

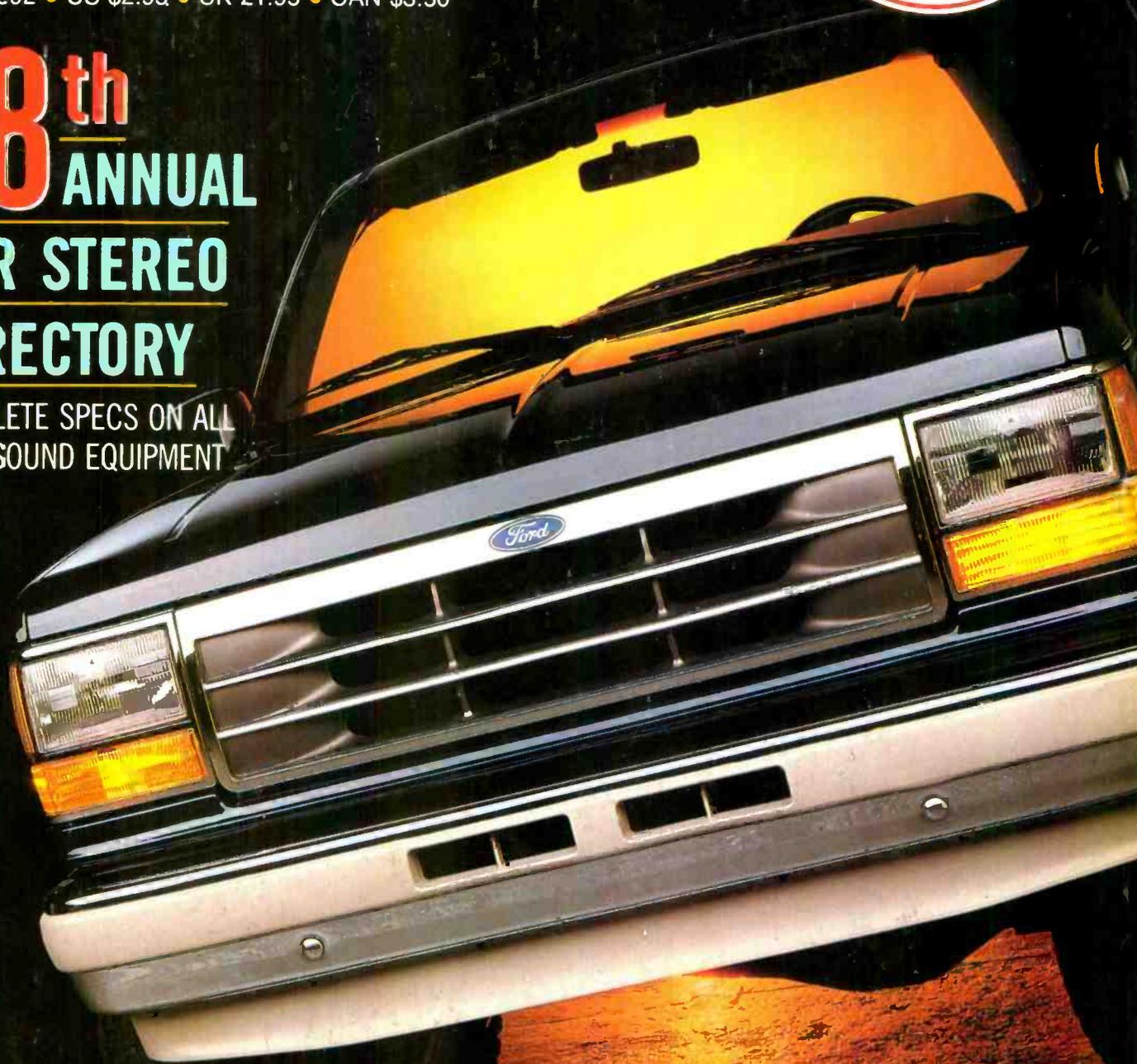
# Audio

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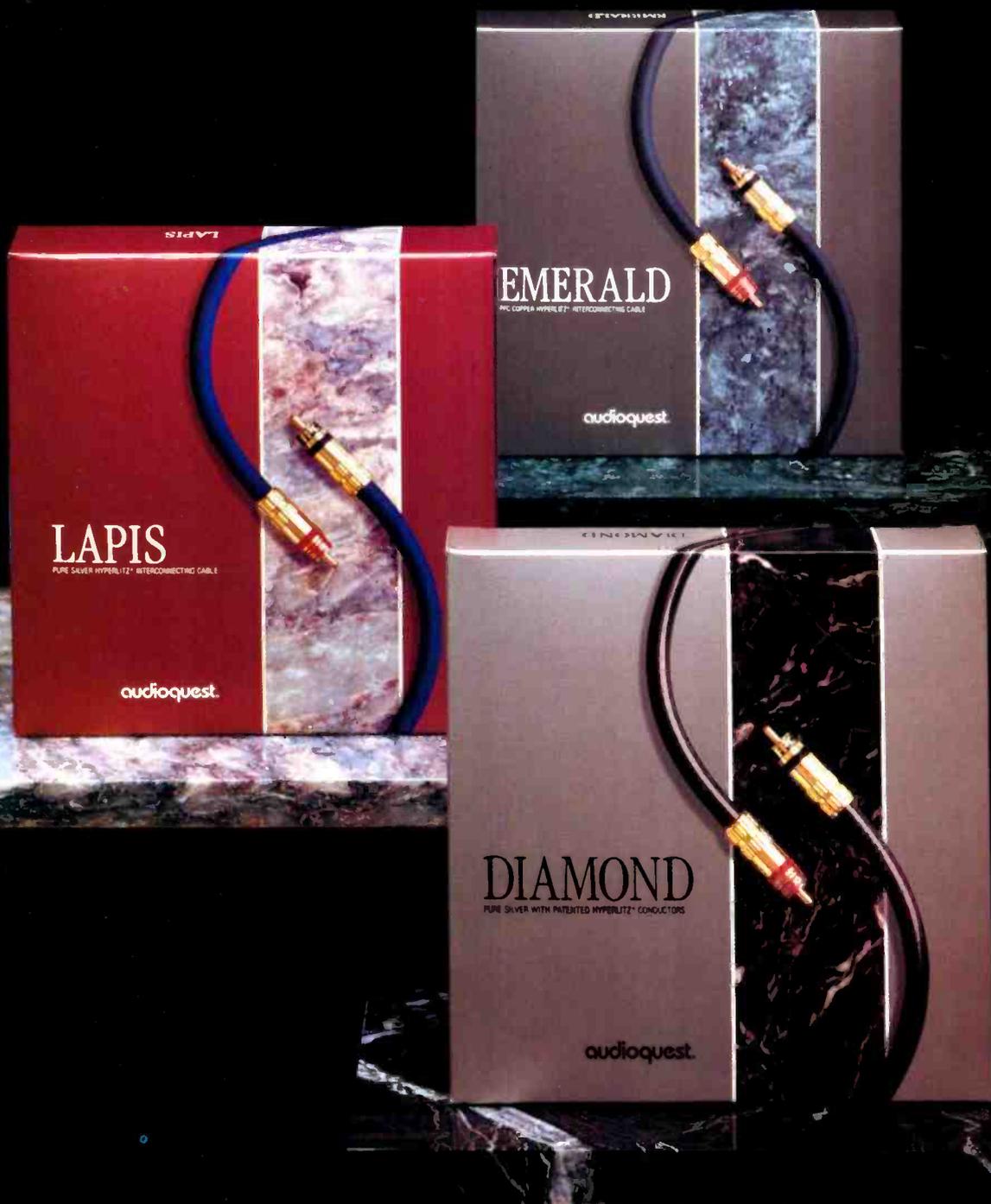
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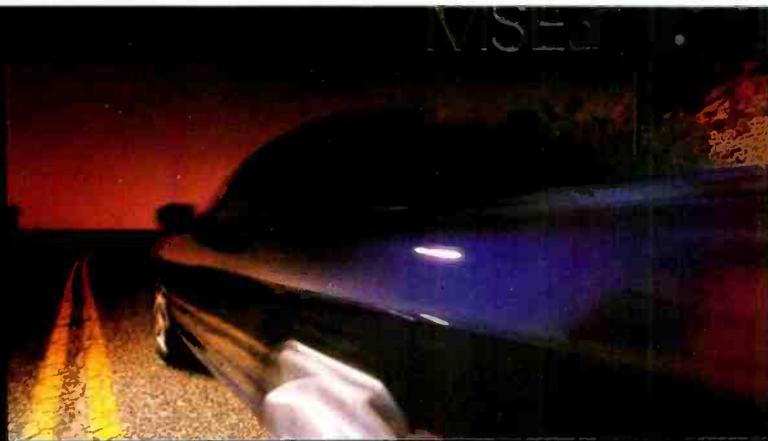
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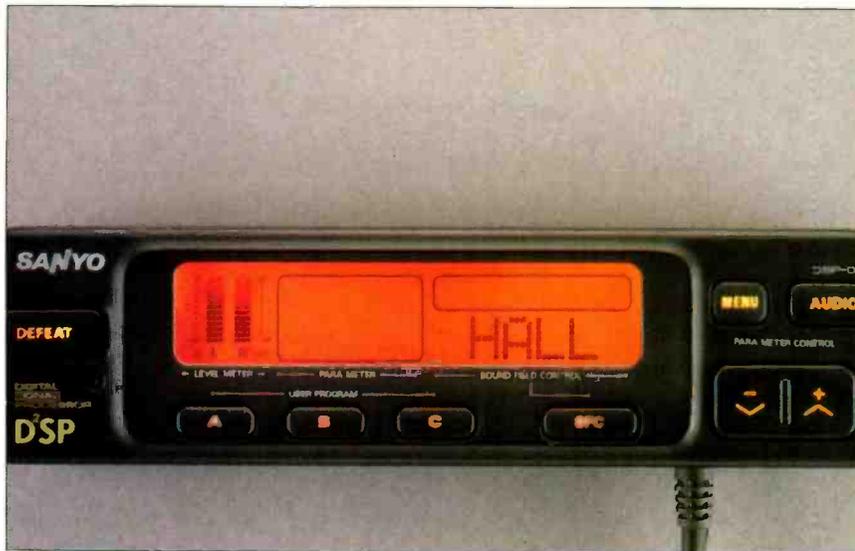
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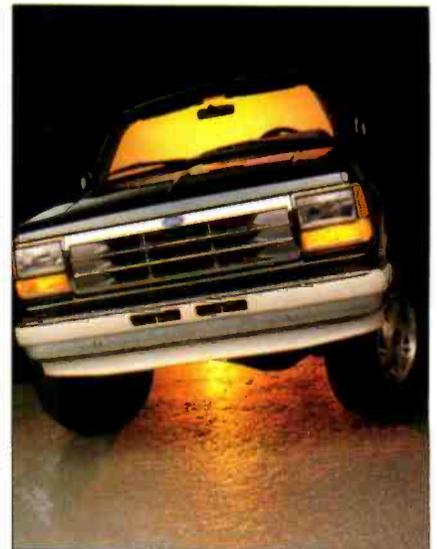
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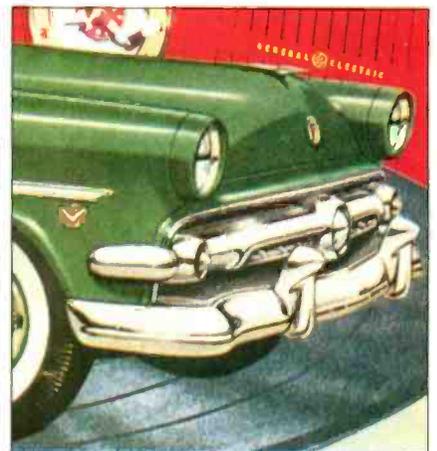
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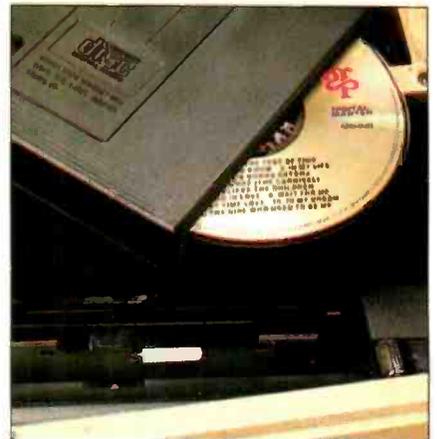
The Cover Subject: 1992 Ford Explorer, courtesy of Nicholas Matarazzo  
 The Cover Photographer: © Bill Ashe

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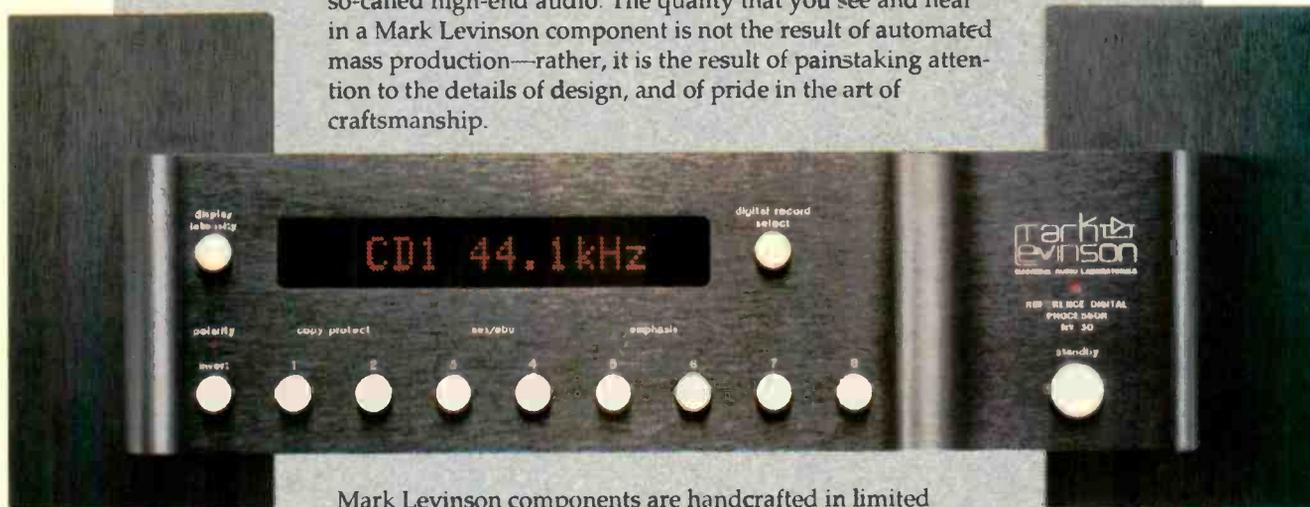
Nº 30

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Mark Levinson® components have earned a reputation for their rugged reliability, uncompromising fit and finish and, above all, superior sonics. We at Madrigal Audio Laboratories are understandably proud of this reputation.

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Mark Levinson components are handcrafted in limited quantities and to exacting specifications. All who participate in their production share the feeling of pride that comes from knowing that they contribute to a product that defines quality.

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The Nº 30 is proof that state-of-the-art digital *and* analog technology can coexist with craftsmanship. The subject here, however, ultimately is music, and the heart of music is in the listening. To fully appreciate the quality of the Nº 30, we recommend that you visit your Mark Levinson dealer for a full audition.



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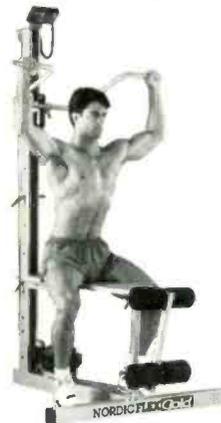
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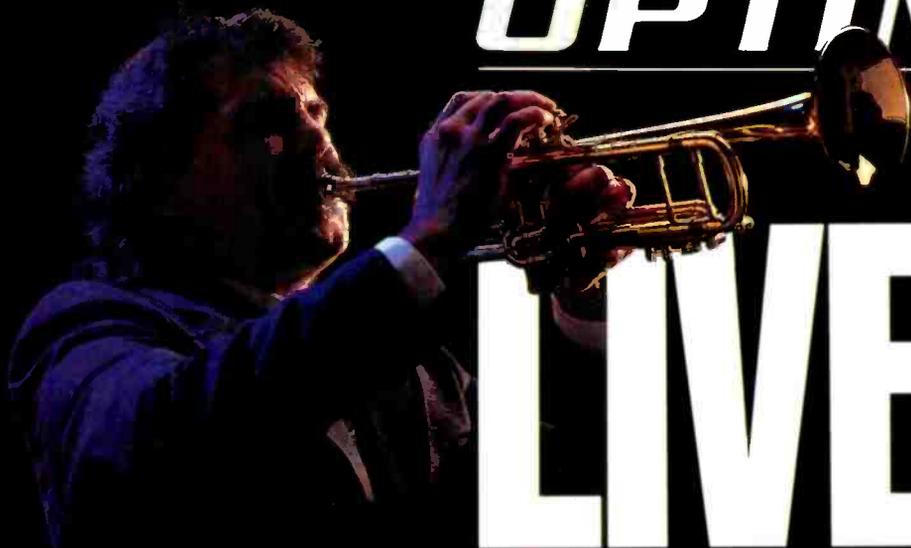
You know those sweet high notes in your favorite music? Well, they're the first to go when you trash your ears by cranking up the volume. Once it's gone, it's gone for good!

So keep the volume in check. Protect your hearing.

We encourage you to enjoy the hot tunes your autosound system can deliver. But, please do so at reasonable noise levels that also respect the rights of others.

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Car Audio Specialists Association/  
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PARA stands for Professional Audio/Video Retailers Association. We are a nationwide organization of independent specialty audio/video stores dedicated to providing our customers with expert advice, quality products, and world class customer service. Our members foster the highest standards of business ethics and professionalism for the protection of the consuming public.

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**We Help You Find What's Right for You!** In today's competitive market, it's easy to get so confused you don't know what to buy. The superstores tout low prices, but there's never anyone who can answer your questions or help you choose a component that will be compatible with what you already own. Because all PARA members specialize in selling music and home video systems, we are committed to educating our employees to understand today's newest products and technologies so they can explain them to you in language that is clear and easy to understand. We are dedicated professionals who love music and want to help you purchase the best sound your money can buy.

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## WHAT'S NEW



### Sherwood Cassette/Receiver

Four amplified outputs (at 25 watts per channel) and four preamp-level outputs allow Sherwood's XR-4814 to be used as a self-contained system or with external amps. It can also control a CD changer. The tuner section has five AM

and 15 FM presets and can automatically store the five strongest local stations. The cassette section has Dolby B NR, a dual-azimuth tape head, music search, and auto-reverse. For security, a small section of the control panel can be removed. Price: \$300.

For literature, circle No. 100



### Kenwood Cassette/Receiver

The KRC-640's tuner section has 24 FM/AM presets with six-station automatic entry and a Priority Radio Preset (PRP) button that recalls a preselected station instantly, even during CD or cassette play. The amplifier

section delivers 15 watts per channel into each of four 4-ohm speakers, or 25 watts per channel into a single pair of speakers, all at 1% THD over a bandwidth of 30 Hz to 20 kHz. It can also be used to control a Kenwood CD changer. Price: \$349. For literature, circle No. 101



### Clarion In-Dash CD/Receiver

The CD section of Clarion's 5770CD features dual one-bit, bitstream-type, D/A converters plus such conveniences as intro scan and memory features which can resume play at the exact spot where play left off or at the beginning of the last track played. The

amplifier section delivers 27 watts into each of its four channels. The most frequently used control buttons are raised and located along the outside edge. An audio mute is triggered when a cellular telephone is in use. The unit is removable. Price: \$499.95.

For literature, circle No. 102

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### Gold Line Third-Octave Analyzer

The DSP-30 portable real-time analyzer from Gold Line offers display scales of 1/4, 1/2, 1, 2, 3, 4, or 5 dB per step, plus the ability to scroll the display up or down through an 85-dB window. It can also display reference and current SPL levels digitally. Signals can be displayed in average, peak, or peak-hold mode, and curves in

the six memories (expandable to 30) can be summed or subtracted. Filter sharpness is selectable from the built-in keypad. Both line and microphone inputs are built in, and an electret microphone is supplied. The unit is powered by 8 AA batteries. Options include ports for a computer printer, RS-232 serial data link, oscilloscope, or CRT monitor, as well as extra nonvolatile memories. Price: \$1,500; RS-232 port, \$315; printer port, \$250; additional memories, \$125.

For literature, circle No. 103



### Sennet Powered Subwoofer

Rated at 20 to 250 Hz, Sennet's SC-80 "Sonic Boom" powered subwoofer

has a compact tube enclosure designed for trunk or hatch-back mounting in cars, or in vans, pickups, or boats.

The woofer driver is an 8-inch, long-throw design, with crossover frequency selectable at 120 or 250 Hz. The amplifier section delivers 45 watts.

Price: \$120. For literature, circle No. 104

### Celestion Subwoofer

Among Celestion's first entries in the car stereo market is the AD 12 subwoofer. The speaker is designed for use in infinite-baffle and compact vented enclosures and has a professional-grade cast alloy basket frame and a 3-inch, high-temperature voice-coil. The 12-inch speaker will handle 600 watts with a sensitivity of 94 dB for 1 watt at 1 meter. Price: \$279.

For literature, circle No. 105



BERT WHYTE



## NOW, THEN

**M**ost people are aware that a Silver Anniversary marks a span of 25 years, a Golden Anniversary is 50 years, and a Diamond Anniversary (sometimes called a "Diamond Jubilee") is 75 years. But how many know that the social arbiters of etiquette have decreed sapphire as the celebratory gem for a 45th anniversary? Since this May issue of *Audio* marks our 45th anniversary, perhaps we should have emblazoned the front cover with a giant "blow-up" of a sapphire stylus! However, since a phono stylus is an artifact of what is now regarded by many as an archaic technology, perhaps it would be inappropriate for a publication that has chronicled the cutting edge of audio technology for 45 years.

As has been noted many times, 1947 can roughly be reckoned as the beginning of the hi-fi era and what has evolved into our present audio component industry. In that May 1947 first issue of *Audio Engineering* (which was our title then), there were articles on square-wave analysis and IM testing and comments on the Altec 603 loudspeaker (raw driver of course). There was a new Fairchild cutter-head, with response from 30 to 8,000 Hz and two new wire recorders! One Edward Tattall Canby was reviewing monophonic 78-rpm records. Primitive stuff by today's standards, but of keen interest to the basically engineering-oriented readers of our first issue. It was several years before the engineering types who read *Audio* were joined by ever-increasing numbers of what became known as "hi-fi nuts." In retrospect, it was those often-maligned nuts or "bugs," whose zealous pursuit of higher fidelity in the reproduction of music established the foundations of the audio component industry.

The advent of the LP vinyl disc in 1949 really spurred the growth of the hi-fi business, and the ongoing advances in audio technology brought ever-higher quality of sound reproduction. By 1960, the hi-fi business was no longer the sole province of the hi-fi

hobbyists, but had become "entertainment electronics." The market had become segmented into "low-fi" mass-market products, "mid-fi," and "high-end audio." The latter category was, and is, a sort of proving ground for the most advanced and innovative new audio technology.

By 1972, the audio components in-

casts, but much of what those industry leaders had to say has surprising relevance in today's audio component market. I've culled a number of those predictions that I think are the most interesting and perceptive.

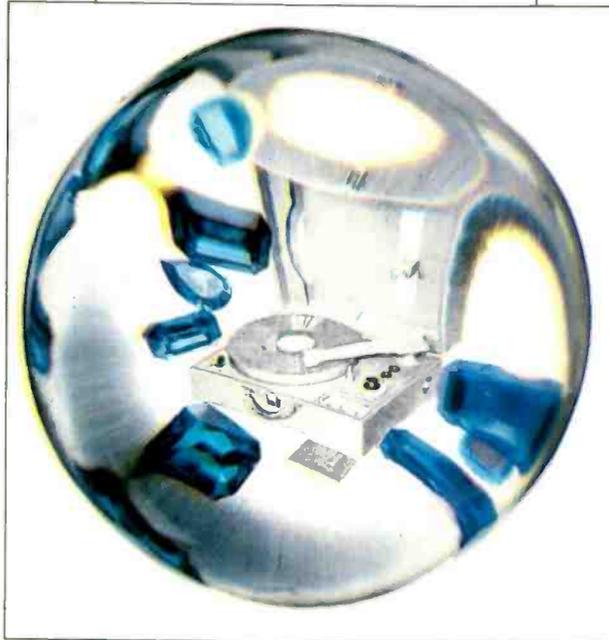
A. J. Hofmann, the president of loudspeaker manufacturer Acoustic Research Inc., observed: "The re-creation of the ambience of the concert hall through four channels will make slow but steady headway. Once the system and hardware have been settled, there will still be the resistance of the mistress of the house to having four speaker systems in the living room. In my opinion this is the greatest long-range hindrance to universal multi-channel reproduction in the home.

"There is room for drastic improvement in TV sound systems, and it is logical that this would be a fertile ground for hi-fi expansion. There ought to be multi-channel high-fidelity TV sound to complement the flat TV screens that will be here."

Hofmann was talking about quadraphonic sound, which was in vogue then, but obviously, the Dolby Surround home theater of today often encounters the same kind of resistance from the "lady of the house." There are major differences, however, between the quadraphonic layout of 1972, which was pretty much the domain of the audiophile hobbyist, and the Dolby Surround home theater, which, with the visual elements of the TV, is something that can be shared and enjoyed by the entire family.

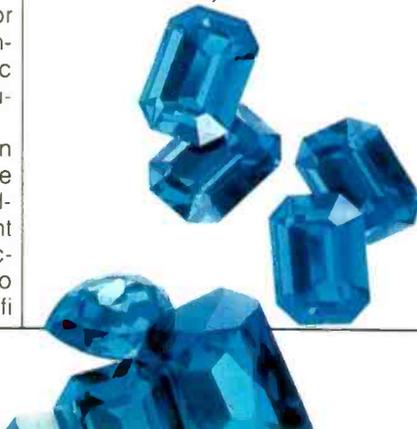
Joseph N. Benjamin, president of Benjamin Electronic Sound Corp., predicted that "tomorrow's juvenile will be surrounded by sound in his own cocoon (just as the narrator in Anthony Burgess' *A Clockwork Orange*), and this may demand as much as 12-channel reproduction. This will certainly be available from tape, but possibly from other program sources as well in the future."

Benjamin also anticipated multi-channel audio reproduction, although I doubt his 12 channels are practical, or



industry was firmly in place and flourishing mightily. *Audio* magazine had grown along with the industry, and quite understandably, made much of its 25th Silver Anniversary. I wrote a retrospective view of the hi-fi phenomenon in that May 1972 issue, and in another feature, a group of prominent executives in the audio industry were asked to make some prognostications on what the audio scene would be like 10 years in the future, in 1982.

Well friends, this 45th anniversary issue makes it 20 years since those fore-

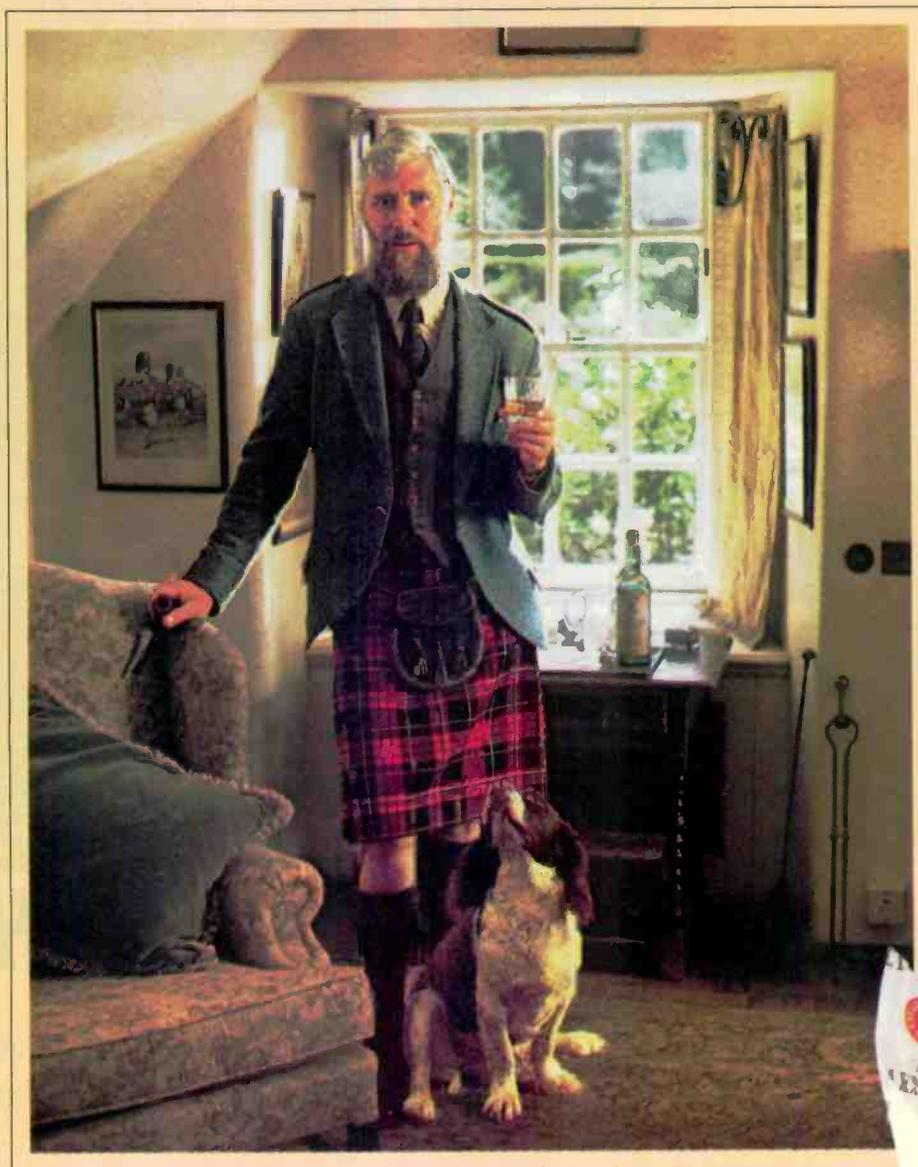


Photographs: David Hamsley



*“If you cannot drink The Glenlivet®  
the correct way, I beg you  
to drink some other Scotch.”*

*—Sandy Milne,  
our Resident Sage.*



Sandy Milne sampling the goods

At the pinnacle of Scotches sit the single malt whiskies. Slightly above them sits The Glenlivet, the father of them all.

At this topmost level of Scotch, there is a ritual to the drinking of it.

“Ice massacres the smooth, mellow taste,” says our Sandy Milne somewhat testily. “So, no ice. All you want is a drop or two of water to bring out the ‘nose,’ or aroma. Spring water, if you’ve got it. Cool, not cold. And use a fine crystal glass, gently warmed in a cupped hand to release the full bouquet.”

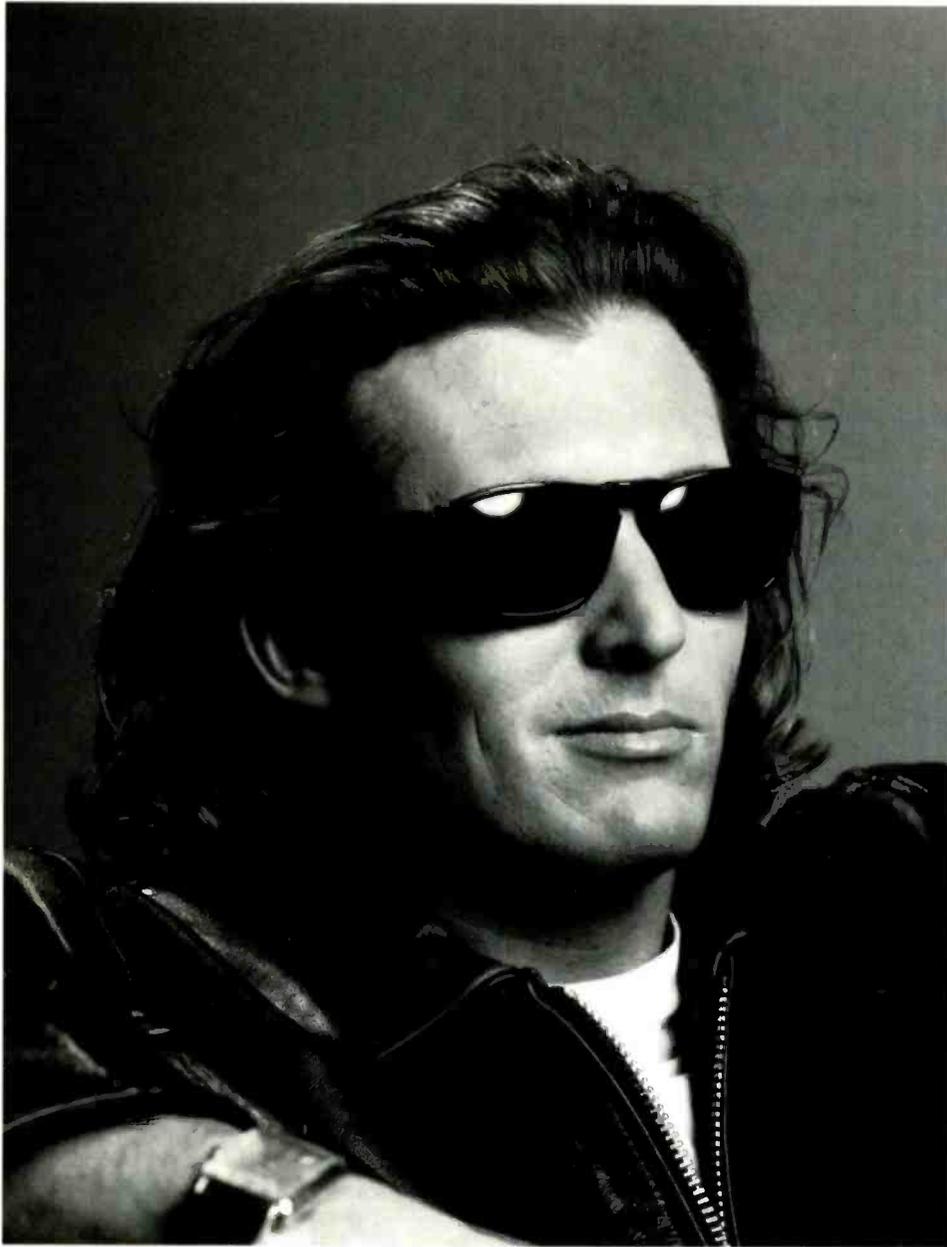
“Save the ice cubes and big splashes of water for other Scotch,” advises Sandy, “where it hardly matters a hoot.”



— What is a single malt Scotch? —

A single malt is Scotch the way it was originally: one single whisky, from one single distillery. Not, like most Scotch today, a blend of many whiskies. The Glenlivet single malt Scotch whisky should therefore be compared to a château-bottled wine. Blended Scotch is more like a mixture of wines from different vineyards.

**The Glenlivet.  
The Father of All Scotch.**



## ***NORMAL BIAS***

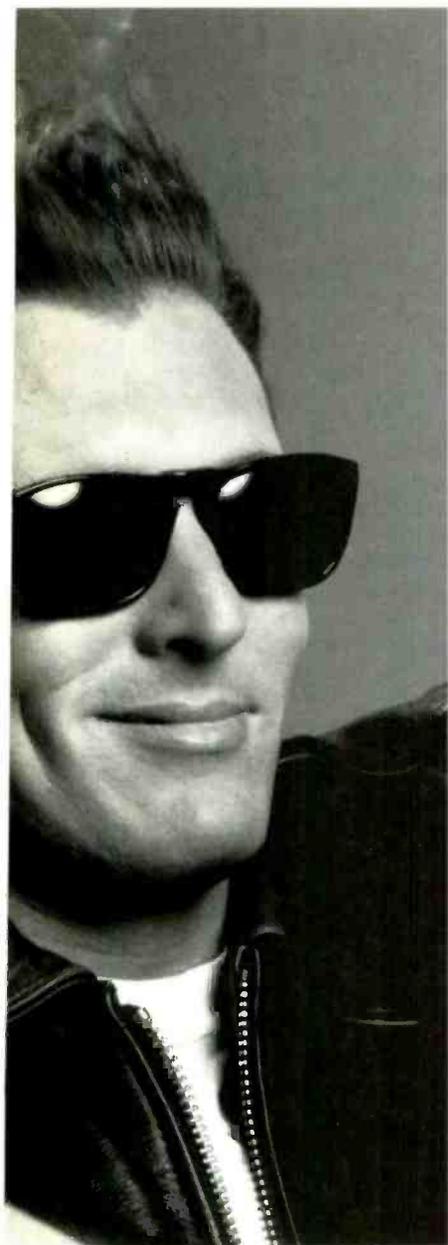


## ***HIGH***

Maxell has a tape for those whose passion for music isn't normal or high, but intense.

The tape is XLII-S. The power behind it is Black Magnetite—a higher output magnetic material harnessed by Maxell engineers.

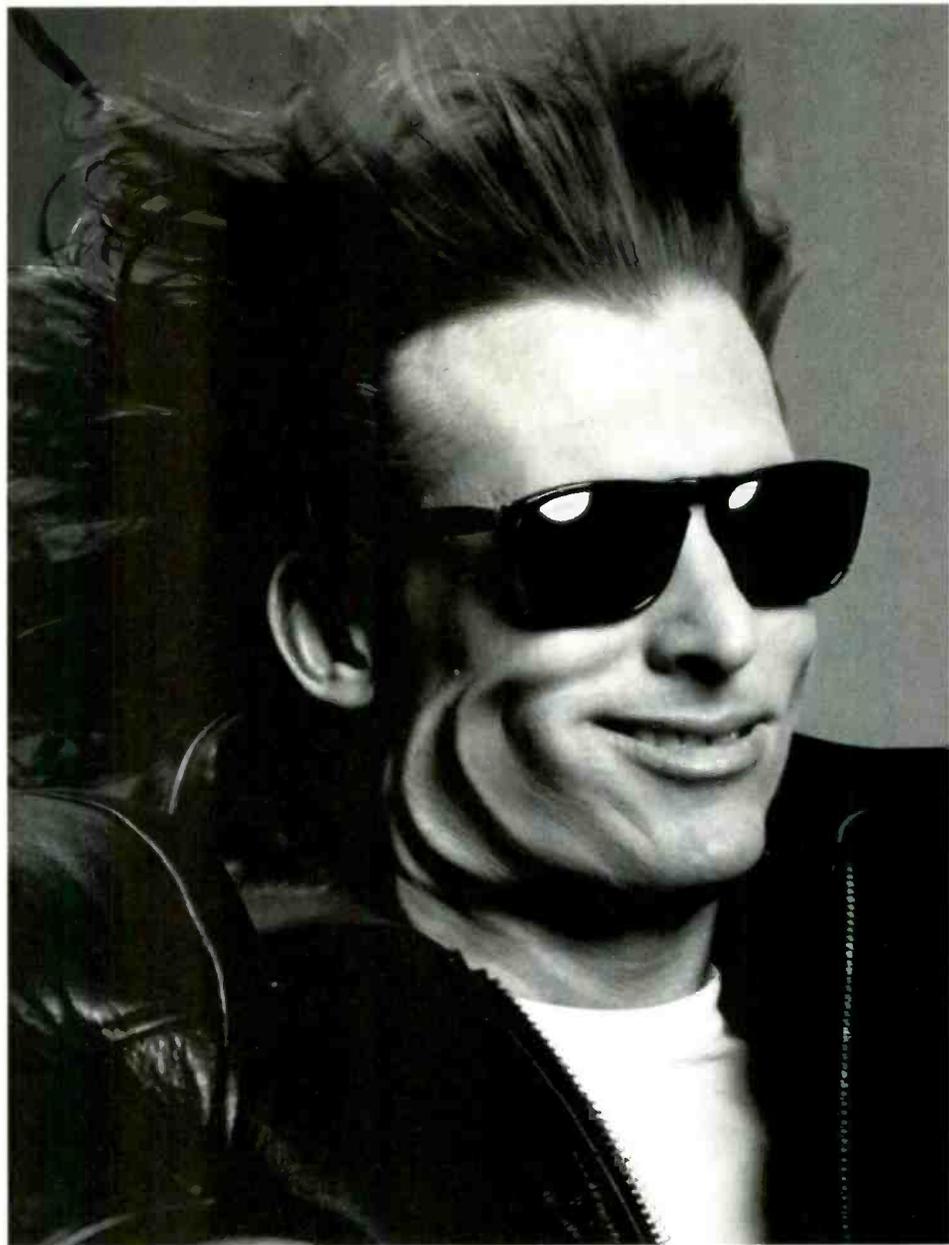
With 13% greater power than



## **BIAS**

the magnetic coating on any normal or high bias tape, Black Magnetite helps XLII-S deliver higher maximum output levels and a wider dynamic range.

This might explain why CD Review magazine called XLII-S "head, shoulders and torso above the rest"



## **BLACK MAGNETITE**

in their analysis of high bias cassettes.

"You'll know you're hearing something good," said their reviewer, "when your heart leaps into your throat."

That's not normal. That's not high. That's Maxell XLII-S with Black Magnetite.



**TAKE YOUR MUSIC  
TO THE MAX.**

Our first issue covered primitive stuff by today's standards, but it was of keen interest to the engineering-oriented reader.

even necessary given some of the wizardry possible with digital signal processing.

Simon Sheib, president, Avnet, Inc. commented that "the ability to produce fine equipment, at prices which more and more people can afford, will be the thrust of the next 10 years. A decade

ago the general public was just becoming interested in high fidelity. A much larger segment of this public is now interested. Within 10 years, a geometrically larger proportion of the population will discover the pleasures of good sound, as well as the fact that they can afford it."

Avnet owned British Industries, well known for Garrard changers and Wharfedale speakers. Sheib's prediction was right on the mark—audio equipment did indeed become available to a much larger segment of the public, at lower prices. Further, even today's \$399 rack system can reproduce sound with remarkably good quality.

Herb Horowitz, president of Empire Scientific Corp., got right to the point: "There will be four channel and even more channels as high fidelity heads towards the 1980s. Sound will come from all corners of the room, from the ceiling and from the floor. The listener will feel as though he is in a womb of high fidelity. . . . Video tape is here; video records are just around the corner. Then, we'll blend audio and video; audio-visual effects will be a part of the sound."

Horowitz was also on the multi-channel surround sound bandwagon, but he went so far as to include sounds from ceiling and floor. This, of course, describes the ideal "periphonic" sound of the Ambisonic process I reported on in the March 1992 issue of *Audio*.

Hi-fi pioneer Avery Fisher, president of Fisher Radio, could foresee the "integration of the complete stereo receiver unit in a home electronic control center serving also for paging, security, and TV video recording and playback; the use of Class-D amplifiers in which the operating frequency is between 400 kHz to 1 MHz, allowing a great reduction in power dissipation, the size of heat sinks, and the unit."

Fisher clearly anticipated today's audio-video control centers, but his prediction on Class-D amplifiers has yet to be realized, after abortive attempts by several manufacturers.

RCA Laboratories' Dr. Harry F. Olson, who contributed so much to our understanding of microphones, loudspeakers, and acoustics, sagely observed that "auditory perspective and acoustic ambience are areas in which tremendous improvements in performance will be made."

Olson would be pleased with our current DSP units for concert hall acoustic synthesis.

S. Mabuchi, vice president/engineering for Sony Corp. of America,

# WORKS OF ART FROM AUDIOQUEST



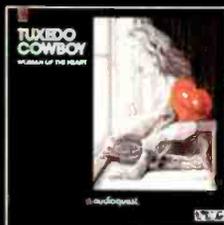
◀ "...a wicked slide guitar and harmonica approach honed to suit his passion."  
-Living Blues



◀ "Blistering fretboard pyrotechnics. Misterio is a must hear."  
-Sounds Like...

Robert Lucas AQ 1001

Strunz and Farah AQ 1002



◀ "Country and western for a new age- it works! Gorgeous. A+/1\* (highest rating)."  
-HiFi News & Record Review (UK)



◀ "Raw and direct- puts the charge back in the battery."  
-Southland Blues  
"If you love the blues then you'll love this band."  
-Willie Dixon

Tuxedo Cowboy AQ 1003

Robert Lucas: Luke and The Locomotives AQ 1004



◀ "Good understanding of Baroque... sensitive handling of ornamentation"  
-High Performance Review



◀ "A seductive tapestry of dynamics and textures from three acknowledged masters of world music and jazz."

Trio Galanterie AQ 1005

MOKAVE (Moore, Karush, Velez) AQ 1006



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very perceptively stated that "theater type entertainment in the home is very close to us now, and therefore we cannot neglect the video art when we discuss the future of the audio art. These two arts will go along hand in hand from now on. . . . I feel very strongly that the ultimate status of the audio art in home entertainment and educational applications relies on a good combination with the visual art. The video equipment should have the best available audio capability. Four-channel audio can create realism of the concert hall. However, if it is accompanied with the visual image of the player of the music or the concert hall, it will add more realism. The reverse is also true; a good visual image with good audio will create more realism than the visual image alone."

Mabuchi's prediction was probably the most accurate, as witnessed by the now well-established concept of Dolby Surround Sound.

I feel it is worth commenting that many of the prognosticators in *Audio's* 25th anniversary issue anticipated the integration of audio and video. Now in our 45th year, *Audio's* mission remains the same—the accurate, timely, and we hope, entertaining reporting on all aspects of the art and science of audio engineering and the reproduction of sound. Nonetheless, we recognize the ongoing and increasing interaction of audio with video, and thus we acknowledge an obligation to keep our readers informed on pertinent developments in both fields.

Our 50th anniversary is just five years hence in 1997. I offer my own prognostications on what we might expect: Digital-based HDTV will be in place. LCD projectors will be highly refined and offer high brightness and contrast ratios along with 1,125-line resolution—and all this without visible pixels and with no need for convergence adjustments. Digital signal processing will enable automatic equalization of loudspeakers in any acoustic environment. There will be full, discrete, SMPTE six-channel surround sound available from LaserDiscs on some updated optical/digital format.

By our 60th anniversary, we may even have music playback from "Mega Memory" chips with no moving parts whatsoever! If this is not yet a reality,

we may at least be all linked together by fiber-optic interactive networks, with access to central audio-video "entertainment" libraries at the touch of a button.

In these depressing, recessionary times, audio and video equipment might not carry much weight in respect

to economic priorities, but there is no denying the solace and therapeutic value of great music and pleasing video vistas!

Just to show you what kind of an optimist I am, it occurs to me that on *Audio's* 75th Diamond Jubilee, I'll only be 102! 

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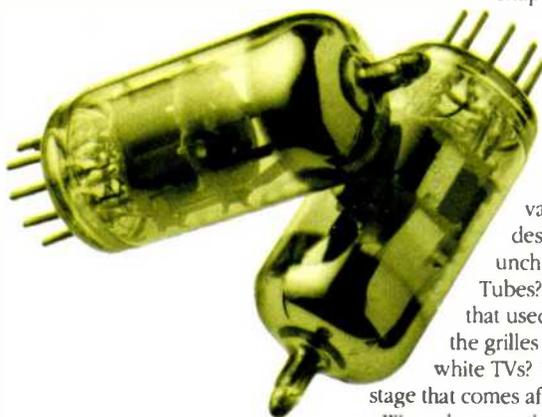
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*Vandersteen loudspeakers are priced from under \$700 per pair.*

# CAN TUBES WARM UP CD SOUND?

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



Our new SD/A-490t has a clock that "ticks" 33 million times a second, multi-stage noise shaping, pulse width modulators and enough other edge-of-the-art circuitry to finally qualify us for entry into the hallowed Compact Disc Techno-Jargon Hall of Fame.

But it also includes two vacuum tubes whose classic design has remained unchanged for over 35 years.

Tubes? Those warm glass things that used to glow cheerily through the grilles of old radios and black & white TVs? Yes. In an important circuit stage that comes after all the digital wizardry.

We and many other critical listeners believe that this anachronistic addition to an already excellent CD player design significantly enhances its sound. Read on and decide for yourself.

## THE AMPLIFIER THAT DOESN'T AMPLIFY.

Between a CD player's D/A converter and external outputs is circuitry called a buffer amplifier stage. When you hear the word amplifier, you think of something which makes a signal louder. But that's not a buffer amp's purpose. In fact, contrary to popular lore, a CD player's buffer amplifier doesn't boost the signal strength at all — the final output of a CD player's D/A converter already has sufficient voltage to directly drive a power amplifier!

Instead, the buffer amp is a *unity gain* device which 1) increases output current, and 2) in the process, acts as a sort of electronic shock absorber.

A signal emerging from a CD player's digital-to-analog conversion process has sufficient voltage but insufficient current for proper interaction with a preamplifier or power amp. By acting as a current amplifier, the buffer stage helps lower impedance to a level that's

compatible with modern components — about 50 ohms in the case of the SD/A-490t.

At the same time, the buffer stage helps isolate the relatively fragile D/A chip set from the nasty outside world of demanding analog components.

## TUBES VERSUS SOLID STATE.

All compact disc players have buffer amplifiers. But more than 98% of them use solid state devices for this stage: either integrated op-amp circuits or discrete transistors.

A handful of hard-to-find, esoteric designs in the \$1200 to \$2500 range employ one or more tubes instead. As does our readily-available \$699 SD/A-490t. For fundamental physical reasons, tubes have different transfer function characteristics than transistors. When used in ultra-expensive, audiophile preamplifiers and power amplifiers, their sound is variously described as "mellower", "warmer", "more open and natural" or simply "less harsh than solid state".

At the heart of these perceived differences are three basic facts:

1. Tubes produce *even-order* distortion (i.e. 2nd, 4th, 6th harmonics, etc.) while transistors create *odd-order* distortion, particularly 3rd harmonics which are less psychoacoustically pleasant.

2. In a buffer stage, a tube acts as a pure Class A device, which is considered the optimal amplifier configuration. Op-amps function as Class A in and Class B out, with potential crossover distortion as voltage swings from positive to negative.

3. Tubes "round off" the waveform when they clip. When over-driven, solid state devices cut off sharply, causing audible distortion.

## THE SD/A-490t'S OUTPUT SECTION

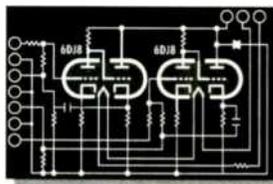
Our new CD player uses two 6DJ8 dual triodes (each literally two separate tubes in a single glass envelope) placed between the digital-to-analog converter and a motorized volume control.\*\*

Operated at less than 30% of their maximum capacity, these tubes achieve a highly linear output voltage with very low static and transient distortion while providing very high dynamic headroom.

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

## A "LESS IS MORE" DIGITAL APPROACH FOR CLEANER ANALOG SOUND.

It would be pointless to have a tube output stage if the digital circuitry which precedes it





The Carver SD/A-490t.  
At \$699, its suggested retail is \$500 less than  
the nearest competitor with tube output\*\*\*

wasn't first rate. The SD/A-490t uses Single-Bit D/A circuitry to eliminate a form of exceedingly audible distortion inherent in most current CD player designs, and to provide better signal linearity than ever before.

If you've read current CD player brochures, you've probably stumbled across descriptions of de-glitcher circuits, laser trimming and even 22-bit converters. All these are merely fixes, applied to the same basic kind of D/A converter in an attempt to overcome built-in shortcomings.

In contrast, the SD/A-490t uses a completely new technology which avoids many of the problems that older approaches have struggled to surmount. We'd have to buy a whole section in this magazine to fully explain the differences (if you're interested, call 1-800-443-CAVR for an appropriately long and detailed brochure), but here's a short synopsis.

Traditional converters require 16 separate reference circuits, each of which must be accurate to one part in 65,536 — but, due to the realities of mass production, rarely are. If they're not "dead-on", an unpleasant form of noise called *zero-cross distortion* is produced. Because Carver's Single Bit D/A Converter transforms a 16-bit signal into a 1-bit pulse signal array, the "ladder" of 16 ultra-high-precision reference devices is not required: In effect, the SD/A-490t need only manipulate a stream of varying-width on/off pulses instead of having to accurately create 65,536 different amplitude levels at all times.

Zero-cross distortion is non-existent, and the SD/A-490t's Single Bit converter is able to decode linearity in excess of 115 dB below peak level with exceptionally low noise. You'll particularly notice the difference in the heightened purity and clarity of music during very quiet passages. Every nuance, intonation and harmonic of the original recording is there. Yet

"digital" harshness is noticeably absent even before it enters the SD/A-490t's mink-lined tube stage.

### AN ARRAY OF FEATURES AS RICH AS ITS SOUND.

We've designed the SD/A-490t to be both useful and easy-to-use. 21-key front panel or remote programming. Fixed and variable output. Programming grid display. Random "shuffle" play.

Variable length fade. Automatic song selection to fit any length of tape. Even index programming for classical CD's.

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

### BRING YOUR TWO BEST CRITICS TO A CARVER DEALER.

It's tempting to further regale you with how well we think the SD/A-490t's tubes and Single Bit circuitry improve the sound of a compact disc. But your own ears should be the final arbiter of quality.

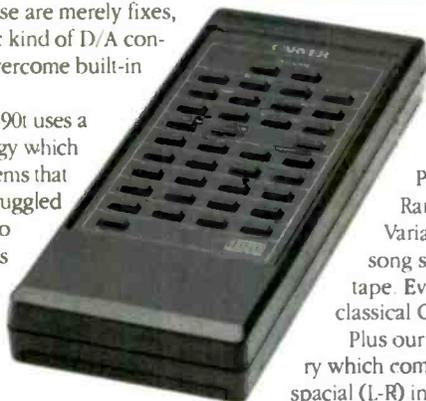
Thus you are invited to bring a few familiar compact discs down to your local Carver dealer and compare for yourself, hopefully creating your own superlatives in the process.

Suffice it to say that almost all critical listeners not only are able to hear a difference, but prefer the sound of the remarkably affordable SD/A-490t's dual triode transfer function.

\*A device which neither amplifies nor attenuates a signal is said to have unity gain. In other words, what goes in comes out unchanged. Or does it?

\*\*Remote control variable output is a wonderfully convenient feature, but it would be pointless to eliminate solid state circuitry in the buffer amp stage and then use a solid state circuit for the final gain attenuator. So the SD/A-490t changes volume the old fashioned, physical way: a nice, clean carbon potentiometer, in this case, physically rotated by a small motor.

\*\*\*Source: 1990 *Audio Magazine Annual Equipment Directory*.



### THE SD/A-490t

- Dual 6DJ8 Vacuum Tube Output Stage
- Over-sized Disc Stabilizer Transport
- 24-Track Programming with 21-key front panel & remote input
- Music Calendar Display
- Indexing
- Random Play
- Motorized Volume Control
- Time Edit/Fade Taping Feature with user-variable time parameters
- 2 to 10 Second Variable Length Fade
- Exclusive Carver Soft EQ (Digital Time Lens) circuitry
- Optical and Coaxial
- Digital Outputs
- 3-Inch (8cm) CD Compatibility



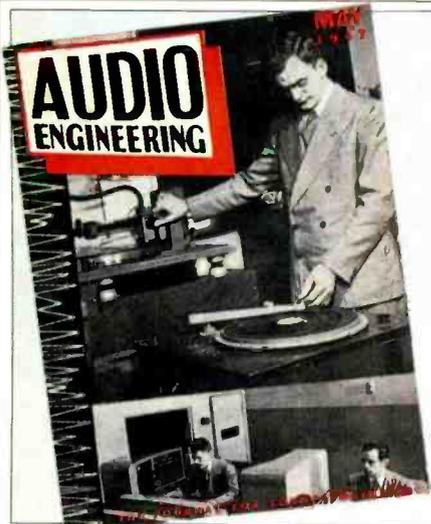
*Bob Carver*

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## AN APPETITE FOR AUDIO



**T**he first issue of *Audio* was published in May of 1947 under the name *Audio Engineering* and it was known by this name until 1954. As a past president of the Audio Engineering Society (AES), I am keenly aware of the fact that C. G. McProud, editor and publisher of the original *Audio Engineering*, offered the magazine as a platform for some of the papers generated for early Society meetings. When the AES initiated its own *Journal* in 1953, *Audio* began a life of its own.

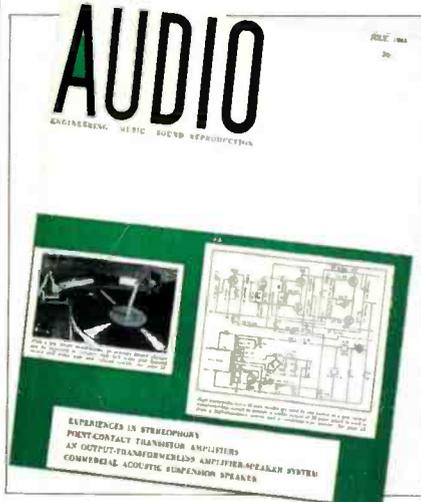
When I went to work for Paul Klipsch in 1956, I became fascinated with his collection of *Audio* issues. With my limited knowledge of engineering at that time, *Audio* proved to be just about the only portion of Paul's vast library I could begin to understand. I stayed many evenings after work just to thumb through them, learning as I went.

In 1958, I enrolled in electrical engineering at the University of Texas and supplemented my GI Bill of Rights by working as an organist/choirmaster. A member of the choir who was also an audio buff had a complete collection of *Audio*. My fascination continued and no doubt contributed to my own career commitment to the field.

In those early days, high fidelity in the home was an esoteric thing. Most people had "console phonographs" made by Magnavox, Philco, General Electric, or RCA, and only true audio buffs had what were called "separates," most of them designed and built by American entrepreneurs. Such brands as Klipsch, Bozak, Acoustic

Research, and James B. Lansing dominated the loudspeaker field, while H. H. Scott, McIntosh, and Marantz dominated electronics. And who over 50 can forget Rek-O-Kut turntables and Pickering cartridges? And certainly let's not ignore the gigantic strides made by Emory Cook and Ewing Nunn as they generated new software for the fledgling industry.

*Audio* was the ultimate buff book (the *only* buff book for many of those early years), and in it you found articles on construction of home systems, amplifiers, and the like. With the advent of stereo there were detailed articles on cutting heads and the new discs. In fact, when I edited the *Stereophonic Techniques* anthology in 1986 for AES, I requested that the AES editorial office contact *Audio* for permission to include five papers from *Audio* from the '50s.



For several years during the '50s and '60s *Audio's* covers featured a unique installation each month, with copious details in the text. Many of these whetted my appetite, and it wasn't til' many years later that I finally entered that league myself. Imagine reading an article on Sherman Fairchild's home studio in his Fifth Avenue duplex, and ever dreaming that you would own its equivalent in the 1980s!

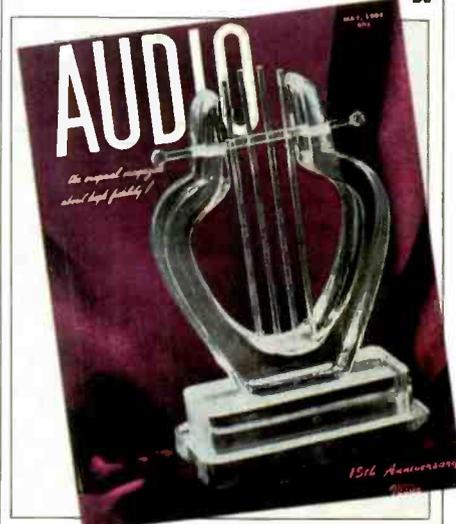
As time passed, the emphasis of the book changed. Stereo had become something for the masses, and high quality sound was within the reach of most people. Product reviews became an important part of the overall picture, and *Audio* virtually pioneered what we might call the *technical review* for

which detailed measurements provided the basis. A major step forward for the magazine in the early '70s was getting Richard Heyser to do the first in-depth loudspeaker reviews the industry had ever known, either in the United States or elsewhere. That tradition continues with Don Keele.

