
 • Portable plain paper printing calculator **\$24⁹⁵**

Casio FX-400OP
 • Scientific, programmable, 26-memories **\$34⁹⁵**

Texas Instruments 2800
 • Paperless printing, retains 99 entries . . . **\$39⁹⁵**

Hewlett Packard HP-17B
 • Programmable financial, 6.5K memory . . . **\$79⁹⁵**

Databank Specials



Sharp OZ-7000 "Wizard"
Electronic Organizer
 • Seven major functions in one: calendar, schedule, phone/address book, memo pad, clock, & calculator • Stores up to 700 names/numbers • Application ICs optional
 Our Low Price **\$229⁹⁵** (SHA WIZARD)

Selectronics 8000C
 • 8K databank, 20-character LCD-display . . . **\$19⁹⁵**

Sharp EL-6250
 • Databank/autodiater, 8K memory . . . **\$49⁹⁵**

Casio SF-4500
 • 32K, 18-character X 6-line display . . . **\$119⁹⁵**

Casio SF-7500
 • 64K, 32-character X 6-line display . . . **\$169⁹⁵**

Psion Organizer LZ
 • 32K, expand to 128K diary & notebook **\$249⁹⁵**

Casio SF-9000
 • 64K, business card and memo functions . **CALL**

Spellers/Language Translators



Franklin LM-4000
Pronouncing Dictionary & Thesaurus
 • Phonetic spelling of over 83,000 words • Thesaurus with over 470,000 synonyms • Pronounces w/h word correctly • Typewriter style keyboard • Alphabetized keyboard
 Our Low Price **\$299⁹⁵** (FRA LM4000)

Seiko WP-1000
 • 85K vocabulary, scrolls, phonetic correction **\$24⁹⁵**

Seiko TR-1400
 • Spanish/English 80K word translator . . . **\$69⁹⁵**

Selectronics WF-224
 • 100K vocabulary, 220K synonyms . . . **\$79⁹⁵**

Franklin WM-1100
 • 80K words, 35K thesaurus, 470K synonyms **\$109⁹⁵**

Hexaglot Translator
 • 6-languages, 8800 word vocabulary . . . **\$119⁹⁵**

Franklin LM-3000
 • 80K spellier/dictionary, 4-line display . . . **\$179⁹⁵**

Telephone Specials



Panasonic KX-T4200
Cordless Telephone Answering System
 • Beepless remote • Two digit LED call counter • 10# speed dialer • Call screening from remote • Automatic message transfer
 Our Low Price **\$148⁸⁸** (PAN KXT4200)

Panasonic KXT-3807
 • Cordless phone, wall/desk, paging . . . **\$59⁹⁵**

Code-A-Phone 5500
 • Remote answering machine, toll saver . . . **\$69⁹⁵**

PhoneMate 6560
 • Phone & answering machine, 10# memory **\$69⁹⁵**

PhoneMate 7210
 • Remote answering machine, date/time . . . **\$88⁸⁸**

Sony SPP-50
 • Cordless phone, upright design, paging **\$99⁹⁵**

Panasonic KXT-2432
 • Phone & answer machine, speakerphone **\$134⁹⁵**

Business Phones/Accessories



GTE 4275
2-Line Home/Small Business System
 • 2-line system with conferencing • Intercom • Page & all Page • Speakerphone • Hands-free page response • Dial-right display • 40-number auto dialer
 Our Low Price **\$159⁹⁵** (GTE 4275)

Panasonic KP-110
 • Electric auto-stop pencil sharpener . . . **\$19⁹⁵**

Panasonic KXT-3250
 • Intercom paging phone, speakerphone **\$149⁹⁵**

Panasonic KXT-3170
 • 3-line phone, 48# dialer, speakerphone **\$149⁹⁵**

Excelle Execufold
 • Electric desk/top letter folder, trifolds . . . **\$159⁹⁵**

AT&T System 2000-Master
 • Master 2-line phone, intercom & paging **\$229⁹⁵**

Pantronics Phonebeam
 • Echoless speakerphone, with remote mic **\$259⁹⁵**

Facsimile Machines



Murata M-1400
Facsimile/Telephone & Copier
 • 5-page feeder • G2 & 3 compatibility • 16-level greyscale • Delayed dialing command • 100# autodialer • English or spanish operation
 Our Low Price **\$699⁹⁵** (MTA M1400)

Panasonic KXF-80
 • G-3, remote, answering machine, copier **\$559⁹⁵**

Sharp UX-110
 • G-3, 5-page auto document feeder . . . **\$579⁹⁵**

Epson FAX-1000
 • G-3, 6 grey tones, auto paper cutter . . . **\$759⁹⁵**

Panasonic KXF-120
 • G-2 & 3, 5-page feeder, 110# memory . . . **\$799⁹⁵**

Canon FAX-23
 • G-3, auto paper cutter, 15-page feeder **\$929⁹⁵**

Panasonic KXF-220
 • G-2 & 3, answer machine, 130# memory **\$1079⁹⁵**



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- Terk FM-950C**
Indoor FM Electronic Antenna
• Perfect for the apartment or office • Modern high tech style • 24-dB's of gain • Omnidirectional pick-up • LED display • One year warranty • Black finish
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- Terk FM-2000**
• Omnidirectional or directional FM antenna **\$19⁹⁵**
- Parsec LS-3**
• Omnidirectional variable gain FM antenna **\$29⁹⁵**
- Audioquest Feet**
• Sorbothane isolation feet . . . 4-Pack **\$34⁹⁵**
- Memorex CP-8**
• Universal programmable remote control **\$69⁹⁵**
- Parsec ARC**
• AM/FM electronic antenna, upto 32dB gain **\$149⁹⁵**
- DBX SNRI**
• Noise reduction unit, reduces noise & hiss **\$239⁹⁵**