I believe that *Audio* introduced the first industry-wide equipment directory back in the '50s and it has since become the bible of the industry. The 1991 directory weighed in at 376 pages.

With its predominantly technical background, one might think that *Audio* would favor objective evaluations to subjective ones. Traditionally this was the case, but in recent years the magazine has given both a more equal balance, realizing that there is much that cannot easily be measured. The "Auricle" section has become the vehicle for reviews that go well beyond the technical domain, and the writings of Anthony Cordesman and Bascom King in this important area have been illuminating.

On the subject of writers, no magazine in the field has had so many "long timers" as *Audio*. I was recently thumbing through some issues from the early '70s and found it notable that Bert Whyte has been writing "Behind the Scenes" for more than two decades. Ed Canby's "Audio ETC" goes back perhaps 15 or 20 years earlier, and his reviews began with the first issue. I hope I can stick around as long—and be as relevant as these men. **A**



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**Blind Faith** (Polydor) 423•673

**Scorpions—Crazy World** (Mercury) 423•608

**Dire Straits—On Every Street** (Warner Bros.) 428•359

**Keith Sweat—Keep It Comin'** (Elektra) 431•130

**John Mellencamp—Uh-Huh** (Riva) 423•574

**Eric Clapton—Time Pieces** (Polydor) 423•467

**Jon Bon Jovi—Blaze Of Glory** (Mercury) 423•400

**John Williams—I Love A Parade** (Sony Class.) 422•717

**Crowded House—Woodface** (Capitol) 422•253

**Skid Row—Slave To The Grind** (Atlantic) 422•220

**Allman Brothers Band—Shades Of Two Worlds** (Epic) 422•212

**Bad English—Backlash** (Epic) 422•170

**Kenny G Live** (Arista) 401•505

**The Psychedelic Furs—World Outside** (Columbia) 422•055

**Marc Cohn** (Atlantic) 421•552

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**Another Bad Creation—Coolin' At The Playground Ya' Know!** (Motown) 419•903

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**Wilson Phillips** (SBK) 406•793

**Harry Connick, Jr.—We Are In Love** (Columbia) 406•645

**Whitney Houston—I'm Your Baby Tonight** (Arista) 411•710

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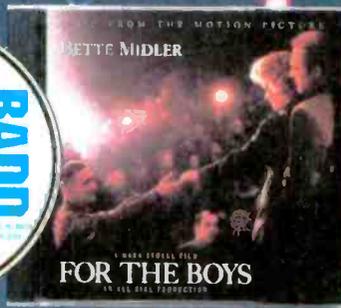
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## THE WAY WE WERE

It's been 45 years! I regret that early in 1947 I missed a sort of Olympic gold—I was not in our very first issue. (You're always a gold medalist to us Ed, and you were in the first issue, yes, right from the beginning.—E.P.) This month is our 45th anniversary. We appeared in May 1947 under our original name, *Audio Engineering*. It was the same mag as today and, to my knowledge, never an issue missed since. The "Engineering," clumsy on a cover, was gracefully retired, but not the engineering inside. So we became *Audio*, surely the first of our sort to extend coverage all the way from the professional out to the consumers of the products and processes we discussed. And towards the music lovers who wanted better sound for their musical ears. That's where I came in.

Let me give you a first-hand memory/feeling for those days, almost two years after the war that left the U.S. unharmed at home but stopped cold, as we had not been stopped since 1865. Reconstruction it was then called. Postwar frustration would be a better word for 1945, and on and on. Continued deep unrest, after the peace. First it had been fear we would be involved, then war itself, the anxious waiting for dismal news—by 1945 we really festered in a way I remember all too well. Too long! We could not remember anything else, and now we wanted the big change, and quick. Anxiety! It had been with us for years and years, going back long before that early crisis in 1938 called Munich. After that, we knew the inevitable in our hearts, and it came.

We have similar feelings of dread today, but we can more easily feel we are exempt. Oh, it could happen here but it's been a very long time. Maybe it won't. No such mild hopes in those years! Things moved much too fast. We still could wish that if we just stayed away, even after war began, we might be left alone. But let me tell you, the tension of doubt was reinforced every day, though we denied it. And so life went on as usual. Far into actual war.

In early 1941, I guess, my father got a bright, new, green 1941 Dodge sedan. It really wowed us, so modern and, somehow, so cheery. *Maybe everything will be OK*, it said. It even had the beginnings of an automatic



transmission, a fluid clutch. If you got to a hill, you had to shift manually into second. If you didn't, the car would come to a stop and then gently roll backwards while the engine plugged away forward.

Our next car came along 11 years later. Another Dodge, in 1952. It had half-automatic transmission but otherwise was virtually unchanged. Progress? Hardly. That's what was coming up for us. *Peace—and no change.* Frustration. Deep and maybe selfish. After all, we lived okay, the fighters were back home, the carnage over. But we wanted, selfishly, a lot more from peace! We wanted **RELEASE** from anxiety, and we wanted it in worldly goods. So we celebrated V-E Day and V-J Day, almost hysterically, and then slumped right back. No change, nothing new. Not for us at home. Not for those who returned expecting the best. Euphoria melted into despair, as we inched, millimetered, into the time of peace.

Unhappily, the delays hit the American public as just too much to bear. The tensions of waiting so long for the fruits of peace, tensions so long held tight, channelled into worthy causes during war itself, now had no reason.

But they stayed on. The status quo was still quo. A dog's age! Why, WHY, couldn't we *get going*? Selfish of us and unthinking. But the longer the seeming stalemate lasted, the worse did we feel. In times like these, people don't think, they emote. Americans simply would not understand, as consumers, why there weren't instant floods of consumer goods, top to bottom, after such an endless dearth of anything really new and interesting.

Yes, in the long, early postwar years there were itty-bitty bits of progress. Even new cars. But these were 1941 models with new radiator grilles. Such a gut disappointment. I remember the return of metal file cases, instead of wartime wood. *That* was progress? Big-city trolley cars, brought back during the war, were again retired. Big deal. You could buy toothbrushes. There was unrationed gas—if you still had a prewar car. But who did?

I remind you that during the war the entire broadcast and record industry, base for our audio, was on hold, though operating. That included the just-established FM system, where I found myself working as previously described. The Major, Edwin Armstrong, was on the way to a huge new FM



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In 1947, the audio field was suddenly flooded with new records, turntables, new phono cartridges—we were propelled with excitement.

network, to rival the AM powers. He had twisted arms at big electrical outfits to build high-quality FM sets under his direct supervision. There were FM stations blossoming everywhere, right up to the war. He even had two huge super-power FM transmitters built, near New York and Boston, and microwave connections set up. But on December 7, 1941, all this was stopped on a dime. The same for the record industry when the shellac supply for 78-rpm records was cut off. Turn in an old disc for every new one you bought.

When peace came at last, more frustration. Nothing seemed to happen. I was well established in FM, but our hopes went right on being future. Wait, wait, WAIT. Four years of war; then right on, the same. When would we expand? Tension, anxiety, just as it had been in one way or another since the middle '30s. It was a deadly time, coming so agonizingly on top of the years before peace.

As told here already, in June of that sad year, 1946, our FM station expired on practically no notice. I was left minus a career, completely at sea. So were plenty of other 1946 hopefuls. Yes, momentous things were going on behind the scenes, but few of us knew of them. Life just went on and on, downhill with peace. It really was awful, and generally so for everybody. Would we ever get started again?

Then came one of the really extraordinary years in U.S. history—1947. You note the date—our own. It seemed, all of a sudden, that everything burst out—at last. Illusion? Progress is gradual, perforce. But nevertheless, the mood suddenly reversed. Maybe it was just a rising flood of lesser but really NEW items. We looked at them, we began to buy, and we said to ourselves "Maybe the log jam is busted!" As in politics, such feelings feed on themselves. The long, vicious decades of tension ended, it seemed, in minutes. It was incredible. (Though, of course, the planning and tooling up had been going on for a long time before.) Starting with the quickest designs, the fever spread rapidly into more and more complex new products, really postwar, truly innovative if not always successful. We didn't care. It was over. Maybe a dozen years! Children had grown up with it. Now at

last, release. We went overboard. This is from personal remembrance.

In the audio field there was suddenly our own flood. There were new records, of course, turntables, revolutionary new phono cartridges, 10-watt home amps, then quickly the new hi-end amps, much superior. It was not yet "hi-fi," this movement, but it was the beginning and did it move from then on!

Right in the middle, our new magazine was born, riding the wave by no coincidence at all. Luckily for us, a mag can be set up faster than a new car model. Audio? It was still an unfamiliar term to most, including myself, coined to clear the distinction between electrical engineering and electronics for sound. In no time there was an Audio Engineering Society (I am a charter member thanks to our first editor) and for a while we were its journal until the AES made its own.

So now you can understand the explosive time into which we projected

our magazine. And the excitement described by others as well as myself in the new world of hi-fi. We hit the nose on the head, as I like to say.

The climax and completion of all this was at last the *really* new cars. The top! The ultimate fulfillment. But we were there first. I was at the first show of the BRAND NEW Ford. Was it 1948½? 1949? It was stupendous!

By no coincidence, also, the new managing editor of *Audio*, C.G. McProud, listening one day in early 1947 to local radio, heard a program called "The New Recordings," with Edward Tatnall Canby. I had rescued this program from the FM debacle and moved it "live" to the city AM station, WNYC. A phone call from McProud to my new phone nearby, and I was reattached to life and a career. Casually. My memory of our first meeting is mainly the McProud Siamese cats.

One thing leads to another, right? *Audio* started 45 years ago, and I've been around ever since. 

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## We Sell Subscriptions . . . One at a Time

Dear Editor:

I received my first issue of *Audio* (December 1991) and immediately wondered if I made a gross error in subscribing. I notice from the annual subject index that not one receiver was reviewed during 1991, but in the December issue a tube amp was reviewed that costs more than my entire system of Sony ES components and Klipsch Chorus speakers. (I certainly remember tubes from my Bogen DB 20 days, and those 6L6s warmed my room.) My question is this: Is the lowly receiver below the dignity (whatever) level of *Audio* to test and review? I am a professional, but I drive a Chevy; reading about Mercedes-Benzes really does not help me. Also, most of us beer drinkers really don't like champagne. Should I ask for a refund of my subscription, or is there hope for us "beer" component people?

Robert E. Wallace  
Tazewell, Va.

*Editor's Reply:* Thanks for your well-written and thoughtful letter. Ones like yours are fun to answer, even if I do have to admit that maybe we shouldn't have been your first choice in magazines on hi-fi.

Anyway, yes, we do review receivers, but I don't think enough of them to satisfy you. However, it is my "informed" opinion that the same money can be better spent on separates, and it's magazines like *Audio* that can tell you which brands to look at for Ferrari quality at Chevy prices, i.e., used gear or bottom-of-the-product line. Yes, we do tend to review the top-drawer models—so that we can find out about *all* the features—but you are the one who decides whether you need all that stuff. Also, our top-drawer approach is to help distinguish us from our sister publication, *Stereo Review*, which does take a more moderate approach, for novices relative to our pro leanings. I think you may be happier with them, if you've budget for only *one* magazine. On the other hand, you're not a first-time buyer, so maybe you should educate your palate. . . .—E.P.

*Reader's Response:* Thank you for replying to my letter. I have decided to

stick with your magazine even though I am not an audiophile—meaning that I cannot differentiate the sound of 12-gauge from 14-gauge speaker wire. I really do enjoy the technology, but it is only a tool in the pursuit of my first and true love: Music.

As a beer/Chevy person, I do not demean your Ferrari/champagne fellows, nor do I envy you. However, I look forward to being taught that the grass is really greener on the other side.—Robert E. Wallace

## Manic Compression?

Dear Editor:

Len Feldman and Ivan Berger's review of the Delco/Bose Gold Series (September 1991) was good as far as it went, but it failed to call attention to two annoying shortcomings of the Compact Disc player for the Cadillac. I have had two units, the original and its replacement.

First of all, the difference in the audio levels of radio and CD is substantial,

the CD being much louder. Adjustment is absolutely essential before switching from radio to CD! Secondly, when compression is engaged, a fairly loud noise, which might be described as a pop, smack, or slap is heard with the first note of each number on the disc or when switching from radio to CD. Also, staccato notes are unduly accented. Otherwise the system is quite satisfactory, which is fortunate since there are no options once the Delco/Bose system is purchased. If the reviewers did not encounter such problems, the unit may have been improved since I acquired mine.

Warren L. Slagle  
Knoxville, Tenn.

*Author's Reply:* I encountered none of the problems Mr. Slagle cites. I can't be sure, at this point, whether I ever switched directly between radio and CD (though I probably did so), but I did use the compression without any problem.  
—J.B.

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## Bias Adjustment Procedure

*Q. I recently purchased a cassette deck with fine bias control, three heads, HX Pro, and other features. I am a bit perplexed as to how I should achieve optimum bias adjustment. In the June 1990 issue of Audio, Howard Roberson, in a sidebar to an article about Dolby S noise reduction, mentions using a 10-kHz tone to adjust bias. Is the 10-kHz test tone an acceptable and reliable means of adjusting bias? Is this adjustment affected by HX Pro circuit? Should this circuit be engaged during bias adjustment? Is the 10-kHz test tone from the CBS CD-1 test disc—referred to in many articles—an acceptable source of this test tone?—Thomas N. Snuggs, Jr., Albe-marle, N.C.*

A. Roberson's piece perhaps did not bring out clearly enough that bias adjustment was performed by using both a 400-Hz and a 10-kHz tone of equal amplitude. His sidebar does mention that the deck he tested provides a 400-Hz tone.

Bias is adjusted so that both recorded tones have equal amplitude in playback. The procedure should be used at a level about 20 dB below the deck's 0-VU mark on its record level indicator. The reason for such a level is that the 10-kHz tone is subjected to a good deal of treble boost by the record-equalization circuit, and one wants to make sure that this does not result in tape saturation at 10 kHz, which would invalidate the adjustment procedure.

The foregoing is considered to be a reliable method of setting bias for the particular tape one is going to record. That is, it results in an optimum combination of extended treble response, high signal-to-noise ratio, and low distortion—or at least comes close to optimum. The person equipped with an audio signal generator, harmonic distortion analyzer, and audio voltmeter can probably arrive at a somewhat better optimum. But usually the bias adjustment so derived is only marginally better than that based on two tones.

In theory, the adjustment based on two tones should be made with Dolby noise reduction off, although better results are sometimes obtained with Dolby NR on. The same applies to HX Pro, assuming that the deck gives one the option of turning HX Pro off and on.

The wise thing is to try the adjustment both ways, and settle for the method that audibly gives best results, if there is a difference. After adjustment of bias, check whether the program source and the playback sound identical on music or interstation FM noise. It might happen that there is a significant difference between source and playback, whichever method of bias adjustment you employ (Dolby NR on or off; HX Pro on or off). Then the appropriate step would be to adjust bias on the basis of comparing the program source with the playback of that source. If treble seems excessive, increase bias. If treble seems insufficient, decrease bias, but try to avoid going too far in this direction. Some very good authorities find that it is worth a slight drop in treble in order to keep distortion low; decreasing bias is apt to raise distortion.

The test tones employed for setting bias by the twin-tone procedure are supplied by some decks. Alternatively,

they can be obtained from a test CD or LP, or from an audio generator.

At the risk of telling you more than you care to know about the subject (although other audiophiles might care), let me add that in the days when open-reel tape decks prevailed, there was a recommended bias adjustment procedure based on a single tone. This, depending on the manufacturer, was usually a tone of 1 or 2 kHz. The procedure was to start with low bias, increase bias until peak output of the test tone was obtained, and further increase bias slightly until output of the tone dropped about 0.5 dB. Accordingly, bias was placed in a region where slight changes in bias would not result in large changes in upper treble response. A

If you have a problem or question on tape recording, write to Mr. Herman Burstein at AUDIO, 1633 Broadway, New York, N.Y. 10019. All letters are answered. Please enclose a stamped, self-addressed envelope.

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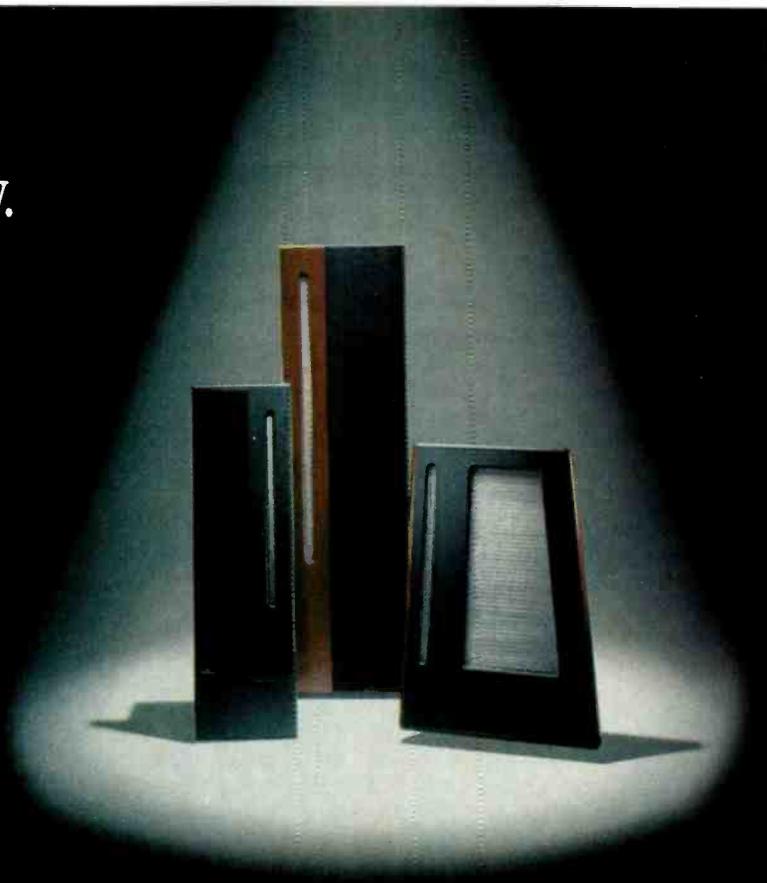
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## Power Transformers and Sound Quality

*Q. I recently had the power transformer in my receiver replaced because of a low-level "buzzing" noise that it was producing mechanically. The original transformer checked out okay electrically and the receiver had been functioning properly.*

*According to the technician who performed the work, the new transformer is also performing properly. Strangely, the receiver now seems, subjectively, to produce deeper and more powerful bass. This improvement is slight, but extended listening has convinced me it really does exist, even though I was not expecting such a change. Unfortunately the improvement stops here because the depth perspective of the soundstage has changed from being rather laid back to a more forward, "in-your-lap" kind of effect. If I back off on the midrange controls on my loudspeaker systems a small amount, the soundstage is pulled back into proper focus, more closely resembling the soundstage that was present before the power transformer was replaced.*

*If the improved bass response is an indication, it would seem that the new transformer might be more efficient than the old one was. Even so, shouldn't the voltage regulation in the power supply prevent any small changes in voltage from reaching the amplifier circuits and perhaps causing problems such as those I mentioned?—Dennis L. Chase, New Cumberland, Pa.*

A. First, could it be that the quietness of your listening environment occasioned by the new transformer has given the psychoacoustic effect of better bass and altered imaging, and that the actual sonic performance of the receiver is really the same as it was before the transformer was replaced? I lean toward this conclusion because I know for certain that the masking effect of the kind of background "buzzing" you have described can often be considerable.

Second, I wonder if the technician performing the transformer transplant found some other problems with your receiver and took care of them without mentioning this to you. Obviously this could account for the sonic differences

between "then and now" that you have been perceiving.

As long as the imaging can be made to your liking by a simple adjustment of a couple of controls, you don't have a problem. I find it difficult to believe that the original transformer should have a significantly different d.c. resistance from the new one. Of course, if the original unit had a higher d.c. resistance than the new one, the receiver's power bandwidth would be increased.

## Replacing Audio on Videotapes

*Q. Is there a way to record, or dub, music onto a previously recorded videocassette? Can it be done without losing the original video portion of the program? If it can be done, please tell me how and what equipment will be needed—Pansy Caldwell, Moody, Tex.*

A. The linear audio track or tracks that run along the edges of VHS tapes can be replaced easily. Hi-Fi audio tracks, which are recorded as FM sig-

nals mixed with the video, cannot, except by recopying the entire tape. However, VHS Hi-Fi VCRs always have linear audio as well.

Many VCRs have audio dubbing switches that let you overdub a tape's linear audio track while watching the picture to see where you are. Unfortunately, I see fewer and fewer new machines that have this feature. If your VCR doesn't have it, see if a friend's VCR does, and redo your soundtrack at his house.

In the case of a Hi-Fi tape, recopying it in order to make a new Hi-Fi track will give you the greatest audio fidelity and will let you record in stereo. (Most Hi-Fi VCRs have only monophonic linear tracks.) However, the picture quality of your copy will suffer. **A**

**If you have a problem or question about audio, write to Mr. Joseph Giovanelli at AUDIO Magazine, 1633 Broadway, New York, N.Y. 10019. All letters are answered. Please enclose a stamped, self-addressed envelope.**

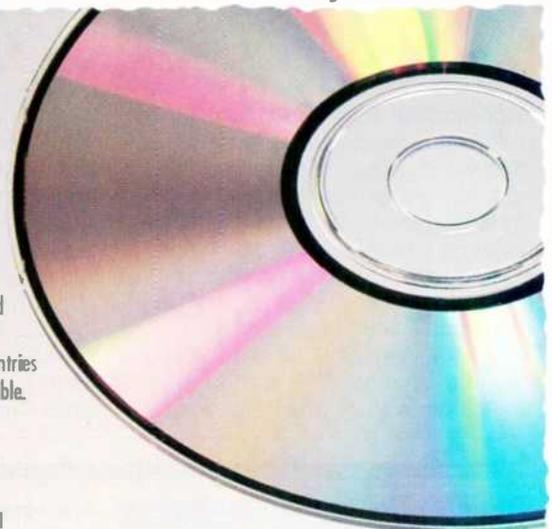
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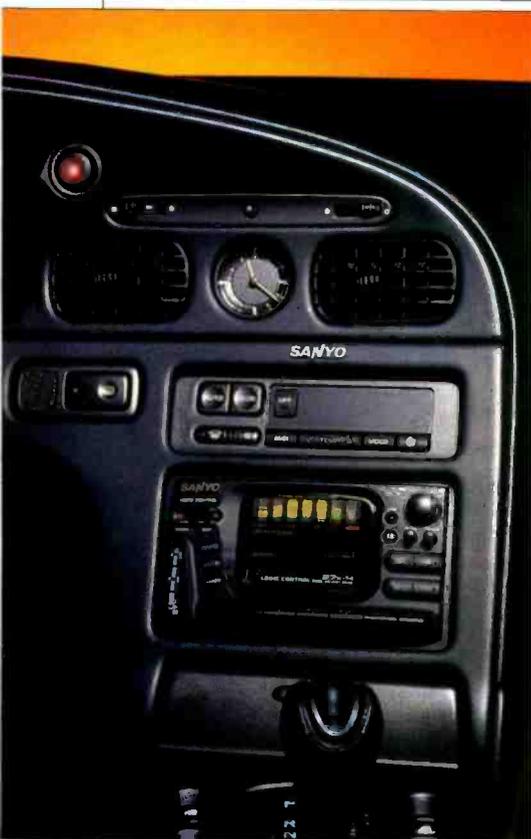
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## CARS, KARAOKE, AND DOUBLE DIN



### A Somewhat Different Country

Car stereo has always been a bit different in Japan. A decade or so ago, fancy Japanese car sound systems used multiple components—separate tuners, tape decks, amps and equalizers—with separate controls, as home systems do. The ergonomics were nightmarish, but from what I've seen, Japanese drivers spend even more time sitting still in traffic than we do, which gives them

plenty of opportunity to find whatever controls they want to operate.

Modern cars leave no room for such set-ups, but many Japanese cars and a few U.S. trucks and vans have double-DIN stereo slots, and many double-height head units are available. At least three companies (JVC, Pioneer, and Sanyo) now offer them over here as well, and Panasonic sells one in Europe.

In the most recent issue I've seen of Japan's *Auto Sound* magazine, I note still other differences: Installations are shown in such cars as the Toyota Soarer, Mazda Sentia, and Eunos Presso, which are not available here, at least under those names. In-car video systems abound. Diagrams of DSP systems show the driver sitting in the right-hand seat. Sing-along fans in Japan have been able to get car karaoke for a while. Now it's available in the U.S., too, as part of Pioneer's FH-M75 double-DIN head unit and as a Sanyo-built tape player, the PAT-C10, available from Zenasia in Carson, Cal. Both units have circuits that cancel out the center signal, eliminating most vocals, so you can sing along with the records of your choice instead of needing special karaoke recordings. The Pioneer unit also has a safety alarm that can wake the driver at preset intervals. The Zenasia unit, which can also be used at home, has pitch control to bring the music more into your vocal range, and an echo circuit (*de rigueur* for karaoke systems in Japan).

I suspect car karaoke will catch on here quicker than regular karaoke will, since Americans are probably less

inhibited about singing in the privacy of their cars than about singing in public. (Even the Japanese, however, seem to need a little loosening up before picking up a mike—karaoke is most popular in bars, there.)

The installations shown in *Auto Sound* are slick, but pretty much in the mold of good custom installations anywhere. I did, however, notice a Nakamichi changer built into the back of a Porsche 928 hatchback's rear-seat headrest. The passenger in the other rear seat can reach it to change disc magazines—and the driver can, too, when the seat is folded forward. Of course, that highly visible changer would be a magnet for thieves in a less law-abiding country than Japan.



So would the amplifier shown proudly mounted on a car's rear package shelf in a Bose ad.

A Bose ad? Yep. Bose is active in the Japanese car audio aftermarket, selling equipment you don't see in the U.S. And Japanese equipment that you do see here is likely to be sold there under such names as Excedio, Carozzeria, MacAudio, and AddZest.



### Answered Prayer

Most of the controls on my Merkur Scorpio (actually a European Ford) are rocker switches with a pleasantly intuitive touch-coding system. The end of the rocker with the projecting bump turns things on, turns them further on, or raises them; the end with the matching dimple does the opposite. This is an international standard on Ford products—in the U.S., the Ford Taurus, Mercury Sable and Lincoln Continental use it, too.

One day, I noticed the same system at work in an Oldsmobile. "Aha!" thought I, "If it's this close to universal, car stereos should also use it." The next day, some visitors from Blaupunkt showed me that it already was in use, at least on some of their models. On the Philadelphia SQR 49 shown here, for instance, the code is out for up or fast forward, in for down or reverse. The Blaupunkt New York uses this coding, too, but only on one rocker switch.

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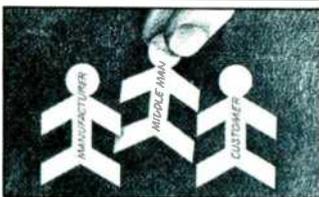
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## Calling All Cars

Perhaps it's appropriate that this idea comes from a Detroit-area audio club, the Southeastern Michigan Woofer and Tweeter Marching Society. A contributor to the Society's newsletter suggested the following "subjective evaluator's criterion":

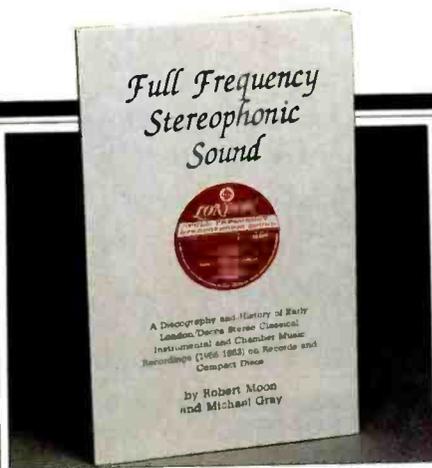
"Take your vehicle to a quiet spot, crank up the stereo, and see how many squad cars come to investigate. The more cars, the better the system."

## Buy in the Sky

Ever wish for a way to jot a record's name down on your shopping list when you hear it played on your car radio? By 1994, you may be able to do better than that—and order the record as you drive. A company called RadioSat hopes to have a satellite-to-car radio service up by then, with voice interaction. You'll not only be able to get the programming you wish merely by saying "Jazz" or "Classical" to your radio, but will be able to mail-order records and other merchandise as you drive. Judith Gross, writing in the trade journal *Radio World*, points out that stations will also be able to use RadioSat to poll listeners on their opinions of new records.

## Fan Club

With the growing emphasis on the cosmetic aspects of car stereo installation, amplifiers are increasingly often buried in hidden compartments, where ventilation is scarce. As a consequence, more and more manufacturers are building inside-out amplifiers, with their heat-sinks buried in a tunnel through which air is driven by a built-in fan. Concord, Harman Kardon, Orion, Proton, Rockford Fosgate, and plenty of others make such amps. And for those who already have amps with external heat sinks, dB Speakerworks, of Shreveport, La., has a line of Amp Cooler enclosures with built-in fans. The units range from \$140 to \$200, depending on their size and number of fans, and their amplifier compartments have carpeted floors and transparent covers to show off the amps inside—the cosmetic emphasis, again.



*Full Frequency Stereophonic Sound* by Robert Moon and Michael Gray. Soft-cover, 83 pp., \$25. Available from Moon at 349 Ellington, San Francisco, Cal. 94112.

This book is subtitled *A Discography and History of Early London/Decca Stereo Classical Instrumental and Chamber Music Recordings (1956-1963) on Records and Compact Discs*. While private printing for a limited readership is expensive, the \$25.00 cost of this book is far too much.

The section titled "FFSS and How It Grew," by Michael Gray, gives valuable information on the history, sequence, and people associated with Full Frequency Stereophonic Sound and Full Frequency Range Recordings. The writing style seems a bit convoluted, making the historical sequence a bit difficult to follow, but a second reading makes it clearer. Throughout the book, abbreviations and terms such as "outriggers," which may be unfamiliar to the reader, should be clearly defined when first used rather than by usage later in the text.

The section titled "Stereo and the Modern Orchestra," by Ivan March, is confusing until one reads, at its end, that it is a reprint from 1961. For clarity, this should have been stated at the beginning of the section. The same applies to "Reverberation and Microphone Placing for Stereophonic Recordings"—a reprint from 1963.

The remaining sections, probably mostly by Robert Moon, although this isn't clear, are devoted to record ratings, reviews of "The Best Records," artists, Compact Disc reissues, and label and pressing information. Record reviews, in general, have a large subjective element, and these are no exception. While listeners may disagree

with some of the opinions, the reviews and ratings are done in a logical straightforward manner, offering helpful insights for the critical listener of these hard-to-find and sought-after early LPs. No recording dates are given in the ratings section, and, as indicated by the subtitle, none of the many excellent opera recordings of the era are covered. Also, some of the abbreviations used in the rating chart, while defined in the previous text, should be clearly restated in the symbol definition section for readers not familiar with these terms.

The "Best Records" section gives the author's opinion of why the recording is outstanding, both technically and artistically, and does include recording dates. The opinions can help the collector be on the lookout for items considered by many to be especially noteworthy. The artists section gives brief biographical comments and touches on the relationship between artists and the early recording engineers. I found the material on Ernest Ansermet, who spans the full range of conducting on records from acoustic 78s to stereo LPs, especially interesting. The "Labelography" section gives seven black-and-white examples of the labels discussed.

As discography, this book is a good beginning for those devoted to these early stereo recordings, but it is far from complete. It should be expanded to include more recordings, especially opera and vocal. As history, the book is also a good beginning, filling in some mostly blank pages. It is tantalizing not only in the outline that it gives but in the wealth of material that it leaves out. While the historical relationship to Mercury's Living Presence recordings is mentioned, more information on these as well as other quality recordings of the time, such as the mono Westminster Laboratory Series (extraordinarily advanced for their time), would be useful. Perhaps Gray's upcoming book on the history of this era will fill in the details. I cannot help but feel that for \$25.00, the reader should get more than good beginnings. A second, enlarged and revised edition of the present book is to be hoped for and, if sold at a more moderate price, should appeal to a much wider readership. *Michael R. Lane*

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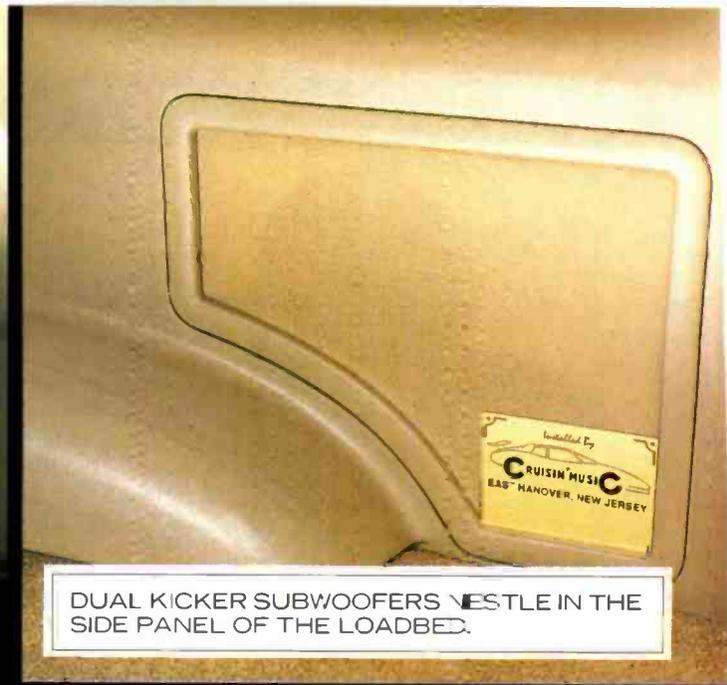
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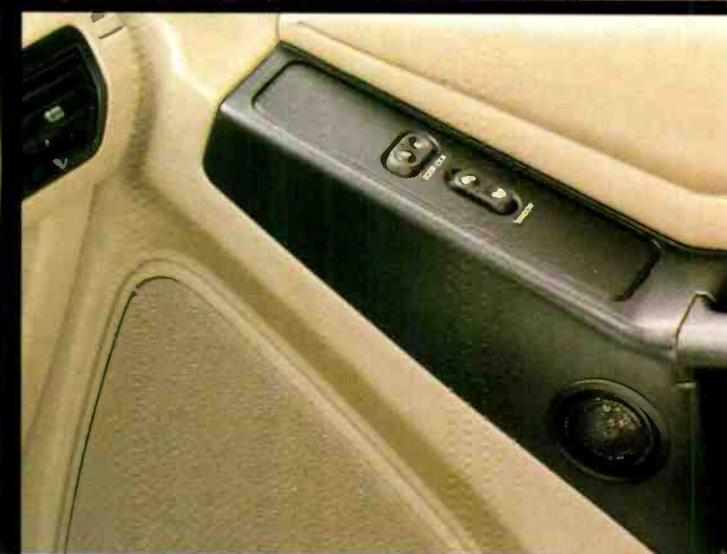
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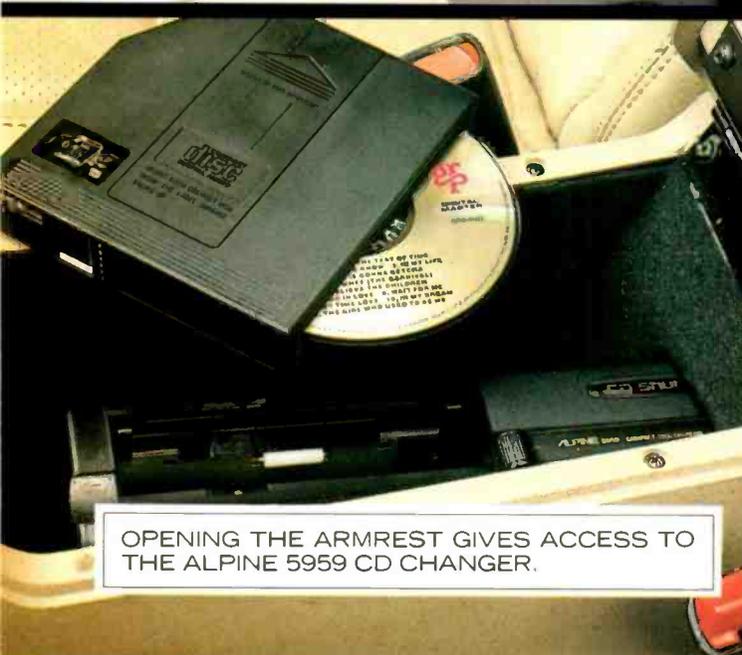
ALPINE'S 7618 HEAD UNIT REPLACED THE STOCK STEREO.



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OPENING THE ARMREST GIVES ACCESS TO THE ALPINE 5959 CD CHANGER.



## INSTALLATION

"I wanted a warm-sounding system that looked stock—as inconspicuous as possible. And I wanted to maintain all the Explorer's cargo space," says the owner of this '92 Ford Explorer. Rick Trover, of Crusin' Music in East Hanover, N.J., obliged with the slick but simple system you see here. All that remains of the Explorer's stock sound system is the FM/AM antenna. The stock head unit was replaced by a \$600 Alpine 7618, which also controls a compact Alpine 5959 six-disc CD changer (\$850) neatly tucked into the center armrest.

The main speakers are two-way Polks: MM 3055 systems (\$349.95 per pair), with 5¼-inch woofers, in the front doors, MM 3065s (\$369.95), with 6½-inch woofers, in the back doors. The back doors were used because there's no rear parcel shelf to hold the speakers, but this also gives better imaging to rear-seat passengers. A custom, sealed enclosure, of about 1 cubic foot, holds the two Kicker Competition C-6.5 woofers (\$75 each) in the back.

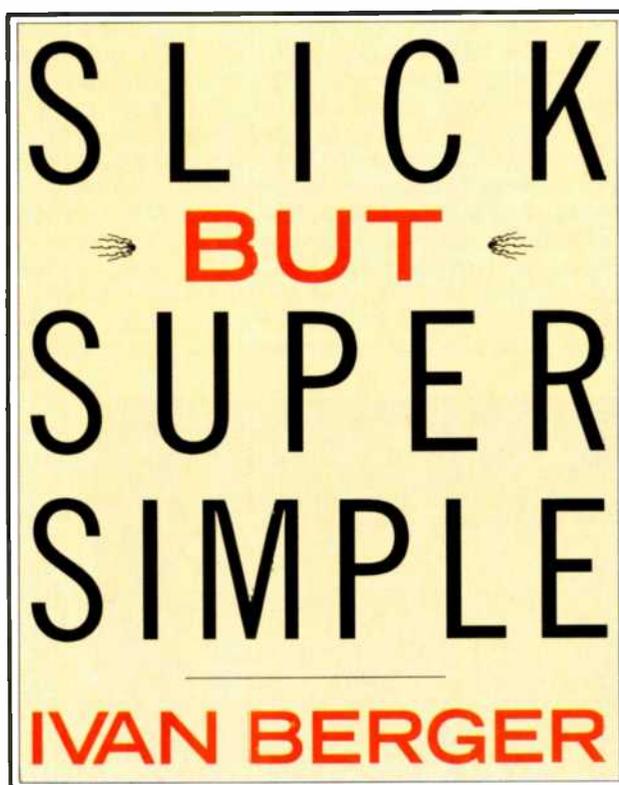
The amplifier, a Phoenix Gold MQ430 (\$599.95) is mounted under the rear seat. Though its four channels are rated at only 30 watts apiece into 4-ohm loads, it's actually

delivering a bit more. The subwoofers, wired in parallel to make a 2-ohm load, are wired across the hot terminals of the two rear channels (with a \$50 PAC passive, 80-Hz low-pass filter ensuring that the subwoofers only woof). According to Phoenix Gold, the amp should be able to deliver about 100 watts from the rear channels in that configuration.

A VSE Stealth Plus alarm stands watch over it all. Other non-audio electronics include a Bel 932R radar detector (\$279.95), and a Pioneer PCM 300 cellular phone (\$595) with a Hirschmann roof-mount antenna (\$125). The wiring consists of Phoenix Gold speaker cables and triple-shielded interconnects, plus Monster power cables. Trover states Crusin' Music's labor bill at \$2,000.

The system's sound has the desired warmth, with deep, tight bass you might not expect from such small

woofers and such a moderate-sized amp. There is a hole in the middle of the image with the fader control cranked to yield a forward-imaging stereo stage, but that's not at all surprising in a car of the Explorer's width—curing that with a center speaker would have simply been incompatible with the stock look of the system. **A**



PHOTOGRAPHS: © BILL ASHE

# SWE



Alpine's 7980 puts a CD changer in the dash.

IVAN BERGER

**T**his year's Winter Consumer Electronics Show made two things plain about car stereo: We're headed for a thoroughly digital world—but we're not there yet.

The trend towards digital was made clear in many ways. For example, much of the rise in sales of in-dash CD players is accounted for by sales of players with built-in amps. This means CD's appeal is broadening to people who don't install fancy, multi-amplifier systems. (It may also help that many new self-amplified head units, both tape and CD, deliver about 25 watts per channel instead of

commodate its 10-inch depth. Alpine's 7980 in-dash model includes not only a tuner but a three-disc changer, yet fits a standard DIN slot (albeit with a separate, remote sub-chassis for its tuner circuits). The Alpine only holds three discs at a time, but if it's within reach, that's no problem.

Sacrificing compactness for capacity, JVC introduced its XL-MG1800, which holds three, six-disc magazines, enough for more than 22 hours of play if you pick long CDs. If that's not enough, you can control six of these changers from JVC's KS-RG7 or KS-RX770 cassette receivers or KS-RM18 controller unit, and play music 'round the clock for more than five full days or nights! For that matter, Sony's UniLink control system now allows the use of a single controller for 10 of its 10-disc changers. (I suspect that only yacht owners will exercise these monster options.) On a more modest scale, two of Audiovox's CDC-700 changers can be linked to make a 20-disc system.

Changer manufacturers are growing more aware of automotive installation and operating problems. Every changer I know of can be operated either lying flat or facing up, and Clarion's compact new 6201CD (only 2 7/8 in. thick) can be set up for any mounting angle within a 120° range. (The Clarion also uses a single cable for all signal, control, and power connections, making installation easier.) To minimize the effects of road bumps, Clarion, Kinergetics, Sanyo, Nakamichi, and Yamaha (among others) have oil-damped suspensions. The Acoustic Isolation System on Nakamichi's 100cdc and 100cdc/i changers includes not only a triple suspension but a hermetically sealed housing to ensure that the CD and laser won't be shaken by pressure waves from trunk-mounted speakers.

The difference between the two Nakamichi models is that only one, the 100cdc/i, has a



Nakamichi's new changers are hermetically sealed for isolation from trunk-mounted speakers.

the 4 to 10 watts that buyers of in-dash players formerly were stuck with.) Changers are getting more compact, so they can move out of trunks and into passenger compartments. Sony has shrunk its 10-disc changers to the size of earlier six-disc models. New, smaller models from Panasonic (the CX-DP60, 2 7/8 in. x 11 in. x 6 1/2 in.), Denon (the DCH-700 (2 in. x 10 in. x 7 in.), and others can fit into some armrests and glove compartments, or under seats. Denon's can even fit a DIN opening, though few DIN radio slots can ac-

# et Sounds



last year, is a case in point. It has no audio equipment in the dash at all, just a display and control unit for a suite of trunk-mounted components that include one or more CD changers, an FM/AM tuner with diversity (dual front-end, dual-antenna) reception, amplifiers, and two digital signal-processing (DSP) units. The first of these, the XES-P1 provides digital sound-field control, six-band parametric equalization, and nine-step dynamic-range compression; up to 10 combinations of these settings can be memorized for instant selection or automatically linked to individual CDs in the changer. The second DSP unit, the XES-X1, is a digital crossover that provides nearly infinite crossover slopes without phase shift, plus digital time delays to compensate for speaker placement problems in the car.

Blaupunkt's Las Vegas incorporates a cellular phone and a tuner that can receive RBDS datacasts over the air.

built-in D/A converter. The other requires an external one. Several are available: Nakamichi introduced a stand-alone D/A unit (and a changer with both analog and digital outputs) last year; this year Soundstream is introducing one designed by Krell, Coustic will have one designed by Kinergetics, Kinergetics will have one of its own, as will Alpine, Blaupunkt, and Eclipse.

A glance at the "CD Changer" category in our Car Stereo Directory section (being compiled as I write this) shows other converters. The Kinergetics and Coustics units are one-bit designs with Class-A balanced analog sections and three digital inputs (two coaxial, one fiber-optic). Soundstream's Krell design is a hybrid, feeding the upper 10 bits from its 18-bit filter to a ladder converter and feeding the lower eight bits to a one-bit converter circuit. Naturally, all these companies and more are offering changers with both digital and analog outputs. The Eclipse ESD-510 and Soundstream CD308 in-dash CD players will also have both types of output.

Fiber-optic connections are more common in car components such as these than in home components, to eliminate potential pickup of interference from the car's electrical systems. They'll grow more common yet, as systems tend toward the totally digital. Sony's Mobile ES system, introduced

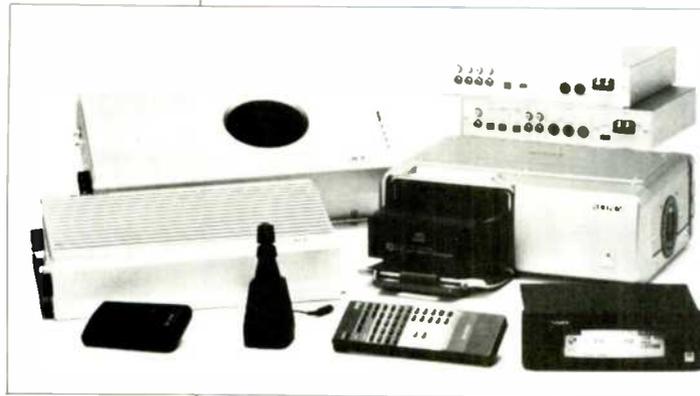
Alpine's new Digital Link systems are similar in concept, if slightly less elaborate. The "Digital-Pure" version includes a controller

Sanyo D<sup>2</sup>SP-01 DSP unit.



(the 1310) with trunk-mounted tuner module, a CD changer, and the Model 3681 multi-input crossover with digital time correction, plus amps. The Model 1310 controller has a detachable front panel for theft protection, and includes a memory that holds the first

# Car stereo is definitely digital world—but there is still



Sony's Mobile ES system was a major first step towards the all-digital car stereo system.

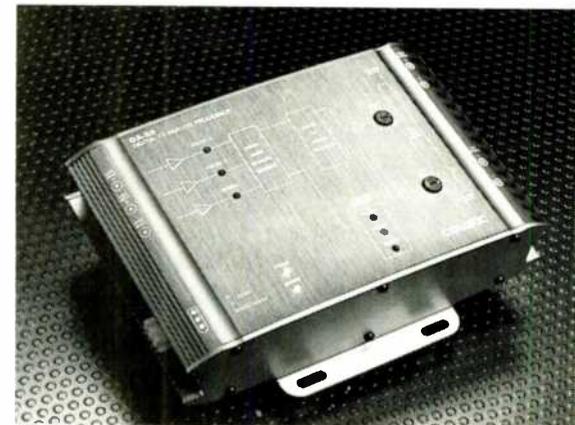
few seconds of music from each CD currently in the changer, so you can scan through your discs without waiting for, or putting wear on, the changer. Its tuner section, which features ID Logic (more on that later), can be mounted in the trunk, eliminating all analog audio gear from the passenger compartment. The "Digital Interactive" version optionally substitutes the Model 7618 head unit for the 1310, and substitutes the Model 3362 crossover and DSP unit for the Model 3681. The Model 3362, designed for dashboard mounting, has ambience circuits and separate nine-band equalizers for front and rear, plus a center-channel output and a digital subwoofer crossover fixed at 80 Hz. Both the 3681 and 3362 have one analog and three fiber-optic digital inputs apiece.

Coustic's DA-55 D/A converter is designed by Kinergetics.

Combining digital ambience and equalization, as Alpine's 3362 does, is an inevitable trend. Pioneer's KEX-M900 (*Audio*, Dec. 1991) head unit was about the first component to combine the two, followed closely by such signal processors as Clarion's DSP 959 and Yamaha's YDSP-1. Now Sanyo has joined in with its D<sup>2</sup>SP-01 (which has a 40-watt center-channel amp), Denon with the DCX-100 (which combines DSP with a D/A converter, a tuner, a changer controller, and a subwoofer crossover, plus A/D conversion for its two analog inputs), and Eclipse with the EQS-2000 DSP (which uses a remote microphone to adjust both sound field and EQ). The Eclipse's built-in EQ has three bands for the front of the car and four for the rear, but adding the EQU-8040 equalizer module increases this capacity to five parametric and seven graphic equalizer bands apiece for front and rear.

Of course, you needn't go all-digital to confine the working parts of a stereo system to the trunk. Rockford Fosgate's Symmetry components—actually large circuit cards that slide into card-cage racks—will soon include an FM/AM tuner whose presets can be scanned by program format, as well as CD changer control, amplifiers, crossovers, user-set equalizers, and a DSP equalizer that checks speaker output with a microphone, then adjusts each speaker's signal for flat response. With this setup, the only thing that need be in the passenger compartment is the controller, the Remote Digital Access Terminal (RDAT for short, a name bound to cause confusion). Other signal sources can be hooked in via external modules that convert their outputs from unbalanced to balanced and raise their levels to about 30 V, to combat interference. The only digital parts are the controller, the DSP card, and a device controller with eight (optionally 16) relays that can be made to turn things on and off in programmed sequences at preset times.

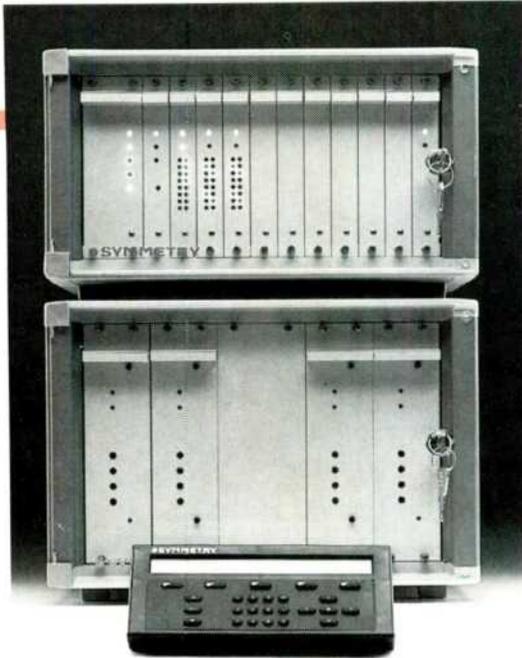
Digital circuitry is also responsible for a number of systems that let you find radio stations by program formats. The simplest of



these to implement are systems that let you enter your favorite stations and their program formats into memory. Besides Alpine's Model 7618 (with memories for 54 stations) and Rockford Fosgate's forthcoming Symmetry

needed for a thoroughly

a way to go.



tuner, you'll find this on Clarion's new CAL-1000 (with memories for 60 stations) along with a built-in cellular phone and CD changer control. Blaupunkt's Las Vegas, due late this year, also has cellular phone and changer control, but its tuner will use a system called RBDS, which identifies station formats through digital subcodes in their broadcasts. And the Alpine 1310, mentioned earlier, uses an updated version of the PRS ID Logic system, that lets you find the station format of your choice, almost anywhere in or near the U.S., through an automatic scan of a built-in database of North American stations. (Panasonic's CQ-ID60, also with ID Logic, is reviewed elsewhere in this issue.)

The Radio Broadcast Data System (RBDS) is the North American version of the RDS system now used in Europe. With this system, stations broadcast digital data packets on an FM subcarrier, conveying such information as station call letters, location, and program content, as well as traffic and emergency information, paging services, and other codes. In Europe, "linking codes" let tuners replace fading signals by seeking out nearer stations carrying the same program; here, where network radio has largely disappeared except for National Public Radio and some news and sports, the chances of finding such a station would be slim.

The trouble with RBDS is that most stations won't adopt it until a lot of radios can pick it up, and people won't look for such radios until RBDS is on the air; it's taken Europe about seven years to attain widespread

adoption. The ID Logic system is less versatile (no paging, no emergency or traffic info, and no ability to follow hour-by-hour changes in station programming), but it works on AM (RBDS is FM-only), it works *right now*—and it works better all the time. For example, the version in the Alpine 1310, in addition to the six station-format selector buttons on our Panasonic, has a seventh that the user can program for any one of another 18 formats stored in the ID Logic chip. Pierre Schwob, the inventor of ID Logic, has found a way to make it take advantage of RBDS. The current ID Logic system allows users to update a few stations manually as station formats change; Schwob's proposed ID Logic B system would update itself automatically, from information broadcast via RBDS. Unlike RBDS itself, this system would work well even if only one station in a market broadcasts RBDS signals.



Diversity tuning, which selects the best signal from two or more antennas, has held on for years but never quite caught on. Still, its two main proponents keep improving it. Blaupunkt's Sante Fe head unit now selects for minimum multipath rather than maximum signal strength, which should yield cleaner sound. Sony's CDX-U8000 in-dash CD unit, and the tuner module of the Sony ES system mentioned earlier, have separate front ends for each antenna. The ultimate may be Blaupunkt's Auto Directional Antenna (ADA), a phased array of four concealed foil antennas linked to circuitry that steers the array's coverage pattern towards the signal through phase manipulation. So far, there are no ADA models announced for the U.S., but at least one is now sold in Europe. **A**

The Rockford Fosgate Symmetry system uses rack-mounted circuit cards instead of stand-alone components.

Denon's DCX-100 combines DSP with a tuner and a CD-changer controller.

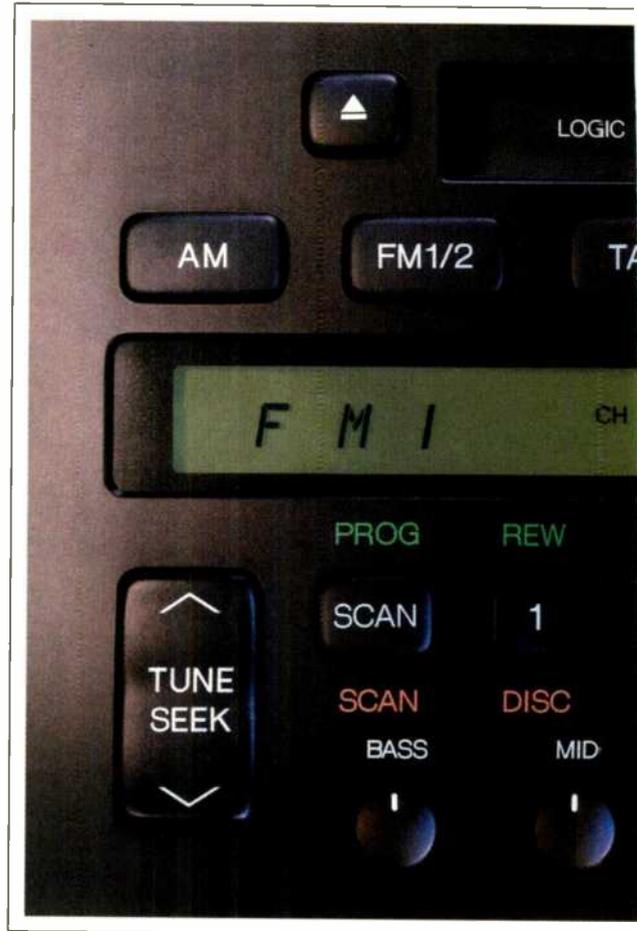
To hear the hum of the Lexus SC400's Four Cam, 32-valve engine is definitely a pleasure. But you have to admit, there will probably be times when you'll want to hum along with something a bit more musical.

Enter the optional Lexus/Nakamichi Premium Sound System with twelve-CD auto-changer, perhaps one of the finest audio units ever to be installed inside an automobile.

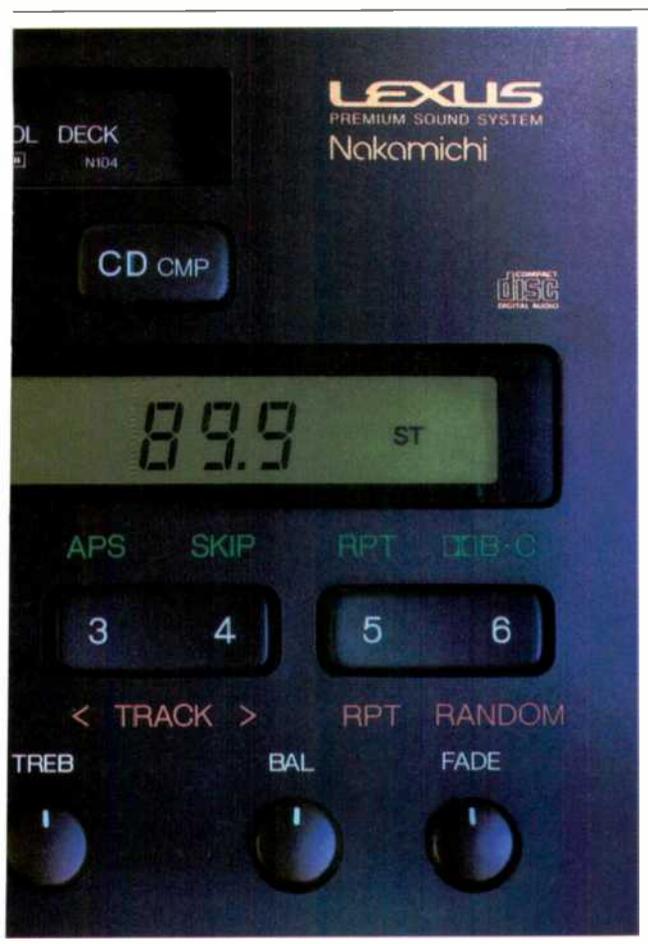
Dare we say, even a living room.

A total of seven speakers occupy the cabin: two tweeters, four extended-range speakers, and a ten-inch subwoofer. Each one placed in a distinct location to enhance sound imaging.

Turn up the volume and the first image that comes to mind is front row seats, thanks to 280 watts\* that, at your discretion, can send a musical note to a place about four inches beneath the sternum. But power is nothing without finesse. That's why active high- and low-pass crossovers feed



As If The Etھے  
Eight Pounding Cylin



specific frequencies that match the optimized operating range of every speaker. Equalization circuits (we'll spare you the details) are also used to tailor sound reproduction to the interior design of the car.

In English,



this means phenomenal sound quality. "The finest system you can buy in a new car" is how *Car Stereo Review* translated it (*Motor Trend* magazine, on the other hand, took a more direct approach by simply naming the entire car 1992 Import Car of the Year).

Of course, if you ever decide to turn off the stereo, you can always listen to how well the engine carries a tune.



# real Sound Of ders Werent' Enough.

## PANASONIC CQ-ID60 CAR STEREO WITH ID LOGIC

### Manufacturer's Specifications

#### Amplifier/Preamplifier Section

**Power Output:** Rated maximum, 22 watts per channel at 400 Hz; EIA, 9 watts per channel into 4 ohms, 20 Hz to 30 kHz, at 1% THD.