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Wireless Stereo Headphones
• Infrared system • Response: 18-20kHz • 90dB dynamic range • Convenient combination transmitter & recharger • Digital ready • Ultra-match plug
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- Sony MDR-E414**
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- Sony MDR-E434**
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- Sony MDR-E225**
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- Sony MDR-E464**
• Digital-ready in-the-ear design **\$29⁹⁵**
- Sony MDR-M22**
• Lightweight digital-ready, one sided cord **\$39⁹⁵**
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- Recoton W-100**
Wireless Stereo Speaker System
• Eliminate the need for room-to-room wires • Enjoy true stereo anywhere you choose • Speakers plug into convenient wall AC outlets anywhere
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- Recoton CD-20**
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- AudioSource LLC-1**
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- Monster Cable ILCDIM**
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Musical Instruments



- Casio DH-100**
Digital Horn
• Amazing "Digital woodwind" performance with 2-preset tones • Midi output • Portamento effect • Built-in speaker • Breath sensitive • Key transpose • Requires 5 AA batteries
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- Yamaha DD-5**
• Digital drum set, 4 touch sensitive pads **\$88⁸⁸**
- Yamaha PSS-480**
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- Yamaha PSS-280**
• 49 mid-size keys, 100 preset voices **\$99⁹⁵**
- Casio SK-100**
• 49 mid-size keys, program sampling **\$99⁹⁵**
- Casio MT-520**
• 49 mid-size keys, drum pad, 12 voices **\$118⁸⁸**
- Yamaha PSS-380**
• 49 mid-size keys, 100 voices & rhythms **\$129⁹⁵**

Car Stereo Specials



- Clarion 977ORT**
ETR AM/FM Stereo Cassette Receiver
• Quartz-locked PLL tuning • 12-FM/6-AM presets • Auto-reverse • Dolby B • 25 watts channel • 4-way balance • Bass & treble • Night illumination • DIN chassis
Our Low Price **\$228⁸⁸** (CLA 977ORT)
- Clarion 2COA**
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- Uniden RD9XL**
• Superhel radar detector, ultra small **\$138⁸⁸**
- BEL 977 Vector 3R**
• Remote radar detector, X, K, & Ka bands **\$138⁸⁸**
- Clarion 1000A**
• 50-watts channel amp, 100-watts bridged **\$177⁸⁸**
- BEL 944 Express 3**
• Super-small 3-band radar detector **\$199⁹⁵**
- Whisper Spectrum 3**
• Ultra-small radar detector, digital display **\$218⁸⁸**

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- TDK SA-100**
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- Maxell MX-90**
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- Sony WMAF-48**
• AM/FM auto-reverse cassette **\$49⁹⁵**
- Toshiba RP-33**
• Super-small, AM/FM stereo radio **\$49⁹⁵**
- Sony WMAF-64**
• AM/FM auto-reverse, Dolby, Mega-Bass **\$89⁹⁵**
- Toshiba KT-4568**
• Digital AM/FM auto-reverse, Dolby **\$99⁹⁵**
- Panasonic RQV-340**
• AM/FM auto-rev cassette, XBS, Dolby **\$99⁹⁵**
- Sony WMAF-604**
• AM/FM auto-rev, Mega-Bass, Dolby **\$129⁹⁵**

Portable CD Players



- Sony D-2**
Portable Compact Disc Player
• Ultra-compact design • High speed music search • 3-way repeat • LCD display • Linear amplifier • Carry belt & line-out cord • AC adaptor • Requires 4 X AA batteries
Our Low Price **\$159⁹⁵** (SON D2)
- Technics SL-XP2**
• 4X oversampling, wired remote, XBS **\$189⁹⁵**
- Toshiba XR-9437**
• AM/FM/CD player, rechargeable battery **\$199⁹⁵**
- Technics SL-XP6**
• 4X-oversampling, rechargeable battery **\$239⁹⁵**
- Toshiba XR-9459**
• Surround-sound and remote control **\$279⁹⁵**
- Sony D-25**
• 4X sampling, remote, rechargeable battery **CALL**
- Sony D-555**
• 8X-sampling, 16-bit digital signal processing **CALL**

Portable Audio



- Sony CFD-60**
AM/FM Cassette CD-Player
• AM/FM stereo tuner • Top loading CD-player • Auto music sensor & search on CD • 2-way repeat • Cue & review • Microphone mixing • AC cord • Requires 8 X D batteries
Our Low Price **\$179⁹⁵** (SON CFD60)
- Panasonic RX-FS400**
• Compact-size AM/FM cassette, auto-stop **\$49⁹⁵**
- Sony CFS-1000**
• 3-Piece AM/FM cassette, 5-band EQ **\$59⁹⁵**
- Sony CFS-960 "Outback"**
• AM/FM auto-rev, water-resistant, Mega-Bass **\$129⁹⁵**
- JVC PCV-55**
• 3-Piece, auto-rev, Hyper-Bass, 5-band EQ **\$149⁹⁵**
- Panasonic RXDT-50**
• AM/FM dual-cassette & CD-player **\$229⁹⁵**
- JVC PCX200J**
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Discs and tapes reviewed by Robert Ackart, Richard Freed, David Hall, Stoddard Lincoln, Eric Salzman, and David Patrick Stearns

BEETHOVEN *Symphony No. 9, in D Minor, Op. 125 ("Choral")*. Josephine Barstow (soprano); Linda Finnie (contralto); David Rendall (tenor); John Tomlinson (bass); City of Birmingham Symphony Chorus and Orchestra, Walter Weller cond. CHANDOS ● ABRD 1389, © ABTD 1389, © CHAN 8750 (66 min).

Performance: *Solid*
Recording: *Full-blooded*

Viennese-born Walter Weller, whose career as chamber musician and conductor has been divided between England and the Continent, hews closely in this Beethoven Ninth to the traditions of his native city. It is a solid and well-considered reading—a big-orchestra affair more in the mold of Bruno Walter than Herbert von Karajan. The soloists are well matched, and if John Tomlinson's rendition of the famous bass solo in the final movement lacks the magisterial quality of a Matti Salminen or Richard Mayr, he does a thoroughly creditable job, as do the other soloists. The chorus projects the Schiller text with will and vitality, and the Birmingham orchestral players respond particularly well to the lyrical aspects of the score. The full-bodied recording in the ample acoustics of the Birmingham Town Hall is a major asset. *D.H.*

BOCCHERINI: *Cello Concerto in G Major (G. 480); Sinfonia in B-flat Major (G. 497); Cello Concerto in D Major (G. 483); Sinfonia in D Minor ("La casa del diavolo," G. 506)*. Anner Bylsma (cello); Tafelmusik, Jean Lamon cond. DEUTSCHE HARMONIA MUNDI/BMG © 7867-2-RC (67 min).