**Preamp Output Level:** 0.6 V (ref. level: tape, 0 dB).

**Tone Control Range:** Bass,  $\pm 10$  dB at 100 Hz; treble,  $\pm 10$  dB at 10 kHz.

**Loudness Contour:** +8 dB at 100 Hz, +6 dB at 10 kHz.

**Recommended Speaker Impedance:** 4 ohms.

#### FM Stereo Tuner Section

**Usable Sensitivity:** 13.2 dBf.

**50-dB Quieting Sensitivity:** 15.2 dBf.

**Frequency Response:**  $\pm 3$  dB, 30 Hz to 15 kHz.

**S/N:** 70 dB.

**Capture Ratio:** 1.5 dB.

**Alternate-Channel Selectivity:** 75 dB.

**Stereo Separation:** 42 dB at 1 kHz.

**Image Rejection:** 55 dB.

**I.f. Rejection:** 100 dB.

#### AM Tuner Section

**Frequency Range:** 530 kHz to 1710 kHz.

**Usable Sensitivity:** 28 dB/ $\mu$ V; 25  $\mu$ V for 20 dB S/N.

#### Tape Player Section

**Frequency Response:** 35 Hz to 14 kHz with Type I tape, 35 Hz to 17 kHz with Type IV tape.

**Wow and Flutter:** 0.09% wtd. rms.  
**S/N:** 62 dB with Dolby NR, 52 dB with NR off.

**Fast Forward/Rewind Time:** Less than 105 S for C-60 tape.

#### General Specifications

**Power Supply:** 11 V to 16 V, test voltage at 14.4 V, negative ground.

**Current Consumption:** 2.5 A average at 0.5 watt output into all four channels; maximum 5.0 A.

**Dimensions:** Main unit, 7 in. W  $\times$  2 in. H  $\times$  5 $\frac{7}{8}$  in. D (17.8 cm  $\times$  5.0 cm  $\times$  15.0 cm); bracket, 7 $\frac{3}{16}$  in. W  $\times$  2 $\frac{1}{16}$  in. H  $\times$  6 $\frac{1}{8}$  in. D (18.2 cm  $\times$  5.3 cm  $\times$  15.5 cm).

**Weight:** Main Unit, 3 lbs., 8 oz. (1.6 kg); bracket, 10 oz. (0.3 kg).

**Price:** \$379.

**Company Address:** One Panasonic Way, Secaucus, N.J. 07094.  
For literature, circle No. 90



The farther you go from home, the harder it is to find radio programs you like. On the road, you can miss even common flavors like rock and easy listening if you happen to hit the appropriate stations during commercials. But not if you use the CQ-ID60. Its ID Logic system (from U.S. inventor Pierre Schwob) incorporates a data base of more than 10,000 stations in more than 4,300 towns and cities in the U.S., Canada, and northern Mexico, all keyed to map grids 30 miles square. In ID Logic mode, you tell the system where you are, tell it what kind of programming you want, and let it find the stations for you. It will also tell you the call sign, city, and state of each station it finds.

More conventional features include 18 FM and six AM station presets, an auto-reverse cassette player with Dolby B NR, and a quick-release mounting bracket. It also has a front-panel jack for use with a portable CD player, switchable amber or green illumination, and a circuit that mutes the stereo when a cellular phone is in use. Amplified and preamp-level outputs are provided for both front and rear channels.

#### Control Layout

In traditional fashion, the CQ-ID60 has its volume control at the left, tuning controls at the right, and station-selector

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For More Information



Call 1-800-451-2248

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Tell the CQ-ID60 where you are and what kind of programs you want, and it will find them for you.

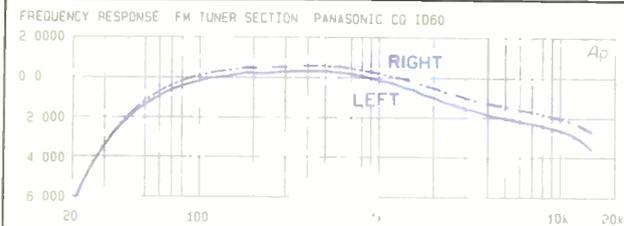


Fig. 1—FM tuner section frequency response.

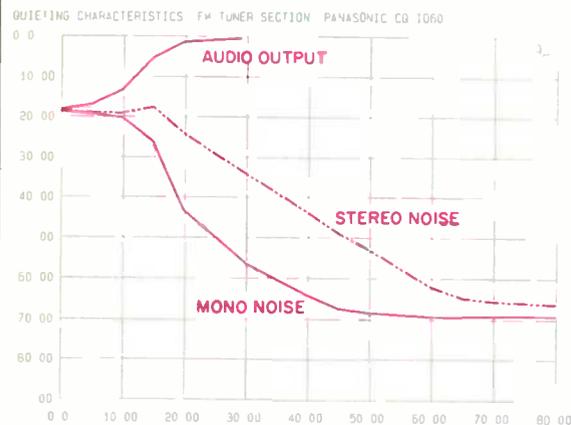


Fig. 2—FM quieting characteristics.

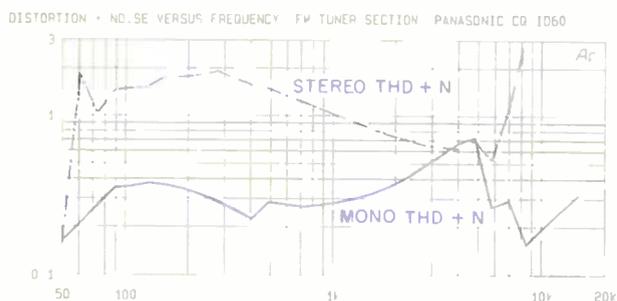


Fig. 3—THD + N vs. frequency for FM tuner section.

buttons under the display. Tradition ends there. The volume control is an up-down rocker (labelled "Audio") whose function changes from volume through bass, treble, balance, and fader back to volume each time you press the small "Select" button set into it; when you use the rocker, the display shows both its current function and setting. A button just above it toggles a volume attenuator on and off; holding it down for at least 2 S toggles loudness compensation on and off instead.

The main tuning controls are four buttons in a rectangular array at the far right. They control up and down tuning (manual if pressed quickly, automatic if held down for half a second), "P-Set" (preset scan if pressed quickly, automatic memorization of the six strongest signals on the band if held down for at least 2 S), and "FMO." That last button switches in the FM Optimizer, which gradually reduces stereo separation and treble response as the signal weakens; it also mutes the tuner if the signal disappears when you drive into a tunnel or underground garage. In ID Logic mode, these same buttons are used to tell the system when the car has moved to the next 30-mile square in any compass direction. The illumination color switch is just above the tuning array, and the CD input is just below.

The tape slot, at the top center, is flanked by the buttons for eject and for fast forward and rewind; pressing the latter two at once reverses the tape direction. During tape play, the display just below the loading slot shows "TAPE" in big letters, with an upward or downward arrow to show which side of the tape is playing, plus small indicators for "MTL" (Type II or IV tape equalization), Dolby NR, and Tape Program Search ("TPS"). The display also shows a big "CD" when the CD input is in use; that input is activated by pressing a button just to the left of the display but is deactivated by pressing the "Band" switch at the lower right or by playing a tape.

Also to the left of the display is a tiny rocker. Pressing its left side quickly selects display of station call sign, location, or format instead of frequency; holding it down at least 2 S enables or disables a beep tone which confirms that a button has been pressed. Pressing the right side of this rocker switches between normal and ID Logic modes. Six large key switches below the display area select individual preset memories (or set them, if you hold the button down for 2 S). In tape mode, the first three select tape type, NR, and "TPS." And in ID Logic mode, the six keys tune stations by program format. The "Band" key, to the right, selects AM or FM and cycles through the three sets of FM memories.

Changing to ID Logic mode gives most of these controls new functions. When you first set up the CQ-ID60, you should go into this mode, then use the "Select" button and the "Audio" rocker to scroll through a list of states, then cities, to program it for your home location. After that, when you're in ID Logic mode, the tuner will find classical, country and western, rock, jazz, easy-listening, or talk stations when you press the appropriate key switch. If you leave town, use the four tuning buttons at the far right to show what direction you're moving in, and ID Logic will update its station selections to match your new location. If no station is found in the category, the display will tell you whether it's because there's no such station or because none of the stations on

# Season tickets for a lifetime.



The season begins tonight. In the comfort of your own home. No parking hassles. No babysitter. No annoyances from the guy in the row behind you.

With the D400 stereo power amplifier coupled to your speakers, your favorite performers will be right there with you, as you've never heard them before. Palpable. Holographic. Immediate. With the most explosive dynamics heard outside of a concert hall.

Simply put, the D400 will transport you. Thanks to the enormous reserves of musical power lurking within the D400's classic, understated exterior. And to sophisticated leading-edge circuitry that focuses and clarifies instrumental timbres as only a great seat or the finest tube amplifier could do before. Without maintenance.

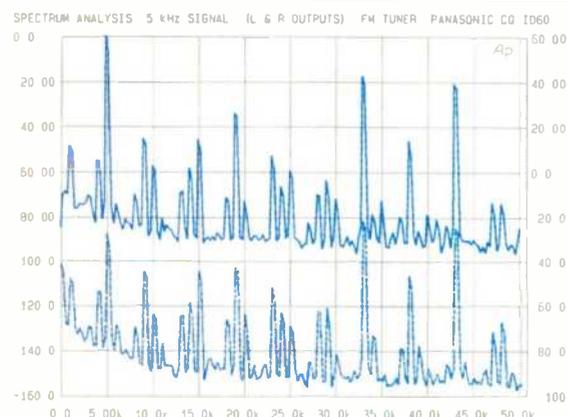
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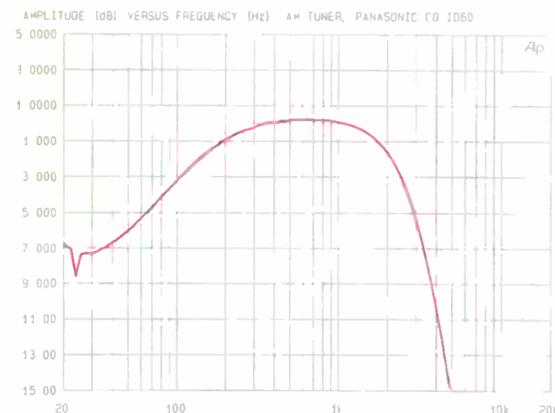
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Enter No. 3 on Reader Service Card

The ID Logic system found no fewer than seven local classical music stations, while I'd thought there were only four of them!



**Fig. 4—Spectrum analysis, FM stereo mode, one channel modulated with 5 kHz (solid curve), other channel unmodulated (dashed curve). Use the right-hand scale for the lower curve.**



**Fig. 5—AM section frequency response, using new standard 75- $\mu$ S pre-emphasis and de-emphasis.**

the list is coming in. A "NO DATA" error message means you've tuned in a station for which no information exists—maybe you've driven to a new area without telling the system where you are. Information can be updated for up to eight stations as they change formats or call letters.

I would guess that the description of this unusual product will have you yearning for it, especially if you travel long distances. Let me simply confirm, before I give my lab results, that I was able to dial up the nearest city (New York, in my case), hit the "Clas" button on the front panel of the CQ-ID60, and come up with seven stations that offer classical for at least part of their programming day. And all the while I had thought there were only four!

## Measurements

Figure 1 shows the frequency response for the FM tuner section. Response is down 3 dB at 32 Hz and at 13 kHz, but since the published specification claims uniformity within  $\pm 3$  dB, one could say this tuner meets that claim with several dB to spare, though I have seen considerably flatter response curves for car FM tuners.

Figure 2 shows the mono and stereo quieting characteristics of the FM tuner section. It takes about 25 dBf of input signal strength to achieve 50 dB of quieting in mono, as against 15.2 dB claimed by Panasonic; 47 dBf of signal strength is required to produce 50 dB of quieting in stereo. (Panasonic offers no claim for this important specification.) I strongly suspect that the FM tuner section of this sample could have been better aligned, since most earlier car audio tuners from this company that I have tested did far better in terms of meeting their specifications. At strong signal levels, best S/N for mono is about 1 dB short of the 70 dB claimed. In stereo, best S/N for strong signals was 66 dB.

Without trying to detune my FM signal generator to produce lowest distortion, I plotted THD + N versus audio frequencies for the FM tuner in mono and stereo for a 65-dBf input signal (Fig. 3). At 1 kHz, mono THD + N is just under 0.3%, while at 100 Hz and 6 kHz, it measured 0.37% and 0.28% respectively. Distortion increases when stereo signals are applied so THD + N in stereo is just over 1% for a 1-kHz modulating signal, and 1.5% and 0.6%, respectively, for the other two test points of 100 Hz and 6 kHz.

When I measured THD + N versus input signal level, I found that usable sensitivity (the point of 3% THD + N) was 13.5 dBf in mono and 29 dBf in stereo; the mono figure is close to Panasonic's rated 13.2 dBf, and there is no stereo figure quoted. From those points, the THD + N curves (not shown) curved down sharply to about the 50-dBf point, after which there was only minor improvement with increasing signal strength. At 65 dBf, THD + N was about 0.25% in mono and about 1.2% in stereo, corresponding closely to the results shown in Fig. 3 for a 1-kHz test signal.

At mid-frequencies, separation fell short of even the 30-dB mark, measuring around 27 to 28 dB. To the tuner's credit, it must be noted that separation remained fairly consistent all the way from about 100 Hz up to 15 kHz, where most FM stereo tuners' stereo separation decreases rapidly. I'd probably have found such blending had I tested the CQ-ID60 with the FM Optimizer switched in. But as neither the manual nor the Panasonic catalog says what it does, I decided not to measure its action.

Figure 4 shows a spectrum analysis taken at the left and right preamp outputs of the FM tuner section while modulating the left channel with a 5-kHz signal. The solid curve shows the components at the output of the left (modulated) channel while the dashed curve represents output from the right (unmodulated) channel. Note that the residual 19-kHz pilot carrier is attenuated by only about 37 dB relative to the desired 5-kHz audio output signal, while sidebands on either side of the suppressed 38-kHz subcarrier are attenuated even less, or about 20 and 23 dB. This is typical of car stereo tuners; they do not need to attenuate these high-frequency products to prevent problems with tape recorders, as home tuners do. A 19-kHz signal, 37 dB down at the

α

# The Quest

**In the beginning is music.**

**It grows from silence deep as thought itself. Images sparkle and disappear with quicksilver speed. Bathed in a crystalline sea of pure sound, you yield to surging currents of music.**

**Through Martin-Logan's exclusive electrostatic technology, music is recreated. Flawless in every nuance and fine detail, whisperquiet, lightningquick, thunderloud. And always, with pristine transparency.**



**The Quest: 72.5" H x 19" W x 13" D**

***Challenge:** Create a speaker diaphragm light enough to play 20,000 Hz yet powerful enough to play 100 Hz, thus eliminating crossovers and achieving a pure wave launch, absolute phase linearity and group delay characteristics approaching zero.*

***Solution:** A diaphragm lighter than one cubic inch of air. Over more than three years, Martin-Logan developed a vapor-deposition system that imprints a conductive coating only 20 atoms thick onto an ultrafine polyester film.*

**The Quest.**

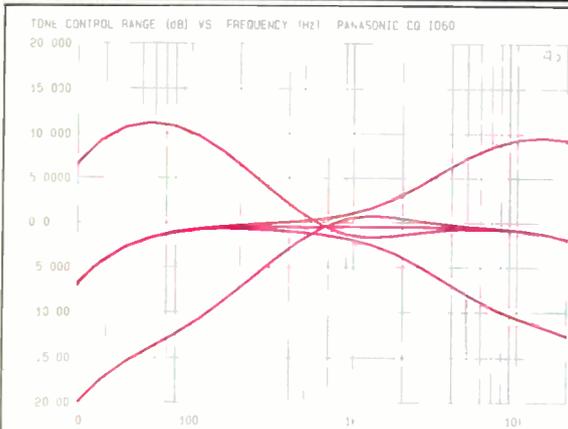
**Where music is the beginning and the end.**

Ω

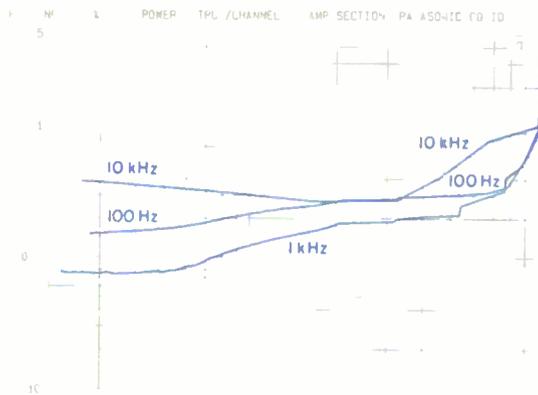
**MARTIN·LOGAN, LTD.**  
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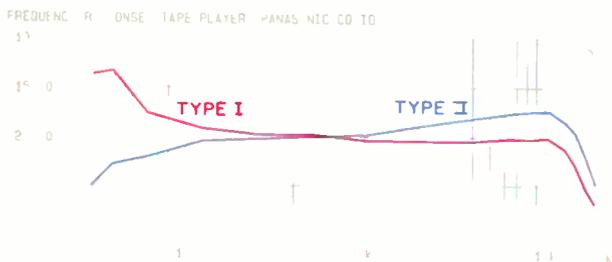
I commend Panasonic for recognizing a need and jumping on the ID Logic bandwagon before anyone else did.



**Fig. 6—Bass and treble control range, for test signals fed through front-panel CD input.**



**Fig. 7—THD + N vs. power output per channel into 4-ohm loads.**



**Fig. 8—Tape playback frequency response.**

unit's output isn't likely to cause tweeter damage either. On the other hand, if you often travel with your dog in the car (or with young people who can still hear 19 kHz and beyond), this level of 19 kHz output might prove annoying.

The less said about the AM tuner section the better—note its unforgivably poor frequency response (Fig. 5). At least, Panasonic has included the newly authorized station frequencies out to 1705 kHz (in fact, it tunes a bit past that limit), so you'll be able to pick up any new stations or stations newly assigned to those upper frequencies.

Turning to the amp and preamp sections, Fig. 6 shows the maximum boost and cut of the bass and treble controls, as well as response with the controls set flat (middle curve), for signals fed in through the front-panel CD input. Note that, while the middle curve's bass response is about the same as that shown for the FM section in Fig. 1, its treble response is a great deal flatter. Results are about what I have come to expect from standard, garden-variety bass and treble controls. And while not shown graphically, the loudness compensation circuitry also worked about like that of other similar circuits, providing around 8 dB of boost at 100 Hz and about 6 dB of boost at the treble end of the spectrum when the volume control was set 30 dB below maximum.

I suspect that anyone going to the trouble of installing this sophisticated ID Logic unit in their vehicle is also going to install higher powered amplifiers with it. Nevertheless, since the CQ-ID60 is a complete receiver with its own built-in amplifiers, I felt duty-bound to at least test amplifier distortion versus power output at three key frequencies (100 Hz, 1 kHz, and 10 kHz). As Fig. 7 shows, the amplifiers deliver their rated 9 watts per channel at or below the rated value of 1% THD for all three test frequencies.

For the tape section I checked frequency response with Type I (normal bias) and Type II (high-bias) calibrated test tapes from BASF and TDK. These tapes were recorded at a level 20 dB below a reference magnetization level of 250 nWb/m. Figure 8 shows the results: I can't imagine why that slight rise at the low end occurs with the Type I tape—I checked that the tone controls were flat for both these tests—but the upper -3 dB point is reached at around 14 kHz, as claimed. For Type II tape, response extends to 17 kHz before reaching the -3 dB point, with a slight rise of about 3 dB at around 10 kHz; at the bass end, response extends down to 39 Hz before reaching the -3 dB point.

For Type I tape, A-weighted S/N measured 49.5 dB without NR, and 58.8 dB when Dolby B NR was applied during playback of my special "noise" tape (recorded with bias signal only). While these figures fall somewhat short of Panasonic's specifications, bear in mind that Panasonic's reference level may be the recording level that results in 3% third-harmonic distortion (a usual practice) rather than the 250 nWb/m reference I use, probably several dB lower.

I also measured the spectral distribution of tape noise, both with and without Dolby B noise reduction. The noise in either case rolled off steeply below about 15 Hz, and was mostly about -70 to -72 dB between that point and 400 Hz. Above that frequency, the curves diverged. Without NR, the curve levelled off from 400 Hz to 2 kHz, then rose again, to reach a peak of about -61 dB at 15 kHz. With Dolby NR, the noise level continued falling until it dropped below -80

The major controls were designed by someone who knows that car stereos aren't mounted at eye level.

dB from about 800 Hz to 3 kHz, then rose to a peak of only about -72 dB around 15 kHz—the usual 10-dB improvement one expects from this NR system at treble frequencies.

Finally, Fig. 9 shows wow and flutter, as measured by the weighted-rms and IEC peak-weighting methods. Over most of the 25-S measurement period, wow and flutter measured around 0.15% weighted rms, a bit poorer than the 0.09% claimed by Panasonic. Using the more rigorous IEC peak weighting system, which more clearly reveals speed variations over the test period, shows that speed variation occasionally reached peaks of more than 0.3%.

Clearly, from the standpoint of its measurements, the Panasonic CQ-ID60 is a passably good unit, if not an outstanding one. But there are trade-offs here, ones that Technical Editor Ivan Berger will surely want to emphasize. The convenience of not having to fumble endlessly while driving from one region to another is a significant consideration. The ability to easily hook in a portable CD player via a front panel jack is also welcome. Panasonic is to be commended for jumping on the ID Logic bandwagon before anyone else. They recognized a need expressed by many car audio enthusiasts, and when the technology became available they were quick to take advantage of it.

*Leonard Feldman*

### Behind The Wheel

The further you go from home, the more useful a feature like ID Logic should be. So I took the Panasonic as far afield from New York City as Hartford, Conn., in one direction, and Pittsburgh, Pa. in the other. Traversing station-packed Connecticut, the CQ-ID60 brought in something to my taste (classical, country and western, and jazz) everywhere I went. In central Pennsylvania, however, there were some places where the display said "No Statn" for my desired formats, and others where flickering call letters on the display showed "Not Find," meaning that it knew of stations that it should be able to receive, but couldn't.

Usually, though, it shows the call letters of a station. After that, pressing the "Disp" side of the little rocker cycles you through the station's frequency, location, and format, then the chief city of your currently logged location, then that city's state. (I'd have preferred getting the station's location first, so I'd know sooner if I was moving towards it or away from it.) Station information was almost always accurate, except in areas halfway between two stations on one frequency, when the display would usually vacillate between both sets of call letters before choosing one. Format information was a little chancier, since a "Jazz" station (for example) may not broadcast jazz all the time.

The cities for which each listener-location grid square are named are not centered in their squares, which can get a bit confusing: New Haven is not due south of Hartford, but those two grid squares stack that way. And though you can get some stations from the "New Haven" grid at the south end of the "Hartford" one, don't expect to pick up stations within New Haven from a spot in downtown Hartford.

If you press the "ID" rocker too long, you get into the "Data" demo mode, which displays all theoretically available stations in the local data base, receivable or not. When not in "Data" mode, the ID Logic system properly rejected

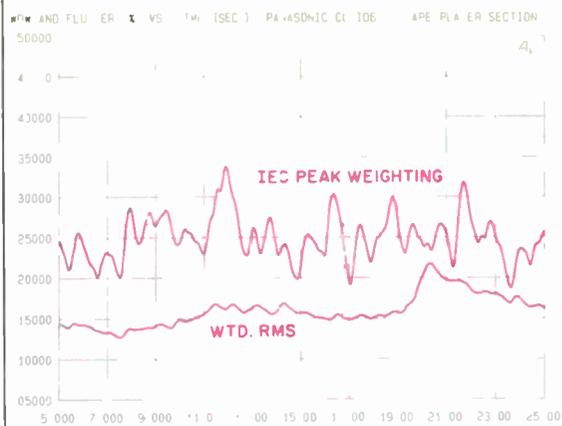


Fig. 9—Wow and flutter over a 25-S period.

some stations that couldn't actually be heard, but stopped at others that yielded only noise puffs.

The Panasonic was not a match for my reference on distant stations, but proved equally adept at handling breakthrough interference (whether from stations on the same or adjacent frequencies, I couldn't tell). The FM Optimizer circuit's most audible effect was a welcome reduction in distortion. On AM, reception was about average—quite pleasant on some stations, full of noises on others.

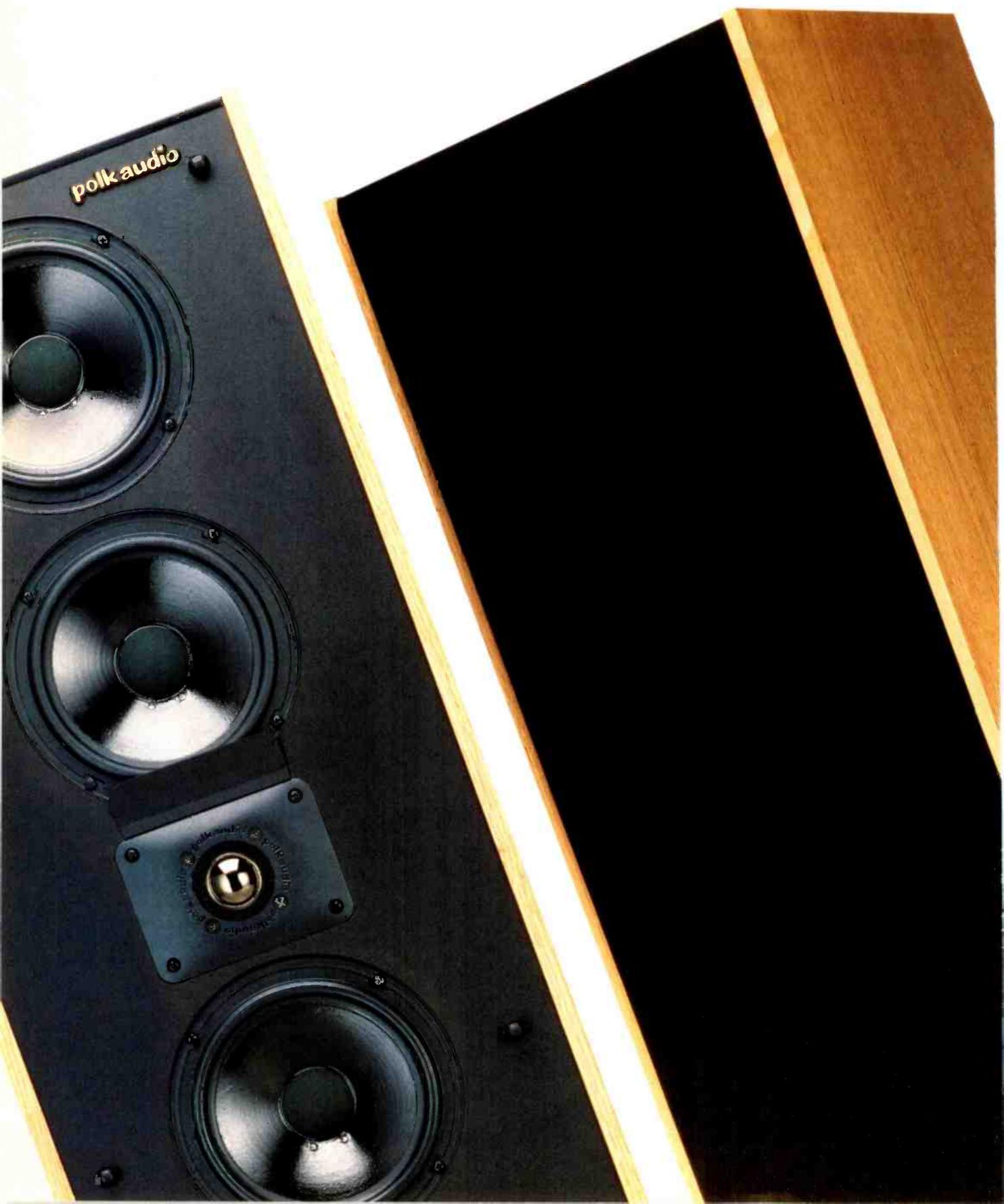
The controls were nicely arranged, for the most part, with the "Audio" rocker and the preset/format and "Band" keys obviously designed by someone who knew that most car stereos are mounted parallel to the car floor, well below eye level. The display, however, had a row of small but important indicators (for Dolby NR, stereo reception, "Data" mode, "FMO," tape type, and "TPS") at the top, where they were hidden from the driver's view. The main display information, however, was quite easy to read, especially the bright "ID" indicator (vital, since most controls change their function in that mode) and the big letters and numbers for the "Audio" rocker's modes and settings, broadcast station info, "Tape" (with arrows pointing up or down, depending on which side of the tape is playing) and "CD" (when that input is activated). My one complaint was that it's too easy to turn the unit off or attenuate the sound when you're trying to raise the volume—slightly different button design would have prevented that.

Night illumination is good. With the unit off, only the power switch lights up, but as inserting a tape won't turn the unit on, there's no need to illuminate the tape slot when the unit's off. With the unit on, all controls, the display, and the tape slot light up nicely, except for the big tape-transport buttons, which are easy to find anyway. While the green illumination matched that of my dash, I found that selecting amber illumination made the display easier to read by day.

The sound, as you'd suspect, was best when playing CDs through the front-panel input, next best on tape, okay on FM, and merely inoffensive on AM. I heard no evidence of wow and flutter, even on bumpy roads.

*Ivan Berger*

# Breathtaking



# the new Polk RTA 15t

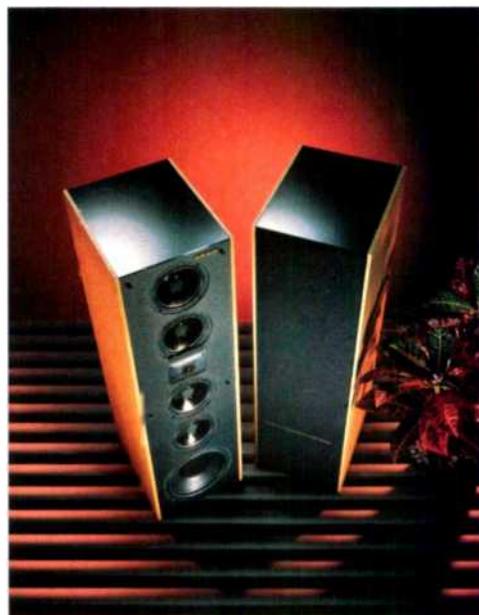
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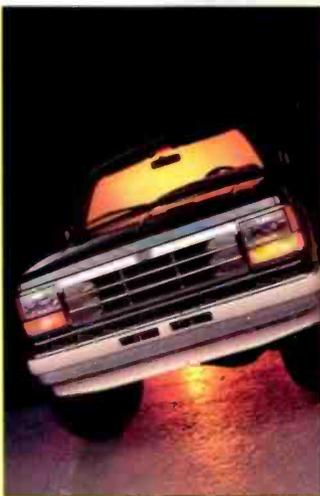


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# 18<sup>th</sup> CAR



# ANNUAL STEREO DIRECTORY

Photograph: Bill Ashe

## CD CHANGERS

MANUFACTURER	Model (RD) - Remote Included, (RO) - Remote Optional	Price, \$	Number of Magazines	Number of Discs per Magazine	Frequency Response, Hz to kHz, ±dB	Dynamic Range, dB	THD at 1 kHz for 0-dB Level, %	Number of Programmable Selections	Repeat Functions: Entire Disc (D), Track (T), Entire Program (E)	Audible Fast Search?	Auto Scan: Disc (D), Tuner (T)	TUNER										
												FM Usable Sensitivity, dB (for -30 dB THD + M)	Alternate-Channel Selectivity, dB	FM Mono, S/N, -dB	Total Number of Station Presets	Digital Out Jacks?	RCA Out Jacks?					
AIWA	ADC-M11(RD) Changer	599.00	1	10	5-20	85			D T E											Yes		
	ARC-M11 Controller	149.00																				
	ARF-M11 FM Modulator	99.00																				
ALPINE	3900 D/A Converter	1200.00	1	3	5-22	95	0.006	0	D/T	Yes	D	16.3	80	65	24							
	7980 In-Dash Changer/Tuner	900.00	1	3	5-20	95	0.006	0	D/T	Yes	D											
	5951Z Changer/Controller/FM Modulator	580.00	1	6	5-20 ± 1	95	0.01	0	D/T	Yes	D											
	5957S Changer	550.00	1	6	5-20 + C, -1	103	0.005													Yes	Yes	
	1310 Controller/Tuner (with ID Logic)	620.00	1	6	5-20 + 0, -1	95	0.03	60	D/T	Yes	D	9.3	80	65	12	Yes	Yes	Yes	Yes	Yes	Yes	
	5952V Changer	480.00	1	6	5-20 + 0, -1	95	0.03													Yes	Yes	
5959S Changer	880.00	1	6	5-20 + 0, -1	114	0.0025													Yes	Yes		
5953 Controller	220.00						720	D/T/E	Yes	D										Yes	Yes	
5954 Controller	150.00																			Yes	Yes	
1390 Tuner	200.00										16.3	80	60	24								
AUDIOVOX	CDC-700 Changer	699.00	1	10	5-20 ± 1	95	0.008	0	D T	Yes	D									No	No	
BLAUPUNKT	CDC M1 Changer	899.95	1	10	5-20 ± 1	90	0.005		D T	Yes	D T									Yes	Yes	
	CDC M4 Changer	449.95	1	10	5-2 ± 0.5	90	0.05		D T	Yes	D T									Yes	Yes	
CLARION	6300CD Changer	699.95	1	6	5-20	95			D T E	Yes	D									Yes	Yes	
	6201CD Changer	399.95	1	6	5-20	93			D T E	Yes	D									No	No	
FMC 303 Controller	169.95																			No	No	
COUSTIC	CC-55 Changer	599.95	1	10	5-20 ± 0.5	90	0.008		D T	Yes	D									Yes	Yes	
DENON	DCC-700 Changer	700.00	1	5	5-20 ± 1	100	0.003		D T	Yes	D									Yes	No	
	DCC-500 Changer	500.00	1	10	5-20 ± 3	90	0.005		D T	Yes	D									No	No	
	DCX-70 Controller	140.00							No	Yes	D									No	Yes	
DCX-60 FM Modulator	85.00								No	D										No	Yes	
ECLIPSE	ESD-430 Changer	500.00	1	12	5-20	92	0.01													No	No	
	ESD-431 Changer Wireless Remote	750.00	1	12	5-20	92	0.01													No	No	
	ESD-530 Changer	900.00	1	12	5-20		.00007													Yes	No	
JVC	XL-MG1800 Changer	729.95	3	6	5-20	98	0.004															
	XL-MG700RF Changer/Controller/FM Modulator	639.95	1	6	5-20	98	0.004															
	XL-MK500 Changer	479.95	1	6	5-20	98	0.004															
	KS-RF1 Controller/FM Modulator	179.95																				
	KS-RM18 Controller	259.95						50	D T		D											
KS-IF100 FM Modulator	99.95																					
KENWOOD	KDC-C600 Changer	429.00	1	10	2-20	96	0.005	20														
	KCA-R20 Controller	199.00																			Yes	Yes
	KCA-R10 Controller	149.00																				
	KCA-FM10 FM Modulator	69.00																				

# CD CHANGERS

MANUFACTURER	Model (RI) = Remote Included, (RD) = Remote Optional	Price, \$	Number of Magazines	Number of Discs per Magazine	Frequency Response, Hz to kHz, ±dB	Dynamic Range, dB	THD at 1 kHz for 0-dB Level, %	Number of Programmable Selections	Repeat Functions: Entire Disc, (D); Track (T), Entire Program (E)	Audible Fast Search?	Auto Scan: Disc (D), Tuner (T)	FM Usable Sensitivity, dBμV (For -30 dB THD + N)	Alternate-Channel Selectivity, dB	FM Mono. S/N, -dB	TUNER						
															Total Number of Station Presets	Digital Dui-Jacks?	RCA Dui-Jacks?				
KINERGETICS RESEARCH	KMP-100-U(RI) D/A Converter/Preamp KMC-100(RI) Changer	5000.00 1400.00	1	10		0.1	0	D T	Yes	D						Only	Yes				
L.A. SOUND	LA 1505CD Changer LA 1500CDC Controller LA 150 Remote	399.00 139.00 89.00	1	5	5-20 ± 0.5	90	0.05	10	D T/E D T/E D T/E	No No No						No	Yes				
MOPAR	82201547(RI) Changer/FM Modulator 4465101(RI) Changer	610.00 610.00	1 1	6 6	20-20 ± 1 20-20 ± 1	95 95	0.008 0.008		D T D T	Yes Yes											
NAKAMICHI	MC-101 Controller 100 CDC Changer 100 CDC/4 Changer CDC-101 Changer DAC-101 D/A Converter	200.00 2200.00 3000.00 900.00 500.00	1 1 1 1 1	10 10 10 10 10	5-20 5-20 5-20 5-20 ± 0.5	100 85 98	0.004 0.05 0.002									Only Yes Yes Yes	Yes Yes Yes Yes				
PANASONIC	CX-DP60 Changer CY-RM60 Wireless Remote/Display Unit/FM Modulator CY-FM5 FM Modulator CX-DPFM60 Changer Wireless Remote/Display Unit/FM Modulator CX-DP15(RD) Changer CY-RM15 Controller (with amp) CY-RM16 Controller CY-RM5 Controller	499.00 179.00 79.00 620.00 599.00 299.00 249.00 129.00	1 1 1 1 2	6 6 6 6 6	5-20 ± 1 5-20 ± 1 5-20 ± 1	96	0.01 0.01 0.005		D T D T D T/E	Yes Yes Yes	D D D						Yes Yes Yes Yes Yes				
PIONEER	CDX-M30 Changer CDX-FM30(RI) Changer/FM Modulator CDX-FM35 Changer/FM Modulator DEX-M400(RIC) Controller DEX-T70 Tuner CD-M1 Remote	460.00 680.00 560.00 240.00 230.00 120.00	1 1 1 1	6 6 6	5-20 ± 1 5-20 ± 1 5-20 ± 1 30-15 ± 3	94		512 512 512 512	D T/E D T/E D T/E D T	Yes Yes Yes Yes	D D D T T D					7	70	70	24	Yes No No No No Yes	No No No No Yes
PREMIER	CDX-M33 Changer	460.00	1	6	5-20 ± 1	94		512	D T/E	Yes	D						Yes	No			
PRESTIGE	P-175(RI) Changer	699.95	1	10	5-20 ± 1	95			D T	Yes	D						No	No			
RADION	DCD-8000 Changer Controller	400.00	1	6					D T		D						No	No			
SANYO	MAX-7000 Changer FXD-C201 Changer	549.99 449.99	1 1	10 10	5-20 5-20	95 95	0.008 0.008										No No	Yes Yes			
SENTREK	SCD 2000(RI) Changer/Controller/ FM Modulator	659.95	1	10	17-20	95	0.008	0	D T	Yes	D										
SHERWOOD	XM-710 Changer XM-7000 Changer/Controller/ FM Modulator XM-7100 Changer/Controller	499.00 600.00 650.00	1 1 1	6 6 6	5-20 ± 0.5 5-20 ± 0.5 5-20 ± 0.5	92 91 91	0.002 0.02 0.02	30 30 30	D T/E D T/E D T/E	Yes Yes Yes	D D D						Yes	Yes			
SONY	CDX-A15 Changer CDX-A55 Changer CDX-A15RF Changer/Controller/ FM Modulator CDX-A55RF Changer Controller/ FM Modulator RM-X12A Controller RM-X2001 Preamp/Controller XT-30 Tuner XTC-100 Tuner/Amp/Controller CDX-U300 Changer CDX-U500 Changer CDX-U300RF Changer Controller/ FM Modulator RM-X14 Controller/FM Modulator	450.00 450.00 560.00 580.00 160.00 400.00 180.00 330.00 450.00 600.00 670.00 260.00	1 1 1 1 1 1 1 1 1 1 1 1	10 10 10 10 10 10 10 10 10 10 10 10	5-20 5-20 5-20 5-20 5-20 5-20 5-20	85 95 85 95	0.015 0.01 0.015 0.01	0 0 0 0 0 10 110 110 110	No D T D T D T D T D T D T/E D T/E	No Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes	D D D D D D D D D D D D				12 75 75	75 68	68 30 18	No No No No No No No No No No No No	No No Yes Yes Yes Yes Yes Yes Yes		
SONY ES	XES-C1 Changer CDX-U400D Changer XES-P1 Preamp Controller XES-T1 Tuner	900.00 550.00 1300.00 250.00	1 1 1	10 10	3-20 5-20 30-15	105 105 70	0.003 0.005 0.3	110 110	D T/E D T/E	Yes Yes	D T T					8	75	70	30	Yes Only Yes No	Yes Yes Yes
SOUNDSTREAM	DC1000 Changer/Remote DTA1 D/A Converter	759.00 595.00	1	10	5-20 ± 1 5-20 ± 0.25	90 96	0.05 0.03										Yes	Yes Yes			
TARGA	Q-4000 Changer/Controller Q-6000 (see components below) CDC-5 Changer Q-735C Head Unit	400.00 699.00	1 1	6 10				16	D T D T/E	Yes Yes	D D T						30	Yes			
TECHNICS	CX-DP3000 Changer	979.00	1	12	5-20 ± 1	96	0.005		D T	Yes	D										
TOSHIBA	TX-972FM Changer/Controller/ FM Modulator TX-972AU Changer/Controller	549.95 529.95	1 1	10 10	20-20 20-20	55 90	0.0002 0.0002	160 160	D T/E D T/E	Yes Yes	D D						No No	Yes			
YAMAHA	YCDC-1000 Changer YCT-925 Controller/Tuner YFM-1 FM Modulator YCC-1 Remote YDSP-1 Controller/ Digital Sound-Field Processor	549.00 549.00 80.00 130.00 949.00	1	10	5-20	100			C T/E T	Yes Yes	D T D T	15.0	75	70	24	Yes No	Yes				



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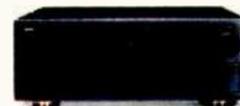
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# IN-DASH CD PLAYERS

MANUFACTURER	Model (R) = Remote Included, (RG) = Remote Optional, (C) = Player Controls CD Changer	Price, \$	Frequency Response, Hz to kHz, ±dB	Dynamic Range, dB	THD, %, at 1 kHz for 0-dB Level	Filters: Media Only (A), Digital + Analog (B) (A)	Number of Programmable Selections	AUX Input?	Repeat Functions: Entire Disc (D), Track (T), Entire Program (E)	Audible Fast Search?	Auto Scan: Disc (D), Tuner (T)	TUNER									
												FM Usable Sensitivity, dBm (For -30 dB THD + N)				FM Mono S/N Ratio, -dB	Total Number of Station Presets (if Applicable)	Built-in Amp Power, Watts (if Applicable)	Thet Protection: Pull-Out (P), Removable (R)	RCA In Out Jacks?	
												30 Max.	30 Max.	30 Max.	30 Max.						
ALPINE	7803S	550.00	5-20 +0,-1	95	0.006	D	0	No	D/T	Yes	D	16.3	80	60	24	30 Max.	R	Dut	Dut		
	7802	460.00	5-20 ±1	93	0.01	D	0	No	D/T	Yes	D	16.3	80	60	24	30 Max.	P	Rear	Dut		
	7980 (3-Disc Changer)	900.00	5-20 +0,-1	95	0.006	D	0	No	D/T	Yes	D	16.3	80	65	24		P				
	7915	520.00	5-20 +0,-1	95	0.006	D	0	No	D/T	Yes	D/T	16.3	80	60	24		P		Dut		
7914	480.00	5-20 +0,-1	95	0.006	D	0	No	D/T	Yes	D/T	16.3	80	60	24		P		Dut			
AUDIOVOX	ACD 35	599.95	5-20	95	0.05	D	16	No	D/T/E	Yes	D/T	13		30	25	P		Out			
BLAUPUNKT	New York	799.95	20-20 ±0.3	90	0.005	D	16	No	D/T/E	Yes	D/T	13	85	75	36	10 x 4	P/S	Out	Yes		
	Aspen	479.95	10-20 ±1	90	0.002	D	0	No	D/T	Yes	D/T	12	75	70	24		P	Yes	Yes		
	Denver	449.95	10-20 ±1	90	0.002	D	0	No	D/T	Yes	D/T	12	75	70	24		P	Yes	Yes		
	Miami	449.95	10-20 ±1	90	0.002	D	0	No	D/T	Yes	D/T	12	75	70	24	10 x 4	P	Yes	Yes		
Orlando	419.95	10-20 ±1	90	0.002	D	0	No	D/T	Yes	D/T	12	75	70	24		P	Yes	Yes			
CLARION	5870CD	649.95	5-20	93		D	0	Yes	D/T/E	Yes	D/T	12	70	20		P	Dut	Dut			
	5930CD	999.95	5-20	95		D	0	Yes	D/T/E	Yes	D/T	12	70	24		P	Dut	Dut			
	5632CD	349.95	5-20 ±0.1	93	1	D	0	No	D/T/E	Yes	D/T	12	70	20	27		P	Yes	Yes		
	5671CD	399.95	5-20 ±0.1	93	1	D	0	No	D/T/E	Yes	D/T	12	70	20	27		P	Yes	Yes		
	5730CD	449.95	5-20 ±0.1	93	1	D	0	No	D/T/E	Yes	D/T	12	70	20	27 x 4		P	Yes	Yes		
	5770CD	499.95	5-20 ±0.1	93	1	D	0	No	D/T/E	Yes	D/T	12	70	20	27 x 4		P	Yes	Yes		
COUSTIC	CD-303	549.95	4-20 ±2	90	0.05	D	16	Yes	D/T/E	Yes	D/T	12	70	60	30	14 x 4	P	Yes			
CRAIG	AP902	599.95	5-20	90	.0001	D		No	D/T/E	Yes	D/T	15.9	70	60	18	25	P	Yes			
DENDN	DCC-9770(RIC)	750.00	5-20 ±1	96	0.005	D	0	No	D/T	Yes	D/T	14.8	100	70	24	18	P	Dut	Yes		
	DCC-8770	650.00	5-20 ±1	96	0.005	D	0	Yes	D/T	Yes	D/T	14.8	100	70	24		P	Yes	Yes		
	DCC-8570	550.00	5-20 ±1	96	0.005	D	0	Yes	D/T	Yes	D/T	14.8	100	70	24		P	Yes	Yes		
ECLIPSE	ECD-411(C)	699.95	20-20 ±3	94	0.02	A	0	No	D/T	Yes	D/T	13.5			24	12	P	Yes	Yes		
	ECD-410	475.00	20-20 ±3	94	0.02	A	0	Yes	T	Yes	D/T	13.5			24	12	P	Yes	Yes		
	ECD-510	900.00	5-20		.00007	D	0	No	D/T	Yes	D/T	12.6			24		P, Dpt.	Yes	Yes		
FULTRDN	16-9700		20-20	85	0.2	A	0	No	T	Yes	D/T	12	25	60	18	25	P	Yes			
JENSEN	CD-9500	429.00	10-20						T	Yes	D/T	14			18	20	P				
JVC	XL-G3700(RI)	399.95	5-20	90	0.015				D/T	D	15.3			24	8	P					
	XL-G2700(RI)	379.95	5-20	90	0.015				D/T	D	15.3			24	8						
	XL-G2000(RI)	319.95	5-20	90	0.015		15		D/T/E	D/T	15.3			24	8						
	KS-RX835	799.95	5-20	95	0.005				D/T	D/T	12.1			24	3 x 2, 8 x 2						
	CD Cassette Receiver																				
KAWASAKI	KRCD 292	699.00	20-20 ±0.5	90	0.05	D	16	No	D/T/E	Yes	D/T	12	55	60	30	25	P	Yes			
KENWOOD	KDC-95R(RIC)	599.00	5-20 ±1	96	0.005	D	20	No	D/T	Yes		15.2@ 50 dB	70	96	24		P/S	Out			
	KDC-85R(C)	549.00	5-20 ±1	96	0.005	D	20	No	D/T	Yes		15.2@ 50 dB	70	96	24		P/S	Out			
	KDC-77R	479.00	5-20 ±1	96	0.005	D	0	No	D/T	Yes		15.2@ 50 dB	70	96	18	8 x 4	P	Dut			
	KDC-67R	429.00	5-20 ±1	96	0.005	D	0	No	D/T	Yes		15.2@ 50 dB	70	96	18	8 x 4		Dut			
KRACO	KCD-3000	849.95	5-20 ±3	90	1.0	0		No	T	Yes	T	15	53	80	18	20	P	Yes			
L.A. SOUND	LA 1100CD	449.00	5-25 ±0.09	90	0.02	D	0	In Out	D/T	Yes	T			60	24	14 x 2, 8 x 4	P	Yes			
MOPAR	82400844	530.00	30-20 +0,-2	100	0.15	D	0	No	D	No	D/T	30@ 50 dB	60	58	20	12 x 4					
NAKAMICHI	Mobile CD Tuner 1(RIC)	750.00	5-20 ±0.5	85	0.008	D	0	Yes		Yes	D	17		60	18		P	Yes			
OPTIMUS	12-1987	359.95	20-20 ±3	80	0.15	0	16		D/T/E	Yes	D/T				18		P	Yes	Yes		
	12-1941 (Under-Dash)	349.95	20-20		0.1	A	0	Yes		Yes					18			Yes	Yes		
PANASONIC	CO-DP42	569.00	5-20 ±1		0.008		12	Yes	D/T	Yes	D/T	13.2	75	70	24	27 x 4	P	Yes	Yes		
	CO-DP38	529.00	5-20 ±1		0.008		12	Yes	D/T	Yes	D/T	13.2	75	70	24	22 x 4	R	Yes	Yes		
	CO-DP37	499.00	5-20 ±1		0.008		12	Yes	D/T	Yes	D/T	13.2	75	70	24	17 x 4	P	Yes	Yes		
	CO-DP32	429.00	5-20 ±1		0.008		12	No	D/T	Yes	D/T	13.2	75	70	24	22		Yes	Yes		
PHILIPS	DC911	599.00			0.009	D	12		D/T/E	Yes	D/T				18	8 x 2, 25 x 2	P	Yes			
PIONEER	DEH-M980(RIC)	680.00	5-20 ±1	90		D	512	No	D/T	Yes	D/T	8	70		24	30 x 4	R	Yes	Yes		
	DEH-880(RI)	600.00	5-20 ±1	90		D	0	No	D/T	Yes	D/T	8	70		24	30 x 4	R	Yes	Yes		
	DEH-780(RI)	510.00	5-20 ±1	90		D	0	No	D/T	Yes	D/T	11	70		24	30	R	Yes	Yes		
	DEH-680	480.00	5-20 ±1	90		0	0	No	D/T	Yes	D/T	11	70		24	30	R	Yes	Yes		
	DEH-580	410.00	5-20 ±1	90		0	0	No	D/T	Yes	D/T	11	70		24	30	R	Yes	Yes		
	GEH-M2000(C)	280.00	5-20 ±1	90		D	512	No	D/T/E	Yes	D/T	11	70		24	25 x 2, 15 x 4	R	Yes	Yes		
	FHM-75(RIC)	1200.00	5-20 ±1	90		D	0	No	D/T	Yes	D/T	8	70		24	30 x 4		Yes	No		
	CDX-4	400.00	5-20 ±1	90		D	0		D/T	Yes	D										

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# IN-DASH CD PLAYERS

MANUFACTURER	Model (R) = Remote Included, (RO) = Remote Optional, (C) = Player Controls CD Changer	Price, \$	Frequency Response, Hz to kHz, ±dB	Dynamic Range, dB	TRD, %, at 1 kHz for 0-dB Level	Filtration: Analog Only (A), Digital + Analog (D)	Number of Programmable Selections	AUX Input?	Repeat Functions: Tape (A), Track (B), Entire Program (C)	Audible Fast Search?	Automatic Rewind?	Controls: Volume (V), Fader (F), Tone (T), Balance (B), Program Search?	Intro Scan?	Direct-Access Numeric Keypad?	TUNER						
															FM Usable Sensitivity, dB (For -30 dB TRD + N)	Alternate-Channel Selectivity, dB	FM Mono S/N Ratio, -dB	Total Number of Station Presets (if Applicable)	THX Protection: Full-Out (P), Compress (R), Secret Code (S)	RCA In/Out Jacks?	
PREMIER	DEX-M88(RIC) DEH-M77(RIC) DEH-M66(RIC)	900.00 700.00 540.00	5-20 ± 1 5-20 ± 1 5-20 ± 1	92 90 90		D D D	512 512 512	Yes No No	D/T/E D/T D/T	Yes Yes Yes	D/T D/T D/T	7 8 11	70 70 70	70	24 24 24	30 x 4 30	R R R	Yes Yes Yes			
PROFILE	CD210	450.00	20-22 ± 0.5	90	0.02	D		No	D/T	Yes	D/T				60	65	18	25	P	Dut	
RADION	DCD-7000	599.00					16	Yes	T	Yes	D/T						30	35	P		
SANYO	ECD8500	449.99	5-20 ± 3	90	0.05	D	16	No	D/T/E	Yes	D/T				12	65	60	30	25 x 2, 20 x 4	P	Yes
SENTREK	SCD 1000	499.95	20-20 ± 5	95	0.05	D	0	No	D/T/E	Yes	D/T				17	80	60	30	14	P	Yes
SHERWOOD	XCM-6820(C) XC-6810P XC-6520P XC-6420P XC-6320P	575.00 475.00 625.00 500.00 450.00	5-20 ± 9.5 5-20 ± 0.5 5-20 ± 1 5-20 ± 1 5-20 ± 1	94 91 94 90 90	0.02 0.02 0.02 0.02 0.02	D D D D D	8 8 0 9 0		D/T/E D/T/E D/T/E D/T/E D/T/E	Yes Yes Yes Yes Yes	0 D D D D	11.2 11.2 11.2 11.2 11.2	80 80 80 80 80	70 70 70 70 70	30 18 24 30 24	25 x 4 25 25 x 4 25 x 2, 8 x 4 25	R/S P P P P	Yes Yes Yes Yes Yes			
SONY	CDX-4040 CDX-5080 CDX-5180 CDX-U8000(C)	380.00 450.00 520.00 680.00	5-20 5-20 5-20 5-20	85 85 90 100	0.015 0.015 0.01 0.008	D D D D	0 0 0 0	Yes Yes Yes Yes	D/T D/T D/T D/T	Yes Yes Yes Yes		12.0 12.0 12.0 12.0	75 75 75 75	68 68 68 68	24 24 24 30	11 10	P R R	Yes Yes Yes Yes			
SPARKOMATIC	SR600	399.99	20-20	85	0.05	D	20	No	T	Yes	D/T				17	60	60	18		Yes	
TARGA	CDR-7 Q-2000	599.00 499.00					16 16	Yes Yes	T T	Yes Yes	D/T D/T						30 30	35 15 x 2, 35 x 2	P P		
TOSHIBA	TX-910 TX-902	609.95 419.95	5-20 ± 3 5-20 ± 3	90 90	0.05 0.05	D D		No No	D/T/E D/T/E	Yes Yes	D D/T				10	50	60	18	25		Yes Yes
YAMAHA	YCDR-1020 YCDT-720	699.00 499.00	20-50 5-20	100 90	0.01 0.05	D D	20	Yes Yes	D-T-E T	Yes Yes	D/T D/T				20 15	75	70	30 30	35 x 4	P P	Yes Yes

# DAT PLAYERS

MANUFACTURER	Model (R) = Remote Included, (RO) = Remote Optional, (C) = Player Controls CD Changer	Price, \$	Frequency Response, Hz to kHz, ±dB	Dynamic Range, dB	TRD at 1 kHz for 0-dB Level, %	Filtration: Analog Only (A), Digital + Analog (D)	AUX Input?	Repeat Functions: Tape (A), Track (B), Entire Program (C)	Audible Fast Search?	Automatic Rewind?	Controls: Volume (V), Fader (F), Tone (T), Balance (B), Program Search?	Intro Scan?	Direct-Access Numeric Keypad?	TUNER						
														FM Usable Sensitivity, dB (For -30 dB TRD + N)	Alternate-Channel Selectivity, dB	FM Mono S/N Ratio, -dB	Total Number of Station Presets	THX Protection: Full-Out (P), Compress (R), Secret Code (S)	RCA Out Jacks?	
AIWA	HD-S100(RI)	950.00	10-22 ± 1	90	0.009	D	Yes	Yes	Yes	V	Yes	Yes	No						P	Yes
CLARION	Audia 8100	2299.95	30-15	92	0.005	D	Yes	A/B/C	No	Yes	V/B/F/T	Yes	Yes	No	12	70	92	12	S	Yes
SHARP	RX-P1(RI)	1499.99	5-22	90	0.009	D	Yes	A/B/C	Yes	Yes	V	Yes	No	No					No	No
SONY	DTX-10	1199.95	5-22	90	0.01	D	Yes	A/B	Yes	Yes	V/B/F/T	Yes	Yes	No	12	75	70	24		Yes



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# AMPS/EQUALIZERS

MANUFACTURER	Model	Price, \$	Preamp (P), Amp (A), Equalizer (E)	Number of EQ Bands	Boost/Cut Range, ±dB	S/N Ratio, -dB, A-Weighted	Watts/Channel into 4 Ohms, per EIA-egg	Full-Power Bandwidth, Hz to kHz	THD at Rated Output, % per EIA-150	Input Level: Preamp (P), Speaker (S)	Fader Control?	Includes Crossover?	RCA Input Jacks?	Dimensions, inches	Notes
A/D/S/	PS 5	240.00	A			40	10-40 ±1	0.05	P/S	No	Yes	7 7/8 x 1 3/4 x 5 1/2	Bridges to 90 watts; operates into 2 ohms.		
	PS 5.2		A		105	40	10-40 ±1	0.05	P		Yes	7 7/8 x 1 3/4 x 5 1/2	As above.		
	PQ 8	195.00	A			20 x 4	10-40 ±1	0.3	P/S	No	Yes	9 3/4 x 1 7/8 x 5 7/8	Includes RCA adaptor, Model AC 202; operates into 2 ohms.		
	PQ 10	490.00	A			80 x 2†	10-40 ±1	0.05	P/S	No	Yes	11 1/4 x 2 x 6 1/2	†Two-, three-, or four-channel operation. Operates into 2 ohms.		
	PQ 10.2		A		105	80 x 2†	10-40 ±1	0.05	P		Yes	11 1/4 x 2 x 6 1/2	As above.		
	PQ 20	790.00	A			200 x 2†	10-40 ±1	0.05	P/S	No	Yes	14 x 2 3/8 x 8 1/4	As above.		
	PQ 20.2		A		110	200 x 2†	10-40 ±1	0.05	P		Yes	14 1/4 x 2 3/8 x 8 1/4	As above.		
	PH 12	290.00	A			20 x 6	10-40 ±1	0.03	P/S	No	No	9 3/4 x 1 7/8 x 7 3/4	Operates into 2 ohms.		
	PH 15	690.00	A			50 x 6††	10-40 ±1	0.05	P/S	No	No	14 x 2 3/8 x 8 1/4	††Three-, four-, five-, or six-channel operation. As above.		
PH 15.2		A		105	50 x 6††	10-40 ±1	0.05	P		No	14 1/4 x 2 3/8 x 8 1/4	As above.			
AIWA	MA-8500	425.00	A		98	60 x 3†	10-25	0.045	P	No	Yes	10 1/2 x 2 x 12 1/2	†Three- or five-channel operation.		
	MA-8400	350.00	A		98	35 x 4	10-25	0.045	P	No	Yes	10 1/2 x 2 x 10 1/4	Bridges to 60 watts x 2.		
	MA-7400	300.00	A		95	25 x 4	10-25	0.05	P	No	Yes	10 1/2 x 2 x 9 1/2	Bridges to 40 watts x 2.		
	MA-2500	99.00	A		90	25	20-30	0.1	P/S	No	Yes	5 1/2 x 1 1/4 x 5 5/8			
	MA-G2500	150.00	A,E	7	12	87	25	20-30	0.1	P/S	Yes	Yes	7 1/8 x 1 x 16		
ALPHASONIK	FA-100	295.00	A		95	50	5-30	0.01	P	No	No	2 1/2 x 8 1/2 x 10 1/4	Bridgeable.		
	FA-150	395.00	A		95	75	5-30	0.01	P	No	No	2 1/2 x 8 1/2 x 12 1/4	As above.		
	FA-200	495.00	A		95	100	5-30	0.01	P	No	No	2 1/2 x 8 1/2 x 15	As above.		
	PMA-2030I	195.00	A		95	30	5-30	0.05	P/S	No	No	2 1/2 x 7 1/8 x 5 7/8	As above.		
	PMA-2050I	199.00	A		95	50	5-30	0.05	P/S	No	No	2 1/2 x 7 1/8 x 7 1/2	As above.		
	PMA-2075I	249.00	A		95	75	5-30	0.05	P/S	No	No	2 1/2 x 7 1/8 x 10	As above.		
	PMA-2100I	349.00	A		95	100	5-30	0.01	P/S	No	No	2 1/2 x 7 1/8 x 13	As above.		
	PMA-2150I	449.00	A		95	150	5-30	0.01	P/S	No	No	2 1/2 x 7 1/8 x 14 1/2	As above.		
	PMA-4035I	299.00	A		95	70 x 2†	5-30	0.05	P/S	No	Yes	Yes	2 1/2 x 7 1/8 x 12	†Two-, three-, or four-channel operation.	
	PAS-1100	295.00	A		90	100 x 1	15-160 Hz	0.05	P/S	No	Yes	Yes	2 x 6 3/8 x 8	Mono subwoofer amp; high-pass line output.	
PAS-1060	190.00	A		90	60 x 1	15-150 Hz	0.05	P/S	No	Yes	Yes	2 x 5 5/8 x 6 1/2	Mono subwoofer amp.		
PQ-7	150.00	E	7	18	95			0.02	P/S	Yes	No	Yes	7 x 1 x 5		
PS-7B	230.00	E	7	18	95			0.02	P/S	Yes	†	Yes	7 x 1 x 4 3/4	†Subwoofer crossover.	
P-2	300.00	E	5	18	100			0.01	P/S	Yes	No	Yes	7 x 1 x 6	Adjustable center frequencies.	
ALPINE	3402	500.00	P,E	7	15	100			P	No	No	Yes	9 1/2 x 1 1/2 x 6 3/4	True parametric; four-channel operation.	
	3339	420.00	P,E	7	12	100			P	No	Yes	Yes	†	†Control unit, 6 1/4 x 1 7/8 x 3/4; base unit, 7 x 1 x 5 1/2. Includes spectrum analyzer. Adjustable crossover frequency.	
	3331	260.00	P/E	11	12	100			P	Yes	Yes	Yes	7 x 1 x 5 1/2		
	3319	140.00	P/E	7	12	95			P/S	Yes	No	Yes	7 x 1 x 5 1/2		
	3217	140.00	P/A,E	7	12	90	25		P/S	Yes	No	Yes	7 x 1 x 5 1/2	Fader works on preamp and speaker outputs.	
	3566	660.00	A		105	†	20-20	0.08	P		Yes	Yes	10 3/8 x 2 1/4 x 13 3/8	†Three-, four-, five-, or six-channel operation; six-channel mode, 30 watts x 4 and 60 watts x 2.	
	3558	1200.00	A		110	30 x 4†	20-20		P		No	Yes	9 3/8 x 2 1/8 x 15 3/4	†Two-, three-, or four-channel operation. Class A.	
	3555	500.00	A		105	150 x 2†	20-20	0.08	††		Yes		10 3/8 x 2 1/4 x 11 1/2	†As above. ††Preamp-level input included; speaker-level input available with Model 4311 adaptor (\$25.00). Operates into 2 ohms.	
	3553	390.00	A		105	100 x 2†	20-20	0.08	††		No		10 3/8 x 2 1/4 x 10 3/4	†As above. Operates into 2 ohms.	
	3549	580.00	A		110	100	20-20	0.08	††		Yes		10 3/8 x 2 1/4 x 11 1/4	Bridges to 300 watts; operates into 2 ohms.	
	3548	300.00	A		106	60	20-20	0.08	††		Yes		9 1/2 x 7 1/8 x 2	As above but 160 watts.	
	3547	250.00	A		106	40	20-20	0.08	††		Yes		9 1/2 x 6 1/4 x 2	As above but 120 watts.	
	3544	750.00	A		110	150	20-20	0.08	P		No	Yes	11 1/8 x 2 1/8 x 10 1/4	As above but 400 watts.	
	3543	550.00	A		110	100	20-20	0.08	P		No	Yes	11 1/8 x 2 1/8 x 10 1/4	As above but 300 watts.	
	3542	280.00	A		105	60	20-20	0.08	P		No	Yes	8 5/8 x 2 x 7	As above but 160 watts.	
	3541	230.00	A		105	40	20-20	0.08	P		No	Yes	8 5/8 x 2 x 6 1/4	As above but 100 watts.	
	3531	160.00	A		92	18 x 4	20-20	0.8	P/S	No	Yes	Yes	4 3/4 x 1 5/8 x 5 7/8	Operates into 2 ohms.	
	3522	160.00	A		100	30	20-20	0.08	P		No	Yes	8 1/4 x 1 7/8 x 5 1/2	As above; bridges to 80 watts.	
	3513	130.00	A		105	25	20-20	0.08	P		No	Yes	7 7/8 x 1 1/2 x 5 1/2	Bridgeable; operates into 2 ohms.	
	3503	100.00	A		92	18	20-20	0.8	P/S	No	Yes	Yes	4 3/4 x 1 1/2 x 3 7/8	Operates into 2 ohms.	
3362	1200.00	†	†		95				P	Yes	No	Yes	7 x 2 x 5 1/2	†Digital ambience processor with nine front and nine rear digital EQ bands. Optical digital input. †Digital ambience processor.	
3617	520.00	†			95				P	Yes	No	Yes	7 x 2 x 5 1/2		
ALTEC LANSING	ALA 552	300.00	A		110	50	10-30	0.08	P/S	No	No	Yes	3 1/2 x 3 x 10 3/4	Bridgeable.	
	ALC 11	150.00	E	3	12	100		0.008	P/S	No	Yes	Yes	2 3/4 x 7 x 3 1/8		
	ALC 15	350.00	E	3	12	100		0.008	P	Yes	Yes	Yes	3 1/4 x 8 3/8 x 8		
	ALC 20	650.00	E	5	12	100		0.003	P	Yes	Yes	Yes	2 1/2 x 8 7/8 x 14 7/8	Optional under-dash control unit, Model ALC 20C, \$375.00.	
ANABA AUOMD	PA100	214.99	A		97	50	20-20 ±1	0.03	P		Yes			Bridgeable.	
	PA200	279.99	A		100	100	20-20 ±1	0.03	P		Yes			As above.	
	PA300	334.99	A		100	150	20-20 ±1	0.03	P		Yes			As above.	
	PA400	444.99	A		101	200	20-20 ±1	0.03	P		Yes			As above.	
	PA450	299.99	A		97	50 x 4†	20-20 ±1	0.03	P		Yes			†Two-, three-, or four-channel operation.	
	PA4100	459.99	A		100	100 x 4†	20-20 ±1	0.03	P		Yes				

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# AMPS/EQUALIZERS

MANUFACTURER	Model	Price, \$	Preamp (P), Amp (A), Equalizer (E)	Number of EQ Bands	Boost/Cut Range, ±dB	S/N Ratio, dB, A-Weighted	Watts/Channel into 4 Ohms, per EA-egg	Full-power Bandwidth, Hz to kHz	THD at Rated Output, %	Input Level: Preamp (P), Speaker (S)	Fader Control?	Includes Crossover?	RCA Input Jacks?	Dimensions, inches	Notes
AUDIO CONNECTION	Dispersion Module	139.95	P					0.004	P	No	†	Yes	10½ x 1¼ x 1	†Optional external crossover filter modules. Eight outputs.	
AUDIOCONTROL	EQL Series II	249.00	P/E	13	12	112		0.005	P/S	No	No	Yes	1¼ x 6¾ x 8¾	Level-matching preamp; seven-band bass EQ with half-octave spacing, six-band octave EQ for mids and highs.	
	EQX Series II	349.00	P/E	13	12	112		0.005	P/S	No	†	Yes	1¼ x 6¾ x 8¾	As above. †Programmable crossover with Linkwitz-Riley alignment.	
	EQQ	349.00	P/E	12	12	110		0.005	P/S	No	No	Yes	2¼ x 6¾ x 9½	Level-matching preamp; independent EQ on four channels.	
	EQT	299.00	P/E	30	12	110		0.005	P/S	No	No	Yes	2¼ x 6¾ x 9½	Mono; level-matching preamp; ½-octave EQ spacing; constant Q.	
	ESP-2	189.00	E	3	Var.	110		0.05	P	No	No	Yes	1¼ x 4½ x 5½	Spatial restoration processor; includes dash-mountable remote control.	
	ESP-3	299.00	E	3	Var.	110		0.05	P	No	Yes	Yes	1¼ x 5½ x 7	Proprietary center-channel processor with spatial restoration; high-pass on center output; includes remote control.	
	The Epicenter	189.00	E	1	15	110		0.005	P	No	No	Yes	1½ x 5 x 6	Proprietary bass restoration circuit; includes dash-mountable remote control.	
System 90/Model 20	549.00	A			100	70	10-50	0.09	P/S	No	†	Yes	12½ x 6½ x 2½	Includes the Epicenter. †Programmable crossover.	
System 90/Model 40	649.00	A			100	40 x 4	10-50	0.05	P/S	No	†	Yes	12½ x 6½ x 2½	Includes the Epicenter. †Two programmable crossovers.	
AUDIOLINK	Powerdriver PD-2	129.95	P			85		0.01	P/S	No	†	Yes	7/8 x 37/8 x 2½	†Optional.	
	EQ3	109.95	P/E	3	12	80		0.01	P	No	No	Yes	4 x 2½ x 2	For use with model above.	
AUDIOVOX	AMP-520	59.99	A			85	20	30-40	10	P/S	No	No	Yes	4 x 1¼ x 6¼	
	AMP-530	89.99	A			85	25	30-40	10	P/S	No	No	Yes	7/8 x 2¾ x 7½	
	AMP-540	149.99	A			85	50	30-40	10	P/S	No	No	Yes	7/8 x 2¾ x 8¾	
	AMP-580	175.00	A			90	35	10-40	0.1	P/S	No	Yes	Yes	8¾ x 2 x 8	Bridgeable.
	AMP-581	220.00	A			90	60	10-40	0.1	P/S	No	Yes	Yes	12¼ x 2 x 8	As above.
	AMP-582	300.00	A			90	120	10-40	0.1	P/S	No	Yes	Yes	16¾ x 2 x 8	As above.
	AMP-583	350.00	A			90	60 x 4	10-40	0.1	P/S	No	Yes	Yes	16¾ x 2 x 8	As above.
	AMP-760	70.00	A/E	7	12	80	15	50-20	10	S	Yes	No	No	6½ x 1 x 4	CO input.
	AMP-777	150.00	A/E	7	12	80	18 x 4	20-30	10	S	Yes	No	No	6¾ x 1½ x 6	
	AMP-785	125.00	A/E	7	12	80	18	20-30	10	S	Yes	No	No	6¼ x 1¼ x 5½	
AUTOTEK	7040BTS	199.95	A	1		105	18	20-20	0.05	P	No	No	Yes	7½ x 1¼ x 4¼	Bridgeable; operates into 2 ohms; 18-dB boost at 45 Hz; two-way preamp bypass switch.
	7050BTS	299.95	A	2		105	22	20-20	0.015	P	No	No	Yes	8¼ x 2½ x 4¾	Bridgeable; operates into 2 ohms; 18-dB boost at 45 Hz and 12-dB boost at 16 kHz; three-way preamp/EQ bypass switch.
	7100BTS	399.95	A	2		105	50	20-20	0.015	P	No	No	Yes	8¼ x 2½ x 6½	As above.
	7150BTS	549.95	A	2		105	75	20-20	0.015	P	No	No	Yes	8¼ x 2½ x 8¾	As above.
	7300BTS	799.95	A	2		105	150	20-20	0.015	P	No	No	Yes	8¼ x 2½ x 14	As above.
	7600BTS	1099.95	A	2		105	300	20-20	0.015	P	No	No	Yes	8¼ x 2½ x 19	As above.
	7054BTS	569.95	A	2		105	22 x 4	20-20	0.015	P	No	No	Yes	8¼ x 2½ x 8¾	As above.
	7204BTS	759.95	A	2		105	50 x 4	20-20	0.015	P	No	Yes	Yes	8¼ x 2½ x 11¾	As above.
	7050XX	369.95	A	2		105	22	20-20	0.015	P	No	No	Yes	8¼ x 2½ x 6½	As above but operates into 1 ohm.
	7100XX	469.95	A	2		105	50	20-20	0.015	P	No	No	Yes	8¼ x 2½ x 8¾	As above.
	9050BTS	499.95	A	2		90	22	20-20	0.015	P	No	No	Yes	8¼ x 2½ x 6½	Bridgeable; operates into 0.5-ohm load; 18-dB boost at 45 Hz and 12-dB boost at 16 kHz.
	9100BTS	899.95	A	2		90	50	20-20	0.015	P	No	No	Yes	8¼ x 2½ x 8¾	As above.
	7005B	349.95	E	15		100			0.04	P	No	No	Yes	13 x 1½ x 5½	Trunk-mount.
7005	399.95	E	15		100			0.04	P	No	No	Yes	13 x 1½ x 5½	As above.	
7006	599.95	E	31	12	101			0.04	P	No	No	Yes	1½ x 8 x 12½	As above.	
7004	279.95	E	4	12	90			0.04	P	No	No	Yes	1 x 7½ x 4	Half-DIN size.	
BLADE TECHNOLOGIES	VTR 100	2999.00	A			95	50	20-20 ±1	0.5	P	Yes	No	Yes	15¼ x 8½ x 8	Tube design; Class A, switchable to Class AB1; operates into 2 ohms.
	SE Mono	499.00	A			90	200 x 1	3-20 ±0.5	0.07	P	Yes	No	Yes	5¼ x 6¾ x 1¾	Monoblock; two summing inputs; operates into 2 ohms; MOS-FET.
	SE4.2	899.00	A			90	200 x 2	3-20 ±0.5	0.07	P	Yes	No	Yes	9¾ x 6¾ x 1¾	Operates into 2 ohms; MOS-FET.
	SE6.3	1299.00	A			90	200 x 3	3-20 ±0.5	0.07	P	Yes	No	Yes	14½ x 6¾ x 1¾	As above.
	SE8.4	1699.00	A			90	200 x 4	3-20 ±0.5	0.07	P	Yes	No	Yes	19 x 6¾ x 1¾	As above.
	SE10.5	1999.00	A			90	200 x 5	3-20 ±0.5	0.07	P	Yes	No	Yes	23¾ x 6¾ x 1¾	As above.
	SE12.6	2499.00	A			90	200 x 6	3-20 ±0.5	0.07	P	Yes	No	Yes	28 x 6¾ x 1¾	As above.
	SE C50	499.00	A			90	50 x 1	3-20 ±0.5	0.07	P	Yes	No	Yes	5¼ x 6¾ x 1¾	Monoblock; operates into 1 ohm; MOS-FET.
	SE C100	899.00	A			90	50 x 2	3-20 ±0.5	0.07	P	Yes	No	Yes	9¾ x 6¾ x 1¾	Operates into 1 ohm; MOS-FET.
	SE C200	1699.00	A			90	50 x 4	3-20 ±0.5	0.07	P	Yes	No	Yes	19 x 6¾ x 1¾	As above.
	SE C250	1999.00	A			90	50 x 5	3-20 ±0.5	0.07	P	Yes	No	Yes	23¾ x 6¾ x 1¾	As above.
	504 CX	799.00	A			105	50 x 4†	3-20 ±0.5	0.02	P	Yes	Yes	Yes	13 x 5½ x 2½	†Two-, three-, or four-channel operation. Simultaneous stereo and bridged mono output; triamp capable; Class A; operates into 2 ohms; MOS-FET.
	502		A			150	50	3-20 ±0.5	0.02	P	Yes	No	Yes		
BLAUPUNKT	BMAS350B	699.95	A			110	†	5-100	0.05	P		††	Yes	12 x 12½ x 2	†Three-channel mode, 100 watts x 2 and 150 watts x 1; five-channel, 50 watts x 4 and 150 watts x 1. ††Separate front, rear, and subwoofer crossovers.

# AMPS/EQUALIZERS

MANUFACTURER	Model	Price, \$	Preamp (P)	Amp (A)	Equalizer (E)	Number of EQ Bands	Boost/Cut Range, ±dB	S/N Ratio, dB, A-Weighted	Watts Channel into 4 Ohms, per EIA-490	Full-Power Bandwidth, Hz to kHz	THD at Rated Output, %	Input Level, Preamp (P), Speaker (S)	Fader Control?	Includes Crossover?	RCA Input Jacks?	Dimensions, inches	Notes
BLAUPUNKT (Continued)	BQX300	429.95	A			95	100 x 2†	10-65	0.1	P/S		Yes	Yes	Yes	9 1/2 x 3 x 12	†Two-, three-, or four-channel operation. ‡Five-channel mode, 25 watts x 4 and 50 watts x 1. ††20 to 80 Hz for subwoofer channel, 150 Hz to 50 kHz for satellite channels. Bridgeable.  Four EQ presets. Mounted on flexible stalk.	
	BMA200	329.95	A			90	†	††	0.1	P/S		Yes	Yes	Yes	6 1/2 x 3 x 12		
	BSX150	299.95	A			90	50	10-65	0.1	P/S		Yes	Yes	Yes	6 1/2 x 3 x 12		
	BQA120	129.95	A			90	30 x 4	10-50	0.1	P/S		No	No	Yes	4 1/4 x 6 x 1 1/2		
	BSA60	99.95	A			90	18	10-50	0.05	P		No	No	Yes	4 1/4 x 6 x 1 1/2		
	BEQ08E	349.95	E			80			0.03	P/S		Yes	Yes	Yes	7 x 1 x 5 1/2		
	BEQ65A	229.95	E			80			0.03	P/S		Yes	Yes	Yes	2 1/2 x 6 3/4 x 7 1/2		
BEA120	149.95	A/E			80	25 x 4	20-20		0.03	P/S		Yes	Yes	Yes	7 x 1 1/2 x 5 1/2		
CANTON	M 50	200.00	A			94	50 x 1	20-20	0.1	P/S		Yes			6 3/4 x 3 1/4 x 1 1/2	Mono amp module for Model MF 3 or MF 5 Mainframe. Model MF 3, holds three amp modules, 11 1/2 x 6 3/4 x 3/4 inches, \$150.00; Model MF 5, holds five modules, 18 1/2 x 6 3/4 x 3/4 inches, \$200.00. Stereo amp module, fits Mainframes as above.	
	S 30	150.00	A			94	15	20-20	0.1	P/S		Yes			6 3/4 x 3 1/4 x 1 1/2		
CARVER	PMA-4075	499.95	A			100	50 x 4	20-20	0.2	P		Yes	Yes	Yes		Simultaneous stereo and bridged mono output for each pair of channels, with low-pass filtering on bridged output; 9-dB boost at 45 Hz. Simultaneous stereo and bridged mono output, with low-pass filtering on bridged output; 9-dB boost at 45 Hz. As above. Bridgeable.  †Sonic Holography spatial processor.	
	PMA-2150	449.95	A			100	100	20-20	0.2	P/S	Yes	Yes	Yes	Yes	13 3/4 x 7 3/8 x 3 3/4		
	PMA-2100	349.95	A			100	75	20-20	0.2	P/S	Yes	Yes	Yes	Yes	11 1/2 x 7 3/8 x 3 3/4		
	PMA-2062	259.95	A			100	40	20-20	0.5	P/S	Yes	No	No	Yes	6 1/4 x 5 x 2 1/2		
	PMA-2022	99.95	A			100	22	20-20	0.5	P/S	Yes	No	No	Yes	12 1/4 x 6 3/4 x 2 1/4		
SX-2/3	499.95	†			90				0.1	P		Yes	Yes	Yes			
CLARION	100EQB7	99.95	A/E			5	12	90	25	20-20	1	S	Yes	Yes	No	7 1/2 x 1 x 5 1/2	†Digital signal processor.  Bridgeable.
	703EQA	149.95	A/E			7	12	92	25	20-20	1	P/S	Yes	Yes	Yes	7 1/2 x 1 x 5 1/2	
	704EQA	199.95	A/E			7	12	92	25 x 4	20-20	1	P/S	Yes	Yes	Yes	7 1/2 x 1 x 5 1/2	
	52EQ	99.95	E			5	12	90			1	P/S	Yes	Yes	Yes	7 1/2 x 1 x 5 1/2	
	72EQ	169.95	E			7	12	95			1	P	Yes	Yes	Yes	7 1/2 x 1 x 5 1/2	
	711EQ	299.00	E			7	12	85			1	P	Yes	Yes	Yes	7 1/2 x 1 x 5 1/2	
	720EQ	499.95	E			7	12	85			1	P	Yes	Yes	Yes	9 x 1 x 6 5/8	
	DSP959	899.95	†			9	12	100			1	P	Yes	Yes	Yes	7 1/2 x 2 x 5 1/2	
	201A	79.95	A			94		25	10-60	1	P/S	No	No	Yes	7 x 1 x 5 1/2		
	402A	119.95	A			94		25 x 4	10-60	1	P/S	No	No	Yes	7 x 1 x 5 1/2		
	601A	189.95	A			100		50	10-60	0.08	P	No	No	Yes	5 1/2 x 2 x 8 5/8		
	1001A	249.95	A			103		80	10-60	0.08	P	No	No	Yes	7 1/2 x 2 x 8 5/8		
	1601A	329.95	A			105		130	10-60	0.08	P	No	No	Yes	9 1/2 x 2 x 8 5/8		
	1610A	499.95	A					40 x 4		0.1	P			Yes	8 3/4 x 2 3/4 x 12 7/8		
	3200A	799.95	A					80 x 4		0.1	P			Yes	13 1/2 x 2 3/4 x 12 7/8		
COMPETITION	C-500		A					100	25	20-20	0.01	P/S	No	No	Yes	Parametric bass boost. As above. As above. As above. As above.	
	C-1000	349.00	A			1	+18	100	50	15-30	0.01	P/S	No	No	Yes		
	C-2000	500.00	A			1	+18	100	100	15-30	0.01	P/S	No	No	Yes		
	C-4000	679.00	A			1	+18	100	200	15-30	0.01	P/S	No	No	Yes		
	C-1004	425.00	A					100	25	20-20	0.01	P/S	No	No	Yes		
	C-2004		A					100	50	20-20	0.01	P/S	No	No	Yes		
COUSTIC	AMP-660	660.00	A			95	50 x 6†	10-50	0.05	P	No	No	Yes	Yes	25 1/2 x 8 7/8 x 2 3/8	†Three-, four-, five-, or six-channel operation. Simultaneous stereo and bridged mono output. As above. As above. ††Two-, three-, or four-channel operation. 6- or 12-dB boost at 45 Hz and 15 kHz; front and rear inputs can be paralleled.	
	AMP-460	359.95	A			95	98	10-55	0.05	P/S	No	No	Yes	Yes	16 7/8 x 8 7/8 x 2 3/8		
	AMP-360	289.95	A			92	65	10-50	0.05	P/S	No	No	Yes	Yes	13 x 8 7/8 x 2 3/8		
	AMP-260	219.95	A			92	45	10-50	0.05	P/S	No	No	Yes	Yes	9 x 8 7/8 x 2 3/8		
	AMP-160	139.95	A			70	30	10-30	0.05	P/S	No	No	Yes	Yes	7 1/2 x 8 7/8 x 2 3/8		
	AMP-268	419.95	A			92	100 x 2††	10-30	0.05	P/S	No	Yes	Yes	Yes	8 7/8 x 2 3/8 x 16 7/8		
	AMP-108	139.95	A			90	16 x 4	15-25	0.09	P/S	No	No	Yes	Yes	5 5/8 x 1 3/4 x 9 1/4		
	AMP-102	69.95	A			90	16	15-25	0.09	P/S	No	No	Yes	Yes	5 5/8 x 1 3/4 x 6 1/4		
AMP-560	1550.00	A			92	250 x 4††	10-50	0.05	P	No	No	Yes	Yes	38 x 12 x 3 3/4			
EQ-1100	179.95	P/E			7	12	90		0.05	P	Yes	Yes	Yes	7 x 6 x 1			
EQ-1001	114.95	P/E			7	12	90		0.05	P	Yes	Yes	Yes	7 x 6 x 1			
CRAIG	MA2300	230.00	A			90	70	20-20	0.2	P/S		Yes	Yes	Yes	8 1/2 x 2 1/2 x 9	Bridgeable; operates into 2 ohms. As above.	
	MA2160	150.00	A			80	35	20-20	0.5	P/S		Yes	Yes	Yes	6 1/2 x 2 1/2 x 9		
	MA2080	90.00	A			60	16	20-20	1.0	P/S		Yes	Yes	Yes	4 x 2 1/2 x 9		
	ME101	50.00	A/E			7	12	15	20-20		S	Yes	Yes	Yes	5 1/2 x 1 1/2 x 4 3/4		
	ME105	70.00	A/E			10	12	18	20-20		S	Yes	Yes	Yes	5 1/2 x 1 1/2 x 4 3/4		
CRUNCH	50	299.00	A			90	25	20-20	0.015	P	No	No	Yes	Yes		Accepts filter, crossover, or EQ module; includes eight-gauge power cables. As above; bridges to 450 watts into 1 ohm. Accepts filter, crossover, or EQ module; includes eight-gauge power cables. As above. As above. As above. As above. As above. As above. As above. †Equalizer/noise-gate module.	
	50HC		A			95	25	10-32	0.015	P	No	No	Yes	Yes			
	100	425.00	A			95	50	10-32	0.015	P	No	No	Yes	Yes			
	150	550.00	A			97	75	10-32	0.015	P	No	No	Yes	Yes			
	250		A			97	125	10-32	0.015	P	No	No	Yes	Yes			
	400		A			98	200	10-32	0.015	P	No	No	Yes	Yes			
	600	1250.00	A			102	300	10-32	0.015	P	No	No	Yes	Yes			
	425	499.00	A			93	25 x 4	20-20	0.015	P	No	No	Yes	Yes			
	450	650.00	A			95	50 x 4	10-32	0.015	P	No	No	Yes	Yes			
	M60		†			3					P	No	No	No			
CRUTCHFIELD	CR2X30P	149.00	A			102	30	10-50	0.02	P		No	Yes	Yes	7 1/2 x 1 1/2 x 5 1/2	Bridgeable. As above. †Two-, three-, or four-channel operation.	
	CR2X50P	219.00	A			102	50	10-50	0.02	P		No	Yes	Yes	7 1/2 x 1 1/2 x 8 1/2		
	CR4X30P	229.00	A			102	30 x 4†	10-50	0.02	P	Yes	No	Yes	Yes	7 1/2 x 1 1/2 x 12 1/2		
	CR4X50P	299.00	A			102	50 x 4†	10-50	0.02	P	Yes	No	Yes	Yes	7 1/2 x 1 1/2 x 13 1/4		

# AMPS/EQUALIZERS

MANUFACTURER	Model	Price, \$	Preamp (P), Amp (A), Equalizer (E)	Number of EQ Bands	Boost/Cut Range, ±dB	S/N Ratio, -dB, A-Weighted	Watts Channel into 4 Ohms, per EIA-190	Full-Power Bandwidth, Hz to kHz	THD at Rated Output, % per EIA-190	Input Levels, Preamp (P), Speaker (S)	Fader Control?	Includes Crossover?	RCA Input Jacks?	Dimensions, Inches	Notes
DEMON	DCA-800	600.00	A		100	40 x 6†	20-20	0.05	P	No	††	Yes	14 1/2 x 2 3/8 x 11	†Three-, four-, five-, or six-channel operation. ††Subwoofer crossover.	
	DCA-600	450.00	A	1	+16	100	40 x 4†	20-20	0.05	P	No	No	Yes	9 7/8 x 2 1/8 x 12 5/8	†Two-, three-, or four-channel operation. Bridgeable.
	DCA-500	300.00	A	1	+16	100	40	20-20	0.05	P	No	No	Yes	9 7/8 x 2 1/8 x 7 1/2	As above.
	DCA-400	200.00	A	1	+16	95	30	20-20	0.3	P	No	No	Yes	9 7/8 x 2 1/8 x 6 1/2	As above.
	DCA-3150	150.00	A			90	12 x 4	20-20	0.5	P	No	No	Yes	9 7/8 x 1 3/4 x 6	As above.
	DCA-3120	80.00	A			90	12	20-20	0.5	P	No	No	Yes	7 x 1 x 5 1/2	As above.
	DCE-2190	220.00	E	9	12	97		20-20	0.005	P	Yes	Yes	††	8 1/2 x 1 7/8 x 4	Selectable crossover frequency. †12 front EQ bands, 12 rear. ††Supplied by modules below.
	CAMI	270.00	E	†	12	95		20-20	0.008	P	No	No	††	8 1/2 x 1 7/8 x 4	Four-channel controller; auto source switch. †Optional.
	DCE-250	160.00	P			95		20-20	0.008	P/S	No	†	Yes	8 1/2 x 1 7/8 x 5 1/2	Four-channel controller. †Optional.
	DCL-420	100.00	P			95		20-20	0.008	P/S	No	†	Yes	8 1/2 x 1 7/8 x 5 1/2	Four-channel controller. †Optional.
EARTHQUAKE SOUND	PA-2300	899.00	A		110	300	10-32	0.015	P	No	No	Yes	2 3/4 x 9 x 16	Bridgeable; operates into 2 ohms; 18-dB bass boost and 12-dB treble boost.	
	PA-2150	749.00	A		105	150	10-32	0.015	P	No	No	Yes	2 3/4 x 9 x 13	As above.	
	PA-2075	549.00	A		99	75	10-32	0.015	P	No	No	Yes	2 3/4 x 9 x 11	As above.	
	PA-2050	489.00	A		97	50	10-32	0.015	P	No	No	Yes	2 3/4 x 9 x 11	As above.	
	PA-2030	330.00	A		94	30	10-32	0.015	P	No	No	Yes	2 3/4 x 9 x 6	As above.	
	PA-2020	325.00	A		90	20	10-32	0.015	P	No	No	Yes	2 3/4 x 9 x 6	As above.	
	PA-4300	1499.00	A		110	300 x 4	10-32	0.015	P	No	No	Yes	2 3/4 x 9 x 33	As above.	
	PA-4030	549.00	A		94	30 x 4	10-32	0.015	P	No	No	Yes	2 3/4 x 9 x 11	As above.	
	PA-4050C	729.00	A		97	50 x 4	10-32	0.015	P	No	Yes	Yes	2 3/4 x 9 x 11	As above.	
	PA-4020C	559.00	A		90	20 x 4	10-32	0.015	P	No	Yes	Yes	2 3/4 x 9 x 11	As above.	
ECLIPSE	EUM-2420	499.95	A		105	50 x 4†	20-20	0.03	P			Yes	13 3/8 x 2 3/8 x 10	†Two-, three-, or four-channel operation.	
	EUM-2410	399.95	A		103	25 x 4†	20-20	0.03	P			Yes	13 3/8 x 2 3/8 x 10		
	EUM-2204	99.95	A		84	11	20-20	0.1	P			Yes	5 1/2 x 1 1/2 x 2		
	EQS-1000	799.95	††		90		20-20	0.08	P	Yes	Yes	Yes	7 x 2 x 6 1/2	††Digital sound processor with ambient center-channel output.	
	EQS-1001	649.95	††		90		20-20	0.08	P	Yes	Yes	Yes	7 3/8 x 1 5/8 x 6 1/4	Mounts in trunk or under seat; controlled by Model EQZ-301 (see "Radios"), ECD-411 (see "CD Players"), or EQR-1100 (\$199.95).	
EXXESS ELECTRONIXX	EX-420	102.00	A		89	210	20-20	0.05	P/S	No	Yes	Yes		Bridgeable.	
	EX-240	67.85	A		89	120	20-20	0.05	P/S	No	Yes	Yes		As above.	
	EX-260-4	41.50	A		85	65 x 4	20-20	0.05	P/S	No	Yes	Yes			
	EX-260-2	36.00	A		85	130	20-20	0.05	P/S	No	Yes	Yes			
	AMP + 400-2	52.00	A		85	200	20-20	0.05	P/S	No	Yes	Yes			
	AMP + 400-4	67.85	A		85	100 x 4	20-20	0.05	P/S	No	Yes	Yes			
	FAS	PE75S	125.00	P/E	7	12				P/S	Yes	Yes	Yes	7 x 1 x 5 1/2	
PE60		114.95	P/E	7	12				P/S	Yes	Yes	Yes	7 x 1 x 5 1/2		
PA200		329.00	A			160	5-30	0.05	P	No	No	Yes	12 1/2 x 8 3/4 x 2		
PA140		279.00	A			110	5-30	0.05	P	No	No	Yes	8 3/4 x 8 3/4 x 2		
PA425		99.95	A			25 x 4	20-20	1	P/S	No	No	Yes	6 1/2 x 1 1/2 x 4 1/2	Front and rear gain controls.	
PA25		69.95	A			25	20-20	1	P/S	No	No	Yes	5 1/2 x 1 1/2 x 4 1/2		
FULTRON		16-0150M	449.95	A		95	150	20-30	0.05	P		No	Yes	13 3/4 x 2 x 7 1/2	Bridgeable; operates into 2 ohms.
	16-0100M	349.95	A		95	100	20-30	0.05	P		No	Yes	11 3/4 x 2 x 7 1/2	As above.	
	16-0075M	279.95	A		95	75	20-30	0.05	P		No	Yes	10 x 2 x 7 1/2	As above.	
	16-0050M	229.95	A		95	50	20-30	0.05	P		No	Yes	7 x 2 x 7 1/2	As above.	
	16-0025M	199.95	A		95	25	20-30	0.05	P		No	Yes	7 x 2 x 7 1/2	As above.	
	16-0425M	299.95	A		95	25 x 4	20-30	0.05	P		No	Yes	8 x 2 x 7 1/2	As above.	
	15-0050	199.95	A		85	50	10-50	0.08	P/S	No	No	Yes	9 1/8 x 1 3/4 x 9 1/8	Bridgeable.	
	15-0450	299.95	A		85	50 x 4	10-50	0.08	P/S	No	No	Yes	11 1/4 x 1 3/4 x 9 1/8	As above.	
	15-0425	99.95	A		75	25 x 4	10-50	0.05	P/S	No	No	Yes	7 1/2 x 2 1/4 x 5 3/8		
	15-0225	55.95	A		69	25	10-50	1	P/S	No	No	Yes	4 x 1 1/2 x 4 3/4		
	15-0740	189.95	A/E	7	12	75	20 x 4	20-35	0.05	P/S	Yes	Yes	Yes	1 x 6 1/8 x 7	Programmable; includes spectrum analyzer.
	15-0730	79.95	A/E	10	12	65	13 x 4	20-20	1	P/S	Yes	No	Yes	1 x 4 1/2 x 7	Parametric.
	16-0737	199.95	A/E	4	18	110		20-20	0.005	P	Yes	Yes	Yes		Parametric EQ.
G & S DESIGNS	PA-4X	399.99	P/E	4	18	95		0.001	P	Yes	No	Yes	1 x 7 x 3 3/8	Parametric EQ.	
HAFLE	MSE-100tn	399.00	A		100	50	20-20	0.05	P/S			Yes	2 x 9 1/2 x 8 3/4	Bridges to 170 watts; MOS-FET.	
	Trans-Nova														
	MSE-200tn	549.00	A		100	100	20-20	0.05	P/S			Yes	2 x 14 x 8 3/4	As above but bridges to 370 watts.	
	Trans-Nova														
	MA4	499.00	A		100	150 x 2†	20-20	0.05		No	No	Yes	12 x 9 x 3 1/2	†Two-, three-, or four-channel operation. MOS-FET.	
	MSE40	199.00	A		110	20	20-20	0.05	P	No	No	Yes	8 5/8 x 5 x 2 1/4	Bridges to 75 watts; MOS-FET.	
	MSE80	299.00	A		110	20 x 4	20-20	0.05	P	No	No	Yes	8 5/8 x 8 x 2 1/4	As above but bridges to 75 watts x 2.	
MSE120	349.00	A		110	20 x 6	20-20	0.05	P	No	No	Yes	8 5/8 x 11 1/4 x 2 1/4	As above but bridges to 75 watts x 3.		
MSE-460	369.00	P/E	3	12				P/S	†		Yes		†Faded and nonfaded outputs. CD and tape inputs.		
MAQ104	349.00	E	10	12	90				No	No	Yes	10 x 8 x 1 3/4	Four-channel operation; octave spacing; turn-on delay.		
HARMAN KARDON	TC600	1300.00	A		100	300	10-100	0.1	P/S	No	No	Yes	16 5/8 x 12 1/8 x 3 1/4	Simultaneous stereo and bridged mono output.	
	TC400Q	1000.00	A		100	100 x 4†	10-100	0.1	P/S	No	No	Yes	16 5/8 x 12 1/8 x 3 3/4	†Two-, three-, or four-channel operation.	
	TC300	800.00	A		100	100	10-100	0.1	P/S	No	No	Yes	14 5/8 x 12 1/8 x 3 3/4	Simultaneous stereo and 300-watt bridged mono output.	
	CA140Q	499.00	A		100	35 x 4†	10-100	0.1	P/S	No	No	Yes	12 5/8 x 9 3/8 x 2 1/4	Simultaneous stereo and bridged mono output.	
	CA70	329.00	A		100	35	10-100	0.1	P/S	No	No	Yes	10 5/8 x 6 3/4 x 2 1/4	As above.	
	CA60Q	319.00	A		100	15 x 4	10-100	0.1	P/S	No	No	Yes	12 3/8 x 6 3/4 x 2		
CA30	159.00	A		100	15	10-100	0.1	P/S	No	No	Yes	7 1/4 x 6 3/4 x 2			

# Chronicle

Since 1976, Coustic has consistently created and manufactured some of the highest quality equipment on the car audio market.

From its introduction in 1978, the memorable RX-3000 has drawn incredible consumer demand. In the early eighties, the unforgettable EQ-8370 maintained strong popularity for an amazing stretch of seven years. Then, of course, there was the AMP-500/300 power amplifier series with its superb sonic reproduction capability.

The HZ Shaper™ (U.S. Pat. D302,556 & D302,695) speaker series was invented to solve inherent acoustic problems created within the automobile interior, while the highly successful RX-500 radio series achieved legendary status. Continuing in Coustic's tradition of quality and innovation...



**AMP-380/190**  
Automotive Power Amplifier

Since its introduction in 1985, the AMP-380/190 has become an industry classic. It is the first amplifier ever designed to utilize HEXFET™ components in its Pulse Width Modulated (PWM) power supply.



**EQ-1030 Real-Time Analyzer/Pre-Amp/Active Crossover**

Selected as "one of the most innovative consumer products of 1986" at the **Innovations '86 Design & Engineering Exhibition** event held at the 1986 International Summer Consumer Electronic Show. The EQ-1030, a programmable 7-band EQ designed with pink noise generator, microphone and detachable electronic crossover, is the first and only product of its kind ever to be created for the automotive environment.



**XM-3 Mobile Electronic Crossover** (U.S. Pat. #4,905,284)

The most popular and widely imitated electronic crossover ever created, the trend-setting XM-3 is well recognized in the industry for its unique features.

*"The XM-3 is an installer's dream come true... but the real beauty lies in the crossover's ability to be configured for practically any amplifier/speaker system you can think of... it's a very useful product and a tremendous value."*

Michael Smolen  
User's Evaluation,  
CAR STEREO REVIEW  
Summer 1988

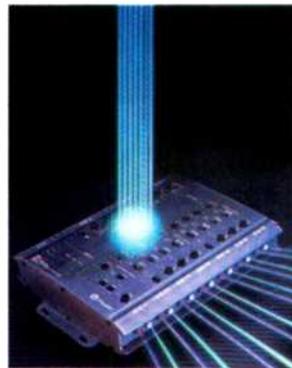


**AMP-460 Power Logic Component Amplifier**

The first of Coustic's **Power Logic** Component automotive power amplifier line, the AMP-460 was honored as "one of the most innovative consumer products of 1990" at the **Innovations '90 Design & Engineering Exhibition**.

*"It offers an excellent design, quality construction, reliable operation, and great sonics while avoiding the distraction of useless bells and whistles... in short, this is a very cost-effective but still hi-fi amplifier."*

Ken C. Pohlmann  
Test Reports,  
CAR STEREO REVIEW  
May/June 1990



**XM-7 Multi-Function Mobile Electronic Crossover** (Patent Pending)

The "reference standard" for electronic crossover design technology, the XM-7 was recognized as another "one of the most innovative consumer products of 1990" at the **Innovations '90** event.



**RTA-33 30-Band One-Third Octave Real Time Analyzer.** (Patent Pending)

The world's smallest, most powerful and amazingly accurate Real Time Analyzer, the RTA-33, earned Coustic yet another honor as "one of the most innovative consumer products of 1991" at the **Innovations '91**.

Utilizing DSP technology, the RTA-33 represents a major breakthrough in precision instrumentation.

*"The 33 is an excellent RTA. In terms of design, Coustic's engineers have stepped up to the plate and hit a home run. No other RTA offers this combination of small size, versatility, special features, precision, and price... The RTA-33 simply rewrites the rules."*

Ken C. Pohlmann  
User's Evaluation,  
CAR STEREO REVIEW  
Jan/Feb 1992



**RX-739 Car Radio/Cassette**

An evolutionary improvement, Coustic's new 1992 series of full-featured Car Radio/Cassette Players is a fusion of technological ingenuity, functionality and dynamic ergonomics.



**DA-55 Dual Single-Bit Digital to Analog Processor with 18-Bit Resolution**

Designed and hand-crafted in the United States, DA-55 represents the debut of Coustic's new premiere **Design Reference** series. Coustic again sets the standard for design excellence.

At Coustic, creative imagination combined with serious dedication is a tradition.

**COUSTIC**®

4260 Charter Street  
Vernon, CA 90058-2596 USA  
Phone: 213-582-2832  
Fax: 213-582-4328

# AMPS/EQUALIZERS

MANUFACTURER	Model	Price, \$	Preamp (P), Amp (A), Equalizer (E)	Number of EQ Bands	Bass/Cut Range, ±dB	S/N Ratio, dB, A-Weighted	Ways/Channel into 4 Ohms, per EA-490	Full-Power Bandwidth, Hz to kHz	THD at Rated Output, % per EA-490	Input Levels, Preamp (P), Amp (A)	Fader Control?	Includes Crossover?	RCA Input Jacks?	Dimensions, Inches	Notes
HIFONICS	Cupid VIII	195.00	A		98	22	20-20	0.05	P	No	No	Yes	1 7/8 x 7 1/2 x 5 1/2	Bridgeable; MOS-FET; accepts up to 13-V signals.	
	Pluto VIII	260.00	A		107	35	20-20	0.02	P	No	No	Yes	2 1/2 x 8 3/4 x 4	As above but accepts up to 9-V signals.	
	Vulcan VIII	345.00	A		110	50	20-20	0.02	P	No	No	Yes	2 1/2 x 8 3/4 x 6 1/2	As above.	
	Odin VIII	420.00	A		112	75	20-20	0.02	P	No	No	Yes	2 1/2 x 8 3/4 x 6 1/2	As above.	
	Thor VIII	560.00	A		114	125	20-20	0.02	P	No	No	Yes	2 1/2 x 8 3/4 x 7 3/4	As above.	
	Boltar VIII	725.00	A		116	200	20-20	0.02	P	No	No	Yes	2 1/2 x 8 3/4 x 11 3/4	As above.	
	Zeus VIII	870.00	A		118	300	20-20	0.02	P	No	No	Yes	2 1/2 x 8 3/4 x 15 1/2	As above.	
	Colossus VIII	1800.00	A		116	600	20-20	0.02	P	No	No	Yes	2 1/2 x 8 3/4 x 26 1/2	As above.	
	Juno VIII	300.00	A		98	22 x 4	20-20	0.05	P	No	No	Yes	1 7/8 x 7 1/2 x 10 1/4	Bridgeable; MOS-FET; accepts up to 13-V signals.	
	Jupiter VIII	360.00	A		107	35 x 4	20-20	0.02	P	No	No	Yes	2 1/2 x 8 3/4 x 7 3/4	As above but accepts up to 9-V signals.	
	Europa VIII	450.00	A		107	35 x 4	20-20	0.02	P	No	Yes	Yes	2 1/2 x 8 3/4 x 7 3/4	As above; crossover variable from 50 Hz to 5 kHz.	
	Gemini VIII	625.00	A		109	50 x 4	20-20	0.02	P	No	Yes	Yes	2 1/2 x 8 3/4 x 11 3/4	As above.	
	Olympus VIII	870.00	A		114	110 x 4	20-20	0.02	P	No	Yes	Yes	2 1/2 x 8 3/4 x 15 1/2	As above.	
	Aphrodite VIII	975.00	A		98	50 x 6	20-20	0.02	P	No	†	Yes	2 1/2 x 8 3/4 x 17 3/4	†Three-way crossover, variable from 45 Hz to 5 kHz. Bridgeable; MOS-FET; accepts up to 9-V signals.	
	Cyclops VIII	365.00	A		113		20-20	0.02	P	No	Yes	Yes	2 1/2 x 8 3/4 x 6 1/2	Monoblock; crossover variable from 43 to 550 Hz; MOS-FET; accepts up to 9-V signals.	
	Hercules VIII	520.00	A		116		20-20	0.02	P	No	Yes	Yes	2 1/2 x 8 3/4 x 11 3/4	As above.	
	Atlas VIII	740.00	A		119		20-20	0.02	P	No	Yes	Yes	2 1/2 x 8 3/4 x 17 3/4	As above.	
	Ulysses VIII	550.00	A		106	25	20-20	0.02	P	No	No	Yes	2 1/2 x 8 3/4 x 11 3/4	Bridgeable; MOS-FET; accepts up to 9-V signals; operates into 0.5-ohm load.	
	Isis VIII	900.00	A		110	50	20-20	0.02	P	No	No	Yes	2 1/2 x 8 3/4 x 17 3/4	As above; operates into 1 ohm.	
	Eros VIII	360.00	A		107	35	20-20	0.02	P	No	No	Yes	2 1/2 x 8 3/4 x 6 1/2	As above but operates into 1 ohm.	
Titan VIII	440.00	A		110	50	20-20	0.02	P	No	No	Yes	2 1/2 x 8 3/4 x 7 3/4	As above.		
Cleo VIII	110.00	E	3	12	103		0.02	P	No	No	Yes	1 x 7 x 3 1/2	Quasi-parametric; variable center frequencies; separate left and right EQ controls; with Cupid VIII amp, \$260.00; with Pluto VIII, \$345.00; with Odin VIII, \$489.00.		
Plato VIII	210.00	E	10	12	103		0.02	P	No	No	Yes	1 x 8 3/4 x 4 7/8	Quasi-parametric; variable center frequencies; separate left and right EQ controls.		
Epsilon VIII	230.00	P E	4	12	103		0.02	P	Yes	No	Yes	1 x 7 3/8 x 4 1/8	controls. Half-OIN size; backlit.		
HOLLYWOOD SOUND LABS	RS-A50E	459.00	A		97	25	20-20	0.009	P	No	No	Yes		18-dB bass and treble boost; operates into 1 ohm.	
	RS-A25E	391.00	A		93	12.5	20-20	0.009	P	No	No	Yes		As above.	
	HSL-A100X	393.00	A		92	50	20-20	0.05	P/S	No	Yes	Yes		12-dB bass and treble boost; operates into 2 ohms.	
HSL-A50X	299.00	A		85	25	20-20	0.05	P/S	No	Yes	Yes		As above.		
THE HOTT SET-UP	HS2.125	629.00	A		100	125	10-30	0.03	P	No	No	Yes	14 x 8 1/2 x 2 1/4	Bridgeable.	
	HS2.75	519.00	P		100	75	10-30	0.03	P	No	No	Yes	12 x 8 1/2 x 2 1/4	As above.	
	HS2.50	359.00	A		100	50	10-30	0.03	P	No	No	Yes	10 x 8 1/2 x 2 1/4	As above.	
	T25.4	369.00	A		100	25 x 4	10-30	0.03	P	No	No	Yes	11 3/4 x 6 3/4 x 2	As above.	
	T25.2	239.00	A		100	25	10-30	0.03	P	No	No	Yes	7 1/2 x 6 3/4 x 2	As above.	
T50.2	299.00	A		100	50	10-30	0.03	P	No	No	Yes	9 1/2 x 6 3/4 x 2	As above.		
IMPACT	AX-100	229.95	A	1	+12	90	50 x 1	15-500 Hz	0.05	P/S	No	†	Yes	2 1/4 x 7 1/2 x 7	Mono subwoofer amp; operates into 2 ohms. †Low-pass filter, adjustable from 50 to 500 Hz.
	AX-160	299.95	A	1	+12	90	80 x 1	15-500 Hz	0.05	P/S	No	†	Yes	2 1/4 x 7 1/2 x 8	As above. †Mono low-pass and stereo high-pass filters, adjustable from 50 to 500 Hz.
JBL	GTQ400	549.00	A		100	200 x 2†	10-40	0.05	P	No	Yes	Yes	17 1/8 x 8 5/8 x 2 3/8	†Two-, three-, or four-channel operation. Simultaneous stereo and bridged mono output; biamp capable.	
	GTQ200	399.00	A		100	100 x 2†	10-40	0.05	P/S	No	Yes	Yes	14 1/8 x 8 5/8 x 2 3/8	As above.	
	GTQ100	179.00	A		95	18 x 4	10-35	0.5	P/S	No	Yes	Yes	11 1/8 x 4 1/4 x 2 3/8	Biamp capable.	
	GTS150	289.00	A		100	50	10-30	0.05	P	No	No	Yes	11 1/8 x 8 5/8 x 2 3/8	Bridges to 150 watts; simultaneous stereo and bridged mono output.	
GTS50	119.00	A		95	18	10-35	0.5	P/S	No	No	Yes	8 1/8 x 4 1/4 x 2 3/8			
JENSEN	A220	199.95	A		85	50		0.5	S	No	No	Yes	7 3/4 x 2 x 7 3/4	Bridgeable.	
	A320	299.95	A		85	75		0.5	S	No	No	Yes	7 3/4 x 2 x 9 3/4	As above.	
	A432	329.95	A		85	100 x 2†		0.5	S	No	No	Yes	7 3/4 x 2 x 15 3/4	†Two-, three-, or four-channel operation.	
	A4320	330.00	A		85	125 x 2†		0.5	P/S	No	No	Yes	16 3/4 x 2 3/8 x 9 3/8	Simultaneous stereo and bridged mono output; operates into 2 ohms.	
	A4328BE	380.00	A		85	125 x 2†		0.5	P/S	No	No	Yes	16 3/4 x 2 3/8 x 9 3/8	Includes 8BE harmonic-restoration processing; operates into 2 ohms.	
	A82	70.00	A		85	18		1	P/S	No	No	Yes	5 5/8 x 1 3/4 x 5 3/4	Floating ground.	
	A84	130.00	A		85	18 x 4		1	P/S	No	No	Yes	5 5/8 x 1 3/4 x 5 3/4	As above.	
	EOA78	109.00	A/E	7	12	85	18 x 4	0.5	P/S	Yes	No	Yes	5 x 1 x 5 1/2	Half-OIN size; illumination.	
	EOA111	139.00	A/E	10	12	85	18 x 4	0.5	P/S	Yes	No	Yes	7 x 1 x 5 1/2	As above.	
	EOA77	137.95	P/E	7	12	85					Yes	Yes	5 x 1 1/4 x 5 1/2		
EOA110	137.95	P/E	10	12	85					Yes	Yes	7 x 1 1/4 x 5 1/2			
JVC	KS-A51	99.95	A		90	12	40-20	0.8	P/S			Yes	1 1/4 x 6 x 3 1/4	Bridgeable.	
	KS-A102	179.95	A		90	30	40-20	0.08	P				1 5/8 x 9 x 5 3/4	As above.	
	KS-A202	349.95	A		90	60	40-30	0.04	P				2 x 10 1/2 x 7	As above; operates into 2 ohms;	
	KS-AG112	279.95	A		100	45	20-20	0.04	P				2 1/4 x 11 7/8 x 5 3/8	MOS-FET.	
	KS-AG214	499.95	A		100	40 x 4†	20-20	0.04	P				2 1/4 x 11 7/8 x 10 3/4	†Two-, three-, or four-channel operation. Operates into 2 ohms; MOS-FET; low-pass filter.	
	KS-AG404	549.95	A		90	60 x 4†	20-20	0.04	P				2 1/4 x 11 7/8 x 12 1/4	†As above. Low- and high-pass filters.	
	KS-EA200	179.95	A/E	7	12	90	12	40-20	0.8	P	Yes		1 x 7 1/2 x 6	illumination.	
	KS-EA400	229.95	A/E	7	12	90	12 x 4	40-20	0.8	P	Yes		1 x 7 1/2 x 6	As above.	
KS-E35	149.95	E	7	12	90		0.8	P	Yes			1 x 7 1/2 x 6	As above.		

# Digital Access

Since the advent of CD technology, the Car Audio Industry has experienced a steady demand to improve digital sound reproduction. And now, presenting Cooustic's latest family of digital products — brilliantly designed to take advantage of current technology while keeping options open for the future.

Because D/A Conversion is the most critical element of the digital audio system, Cooustic has created the DA-55, an advanced Digital to Analog Processor especially for the car audio environment. Designed and handcrafted in the United States, the DA-55's introduction represents the debut of Cooustic's new premiere **Design Reference** series. Now, car audio enthusiasts can really hear what they have been missing.



The DA-55 utilizes a U.S. made Dual Single-Bit Chip Set design with 18-Bit Resolution, which incorporates a Dual 8 Times Oversampling Digital Filter, a 64 Times Oversampling Fifth Order Delta-Sigma Modulator, as well as an Ultralinear Digital to Analog Filter Set (a Fourth Order Butterworth Switched-Capacitor Filter with multiple feedback loops followed by a Second Order Butterworth Analog Filter). The Filter

Set's excellent phase response results in superior sound imaging.

Multiple digital formats such as CD, DAT, and the emerging DCC technologies are all compatible with the DA-55. The three digital inputs (two coaxial and one optical), as well as sampling frequency are automatically selected by a special Auto Input Sensing Circuit (AISC).

Cooustic's DA-55 features Class A, all discrete, Optimized Transient Response (OTR) analog output circuitry with *true balanced outputs* for sonic excellence, and low impedance outputs to drive lengthy cable with very little distortion. Totally separate power supply and ground plane between the digital and analog sections minimizes crosstalk and low-level digital noise.

Mil-Spec double-sided glass epoxy printed circuit board, Cardas internal wiring, WIMA or Roederstein capacitors, Gold-plated RCA connectors, and a custom CNC machined, all-aluminum chassis are some of the other high-quality components included in the DA-55 construction.

Cooustic's dedicated commitment to quality assures that the DA-55 will set the excellence standard for accuracy and performance.



## Open Access CD Changer

To compliment the DA-55's debut, Cooustic announces the CC-55 10-Disc Dual Single-Bit CD Changer with 8 Times Oversampling Digital Filter. Featuring a digital output with SPDIF format, the CC-55 gives your system open access to any future developments in the world of digital technology.

Complete with Remote Control, the CC-55 lets you choose advanced features like Shuffle Play, Intro Scan, Repeat Disc, Repeat Track, Track Skip, Music Search and much more without touching a single disc or taking your eyes off the road. You can even connect two changers together via the separately available Dual Changer Interface and play 20 discs through the same remote.

Not only is it easy to use, the CC-55 can be simple to install. With an optional RF Modulator, the CC-55's audio output connects to any existing audio system through the car's antenna loop. Or the CC-55 can connect directly to your existing system through an auxiliary input offering greater dynamic range.

A specially engineered, Oil-Damped, Anti-Skip Free-Float Suspension system maintains unsurpassed disc tracking accuracy, whether the CC-55 is mounted vertically or horizontally even on the roughest roads. A Ground Isolator is included to eliminate noisy hum or ground loop whine. The CC-55 includes everything you will need in one complete package!

## FM/AM CD Player with Great Features

For in-dash application, Cooustic introduces the latest CD-303 High Power FM/AM CD

Player offering loads of great features. An Auxiliary Input lets you directly connect Cooustic's CC-55 or any remote operated CD changer, or play your portable cassette player.



Cooustic's Optimizer V circuitry provides FM reception comparable to the audio quality of the CD player itself! The CD-303 features Low Vibration Anti-Skip Floating Suspension which provides perfect disc tracking even on rough rides.

Bi-Level Fader Control lets you simultaneously adjust the relative level of front/rear pre-amp and speaker outputs. Features like Intro Scan, Shuffle Play, Repeat Track, Auto Station Memories, Preset Scan and much more are all standard.

Front panel illumination is switchable to either green or amber. The Pull-out Chassis provides security and portability. The Cooustic CD-303 is one of the most complete, full-featured CD Players available.

Engineered for the sophisticated audio enthusiast, Cooustic's family of digital products are designed with options to access the future.