Performance: *Splendid*
Recording: *Lovely*

Here is a particularly well-chosen mixture of Boccherini symphonies and concertos that are exquisitely performed on authentic period instruments by a group of musicians who know how to render the delicate little details so essential to a full realization of this composer's frag-

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REVIVING BUSONI



Garrick Ohlsson

I CAN'T resist quoting one of the Berlin reviews that greeted Ferruccio Busoni's remarkable Piano Concerto of 1904: "... a flood of cacophony ... the joys of barbarians lusting in war ... the orgies of absinthe drinkers and harlots. ... It was frightful."

Busoni conceived the work, his only piano concerto, on the hugest scale: five movements, an hour and a quarter in length, male chorus in the finale. It's ambitious, dramatic, humorous, philosophical, warm, brilliant, moving, witty, sublime. Right up there with the Beethoven Ninth and the Mahler symphonies? Well, close!

Where has it been all this time? The piece has, from the start, had its vehement admirers and violent detractors. It almost did not recover from its initial savaging at the hands of the German critics. Periodic attempts to revive it (notably by the late pianist John Ogden a number of years back) have spurred enthusiasm, but the welcome mat has never stayed out. Perhaps Garrick Ohlsson's new recording will do it.

Ohlsson's live performance in Cleveland last season generated a lot of buzz; in the recorded version you can hear

why. The idea that this is a pretentious and bombastic work is immediately dispelled as soon as you sit down to listen. Ohlsson, Christoph von Dohnányi, and the Cleveland Orchestra and Men's Chorus take the work at face value—as a serious, monumental epic but also music full of humor and charm. The German philosophy is there all right, but the piece is also (as one movement title puts it) *all'Italiana*. What better combination?

The clarity and scale of the performance, but also its intimacy, energy, and good humor, are well caught by Telarc's superb recording. Roll over in your grave, Herr Berlin *Tägliche Rundschau* Critic! Contrary to what you and your colleagues wrote about it, Busoni's concerto is a work of great mastery and vision. And it has, as this performance clearly demonstrates, the power to speak to our time. *Eric Salzman*

BUSONI: *Piano Concerto in C Major, Op. 39*. Garrick Ohlsson (piano); Cleveland Orchestra Men's Chorus; Cleveland Orchestra, Christoph von Dohnányi cond. TELARC © CD-80207 (72 min).



Helmuth Rilling: *Requiem for Rossini*

ile, Rococo sensibility. The symphonies, which seemed so monochromatic in Raymond Leppard's Philips set, sparkle and charm without being precious. What can sound like empty though athletic note-spinning on conventional instruments shimmers with color and bristles with excitement in original-instrument performances like these. As an ideal cross section of Boccherini's music, the recording should appeal both to those who are just discovering him and to those who think they know his work well. *D.P.S.*

CHOPIN: *Preludes, Op. 28; Ballade No. 1, in G Minor, Op. 23; Fantaisie in F Minor, Op. 49; Scherzo No. 1, in B Minor, Op. 20.* Gabriel Tacchino (piano). PIERRE VERANY/HARMONIA MUNDI USA © PV.789091 (75 min).

Performance: *Clear-eyed*
Recording: *Very good*

Gabriel Tacchino is best known in this country for his recordings of twentieth-century music—particularly his outstanding ones of various works by Poulenc and of all the Prokofiev concertos. His way with Chopin may not suit every taste, but he brings some provocative and refreshing ideas to the music. He takes a very clear-eyed view of it; there is nothing of the *saloniste* in his playing, no gossamer veils, and yet the effect is far from stark or aloof. There is no lack of subtlety, no withholding of warmth or tenderness where such elements are indicated. One of the tiniest of the preludes, No. 7, is unostentatiously realized as the exquisite little poem it is, and in the more extended reverie of No. 13 and in the beloved No. 15, Tacchino seems to be not so much understating as simply guarding against the overripeness we still hear in too many performances of these pieces. The effect, in any event, is especially convincing. The three larger pieces at the end of the recital provide more telling

evidence of the sense of proportion and regard for clarity that contribute so much to his effectiveness in the preludes. The sonic focus itself is very much attuned to these qualities and is indeed ideally judged to set them off to best advantage—almost as if the recording engineer were a chamber-music partner to the performer. *R.F.*

DVOŘÁK: *Piano Trio No. 1, in B-flat Major, Op. 21; Piano Trio No. 2, in G Minor, Op. 26.* Raphael Trio. NEWPORT CLASSIC © NCD 60074 (63 min).

Performance: *Excellent*
Recording: *Big and bold*

This somewhat belated follow-up to the Raphael Trio's outstanding Nonesuch LP of Dvořák's great Op. 65 Piano Trio fulfills all the expectations that recording created. The two early trios here are performed splendidly; there is passion, there is commitment, there is absolute immersion in the style, and there is (by no means incidentally) first-rate playing throughout in terms of both individual performance and interaction among the three players. It is just the sort of spirit one wants in chamber music, and in Dvořák's in particular.

In the Denon CD of the same two works performed by the Suk Trio, vintage 1977 (when Jan Panenka was that group's pianist), the Czechs take the big first-movement repeat in Op. 21; the Americans do not. Apart from that, the performances are very much in the same style and on the same level, with perhaps a slightly higher degree of vitality and tension from the Raphael Trio, an arguably higher degree of subtlety from the Suk—impressions that may have to do with sonic considerations. The Newport disc has a bigger, bolder sonic frame, rather close-up, while the Denon has a somewhat more discreet focus; both are realistic and comfortable. For the listener, choosing between them is a no-lose situation; if pressed, I would incline ever so slightly toward the Raphael. *R.F.*

MENDELSSOHN: *Piano Concerto No. 1, in G Minor, Op. 25; Piano Concerto No. 2, in D Minor, Op. 40; Capriccio brillant in B Minor, Op. 22.* Sergei Edelman (piano); Bamberg Symphony Orchestra. Claus Peter Flor cond. RCA © 7988-4-RC, © 7988-2-RC (62 min).

Performance: *Expansive*
Recording: *Rich*

For the last two or three years I've been enjoying these three works on an especially economical Pantheon CD that also includes Mendelssohn's *Rondo brillant*, Op. 29, all in bright-eyed, vivacious performances by Cristina Ortiz with the Stuttgart Radio Orchestra under Moshe Atzmon. Sergei Edelman and Claus Peter Flor benefit here from conspicuously richer sound, but their more expansive approach tends to sound just a little underanimated—and a little more

so on the second hearing than the first. Both the Kalichstein/Laredo performances on Nimbus and the Perahia/Marriner on CBS are more persuasive in that respect, and the Nimbus CD is even more impressive sonically than the new RCA. But Ortiz and Atzmon work together so beautifully, exude such a sense of spontaneity and joyous involvement with the music, that theirs is the disc I'd want. *R.F.*

MESSA PER ROSSINI. Gabriela Benácková-Čápková (soprano); Florence Quivar (mezzo-soprano); James Wagner (tenor); Alexandru Agache (baritone); Aage Haugland (bass); Gächinger Kantorei; Prague Philharmonic Choir; Stuttgart Radio Symphony Orchestra, Helmuth Rilling cond. HÄNSSLER/KOCH IMPORT SERVICE © 98.949 two CD's (110 min).

Performance: *Excellent*
Recording: *Very good*

Program notes for Verdi's Requiem of 1874 frequently tell us that the "*Libera me*" in that grand work in memory of Alessandro Manzoni is an adaptation of the concluding section Verdi had composed a few years earlier as his contribution to a composite Requiem for Rossini, a work that was never performed. No matter how often that information was presented, it seems to have created very little curiosity on anyone's part, and it was less than two years ago, nearly 120 years after the work was composed, that the *Messa per Rossini* was actually performed for the first time—and recorded.

Verdi initiated the idea for this work four days after Rossini's death in 1868; he wrote to his publisher, Tito Ricordi, proposing that several of "Italy's most eminent composers should write a Requiem Mass to be performed on the anniversary of his death." He proposed further that there should be a single performance in Bologna, following which the score should be sealed away except for later Rossini commemorative occasions. In addition to Verdi himself, a dozen other composers took part, and the composite score was ready in time for the anniversary in 1869, but, for various reasons (not entirely musical ones), the performance never took place.

The musicologist David Rosen came across the original material for the *Messa per Rossini* in 1970, but it was not until 1986, in the course of an International Bach Academy in Stuttgart, that further scholarly activity was initiated that led at last to the first performance of the work, under the direction of Helmuth Rilling, at a festival in that city in September 1988. Rilling and his Stuttgart forces actually taped the work for television a few weeks before the public première; he has since performed it in Parma and, last October, with the New York Philharmonic. It is a long work, nearly two hours, but it does sustain interest. Antonio Buzzolla's "*Introitus*"

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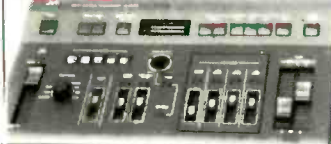
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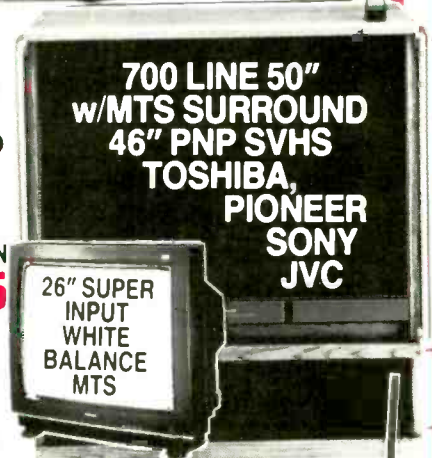
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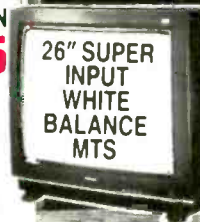


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RILEY'S COUNTERREVOLUTION



The Kronos Quartet

TERRY RILEY'S *Salome Dances for Peace*, a two-hour, five-part, twenty-three-movement string quartet with references both to the Biblical legend of Salome and to Native American mythology, has just been released by Nonesuch in a performance by the Kronos Quartet. It consolidates Riley's return to notated music after a decade of (mostly) improvisation. He did write some pieces for the Kronos back in the early Eighties, but they often seemed like postminimalist trifles most suitable for New Age music listeners. *Salome* firmly establishes Riley as an important, imposing talent who has clearly given a counter-revolutionary new identity to the string quartet with his tonal but completely individual style. *Salome Dances for Peace* may eventually be counted among the great works composed in the Eighties.

It has more than length in common with Mahler, with whom Riley shares a strong narrative sense. The music depicts Salome's being called by the Great Spirit to combat the war demons, who have stolen peace from the world. Though Riley's scenario may sound silly, he has translated it into music that is as convincing as a Stravinsky ballet. Indeed, the infectiously rhythmic *Salome*

often sounds like a ballet score, but it needs no choreography—it is complete in itself.

Structurally, the work lacks the integrity of a Mahler symphony, but there's such a strong sense of motivic development among its many movements that it never seems to sprawl. Aside from the motif representing the Great Spirit, which appears in amazingly diverse forms throughout the piece, Riley rarely develops anything in a logical, fluid style; his writing is more sporadic and freewheeling, almost Brucknerian in the mercurial way he splinters and juxtaposes musical ideas.

That style perfectly suits the composer's highly pictorial, sometimes phantasmagorical imagination, the force of which carries the listener through even the later parts of the quartet, where the narrative thread threatens to unravel completely. By then, programmatic details cease to matter much. Riley has created a sound world so full of entrancing effects, so vividly realized by the Kronos Quartet, that it's a highly enjoyable place to spend two hours.