**cooustic**<sup>®</sup>

4260 Charter Street  
Vernon, CA 90058-2596, USA  
Phone: 213-582-2832  
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# AMPS/EQUALIZERS

MANUFACTURER	Model	Price, \$	Preamp (P)	Amp (A)	Equalizer (E)	Number of EQ Bands	Boost/Cut Range, ±dB	S/N Ratio, dB, A-Weighted	Watts/Channel into 4 Ohms, per ICA-450	Full-Power Bandwidth, Hz to kHz	THD at Rated Output, % per ICA-450	Input Level: Preamp (P), Speaker (S)	Fader Control?	Includes Crossover?	RCA Input Jacks?	Dimensions, inches	Notes	
JVC (Continued)	KS-E75	249.95	E	†	12	90				0.03	P	Yes				1 x 7½ x 6	†Five front EQ bands, seven rear. As above.	
	KS-ES100	299.95	E		9	12	90			0.03	P	Yes				2 x 7½ x 6½	Five preset and five programmable EQ patterns; includes spectrum analyzer; illumination.	
	KS-DP100	599.95	†				85			0.02	P				††		†Digital signal processor with four preset and four programmable sound fields; five-step digital bass control. ††Hide-away unit, 2 x 6½ x 5; controller, 2 x 6½ x 1½. Selectable subwoofer cutoff, 80 or 120 Hz.	
KAWASAKI	KE-410	180.00	A/E		10	12	92	25 x 4	20-20	0.08	P/S	Yes	Yes	Yes		7 x 2 x 6	Bridgeable.	
KENWOOD	KGC-9042	399.00	P/E		9	12	100				P	Yes	†	Yes	Yes	7½ x 1 x 5½	†Subwoofer crossover.	
	KGC-6042	249.00	P/E		11	12	100				P	Yes	†	Yes	Yes	7 x 1 x 5½	Parametric EQ; includes spectrum analyzer.	
	KGC-4042	149.00	P/E		5	12	100				P	Yes	Yes	Yes	Yes	3½ x 1 x 4¾		
	KGC-4032	199.00	A/E		9	12	100	20			P/S	Yes	Yes	Yes	Yes	7 x 1 x 6½		
	KAC-1023	999.00	A				105	200	2-100	0.3	P/S	No	Yes	Yes	Yes	11½ x 2¼ x 15¾	Simultaneous stereo and bridged mono output.	
	KAC-923	499.00	A				105	100	2-100	0.3	P/S	No	Yes	Yes	Yes	10¾ x 2¼ x 9¾	As above.	
	KAC-823	399.00	A				105	70	2-100	0.3	P/S	No	Yes	Yes	Yes	10¾ x 2¼ x 8¾	As above.	
	KAC-723	249.00	A				105	40	2-70	0.5	P/S	No	Yes	Yes	Yes	10¾ x 2¼ x 6¾	As above.	
	KAC-742	299.00	A				100	30 x 4†	4-64	0.08	P/S	No	No	Yes	Yes	11 x 2 x 9½	†Two-, three-, or four-channel operation.	
	KAC-642	199.00	A				100	16	6-65	0.8	P/S	No	No	Yes	Yes	8¾ x 1½ x 7¾	As above.	
KAC-622	159.00	A				100	30	4-65	0.8	P/S	No	No	Yes	Yes	8 x 1½ x 5½	Simultaneous stereo and bridged mono output.		
KAC-322	79.00	A				95	15	10-45	1	P/S	No	No	Yes	Yes	4¾ x 1¼ x 3¾	As above.		
KINERGETICS RESEARCH	KMA-250	1700.00	A				90	50	20-200	0.05	P	No	No	Yes	Yes	2 x 14½ x 10	Bridgeable; balanced or unbalanced input.	
	KMA-450	2200.00	A				90	50 x 4	20-200	0.05	P	No	No	Yes	Yes	2 x 20 x 10	As above.	
	KMP-100-U	5000.00	†				90		20-200	0.1	P	Yes	No	Yes	Yes	2 x 14½ x 10	†Balanced preamp with D/A converter (see "CD Changers").	
KRACO	KEC-6	99.95	A/E		7	12	70	20	20-20	10	S	Yes	No	No	Yes	5 x 5 x 1¼		
	KEC-4	69.95	A/E		5	12	65	15	20-20	10	S	Yes	No	No	Yes	4 x 4½ x 1¼		
	KA-2525	99.95	A				65	12	20-30	0.5	P/S	No	No	Yes	Yes	7 x 6½ x 2		
	KA-5050	154.95	A				75	30	20-30	0.5	P/S	No	No	Yes	Yes	8 x 8 x 8		
	KA-7575	209.95	A				75	45	20-30	0.5	P/S	No	No	Yes	Yes	8 x 8 x 11		
LANZAR SOUND	LZE010	709.95	P/E		10	12	90			0.01	P	No	No	Yes	Yes	1¾ x 11¾ x 6¾	Parametric EQ.	
	LZE050	339.95	P/E		5	12	102			0.015	P	Yes	No	Yes	Yes	1 x 7 x 4	Half-DIN size.	
	LZ50S	299.95	A				89	25	20-20	0.015	P	No	No	Yes	Yes	2½ x 9 x 5¾	Bridgeable.	
	LZ100S	399.95	A				92	50	20-20	0.015	P	No	No	Yes	Yes	2½ x 9 x 7½	As above.	
	LZ160S	549.95	A				95	80	20-20	0.015	P	No	No	Yes	Yes	2½ x 9 x 8¾	As above.	
	LZ180SM	699.95	A/E			18	94	180 x 1	20-20	0.015	P	No	Yes	Yes	Yes	2½ x 9 x 8¾	Monoblock.	
	LZ240S	749.95	A/E			18	94	60 x 4	20-20	0.015	P	No	Yes	Yes	Yes	2½ x 9 x 12½	Bridgeable; biamp capable.	
	LZ250S	749.95	A				97	125	20-20	0.015	P	No	No	Yes	Yes	2½ x 9 x 12½	Bridgeable; bass boost.	
	LZ400S	799.95	A				101	200	20-20	0.015	P	No	No	Yes	Yes	2½ x 9 x 16	As above.	
	LZ600S	1099.95	A				102	300	20-20	0.015	P	No	No	Yes	Yes	2½ x 9 x 20	As above.	
	LXR90	180.00	A				92	25	20-20	0.018	P	No	No	Yes	Yes	2 x 8 x 10		
	LXR180	290.00	A				92	25 x 4	20-20	0.018	P	No	No	Yes	Yes	2 x 8 x 12		
	LXR150	290.00	A				100	50	20-20	0.01	P	No	No	Yes	Yes	2 x 8 x 14	Bridgeable.	
	LXR300	425.00	A				100	100	20-20	0.01	P	No	No	Yes	Yes	2 x 8 x 18	Simultaneous stereo and bridged mono output; operates into 2 ohms.	
	LZ30	169.95	A				89	15	20-20	0.25	P	No	No	Yes	Yes	2½ x 9 x 4		
	L.A. SOUND	Ventura 200BT	349.00	A		2	12	86	50 x 4	9-50	0.05	S	No	No	Yes	Yes	2¾ x 9½ x 16¾	Bridgeable; separate front and rear tone controls; operates into 2 ohms.
Laguna 190		299.00	A				86	75 x 2, 20 x 2	9-50	0.05	P/S		Yes	Yes	Yes	2¾ x 9½ x 14¾	Bridgeable; operates into 2 ohms.	
Hermosa 150		249.00	A				86	75	9-50	0.05	P/S		No	Yes	Yes	2¾ x 9½ x 12¾	As above.	
Malibu 100		189.00	A				88	50	9-50	0.025	P/S		Yes	Yes	Yes	2¾ x 9½ x 9¾	As above.	
Redondo 80		139.00	A				80	20 x 4	10-20	0.09	P/S		No	Yes	Yes	2¾ x 9½ x 6½	Operates into 2 ohms.	
Zuma 40		89.00	A				80	20	10-20	0.09	P/S		No	Yes	Yes	2¾ x 9½ x 3½	As above.	
LP 1205		109.00	A				80	60	15-20	1.0	P/S		Yes	Yes	Yes	Yes	Yes	Bridgeable.
LP 1005		59.00	A				80	25	15-20	1.0	P/S		Yes	Yes	Yes	Yes	Yes	
LE P512		119.00	P/E		5	12	100			0.05	P	No	No	Yes	Yes	Half DIN	Dual source inputs.	
LE 45p		99.00	P/E		7	12	90			0.5	P	Yes	Yes	Yes	Yes	Half DIN	CD input; night illumination.	
LE 65	129.00	A/E		7	12	80	30 x 4	20-20	1.0	P/S	Yes	No	Yes	Yes	Yes	Bridges to 65 watts x 2; includes spectrum analyzer.		
LE 25	69.00	A/E		7	12	80	25 x 4	20-20	1.0	P/S	Yes	No	Yes	Yes	Yes	Bridgeable.		
LAZER	LA2025	219.00	A				100	25	20-20	0.05	P/S		Yes	Yes	Yes	8¼ x 1¾ x 10	Bridgeable; operates into 2 ohms.	
	LA2030	249.00	A				100	30	20-20	0.05	P/S		Yes	Yes	Yes	8¼ x 1¾ x 10	As above.	
	LA2050	319.00	A				100	50	20-20	0.05	P/S		Yes	Yes	Yes	8¼ x 1¾ x 11½	As above.	
	LA4050	439.00	A				100	50 x 4	20-20	0.05	P		Yes	Yes	Yes	8¼ x 1¾ x 17	As above.	
	LA252 HCD	1100.00	A				110	25	20-20	0.005	P		No	Yes	Yes	8 x 2 x 16	Bridges to 800 watts into 0.5-ohm load; MOS-FET.	
	LA202	249.00	A				100	20	20-20	0.02	P		No	Yes	Yes	8 x 2 x 4	Simultaneous stereo and bridged mono output; operates into 2 ohms.	
	LA203	299.00	A				100	20 x 3	20-20	0.02	P	No	No	Yes	Yes	8 x 2 x 7		
LA204	369.00	A				100	20 x 4†	20-20	0.02	P	No	No	Yes	Yes	8 x 2 x 7	†Two-, three-, four-, five-, or six-channel operation. Operates into 2 ohms.		
LA752	499.00	A				110	75	20-20	0.005	P	No	No	Yes	Yes	8 x 2 x 16	Operates into 2 ohms; MOS-FET.		
LINEAR POWER	The Runt	99.95	A				16		40-20	0.75	P/S	No	No	Yes	Yes	1¾ x 4 x 4½		
	6521Q	179.95	A				32.5		20-20	0.12	P/S	No	No	Yes	Yes	2 x 7¼ x 5½		
	4521Q	249.95	A				22.5		20-20	0.01	P/S	No	No	Yes	Yes	2 x 7¼ x 5½		
	9521Q	299.95	A				47.5		20-20	0.05	P/S	No	No	Yes	Yes	2 x 7¼ x 7½		
	15021Q	399.95	A				75		20-20	0.07	P/S	No	No	Yes	Yes	2 x 7¼ x 9½		
	25021Q	599.95	A				125		20-20	0.05	P/S	No	No	Yes	Yes	3 x 9½ x 12		
	50021Q	999.95	A				250		20-20	0.12	P/S	No	No	Yes	Yes	3 x 9½ x 14½		
	1001SW	349.95	A				100 x 1		20-120 Hz	0.05	P/S		Yes	Yes	Yes	2 x 7¼ x 9½	Monosubwoofer amp.	

# Definition

"It's difficult to explain just how important a role a crossover plays in a good automotive stereo system... the ability to adjust both the low/mid and mid/high crossover points as well as the overall output is crucial to balancing your system... a crossover-tweaked system can have near-perfect tonal balance as well as a smooth, spacious sound and an improved sound stage."

Michael Smolen, *User's Evaluation*,  
CAR STEREO REVIEW, Summer 1988.

## XM-7 Multi-Function Mobile Electronic Crossover (Patent Pending)

Honored as "one of the most innovative consumer products of 1990" at the **Innovations '90 Design & Engineering Exhibition** event held at the 1990 International Summer Consumer Electronic Show, this powerful, multifunction electronic crossover is a masterpiece of audio engineering. It may very well become the **reference standard** for electronic crossover design technology.



### Features:

- Exclusive Infinite Electronic Crossover Design
- Dual 4-Way Crossovers for Bi-Quad-Amp Systems
- Front/Rear Inputs with Front/Rear/Subwoofer Outputs
- Separate Front/Rear Parametric Equalizer with Gain, Frequency and Bandwidth Adjustments
- Constant Subwoofer Outputs
- Asymmetrical Electronic Crossover
- Frequency Multiplier
- Parallel Input Switch
- Woofer/Enclosure Equalization
- Phase Inverter for Subwoofer Output
- Adjustable Output Level
- Stereo/Mono Subwoofer
- Gold Plated RCA Connectors
- Power On and Remote Indicators
- Low Battery Indicator



## XM-5 Mobile Electronic Crossover (Patent Pending)

The XM-5 eliminates compromises normally associated with many installations and provides near perfect system tonal quality with superior imaging. It features unique mono front center channel for perfect sound staging as well as rear center channel for rear-fill ambience. Coustic's XM-5, newest member of the awesome XM family, may set the standards against which all electronic crossovers will be judged.

### Features:

- Exclusive Infinite Electronic Crossover Design
- Flexible 2, 3-Way Crossovers for Multi-Amp Systems
- Front/Rear Inputs with Front/Rear/Subwoofer Outputs
- Constant Subwoofer Outputs
- Mono Front and Rear Center Channel Outputs
- Asymmetrical Electronic Crossover
- Frequency Multiplier
- Parallel Input Switch
- Woofer/Enclosure Equalization
- Phase Inverter for Subwoofer Output
- Adjustable Output Level
- Stereo/Mono Subwoofer
- High/Low Impedance Inputs
- Built-in Floating/Common Ground Adaptor
- Gold Plated RCA Connectors

## XM-3 Mobile Electronic Crossover (U.S. Pat No. 4,905,284)

*The XM-3 is an installer's dream come true... but the real beauty lies in the crossover's ability to be configured for practically any amplifier/speaker system you can think of... it's a very useful product and a tremendous value."*

Michael Smolen  
*User's Evaluation*,  
CAR STEREO REVIEW  
Summer 1988



### Features:

- Exclusive Infinite Electronic Crossover Design
- Front/Rear Inputs with Front/Rear/Subwoofer Outputs
- Constant Subwoofer Outputs
- Asymmetrical Electronic Crossover
- Frequency Multiplier
- Parallel Input Switch
- Woofer/Enclosure Equalization
- Phase Inverter for Subwoofer Output
- Adjustable Output Level
- Stereo/Mono Subwoofer
- Gold Plated RCA Connectors



## XM-1 Mobile Electronic Crossover

The XM-1 provides two separate sets of crossover frequencies for high and low pass circuits. Powerful, yet simple, the XM-1 perfectly matches any subwoofer/woofer and mid/tweeter combination in the audio system.

### Features:

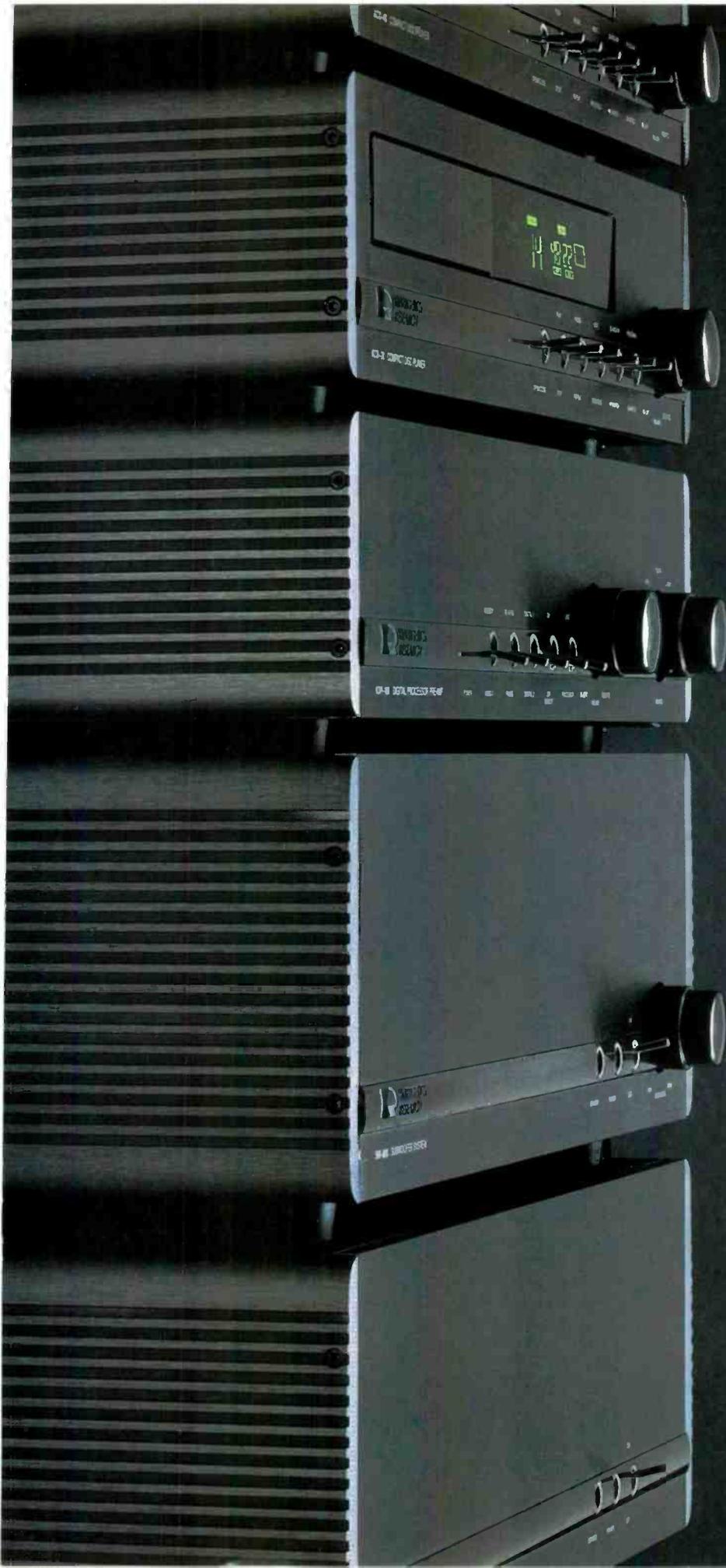
- Asymmetrical Electronic Crossover
- High/Low Impedance Inputs
- Built-in Floating/Common Ground Adaptor
- Adjustable High-Pass and Low-Pass Crossover Frequencies
- Adjustable Input Sensitivity
- Gold Plated RCA Connectors
- Compact, Low-Profile Cabinet Design

Coustic's family of XM's is designed with an elegant, modular approach to system performance and expansion. From the most complex and exotic to the simplest single crossover system, XM defines award-winning car audio.

**COUSTIC**<sup>®</sup>  
4260 Charter Street  
Vernon, CA 90058-2596, USA  
Phone: 213-582-2832  
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# AMPS/EQUALIZERS

MANUFACTURER	Model	Price, \$	Preamp (P)	Amp (A)	Equalizer (E)	Number of EQ Bands	Boost/Cut Range, ±dB	S/N Ratio, -dB, A-Weighted	Watts (Channel) into 4 Ohms, Per EQ-A-60	Full-Power Bandwidth, Hz to kHz	THD at Rated Output, Hz to kHz	Input Level: Preamp (P), Speaker (S)	Fader Control?	Includes Crossover?	RCA Input Jacks?	Dimensions, inches	Notes
LINEAR POWER (Continued)	2001SW	499.95	A					200 x 1	20-5	0.05	P/S		Yes	Yes	2 x 7 1/4 x 12	As above. Monoblock. Half-DIN size; two-input switching. Half-DIN size; 32-dB gain; with separate, wired controls for custom mounting, Model PA-II-R, \$499.95.	
	8002SW	1599.95	A					800 x 1	20-20	0.09	P/S		No	Yes	3 1/2 x 10 x 17		
	PA-I	199.95	P/E		3	12	100				P/S		No	Yes	1 x 6 1/2 x 3 1/2		
	PA-II	349.95	P/E		4	16	105				P/S	Yes	No	Yes	1 x 6 1/2 x 3 1/2		
	4253	399.00	A					25 x 4	20-20	0.08	P/S		Yes	Yes	2 x 10 x 8		
	4503	499.95	A					50 x 4	20-20	0.08	P/S		Yes	Yes	2 x 10 x 10		
4753	599.95	A					75 x 4	20-20	0.08	P/S		Yes	Yes	2 x 10 x 12			
2202 Servo	999.95	A					220 x 1	20-1	0.05	P/S		No	Yes	3 x 9 1/2 x 9 1/2	Servo mono subwoofer amp; includes four 8-inch subwoofers (see "Speakers"). As above but with two 12-inch subwoofers.		
5002 Servo	1799.95	A					500 x 1	20-1	0.05	P/S		No	Yes	3 x 9 1/2 x 14 1/2			
MAJESTIC	MAX AMP 50	250.00	A				80	50	20-20	0.05	P	No	No	Yes	7 1/4 x 8 1/4 x 2 1/4	Bridgeable. As above. As above. Floating and common ground. As above; passive EQ capability. Includes spectrum analyzer; boost bypass switch; floating and common ground. Includes spectrum analyzer and pink-noise generator with mike; four EQ memories; CD input jack; floating and common ground. Illuminated panel; floating and common ground. Floating and common ground. Parametric. Four-channel operation; 9-V powering for portable CD players; CD input. Gooseneck; subwoofer output; common and floating ground. BTL output circuit. Bridgeable; MOS-FET; operates into 2 ohms. As above. As above. BTL circuitry. Bridgeable; MOS-FET; Class A for 2-ohm operation. As above. As above. As above. As above. †Two-, three-, or four-channel operation. MOS-FET; operates into 2 ohms. As above.	
	MAX AMP 100	300.00	A				80	100	20-20	0.05	P	No	No	Yes	11 x 8 1/4 x 2 1/4		
	MAX AMP 150	400.00	A				80	150	20-20	0.05	P	No	No	Yes	15 1/2 x 8 1/4 x 2 1/4		
	MEB700FC	79.95	A/E		7	12	65	30	20-20		P/S	Yes	No	Yes	5 3/8 x 1 x 5 1/8		
	MEB2010	89.95	P/A/E		10	12	65	50	20-20		P/S	Yes	No	Yes	7 x 1 1/4 x 5 1/2		
	MEB1070S	99.95	A/E		7	12	70	40	20-20		P/S	Yes	No	Yes	7 x 1 x 5 1/2		
	MEB7300	199.95	A/E		7	12	70	50 x 4	20-20		P/S	Yes	No	Yes	6 3/8 x 2 x 6 3/8		
	MPA7000	79.95	P/E		7	12	65				P	Yes	No	Yes	5 1/2 x 1 1/8 x 4		
	MPA8000S	89.95	P/E		7	12	70			0.1	P/S	Yes	Yes	Yes	7 x 1 x 5 1/2		
	MPA6PG	99.95	P/E		5	12	100			0.02	P/S	No	No	Yes	7 x 1 x 4 1/2		
	MPA8500S	109.95	P/E		7	12	70			0.02	P/S	Yes	Yes	Yes	7 x 1 x 4 1/2		
	MPA7 Cobra	159.95	P/E		7	12	65			0.3	P/S	Yes	No	Yes	2 x 6 1/2 x 1		
	MA60	49.95	A				50	30	50-15	0.9	P/S	No	No	Yes	4 1/2 x 1 x 5 1/2		
	MA120	79.95	A				65	50	20-20	0.1	P/S	No	No	Yes	8 3/8 x 2 3/8 x 3 3/4		
	MA160A	119.95	A				70	80	20-20	0.05	P/S	No	Yes	Yes	5 1/8 x 2 1/2 x 7 1/8		
	MA550HD	169.95	A				70	50	20-20	0.05	P/S	No	No	Yes	7 1/8 x 7 1/8 x 2 1/2		
	MA770SW	249.95	A				70	80	20-20	0.05	P/S	No	Yes	Yes	7 3/8 x 8 3/8 x 3 3/8		
	MA8900A	69.95	A				80	40	20-20	1	P/S	No	No	Yes	5 x 1 1/4 x 4 1/4		
	MA9100A	189.95	A				80	36	20-20	0.05	P/S	No	No	Yes	10 1/2 x 2 3/4 x 6		
	MA9300SW	249.95	A				80	50	20-20	0.05	P/S	No	Yes	Yes	10 1/2 x 2 3/4 x 8		
MS8400SW	269.95	A				80	75	20-20	0.05	P/S	No	Yes	Yes	10 1/2 x 2 3/4 x 9 1/4			
MA9500SW	299.95	A				80	100	20-20	0.05	P/S	No	Yes	Yes	10 1/2 x 2 3/4 x 10			
MA9800A	599.95	A				80	200	20-20	0.05	P/S	No	Yes	Yes	10 1/2 x 2 3/4 x 18			
MA430HD	279.95	A				80	70 x 2†	20-20	0.05	P/S	No	No	Yes	10 1/2 x 2 3/4 x 10			
MA460HD	299.95	A				80	300 x 2†	20-20	0.05	P/S	No	No	Yes	11 x 2 3/4 x 11 1/4			
MAXITRON	MA-3500	115.95	A				80	75	20-20	0.05	P/S	No	No	Yes	8 1/2 x 2 1/4 x 8	Bridgeable. As above.	
	MA-4500	184.95	A				80	100	20-20	0.05	P/S	No	No	Yes	8 1/2 x 2 1/4 x 10		
	MQ-1100	63.95	A/E		10	12	75	40	20-20	1	S	Yes	No	Yes	1 1/4 x 6 1/2 x 5 1/4		
MEI	DA7255	329.95	A				95	110	20-20	0.5	P/S	No	Yes	Yes	14 x 9 1/2 x 2 1/4	Bridgeable. As above. As above. As above.	
	QA7440	279.95	A				95	50 x 4	20-20	0.5	P/S	No	No	Yes	14 x 9 1/2 x 2 1/4		
	QA7230	224.95	A				95	70	20-20	0.5	P/S	No	No	Yes	11 1/8 x 9 1/2 x 2 1/4		
	QA7220	165.95	A				95	50	20-20	0.5	P/S	No	No	Yes	7 1/4 x 9 1/2 x 2 1/4		
	QA7210	79.95	A				85	15	20-20	0.5	P/S	No	No	Yes	3 1/2 x 9 1/2 x 2 1/4		
	PA7420	79.95	A				75	12 x 4	20-20	0.8	P/S	No	No	Yes	7 1/2 x 4 1/2 x 1 3/4		
	PA7220	59.95	A				70	12	20-20	0.8	P/S	No	No	Yes	6 x 4 1/2 x 1 3/4		
	EA6100	59.95	A/E		7		70	12.5	20-20	0.8	P	Yes	No	Yes	5 1/8 x 1 1/8 x 6 1/8		
	EA6200	79.95	A/E		7		70	12.5	20-25	0.8	P	Yes	No	Yes	7 x 1 x 6 1/8		
	EA6300	99.95	A/E		7		70	12.5	20-25	0.8	P/S	Yes	No	Yes	7 x 1 x 5 1/2		
	EA6350	169.95	A/E		7		70	12.5 x 2, 20 x 2	20-25	0.8	P/S	Yes	No	Yes	7 x 2 x 7 1/8		
	EA6470	199.95	A/E		7		70	12.5 x 2, 20 x 2	20-25	0.8	P/S	Yes	No	Yes	7 x 2 x 7 1/8		
	EP6250	89.95	E		7		70				S	Yes	Yes	Yes	7 x 1 x 5 3/4		
METROSOUND	MPX 504	250.00	A				80	50 x 4	23-30	0.05	P/S		Yes	Yes	8 1/8 x 2 3/8 x 16 1/8	Bridgeable; operates into 2 ohms. As above. As above. Bridgeable.	
	MPX 752	200.00	A				80	75	20-30	0.03	P/S		Yes	Yes	8 1/8 x 2 3/8 x 12 3/8		
	MPX 402	150.00	A				80	40	10-41	0.03	P/S		Yes	Yes	8 1/8 x 2 3/8 x 11 1/4		
	MPX 420	120.00	A				80	40	17-40	0.90	P/S		Yes	Yes	7 x 2 1/2 x 11 1/8		
	MPX 280	70.00	A				80	20	20-30	0.90	P/S		Yes	Yes	7 x 2 1/2 x 6 1/2		
	MQ 9900	70.00	A/E		7	10	80	20	20-20	1.0	P/S	Yes	No	Yes	7 x 1 1/4 x 5 1/4		
	MQ 9907I	100.00	A/E		7	10	80	35	20-20	1.0	P/S	Yes	No	Yes	6 1/4 x 1 1/8 x 6 1/4		
	MQ 9807p	100.00	P/E		7	12	80			1.0	P	Yes	Yes	Yes	7 x 1 x 5 1/4		
MILBERT AMPLIFIERS	BaM-230	1895.00	A				90	30	20-60	2	P/S	No	No	Yes	18 x 4 1/2 x 6 1/4	Bridgeable; tube design. Tube-transistor design. As above.	
	TC-2R	670.00	P/E		2	10	90		2	P	No	Yes	Yes	Yes	7 x 2 x 4 1/2		
	TC-4R	830.00	P/E		2	10	90		2	P	Yes	Yes	Yes	7 x 2 x 4 1/2			
M & M ELECTRONICS	MM-50	468.95	A				85	25	10-40	0.05	P	No	No	Yes		Bridgeable. As above. As above. As above.	
	MM-100	610.95	A				97	50	10-40	0.05	P	No	No	Yes			
	MM-150	751.95	A				97	75	10-40	0.05	P	No	No	Yes			
	MM-250	1059.95	A				100	125	10-40	0.05	P	No	No	Yes			
MOBILE AUTHORITY	106zx	159.95	A				89	90	18-30	0.5	P	No	No	Yes		16-dB bass boost. As above. Bridgeable. As above. As above. As above; MOS-FET. Includes spectrum analyzer; CD input. Gooseneck.	
	110zx	189.95	A				89	90 x 4	18-30	0.5	P	No	No	Yes			
	122zx	279.95	A				105	100	12-50	0.02	S	No	No	Yes	2 x 9 3/4 x 7 1/4		
	124zx	299.95	A				105	150	12-50	0.02	S	No	No	Yes	2 x 9 3/4 x 10		
	126zx	329.95	A				105	100 x 4	12-50	0.02	S	No	No	Yes	15 1/4 x 9 3/4 x 2 1/8		
	130zx	169.95	A				115	40	8-45	0.02	S	No	No	Yes	2 x 9 3/4 x 4		
	158zx	249.95	A/E		7	12	90	120	20-12	0.03	S	Yes	Yes	No	7 x 1 1/8 x 5 3/4		
	178zx	149.95	E		7	12	70			0.03	S	Yes	Yes	No			



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# AMPS/EQUALIZERS

MANUFACTURER	Model	Price, \$	Preamp (P), Amp (A), Equalizer (E)	Number of EQ Bands	Boost/Cut Range, ±dB	S/N Ratio, -dB, A-Weighted	White Channels, per ELK-450	Full-Power Bandwidth, Hz to kHz	THD at Rated Output, Hz to kHz	Input Level: Preamp (P), Speaker (S)	Factor Control?	Includes Crossover?	RCA Input Jacks?	Dimensions, inches	Notes
MONOLITHIC SOUND	PA-100	99.00	A				20 x 1	20-20	P/S		Yes				Mono center-fill or subwoofer amp. Operates into 2 ohms. Operates into 1 ohm. Operates into 2 ohms.  Crossover frequency adjustable from 20 Hz to 15 kHz. Operates into 2 ohms. Monoblock; operates into 1 ohm. Operates into 2 ohms.  Biamp capable; independent high- and low-pass crossover frequencies. Operates into 1 ohm. Class A. As above; monoblock. Bi-FET; illumination. Parametric EQ; half-DIN size; illumination.
	PA-200	149.00	A				20	20-20	P			Yes	4 1/4 x 1 1/2 x 4 1/4		
	PA-400	249.00	A				20 x 4	20-20	P			Yes	4 1/4 x 1 1/2 x 4 1/4		
	PA-700	399.00	A				70	20-20	P			Yes	6 1/2 x 2 1/4 x 6 1/4		
	PA-1000S	499.00	A				50	20-20	P			Yes	6 1/2 x 2 1/4 x 9 1/2		
	PA-1000Q	549.00	A				25 x 4	20-20	P			Yes	6 1/2 x 2 1/4 x 11 1/2		
	PA-1000F	599.00	A		100		25 x 4	20-20	P	Yes		Yes	2 1/4 x 1 1/2 x 6 1/2		
	PA-1000X	649.00	A		100		25 x 4	20-20	P	No	Yes	Yes	2 1/4 x 1 1/2 x 6 1/2		
	PA-2000	499.00	A				100	20-20	P			Yes	6 1/2 x 2 1/4 x 9 1/2		
	PA-2000M	549.00	A				240 x 1	20-20	P			Yes	6 1/2 x 2 1/4 x 9 1/2		
	PA-2400	549.00	A				60 x 4	20-20	P			Yes	6 1/2 x 2 1/4 x 11 1/2		
	PA-2400F	599.00	A				60 x 4	20-20	P	Yes		Yes	6 1/2 x 2 1/4 x 11 1/2		
	PA-2400X	649.00	A				60 x 4	20-20	P		Yes	Yes	6 1/2 x 2 1/4 x 11 1/2		
	PA-5000	1199.00	A				240	20-20	P			Yes	13 x 3 1/2 x 11 1/2		
	Class A 50S	499.00	A				25	20-20	P			Yes	6 1/2 x 2 1/4 x 6 1/4		
Class A 50 EQ-4 PEQF	599.00	A				50 x 1	20-20	P			Yes	6 1/2 x 2 1/4 x 10			
PEQF	359.00	P/E	4	18	105			P	Yes		Yes	1 1/2 x 4 1/4 x 3 1/2			
MTX ROAD THUNDER	RTA225	119.95	A			85	25	20-20	P/S		No	Yes	5 1/4 x 5 1/4 x 1 1/8	Operates into 2 ohms. As above; simultaneous stereo and bridged mono output; variable bass boost. As above. Simultaneous stereo and bridged mono output.	
RTA250	299.95	A			90	50	20-20	P/S		No	Yes	9 x 8 1/8 x 2 1/2			
RTA2100	439.95	A			90	100	20-20	P/S		No	Yes	14 1/8 x 8 7/8 x 2 1/2			
	RTA450	459.95	A			90	50 x 4	20-20	P/S		No	Yes	16 1/8 x 8 7/8 x 2 1/2		
MTX TERMINATOR	MTA225	550.00	A			102	25	20-20	P/S		No	Yes	8 1/2 x 2 3/4 x 12	Simultaneous stereo and bridged mono output; operates into 1 ohm. As above.	
MTA250	650.00	A			102	50	20-20	P/S		No	Yes	8 1/2 x 2 3/4 x 14			
NAKAMICHI	PA-102	139.00	A			100	14	10-50	0.008	P/S	No	Yes	3 1/2 x 1 1/2 x 5	Bridgable. Monoblock. Bridgable. †Two-, three-, or four-channel operation. ††For use with Mobile Tuner Deck 1, 2, or 3 (see "Radios").  Line level out; for use with Mobile Tuner Deck 1, 2, or 3.	
PA-202	330.00	A			110	40	10-50	0.005	P	No	Yes	7 1/2 x 2 1/4 x 7 1/2			
PA-301	530.00	A			110	160 x 1	10-50	0.005	P	No	Yes	12 3/4 x 2 1/4 x 7 1/2			
PA-302	530.00	A			110	80	10-50	0.005	P	No	Yes	12 3/4 x 2 1/4 x 7 1/2			
PA-304	550.00	A			110	90 x 2 †	10-50	0.005	P	No	Yes	12 3/4 x 2 1/4 x 7 1/2			
Power Port 1	160.00	A			100	14 x 4	10-50	0.05	††	††	††	††	7 1/4 x 2 1/4 x 6 3/8		
Power Port 2	150.00	A			100	14 x 2 †	10-50	0.05	††	††	Yes	††	7 1/4 x 2 1/4 x 6 3/8		
Power Port 3	50.00	P											7 1/4 x 2 1/4 x 6 3/8		
CA-101	650.00	P	3	105					P	Yes	No	Yes	7 1/8 x 1 x 5		
NUMARK	DA2020WC	445.00	A			100		10-20	0.03		No	Yes	2 1/2 x 12 x 8 1/8		Mounts inside speaker enclosure.
DA2020	410.00	A			100		10-20	0.03		No	Yes	2 1/2 x 11 1/2 x 8 1/8			
ORION	Cobalt 230	196.00	A			110	30	6-30	0.03	P/S	No	Yes	8 x 2 x 7	Simultaneous stereo and bridged mono output; MOS-FET. As above. As above. As above. †Two-, three-, or four-channel operation. As above. ††Two-, three-, four-, five-, or six-channel operation. †††Three-way crossover. As above. Simultaneous stereo and bridged mono output. As above. As above; simultaneous 15-dB boost at 40 Hz, 4-dB cut at 200 Hz, and 6-dB boost at 10 kHz. As above. As above. As above. As above. As above; operates into 0.5-ohm load. As above but operates into 1 ohm. As above. Simultaneous stereo and bridged mono output; simultaneous 15-dB boost at 40 Hz, 4-dB cut at 200 Hz, and 6-dB boost at 10 kHz. As above. As above. Illumination. Quasi-parametric EQ; half-DIN size. Quasi-parametric EQ; powered by amp. Powered by amp.	
Cobalt 260	273.00	A			110	60	6-30	0.03	P/S	No	Yes	8 x 2 x 9			
Cobalt 430	345.00	A			110	30 x 4	6-30	0.03	P/S	No	Yes	8 x 2 x 11			
220GT	194.00	A			110	20	6-30	0.03	P/S	No	Yes	5 x 6 1/2 x 1 1/4			
420GT	458.00	A			110	20 x 4 †	6-30	0.03	P/S	No	Yes	12 x 6 1/2 x 1 1/4			
620GT	586.00	A			110	20 x 6 †	6-30	0.03	P/S	No	††	Yes	18 x 6 1/2 x 1 1/4		
240GX	348.00	A			110	40	6-30	0.03	P	No	No	Yes	7 1/2 x 8 1/2 x 2 1/4		
280GX	494.00	A			110	80	6-30	0.03	P	No	No	Yes	11 x 8 1/2 x 2 1/4		
222SX	331.00	A			110	22	6-30	0.03	P	No	No	Yes	8 1/2 x 8 1/2 x 2 1/4		
250SX	475.00	A			110	50	6-30	0.03	P	No	No	Yes	10 x 8 1/2 x 2 1/4		
275SX	545.00	A			110	75	6-30	0.03	P	No	No	Yes	12 x 8 1/2 x 2 1/4		
2150SX	725.00	A			110	150	6-30	0.03	P	No	No	Yes	17 x 8 1/4 x 2 1/4		
2250SX	1450.00	A			110	250	6-30	0.03	P	No	No	Yes	23 x 8 1/2 x 2 1/4		
225HCCA	545.00	A			110	25	6-30	0.03	P	No	No	Yes	11 x 8 1/2 x 2 1/4		
250HCCA	744.00	A			110	50	6-30	0.03	P	No	No	Yes	17 x 8 1/2 x 2 1/4		
2100HCCA	1470.00	A			110	100	6-30	0.03	P	No	No	Yes	23 x 8 1/2 x 2 1/4		
GS100	910.00	A			110	50	6-30	0.025	P	No	No	Yes	10 x 8 1/2 x 2 1/4		
GS300	1175.00	A			110	150	6-30	0.025	P	No	No	Yes	17 x 8 1/2 x 2 1/4		
GS500	2750.00	A			110	250	6-30	0.025	P	No	No	Yes	23 x 8 1/2 x 2 1/4		
300PQ	198.00	P/E	3	15	110			0.01	P	No	No	Yes	4 3/8 x 1 1/2 x 4		
300PHD	236.50	P/E	3	12	110			0.01	P	No	No	Yes	6 3/8 x 1 x 4 1/4		
500PQ	398.00	P/E	5	15	110			0.01	P	No	No	Yes	6 x 1 1/2 x 4 1/4		
600EQM	307.50	P/E	6	12	110			0.01	P	No	No	Yes	6 x 1 1/4 x 4 1/4		
PANASONIC	CY-M1004	599.00	A			102	55 x 4	5-100	0.005			Yes	11 1/4 x 2 1/4 x 9 3/4	Bridgable. As above. As above. As above. As above. Monoblock.	
CY-M654	419.00	A			100	37 x 4	5-100	0.005			Yes	11 1/4 x 2 1/4 x 9			
CY-M1002	299.00	A			102	58	5-100	0.005			Yes	11 1/4 x 2 1/4 x 6 1/4			
CY-M652	239.00	A			100	37	5-100	0.005			Yes	9 1/2 x 2 x 5 1/8			
CY-M302	59.00	A			78	12	10-50	0.05			No	3 1/8 x 1 3/8 x 2 3/8			
CY-M301	54.00	A			78	12 x 1	10-50	0.05			No	3 1/8 x 1 3/8 x 2 3/8			
CY-EQ10	239.00	E	14	12				0.005		Yes	Yes	7 x 1 x 5 1/8			
PHASE LINEAR	PLAX 30	120.00	A			85	15	30-20	0.2	P/S		Yes	8 1/2 x 2 3/8 x 3 1/8	Bridgable. As above.	
PLAX 60	270.00	A			85	30	30-20	0.2	P		Yes	9 3/8 x 2 1/2 x 5 1/8			
PLA-200	550.00	A			85	100	±1	20-20	0.05	P	Yes	Yes	10 1/8 x 2 3/8 x 8 1/4		
PLA-234	795.00	A			100	60 x 4	±1	20-20	0.05	P	Yes	Yes	15 x 2 3/8 x 8 1/4		



# AMPS/EQUALIZERS

MANUFACTURER	Model	Price, \$	Preamp (P), Amp (A), Equalizer (E)	Number of EQ Bands	Boost/Cut Range, ±dB	S/N Ratio, -dB, A-Weighted	Watts/Channel into 4 Ohms, per EA-490	Full-Power Bandwidth, Hz to kHz	THD at Rated Output, % Per EA-490	Input Levels	Fader Control?	Includes Speaker (S)	Includes Crossover?	RCA Input Jacks?	Dimensions, Inches	Notes
PYLE	A50	245.95	A				100	25	10-50	0.09	P	No	No	Yes	2 x 8 x 7 <sup>1</sup> / <sub>2</sub>	Bridgeable. As above. As above. As above. As above.
	A100	349.95	A				100	50	10-50	0.09	P	No	No	Yes	2 <sup>1</sup> / <sub>2</sub> x 10 <sup>1</sup> / <sub>4</sub> x 7 <sup>1</sup> / <sub>2</sub>	
	A200	479.95	A				100	100	10-50	0.09	P	No	No	Yes	2 <sup>5</sup> / <sub>8</sub> x 9 <sup>3</sup> / <sub>8</sub> x 12	
	A400	665.95	A				100	200	10-50	0.09	P	No	No	Yes	2 <sup>5</sup> / <sub>8</sub> x 9 <sup>3</sup> / <sub>8</sub> x 15 <sup>1</sup> / <sub>4</sub>	
	A140 4 PA1	399.95 249.95	A P/E	4	12		100	35 x 4	10-50	0.09 0.01	P P	No Yes	No No	Yes Yes	2 <sup>5</sup> / <sub>8</sub> x 12 <sup>1</sup> / <sub>4</sub> x 7 <sup>1</sup> / <sub>2</sub> 1 <sup>1</sup> / <sub>2</sub> x 5 <sup>5</sup> / <sub>8</sub> x 4 <sup>1</sup> / <sub>2</sub>	
QUIXOTIC	SEQ14.1	895.00	E	14	†		100			0.005	P	No	No	Yes	7 x 2 x 4.6	†±6 or ±15 dB, 2/3-octave EQ spacing; constant Q. As above but 1/3-octave spacing.
	SEQ28.1	1195.00	E	28	†		100			0.005	P	No	No	Yes	12 x 2 x 4.6	
RAADION	O-20	80.00	A				92	25	20-20	0.062	S	No	No	Yes		Bridgeable; operates into 2 ohms. As above; Class A; MOS-FET. As above. As above.
	O-25	120.00	A				92	25 x 4	20-20	0.045	S	No	No	Yes		
	O-410X	140.00	A				92	40	20-20	0.062	P/S	Yes	Yes	Yes	9 x 6 <sup>1</sup> / <sub>2</sub> x 2 <sup>3</sup> / <sub>8</sub>	
	O-418MX	180.00	A				93	45	20-20	0.057	P/S	Yes	Yes	Yes	8 <sup>1</sup> / <sub>4</sub> x 9 <sup>3</sup> / <sub>4</sub> x 2 <sup>3</sup> / <sub>8</sub>	
	O-420MX	210.00	A				93	65	20-20	0.057	P/S	Yes	Yes	Yes	8 <sup>1</sup> / <sub>4</sub> x 9 <sup>3</sup> / <sub>4</sub> x 2 <sup>3</sup> / <sub>8</sub>	
	O-435MX	280.00	A				95	60 x 4	20-20	0.057	P/S	Yes	Yes	Yes	8 <sup>1</sup> / <sub>4</sub> x 13 x 2 <sup>3</sup> / <sub>8</sub>	
	O-438MX	250.00	A				95	100	20-20	0.057	P/S	Yes	Yes	Yes	8 <sup>1</sup> / <sub>4</sub> x 9 <sup>1</sup> / <sub>4</sub> x 2 <sup>3</sup> / <sub>8</sub>	
	O-440MX	340.00	A				95	120	20-20	0.057	P/S	Yes	Yes	Yes	8 <sup>1</sup> / <sub>4</sub> x 13 x 2 <sup>3</sup> / <sub>8</sub>	
	O-450MX	380.00	A				95	85 x 4	20-20	0.057	P/S	Yes	Yes	Yes	8 <sup>1</sup> / <sub>4</sub> x 13 x 2 <sup>3</sup> / <sub>8</sub>	
	OEQ-325	50.00	A/E	7	12		50				P/S	Yes	No	Yes		
	OEQ-335	60.00	A/E	10	12		50				P/S	Yes	No	Yes		
	OEQ-400	80.00	A/E	7	12		25				P/S	Yes	No	Yes		
	OEQ-620	90.00	P/E	7	12						P/S	Yes	Yes	Yes		
	OPX-163	120.00	P/E	5	12						P	No	No	Yes		
	REALISTIC	12-1957	79.95	A				100	25 x 4	20-25		S	No	No	Yes	
12-1960		139.95	A				100	60 x 4	20-30		S	No	No	Yes	1 <sup>1</sup> / <sub>2</sub> x 8 <sup>3</sup> / <sub>4</sub> x 7 <sup>1</sup> / <sub>2</sub>	
12-1955		59.95	A/E	7	12			20 x 4	15-30	1.0	S	Yes	No	No	1 <sup>1</sup> / <sub>4</sub> x 6 <sup>3</sup> / <sub>8</sub> x 5 <sup>1</sup> / <sub>8</sub>	
12-1958		119.95	A/E	7	12			15 x 4	30-25	1.0	S	Yes	No	Yes	1 <sup>1</sup> / <sub>8</sub> x 7 <sup>1</sup> / <sub>8</sub> x 6 <sup>3</sup> / <sub>4</sub>	
12-1959		79.95	A/E	7	12			30 x 4	15-30	1.0	S	Yes	No	Yes	1 <sup>1</sup> / <sub>8</sub> x 7 <sup>1</sup> / <sub>8</sub> x 6 <sup>1</sup> / <sub>4</sub>	
12-1961		99.95	A/E	7	12			35 x 4	30-25	1.0	S	Yes	No	Yes	1 <sup>1</sup> / <sub>8</sub> x 6 <sup>1</sup> / <sub>4</sub> x 6 <sup>1</sup> / <sub>2</sub>	
12-1962		89.95	E	7	12		95			0.1	S	Yes	No	Yes	1 x 7 x 6	
12-1963		49.95	A/E	5	12		65		20-30		S	Yes	No	No	1 <sup>1</sup> / <sub>4</sub> x 6 <sup>3</sup> / <sub>8</sub> x 4 <sup>1</sup> / <sub>4</sub>	
12-1867		39.95	A/E	7	12		65				S	Yes	No	No	1 <sup>3</sup> / <sub>8</sub> x 5 <sup>1</sup> / <sub>8</sub> x 4	
ROADMASTER		EA 400NI	60.00	A/E	5	12		79	25 x 4	15-20	10	S	Yes	No	No	1 <sup>1</sup> / <sub>8</sub> x 4 <sup>3</sup> / <sub>4</sub> x 4 <sup>1</sup> / <sub>2</sub>
	EA 1000N	125.00	A/E	10	12		79	50 x 4	10-20	10	S	Yes	No	No	1 <sup>1</sup> / <sub>4</sub> x 6 x 4 <sup>1</sup> / <sub>2</sub>	
	PB 500N	35.00	A				79	50	30-18	10	S	No	No	No	1 <sup>1</sup> / <sub>8</sub> x 4 <sup>3</sup> / <sub>4</sub> x 4 <sup>1</sup> / <sub>2</sub>	
ROCKFORD FDSGATE	230sd	129.95	A				105	15	20-20	0.08	P/S	No	No	Yes	7 <sup>1</sup> / <sub>8</sub> x 2 x 4 <sup>3</sup> / <sub>8</sub>	Bridgeable. As above. As above. As above. As above. As above; 18-dB bass boost and 12-dB treble boost. As above. As above. As above. As above. As above. As above.
	260sd	179.95	A				105	30	20-20	0.08	P/S	No	No	Yes	7 <sup>1</sup> / <sub>8</sub> x 2 x 6 <sup>3</sup> / <sub>8</sub>	
	460sd	269.95	A				105	30 x 4	20-20	0.08	P/S	No	No	Yes	7 <sup>1</sup> / <sub>8</sub> x 2 x 9 <sup>3</sup> / <sub>8</sub>	
	Punch 30HD	179.95	A				80	15	20-20	0.05	P	No	No	Yes	6 <sup>1</sup> / <sub>8</sub> x 7 <sup>1</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>2</sub>	
	Punch 45HD	275.00	A	2			80	22.5	20-20	0.05	P	No	No	Yes	5 <sup>1</sup> / <sub>8</sub> x 8 <sup>3</sup> / <sub>4</sub> x 2 <sup>1</sup> / <sub>8</sub>	
	Punch 75HD	399.00	A	2			80	37.5	20-20	0.05	P	No	No	Yes	7 <sup>5</sup> / <sub>8</sub> x 8 <sup>3</sup> / <sub>4</sub> x 2 <sup>1</sup> / <sub>8</sub>	
	Punch 150HD	515.00	A	2			80	75	20-20	0.05	P	No	No	Yes	9 <sup>5</sup> / <sub>8</sub> x 8 <sup>3</sup> / <sub>4</sub> x 2 <sup>1</sup> / <sub>8</sub>	
	Power 100HD	329.00	A				80	15 x 4	20-20	0.05	P	No	No	Yes	10 x 7 x 1 <sup>1</sup> / <sub>2</sub>	
	Power 300	399.00	A	2			80	50 x 4†	20-20	0.05	P	No	Yes	Yes	14 <sup>1</sup> / <sub>4</sub> x 7 <sup>1</sup> / <sub>4</sub> x 2 <sup>1</sup> / <sub>2</sub>	
	Power 650	1575.00	A				80	125 x 4†	20-20	0.05	P	No	Yes	Yes	18 <sup>3</sup> / <sub>8</sub> x 7 <sup>1</sup> / <sub>4</sub> x 2 <sup>1</sup> / <sub>2</sub>	
	Power 1000C	2650.00	A				80	150 x 4	20-20	0.05	P	No	No	Yes	21 <sup>1</sup> / <sub>8</sub> x 7 <sup>3</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>4</sub>	
	PA-1	369.00	P	3	12		90				P	Yes	No	Yes	6 <sup>3</sup> / <sub>4</sub> x 3 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>2</sub>	
PA-1HD	369.00	P	3	12		90				P	Yes	No	Yes	6 <sup>3</sup> / <sub>8</sub> x 1 x 3 <sup>3</sup> / <sub>4</sub>		
OEQ-1	315.00	E	9	9		90				P	No	No	Yes	4 <sup>3</sup> / <sub>4</sub> x 8 <sup>3</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>4</sub>		
ROCKSTAR	RST-220	105.00	A				85	45	20-20	0.25	P/S	No	No	Yes	11 x 2 <sup>1</sup> / <sub>2</sub> x 7 <sup>1</sup> / <sub>2</sub>	Bridgeable; operates into 2 ohms. Bridgeable. As above. As above.
	RST-210	99.00	A				85	35	20-20	0.25	P/S	No	No	Yes	8 x 8 x 2 <sup>1</sup> / <sub>2</sub>	
	RST-164	52.00	A				85	25 x 4	20-20	0.25	P/S	No	No	Yes	6 <sup>3</sup> / <sub>4</sub> x 7 <sup>3</sup> / <sub>4</sub> x 2	
	RST-190	49.00	A				85	30	20-20	0.25	P/S	No	No	Yes	6 <sup>1</sup> / <sub>2</sub> x 6 <sup>1</sup> / <sub>2</sub> x 2 <sup>1</sup> / <sub>2</sub>	
RST-733	49.00	P/E	7							P/S	Yes	No	Yes	7 x 4 x 1 <sup>1</sup> / <sub>2</sub>		
RODEK	RA220	119.95	A				89	20	20-20 +0, -5	0.05	P			Yes	2 <sup>1</sup> / <sub>2</sub> x 8 <sup>3</sup> / <sub>8</sub> x 2 <sup>3</sup> / <sub>8</sub>	†"Tilt" control acts as high-pass filter with variable cutoff frequency or as boost below 50 Hz. Bridgeable. Bridgeable. Operates into 1 ohm. ††High-pass section. Monoblock.
	RA230E	229.95	A				85	30	20-20 +0, -5	0.05	P		†	Yes	2 <sup>1</sup> / <sub>2</sub> x 8 <sup>3</sup> / <sub>8</sub> x 4 <sup>3</sup> / <sub>4</sub>	
	RA250E	329.95	A				89	50	20-20 +0, -5	0.05	P		†	Yes	2 <sup>1</sup> / <sub>2</sub> x 8 <sup>3</sup> / <sub>8</sub> x 6 <sup>1</sup> / <sub>2</sub>	
	RA280E	399.95	A				95	80	20-20 +0, -5	0.05	P		†	Yes	2 <sup>1</sup> / <sub>2</sub> x 8 <sup>3</sup> / <sub>8</sub> x 8 <sup>3</sup> / <sub>8</sub>	
	RA2150E	639.95	A				98	150	20-20 +0, -5	0.05	P		†	Yes	2 <sup>1</sup> / <sub>2</sub> x 8 <sup>3</sup> / <sub>8</sub> x 14 <sup>1</sup> / <sub>4</sub>	
	RCA224E	469.95	A				85	24	20-20 +0, -5	0.05	P			Yes	2 <sup>1</sup> / <sub>2</sub> x 8 <sup>3</sup> / <sub>8</sub> x 8 <sup>3</sup> / <sub>8</sub>	
	RA450	579.95	A				88	50 x 4	20-20 +0, -5	0.05	P	Yes		Yes	2 <sup>1</sup> / <sub>2</sub> x 8 <sup>3</sup> / <sub>8</sub> x 11 <sup>1</sup> / <sub>8</sub>	
	RA425	369.95	A				85	25 x 4	20-20 +0, -5	0.05	P			Yes	2 <sup>1</sup> / <sub>2</sub> x 8 <sup>3</sup> / <sub>8</sub> x 8 <sup>3</sup> / <sub>8</sub>	
RA1125	429.95	A				96	125 x 1	20-20 +0, -5	0.05	P		††	Yes	2 <sup>1</sup> / <sub>2</sub> x 8 <sup>3</sup> / <sub>8</sub> x 6 <sup>1</sup> / <sub>2</sub>		
SANYO	BPA8250	229.99	A				100	30	20-20	0.04	P	No	No	Yes	9 <sup>1</sup> / <sub>2</sub> x 2 <sup>1</sup> / <sub>2</sub> x 6	Bridgeable. †Two-, three-, or four-channel operation. Mono subwoofer output; ground isolation circuit. †Digital signal processor with parametric EQ; six-channel operation with 16-watt center-channel power; four preset sound fields, six programmable memories. ††Controller, 7 x 1 <sup>1</sup> / <sub>8</sub> x 1; trunk unit, 7 x 2 x 6.
	BPA8455	269.99	A				100	130 x 2†	20-20	0.04	P	No	No	Yes	11 x 2 <sup>1</sup> / <sub>2</sub> x 9 <sup>1</sup> / <sub>4</sub>	
	EQM5	149.95	E	7	12		95			0.007	P	Yes		Yes	7 x 1 x 5 <sup>1</sup> / <sub>8</sub>	
	OSP-01	649.99	†	5	12		90	16 x 1	20-20	0.01	P	Yes	Yes	Yes	††	

# AMPS/EQUALIZERS

MANUFACTURER	Model	Price, \$	Preamp (P)	Amp (A)	Equalizer (E)	Number of EQ Bands	Boost/Cut Range, ±dB	S/N Ratio, -dB, A-Weighted	Watts Channel into 4 Ohms, per EIA-490	Full-Power Bandwidth, Hz to kHz	THD at Rated Output, %	Input Level: Preamp (P), Speaker (S)	Fader Control?	Includes Crossover?	RCA Input Jacks?	Dimensions, inches	Notes
SENTREK	SPA 075	44.95	A			77	12		40-20 ±3	0.01	P/S	No	No	Yes	1 x 4 1/2 x 5 1/2		
	SPA 100	64.95	A			77	14		20-20 ±3	0.01	P/S	No	No	Yes	1 3/8 x 7 x 4 1/2	Selectable high-pass crossover frequency.	
	SPA 138	84.95	A			78	16		20-20 ±3	0.01	P/S	No	Yes	Yes	2 1/2 x 7 5/8 x 3		
	SPA 140	89.95	A			77	14 x 4		20-20 ±3	0.01	P/S	No	No	Yes	1 5/8 x 8 1/2 x 4 1/2		
	SPA 188	134.95	A			80	30		20-20 ±3	0.01	P/S	No	Yes	Yes	2 1/2 x 8 5/8 x 5 1/8	As above.	
	SPA 338	224.95	A			84	65		20-20 ±3	0.005	P/S	No	Yes	Yes	2 1/2 x 8 5/8 x 7 7/8	Bridgeable.	
	SPA 458	349.95	A			86	100 x 2 †		20-25 ±1	0.005	P/S	No	Yes	Yes	2 3/8 x 14 x 8 3/8	†Two- or three-channel operation.	
	SPA 600	629.95	A			90	200 x 2 †		20-40 ±1	0.005	P/S	No	No	Yes	3 x 17 x 12	†As above. MOS-FET.	
	SAQ 1430	59.95	A E	7	12	75	14		20-20 ±1.5	0.003	S	Yes	No	No	1 x 7 x 4		
	SAQ 1459	74.95	A E	10	12	80	14		20-20 ±1.5	0.01	S	Yes	No	No	1 x 7 x 4		
	SAQ 1709	74.95	A E	7	12	84	14		20-20 ±1.5	0.01	P/S	Yes	No	Yes	1 1/8 x 5 1/2 x 4 3/4		
	SAQ 2009	89.95	A E	10	12	84	14		20-20 ±3	0.01	P/S	Yes	No	Yes	1 x 7 x 4 3/4	Includes spectrum analyzer.	
	SAQ 2309	109.95	A E	7	12	84	14		20-20 ±3	0.01	P/S	Yes	No	Yes	1 x 7 x 4 3/4	As above; CD input.	
	SAQ 2500	119.95	A E	7	12	84	14		20-20 ±3	0.01	P/S	Yes	No	Yes	1 x 7 x 4 3/4		
	SAQ 4000	169.95	A E	7	12			15 x 2, 28 x 2	20-20 ±3	0.01	P/S	Yes	No	Yes	2 x 7 3/8 x 7		
	SAQ 7400	199.95	A E	7	12	84		14 x 2, 35 x 2	20-20 ±3	0.01	P/S	Yes	No	Yes	2 x 7 1/4 x 7	Four EQ presets; includes pink-noise generator.	
	SEQ 740	59.95	P/E	7	12	90					P/S	Yes	No	Yes	1 x 7 x 4		
SEQ 750	69.95	P/E	10	12	90					P/S	Yes	No	Yes	1 x 7 x 4			
SEQ 820	89.95	P/E	7	12	90					P/S	Yes	Yes	Yes	1 x 7 x 4	Includes spectrum analyzer.		
SEQ 920	149.95	P/E	†	12	90					P/S	Yes	Yes	Yes	1 x 7 x 4	†Five front EQ bands, seven rear. Subwoofer level control.		
SHERWOOD	XQ-1101	235.00	P/E	7	12	85				0.05	P	Yes	Yes	Yes	Half DIN	Two fixed and three user-set EQ memories; surround capability. Selectable crossover frequency; CD input. Two surround modes.	
	XQ-1102	125.00	P/E	7	10	85				0.05	P	Yes	Yes	Yes	Half DIN		
	XQ-1023	170.00	P/A E	7	10	85	16 x 4		20-20	0.5	P	Yes	No	Yes	Half DIN		
	XQ-1021	125.00	P/A E	7	10	85	16		20-20	0.5	P	Yes	No	Yes	Half DIN		
	XA-1040	95.00	A			85	16		10-45	0.5	P		No	Yes	5 1/2 x 1 1/4 x 4		
	XA-1041	110.00	A			85	16 x 4		+3, -1 10-45	0.5	P		No	Yes	7 1/2 x 1 1/2 x 5 1/4		
	XA-1100	190.00	A			90	40		+3, -1 15-35	0.5	P		No	Yes	9 x 3 x 8 3/8	Bridgeable.	
	XA-1180	250.00	A			90	70		±3 15-35	0.5	P		No	Yes	10 x 3 x 8 3/8	As above.	
	XA-1181Q	290.00	A			90	30 x 4 †		±3 15-35	0.5	P		No	Yes	11 x 3 x 9	†Two-, three-, or four-channel operation.	
	XA-1240Q	350.00	A			95	50 x 4 †		±3 15-35	0.5	P		No	Yes	13 x 3 x 9		
	XAT-400Q	660.00	A			105	100 x 4 †		±3 20-20	0.05	P	No		Yes	19 3/4 x 2 1/4 x 11 1/8	††Two-, three-, four-, five-, or six-channel operation. Operates into 1 ohm. As above.	
	XAT-300Q	540.00	A			105	75 x 4 †		20-20	0.05	P	No		Yes	18 1/8 x 2 1/4 x 11 1/8		
	SONY	XM-2020	80.00	A			95	20		20-20	0.5	P			Yes	5 1/8 x 1 1/8 x 3 1/4	Operates into 2 ohms.
XM-2040		150.00	A			95	20 x 4		20-20	0.5	P			Yes	6 7/8 x 1 1/8 x 4 3/4	As above.	
XM-3020		145.00	A			100	30		20-20	0.08	P			Yes	9 x 1 3/8 x 4 3/4	As above.	
XM-4020		220.00	A			100	40		20-20	0.08	P			Yes	9 3/4 x 1 3/4 x 6	As above.	
XM-6020		280.00	A			105	60		20-20	0.08	P			Yes	12 1/4 x 2 1/4 x 7	As above.	
XM-10020		450.00	A			105	100		20-20	0.08	P			Yes	12 1/4 x 2 1/4 x 8 1/2	As above.	
XM-4040		330.00	A			105	40 x 4 †		20-20	0.08	P			Yes	12 1/4 x 2 1/4 x 8 1/2	†Two-, three-, or four-channel operation. As above.	
XM-5540F		500.00	A			105	55 x 4 †		20-20	0.08	P		Yes	Yes	14 1/4 x 2 1/4 x 9 1/2	†As above.	
XM-C6000		980.00	A			105	†		20-20	0.08	P		††	Yes	23 1/4 x 2 3/4 x 11	†Five- or six-channel operation; six-channel mode, 40 watts x 4 and 70 watts x 2. ††Two- or three-way crossover.	
XE-90 MkII		220.00	E	9	12	105				0.005	P	Yes	Yes	Yes	7 1/4 x 1 x 5 3/8		
XE-8 MkII	330.00	E	7	12	105				0.005	P	Yes	Yes	Yes	7 1/4 x 1 x 5 3/8			
XE-700	550.00	E	10	12	105				0.008	P	Yes	No	Yes	7 1/4 x 2 x 5 1/2			
SONY ES	XES-P1	1300.00	†	6	36	105				0.005	P	Yes	No	Yes	††	†Preamp with digital parametric EQ, compression, and surround processing; controls CD changers (see "CD Changers"). ††Chassis, 9 3/4 x 2 x 8 1/2; display unit, 7 1/4 x 2 x 6 3/8; includes joystick.	
	XES-M1 XES-M3	550.00 1000.00	A A			107 110	60 150 x 1		5-100 3-100	0.02 0.02	P P			Yes Yes	12 3/8 x 2 7/8 x 8 1/8 14 3/8 x 3 3/4 x 9 3/8	Monoblock.	
SOUND BARRIER	GA-400	336.00	A			65	200		20-30 +0, -1	0.05†	S		††	No		Bridgeable. †At 90 watts. ††Subwoofer crossover.	
	GA-200	208.00	A			65	100		20-30 +0, -1	0.05†	S		††	No		As above. †At 35 watts.	