David Patrick Stearns

RILEY: *Salome Dances for Peace*. Kronos Quartet. NONESUCH © 79217-2 two CD's (121 min).

gets it off to a very good start; Antonio Bazzini's "*Dies irae*" turns out to be strikingly similar to the more concise and forceful one Verdi himself created for his own Requiem; Alessandro Nini's "*Ingemisco*," like Verdi's later setting, gives the spotlight to the solo tenor, but it is an utterly and intriguingly different sort of piece; Carlo Coccia's *a cappella* setting of the "*Lacrimosa*" impresses with its sense of uncontrived dignity (though the attached "Amen" is a little overextended for its substance); Gaetano Gaspari's elaborately operatic "*Domine Jesu*" is charming in its use of color; Pietro Platania's "*Sanctus*" is agreeably sonorous if rather empty, and the same may be said of Teodulo Mabellini's "*Lux aeterna*." If none of these comes up to the level of Verdi's familiar piece, which concludes the work, there is much to invite more than a single hearing.

The performance could hardly be better, and the recording itself is both rich and well defined. The name of the soprano Gabriela Beňačková-Čápková has been reduced to "Beňačková-Cap" in the labeling, and the absence of anything in the set to key the respective sections to track numbers is a major frustration. But the indispensable parts of the documentation of this unique work are well executed. *R.F.*

NIELSEN: *Symphony No. 2, Op. 16* ("*The Four Temperaments*"); *Symphony No. 5, Op. 50*. Royal Danish Orchestra, Paavo Berglund cond. RCA © 7884-4-RC, © 7884-2-RC (69 min).

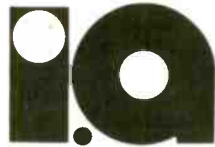
Performance: *In classic tradition*
Recording: *Good*

NIELSEN: *Symphony No. 2, Op. 16* ("*The Four Temperaments*"); *Pan and Syrinx, Op. 49; Aladdin, Suite*. Swedish Radio Symphony Orchestra and Chorus, Esa-Pekka Salonen cond. CBS © MT 44934, © MK 44934 (65 min).

Performance: *Brilliant*
Recording: *Bright, clean*

There are no fewer than four Carl Nielsen orchestral cycles currently under way, and these two discs represent generous samplings of the RCA and CBS projects. Paavo Berglund's reading of the Second Symphony, *The Four Temperaments*, is in the classic mold of such Danish conductors as Thomas Jensen, for whom Nielsen in the flesh was living memory and whose 1947 recording of the work was the first of the composer's symphonies to be commercially released. The approach is strong and sinewy in the outer movements, and the performance achieves special eloquence and intensity in the "Melancholic" slow movement. The dramatic points in the "Choleric" and "Phlegmatic" movements are tellingly made. The Fifth Symphony under Berglund lacks the sheer dynamism of the recordings by Blomstedt and Bernstein, but again the performance is in the classic Danish tra-

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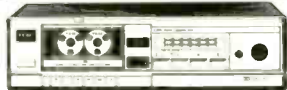


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—	A&R Editions.....	114
60	Adcom.....	29-34
62	BBE Sound Inc.....	83
51	Beyerdynamic.....	46
—	Bose.....	118-119
157	Cambridge SoundWorks.....	36-37
3	Canton.....	26-27
—	CBS Columbia House-CD Club.....	24 a,b
168	Cerwin-Vega.....	142
—	Christian Brothers.....	4
188	Cooustic.....	45
113	Cooustic.....	47
98	Cooustic.....	49
—	Crutchfield.....	56
27	Denon.....	13
71	Discount Music Club.....	46
1	Electronic Wholesalers.....	155
40	Harman Kardon.....	57
—	Illinois Audio.....	157
39	J&R Music World.....	149,150-151
—	Jensen.....	145
2	Klipsch.....	39
—	KNI Loudspeaker.....	22
20	Magnepan.....	12
29	McIntosh.....	62
22	Mitsubishi.....	18-19
109	Mobile Fidelity.....	22
79	Ohm.....	42
—	Onkyo.....	6
97	Paradigm.....	98
85	Phase Linear.....	74
—	Philip Morris-Marlboro.....	73
—	Philip Morris-Merit.....	51
—	Philip Morris-Parliament.....	26-27
—	Philips.....	60-61
31	Pioneer-Car.....	14
31	Pioneer-Home.....	52-53
173	Pioneer-LaserDisc Club.....	40
90	Polk Audio.....	Cov 2,1-3
93	Proton.....	109
—	Radio Shack.....	68
—	RCA-BMG Direct.....	16 a,b
161	Sharp.....	9
103	Sherwood.....	Cov 3
104	Shure.....	46
105	Signet.....	147
184	Sixth Ave Electronics.....	152
106	Sony.....	10-11,21
84	Univenture.....	114
—	Wisconsin Discount Stereo.....	159
—	Yamaha.....	Cov 4

FEBRUARY

dition. The 1,500-seat Odd Fellow Hall in Copenhagen, essentially a converted Baroque ballroom, yields a very bright sound, but there's also a midrange resonance that tends to shadow the highest frequencies. Having attended many concerts there in the mid-Fifties, I feel that large orchestras are a bit much for the space.

Not so Stockholm's Berwald Hall, which is clean and brilliant to a fault, tending to emphasize the ferocious qualities of Esa-Pekka Salonen's treatment of *The Four Temperaments*. But compared with Berglund, the young Finnish conductor seems to be skating on the surface rather than getting to the musical heart of the matter. He certainly does not make his dramatic points as effectively as his senior compatriot. In the colorful *Aladdin* suite, on the other hand, Salonen is very much in his element. And the brief *Pan and Syrinx*, a kind of Scandinavian "afternoon of a faun," is a real charmer in Salonen's hands. *D.H.*

SHOSTAKOVICH: *Symphony No. 15, in A Major, Op. 141; October, Symphonic Poem, Op. 131; Overture on Russian and Kirghiz Folk Themes, Op. 115.* Gothenburg Symphony Orchestra, Neeme Järvi cond. DEUTSCHE GRAMMOPHON © 427 616-1 (66 min).

Performance: *Superb*
Recording: *Stunning*

This last of the Shostakovich symphonies, dating from 1971, is a haunted and haunting work, inhabited by ghosts of music past, including Rossini's *William Tell* Overture and Wagner's *Ring*, not to mention fleeting wraiths from Shostakovich's own extensive oeuvre. The opening movement, full of sass and wit, is followed by a profound *in memoriam* adagio. An acerbic scherzo paves the way for a variation finale in which the Fate motive and timpani figure drawn from Siegfried's Funeral Music play a major role. The heart of the movement is the passacaglia built around a spectral variant of the march tune in Shostakovich's own *Leningrad* Symphony, leading to a gut-wrenching climax that subsides into a coda of reminiscences, full of clicking, clucking, chiming sounds evocative of the remorseless passage of time.

Maxim Shostakovich (the composer's son), Eugene Ormandy, and Bernard Haitink all made memorable early recordings of this score. Now Neeme Järvi, with the Gothenburg Symphony, has given us the first digital recording, and it is on an equally high interpretive level. Complementing an orchestral performance of superb power and finesse is the recording itself, made at Gothenburg's famous concert hall; it does the music and the players proud. Most of the symphony's scoring is of the utmost transparency, drawing on the full range of the instrumental spectrum, from highest to deepest, including

metalophones, wood percussion, and snare drum. The dynamics range from deathly stillness punctuated by eerie woodwind chords to floor-shaking tuttis. In short, one could hardly ask for a more ideal demonstration vehicle for the CD medium.

I only wish that more interesting filler material had been chosen. *October* is more substantial than a lot of civic Shostakovich but veers toward being a patriotic rabble-rouser with its quote of a partisan song from one of the composer's early film scores. The Overture on Folk Themes is an entertaining pops-concert affair. Järvi and his Swedish players nonetheless give their all, and the level of music-making throughout reinforces the fine impression that this conductor has made with his previous Shostakovich recordings. *D.H.*

STRAVINSKY: *Le Sacre du printemps; Apollo.* City of Birmingham Symphony Orchestra. Simon Rattle cond. EMI/ANGEL 4DS-49636, © CDC-49636 (65 min).

Performance: *Bursting, exploding*
Recording: *Brilliant*

STRAVINSKY: *Le Sacre du printemps; Petrouchka.* Royal Philharmonic. Yuri Temirkanov cond. RCA © 7985-4-RC, © 7985-2-RC (71 min).

Performance: *Stodgy*
Recording: *Colorful*

Being Russian doesn't mean that you were born to conduct Stravinsky. I'll take the "provincial" English version led by Simon Rattle, not only over its Russian-led competitor here but over a lot of other recent Stravinsky. Timing will do it every time. Both of these are well-made English recordings with lots of color. But in *Le Sacre*, the rhythm piece of all time, timing is everything, and Rattle nearly always has it right. As he conducts it, the piece is bursting at its seams, exploding at its edges. But it is also a subtle music drama full of suspense and surprise, and he catches all that too. Listen to the drama of the "Sacrificial Dance"—not just dissonant, disconnected modern music but real music theater. And then he turns around and delivers a finely tuned Neoclassical performance of the ballet *Apollo*, almost a trifle next to the *Sacre* but engaging nevertheless.

It takes some effort to turn *Le Sacre* and *Petrouchka* into stuffy, conservative enterprises, but Yuri Temirkanov manages it. Just because Stravinsky later turned from Russian "barbarism" to Francophile Neoclassicism doesn't mean you can Neoclassicize the *Sacre* and get away with it! *E.S.*

WAGNER: *Tannhäuser* (see *Best of the Month*, page 140)

WALTON: *Symphony No. 1; Hindemith Variations* (see *Best of the Month*, page 141)

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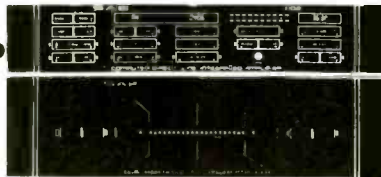
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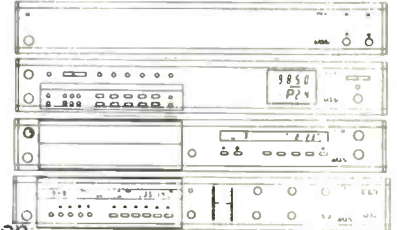
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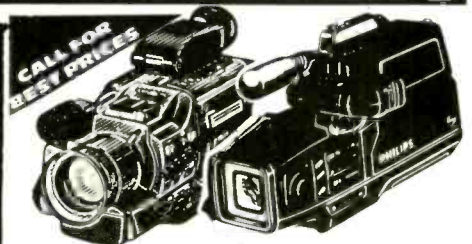
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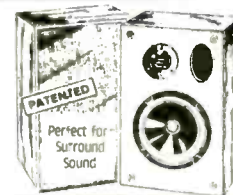
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by Christie Barter
& Ron Givens

REMEMBER the Japanese percussion group Kodo? A few years ago they had a popular demonstration disc in "Heartbeat Drummers of Japan" on the audiophile label Sheffield Lab. Well, they're back. They have made a new CBS album called "Ubu-suna" (which means "guardian of the earth"), and they are currently in the United States on their "One Earth Tour." Their performances on traditional Japanese drums have been described as having "the natural strength and violence of a hurricane."

After opening in Detroit and Ann Arbor, Michigan,

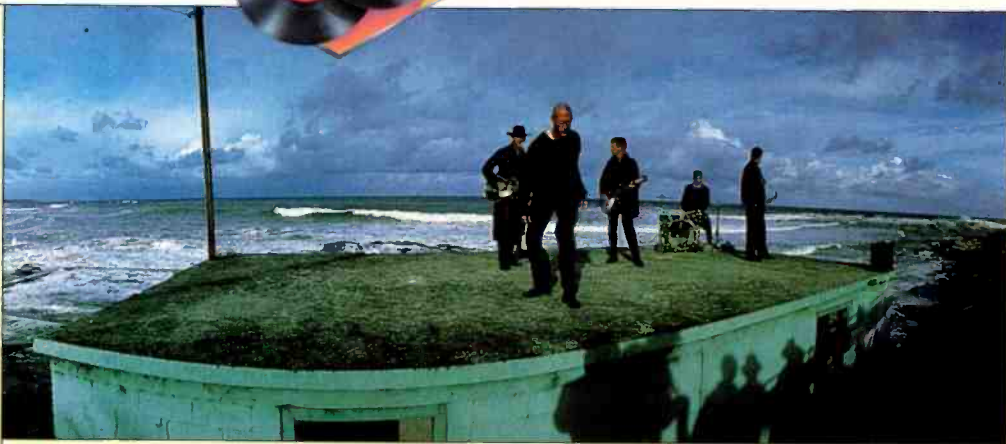


Kodo: on tour

Kodo will swing through the Northeast and tour until the end of March, finishing up with appearances on university campuses in Palo Alto, Berkeley, and Los Angeles, California. □

ALSO touring is the Australian rock group **Midnight Oil**, known for their successful mixture of political statements with rock in such best-selling albums as "10, 9, 8, 7, 6, 5, 4, 3, 2, 1" and "Diesels and Dust." Recorded last summer in Sydney, their newest album is "Blue Sky Mining" on CBS. The band's 1990 tour, which begins early this spring in England, will take them to Continental Europe, the United States, and Australia and bring them back to the U.S. in the fall.