# AMPS/EQUALIZERS

MANUFACTURER	Model	Price, \$			Preamp (P), Amp (A), Equalizer (E)	Number of EQ Bands	Boost/Cut Range, ±dB	S/N Ratio, -dB, A-Weighted	Watts/Channel, per CH@4Ω	Full-Power Bandwidth, Hz to kHz	THD at Rated Output, %	Input Level: Preamp (P), Speaker (S)	Fader Control?	Includes Crossover?	RCA Input Jacks?	Dimensions, inches	Notes
SOUNDSTREAM	D60II	198.00	A					100	30	20-20	0.1	P/S	No	Yes		4.3 x 7.8 x 2.1	Bridgeable.
	D100II	339.00	A					100	50	20-20	0.1	P/S	No	Yes		6 x 7.8 x 2.1	As above.
	D200II	499.00	A					100	100	20-20	0.1	P/S	No	Yes		11 x 7.8 x 2.1	As above.
	CA50II	395.00	A					100	25	20-20	0.1	P/S	No	Yes		6 x 7.8 x 2.1	As above; Class A.
	CA100H	575.00	A					100	50	20-20	0.1	P/S	No	Yes		11 x 7.8 x 2.1	As above.
	MC120	369.00	A					100	35 x 4†	20-20	0.1	P/S	No	Yes		8 x 7.8 x 2.1	†Two-, three-, or four-channel operation.
	MC140X	469.00	A					100	35 x 4†	20-20	0.1	P/S	No	Yes		8 x 7.8 x 2.1	
	MC300	795.00	A					100	75 x 4†	20-20	0.1	P/S	No	Yes		14 x 2.6 x 10	
MC245	599.00	A					100	††	20-20	0.1	P/S	No	Yes		13 x 6.5 x 2.1	††Two-, three-, four-, or five-channel operation; five-channel mode, 35 watts x 4 and 100 watts x 1.	
SPARKMATIC	SBE7	54.99	A E	7	12	55	20	20-20	5			Yes		No		1½ x 5½ x 5	
	GE50	39.99	A E	5	12	55	20	20-20	5			Yes		No		1½ x 4¾ x 2.1	
	LC52	19.99	A			55	20	20-20	5			No		No		1¼ x 4¼ x 4¼	
	AMP 8000	94.99	A			100	45	10-30	1	P S	No	No	Yes		2½ x 7½ x 6¾		
	AMP 7000	54.99	A			80	40		1	S			Yes		16¾ x 1½ x 16¾		
	LC269	59.99	A	1	9	50	18	20-20	10	S	No	No			4¾ x 1½ x 4		Includes 6 x 9-inch coaxial speaker.
TARGA	Q-10	80.00	A			92	25	20-20	0.062	S		No	Yes				
	Q-15	120.00	A			92	25 x 4	20-20	0.045	S		Yes					
	Q-55MX	280.00	A			95	60 x 4	20-20	0.057	P/S		Yes				8¼ x 13 x 2¾	Bridgeable; operates into 2 ohms; Class A; MOS-FET.
	Q-30MX	140.00	A			92	40	20-20	0.062	P/S		Yes	Yes			9 x 6½ x 2¾	Bridgeable; operates into 2 ohms.
	Q-38MX	180.00	A			93	45	20-20	0.057	P/S		Yes	Yes			8¼ x 9¾ x 2¾	As above; Class A; MOS-FET.
	Q-40MX	210.00	A			93	65	20-20	0.057	P/S		Yes	Yes			8¼ x 9¾ x 2¾	As above.
	Q-58MX	250.00	A			95	100	20-20	0.057	P/S		Yes	Yes			8¼ x 9¼ x 2¾	As above.
	Q-60MX	340.00	A			95	120	20-20	0.057	P/S		Yes	Yes			8¼ x 13 x 2¾	As above.
	Q-65MX	380.00	A			95	85 x 4	20-20	0.057	P/S		Yes	Yes			8¼ x 13 x 2¾	As above.
	Q-78MX	500.00	A			97	200	20-20	0.045	P/S		Yes	Yes			8¼ x 13½ x 2¾	As above.
	E-800	80.00	A E	7	12		25			P S		Yes				Half DIN	
	E-835	90.00	A E	7	12		50			P S		Yes	Yes			Half DIN	
	E-845	130.00	A E	7	12		50			P S		Yes	Yes			Half DIN	Includes spectrum analyzer.
	E-855	150.00	A E	7	12		100			P S		Yes				DIN	CD input.
E-865	180.00	A E	7	12		50 x 4			P S		Yes	Yes			DIN	As above; includes spectrum analyzer; four programmable memories.	
P-55	120.00	P/E	5	12									Yes		Half DIN	Parametric EQ; operates on four channels; separate left and right EQ controls.	
P-65	250.00	P/E	4	18								Yes	No		Half DIN	As above but four- or six-channel operation.	
E-910	90.00	P/E	7	12						P S	Yes	Yes			Half DIN	Illumination.	
E-930	140.00	P/E	7	12						P S	Yes	Yes			Half DIN	Includes spectrum analyzer.	
E-940	180.00	P/E	7	12						P S	Yes	Yes			Half DIN	As above; three programmable memories; surround control.	
TOSHIBA	TP820	369.95	A			90	50	20-20	0.25	P/S		No	Yes			10½ x 2½ x 5¾	
	TP840	289.95	A			95	75	20-20	0.25	P/S		No	Yes			10½ x 2½ x 5¾	
	TP850	229.95	A			95	100	20-20	0.25	P/S		No	Yes			12½ x 2½ x 7¾	
	TP870	199.95	A			95	150	20-20	0.25	P/S		No	Yes			12½ x 2½ x 8½	
	TQ220	299.95	E	7	12	85			0.1			Yes	No	Yes		7 x 1 x 6½	Bridgeable. As above. Includes spectrum analyzer; subwoofer output.
U.S. AMPS	US-25A	179.00	A			90	12.5	20-20	0.05	P/S	No	No	Yes			7½ x 2 x 6	Operates into 2 ohms.
	US-50A	249.00	A			90	25	20-20	0.05	P/S	No	No	Yes			7½ x 2 x 7½	
	US-150A	399.00	A			90	75	20-20	0.05	P/S	No	No	Yes			7½ x 2 x 12	
	US-250A	499.00	A			95	125	20-20	0.05	P/S	No	No	Yes			7½ x 2 x 15	
	US-250C	750.00	A			100	125	20-20	0.05	P/S	No	No	Yes			7½ x 2 x 18	
	US-500A	899.00	A			100	250	20-20	0.05	P/S	No	No	Yes			7½ x 2 x 20	Bridges to 800 watts.
	US-425	399.00	A			100	25 x 4	20-20	0.05	P/S	No	Yes	Yes			7½ x 2 x 12	
	US-X2	199.00	P			100			0.05	P/S	No	Yes	Yes			5½ x 1 x 6	
	US-B24	219.00	A			90	25 x 1	20-20	0.1	P/S	No	Yes	Yes			7½ x 2 x 6¼	Mono subwoofer amp; 12-dB boost at 40 Hz; operates into 2 ohms.
	US-25HCA	289.00	A			90	12.5	20-20	0.05	P/S	No	No	Yes			7½ x 2 x 7½	Bridges to 150 watts into 1 ohm.
	US-50HCA	479.00	A			95	25	20-20	0.05	P/S	No	No	Yes			7½ x 2 x 12	As above but 300 watts.
	US-100HCA	1100.00	A			100	50	20-20	0.05	P/S	No	No	Yes			7½ x 2 x 20	As above but 800 watts.
US-200HCA	1800.00	A			100	100	20-20	0.05	P/S	No	No	Yes			7½ x 2 x 40	As above but 1600 watts.	
U.S.D.	SW30	1650.00	E	30	†	108			0.009	P	No	No	No			2 x 19½ x 5	±6 or ±12 dB. Constant Q.
VECTOR RESEARCH	VM-100	249.95	A			100	50	20-20	0.1	P/S			Yes			9 x 9 x 1¾	Bridgeable.
	VM-200	349.95	A			100	100	20-20	0.1	P/S			Yes			9 x 11 x 1¾	As above.
YAMAHA	YPA-1020	549.00	A			105	170 x 2†	20-20	0.1	P	No	Yes	Yes			11½ x 2¼ x 11½	†Two-, three-, or four-channel operation.
	YPA-720	399.00	A			105	110 x 2†	20-20	0.1	P	No	Yes	Yes			11½ x 2¼ x 8¾	Dynamic bass extension.
	YPA-620	319.00	A			60			0.1			Yes	Yes			8¾ x 3 x 9¾	Bridges to 150 watts.
	YPA-320	219.00	A			50			0.1			No	Yes			8¾ x 2 x 5½	Bridges to 110 watts.
	YPA-240	159.00	A			100	18 x 4	20-20	1.0	P/S	No	No	Yes			10 x ½ x 4¾	Bridges to two channels.
	YPA-100	89.00	A			100	12	20-20	1.0	P/S	No	No	Yes			7 x 1¼ x 3¾	
	YGE-420	219.00	P/E	7	12	100			0.02	P/S		Yes	Yes			7 x 1 x 5½	AUX input.
	YEC-400	129.00	P			115			0.01	P		Yes	Yes			8¼ x 1½ x 6½	Six crossover frequencies.
YDSP-1	949.00	†						0.03			Yes	Yes			††	†Digital sound-field processor with eight presets; controls CD changer. ††Main unit, 7½ x 2 x 6¾; dash-mounted control, 6¾ x 1¾ x 1.	
ZAPCO	Z300	909.95	A			115	225	20-20	0.01			No	Yes			18 x 6 x 2¼	Optional remote status display.
	Z00s4		A			110	50 x 4	20-20	0.02			†	Yes				†Optional crossovers and noise gate.
	Z150	479.95	A			110	75	20-20	0.02			No	Yes			11¾ x 6 x 2¼	
	Z100mvx	399.95	A			105	100 x 1		0.01			Yes	Yes			10¾ x 6 x 2¼	Monoblock; selectable crossover slope and subwoofer polarity.
	Z100	339.95	A			110	50	20-20	0.01			No	Yes			10¼ x 6 x 2¼	
	Z50	229.95	A			100	12.5 x 4	20-20	0.05			No	Yes			7 x 6 x 2¼	
	SX	999.95	P/E	5	20	105			0.003			Yes	†			4¾ x 6¾ x 1	†Two crossovers with selectable slopes.
PX	545.95	P/E	4	18	105			0.004			No	Yes			7 x 5 x 2		
PEQ	425.00	P/E	9	18	92			0.05			No	No	No		8¾ x 4¼ x 1¼	Separate left and right EQ controls.	

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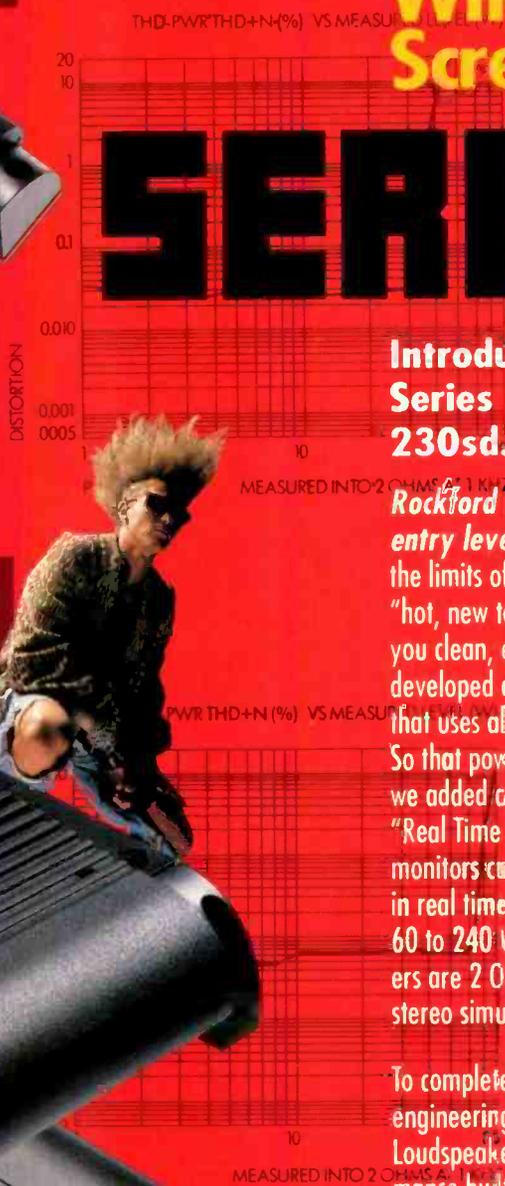
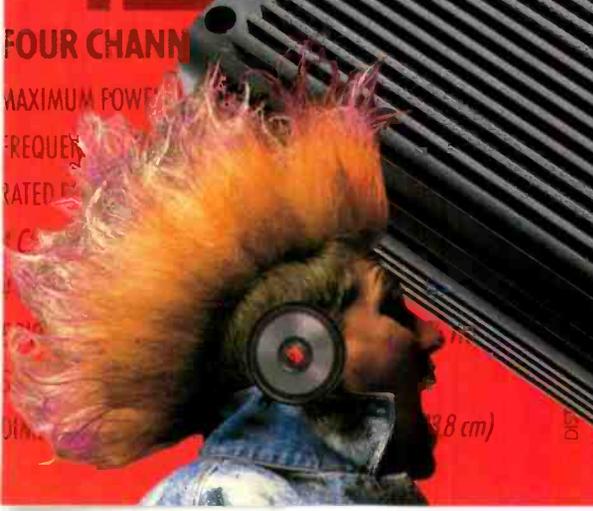
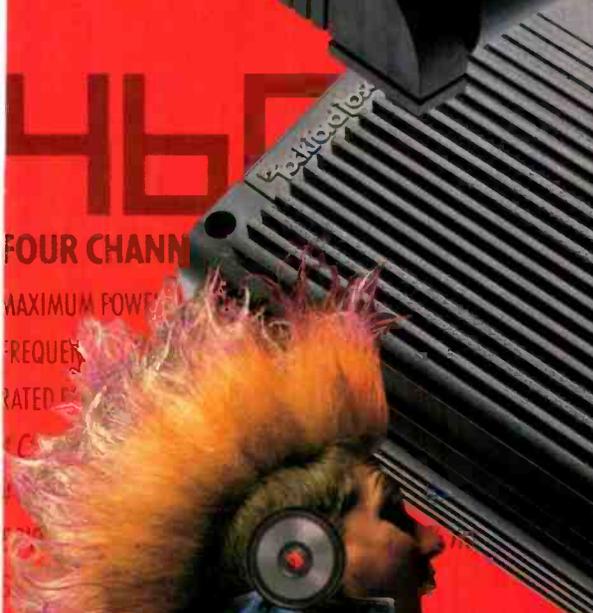
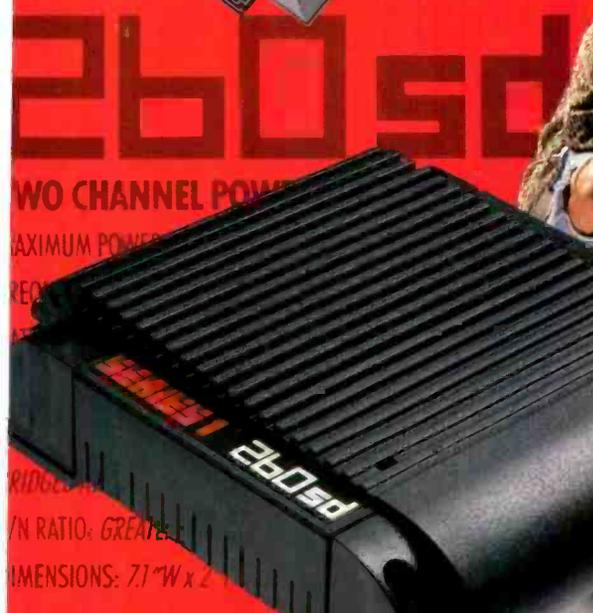
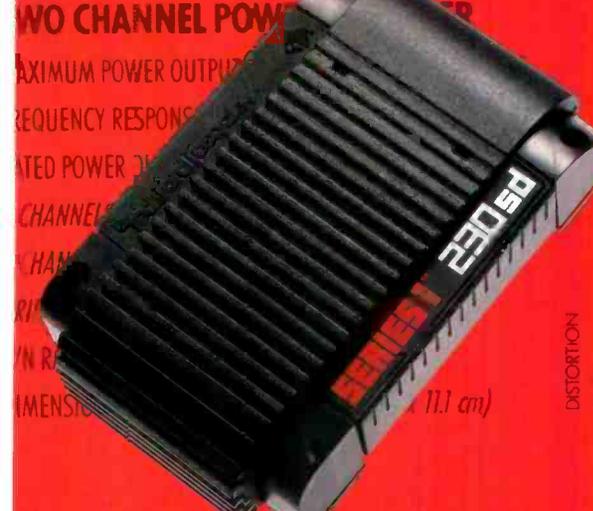
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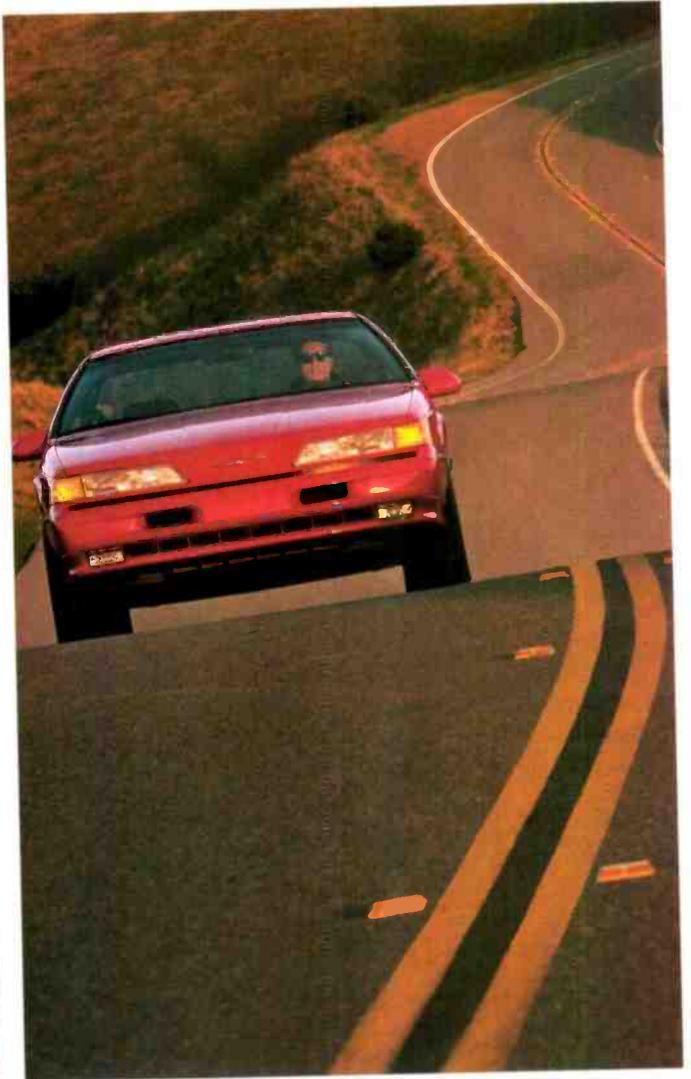
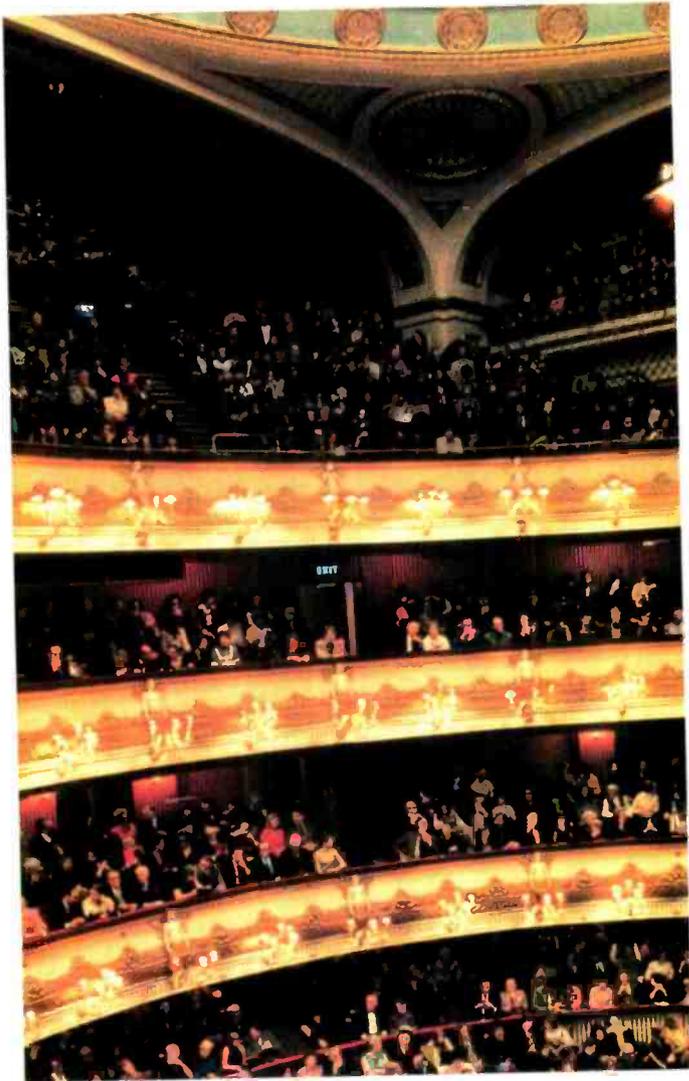


# RADIOS/TAPE PLAYERS

MANUFACTURER	Model (R) - Remote Included, (RG) - Remote Optional, (C) - Head Unit Controls CD Changer	Price, \$	AMPLIFIER										TUNER					TAPE																		
			Average Watts Channel, Per EIA-400		THD at Rated Output, Per EIA-400		Output Level: Preamp (P), Speaker (S)		Number of Tone or EQ Controls		FM Mono Usable Sensitivity, dB (For -30 dB THD + M)		Alternate Channel Selectivity, dB		FM Mono S/N Ratio, dB		Total Number of Station Presents		Tuning: Seek (A), Scan (B), Both (C)		Local Disturb Control: Manual (M), Automatic (A)		AM Stereo Capable?		Frequency Response, Hz to kHz, ±dB		Noise-Reduction Circuit? See Code (With M in applicable)		Auto Reverse?		Programm Search?		Fit: GM Vehicles (A), GM Chrysler (B), Dodge (C), Dual-Shaft (D), Then Precise: Full-Drive (P), Removable Cassette (R), Secret Code (S)		RCA In/Out Jacks?	
			0.8	P	3	12.7	80	76	24	C	A		40-18 ±0.3	B/C	76	Yes	Yes	C	P	Yes	Yes															
AIWA	CT-X8(RDC)	499.00	25 x 4	0.8	P	3	12.7	80	76	24	C	A		40-18 ±0.3	B/C	76	Yes	Yes	C	P	Yes	Yes														
	CT-X6(RDC)	449.00	25 x 4	0.8	P	3	12.7	80	74	24	C	A		40-16 ±3	B	64	Yes	Yes	C	P	Yes	Yes														
	CT-X4	379.00	25 x 4	0.8	P	3	12.7	70	64	24	C	A		40-16 ±3	B	64	Yes	Yes	C	P	Yes	Yes														
	CT-X2	319.00	25	1	P	3	12.7	70	63	24	C	M		40-16 ±3	B	64	Yes	Yes	C	P	Yes	Yes														
	CT-X1	279.00	8	1	S	3	12.7	70	63	24	C	M		40-16 ±3	B	63	Yes	Yes	C	P	Yes	Yes														
	CT-S2700	249.00	25	1	P	3	14.2	70	61	24	C	A		40-14 ±3	B	63	Yes	Yes	C	P	Yes	Yes														
CT-S2600	199.00	25	1	S	3	14.2	61	61	24	C	A		40-14 ±3	B	63	Yes	Yes	C	P	Yes	Yes															
ALPINE	7294S(C)	550.00	25		P/S	2	16.3	80	60	24	C	M	No	30-22 ±3	B/C	72	Yes	Yes	C	P	Out	Out														
	7516(C)	450.00	25		P/S	2	16.3	80	60	24	C	M	No	30-20 ±3	B	64	Yes	Yes	C	P	Out	Out														
	7400	200.00	6		S	2	16.3	80	60	18	A	M	No	40-18 ±3	B	55	Yes	No	D	P	Out	Out														
	7401	240.00	6		P/S	2	16.3	80	60	18	A	M	No	40-18 ±3	B	64	Yes	No	D	P	Out	Out														
	7502	280.00	16		P/S	2	16.3	80	60	18	A	M	No	40-18 ±3	B	64	Yes	No	D	P	Out	Out														
	7189	260.00	6		P/S	2	16.3	80	60	24	C	M	No	40-18 ±3	B	55	Yes	Yes	C	P	Out	Out														
	7618(RIC)	600.00			P	2	16.3	80	60	24	C	M	No	20-22 ±3	B/C	72	Yes	Yes	C	P	Out	Out														
	7292S(C)	380.00	25		P/S	2	16.3	80	60	24	C	M	No	40-18 ±3	B	64	Yes	Yes	C	P	Out	Out														
	7392S	380.00			P	2	16.3	80	60	24	A	M/A		20-22 ±3	B	64	Yes	Yes	C	P	Out	Out														
	7525	600.00	10 x 4	0.8	P/S	2	9.3	80	65	24	A	M/A		20-22 ±3	B/C	75	Yes	Yes	C	P	Out	Out														
	7290	320.00	8.8	0.8	P/S	2	16.3	80	60	24	A	M/A		40-18 ±3	B	64	Yes	Yes	C	P	Out	Out														
	7190	290.00	2.2	0.8	P/S	2	16.3	80	60	24	A	M/A		40-18 ±3	B	64	Yes	Yes	C	P	Out	Out														
	7524	550.00	10 x 4	0.8	P/S	2	9.3	80	65	24	A	M/A		20-22	B	67	Yes	Yes	C	P	Out	Out														
ANABA AUDIO	7382	259.00	30	0.01	P/S	2	26.3	68	70	18	B	A		20-18	D	83	Yes	Yes	C	P	Yes	Yes														
	7384	298.00	30	0.01	P/S	2	26.3	68	70	18	B	A		20-18	D	83	Yes	Yes	C	P	Yes	Yes														
	7386	399.00	30	0.01	P/S	2	26.3	68	70	18	B	A		20-20	D	86	Yes	Yes	C	P	Yes	Yes														
AUDIOVOX	AV-218	250.00	5	10	S	1	15	60	60	24	C	A	No	50-10		50	No	No	C	P	No	No														
	AV-228	299.95	20	10	P/S	2	15	60	60	24	C	A	No	50-10		50	No	No	C	P	No	No														
	AV-238	379.00	20	10	P/S	5	13	65	65	24	C	A	No	50-10	B	60	Yes	Yes	C	P	No	No														
	AV-245	399.95	20	10	P/S	5	13	65	65	24	C	A	No	50-10	B	60	Yes	Yes	C	P	No	No														
	AV-933	199.95	5	10	S	1	16	60	60	0	C	M	No	50-10		50	No	No	C	P	No	No														
	AV-949	199.95	5	10	S	1	15	60	60	18	C	A	No	50-10		50	No	No	D	P	No	No														
	AV-954	225.00	5	10	S	1	15	60	60	18	C	A	No	50-10		50	No	No	D	P	No	No														
	AV-958	250.00	20	10	P/S	2	13	65	65	18	C	A	No	50-10		50	Yes	No	D	P	No	No														
	AV-959	299.95	20	10	P/S	2	13	65	65	18	C	A	No	50-12	B	50	Yes	Yes	C	P	No	No														
	AV-982	175.00	20	10	S	3	15	60	60	18	C	A	No	50-10		60	No	No	D	P	No	No														
	AV-985	169.95	5	10	S	3	16	60	60	0	M	No		50-10		50	No	No	D	P	No	No														
	AV-3000	99.95	5	10	S	1	16	60	60	0	M	No		50-10		50	No	No	D	P	No	No														
BLAUPUNKT	Washington(C)	549.95	25 x 2, 7.5 x 4	1	P/S	2	15	85	70	36	C	M/A	No	30-20 ±3	B/C/D	72	Yes	Yes	C	P/S	Yes	Yes														
	Louisville(C)	399.95	25 x 2, 7.5 x 4	1	P/S	2	15	85	70	24	C	M/A	No	30-20 ±3	B	63	Yes	Yes	D	S	Yes	Yes														
	Santa Fe	379.95	7.5 x 4	1.0	P/S	3	15	85	70	30	C	A	No	30-18 ±3	B/C	72	Yes	Yes	C	P/S	Yes	Yes														
	Cheyenne	329.95	7.5 x 4	1.0	P/S	3	15	85	70	30	C	A	No	30-18 ±3	B	63	Yes	Yes	C	P/S	Yes	Yes														
	Daytona	259.95	7.5 x 4	1.0	P/S	3	15	85	70	30	C	A	No	30-18 ±3	D	58	Yes	Yes	C	P/S	Yes	Yes														
	Boston	249.95	25 x 2, 7.5 x 4	1	P/S	2	13	70	65	30	C	A	No	40-15 ±0.3	B	63	Yes	Yes	D	S	Yes	Yes														
Newport	229.95	7.5	1	P/S	2	13	70	65	24	C	A	No	40-15 ±0.3	D	60	Yes	Yes	D	S	Out	Yes															
Malibu	219.95	7.5 x 4	1.0	P/S	3	15	85	70	30	C	A	No	30-18 ±3	D	58	Yes	No	C	S	Yes	Yes															
CARRERA	CS-1000	159.95	25	1	P/S	2	17	65	60	24	C	A	No	40-14		50	Yes	Yes	C	P	Out	Out														
	CS-2000	199.95	25	1	P/S	2	16.3	65	65	24	C	A	No	40-15		52	Yes	Yes	C	P	Out	Out														
CLARION	3670RC(C)	299.95	18 x 4	1	P/S	2		70	70	20	C	A	No	30-16	B	66	Yes	No	C	P	Yes	Yes														
	3771RC(C)	349.95	18 x 4	1	P/S	2		70	70	20	C	A	No	30-16	B	74	Yes	Yes	C	P	Yes	Yes														
	3970RC(C)	589.95	10 x 4	1	P/S	3	12	70	70	20	C	A	No	30-16 ±3	B/C	66	Yes	Yes	C	P	Yes	Yes														
	8204R	129.95	5 x 4	1	S	1		70	70	18	C	A	No	40-14		53	Yes	No	D	P	Yes	Yes														
	1400RT	149.95	5 x 4	1	P/S	2		70	70	18	C	A	No	40-14		56	Yes	No	D	P	Yes	Yes														
	1700RT	199.95	18 x 4	1	P/S	2		70	70	18	C	A	No	40-14		56	Yes	Yes	D	P	Yes	Yes														
	8430R	149.95	5 x 4	1	S	2		70	70	18	C	A	No	30-18	B	66	Yes	Yes	C	P	Yes	Yes														
	9731RT	249.95	15 x 4	1	P/S	2	12	70	70	18	C	A	No	40-14		53	Yes	No	D	P	Yes	Yes														
	1470R	179.95	5 x 4	1	S	2	12	70	70	18	C	A	No	30-18	B	66	Yes	Yes	C	P	Yes	Yes														
	9470R	219.95	15 x 4	1	P/S	2	12	70	70	15	C	M	No	40-14		53	Yes	No	D	P	Yes	Yes														
	9670RT	289.95	15 x 4	1	P/S	2	12	70	70	15	C	M	No	30-18		66	Yes	Yes	C	P	Yes	Yes														
	1770RT	269.95	18 x 4	1	P/S	2	12	70	70	20	C	A	No	30-16		56	Yes	Yes	C	P	Yes	Yes														
	2001RT	239.95	3.2	1	P/S	2	12	70	70	12	C	A	No	30-16	B	66	Yes	Yes	C	P	Yes	Yes														
2002RT	319.95	12 x 2, 6 x 4	1	P/S	2	12	70	70	12	C	A	No	30-16	B	66	Yes	Yes	C	P	Yes	Yes															
COUSTIC	RX-739	279.95	15 x 2, 5 x 4	0.09	P/S	2	17	70	60	30	A	A	No	30-18 ±5	B	60	Yes	Yes	C	P	Yes	Yes														
	RX-737	249.95	15 x 2, 5 x 4	0.09	P/S	2	17	70	60	30	C	A	No	35-16 ±5		50	Yes	Yes	C	P	Out	Out														
	RX-730	199.95	5 x 4	0.09	P/S	2	17	70	60	30	A	A	No	35-16 ±5		50	Yes	Yes	C	P	Out	Out														
	RX-713	199.95	15	0.09	P/S	2	17	70	60	30	A	A	No	30-18 ±5	B	60	Yes	Yes	C	P	Out	Out														
	RX-712	179.95	15	0.09	P/S	2	17	70	60	30	A	A	No	35-16 ±5		50	Yes	Yes	D	P	Out	Out														
	RX-703	149.95	5	0.09	S	2	17	70	60	30	A	A	No	35-16 ±5		50	Yes	Yes	D	P	Out	Out														
CRAIG	AG5030	160.00	4	5	S	1	22.1	60	60	18	C	A	No																							

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# RADIOS/TAPE PLAYERS

MANUFACTURER	Model (R) = Remote Included, (RD) = Remote Optional, (C) = Head Unit Controls CD Changer	Price, \$	AMPLIFIER										TUNER					TAPE				
			Average Watts/Channel, per EA-dB	THD at Rated Output, % per EA-dB	Output Level: Preamp (P), Speaker (S)	Number of Tones or EQ Controls	FM Mono Usable Sensitivity, dB (Per -30 dB THD + N)	Alternate Channel Selectivity, dB	FM Mono S/N Ratio, dB	Total Number of Station Presets	Tuning: Seek (A), Scan (B), Both (C)	Local Display Control: Manual (M), Automatic (A)	AM Stereo Capable?	Frequency Response, Hz to kHz, -dB	Noise-Reduction Circuit? See Code	Tape S/N Ratio, dB, A-Weighted (Limit N/A if applicable)	Auto Reverse?	Program Search?	Fit: GM Vehicles (A), GM-Christler (B), DIN ISO (C), Dual-Shaft (D) Removable/Pull-Out Serial Code (P), RCA In/Out Jacks?			
KRACO (Continued)	LEO-600	129.95	5	3.0	S	3	9	53	55	0		M	No	70-15 ± 3		55	No	No	D		No	
	KID-588	116.95	5	3.0	S	1	10	50	55	0		M	No	70-12 ± 3		55	No	No	D		No	
	KGE-601	92.95	5	3.0	S	3	10	50	55	0		M	No	70-12 ± 3		50	No	No	D		No	
	KID-581	69.95	5	3.0	S	1	10	50	55	0		A	No	70-12 ± 3		50	No	No	D		No	
L.A. SOUND	LA 740D	249.00	14	1	P/S	2			55	24		C	A	No	30-15 ± 3	B		Yes	Yes	C	P	Yes
	LA 735	219.00	14	1	P/S	2			55	18		C	A	No	30-15 ± 3			Yes	No	C	P	Yes
	LA 715	199.00	14	1	P/S	2			55	18		A	A	No	30-15 ± 3			Yes	No	C	P	Yes
	LA 585	199.00	14	1	P/S	2			55	24		C	A	No	30-15 ± 3			Yes	No	C	P	Yes
	LA 545	189.00	14	1	P/S	2			55	30		A	A	No	30-15 ± 3			Yes	No	C	P	Yes
	LA 445	149.00	14	1	P/S	2			55	30		A	A	No	30-15 ± 3			No	No	C	P	Yes
	LA 528D	249.00	14	1	P/S	3			55	18		C	A	No	30-15 ± 3	B		Yes	Yes	C	P	Yes
	LA 555	219.00	14	1	P/S	2			55	24		A	A	No	30-15 ± 3			Yes	No	C	P	Yes
	LA 525	219.00	14	1	P/S	3			55	18		C	A	No	30-15 ± 3			Yes	No	C	P	Yes
	LA 325	199.00	14	1	P/S	2			55	24		A	M	No	30-15 ± 3			Yes	No	C	P	Yes
	LA 228	149.00	7	1	P/S	2			55	18		A	A	No	30-15 ± 3			Yes	No	D		No
	LA 218	109.00	7	1	S	1			55	18		A	A	No	30-15 ± 3			No	No	D		No
	LA 118	79.00	7	1	P/S	1			55			M	No	30-15 ± 3			Yes	No	D		No	
	LA 108	39.00	7	1	S	1			55			M	No	100-10 ± 3			No	No	D		No	
LA 1503CDC(C)	299.00	14	1	P/S	2			55	24		C	A	No	30-15 ± 3	B		Yes	Yes	C	P	Yes	
LA 1502CD(C)	249.00	14	1	P/S	2			55	24		A	M	No	30-15 ± 3			Yes	Yes	C	P	Yes	
LA 1501CD(C)	199.00	7	1	P/S	2			55	24		C	A	No	30-15 ± 3			Yes	No	C	P	Yes	
MAJESTIC	MCR9135	150.00	5 x 4		P/S	3			60	18		C	A	No	60-12		No	No	D		Yes	
	MCR9153	160.00	5 x 4		P/S	3			60	18		C	A	No	60-12		No	No	D		Yes	
	MCR9040	160.00	5 x 4		P/S	3			60	0		A	M	No	60-12		Yes	No	C	P	Yes	
	MCR9139	180.00	5 x 4		P/S	3			60	18		C	A	No	60-12		Yes	No	C	P	Yes	
	MCR1700AM	129.95	6	0.5	S	1	10		60	0		M	No	50-10		50	Yes	No	D		No	
	MCR3700AM	179.95	6	0.5	P/S	2	10		60	0		A	M	No	50-10		50	Yes	No	D		Yes
	MCR1100	79.95	8	0.5	S	1	10		60	0		M	No	50-10		50	No	No	D		No	
	MCR1100F	89.95	12	0.5	S	1	10		60	0		M	No	50-10		50	No	No	D		No	
	MCR1500BT	129.95	6	0.5	S	2	10		60	0		M	No	50-10		50	Yes	No	D		No	
	MCR84-400	139.95	6	0.5	P/S	2	10		60	0		M	No	50-10		50	Yes	Yes	D		Yes	
	MCR4100HP	179.95	15	0.5	P/S	2	10		55	12		C	M	No	50-10		55	Yes	No	D		Yes
	MCR4650HP	189.95	15	0.5	P/S	5	10		55	12		A	M	No	50-13		50	Yes	No	D		Yes
	MCR90-101	219.95	5.5 x 2, 4 x 4	0.5	P/S	2	14		65	24		C	M	No	50-14		55	Yes	Yes	D		Yes
	MCR90-202HP	249.95	15 x 2, 9 x 4	0.5	P/S	2	14		65	24		C	M	No	50-14	B	60	Yes	Yes	D		Yes
	MCR90-303HP	229.95	15 x 2, 9 x 4	0.5	P/S	2	16		50	24		C	M	No	50-14		50	Yes	No	C		Yes
	MCR3400	149.95	6	0.5	P/S	1	6		60	12		C	A	No	50-10		55	No	No	D		Yes
	MCR3500	149.95	6	0.5	P/S	1	10		60	12		C	M	No	50-10		55	No	No	D		Yes
MCR3900A	169.95	6	0.5	P/S	1	10		60	12		C	M	No	50-10		50	Yes	No	D		Yes	
MCR3600	169.95	6	0.5	P/S	2	6		60	18		C	A	No	50-10		55	Yes	No	D		Yes	
MCR90-404HP	259.95	15 x 2, 9 x 4	0.5	P/S	2	16		50	24		C	M	No	50-14	B	60	Yes	Yes	D		Yes	
MCR90-630	229.95	4.5 x 2, 3.5 x 4	0.5	P/S	2	16		50	18		C	M	No	50-14		50	Yes	No	C	P	Yes	
MCR90-707HP	279.95	15 x 2, 9 x 4	0.5	P/S	5	16		50	24		C	M	No	50-14		50	Yes	Yes	C	P	Yes	
MCR90-909HP	299.95	15 x 2, 9 x 4	0.5	P/S	2	16		50	24		C	M	No	50-14	B	60	Yes	Yes	C	P	Yes	
MAXITRON	MCR-2100	148.95	8	0.5	P/S	2	12	65	62	18		C	A	No	31.5-15 ± 1	No	60	Yes	No	C	P	Yes
	MCR-2300	206.95	25	0.5	P/S	2	12	65	62	24		C	A	No	31.5-15 ± 1	No	65	Yes	No	C	P	Yes
	MCR-2500	229.95	25	0.5	P/S	5	12	65	62	24		C	A	No	31.5-15 ± 1	No	65	Yes	No	C	P	Yes
	MCR-2700	244.95	7 x 2, 25 x 2	0.5	P/S	2	12	65	62	24		C	A	No	31.5-15 ± 1	No	65	Yes	No	C	P	Yes
MEI	CX2850	189.95	12.5	0.8	P/S	2	16	54	55	30		B	M	No	30-17 ± 0.3	B	54	Yes	Yes	C	P	Yes
	CX2830	199.95	12.5	0.8	P/S	2	16	54	60	24		C	M	No	25-15 ± 3		50	Yes	Yes	C	P	Out
	CX2820	184.95	12.5	0.8	P/S	2	16	54	60	24		C	M	No	40-16 ± 3	D	50	Yes	Yes	C	P	Out
	CX2810	159.95	12.5	0.8	P/S	2	16	54	55	24		C	M	No	30-12 ± 0.3		50	Yes	No	C	P	Yes
	CX2770	179.95	12.5	0.8	P/S	2	15.5	50	61	24		C	M	No	30-15 ± 0.3	B	50	Yes	Yes	D		Yes
	CX2610	164.95	12.5	0.8	S	2	16	54	60	24		C	M	No	40-16 ± 3		50	Yes	No	C	P	Yes
	CX2450	139.95	2.7	0.8	P/S	2	15.5	50	62	12		A	M	No	50-15 ± 0.3	D	48	Yes	No	D		Yes
	CX2250	129.95	2.7	0.8	S	1	15.5	48	62	12		A	M	No	50-15 ± 0.3	D	46	Yes	No	D		No
	CX2170	124.95	2.7	0.8	S	2	15.5	50	60	24		C	M	No	25-15 ± 3	D	45	Yes	No	C	P	No
	CX1150	49.95	2.7	0.8	S	1			40			M	No	80-8 ± 0.3		40			D		No	
METROSOUND	MXD 750ATI	320.00	14	10	P/S	2			55	30		A	M	No		B		Yes	Yes	C	P	Yes
	MXD 710ATI	270.00	14	10	P/S	2			55	30		C	A	No		B		Yes	Yes	C	P	Yes
	MXD 690ATI	250.00	14	10	P/S	2			55	30		A	A	No		D		Yes	Yes	C	P	Yes
	MXD 670ATI	210.00	14	10	P/S	2			55	18		C	A	No		D		Yes	No	C	P	Yes
	MXD 640AT	170.00	5	1	P/S	2			55	18		C	A	No				Yes	No	C	P	Yes
	MXD 510AT	150.00	14	10	P/S	2			55	12		C	A	No				No	No	C	P	Yes
	MXD 610	150.00	14	10	P/S	2			55	12		C	A	No				No	No	C	P	Yes
	MXD 505	120.00	5	1	P/S	2			55	12		C	A	No				No	No	C	P	Yes
	MX 665i	220.00	14	10	P/S	2			55	18		A	A	No		B		Yes	Yes	D		Yes
	MX 615	170.00	5	1	P/S	2			55	18		A	A	No		D		Yes	Yes	D		Yes
	MX 660i	190.00	14	10	P/S	2			55	18		A	A	No				Yes	Yes	D		Yes
	MX 600	140.00	5	1	P/S	2			55	18		A	A	No				No	No	D		Yes
	MX 520	120.00	14	10	P/S	2			55	18		A	A	No				No	No			

# RADIOS/TAPE PLAYERS

MANUFACTURER	Model (R) = Remote Included, (RD) = Remote Optional, (C) = Head Unit Controls CD Changer	Price, \$	AMPLIFIER										TUNER					TAPE																				
			Average Watts Channel, per EX-499		THD at Rated Output, % per EX-499		Output Levels: Preamp (P), Speaker (S)		Number of Tone or EQ Controls (For -30 dB THD + N)		FM Mono Usable Sensitivity, dB (Alternate Channel Selectivity, dB)		FM Mono S/N Ratio, -dB		Total Number of Station Presets		Tuning: Seek (A), Scan (B), Both (C)		Local Station Control: Manual (M), Automatic (A)		AM Stereo Capable?		Frequency Response, Hz to kHz, ±dB		Noise-Reduction Circuit? See Code		Type S, R Ratio, eg. A=Weighted (With MP if applicable)		Auto Reverse?		Program Search?		Fit: GM Vehicles (A), GM Chrysler (B), Non-Ford (C), Dual-Switch (D)		Thin Frontcase: Full Out (P), Reverse Case (R)		RCA In/Out Jacks?	
			Model (R) = Remote Included, (RD) = Remote Optional, (C) = Head Unit Controls CD Changer	Price, \$	Watts	THD	Preamp	Speaker	Tone	EQ	FM Sens	FM S/N	Presets	Tuning	Local	AM	Freq	Noise	Type	Auto	Program	Fit	Thin	RCA														
NAKAMICHI	Mobile Tuner Deck 1 (RIC) (†See "Amps")	830.00	†	†	†	2	17		60	18	A	A	No	20-20 ±3	B/C	70	Yes	Yes	C	R	Yes																	
	Mobile Tuner Deck 2 (C) (†See "Amps")	630.00	†	†	†	2	17		60	18	A	A	No	20-18	B/C	70	Yes	Yes	C	R	Yes																	
	Mobile Tuner Deck 3 (†See "Amps")	430.00	†	†	†	2	17		60	18	A	M	No	20-16	B	64	Yes	Yes	C	R	Yes																	
OPTIMUS	12-1944	199.95	22		S					30	A		No	60-14	B		Yes	No	C		No																	
	12-1938	259.95	15 x 4		S	3				30	A	A	No	50-15	B		Yes	No	C		No																	
	12-1936	199.95	14 x 4		S	3				30	A		No	50-15	B		Yes	No	C		No																	
PANASONIC	CO-080	339.00	15 x 4, 25 x 2				15.2	75	70	24	C			30-15 ±3	B	62	Yes	Yes	C	R	Yes																	
	CO-055	309.00	15 x 4, 25 x 2				15.2	75	70	24	C			30-15 ±3		52	Yes	No	C	P	Yes																	
	CO-050	249.00	15 x 4, 25 x 2				15.2	75	70	24	C			30-15 ±3		52	Yes	No	C	P	Yes																	
	CO-J01	174.00	7.5				15.2	75	70	18				30-15 ±3		52	Yes	No	C		Yes																	
	CO-1060	379.00	22 x 4				13.2	75	70	24	A	A		35-20 ±3	B	62	Yes	Yes	C	P	Yes																	
	CO-V15	379.00	22 x 4				13.2	75	70	24	A	A		35-17 ±3	B	62	Yes	Yes	C	P	Yes																	
	CO-V10	299.00	22 x 4				13.2	75	70	24	A	A		35-17 ±3	B	62	Yes	Yes	C	P	Yes																	
	CO-8580	259.00	20				15.2	75	70	15	A	A		35-17 ±3	B	62	Yes	Yes	D		Yes																	
	CO-8560	229.00	7.5				15.2	75	70	15	A	A		35-17 ±3	B	62	Yes	Yes	D		Yes																	
	CO-8530	209.00	20				15.2	75	70	15	A	A		35-16 ±3		52	Yes	Yes	D		No																	
	CO-8520	169.00	7.5				15.2	75	70	15	A	A		35-12.5 ±3		52	Yes	No	D		No																	
	CO-8510	149.00	7.5				15.2	75	70	15	A	A		35-12.5 ±3		52	Yes	No	D		No																	
PHILIPS	DC520	259.00	8 x 4	0.009	P/S	2				30	C	M	No	35-18		58	Yes	No	C	P	Dpt.																	
	DC630	388.00	25 x 2 (25 x 4 Opt.)	0.009	P/S	2				15	A	A	No	35-18	B	58	Yes	No																				
	DC640	455.00	25 x 4	0.009	P/S	2				15	A	A	No	35-18	B	58	Yes	Yes																				
PIONEER	KEH-M5500(C)	360.00	25 x 2, 15 x 4		P/S	2	11	70	70	24	C	M	No		B		Yes	Yes	C	R	Yes																	
	KEH-M4500(C)	330.00	25 x 2, 15 x 4		P/S	2	11	70	70	24	C	M	No				Yes	No	C	R	Yes																	
	KEH-M7300TR(C)	450.00	25 x 2, 15 x 4		P/S	2	11	70	70	24	C	M	No	40-17 ±3	B	63	Yes	No	C	R	Yes																	
	KEH-3200QR	295.00	25 x 2, 15 x 4		P/S	2	11	70	70	24	C	M	No	40-17 ±3	B	63	Yes	No	C	R	Yes																	
	KEH-2200QR	245.00	25 x 2, 15 x 4		P/S	2	11	70	70	24	C	M	No	40-14 ±3		52	Yes	No	C	R	Yes																	
	KEH-6969	270.00	25 x 2, 15 x 4		P/S	2	11	70	70	24	C	M	No	40-17 ±3	B	63	Yes	No	C	R	Yes																	
	KEH-4949	220.00	25 x 2, 15 x 4		P/S	2	11	70	70	24	C	M	No	40-14 ±3		52	Yes	No	C	R	Yes																	
	KEH-M6200(C)	370.00	25	0.05	P/S	2	11	70	70	24	C	A	No	40-14 ±3		52	Yes	No	C	R	Yes																	
	KEH-M6200 (RIC)	510.00	25	0.05	P/S	3	11	70	70	24	C	A	No	30-18 ±3	C	71	Yes	Yes	C	R	Yes																	
	KEH-M7200(C)	410.00	25	0.05	P/S	2	11	70	70	24	C	A	No	40-17 ±3	B	63	Yes	Yes	C	R	Yes																	
	KEH-5200	360.00	25	0.05	P/S	2	11	70	70	24	C	A	No	40-17 ±3	B	63	Yes	Yes	C	R	Yes																	
	KE-3700QR	275.00	8.5 x 2, 7 x 4	0.05	P/S	2	11	70	70	24	C	A	No	50-17 ±3	B	60	Yes	Yes	C	P	Yes																	
	KE-2700QR	245.00	8.5 x 2, 7 x 4	0.05	P/S	2	11	70	70	24	C	A	No	50-14 ±3		52	Yes	Yes	C	P	Yes																	
	KE-1700QR	225.00	8.5 x 2, 7 x 4	0.05	P/S	2	11	70	70	24	C	A	No	50-14 ±3		52	Yes		C	P	Yes																	
	KEH-9898TR	340.00	25 x 2, 15 x 4	0.3	P/S	2	11	70	70	24	C	A	No	40-17 ±3	B	66	Yes	Yes	D		Yes																	
	KE-4848	245.00	8.5 x 2, 7 x 4	0.3	P/S	2	11	70	70	24	C	A	No	50-17 ±3	B	63	Yes	Yes	D		Yes																	
	KE-3838	195.00	8.5 x 2, 7 x 4	0.3	P/S	2	11	70	70	24	C	A	No	50-14 ±3		52	Yes	No	D		Yes																	
KE-2828	175.00	8.5	0.3	S	1	11	70	70	24	C	M	No	50-14 ±3		52	Yes	No	D		No																		
PREMIER	KEX-M900 (RIC)	1200.00			P	12	7	70	70	24	C	A	No	30-18 ±3	B/C	71	Yes	Yes	C	R	Yes																	
	KEX-M850 (RIC)	650.00			P	4	8	70	70	24	C	M	No	25-22 ±3	B/C	73	Yes	Yes	C	R	Yes																	
	KEH-M650 (RIC)	520.00	25	0.05	P/S	3	11	70	70	24	C	A	No	30-22 ±3	B/C	71	Yes	Yes	C	R	Yes																	
	KEH-M580 (C)	370.00	25 x 2, 15 x 4		P/S	2	11	70	70	24	C	M	No		B		Yes	Yes	C	R	Yes																	
	KEH-M550 (C)	420.00	25	0.05	P/S	2	11	70	70	24	C	A	No	40-20 ±3	B	62	Yes	Yes	C	R	Yes																	
	KEH-380QR	260.00	25 x 2, 15 x 4		P/S	2	11	70	70	24	C	M	No	40-14 ±3		53	Yes	Yes	C	R	Yes																	
	KE-450QR	285.00	8.5 x 2, 7 x 4	0.05	P/S	2	11	70	70	24	C	A	No	50-20 ±3	B	60	Yes	Yes	C	P	Yes																	
	KE-350	255.00	8.5 x 2, 7 x 4	0.05	P/S	2	11	70	70	24	C	A	No	50-20 ±3	B	60	Yes	Yes	D		Yes																	
KE-250	215.00	8.5 x 2, 7 x 4	0.05	P/S	2	11	70	70	24	C	M	No	50-14 ±3		52	Yes	Yes	D		Yes																		
PRESTIGE	P-35	164.95	7 x 4	1	S	1	11	74	70	24	C	M	No	50-10 ±3		50	Yes		C	P	Yes																	
	P-45	249.95	7 x 4	1	P/S	2	11	74	70	24	C	M	No	50-12 ±3		52	Yes		C	P	Yes																	
	P-55	299.95	25 x 2, 7 x 2	1	P/S	2	11	74	70	24	C	M	No	30-15 ±3	B	60	Yes	Yes	C	P	Yes																	
(Continued)	P-65 (RI)	324.95	25 x 2, 7 x 2	1	P/S	2	11	74	70	24	C	M	No	30-15 ±3	B	60	Yes	Yes	C	P	Yes																	



# RADIOS/TAPE PLAYERS

MANUFACTURER	Model (RI) = Remote Included (RD) = Remote Dialtone (C) = Head Unit Controls CD Changer	Price, \$	AMPLIFIER										TUNER					TAPE				
			Average Watts Channel, per EIA-490	THD at Rated Output, % per EIA-490	Output Levels: Preamp (P), Speaker (S)	Number of Tone or ED Controls	FM Mono Usable Sensitivity, dB (For -30 dB THD + W)	Alternate Channel Selectivity, dB	FM Mono S/N Ratio, -dB	Total Number of Station Presets	Tuning: Seek (A), Scan (B), Both (C)	Local/Remote Control: Manual (M), Automatic (A)	AM Stereo Capable?	Frequency Response, Hz to kHz, -dB	Noise-Reduction Circuit? See Code	Tape S/N Ratio, -dB, Averaged (W) (W) NR (N) (N) (N) (N)	Auto Reverse?	Program Search?	Fit: GM Vehicles (A), GM Character (B), DIN/ISO (C), Dual-Shaft (D)	Thin Frontcase Pull-Out (P), Remote Control (R), Secret Code (S)	RCA In/Out Jacks?	
SHERWOOD (Continued)	XR-3164P	270.00	4 x 4, 14 x 2	0.5	P/S	2	12.4	80	70	30	C	M/A	No	20-20 ± 3		55	Yes	Yes	C	P	Yes	
	XR-3154	240.00	4 x 4, 14 x 2	0.5	P/S	2	12.4	80	70	30	C	M/A	No	20-20 ± 3		55	Yes	Yes	C		Yes	
SONY	XR-6077	150.00	6	1.0	S	2	13	70	68	24	A	M	No	40-15	No	58	Yes	No	O	No	No	
	XR-6157	200.00	6	1.0	P/S	2	12.5	75	68	18	A	M	No	40-16	No	58	Yes	Yes	O	No	Yes	
	XR-6287	230.00	12	1.0	P/S	2	12.5	75	68	18	A	M	No	40-16	B	66	Yes	Yes	O	No	Yes	
	XR-4357	230.00	9	1.0	S	2	13	70	68	24	A	M	No	30-15	No	55	Yes	No	C	No	No	
	XR-5250	280.00	11	1.0	P/S	2	12	75	69	24	A	M	No	30-16	B	66	Yes	Yes	C	P	Yes	
	XR-5450	300.00	11 x 4	1.0	P/S	2	12	75	69	24	A	M	No	30-16	No	55	Yes	Yes	C	R	Yes	
	XR-5550	330.00	11 x 4	1.0	P/S	2	12	75	69	24	A	M	No	30-16	B	66	Yes	Yes	C	R	Yes	
	XR-7130	330.00		1.0	P	2	12	75	69	24	A	M	No	30-18	B/C	76	Yes	Yes	C	P	Yes	
	XR-U220(C)	340.00	11 x 4	1.0	P/S	2	12	75	68	24	A	M	No	30-16	No	55	Yes	Yes	C	R	Yes	
	XR-U330(C)	400.00	11 x 4	1.0	P/S	2	12	75	68	24	A	M	No	30-16	B	66	Yes	Yes	C	R	Yes	
	XR-U550(ROC)	500.00	11 x 4	1.0	P/S	2	12	75	68	30	A	M	No	30-18	B/C	76	Yes	Yes	C	R	Yes	
	XR-U770(ROC)	670.00		1.0	P	2	8	75	70	30	A	M	No	30-20	B/C	76	Yes	Yes	C	R	Yes	
	XTC-100(C)	330.00	20 x 4	1.0	P/S	2	12	75	68	18	A	M	No		B/C	76	Yes	Yes	C	R	Yes	
SONY ES	XR-U880(RIC)	650.00			P	2	8	75	69	30	A	M	No	30-20		B/C	76	Yes	Yes	C	R	Yes
SOUND BARRIER	X-59	212.00	35		P/S						M	No					Yes	No	C	P	Yes	
	X-49	190.00	7		S						M	No					Yes	No	C	P	Yes	
	X-26	112.00	7		S						M	No					Yes	No	C	P	Yes	
	X-21	68.00	7		S						M	No					Yes	No	D	P	No	
SOUNDSTREAM	TC303	299.00	11 x 2, 4.5 x 4	0.8	P/S	3	17	65	70	12	B	A	No	30-20 ± 5	B/C	68	Yes	Yes	C	P	Yes	
	TC306	499.00			P	4	17	65	67	12	C	M	No	30-20 ± 3	B/C	70	Yes	Yes	C	P	Yes	
SPARKOMATIC	SR339	109.99		1	S	1	20	55	60	18	C	A	No	80-10 ± 3		50	No	No	D	P	Yes	
	SR359	149.99	5	1	S	1	20	55	60	18	C	A	No	80-10 ± 3		50	No	No	D	P	Yes	
	SR3200	159.99	12								A	A	No			Yes	No	C				
	SR345	129.99	5	1	S	1	9	65	60	18	A	A	No	60-20 ± 3		65	No	No	C	P	Yes	
	SR37	69.99	5	1	S	3	18	45	60		A	M	No	75-10 ± 3		35	No	No	D	P	Yes	
	SR35	54.99	5	1	S	1	20	40	50		A	M	No	100-9 ± 3		35	No	No	D	P	Yes	
	SR39	79.99	4	1	S	1	20.8				A	M	No	75-10 ± 3		55	No	No	O	P	Yes	
	SR333	119.99	5	1	S	3	11.2		62	18	C	A	No	70-12 ± 3		55	No	No	D	P	Yes	
TARGA	Q-604	150.00	15	2	P	2					A	A	No	35-16 ± 3			No	Yes		P	Out	
	Q-615	190.00	15	1	P	1				5	B	A	A	30-16 ± 3			No	Yes		P	Out	
	Q-625	140.00	15	1	P	1				18	A	A	A	30-16 ± 3			No	Yes		P	Out	
	Q-635	200.00	15	1	P	2				18	A	A	A	30-16.5 ± 3			No	Yes		P	Out	
	Q-705	190.00	7	1	P	1				30	A	M	A	30-16 ± 3			No	Yes		P	Out	
	Q-690A	280.00	35	0.8	P	2				24	C	A	A	25-18 ± 3	B		Yes	Yes		P	Out	
	Q-715A	240.00	15	1	P	2				30	C	A	A	30-16.5 ± 3			Yes	Yes		P	Out	
	Q-820A	300.00	15 x 2, 35 x 2	0.75	P	2				24	C	A	A	30-17.5 ± 3			Yes	Yes		P	Out	
	Q-830A	350.00	15 x 2, 35 x 2	0.75	P	2				24	C	M		28-17.5 ± 3	B/C		Yes	Yes		P	Out	
	R-130	50.00	40	3		1						A	A	30-15.5 ± 3			No	Yes				
	R-160	90.00	40	3		1						A	A	32-16.5 ± 3			No	Yes				
	R-725	230.00	15	1	P	1				24	C	A	A	26-17.5 ± 3			Yes	Yes		P	Out	
	R-755	320.00	15 x 2, 35 x 2	0.85	P	2				30	C	A	A	20-19 ± 3			Yes	Yes		P	Out	
	R-190A	140.00	15	2	P	1				18	A	A	A	28-16.5 ± 3			No	Yes			Out	
	R-390A	200.00	15	1	P	2				18	C	A	A	30-16.5 ± 3			Yes	Yes		P	Out	
R-640A	200.00	15	1	P	1				30	C	A	A	30-16.5 ± 3			Yes	Yes		P	Out		
R-670A	230.00	15	1	P	2				30	C	A	A	30-16.5 ± 3			Yes	Yes		P	Out		
R-680A	250.00	35	1	P	2				24	C	A	A	30-16.5 ± 3			Yes	Yes		P	Out		
Q-6000 (Q-735C head unit with COC-5 CD changer)	699.00	15 x 2, 35 x 2		P	2				30	C			28-18 ± 3	B		Yes	Yes		P	Out		
TOSHIBA	TX301	189.95	25	1	P/S	2	18	58	65	18	C	M	No	63-10 ± 3		56	Yes	No	D	P	Yes	
	TX401	289.95	25	1	S	2	18	58	65	12	A	M	No	63-10 ± 3		56	No	No	C	P	Yes	
	TX501	279.95	25	1	P/S	2	18	58	65	18	C	M	No	63-10 ± 3		56	Yes	No	C	P	Yes	
	TX411	289.95	25	1	P/S	2	18	58	65	18	C	M	No	63-10 ± 3		56	Yes	No	C	P	Yes	
	TX511	309.95	25	1	P/S	2	18	58	65	18	C	M	No	63-10 ± 3		66	Yes	No	C	P	Yes	
	TX590(RI)	799.95	25 x 4 Ext.		P/S	7	16	65	68	24	C	A	No		B/C	76	Yes	Yes	C	P	Yes	
	TX560(RI)	729.95	25 x 4		P/S	7	16	65	68	24	C	A	No		B/C	76	Yes	Yes	C	P	Yes	
	TX550	539.95	25 x 4		P/S	2	16	65	68	24	C	A	No		B/C	76	Yes	Yes	C	P	Yes	
	TX440	479.95	25 x 4		P/S	2	16	65	68	24	C	A	No		B/C	76	Yes	Yes	C	P	Yes	
	TX512	299.95	25 x 2, 7 x 2		P/S	2	17	65	67	24	C	A	No		B	66	Yes	Yes	C	P	Yes	
	TX502	159.95	7 x 4		S	2	18	58	65	24	C	M	No		B	58	No	No	C	P	No	
	TX322	269.95	25		P/S	2	17	65	67	24	C	A	No		B	66	Yes	Yes	C	P	Yes	
VECTOR RESEARCH	VM-120P	199.95	20	1	P/S	2	16.2	66	66	24	C	M	A	30-16.5 ± 3	B	54	Yes	Yes	C	P	Yes	
	VM-220P	249.95	20	1	P/S	2	15.5	70	70	24	C	M	A	30-17.5 ± 3	B	62	Yes	Yes	C	P	Yes	
YAMAHA	YCR-440	329.00	20 x 4		P/S	3	15.0	75	70	24	C	M	A	35-17 ± 3	B/C	63	Yes	Yes	D	P	Out	
	YCR-525(C)	399.00	25 x 2, 20 x 4		P/S	3	15.2	75	70	24	C	M	A	30-18	B/C	76	Yes	Yes	C	P	Out	
	YCR-325	329.00	25 x 2, 20 x 4		P/S	3	16.3	75	70	24	C	A	No	30-18	B	68	Yes	Yes	C	P	Out	
	YCT-925(C)	549.00		0.003	P	3	15	75	70	24	C	M	No	30-15	B/C	76	Yes	No	C	P	Out	
	YCR-340	269.00	20	1	P/S	2	15	75	70	15	C	M	No	30-15	B	64	Yes	No	D	P	Out	
YCR-240	229.00	7.5	1	P/S	2	15	75	70	15	C	M	No	30-15	B	57	Yes	No	D	P	Out		

# A R E T R O S P E C T I V E V I E W

FROM WINDHAM HILL

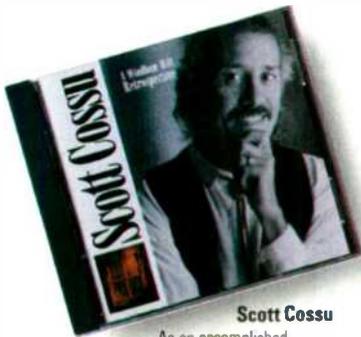


The joy of rediscovering an old favorite is in experiencing its original enchanting power.