The Oils have shown their support for the environment in a nonmusical way. Last year the group's very tall lead



Midnight Oil: mixing politics and rock

singer, Peter Garrett, became president of the Australian Conservation Foundation, a major lobby group, and he has been busy with a series of lectures and political appearances. □

WHEN the singer **Basia** made her debut in 1987, it was decided that her last name was too difficult for record buyers outside her native Poland. The album was "Time and Tide," on Epic, which sold a million copies and made the singer a star, billed simply as Basia.

Born and raised in Poland, Basia spent some time in the United States and now lives in London. Her new Epic album, "London, Warsaw, New York," reflects her multinational life and her multinational approach to music. One of the album's ten songs is *Astrud*, a tribute to the Brazilian singer Astrud Gilberto. Another, *Until You Come Back to Me*, is a bow to Aretha Franklin, who had a hit with it in 1973.

Basia's last name, by the way, is Trzetrzelewska. □

AMONG American artists active in support of environmental issues is **Chip Davis**, president of American Gramophone. Best known for its Fresh Aire series of recordings by **Mannheim Steamroller**, American Gramophone released "Saving the Wildlife" in 1986. The company's newest release, "Yellowstone, the Music of Nature," is the latest of Davis's efforts to help repair the

damage done to Yellowstone National Park by extensive forest fires last summer.

In addition to compositions by Davis, "Yellowstone" includes pieces by Debussy, Ferde Grofé, Respighi, and Vivaldi. Performers are Mannheim Steamroller, the Yellowstone Symphony, the London Symphony, and the Cambridge Singers.

Davis says, "After all the success I've had with Fresh Aire, which is based on nature, I felt I should give some energy back to nature." A portion of the proceeds of sales of the new recording on CD and cassette will go toward fire recovery in Yellowstone. □

IN support of wildlife conservation, **Whitney Houston**, whose new (as yet untitled) album is due for release by Arista in May, has paid for two lion cubs acquired by the Bronx Zoo in New York City. The cubs, a male and a female, were born last May and have been named George and Gracie. Their care and feeding have also been underwritten by the singer for a year's time. □

AMAN who likes to take his time is **Billy Idol**. His new Chrysalis album, "Charmed Life," comes three years after "Whiplash Smile." And that best seller came three years after "Rebel Yell." Speaking of his activities between albums, Idol said, "Around the time of 'Whiplash Smile,' I got caught up in being a rock star in America. Being that heady took me out of reality. There has to be a place to come home to, and that's oneself. Now, I just want to be me." □

AMONG the first compact discs being released this month on the new Koch International Classics label is **Leonard Bernstein's** *Airs and Barcarolles*, which received its concert premiere in New York last fall. Producer Michael Fine recorded the new song cycle immediately following that first performance by soprano **Judy Kaye** and baritone **William Sharp** with **Michael Barrett** and **Steven Blier** as the duo-piano accompanists.

Koch will also occasionally



Basia: multinational

Additional support will be provided by sales of a \$15 poster showing a landscape of Yellowstone. For ordering information for the new album, the poster, or other records, call American Gramophone at 1-800-446-6860. □



release recordings of historical interest. The first of these is a 1953 performance of Mozart's *Sinfonia Concertante* (K. 364) and *Divertimento in E-flat* (K. 563) by musicians of the Prades Festival under Pablo Casals. □

Bill Cosby has signed on for a series of albums for PolyGram Jazz called "Bill Cosby Presents." The first release, "Where You Lay Your Head," features five compositions by Cosby (who does not perform) and his regular musical collaborator, Stu Gardner. Among the big-name jazz artists playing on various tracks are John Scofield, David Murray, Jack DeJohnette, and Al Foster. □

THE end of the 1980's was marked by the loss of such towering musical giants as the conductor Herbert von Karajan and the pianist Vladimir Horowitz. Appropriately, the start of the new decade brings a crop of musicians at the beginning of promising recording careers.

Among them is the young Italian violinist Rodolfo Bonucci, who is featured in a new ASV recording of music by Fauré. The highlight of the album is the recently discovered first movement of a concerto that Fauré began in

Idol: taking his time



Bernstein flanked by Barrett, Blier, Kaye, and Sharp

1889 but never finished. It receives its first recording on this disc by Bonucci with the Mexico City Philharmonic under Enrique Bátiz. □

The American pianist Thomas Lorango plays works by Brahms and Schumann in the recently released "Thomas Lorango, the Debut Album" on Newport Classic. Scheduled for early spring release by Deutsche Grammophon is the debut recording by the twenty-four-year-old Russian pianist Lilya Zilberstein, winner of the 1987 Busoni Competition. The recording includes compositions by Rachmaninoff and Shostakovich.

The American Wagnerian soprano Cheryl Studer, heard in the Angel recording of *Die Walküre*, has made her Deutsche Grammophon debut in *Tannhäuser* (see "Best of the Month"). She also appears in that company's new *Götterdämmerung*, due for release later this year. DG's future plans for Studer include recordings of *The Flying Dutchman* and Richard Strauss's *Salome*.