It is the timeless quality of three of our most acclaimed artists that inspires the *Windham Hill Retrospective Series*. This series high-

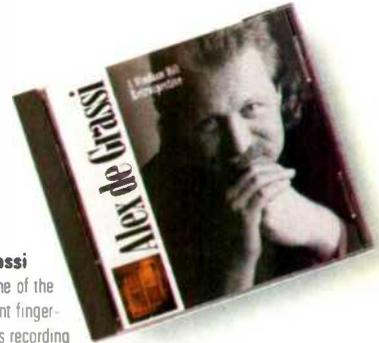
lights the celebrated musical careers of Scott

Cossu, Nightnoise and Alex de Grassi.



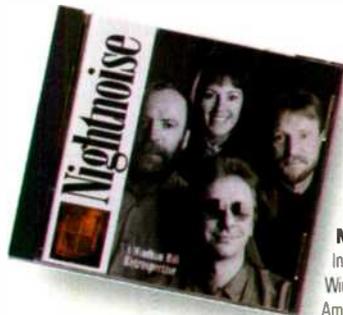
### Scott Cossu

As an accomplished composer, pianist and leader, Scott Cossu has successfully forged a place of his own at the top of the jazz world. Scott's *Retrospective* represents the best from his five critically acclaimed Windham Hill albums.



### Alex de Grassi

Considered one of the most important finger-style guitarists recording today, Alex de Grassi's original, lyrical pieces are full of resounding character. His impressive career is documented in this collection spanning his five Windham Hill albums.



### Nightnoise

In their seven years with Windham Hill, this Irish-American quartet has built one of the strongest, most loyal followings at the label. The *Nightnoise Retrospective* highlights the group's distinctive Celtic-influenced sound.

With the purchase of all three Retrospective CD's, you will also receive a limited-edition, numbered, collector's CD case. Available exclusively through this offer.



To order *The Windham Hill Retrospective Series* featuring Scott Cossu, Nightnoise, and Alex de Grassi along with the Collector's CD Case for \$39.98 plus \$4.00 shipping, return the coupon or call toll-free (24 hours)

**1-800-222-6577**  
**Ext. 107**

The *Retrospective Series* are also sold individually. Each CD is \$13.98 plus \$4.00 shipping per total order.



#### The Windham Hill Retrospective Series Order Form

		QTY	Price	Total
Name _____		_____	The Windham Hill Retrospective Series	\$39.98
Address _____		_____	Scott Cossu	\$13.98
City/State/Zip _____		_____	Nightnoise	\$13.98
Daytime Phone _____		_____	Alex de Grassi	\$13.98
Method of Payment _____		Total price of items _____		
<input type="checkbox"/> Check or Money Order enclosed (US Dollars)		*Sales Tax _____		
<input type="checkbox"/> Mastercard <input type="checkbox"/> Visa <input type="checkbox"/> American Express		Shipping _____		
Card Number _____ Expiration Date _____		TOTAL _____		
Signature _____ Print Name _____				

Mail coupon to  
A Windham Hill Retrospective Series  
PO Box 610160 San Jose, CA 95161-0160

\*To ship items to the following states please add sales tax to the appropriate rate (state and 1/4% local). If shipment is to a state marked \*\* please apply tax to delivery charges as well. CA, NY, IL, TX, MO.  
Shipping fee applies to US shipments only. For foreign shipping charges please write to us.  
Allow 2-3 weeks for delivery. Offer expires September 30, 1992.

# SPEAKERS

MANUFACTURER	Model	Price, \$ (If Sold Individually)	Price, \$ (If Sold In Pairs)	Recommender Watts Channel	Sensitivity, dB SPL (1 Watt/1 Meter)	Impedance, Ohms	Frequency Response, Hz to kHz, ±dB	DRIVERS										Notes	
								Woofer Qty (W)	Woofer Dia (W)	Tweeter Qty (T)	Tweeter Dia (T)	Whizzer (W)	2-Way (2)	4-Way (4)	Separately Mountable Drivers?	Flush Mount (F)	Surface Mount (S)		Convertible (C)
A/D/S/	320T			50	93	4	2.5k-20k ±3	T								3/4	Yes		
	300T			50	92	4	2k-20k ±3	T								3/4	Yes	2 1/2 x 3 1/2-inch mounting flange.	
	220W			80	89	4	120-3 ±3	T	4						F	2	Yes		
	310W			100	92	4	50-3 ±3	W	5 1/4						F	2 1/2	Yes		
	320W			100	91	4	50-2.5 ±3	W	5 1/4						F	1 1/2	Yes		
	220ix			80	89	4	120-20 ±3	W	4	2	P	Yes			†	1 1/2	Yes	†Flush-mount woofer, convertible tweeter. External crossover required.	
	320ix			100	91	4	50-20 ±3	W	5 1/4	2	P	Yes		†	1 1/2	Yes			
	310ix			100	92	4	50-20 ±3	W	5 1/4	2	P	Yes		†	2 1/4	Yes	As above.		
	420ix			150	92	4	42-20 ±3	W	6 1/2	2	P	Yes		†	2 1/4	Yes	As above.		
	420W			150	92	4	42-2.5 ±3	W	6 1/2					†	2 1/4	Yes	As above.		
	SB6			75	90	4	42-150 Hz ±3	S	6 1/2					S				Yes	Dual voice-coils; bandpass enclosure.
	M8SW			100	91	4	30-200 Hz	S	8						F	3 1/4	Yes		
	M10SW			150	91	4	25-200 Hz	S	10						F	3 3/4	Yes		
	SB.2			100	90	4	30-200 Hz	S	8						F	3 3/4	Yes		
	S10.2			200	91	4	18-200 Hz	S	10						F	5	Yes	Dual voice-coils.	
	300i/s		360.00	100	92	4	50-20 ±3	S	5 1/4	2	P	Yes		F, F	1 1/2	Yes	Tweeter level control.		
	320i/s		570.00	100	91	4	50-20 ±3	S	5 1/4	2	P	Yes		F, F	1 1/2	Yes	Includes separate crossover with tweeter level control.		
	200i		250.00	80	88	4	120-20 ±3	S	4	2		No		P	1 1/2	Yes	As above; fits 4 x 6-inch holes.		
L200e		400.00	60	88	4	85-20 ±3	S	4	2		No		S	1 1/2	Yes	Cabinet enclosure.			
L300e		510.00	80	90	4	68-20 ±3	S	5 1/4	2		No		S	1 1/2	Yes	As above.			
SB.2i		170.00	100	92	4	30-85 Hz ±3	S	(2)6 1/2					F, P	2 1/4	Yes	As above.			
S10		220.00	150	90	4	20-85 Hz ±3	S	10					F, S	3 1/4	Yes				
SB7		360.00	200	90	4	30-85 Hz ±3	S	(2)7 1/2					S		Yes	As above.			
SB10		470.00	400	90	4	20-85 Hz ±3	S	(2)10					S		Yes	As above.			
Sbs		140.00	120	91	4	28-85 Hz ±3	S	8					F	3 3/4					
ADVENT	4.6i	119.00	60	89	4	60-23		4 x 6	2		No		F	1 1/4	No				
	5.2i	119.00	90	90	4	60-23		5 1/2	2		No		F	1 1/4	No				
	5.7i	139.00	90	91	4	45-23		5 1/2 x 7 1/2	2		No		F	2 1/4	No				
	4.0i	99.00	75	89	4	65-23		4	2		No		F	1 1/4	No				
	3.5	45.00	50	88	4	110-18		3 1/2	W				F	1 1/4	No				
	6.9i	149.00	150	91	4	40-23		6 x 9	2		No		F	3 1/4	No				
6.5i	139.00	125	91	4	45-23		6 1/2	2		No		F	2 1/4	No					
AIWA	SC-X6500	109.00	60	89	4	50-22		6 1/2	2		No		F	2 1/4	Yes				
	SC-X6900	139.00	100	91	4	45-21		6 x 9	2		No		F	2 1/4	Yes				
	SC-X5250	99.00	45	90	4	65-21		5 1/4	2		No		F	1 1/4	Yes				
	SC-X4600	99.00	40	90	4	65-20		4 x 6	2		No		F	1 1/4	No				
	SC-X4000	79.00	40	90	4	65-20		4	2		No		F	1 1/2	No				
	SC-X3500	59.00	30	89	4	75-20		3 1/2			No		F	4 3/4	No				
ALPHASONIK	D-240	69.00	50	90	4	55-22		4	W				F		No				
	D-250	160.00	65	92	4	45-22		5	2		No		F		No				
	D-265	175.00	80	92	4	35-22		6 1/2	2		No		F		No				
	W-1030	49.50	200	96	4	30-4		10					F		No				
ALPINE	6663	200.00	150	88	4	47-22		6 1/2	2				F, S	3					
	6563	180.00	105	86	4	70-22		5 1/4	2				F, S	2 1/4					
	6562	360.00	150	87	4	50-22		5 1/4	2				F, S	2 1/4					
	6081		300	89	4	45-2		8					S						
	6366CX	120.00	190.00	120	91	4	50-22	W	6 1/2	3				S	2 1/4				
	6223CT		90.00	45	90	4	70-21		4	2				S, S	1 1/4				
	6017EX		60.00	90	87	4	5k-20k	T	4					S					
	6259EU		500.00	120	89	4	50-24	T	6 1/2	2		Yes		P	1 1/4				
	6045CX		130.00	100	91	4	70-23		4	2		No							
	6015CX	400.00	400	94	4	21-1		15											
	6012CX	400.00	400	92	4	26-1.2		12											
	6005CX	200.00	200	90	4	22-300 Hz		15											
	6002CX	150.00	200	90	4	24-300 Hz		12											
	6963		220.00	150	89	4	44-22		6 x 9	2		No							
	6010EX		110.00	120	91	4	2.5k-22k	T	4					S					
	6046ED		200.00	90	89	4	75-22		4	2		Yes		F, S	1 1/4				
	6056ED		220.00	120	90	4	60-22		5 1/4	2		Yes		F, S	2 1/4				
	6066EX		240.00	120	91	4	50-22		6 1/2	2		Yes		F, S	2 1/4				
	6247CD		80.00	90	87	4	70-21		4	2				F	1 1/4				
	6257CD		90.00						5 1/4	2				F					
	6256CD		120.00	90	90	4			5 1/4	2				F					
	6397CX		140.00	90	92	4	48-22		6 x 9	3				F					
	6367CX		130.00	90	91	4	55-21		6 1/2	3				F					
	6137AX		50.00	30	88	4	80-20		3 1/2	W				F					
	6147AD		60.00	30	89	4	70-20		4	W				F	1 1/2				
	6204		100.00	60	90	4	75-21		4 x 6	2				F	1 1/4				
	6210		150.00	90	90	4	50-22		4 x 10	2		No		F	2 1/4				
	6267AX		90.00	90	91	4	55-20		6 1/2	2		No		F	1 1/4				
	6366		190.00	120	89	4	50-21		6 1/2	3		No		F	2 1/4				
	6297AX		110.00	90	92	4	48-21		8 x 9	2		No		F	2 1/4				
	6396		210.00	150	93	4	45-21		6 x 9	3		No		F	3 1/2				
	6482		260.00	150	89	4	40-20		8	2		No							
6011CX		160.00	150	88	4	2k-22k	T						C	5/8		Box enclosure.			
6041		140.00	180	87	4	100-17	M						F	1 1/4					
6051		140.00	180	87	4	75-15	M						F	2 1/4					
6061		190.00	180	87	4	50-8	W	6 1/2					F	2 1/4					
6013	150.00	200	89	4	22-1.2		S	10					F	4 3/4					

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without alterations.

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**ADVENT** 

M O B I L E A U D I O

# SPEAKERS

MANUFACTURER	Model	Price, \$ (if sold individually)	Price, \$ (if sold in pairs)	Recommended Maximum Power, Watts/channel	Sensitivity, dB SPL (1 Watt/1 Meter)	Impedance, Ohms	Frequency Response, Hz to kHz, ±dB	DRIVERS										Notes
								Recommended Day (D), Midrange (M), Woofer (W), Tweeter (T) (1)	Woofer Size, inches	Woofer (W) 2-Way (2), 3-Way (3), 4-Way (4)	Impedance Transformer(s) = A, Variable Transformer(s) = P	Separately Mountable Drivers?	Face Mount (F), Surface Mount (S), Convertible (C), Plug (P)	Maximum Required Mounting Depth, inches	Weatherproofed?			
ALTEC LANSING	M400	140.00	60	90	4	90-8 ±3	W	4					F	1 1/2	Yes			
	M514	170.00	100	90	4	60-8 ±3	W	5 1/4				F	1 1/2	Yes				
	M615	200.00	100	91	4	55-8 ±3	W	6 1/2				F	2 1/2	Yes				
	M41	50.00	50	89	4	80-8 ±3	W	4				F	1 1/2	Yes				
	M50	70.00	60	90	4	60-8 ±3	W	5				F	1 1/2	Yes				
	M65	100.00	80	90	4	55-8 ±3	W	6 1/2				F	2 1/4	Yes				
	TW2	150.00	100	90	4	3.5k-22k ±3	T					F	2 1/4	Yes				
	TW1	50.00	80	90	4	3.5k-20k ±3	T					S						
	ALS525.1	325.00	100	†	4	60-22 ±3		5 1/4	2	A/P	Yes	F, S	1 1/2	Yes	†Woofer, 89 dB; tweeter, 91 dB.			
	ALS62.1	220.00	70	91	4	60-22 ±3		6 1/2	2	No	No	S		Yes				
	ALS52.1	200.00	60	90	4	80-22 ±3		5 1/4	2	No	No	S		Yes				
	ALS40.1	150.00	50	90	4	100-20 ±3		4	2	No	No	S		Yes				
	ALS45	110.00	50	90	4	80-20 ±3		3 1/2	2	No	No	P, F	1 1/2	Yes	Fits 4 x 6-inch hole.			
	ALS12	375.00	400	99	4	28-5 ±3		S 12				F, F, S	4 1/2	Yes				
	ALS10	325.00	400	98	4	30-5 ±3		S 10				F, F, S	4 1/2	Yes				
	ALS6.5	150.00	80	91	4	45-20 ±3		6 1/2			No	S		Yes				
	ALS6.9	180.00	80	93	4	35-21 ±3		6 x 9	2			F, C, C	3 1/4	Yes				
	ALS5	100.00	60	91	4	60-20 ±3		5	2			S		Yes				
	ALS4	70.00	40	90	4	80-20 ±3		4	2			S		Yes				
	ALS693	300.00	120	93	4	50-22 ±3		6 x 9	3		No	C, C, C	3 1/2	Yes	Biamp capable.			
	ALS692	280.00	120	93	4	50-22 ±3		6 x 9	2		No	C, C, C	3 1/2	Yes	As above.			
	ALS500	260.00	100	89	4	60-22 ±3		5 1/4	2			F, F, S		Yes	4 x 6-inch adaptor plate supplied.			
ALS35	70.00	30	88	4	90-22 ±3		3 1/2	W			F, F, S	1 1/2	Yes					
ALS6	200.00	150	90	4	45-3 ±3		S 6			Yes	F, S	2 1/2	Yes					
55	250.00	80	85	4	95-20 ±3		S 4	2			S		Yes	Cabinet enclosure.				
AMRITA AUDIO	6 1/2" Driver	60.00		100	92	6	50-5	W	6 1/2				F	2 1/2	No			
	8" Driver	70.00		200	90	6	40-3	W	8				F	3 1/2	No			
	10" Driver	80.00		200	89	6	35-1.5	W	10				F	4 1/2	No			
ANABA AUDIO	1570	149.95		500	99	4	25-2	W	15									
	AA525		37.50	150	94	4	50-5	M										
	AA300		36.00	150	94	4	3k-21k	T										
	AA630	74.95		200	96	4	30-3	T	8									
	AA1030	89.95		250	97	4	25-2	W	10									
	AA1050	99.95		300	98	4	25-2	W	10									
	AA1230	106.95		350	98	4	25-2	W	12									
AA1250	119.95		400	99	4	25-2	W	12										
ANDANTE	M50		149.95	60	90	4	55-21 ±3		4	2	P	No	S		No	Box enclosure.		
ATOMIC LOUDSPEAKERS	1570	183.00		400	88	4	20-800 Hz	S	15				F		No	Requires box enclosure.		
	1270	155.00		300	89	4	25-1	S	12				F	6	No	As above.		
	1070	144.00		250	90	4	30-1.5	S	10				F	4 3/4	No	As above.		
	1550	138.00		300	90	4		S	15				F	5 1/2	No	As above.		
	1250	111.00		250	91	4		S	12				F		No	As above.		
	1252	122.00		250	92	2	28-1.5	S	12				F		No	As above.		
	1254 Free Air	125.00		250	90	4	40-2	S	12				F		No	As above.		
	1254	125.00		250	90	4	28-1	S	12				F		No	As above; dual voice-coils.		
	Dual Voicecoil																	
	1050	105.00		200	95.8		30-1.5	W	10				F		No	Requires box enclosure.		
	0850	94.00			95.5		40-2.5	W	8				F		No	As above.		
	1030	86.00		100	91	4		W	10				F		No	As above.		
	830	77.00		100	96	4		W	8				F		No			
	630	69.00		75	97	4		W	6	2	Yes		F		No			
	0525		98.00		75	97	4		M				F		No			
	0456		71.00		75	96	4		M				F		No			
	0206	71.00		75	96	4		T					F		No			
0306	55.00		75	96	4		T					F		No				
HP1594	275.00		600	4		16-800 Hz	S	15				F		No				
HP1294	239.00		600	4		22-1	S	12				F		No				
HP1094	141.00		400	4		25-1.5	S	10				F		No				
AUDIOPHILE	1.1		179.00	40	89	4	3.5k-20k	T				A/P		S		Yes	External crossover required.	
	5.1	79.00		100	89	4	50-3.5	W	5				F	1 1/2	Yes	As above.		
	8.1	99.00		100	91	4	27-2	S	8				F	3 1/2	Yes			
	8.2	110.00		100	91	4	27-2	S	8				F	3 1/2	Yes	Dual voice-coils.		
	10.1	120.00		250	94	4	25-2	S	10				F	4 1/2	Yes			
	10.2	130.00		250	91	4	27-2	S	10				F	4 1/2	Yes	As above.		
	2.5	379.00		100	89	4	50-20	S	5		A/P	Yes	†	1 1/2	Yes	†Flush-mount woofer, surface-mount tweeter.		
AUDIOSOURCE	LS Two/A		249.00	50	89	4	60-20		5	2		No	S		4	Cabinet enclosure.		
AUDIOVOX	SC-696	35.00	40	4/8	20-15		6 x 9	W					F		No			
	COMP-200	125.00	100	4/8	100-20		4	3					S		No			
	SW-50	70.00	60	4/8	100-18		5	2			No		C		No			
	SL-50	125.00	150	4/8	40-20		6 x 9	3			No		F		Yes			
	SL-40	100.00	150	4/8	70-20		5 1/4	3			No		F		Yes			
	SL-30	100.00	200	4/8	70-18		6 x 9	2			No		F		Yes			
	SL-20	75.00	200	4/8	90-18		5 1/4	2			No		F		Yes			
	SL-10	50.00	60	4/8	120-17		4	2			No		F		Yes			
	TRY-45	80.00	180	4/8	70-18		5 1/4	3			No		F		No			
	TRY-35	50.00	120	4/8	80-18		5 1/4	3			No		F		No			
	TRY-30	60.00	120	4/8	70-18		6 x 9	3			No		F		No			
	CX-115	50.00	120	4/8	80-18		6 x 9	2			No		F		No			
	CX-15	50.00	120	4/8	100-18		5 1/4	2			No		F		No			
	CX-60	50.00	120	4/8	100-20		5	2			No		F		No			
	CX-2	40.00	100	4/8	110-17		5	2			No		F		No			
	SC-15	30.00	80	4/8	90-15		5 1/4	W					F		No			
	SC-30	30.00	80	4/8	120-15		3 1/2				No		F		No			
SC-1	25.00	60	4/8	120-15		5	W					F		No				

# SPEAKERS

MANUFACTURER	Model	Price, \$		Recommended Maximum Power, Watts/Channel	Sensitivity, dB SPL (1 Watt/1 Meter)	Impedance, Ohms	Frequency Response, Hz to kHz, ±dB	DRIVERS										Notes
		(If Sold Individually)	(If Sold in Pairs)					Supersizer Only (S)	Midrange Only (M)	Woofer Only (W)	Woofer Size, Inches	Woofer (W), 2-Way (2), 3-Way (3), 4-Way (4)	Amplifier Tweeter(s) = A	Adjustable Tweeter(s) = P	Separately Mountable Drivers?	Flare Mount (F), Surface Mount (S), Convertible (C), Pin (P)	Maximum Resonance Mounting Depth, Inches	
AUTOTEK	468TM	69.97		160	4	40-3	M						F	3	No			
	868TM	69.97		160	8	40-3	M						F	3	No			
	488TM	79.97		160	4	40-3	M						F	3 1/2	No			
	888TM	79.97		160	8	35-3	M						F	3 1/2	No			
	4108TW	119.95		260	93	20-1	S	10					F	4 1/2	No	±2, 4, or 8 ohms.		
	4128TW	129.95		260	94	20-1	S	12					F	4 1/2	No			
4158TW	149.95		260	94	20-800 Hz	S	15					F	5 1/4	No				
AVI	SL380	375.00		500	95	25-600 Hz ±3	S	15					F	5 1/2	No			
	SL300	305.00		500	94	28-700 Hz ±3	S	12					F	4 3/4	No			
	SL250	240.00		500	92	30-800 Hz ±3	S	10					F	3 3/4	No			
	SL200	185.00		300	91	35-1 ±3	S	8					F	3 3/4	No			
	SL170	130.00		300	90	42-1.6 ±3	S	8 1/2					F	2 1/2	No			
	MX100	160.00	160.00	160	91	125-6.2 ±2	M						F	2	Yes			
	MX130	200.00	200.00	160	92.5	75-6.2 ±2	M						F	2 1/2	Yes			
	MX160	250.00	240.00	160	93.5	60-5.2 ±2	M						F	2 1/2	Yes			
	HF13N	60.00	120.00	95	4	5k-24k ±2	T			A			S	3/4	Yes	Includes crossovers.		
	HF25S	125.00	240.00	93	4	2.4k-22k ±2	T						F, S	3/4	No			
HF25V	150.00	240.00	93	4	2.4k-22k ±2	T			A			F, S	3/4	No				
B & G MOBILE CONCEPTS	Speaker Panels		370.00	200	97	100-21 ±3				2					Yes	Requires Model 2525 Audidoors (replaces doors of Jeep CJ-7, CJ-8, and Wrangler). \$1110.00 per pair, or Model 2013 Satellite (rear enclosure), \$290.00 each; also requires Connections Kit (wiring, connectors, and tweeter gain control), \$160.00. Enclosed subwoofer; for Jeep CJ-7, CJ-8, and Wrangler.		
	2012	930.00		600	98	30-100 Hz ±3	S	(2)12							Yes			
BLACK KNIGHT	833 CCS AT-10	259.99	39.99	80	92	45-20k	T	8	3	P	Yes	F, S	3/4	Yes				
BLACK MAX	UES-800	90.00	180.00	250	95	30-3.5	W	8					F	4 1/4		For sealed enclosure. As above.		
	UES-600	65.00	130.00	180	95	45-4.0	W	8 1/2					F	3		As above.		
	UES-1000	125.00	250.00	300	96	28-3.5	W	10					F	4		As above.		
	UES-1200	150.00	300.00	400	98	25-3.5	W	12					F	5 1/4		As above.		
	UES-1500	180.00	360.00	450	99	28-3.5	W	15					F	6 1/2		As above.		
	UES-1800	225.00	450.00	450	99	23-3.5	W	18					F	7		As above.		
BLAUPUNKT	ZL 693		249.95	300	93	30-25		6 x 9	3		No	F	3	Yes	Woofer has second voice-coil for connection to subwoofer amp. As above.			
	ZL 653		199.95	150	93	35-25		6 1/2	3		No	F	2 3/4	Yes	As above.			
	ZL 603		179.95	120	93	40-25		6	3		No	F	2 1/2	Yes	As above.			
	ZL 542		139.95	120	93	43-25		5 1/4	2		No	F	2 1/4	Yes	As above.			
	ZL 402		129.95	90	93	45-25		4	2		No	F	2	Yes	As above.			
	RL 6935		139.95	150	94	30-24		6 x 9	3		No	F	3 1/2	Yes	As above.			
	RL 6920		119.95	100	93	35-24		6 x 9	2		No	F	3 1/2	Yes	As above.			
	RL 6528		99.95	80	92	40-24		6 1/2	2		No	F	2 1/2	Yes	As above.			
	RL 5428		89.95	80	91	45-24		5 1/4	2		No	F	2 1/4	Yes	As above.			
	RL 4625		89.95	50	91	50-24		4 x 6	2		No	F	2	Yes	As above.			
	RL 4025		79.95	50	91	50-24		4	2		No	F	2	Yes	As above.			
	HC 1660		99.95	60	91	45-18		8 1/2			No	F	2 1/2	Yes	Honeycomb driver. As above.			
	HC 1340		89.95	40	90	50-22		5			No	F	1 3/4	Yes	As above.			
	HC 1030		79.95	30	89	70-20		4			No	F	1 1/4	Yes	As above.			
	CL 4665P		124.95	60	90	40-20		4 x 6	2		P	P	1 1/2	Yes				
	RL 5400P		149.95	100	92	45-20		5 1/4	2		P	P	1 1/2	Yes				
	CB 4500		159.95	100	89	40-20		4	2		F	F	1 1/2	Yes				
	ACS 1221	119.95		200	95	4	20-3	W	12				F	4 1/4	Yes			
	ACS 1021	89.95		200	95	4	25-3	W	10				F	4 1/4	Yes			
	ACS 8021	79.95		200	95	4	35-3	W	8				F	3 3/4	Yes			
	ACS 1000		99.95	100	90	4	3k-20k	T					S		Yes			
	ACS 1521	199.95		340	96	4	20-2.5 ±3	S	15				F	6	Yes			
ACS 65		149.95	225	93	4	30-5	S	6 1/2				F		Yes				
ACS 60		139.95	180	93	4	35-5.5	W	6				F		Yes				
ACS 54		129.95	150	93	4	38-7.5	W	5 1/4				F		Yes				
ACS 40		109.95	120	93	4	40-8	W	4				F		Yes				
ACS 10		229.95	450	93	4	3.5k-25k	T			P		F, S	2	Yes	Includes frequency-selectable crossover.			
BLUES	BDT25		89.95	75	93	3k-20k ±3	T						F, S	3/4	No			
	BL3.5		99.95	30	86.5	165-8 ±3	M						F, S	1 1/2	No			
	BL4		109.95	50	86	135-3.5 ±3	M						F, S	2 1/4	No			
	BL5.25		119.95	50	88.5	90-3.5 ±3	M						F, S	2 3/4	No			
	BL6.5	79.95		100	87.5	30-4 ±3	M	6 1/2					F, S	2 1/4	No			
	BL8	89.95		100	89.5	30-4 ±3	W	8					F, S	3 3/4	No			
	BL10	129.95		150	90	25-3 ±3	W	10					F, S	4 3/4	No			
	BL12	149.95		150	91	25-2.5 ±3	W	12					F, S	5	No			
	BL15	179.95		150	93.5	25-2 ±3	W	15					F, S	6	No			
	BT62	279.95		200	90.5	4	45-40 ±3	W	8 1/2	2		No			No	Enclosure; for trucks. As above.		
	BT82	329.95		200	93	4	40-40 ±3	W	8	2		No			No	As above.		
	BT102	399.95		250	93	4	38-40 ±3	W	10	2		No			No	As above.		
	BT122	479.95		300	94	4	38-40 ±3	W	12	2		No			No	As above.		
	BH6-02	289.95		200	90.5	4	40-40 ±3	W	6 1/2	2		No			No	Enclosure; for vans, hatchbacks, and 4 x 4s. As above.		
	BH8-02	349.95		200	92.5	4	40-40 ±3	W	8	2		No			No	As above.		
	BH10-02	419.95		250	94	4	38-40 ±3	W	10	2		No			No	As above.		
	BH12-02	479.95		300	94	4	38-40 ±3	W	12	2		No			No	As above.		
	BH15-02	599.95		300	96.5	4	38-40 ±3	W	15	2		No			No	As above.		
TRISOBARIC-10	459.95		300	87.5	4	35-250 Hz	S	10,	(2)8			No		No	Enclosed subwoofer.			

# SPEAKERS

MANUFACTURER	Model	Price, \$ (If Sold Individually)	Price, \$ (If Sold in Pairs)	Recommended Maximum Power, Watts (channel)	Sensitivity, dB SPL (1 Watt/1 Meter)	Impedance, Ohms	Frequency Response, Hz to kHz, ±dB	DRIVERS										Notes
								Speaker Qty (3) Woofer Qty (W) Midrange Qty (M), Tweeter Qty (T)	Woofer Size, Inches	Woofer (W), 2-Way (2), 3-Way (3), 4-Way (4)	Amplifier Tweeter(s) = A, Passive Tweeter(s) = P	Separately Mountable Drivers??	Flush Mount (F) Surface Mount (S), Convertible (C), Plug (P)	Maximum Required Mounting Depth, Inches	Weatherproofed?			
BLUES (Continued)	TRISOBARIC-100	459.95		300	87.5	4	35-250 Hz	S	10, (2)8							No	As above.	
	ISO-KIT 10	349.95		300	91	4	25-250 Hz	S	(2)10				F, S	9	No	Isobaric enclosed subwoofer.		
BOSE	121 Mobile Monitor		249.00	100	89	4			6 x 9				S		Yes			
BOSTON ACOUSTICS	TBX-8		400.00	200	90	4	45-20 ±3		6	2		No	S		Yes	Passive-radiator enclosure; for trucks. Includes crossover.		
	ProSeries Neo 11		260.00	170	89	4	4k-20k ±3		6 x 9	3	P	Yes	F, S	1/2	Yes			
	893		349.95	120	87	4	36-20 ±3	T	6 1/2	2	A/P	Yes	C	3/8	Yes			
	861		249.95	120	87	4	48-20 ±3		5 1/4	2	A/P	Yes	C	2 1/2	Yes			
	851		229.95	100	87	4	58-20 ±3		5 1/4	2	A/P	Yes	C	2	Yes			
	841		219.95	80	87	4	85-20 ±3		4	2	A/P	Yes	C	1 1/4	Yes			
	ProSeries 4.2		380.00	80	89	4	100-20 ±3		5 1/4	2	A/P	Yes	C	1 1/4	Yes			
	ProSeries 5.2		400.00	130	89	4	65-20 ±3		5 1/4	2	A/P	Yes	C	1 1/4	Yes			
	ProSeries 6.2		430.00	170	89	4	55-20 ±3		6	2	A/P	Yes	C	2 1/4	Yes			
	ProSeries 8.0LF	200.00	400	92	4	20-1 ±3	S	8					C	2 1/2	Yes			
	ProSeries 10.4LF	250.00	500	93	4	20-1 ±3	S	10					C	3 1/4	Yes			
	ProSeries 10.8LF	250.00	500	93	8	20-1 ±3	S	10					C	4 1/4	Yes			
	ProSeries 12.0LF	325.00	700	95	4	20-1 ±3	S	12					C	4 1/4	Yes			
	C700 Series II		199.95	100	87	4	58-20 ±3		5 1/4	2		No	P	5	Yes			
	797		199.95	80	89	4	36-20 ±4		6 x 9	2		No	F	1 1/2	Yes			
	767		149.95	50	89	4	60-20 ±4		6 1/2	2		No	F	2 1/2	Yes			
	757		129.95	50	89	4	58-20 ±4		5 1/4	2		No	F	1 1/4	Yes			
	727		109.95	20	90	4	100-20 ±3		3	2		No	P	1 1/2	Yes			
710LF		179.95	200	92	4	35-120 Hz ±3	S	10			No	F	3 1/2	Yes				
780LF Series II		149.95	200	91	4	40-120 Hz ±3	S	8				F	3 3/4	Yes				
701		99.95	80	90	8	4k-20k ±3	T			A/P		C	1/2	Yes				
705		89.95	40	90	4	58-17 ±3		5 1/4	W			F	1 1/4	Yes				
707		59.95	15	90	4	70-14 ±3		4 x 6	W			F	1 1/4	Yes				
704		79.95	25	90	4	90-17 ±3		4	W			F	1 1/4	Yes				
703		49.95	15	90	4	100-12 ±3		3 1/2	W			F	1 1/2	Yes				
BOSTWICK	BOS-654/658	69.50	100	91.8	4/8	55-4.5	W	6 1/2				F	3	No				
	BOS-824/828	79.50	100	90.1	4/8	40-1.2	S	8				F	3 1/2	No				
	BOS-844/848	99.50	125	91.4	4/8	35-2.5	S	8				F	3 1/8	No				
	BOS-1024/1028	89.50	100	91.8	4/8	35-2	S	10				F	4	No				
	BOS-1044/1048	104.50	125	92.3	4/8	36-3	S	10				F	4 1/8	No				
	BOS-1224/1228	109.50	100	91.4	4/8	37-3.5	S	12				F	4 1/8	No				
	BOS-1244/1248	119.50	125	92.7	4/8	37-3.5	S	12				F	5	No				
	BOS-1544/1548	139.50	125	93.7	4/8	25-1	S	15				F	6 1/8	No				
	BOS-1564/1568	179.50	250	94.8	4/8	28-800 Hz	S	15				F	6 1/8	No				
	BOS-354/358	38.50	50	86.3	4/8	250-11	M					F	1 1/2	No				
	BOS-404/408	43.50	75	87.8	4/8	150-8	M					F	2 1/8	No				
	BOS-5254/5258	59.50	100	90.2	4/8	100-5	W	5 1/4				F	2 1/2	No				
	BOS-8014/8018	24.50	35	90	4/8	3k-20k	T					F	7/8	No				
	BOS-SD04/SD08	29.50	50	91	4/8	3k-20k	T					F	7/8	No				
	BOS-HD14/HD18	16.50	25	88	4/8	6k-18k	T					F	7/8	No				
	BOS-HD24/HD28	17.50	25	88	4/8	6k-18k	T					F	7/8	No				
CALRAD	20-318	34.00	30	5	4	50-18			3		No	S			Box enclosure. Wedge style.			
	20-319		81.00	55	4	50-18			3		No	S						
	20-315		19.00	15	4	60-18						F	2 1/4					
CANTON	BMW 5/7		295.00	80		4			5 1/4	2	P	Yes	C	2 1/8	Yes			
	VW Golf II		349.00	80		4			5 1/4	2	A	Yes	F	2 1/8	Yes			
	HC100		295.00	60	87.2	4	48-30 ±3		4	2	P	No	S		No			
	Pullman			80	89.7	4	45-30 ±3		(2)4	3	A	No	S		No			
	Set 1000		350.00	70	89.4	4			4	2	P	Yes	F	1 1/4	Yes			
	Set 2000		400.00	90	89.9	4			5	2	P	Yes	F	2 1/4	Yes			
	Set 3000		450.00	100	89.9	4			(2)4	2	P	Yes	F	1 1/4	Yes			
	Set 4000		450.00	120	92.1	4			7	2	P	Yes	F	2 1/8	Yes			
	Set 5000		700.00	130	93.4	4			7	3	P	Yes	F	2 1/8	Yes			
	CX 160		349.00	50	91.8	4			5	2		Yes	F	2 1/8	Yes			
	TI 25		125.00				4	2.5k-30k	T				F	3/4	Yes			
	M 120		125.00				4	150-2.5	M				F	1 1/4	Yes			
	W 160		150.00				4		W	6			F	2	Yes			
	W 205		250.00				4		W	8			F	3	Yes			
W 280	200.00					4		W	10			F	3 1/4	Yes				
Sub 280	295.00					4		S	10			F	3 1/4	Yes				
Sub 300	350.00		130			4	18-250 Hz ±3	S	10			F	3	Yes				
CELESTION	AP-10	139.00	400	93	4/8	50-1	S	10				F	4.1	Yes				
	AP-12	159.00	400	94	4/8	40-1	S	12				F	4.9	Yes				
	AP-15	189.00	400	95	4/8	30-1	S	15				F	5.9	Yes				
	AD-12	279.00	600	95	4/8	30-500 Hz	S	12				F	5.7	Yes				
	AD-15	399.00	600	97	4/8	30-500 Hz	S	15				F	6.4	Yes				
	AD-15H	499.00	1k	96	4/8	30-1	S	15				F	6.7	Yes				
CERWIN-VEGA	S-8 Free Air	100.00	150	92	8	30-800 Hz	S	8				F	3 1/8	Yes				
	S-10 Free Air	110.00	150	94	8	30-800 Hz	S	10				F	3 1/8	Yes				
	S-12 Free Air	120.00	250	98	8	20-500 Hz	S	12				F	4 1/8	Yes				
	S-15 Free Air	150.00	250	101	8	20-400 Hz	S	15				F	14	Yes				
	CS-9		229.00	150	94	4	40-20 ±3		6 x 9	2	Yes	F, S	2 1/8	Yes				
	CS-6		179.00	80	94	4	60-20 ±3		6 1/2	2	Yes	F, S	2 1/8	Yes				
	MW-6		179.00	80	92	4	60-4 ±3	M				C, F	2 1/8	Yes				
	XL8S	119.00	150		4	40-800 Hz ±3	S	8				C, F	3 1/2	Yes				
	XL8D	119.00	†	†	4	40-800 Hz ±3	S	8				F	3 1/2	Yes				
	XL10S	139.00	250	94	4	30-800 Hz ±3	S	10				F	4 1/2	Yes				



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# SPEAKERS

MANUFACTURER	Model	Price, \$ (If Sold Individually)	Price, \$ (If Sold in Pairs)	Recommended Maximum Power, Watts Channel	Sensitivity, dB SPL (1 Watt/1 Meter)	Impedance, Ohms	Frequency Response, Hz to kHz, ±dB	DRIVERS										Notes
								Subwoofer (W) (S), Midrange (M), Tweeter (T)	Woofer Size, Inches	Woofer (W), 2-Way (2), 3-Way (3), 4-Way (4)	Amplified Tweeter(s) = A, Passive Tweeter(s) = P	Separately Mountable Drivers?	Flush Mount (F), Surface Mount (S), Conceivable (C), Rake (R)	Maximum Required Mounting Depth, Inches	Weatherprotected?			
CERWIN-VEGA (Continued)	XL10D	139.00	†	94	†	30-800 Hz ±3	S	10						F	4½	Yes	†Dual voice-coils, 125 watts and 4 ohms per coil.  †As above.  †Dual voice-coils, 150 watts and 4 ohms per coil.  H.f. overload protected.	
	XL12S	149.00		250	98	4	20-500 Hz ±3	S	12					F	5½	Yes		
	XL12D	149.00	†	98	†	20-500 Hz ±3	S	12						F	5½	Yes		
	XL15S	199.00		300	101	4	20-400 Hz ±3	S	15					F	6¼	Yes		
	XL15D	199.00	†	101	†	20-400 Hz ±3	S	15						F	6¼	Yes		
	XL18S	399.00		103	4	18-250 Hz ±3	S	18							7½	Yes		
	CMT-5		199.95	100	92	4	40-20 ±3		6½	2		Yes	S		Yes			
CLARION	SEP5300	25.00	45	89	4	100-20		3½	W				F	1½		For marine use.		
	SEP5301	40.00	45	89	4	100-20		3½	W		No	F	1½					
	SEP5403	50.00	45	90	4	90-20		4 x 6	2		No	F	1½	Yes				
	SEP5402	90.00	120	92	4	40-22		4 x 10	2		No	F	2½	Yes				
	SE6275	75.00	100	92	4	40-21		6½	2		No	F	2½	Yes				
	SE7360	100.00	120	91	4	40-22		6 x 8	2		No	F	2½	Yes				
	SE1400	40.00	45	90	4	60-18		4	W		No	F	1½	Yes				
	SE2401	60.00	90	4	60-21		4	2		No	F	1½	Yes					
	SE1501	40.00	60	90	4	60-20		5	W		No	F	1½	Yes				
	SE2500	70.00	60	90	4	60-22		5¼	2		No	F	1½	Yes				
	SE1600	55.00	60	90	4	60-20		6½	W		No	F	1½	Yes				
	SE2601	120.00	140	91	4	35-23		6½	2		No	F	1¾	Yes				
	SE2600	70.00	100	90	4	60-21		6½	2		No	F	2½	Yes				
	SE3601	140.00	160	91	4	35-25		6½	3		No	F	1¾	Yes				
	SEB670	100.00	100	90	4	40-23		6½	3		No	F	2½	Yes				
	SE2900	80.00	100	91	4	30-21		6 x 9	2		No	F	1¾	Yes				
	SE3900	110.00	140	92	4	30-23		6 x 9	2		No	F	2½	Yes				
SE2901	150.00	140	92	4	28-23		6 x 9	3		No	F	2½	Yes					
SE3901	180.00	160	92	4	28-25		6 x 9	3		No	F	2½	Yes					
SET170	99.95	120	90	4	2k-25k	T						F	2½	Yes				
SET160	129.95	200	90	4	2k-25k	T						F		Yes				
SEM470	89.95	150	90	4	100-12	M						F		Yes				
SEM570	80.00	150	89	4	50-6	M						F	2	Yes				
SEW5601	100.00	150	90	4	40-6	M	6½					F	2¾	Yes				
SEW5806	70.00	300	92	4	30-3	W	8					F	4	Yes				
SEW5106	80.00	375	93	4	25-3	W	10					F	4½	Yes				
SEW5126	120.00	450	95	4	20-3	W	12					F	5¼	Yes				
CLIF DESIGNS	CD-1		99.00	50	91	4	5k-20k	T					S		Yes	Dual voice-coils. As above. As above. As above.		
	CD-3		109.00	50	91	4	5k-20k	T			A		S		Yes			
	CD-5		129.00	50	91	4	5k-20k	T			P		S		Yes			
	CD-7		139.00	50	91	4	5k-20k	T			A/P		S		Yes			
	CD-9		149.00	50	91	4	5k-20k	T			P		S		Yes			
	CD-41		229.00	50	88.5	4	70-20		4			Yes	S		Yes			
	CD-43		229.00	50	88.5	4	70-20		4		A	Yes	S		Yes			
	CD-45		239.00	50	88.5	4	70-20		4		P	Yes	S		Yes			
	CD-47		239.00	50	88.5	4	70-20		4		A/P	Yes	S		Yes			
	CD-49		249.00	50	88.5	4	70-20		4		P	Yes	S		Yes			
	CD-51		289.00	75	90.4	4	65-20		5			Yes	S		Yes			
	CD-53		289.00	75	90.4	4	65-20		5		A	Yes	S		Yes			
	CD-55		299.00	75	90.4	4	65-20		5		P	Yes	S		Yes			
	CD-57		299.00	75	90.4	4	65-20		5		A/P	Yes	S		Yes			
	CD-59		309.00	75	90.4	4	65-20		5		P	Yes	S		Yes			
	CD-61		329.00	80	92.6	4	55-20					Yes	S		Yes			
	CD-63		329.00	80	92.6	4	55-20				A	Yes	S		Yes			
CD-65		339.00	80	92.6	4	55-20				P	Yes	S		Yes				
CD-67		339.00	80	92.6	4	55-20				A/P	Yes	S		Yes				
CD-69		349.00	80	92.6	4	55-20				P	Yes	S		Yes				
CD-409		249.00	50	88.5	4	70-20		4			Yes	F		Yes				
CD-509		279.00	75	90.4	4	65-20		5			No	F		Yes				
CD-609		299.00	80	92.6	4	55-20		6½			No	F		Yes				
DVC-6		79.00	75	86	4		S	6						Yes				
DVC-8		99.00	100	91.7	4		S	8						Yes				
DVC-10		119.00	150	93.7	4		S	10						Yes				
DVC-12		139.00	200	85	4		S	12						Yes				
COUSTIC	HS-93		99.95	80	94	4	53-20 ±3		6 x 9	3		No	F		Yes	As above.		
	HS-92		79.95	80	93	4	42-19 ±3		6 x 9	2		No	F		Yes			
	HS-90		59.95	80	92	4	53-18 ±3		6 x 9	W		No	F		Yes			
	HS-62		54.95	60	90	4	66-18 ±3		6½	2		No	F		Yes			
	HS-60		44.95	60	90	4	59-18 ±3		6½	W		No	F		Yes			
	HS-52		47.95	50	88	4	59-18 ±3		5¼	2		No	F		Yes			
	HS-50		39.95	50	88	4	61-18 ±3		5¼	W		No	F		Yes			
	HS-42		39.95	40	88	4	77-18 ±3		4	2		No	F		Yes			
	HS-40		32.95	40	88	4	70-18 ±3		4	W		No	F		Yes			
	HS-30		18.95	30	86	4	134-15 ±3		3½	W		No	F		Yes			
	HT-601		32.95	40	92	4	2k-20k ±3								Yes			
	HT-615		214.95	400	95	4	25-1 ±3	T	S	15					¾		Yes	
	HT-612		129.95	300	95	4	28-1.5 ±3	S	S	12					6½		Yes	
	HT-610		82.95	200	93	4	30-2 ±3	S	S	10					5¼		Yes	
	HT-608		54.95	150	92	4	35-3 ±3	S	S	8					4½		Yes	
	HT-606		69.95	60	92	4	55-10 ±3	W	6						3¼		Yes	
	HT-605		59.95	50	90	4	65-12 ±3	W	5¼						2¾		Yes	
	HT-604		49.95	50	90	4	90-12 ±3	M							2½		Yes	
	HT-603		32.95	30	89	4	130-16 ±3	M							1½		Yes	
	HT-602		37.95	15	92	4	3k-25k ±3	T			P				1¼		Yes	
HT-600		27.95	15	92	4	3k-25k ±3	T							5/8	Yes			
HT-623		67.95	30	89	4	130-25 ±3		4 x 6	2					Yes				

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# SPEAKERS

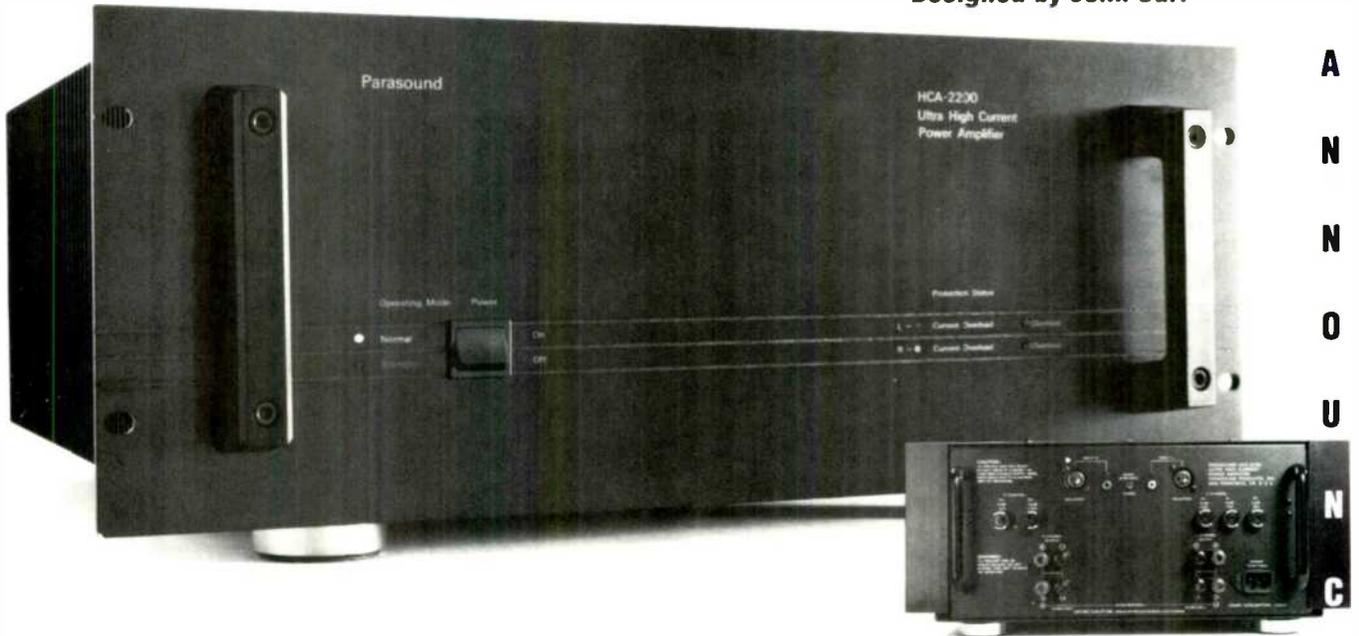
MANUFACTURER	Model	DRIVERS							Subwoofer Only (S) Midrange Only (M), Tweeter Only (T)	Woofer Size, inches	Woofer (W), 3-Way (3), 4-Way (4)	Amplifier Tweeters (A), Passive Tweeters (P)	Separately Mountable Drivers?	Flush Mount (F), Convertible (C), Plate (P)	Maximum Required Mounting Depth, inches	Weatherproofed?	Notes
		Price \$ (If Sold Individually)	Price \$ (If Sold In Pairs)	Recommended, Maximum Power, Watts/Channel	Sensitivity, dB SPL (1 Watt 1 Meter)	Impedance, Ohms	Frequency Response, Hz to kHz, ±dB										
EARTHQUAKE SOUND (Continued)	TW-104 SME		70.00	30	99	4	5k-21k	T			A		S		No	†Includes flat and angled mounts. Sealed-back midrange. As above.	
	TW-105 SMR		75.00	30	99	4	5k-21k	T			†		S		No		
	MD-4	39.00		80	100	8	600-7	M					F	2 1/4	No		
	MD-5	45.00		80	101	8	400-7	M					F	2 1/2	No		
	XL-4	40.00		80	100	4	400-7	M					F	3	No		
	XL-5	60.00		100	101	4	300-7	M					F	3 1/4	No		
	MD-5 Cast	70.00		80	91	4	200-6	M					F	2 1/4	No		
	MD-6 Cast	99.00		80	94	8	50-5	M					F	2 1/4	No		
PL-46	80.00		40	94	8	400-20	M	2		No		P	2 1/4	No	Midrange and tweeter.		
MD-5 Open	50.00		60	96	4	300-5	M					F	2 1/4	No			
ECLIPSE	ESG-4000		129.95	30	4	4	50-25		4	2			F	1 3/4	No	Ambient center-channel speaker for use with EQS-1000 or EQS-1001 digi- tal sound processor (see "Amps"). †Mounts on rear-view mirror.	
	ESG-6950		279.95	70	4	4	30-28	T	6 x 9	3			F	3 1/8	No		
	ESG-1000		109.95	60	4	4	2k-23k	M				F, S	7/8	No			
	ESG-5000		109.95	90	4	4	100-12	W				F	1 3/8	No			
	ESG-6000		119.95	150	4	4	45-3	S	6 1/2			F	2 1/8	No			
	ESG-8000	159.95		199.95	200	4	25-5	S	8			F	3 3/8	No			
	ESG-3000				13			S	3			†			No		
EXCALIBUR	EX-6913		39.95	150	4	4			6 x 9	3			F				
	PP-6923		49.95	150	4	4			6 x 9	3			F				
	EX-4102		39.95	100	4	4			4 x 10	2			F		Yes		
	EX-501		29.95	80	4	4			5 1/4	W			F	1 3/4			
	EX-502		39.95	100	4	4			5 1/4	2			F	1 3/4			
	EX-512		49.95	100	4	4			5 1/4	2			F	1 3/4			
	PP-522		59.95	100	4	4			5 1/4	2			F	1 3/4	Yes		
	EX-401		39.95	60	4	4			4	W			F	1 3/4			
	EX-402		49.95	80	4	4			4	2			F	1 3/4			
	PP-422		59.95	80	4	4			4	2			F	1 3/4	Yes		
	EX-4612		49.95	60	4	4			4 x 6	2			F	1 3/4			
	EX-301		39.95	50	4	4			3 1/2	W			F	1 1/2			
	EX-2001		59.95	80	4	4			(2)3				F, S				
	EX-3001		69.95	100	4	4			(2)4				S		Yes		
	PP-621	39.95		100	8	8							F		Yes		
	PP-821	59.95		150	8	8			8				F		Yes		
PP-1021	79.95		150	8	8			10				F		Yes			
PP-1221	99.95		150	8	8			12				F		Yes			
TW-1	39.95		50	4	4							F					
TW-4	39.95		100	4	4							F					
EXCESS ELECTRONIXX	EX-48	28.75		180	92	4	20-1 ± 3	S	8				F, S		Yes		
	EX-410	36.80		220	93	4	15-1 ± 3	S	10				F, S		Yes		
	EX-412	43.70		280	96	4	10-1 ± 3	S	12				F, S		Yes		
	EX-415	48.30		340	98	4	10-1 ± 3	S	15				F, S		Yes		
	EX-418	94.30		420	98	4	10-1 ± 3	S	18				F, S		Yes		
	FAS	CS369F		169.95	90	93	4	50-25		6 x 9	3		No	F		No	
PS693			99.95	60	4	4	60-20		6 x 9	3		No	F	3	No		
PS692			89.95	50	4	4	60-20		6 x 9	2		No	F	2 1/8	No		
PS62			69.95	60	4	4			6	2		No	F	2	No		
PS6			49.95	20	4	4			6	W		No	F	1 1/4	No		
PS4			49.95	20	4	4			4	W		No	F	1 1/2	No		
FOCAL	T90K	60.00		30	91	6	2.5k-20k	T					F	1	Yes		
	5K013L	130.00		50	90	6	50-5	W	5 1/4				F	2 1/4	Yes		
FULTRON	15-9793		89.95	120	88	4	30-20		6 x 9	3		No	F	3 1/2	Yes	Dual voice-coils.	
	15-9763		74.95	100	86	4	50-20		6 1/2	3		No	F	3	Yes		
	15-9762		59.95	100	86	4	50-20		6 1/2	2		No	F	2 3/8	Yes		
	15-9750		55.95	60	85	4	80-20		5 1/4	2		No	F	2 1/8	Yes		
	15-9746		59.95	60	85	4	80-20		4 x 6	2		No	F	2 1/8	Yes		
	15-9740		40.00	40	85	4	80-20		4	2		No	F	2 1/4	Yes		
	15-8560		69.95	140	86	4	55-4	W	6 1/2			No	F	2 1/4	Yes		
	15-8550		54.95	100	88	4	80-8	M					F	2	Yes		
	15-8540		49.95	60	95	4	80-8	M					F	2	Yes		
	15-8250		99.95	80	88	4	1.5k-20k	T					F		Yes		
	15-8210		29.95	100	86	4	3k-20k	T					C		Yes		
	15-9015	79.95		100	90	4/8	21-3.5	W	15				F				
	15-9012	54.95		80	90	4/8	30-3	W	12				F	5			
	15-9010	49.95		80	88	4/8	36-3.7	W	10				F	4 1/2			
	15-9212	199.95		200	4	4	17.2-5	W	12				F		Yes		
	15-9108	54.95		100	94	4/8	35-2.5 ± 3	W	8				F	4 3/8	No		
15-9110	79.95		140	95	4/8	30-1.7 ± 3	W	10				F					
15-9112	99.95		140	93	4/8	30-1.5 ± 3	W	12				F					
15-9115	119.95		160	93	4/8	25-1.5 ± 3	W	15				F					
GEMINI	RW-10		350.00	150	97	4	60-22		10	3	P	No	S		No	Box enclosure. As above. As above. As above.	
	RW-20	304.00		150	95	4	45-22		10	3	P	No	S		No		
	RW-40	380.00		200	99	4	40-20		12	3	A	No	S		No		
	RW-50	493.00		300	95	4	60-20		15	5	A	No	S		No		
GOLD SOUND	GS1284	199.00		300	95	4	22-2	S	12				F	5 1/4	Yes	Requires enclosure of 1 cubic foot; vented pole-piece. As above; 8-ohm version available; with dual 4- or 8-ohm voice-coils. \$119.00 each. Requires enclosure of 0.7 cubic foot; vented pole-piece; 8-ohm version available. As above; dual voice-coils. As above. Requires enclosure of 0.7 cubic foot; vented pole-piece; 8-ohm version available.	
	GS1244SVC	109.00		200	92	4	22-500 Hz	S	12				F	5 3/8	Yes		
	GS844	98.00		200	92	4	28-2	S	8				F	3 3/4	Yes		
	GS1044	109.00		200	92	4	25-1 ± 3	S	10				F	4 1/4	Yes		
	GS824	79.00		100	91	4	32-2 ± 3	S	8				F	3 3/8	Yes		
GS821-4	74.00		100	91	4	32-2 ± 3	S	8				F	3 3/8	Yes			
(Continued)																	