Among current debut artists on RCA Records is the American classical harmonica virtuoso Robert Bonfiglio, whose first Red Seal record is devoted entirely to music of Heitor Villa-Lobos. It includes Villa-Lobos's *Harmonica Concerto*, which

Bonfiglio performs with the New York Chamber Symphony conducted by Gerard Schwarz. □

Koko Taylor, who has been called the Queen of the Blues, maintains such a busy schedule of performances that she has difficulty finding time for recordings. She interrupted sessions for her sixth Alligator release to film a cameo appearance in a movie starring Nicolas Cage, Willem Dafoe, Isabella Rossellini, and Harry Dean Stanton. Called *Wild at Heart*, the picture is scheduled for release later this year.

After shooting her scene in Los Angeles, Taylor embarked on a West Coast tour before finishing her new album. Tentatively titled "Jump for Joy," it includes a duet with Lonnie Brooks. *It's*

Bonucci: Nineties newcomer



a *Dirty Job* (But *Somebody's Got to Do It*). Also included is Taylor's version of Ted Nugent's *Hey Baby*. Six of Taylor's last seven albums have been nominated for Grammy awards. □

Janet Jackson's "Rhythm Nation 1814," "Blind Man's Zoo" by 10,000 Maniacs, and the all-star "Rainbow Warriors" album were winners of the annual Parents' Choice Awards in the category of rock-and-roll.

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GRACENOTES. Virgin has released "Lake Wobegon Loyalty Days," a live recording by author and radio personality Garrison Keillor



Taylor: jumping

and the Minnesota Orchestra. Taped last July 4, it's subtitled "A Recital for Mixed Baritone and Orchestra." . . . Jive/RCA has released three albums of jazz by South African musicians Ezra Ngcukana, Barney Rachabane, and McCoy Mrubata. They were produced by Kolo Lebona, who played on Paul Simon's "Graceland" album. . . . RCA and Pioneer LDCA are working on a long-form video special starring jazz pianist Marcus Roberts. . . . The one American album reportedly most sought after when East Berliners breached the Wall and had their first crack at West Berlin record bins in November was RCA's hit soundtrack album of 1987, *Dirty Dancing*. □

PETER SCHAAF/KOCH CLASSICS

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THE HIGH END

by Ralph Hodges



IMPROVING ROOM ACOUSTICS

REFLECTION, absorption, and diffusion are the three characteristics of a listening environment and its furnishings that govern its influence on sound produced and reproduced in it. As audio equipment continues to become more accurate and accessible, it is increasingly these three factors that separate a merely competent sonic presentation from a vividly exceptional one.

For most audiophiles, reflections are the bane of the small-room environment, accounting for everything from standing waves to amorphous stereo imaging to migraine-inducing glare and shriek in the upper midrange. Reflections are normally single or double bounces of sound energy from a room's walls or ceiling to opposing surfaces (in the case of standing-wave formation) or to the listener (in the cases of stereo-image confusion and midrange harshness). As with light reflections, a sound wave's angle of reflection tends to equal its angle of incidence. Thus, for higher frequencies at least, geometrical analysis can reveal where a bounce is occurring and where it's going to go. In a good concert hall, sonic reflections are bene-

ficial, because the path lengths are long enough to delay the bounces so that they reinforce desired aural cues rather than interfere with them. In a small, spartanly furnished room, however, reflections are too early, too dense, and too little modified by a spacious, flattering acoustic to enhance listening pleasure. Usually they degrade it.

The direct antidote to reflection is absorption: At identified bounce points, place or hang something that soaks up sound—at least that is one frequently mentioned cure. For higher frequencies you could use panels of acoustical fiberglass of the sort sold for lining speaker cabinets or a decorative rug hung on the wall, perhaps with a lining of fiberglass or hair felt to increase its efficacy.

For lower frequencies the choices are less plentiful and attractive. Gone are the days of the really heavy overstuffed sofa with quantities of lovely absorptive wadding. Today's substitute is a framework of a few sticks topped with lightweight foam pillows, and that accomplishes very little in the low-frequency region. Mark Levinson of Cello recommends futons, the Japanese floor mattresses, as something that could conceivably be hung on a (sturdy) wall for this application. Futons are thick, heavy, inexpensive, and widely available.

Full-band absorption is another thing, however. Any absorber imaginable is frequency selective to some degree, and the acoustics texts in your local library will reveal just how selective most materials are. Sometimes it's possible to clean up a room with just high-frequency absorption, addressing low-frequency problems with speaker placement. But luck has to be with you for this to work, so people have begun looking quite seriously into the technique of diffusion instead. Diffusion puts an irregular room surface where there was formerly a smooth one, which scatters reflections so that their energy is much less concentrated (and therefore much less apparent) than before. It also converts a single reflection into multiple ones spread over a broader time base; subjectively, this more closely simulates a live music experience in a good, if small, auditorium.

The superior acoustics of many older concert halls are often attributed in part to the baroque detailing of their interiors, which afford many opportunities for diffusion. Economic realities tend to make the modern hall a sparer, leaner place, and the usual apartment dweller's listening room is sparer and leaner still. Diffusion can be added with bookcases (which afford some worthwhile lower-frequency absorption as well), open bric-a-brac shelving, and room dividers. Still, an optimum amount of diffusion may be difficult to get without clutter.

Acoustics experts have two main reasons for approving diffusion over absorption in some home settings. First, although practical diffuser devices for living rooms cannot be equally effective at all audio frequencies, they tend to be less frequency selective than absorbers. Second, whereas absorption sufficient to treat specific problems may ultimately make the room too dead, diffusion does not soak up sound energy, just redirects it. In the end, a good-sounding room will probably be found to have significant components of both diffusion and absorption. Achieving the right mix is the trick.

Commercially available devices for home room-acoustics treatment have been proliferating recently. In absorbers, the Sonex foam panels are well established and known to most audio dealers, as are both passive and active "tube traps." A company called RPG Diffuser Systems is now marketing surface-mounting and free-standing modules created by Peter D'Antonio and John Konert. Many of the modules provide both diffusion and absorption, and they have considerable visual appeal for those who appreciate handsomely finished utilitarian architecture. The products have won the virtually unreserved recommendations of such audio luminaries as Dan D'Agostino (Krell), Jack Renner (Telarc), and Mark Levinson. Details can be had from RPG's home office at 12003 Wimbledon St., Largo, MD 20772. Unfortunately, the minimum factory order is \$1,200 worth. Fortunately, some dealers willing to break up a set are beginning to stock the modules. □



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