# SPEAKERS

MANUFACTURER	Model	Price, \$ (If Sold Individually)	Price, \$ (If Sold In Pairs)	Recommended Maximum Power, Watts/Channel	Sensitivity, db SPL (1 Watt/1 Meter)	Impedance, Ohms	Frequency Response, Hz to kHz, ±db	DRIVERS										Notes
								Subwoofer Only (S), Midrange Only (M), Tweeter Only (T)	Woofer Size, Inches	Woofer (W), 2-Way (2), 3-Way (3)	Amplifier Tweeter(s) = A, Passive Tweeter(s) = P	Separately Mountable Drivers?	Flush Mount (F), Surface Mount (S), Convertible (C), Plug (P)	Minimum Required Mounting Depth, Inches	Weatherproof?			
GOLD SOUND (Continued)	GS6x9W	69.00	100	91	4	40-3 ±3	S	6 x 9					F	3%	Yes	Requires enclosure of 0.7 cubic foot; vented pole-piece.		
	GS512-4	39.00	50	90	4	70-5 ±3	M					F	2 1/2	Yes	Vented pole-piece; 8-ohm version available.			
	GS405-4	36.00	40	90	4	100-5 ±3	M					F	1 1/4	Yes	As above.			
	GS624	69.00	100	92	4	35-3 ±3	S	6 1/2				F	3 1/2	Yes	As above; requires enclosure of 0.5 cubic feet.			
	GS612-4	49.00	60	90	4	38-4 ±3	S	6 1/2				F	3	Yes	As above.			
	GS524	59.00	100	89	4	60-4 ±3	S	5 1/4				F	2 3/4	Yes	Vented pole-piece; 8-ohm version available.			
	GS8AC-4	199.00	100	92	4	32-20 ±3		8	2	No	F	3 3/4	Yes	Biamp capable; 8-ohm version available.				
	GS8C-4	139.00	60	92	4	36-20 ±3		8	2	No	F	3 1/2	Yes	As above.				
	GS89AC	199.00	100	92	4	40-20 ±3		6 x 9	2	No	F	3 3/4	Yes	Biamp capable.				
	GS89C	139.00	60	92	4	45-20 ±3		6 x 9	2	No	F	3 1/2	Yes	As above.				
	GS6.5AC	189.00	100	92	4	35-20 ±3		6 1/2	2		F	3 1/2	Yes	As above.				
	GS6.5C	129.00	60	92	4	38-20 ±3		6 1/2	2		F	3	Yes	As above.				
	GS5x7C	138.00	40	92	4	68-25 ±3		5 x 7	2		F	2 3/4	Yes	As above; for Ford, Chrysler, Audi, Porsche, and VW vehicles.				
	GS5AC	169.00	100	92	4	65-25 ±3		5 1/4	2		F	2 3/4	Yes	Biamp capable.				
GS5C	119.00	50	92	4	70-25		5 1/4	2		F	2 1/2	Yes	As above.					
GS4x10C	139.00	40	92	4	58-25 ±3		4 x 10	2		F	2 3/4	Yes	As above; for GM and Ford vehicles.					
GS4x6C	139.00	30	90	4	58-25 ±3		4 x 6	2	No	F	2 3/4	Yes	For GM, VW, BMW, and Porsche vehicles.					
GS4SC	109.00	30	90	4	98-25 ±3		4	2	No	F	1 1/4	Yes						
HAFLER	MAS 10	135.00	75	91	4	4k-20k ±3	T					S	1	Yes	Includes crossover.			
	MAS 5	99.00	75	89	4	8k-20k ±3	T					C	2	Yes				
	MAS 35	119.00	100	88	4	200-20 ±3		3 1/2	2	No	F	2 1/4	Yes	Fits 3 1/2-inch or 4 x 6-inch holes.				
	MAS 460	199.00	100	88	4	200-20 ±3		3 1/2	2	No	F	2 1/4	Yes					
	MAS 51	260.00	100	88	4	100-20 ±3		5 1/4	2	No	F	3 3/4	Yes					
	MAS 55	260.00	100	88	4	100-20 ±3		5 1/4	2	Yes	F	3 3/4	Yes					
	MAS 510	275.00	100	89	4	100-20 ±3		5 1/4	2	No	P	2 3/4	Yes	Fits 5 1/4-inch or 6 x 9-inch holes. As above.				
	MAS 520	325.00	100	88	4	100-20 ±3		5 1/4	2	No	P	2 3/4	Yes					
	MAS 60	125.00	100	88	4	60-4 ±3		6 1/2	2	No	F	2 3/4	Yes					
	MAS 80	200.00	150	89	4	40-2 ±3	S	8			F	3 3/4	Yes					
	MAS 88	200.00	150	89	8	40-2 ±3	S	8			F	3 3/4	Yes					
	MAS 100	250.00	150	89	4	28-1 ±3	S	10			F	4 3/4	Yes					
	MAS 108	250.00	150	89	8	28-1 ±3	S	10			F	4 3/4	Yes					
	ML124X2	150.00	200	90	4	24-2 ±3	S	12			F	5	Yes	Dual voice-coils.				
ML84X2	120.00	200	89	4	30-3 ±3	S	8			F	4	Yes	As above.					
ML104X2	135.00	200	90	4	27-2.5 ±3	S	10			F	4 3/4	Yes	As above.					
HART	MS1000-18	750.00	1k	97	4/8	16-1.25 ±3	S	18				F	6%	No				
	MS1000-15	575.00	1k	97	4/8	20-3 ±3	S	15				F	5	No				
	MS1000-12	475.00	1k	96.5	4/8	24-3 ±3	S	12				F	4 1/2	No				
	SW10000	160.00	100	91	8	16-750 Hz ±3.5	S	10				F	4 1/4	Yes				
	SW8000	130.00	150	93	8	16-1.5 ±3.5	S	8				F	3 1/2	Yes				
	SW6500	110.00	150	91	8	40-1.2 ±3	W	6				F	3	Yes				
	SW6200	85.00	100	92	4	50-3.5 ±3	W	6				F	2 1/2	Yes				
	EMT4500	135.00	75	93.5	8	100-0.5 ±5	M					F	1 1/2	Yes				
	CMT3500	75.00	50	95	8	1k-18k ±3	T					F	1 1/2	No				
	PRD2000	55.00	30	92	8	1.5k-20k ±3	T					F	1 1/2	No				
	ST1000+	65.00	20	92	8	10k-26k ±3	T					S		Yes	Includes crossover.			
	ND-250	110.00	40	90	8	3.5k-23k ±3	T			A,P		F, S		Yes				
	PR-106	48.00	85	88	4	45-6.5 ±3	W	6				F	2 1/2	Yes				
	PR-108	50.00	85	90	4	40-6 ±3	W	8				F	3 1/4	Yes				
PR-110	75.00	100	93	6	35-4	W	10				F	4 1/2	Yes					
PR-112	100.00	100	91	6	30-4	W	12				F	5	Yes					
SR12-100	185.00	250	100	8	27-1.8 ±3	S	12				F		Yes					
HECO	CAC130	320.00	50	89	4	50-32 ±3		(2)5 1/4	2	P	Yes	†	1 1/2	Yes	†Flush-mount woofer, convertible tweeter.			
	CAC160	340.00	60	89	4	45-32 ±3		(2)6 1/2	2	P	Yes	†	2 1/2	Yes				
	CAC200	400.00	60	89	4	40-32 ±3		(4)4	2	P	Yes	†	1 1/4	Yes				
	CAC220	350.00	100	92	4	30-2 ±3	S	(2)8 1/2				F	3 1/2	Yes	Includes crossover.			
	CPT100	140.00	40	89	4	40-2.8 ±3	W	4				F	1 1/4	Yes				
	CAX160G	220.00	50	89	4	45-25 ±3		6 1/2	2	No	F	2 3/4	Yes					
	CAX130G	200.00	50	89	4	50-25 ±3		5 1/4	2	No	F	2 3/4	Yes	Without grille, Model CAX130, \$190.00 per pair.				
	CAD100G	90.00	40	89	4	70-25 ±3		4	W			F	1 1/2	No	Box enclosure.			
	CAS100	450.00	50	87	4	80-32 ±3		4	2	No	S		1 1/2	Yes				
	CAB100	300.00	40	89	4	70-32 ±3		4	2	No	P		1 1/2	Yes				
CPT230A	125.00	160	94	8	27-4 ±3	S	9				F		Yes					
CPT260A	160.00	180	94	8	22-3 ±3	S	10 1/4				F		Yes					
HIFONICS	HT2	40.00	80	88	4	12k-25k	T					F	3/4					
	HT3	55.00	100	89	4	11k-25k	T					F	1 1/2					
	NT1	55.00	100	92	8	17k-25k	T					F	5%		Surface-mount adaptor, \$7.00 each; with mounting flange, Model NT2, \$58.00 each.			
	NT3	60.00	100	92	8	17k-22k	T			P		S						
	MR1	65.00	70	88	4	650-1	M					F	7/8					
	MR2	75.00	100	88	4	500-12	M					F	1					
	MR3	55.00	80	89	4	90-13	W	5				F	2 1/4					
	OL064/068	55.00	120	92	4/8	40-3	S	6 1/2				F	3					
	OL084/088	65.00	120	93	4/8	40-3	S	8				F	3					
	OL104/108	95.00	250	93	4/8	30-2	S	10				F	4 1/4					

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- Matched complementary J-FET inputs
- 24  $\beta$ -matched 60MHz, 15A output transistors
- Balanced XLR and gold unbalanced inputs
- Two pairs of 5-way terminals for bi-wiring



# SPEAKERS

MANUFACTURER	Model	Price, \$ (If Sold Individually)	Price, \$ (If Sold in Pairs)	Recommended Maximum Power, Watts/Channel	Sensitivity, dB SPL (1 Watt/1 Meter)	Impedance, Ohms	Frequency Response, Hz to kHz, ±dB	DRIVERS										Notes
								Speaker Only (1), Miscellaneous (2), Tweeter Only (3), Woofer Only (4)	Woofer Size, Inches	Woofer (W), 3-Way (3), 2-Way (2), 3-Way (4)	Amplifier Tweeter(s) = A, Removable Tweeter(s) = P	Separately Mountable Drivers?	Flush Mount (F), Surface Mount (S), Convertible (C), Pillar (P)	Maximum Required Mounting Depth, Inches	Weatherproofed?			
INFINITY (Continued)	52-Kappa	144.95	30	88	4	63-22		5 1/4					F	1 1/8	Yes			
	42-Kappa	99.95	25	87	4	98-16		4				F	1 1/8	Yes				
	CS-1A Kappa	439.95	200	89	4	34-45		6 x 9				F, S		Yes				
	CS-6 Kappa	279.95	120	90	4	58-22		6	2	A	Yes	F, S	2 3/4	Yes				
	CS-5 Kappa	249.95	100	88	4	85-22		5 1/4		A	Yes	F, S	2 1/4	Yes				
	CS-4 Kappa	229.95	90	88	4	100-22		4		A	Yes	F, S	1 1/8	Yes				
	Kappa Polycell	125.00	40	94	4	3.5k-45k ±3	T			A		S		Yes				
	Emit-N Kappa	189.95	50	93	4	3.5k-45k ±3	T			A		S		Yes				
	RSDS 12" Pro	600.00	300	92	4	22-1.5 ±3	W	12				F	5 1/8	Yes				
	RSDS 12"	450.00	250	90	4	26-1.5 ±3	W	12				F	5 1/2	Yes				
	RSDS 10"	350.00	175	90	4	30-1.5 ±3	W	10				F	4 1/2	Yes				
	RSDS 8"	270.00	150	89	4	35-1.5 ±3	W	8				F	4 1/4	Yes				
	RSDS 6 1/2"	149.95	100	86	4	50-4	W	6 1/2				F	3	Yes				
	RSDS Polycell	125.00	40	94	4	3.9k-22k ±3	T			A		S		Yes				
	RSDS Emit-N	189.95	50	93	4	3.5k-45k ±3	T			P		S		Yes				
	RSDS Polydome	200.00	50	88	4	700-4 ±3	M					F, S	3/4	Yes				
	RSDS 4A	100.00	50	88	4	100-4.5 ±3	M					F, S		Yes				
	RSDS Polygraph	260.00	75	89	4	100-800 Hz ±3	M					F, S	1 1/2	Yes				
	RS-6903	199.95	90	93	4	40-22		6 x 9	3			F, S	2 1/8	Yes				
	RS-6902	159.95	80	93	4	40-20		6 x 9	3			F, S	2 1/8	Yes				
RS-602	119.95	50	92	4	60-20		6 1/2	2			F, S	2 1/8	Yes					
RS-502	119.95	30	91	4	70-20		5 1/4				F, S	1 7/8	Yes					
RS-402	89.95	25	91	4	80-16		4	W			F	1 5/8	Yes					
RS-400	199.95	60	89	4	90-20 ±3		4	2		Yes								
RS-500	219.95	89	89	4	80-20 ±3		5 1/4	2		Yes								
RS-600	229.95	89	89	4	60-20 ±3		6	2		Yes								
482-K	54.95	25	86	4	98-16		4	W			F	1 3/4	Yes					
32-K	49.95	18	86	4	112-16		3 1/2	W			F	1 5/8	Yes					
JBL	1800GT1	479.00	1k	95	4	20-300 Hz	S	18				F, S	6 7/8	Yes	For enclosure of 3.5 cubic feet; Venturi venting.			
	1500GT1	349.00	1k	94	4	20-300 Hz	S	15				F, S	5 1/4	Yes	As above but 2.5 cubic feet.			
	1200GT1	299.00	1k	93	4	20-300 Hz	S	12				F, S	4 1/4	Yes	For enclosure of 1.75 cubic feet.			
	GT152	119.00	300	97	4	20-2	S	15				F, S	6 1/4	Yes	With dual voice-coils, \$129.00 each.			
	GT122	99.00	280	95	4	25-3	S	12				F, S	5 1/4	Yes	As above but \$109.00 each.			
	GT102	89.00	260	94	4	30-3.5	S	10				F, S	4 3/8	Yes	As above but \$99.00 each.			
	GT82	69.00	200	93	4	35-5	S	8				F, S	3 7/8	Yes	As above but \$79.00 each.			
	T120	259.00	300	91	4	40-1.2	S	12				F, S	5 1/4	Yes				
	T100	159.00	200	91	4	35-2.5	S	10				F, S	4 3/8	Yes				
	T104	159.00	300	91	4	35-2.5	S	10				F, S	4 3/8	Yes				
	T84	119.00	250	91	4	40-3	S	8				F, S	3 1/2	Yes				
	T06	129.00	150	92	4	2.5k-26k	T					C	1/4	Yes				
	GT03	79.00	90	90	4	4k-23k	T					C		Yes	Includes crossover.			
	T030	349.00	200	92	4	500-8	M					F, S	2	Yes				
	T414	199.00	40	90	4	60-23		4	2		Yes		1 3/4	Yes				
	T516	249.00	80	92	4	55-26		5 1/4	2		Yes		2 1/4	Yes				
	T616	299.00	100	92	4	50-27		6 1/2	2		Yes		2 1/2	Yes				
	GT965	199.00	160	93	4	40-23		6 x 9	4		No		C	3 3/8	Yes			
	GT963	169.00	140	92	4	45-21		6 x 9	3		No		C	3 7/8	Yes			
	GT962	149.00	120	92	4	50-20		6 x 9	2		No		C	3 3/8	Yes			
	GT961	119.00	105	92	4	45-22		6 x 9	3		No		F	3 3/8	Yes			
	T545	349.00	150	92	4	40-18		6 x 9	3		No		S		Yes			
	GT622	139.00	100	91	4	55-20		6 1/2	2		No		C	1 7/8	Yes			
	GT621	99.00	90	91	4	55-20		6 1/2	2		No		F	1 7/8	Yes	For Fords and Hondas.		
	GT522	119.00	90	91	4	60-20		5 1/4	2		No		C	2	Yes			
GT521	89.00	60	90	4	60-20		5 1/4	2		No		F	2	No	DIN basket.			
GT422	99.00	80	91	4	70-20		4	2		No		C	1 5/8	Yes	For Mercedes.			
GT421	69.00	50	90	4	70-20		4	2		No		F, P	1 1/2	No	For U.S. cars; for European cars, Model GT462M.			
T464	119.00	60	90	4	100-20		3 1/2	2		No		F, P	1 3/4	Yes				
GT462	59.00	60	92	4	70-20		4 x 6	2		No		F	1 7/8	No				
TL410	119.00	80	92	4	55-20		4 x 10	2		No		F	3 1/8	Yes				
TL350	49.00	15	87	4	115-15		3 1/2	W				P	1 1/2	Yes				
T75	269.00	100	85	4	75-26		5 1/4	W		Yes		P	1 5/8	Yes				
JENSEN	JM156	80.00	100	89	4	45-20		6 1/2	W			F		Yes				
	JTE1300	299.00	300	97	4	53-22		(2) 10	3		No			No	Enclosure; for hatchbacks.			
	JW101	149.00	375	89	4	36-200 Hz	S	10				F	3 1/2	No	Dual voice-coils.			
	JTX3469	119.00	190	92	4	30-26		6 x 9	3		No		F	3 1/4	No			
	JCX2469	80.00	160	91	4	35-23		6 x 9	2		No		F	3 1/4	No			
	JTX3269	99.00	160	91	4	30-22		6 x 9	3		No		F	3 1/4	No			
	JCX2269	79.00	140	91	4	35-20		6 x 9	2		No		F	3 1/4	No			
	JW804	59.95	200	88	4	25-3	S	8				F	4 1/8	No				
	JTX340	109.95	150	93	4	45-22		6 x 9	3		No		F	4 1/8	No			
	JTX320	99.95	140	93	4	45-22		6 x 9	3		No		F	4 1/8	No			
	JTX365	99.95	120	91	4	58-20		6 1/2	3		No		F	4 1/8	No			
	JSM401	179.95	120	90	4	80-20		(2) 4	3		No		S		No			
	JSM301	139.95	100	80	4	85-20		4	3		No		S		No			
	JXL461	39.95	50	91	4	65-21		4 x 6	W				F	1 1/2	No	In-dash replacement.		
	JXL351	34.95	50	86	4	70-20		3 1/2	W				F	1 1/4	No	As above.		
JXL692	109.95	160	92	4	40-25		6 x 9	2		No		F	4	No	As above.			
JXL401	49.95	65	86	4	70-21		4	W				F	1 5/8	No				
JXL653	109.95	135	91	4	58-23		6 1/2	3		No		F	1 7/8	No				
JXL693	129.95	175	91	4	40-26		6 x 9	3		No		F	1 1/4	No				
JXL653	109.95	93	93	4	58-23		6 1/2	3		No		F	4 1/8	No				
JXL522	89.95	100	91	4	58-20 ±3		5 1/4	2		No		F	1 3/4	Yes	For marine use.			
JXL653	109.95	135	91	4	58-23		6 1/2	3		No		F	1 7/8	No				
JXL452	69.95	80	90	4	65-23		4 1/2	2		No		F	1 3/4	No				





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# SPEAKERS

MANUFACTURER	Model	Price \$ (If Sold Individually)	Price \$ (If Sold in Pairs)	Recommended Maximum Power, Watts/Channel	Sensitivity, dB SPL (1 Watt/1 Meter)	Impedance, Ohms	Frequency Response, Hz to kHz, ±dB	DRIVERS										Notes
								Superwoofer (W) (1) Subwoofer (W) (1)	Woofer Size, Inches	Woofer (W) (1) Tweeter (T) (1)	Woofer (W) (2) Tweeter (T) (2)	Amplified Tweeter (A) = A, Passive Tweeter (P) = P	Separately Mountable Drivers?	Flush Mount (F) Surface Mount (S), Convertible (C), Pin (P)	Maximum Required Mounting Depth, Inches	Weatherproofed?		
JVC (Continued)	CS-427	49.95	45	86	4	50-20	4	2				F	1 1/4		Bass-reflex enclosure. As above. As above. For marine use. As above.			
	CS-417	39.95	45	87	4	50-20	4	2			F	1 1/4						
	CS-5724	129.95	60	91	4	40-20	5 x 7	2			F	2 1/2						
	CS-304	34.95	30	87	4	80-15	3 1/2	2			F	1 1/4						
	CS-103	229.95	60			40-25					F							
	CS-867	169.95	100	90	4	45-30	4	2			F							
	CS-81	129.95	70	90	4	60-20	4 1/2	2			S							
	CS-8007	169.95	70	90	4	50-20	4	2			S							
	CS-MR626	89.95	100	91	4	40-20	6 1/2	2			F	1 1/4						
	CS-MR616	69.95	75	91	4	40-20	6 1/2	2			F	1 1/4						
KAWASAKI	KS-36	109.00	60	88	4	55-16 ±3	6 1/2	W			F	3	Yes	Box enclosure; dual voice-coils.				
	KS-39	115.00	70	88	4	55-16 ±3	6 x 9	W			C	3 1/4	Yes					
	KS-360	180.00	100	90	4	70-20 ±3	6 1/2	3		No	F	2 1/4	Yes					
	KS-390	180.00	120	92	4	40-20 ±3	6 x 9	3		No	C	3 1/4	Yes					
	KS-301	285.00	180	94	4/8	110-20 ±3	5	2		No	S	3 1/4	Yes					
KEF	GT-100	250.00	50	90	4	50-20 ±3	4 1/2	2		No	P	1 1/4	Yes	1 1/4 inches for satellites, 12 inches for enclosed subwoofers. External crossover required.				
	GT-200	575.00	100	90	4	30-20 ±3	8	3		Yes	P	1 1/4	Yes					
	KAR-19S	120.00	70	90	4	2.5k-22k ±3	T				S		Yes					
	KAR-19F	120.00	70	90	4	2.5k-22k ±3	T				F	1 1/2	Yes					
	KAR-33A	120.00	100	90	4	2.5k-20k ±3	T		A/P		S		Yes					
	KAR-33F	120.00	100	90	4	2.5k-20k ±3	T				F	1 1/4	Yes					
	KAR-110	120.00	100	90	4	50-5	W/M/S	4 1/2			F	2 1/4	Yes					
KAR-200SW	350.00	100	90	4	30-250 Hz	S	8			F	12	Yes	As above; enclosed subwoofer.					
KENWOOD	KFC-HQ160	149.00	150	90	4	35-22 ±3	6 1/2	3		No	F	2 1/4	Yes	Box enclosure; for hatchbacks. Box enclosure; for trucks; tweeter overload protection. As above.				
	KFC-HQ130	119.00	100	90	4	45-22 ±3	5	2		No	F	2 1/4	Yes					
	KFC-HQ100	99.00	60	89	4	55-22 ±3	4	2		No	F	1 1/4	Yes					
	KFC-1683	119.00	120	90	4	45-21 ±3	6 1/2	2		No	F	2	Yes					
	KFC-1673	89.00	100	92	4	50-20 ±3	6 1/2	3		No	F	1 1/4	Yes					
	KFC-1663	59.00	60	92	4	55-20 ±3	6 1/2	W		No	F	1 1/4	Yes					
	KFC-1373	89.00	60	91	4	50-20 ±3	5	2		No	F	1 1/4	Yes					
	KFC-1363	59.00	50	91	4	60-20 ±3	5	W		No	F	1 1/4	Yes					
	KFC-1073	69.00	50	90	4	60-21 ±3	4	2		No	F	1 1/4	Yes					
	KFC-1053	49.00	40	90	4	60-20 ±3	4	W			F	1 1/4	Yes					
	KFC-W212	149.00	300	90	4	30-3	12			S	F	5 1/4	Yes					
	KFC-W210	199.00	300	92	4	30-3	6			S	F	4 1/2	Yes					
	KFC-W106	129.00					6			S	F							
	KFC-463V	249.00	79.00	45	89	4	70-20	4 x 6	2		No	F	1 1/4		Yes			
	KSC-7701	249.00	200	90	4	35-20	20	3		A	No	S			No			
	KSC-9901	249.00	200	90	4	40-20	10	2		Yes	S							
	KSC-8801	199.00	150	90	4	50-20	8	2		Yes	S							
	KSC-5100	169.00	60	85	4	60-20	4	2		Yes	S							
	KFC-411G	99.00	100	91	4	60-20	4 x 10	2		A	S	2 1/2	Yes					
	KFC-4671	99.00	45	91	4	60-20	4 x 6	2		No	F	1 1/4	Yes					
	KFC-830G	39.00	30	89	4	96-20	3 1/2	W		A	F	1 1/4	Yes					
	KFC-6963	99.00	100	91	4	35-22	6 x 9	2		No	F	3	Yes					
	KFC-6973	129.00	105	91	4	35-25	6 x 9	3		No	F	3 1/4	Yes					
	KFC-6983	159.00	150	92	4	30-26	6 x 9	3		No	F	3 1/4	Yes					
	KFC-HQ690	199.00	200	92	4	28-30	6 x 9	3		No	F	3 1/2	Yes					
	KFC-467C	79.00	45	91	4	60-20	4 x 6	2		No	F	1 1/4	Yes					
	KFC-W310	199.00	300	88	4	30-1	10			S	F	4 1/4	Yes					
	KFC-W308	159.00	300	91	4	45-2	8			S	F	3 1/4	Yes					
	KFC-W306	109.00	150	89	4	45-9				M	F	2 1/4	Yes					
	KFC-M204	99.00	120	88	4	45-10				M	F	1 1/4	Yes					
KFC-T301	149.00	150	89	4	2k-25k				T	F	1 1/4	Yes						
KFC-P206	209.00	150	90	4	50-20	6	2		Yes	F	1 1/4	Yes						
KFC-P205	189.00	150	90	4	60-20	5	2		Yes	F	2 1/4	Yes						
KFC-P204	169.00	150	89	4	65-20	4	2		Yes	F	1 1/4	Yes						
KFC-W208	159.00	300	92	4	55-2	8				F	3 1/4	Yes						
KFC-W312	149.00	300	89	4	25-2	12				F	4 1/4	Yes						
KFC-T201	99.00	150	89	4	2k-23k					F, S	1 1/4	Yes						
KICKER	Solo-barc S-8	169.00	300	90	4	28-100 Hz	S	8			S		No	Sealed enclosure. As above. As above.				
	Solo-barc S-10	249.00	450	91	4	24-100 Hz	S	10			S		No					
	Solo-barc S-12	299.00	600	91	4	20-100 Hz	S	12			S		No					
	FX-525	229.00	95	88	4	50-21	5 1/4	2		No	S		No					
	FX-46	199.00	50	86	4	55-21	4 x 6	2		No	S		No					
	FX-69	249.00	160	96	4	30-21	6 x 9	2		No	S		No					
	FX-65	239.00	100	96	4	30-21	6 1/2	2		No	S		No					
	ND-25	249.00	100	95	4	3.5k-20k	T				S, S	1 1/4	No					
	GRD-20	79.00	75	93	6	3k-21k	T				S		No					
	D-20	65.00	75	93	6	3k-21k	T				S, S	3/4	No					
	D-14	59.00	65	94	4	3k-21k	T				F, S	3/4	No					
	Competition C-18	439.00	1k	93	4/8	20-800 Hz	S	18			F	7 1/2	No					
	Competition C-15	199.00	500	92	4/8	25-2	S	15 1/4			F	6	No					
	Competition C-12	169.00	400	94	4/8	25-2	S	12 1/4			F	5	No					
	Competition C-10	139.00	300	96	4/8	25-2	S	10 1/4			F	4 3/4	No					
	Competition C-8	89.00	200	95	4/8	30-3	W	8 1/4			F	3 3/4	No					
	Competition C-6.5	79.00	150	96	4/8	30-3.5	W	6 1/2			F	2 1/4	No					
	Freair F-15	199.00	500	93	4/8	25-2	S	15 1/4			F	6	No					
	Freair F-12	169.00	400	93	4/8	25-2	S	12 1/4			F	5	No					
	Freair F-10	139.00	300	96	4/8	25-2	S	10 1/4			F	4 3/4	No					
Freair F-8	89.00	200	95	4/8	30-3	W	8 1/4			F	3 3/4	No						
Freair F-6x9	79.00	200	96	4/8	30-3.5	W	6 1/2 x 9 1/4			F	3 3/4	No						
Freair F-6.5	79.00	150	96	4/8	30-3.5	W	6 1/2			F	2 1/4	No						
Freair F-5.25	59.00	90	91	4/8	50-5	M				F	2 1/2	No						
Freair F-4	49.00	70	89	4/8	60-6	M				F	2 1/4	No						
Freair F-3.5	39.00	50	88	4/8	90-15	M				F	1 1/4	No						

# SPEAKERS

MANUFACTURER	Model	Price, \$		Recommended Maximum Power, Watts Channel	Sensitivity, dB SPL (1 Watt/1 Meter)	Impedance, Ohms	Frequency Response, Hz to kHz, ±dB	DRIVERS										Notes
		(If Sold Individually)	(If Sold In Pairs)					Subwoofers Only (S), Woofer Only (W), Midrange Only (M), Tweeter Only (T)	Woofer Size, Inches	Woofer (W), 2-Way (2), 3-Way (3), 4-Way (4)	Amplifier Tweeter(s) = A, Passive Tweeter(s) = P	Separately Mountable Drivers?	Finish Mount (F), Surface Mount (S), Conventional (C), Flare (P)	Maximum Required Mounting Depth, Inches	Weatherproofed?			
KICKER (Continued)	SS15		689.00	300	93.5	4	28-21		(2)15	3		No	S		No	Cabinet enclosure.  Passive-radiator enclosure.		
	SS12	549.00		250	93.5	4	30-21		(2)12	3		No	S		No			
	SS10	449.00		200	92.5	4	33-21		(2)10	3		No	S		No			
	SS8	359.00		150	91.2	4	38-21		(2)8	2		No	S		No			
	SS6		179.00	75	91.5	4	55-21		(2)6	2		No	S		Yes			
	SSCTF	479.00		200	92.5	4	25-21		(2)10	3		No	S		No			
	2x12	359.00		200	92.5	4	25-500 Hz	S	(2)10	3		No	S		No			
	SK12		549.00	250	93.5	4	35-21		(2)12	3		No	S		No			
	SK10		449.00	200	92.5	4	38-21		(2)10	3		No	S		No			
	SK10-2		359.00	150	90.5	4	40-21		(2)10	2		No	S		No			
SK8-2		279.00	125	89.5	4	42-21		(2)8	2		No	S		No				
Compact Sub		229.00	75	88.9	4	40-1	S	(2)5	2		No	S		No				
KRACO	FX-93		119.95	100	96	4	40-20		6 x 9	3	A	No	F	3 1/2	No	Box enclosure.		
	FX-95		209.95	100	96	4	20-20		6	2	A	Yes	S	No	No			
	TRI-500		109.95	50	86	4	85-20		4	3	A	No	S	No	No			
	CX-300		59.95	25	85	4	150-16		3 1/2	2	A	No	S	No	No			
	TRI-369		79.95	50	89	4	60-17		6 x 9	3		No	F	3 1/2	No			
	CX-269		54.95	40	86	4	65-16		6 x 9	2		No	F	3 1/2	No			
	CX-120		54.95	40	86	4	90-16		6 1/2	2		No	F	2 1/2	No			
	CX-2-20		59.95	40	86	4	90-16		5 1/2	2		No	F	2 1/4	No			
	THP-3		44.95	25	86	4	150-20		3 1/2	2		No	F	1 1/4	No			
	CX-240		54.95	40	89	4	90-16		4	2		No	F	1 1/4	No			
LANZAR SOUND	LN18	249.95		250	101	4/8	30-2	S	18				F	7 1/2		With dual 4-ohm voice-coils, \$329.95 each. As above but \$236.95 each. As above but \$189.95 each. As above but \$124.95 each. As above but \$105.95 each.  Carpeted box enclosure. As above. As above. As above. As above. As above. As above. As above.		
	LN15	139.95		200	99	4/8	30-2	S	15				F	6 1/2				
	LN12	109.95		150	98	4/8	30-2	S	12				F	5 1/2				
	LN10	79.95		100	96	4/8	30-2	S	10				F	4				
	LN8	74.95		100	96	4/8	30-2	S	8				F	3 1/2				
	OA15S	159.95		200	99	4/8	20-200 Hz	S	15				F	6 3/4				
	OA12S	149.95		150	98	4/8	20-200 Hz	S	12				F	5 1/2				
	OA10S	104.95		120	96	4/8	20-200 Hz	S	10				F	4 3/4				
	OAS8	84.95		100	96	4/8	20-200 Hz	S	8				F	3 3/4				
	LXR10	64.95		100	96	4	30-6	S	10				F	4 1/4				
	LXR12	84.95		120	98	4	30-6	S	12				F	5 1/2				
	LC18S	319.95		400	101	4/8	40-1	S	18				F	7 1/2				
	LC15S	229.95		350	99	4/8	40-1	S	15				F	6 1/4				
	LC12S	184.95		300	98	4/8	40-1	S	12				F	5 1/2				
	LC10S	119.95		200	96	4/8	40-1	S	10				F	4 1/2				
	LC8S	99.95		150	96	4/8	40-1	S	8				F	4				
	RDT		75.95	60	4			T					F, S	3/4				
	HXC6 x 9		259.95	150	4			T	6 x 9	2		No	F, S	3 1/2				
	DST		64.95	60	4			T			A		F, S	1 1/2				
	HXC6.5		229.95	150	4			T	6 1/2	2		No	F, S	3 1/2				
	PST		49.95	60	4			T			P		F, S	1 1/2				
	MWS6.5		134.95	150	4		40-4	T	6 1/2				F	3 1/2				
	DMT		99.95	100	4			T					F	1				
	MWS5		89.95	80	4			M					F	2				
	MO4		84.95	60	4/8			M					F	1 1/4				
XR H88	199.95		100	98	4	50-20		8	2	A	A	S			Carpeted box enclosure. As above. As above. As above. As above. As above. As above.			
XR SP10		279.95	100	100	4	40-20		10	2	A	A	S						
XR H810		319.95	100	102	4	40-20		12	2	A	A	S						
XR H812		379.95	200	98	4	40-20		10	3	A	A	S						
HF6800		419.95	200	100	4	40-20		12	3	A	A	S						
HF7500			200	100	4	40-20		12	3	A	A	S						
MT3100		379.95	200	98	4	40-20		10	3	A	A	S						
MT3300		459.95	200	99	4	40-20		12	3	A	A	S						
LXR8	59.95		100	96	4	30-6	S	8				F	3 3/4					
LXR15	119.95		150	99	4	30-6	S	15				F	6 3/4					
L.A. SOUND	LS 6903H		99.00	100	93	4	50-26		6 x 9	3		No	F	3 1/2	Yes	Replacement for 4 x 6-inch speakers.		
	LS 6902H		89.00	100	92	4	55-21		6 x 9	2		No	F	3 1/2	Yes			
	LS 6902H		69.00	60	91	4	70-20		6 1/2	2		No	F	2	Yes			
	LS 5902H		59.00	60	91	4	80-20		5 1/4	2		No	F	1 1/2	Yes			
	LS 4902H		49.00	50	90	4	90-20		4	2		No	F	1 1/4	Yes			
	LS 4001H		39.00	50	90	4	90-18		4	W			F	1 1/4	Yes			
	LS 3901HR		29.00	20	90	4	100-18		3 1/2	W			F	1 1/4	Yes			
	LS 693		49.00	100	91	4	70-20		6 x 9	3		No	F	3 1/2	No			
	LS 692		39.00	50	91	4	70-20		6 x 9	2		No	F	3 3/8	No			
	LS 692		34.00	50	91	4	90-20		6 1/2	2		No	F	2	No			
	LS 601		24.00	30	91	4	90-20		6 1/2	W		No	F	2	No			
	LS 401		19.00	25	89	4	100-20		4	W			F	1 1/2	No			
	Barstow	449.00		100	107	4	30-20		12	3		No	S		Yes		Box enclosure. As above. As above. As above. As above. As above.	
	Indio	449.00		125	107	4	28-20		12	3		No	S		Yes			
	Mojave	399.00		75	102	4	34-20		10	2		No	S		Yes			
	Hemet		389.00	75	100	4	36-20		10	2		No	S		Yes			
	Azza		299.00	50	98	4	40-20		8	2		No	S		Yes			
	LX 15-400	329.00		200	108	4	30-20		15	2		No	S		Yes			
	LX 12-300	239.00		150	108	4	35-20		12	2		No	S		Yes			
	LX 10-200	199.00		100	104	4	38-20		10	2		No	S		Yes			
	LX 8-100	189.00		75	100	4	42-20		8	2		No	S		Yes			
	LS FA15	199.00		250	88	4	20-1	S	15				F	7	Yes			
	LS FA12	169.00		250	91	4	21-1.5	S	12				F	6 1/2	As above.			
	LS FA10	109.00		150	95	4	36-2.5	W	10				F	5 1/2	As above.			
	LS FA8	99.00		100	95	4	35-3	W	8				F	5	As above.			
	LS 15AS	159.00		200	89	4	24-1	S	15				F	7	As above.			
	LS 12AS	129.00		200	91	4	24-1.5	S	12				F	6 1/2	As above.			
	LS 10AS	89.00		80	91	4	43-2.5	W	10				F	5 1/2	As above.			
	LS 8AS	69.00		80	96	4	56-3	W	8				F	5	As above.			
	LS 6AS	59.00		60	97	4	44-3	W	6 1/2				F	5	As above.			
	LS 5AS	59.00		50	84	4	80-4	W	5 1/4				F	4	As above.			
	LS 4AS	39.00		50	89	4	80-8	M					F	4	As above.			
	LS 1AS	29.00		100	91	4	4k-20k	T					F	1 1/4				
	LS AS	24.00		60	89	4	4k-22k	T					F	1 1/4				

# SPEAKERS

MANUFACTURER	Model	Price \$ (if sold individually)	Price \$ (if sold in Pairs)	Recommended Maximum Power, Watts/Channel	Sensitivity, dB SPL (1 Watt/1 Meter)	Impedance, Ohms	Frequency Response, Hz to kHz, ±dB	DRIVERS										Notes
								Subwoofer Only (S), Woofer Only (W), Midrange Only (M), Tweeter Only (T)	Woofer Size, Inches	Woofer (W) 2-Way (2), 3-Way (3), 4-Way (4)	Amph. Tweeters = A, Adjustable Tweeters = P	Separately Mountable Drivers?	Face Mount (F), Surface Mount (S), Convertible (C), Pass (P)	Maximum Required Mounting Depth, Inches	Weatherproofed?			
LAZER	LA20		25.00	60	89	4	800-20	T					F	1/2				
	LA50		35.00	40	92	6	500-21	T					F	1/2				
	LA75		39.00	50	90	6	500-20	T					F	1/2				
	LA100			80			500-22	T					F	7/8				
	LA350		49.00	60	89	4	400-8	M					F	1 3/4				
	LA400		59.00	80	97	4	50-10	M					F	2				
	LA500		59.00	100	95	4	400-7	M					F	2 1/4				
	LA525		69.00	100	97	4	50-8	M					F	3				
	LA648	60.00		80	89	4	40-7	W	6 1/2				F	4				
	LA848	70.00		100	94	4	20-1.5	W	8				F	4				
	LA1048	90.00		160	96.4	4	20-1.5	S	10				F	5				
	LA1248	110.00		160	97.5	4	19-900 Hz	S	12				F	5				
	LA1548	130.00		160	95.7	4	17-800 Hz	S	15				F	6				
	LA850	60.00		100	92	4	20-2	W	8				F	3 1/2				
	LA1050	80.00		200	95	4	20-1.5	W	10				F	4				
	LA1250	100.00		200	96	4	20-1.5	W	12				F	5				
	LA1550	120.00		250	96	4	20-1.5	W	15				F	6				
SPK208	225.00		100	92	4	20-20		8	2			S						
SPK210	275.00		200	95	4	20-20		10	2			S						
SPK212	350.00		200	96	4	20-20		12	2			S						
SPK215	400.00		250	96	4	20-20		15	2			S						
LINEAR POWER	2202 Servo	995.00	Sys. 1800.	220 Inc. 500			20-100 Hz	S	(4)8			Yes	F	3 3/4	No		Mono; includes feedback-servo amp. (See "Amps/Equalizers.")	
	5002 Servo	1800.00	Sys. 200.00	150			20-100 Hz	S	(2)12			Yes	F		No		As above.	
	BV-1	200.00		90	†		20-150 Hz	S	(2)8				F	10	No		†8 ohms in mono mode, 4 ohms in stereo. Two woofers fire through one 3 x 9-inch faceplate.	
MADISOUND	8154		99.00	75	89	8	30-2 ± 2	W	8			No	F	3 3/4	No			
	8 COAX		125.00	75	90	4	40-21 ± 2	S	8	2			F	3 3/4	No			
	10204D		175.00	†	90.4	†	30-1.5 ± 2	S	10				F	4 1/2	No		†Dual voice-coils, 100 watts and 4 ohms per coil.	
	10207D		175.00	†	90.4	†	30-1.5 ± 2	S	10				F	4 1/2	No		†Dual voice-coils, 100 watts and 8 ohms per coil.	
	12204D		190.00	†	90	†	25-1.5 ± 2	S	12				F	5	No		†Dual voice-coils, 100 watts and 4 ohms per coil.	
MAJESTIC	MAX8	70.00		100	96	4	40-3	S	8									
	MAX10	90.00		100	96	4	38-3	S	10									
	MAX12	100.00		100	96	4	36-3	S	12									
	MAX15	120.00		100	96	4	28-3	S	15									
	MS46P	70.00	40	88	4	100-20				2		No	P	1 1/2	Yes			
	MS410	40.00	25	89	4	80-20		4	W	2			F	1 1/2				
	MS450	50.00	25	89	4	80-20		4	W	2			F	1 3/4				
	MS525	55.00	30	90	4	60-20		5 1/4	W	2		No	F	1 1/2				
	MS610	60.00	40	90	4	50-20		6	W	2		No	F	2 1/4				
	MS930	80.00	60	92	4	48-20k		6 x 9	W	3		No	F	3 1/4				
	MCS3A	39.95	60	88	4	48-20k		6 1/2					F	1 1/2				
	MCS4	39.95	150	92	4	38-20k		8					F	1 1/2				
	MCS5A	49.95	100	90	4	500-10							F	2 3/4				
	MCS6A	49.95	100	92	4	60-10		6 1/2					F	3 1/4				
	MCS8A	49.95	100	92	4	20-2.5		8					F	3 1/2				
	MPS42SL	59.95	60	92	4	60-20		4	W	2		No	F	1 1/2	Yes			
	MPS52SL	59.95	60	92	4	60-20		5 1/4	W	2		No	F	1 3/4	Yes			
	MPS62SL	69.95	60	92	4	50-20		6	W	2		No	F	1 3/4	Yes			
	MPS692	89.95	125	92	4	40-20		6 x 9	W	2		No	F	4 1/4	Yes			
	MPS69	99.95	150	92	4	40-22		6 x 9	W	3		No	F	4 1/4	Yes			
	MS6510	39.95	30	90	4	40-20		6	W			No	F	1 5/8				
	MS6516	49.95	30	90	4	30-20		6	W	2		No	F	1 5/8	No			
	MS4123	49.95	35	90	4	50-20		4 x 10	W	3		No	F	2 3/8	No			
	MS265HE	24.95	20	98	4	60-18		6 1/2	W			No	F	2	No			
	MS269HE	49.95	25	98	4	60-18		6 x 9	W			No	F	3	No			
	MS4010	29.95	20	88	4	100-16		4	W			No	F	1 1/2	No			
	MS4012	29.95	30	88	4	50-18		4	W	2		No	F	1 1/8	No			
	MS355	19.95	10	88	4	120-16		3 1/2	W			No	F	1 1/2	No			
	MS4620	39.95	30	88	4	60-18		4 x 6	W	2		No	F	1 7/8	No			
	MS69120W	79.95	60	90	4	45-20		6 x 9	W	3		No	F	3 1/8	No			
	MS6566	79.95	40	88	4	45-20		6 x 9	W	3		No	F	3	No			
	MS530	49.95	50	90	4	80-21		3 1/2	W	3		No	S		No		Bass-reflex enclosure.	
	MS540	69.95	60	90	4	80-21		4	W	3		No	S		No		As above.	
MS560	99.95	100	90	4	60-20		4	W	3		No	S		No		As above; honeycomb woofer.		
MS590	149.95	150	90	4	60-24		4	W	4		No	S		No		As above.		
MS5100	49.95	25	88	4	80-18		3	W	3		No	S		No		Cabinet enclosure.		
MS5600	99.95	100	92	4	60-20		4	W	3		No	S		No		As above.		
MS5650WP	119.95	100	92	4	50-20		4	W	3		No	S		No				
MS570	129.95	125	92	4	65-20		5 1/4	W	4		No	S		Yes		For pickup trucks, vans, hatchbacks.		
MB QUART	QM 120KX		219.00	60	90	4	49-20		6 1/2			No	F, S	2 5/8	Yes			
	QM 130KX		249.00	50	90	4	49-32		5 1/4			No	F, S	2 3/4	Yes			
	QM 160KX		279.00	70	90	4	38-32		6 1/2			No	F, S	2 1/2	Yes			
	QM 210KX		479.00	90	90	4	35-32		8			No	F, S	3 1/4	Yes			
	QM 19HC		149.00	80	90	4	2.7k-32k	T					F, S	3 1/4	Yes			
	QM 25HC		299.00	100	90	4	2.6k-32k	T					F, S	3 1/4	Yes			
	QM 210TC		139.00	100	90	4	35-200 Hz	S	8				F, S	3 1/4	Yes			
	QM 250SUB		249.00	140	90	4	26-200 Hz	S	10				F, S	4 3/4	Yes			
	QM 215CX		319.00	50	90	4	49-32		5 1/4	2		Yes	F, S	2 5/8	Yes			
	QM 120CX		249.00	80	90	4	49-20		6 1/2	2		Yes	F, S	2 5/8	Yes			
	QM 215 Universal		319.00	50	90	4	45-32		5 1/4	2		Yes	F, S	2 5/8	Yes			
	QM 218 Universal		379.00	70	90	4	40-32		6 1/2	2		Yes	F, S	2 3/4	Yes			
	QM 215 Passat		319.00	50	90	4	48-32		5 1/4	2		Yes	F, S	2	Yes		For Volkswagen Passat.	
QM 130K/W 124		219.00	50	90	4	49-32		4 1/2	2		Yes	F, S	2	Yes		For dash of Mercedes 200 and 300 series 124 body type.		

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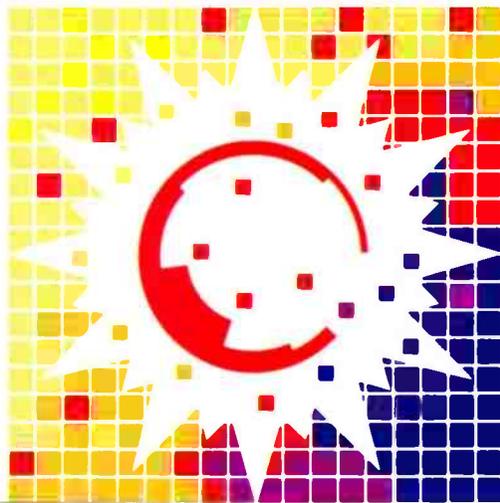






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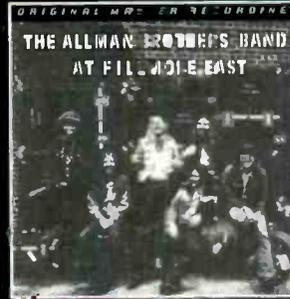
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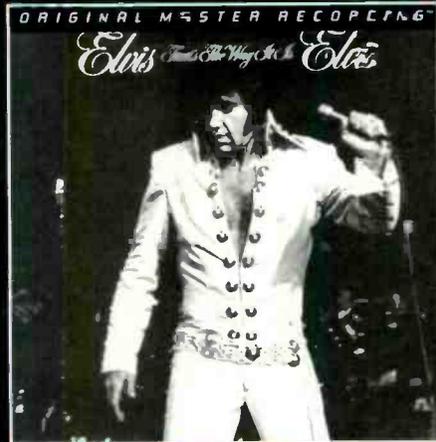


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MANUFACTURER	Model	Price, \$ (If Sold Individually)	Price, \$ (If Sold In Pairs)	Recommended Watts Channel	Sensitivity, dB SPL (1 Watt 1 Meter)	Impedance, Ohms	Frequency Response, Hz to kHz, ±dB	DRIVERS										Notes
								Subwoofer Dia. (D), Mounting Dia. (M), Tweeter Dia. (T)	Woofer Size, Inches	Wizzer (W), 3-Way (3), 4-Way (4)	Amplifier Tweeter(s) = A, Passive Tweeter(s) = P	Separately Mountable Drivers?	Flange Mount (F), Convenient (C), Plate (P)	Maximum Required Mounting Depth, Inches	Weatherproofed?			
PIONEER (Continued)	TS-X300	215.00	120	89	4	50-30	4x5 1/2	4	A	No	S			Yes				
	TS-X200	135.00	80	89	4	65-30	4	3	A	No	S							
	TS-X100	105.00	60	89	4	80-20	4	2	A	No	S							
	TS-66	48.00	40	90	4	180-18	5 1/4		A	No	S			Yes				
	TS-44	38.00	40	88	4	180-18	4		A	No	S			Yes				
	TS-879	65.00	40	88		90-20	3 1/2	2	A	No	F	1 1/2						
	TS-877	42.00	40	88		90-20	3 1/2		A	No	F	1 1/2						
	TS-1018	65.00	40	88	4	50-20	4	2	A	No	F	1 1/2		For GM, Ford, Chrysler, and VW cars. As above. For Toyotas, Mitsubishi's, and Plymouths.				
	TS-1250	80.00	50	91	4	60-20	5	2	A	No	F			Yes				
	TS-A1390	85.00	100	90	4	45-24	5 1/4	2	A	No	F							
	TS-469	82.00	40	89	4	50-20	4 x 6	3	A	No	F	1 1/2		For GM and VW cars. As above.				
	TS-468	72.00	40	89	4	50-20	4 x 6	2	A	No	F	1 1/2		As above.				
	TS-467	50.00	40	89	4	60-20	4 x 6	2	A	No	F	1 1/2		As above.				
	TS-A5705	120.00	120	90	4	40-24	5 x 7	3	A	No	F			Yes				
	TS-A5703	100.00	100	90	4	40-23	5 x 7	2	A	No	F			Yes				
	TS-MR165	200.00	120	90	4	35-21	6 1/2	2	A	No	F	4		Yes				
	TS-MR163	150.00	100	90	4	38-20	6 1/2		A	No	F	3 3/4		Yes				
	TS-W301C	100.00	400	93	4	18-3.5 ± 3	\$ 12					5 1/4		Yes	Sealed enclosure; free-air version, Model TS-W301F.			
	TS-W251C	85.00	300	91	4	18-4 ± 3	\$ 10					4 3/4		Yes	Sealed enclosure; free-air version, Model TS-W251F.			
	TS-W201C	70.00	250	91	4	20-6 ± 3	\$ 8					3 3/4		Yes	Sealed enclosure; free-air version, Model TS-W201F.			
	TS-W161	130.00	150	91	4	30-6 ± 3	M					2 1/2		Yes				
	TS-A1680	160.00	150	91	4	35-30 ± 3		6 1/2	3	A	No	F	2 1/2		Yes			
	TS-A1660	105.00	150	91	4	35-25 ± 3		6 1/2	2	A	No	F	2 1/2		Yes			
	TS-G1622	70.00	60	92	4	40-20 ± 3		6 1/2	2	A	No	F	1 1/2		Yes			
	TS-G1620	50.00	60	92	4	40-20 ± 3		6 1/2	W	A	No	F	1 1/2		Yes			
	TS-A4105	135.00	120	92	4	38-25 ± 3		4 x 10	3	A	No	F	3		Yes			
	TS-A4103	115.00	120	91	4	38-23		4 x 10	2	A	No	F	3		Yes			
	TS-A4605	120.00	50	89	4	45-30 ± 3		4 x 6	2	A	No	F	1 1/2		Yes			
	TS-G1022	65.00	40	91	4	50-20 ± 3		4 x 6	2	A	No	F	1 1/2		Yes			
	TS-G1020	43.00	40	90	4	50-16 ± 3		4	W	A	No	F	1 1/2		Yes			
TS-A1090	85.00	50	90	4	50-24		4	2	A	No	F	1 1/2		Yes				
TS-A1070	55.00	50	90	4	50-21		4	2	A	No	F	1 1/2		Yes				
TS-A1670	130.00	120	91	4	35-26		6 1/2	3	A	No	F			Yes				
TS-A1540	90.00	100	91	4	35-24		6 1/2	2	A	No	F			Yes				
POLK	C4	349.95	200	94	†	35-150 Hz	S (4)			No	S				†2, 4, or 8 ohms. Compound isobaric, bandpass enclosure.			
	MM 1225	199.00	300	90	4/8	20-750 Hz	S 12				F	4 3/4		Yes				
	MM 1200		79.90	75	92	4	3.5k-20k ± 3	T		P	S			Yes				
	MM 2200	119.90	75	92	4	1.75k-20k ± 3		2	A/P	Yes	F, S	1		Yes	Midrange and tweeter module.			
	MM 3000	179.90	100	92	4	2k-26k ± 3	T		A/P		F, S	1 1/2		Yes				
	MM 300	159.90	100	90	4	150-20 ± 3		3 1/2	2		P	1 1/2		Yes				
	MM 3500	54.90	50	89	4	120-17 ± 3		3 1/2	W		F	1 1/2		Yes				
	MM 4500	89.90	50	89	4	80-18 ± 3		4 1/2	W		F, S	1 1/2		Yes				
	MM 4510	99.90	50	88	4	60-3 ± 3		4 1/2	W		F, S	1 1/4		Yes				
	MM 4600	69.90	50	89	4	75-15 ± 3		4 x 6	W		F, S	2		Yes				
	MM 4620	119.90	50	90	4	120-20 ± 3		3 1/2	2		F	1 1/2		Yes	Fits GM vehicles. Fits 4 x 6-inch hole.			
	MM 5000	99.90	75	87	4	50-15 ± 3		5 1/4	W		F, S	1 1/2		Yes				
	MM 5510	119.90	100	89	4	40-3 ± 3		5 1/4	W		F, S	2 1/2		Yes				
	MM 5520	139.90	75	89	4	40-20 ± 3		5 1/4	2		F, S	2 1/2		Yes				
	MM 6510	139.90	100	90	4	35-2 ± 3		6 1/2	W		F, S	2 1/2		Yes				
	MM 6520	179.90	100	90	4	35-20 ± 3		6 1/2	2		F, S	2 1/2		Yes				
	MM 6930	229.90	100	89	4	34-20 ± 3		6 x 9	3		F, S	3		Yes				
MM 8002	150	90	4	30-1.5 ± 3		S 8												
MM 1025	200	90	4	20-1 ± 3		S 10												
MM 1245	179.90	50	88	4	60-20 ± 3		4 1/2	2	A/P	Yes	F, S	1 1/4		Yes	Tweeter level control.			
MM 1255	199.90	100	89	4	40-20 ± 3		5 1/4	2	A/P	Yes	F, S	2 1/2		Yes	As above.			
MM 2255	249.90	100	89	4	40-22 ± 3		5 1/4	3	A/P	Yes	F, S	2 1/2		Yes	As above.			
MM 2265	269.90	100	90	4	35-22 ± 3		6 1/2	3	A/P	Yes	F, S	2 1/2		Yes	As above.			
MM 3045	319.90	50	88	4	60-26 ± 3		4 1/2	2	A/P	Yes	F, S	1 1/4		Yes	External crossover with tweeter level control.			
MM 3055	349.95	100	89	4	40-26 ± 3		5 1/4	2	A/P	Yes	F, S	2 1/2		Yes	As above.			
MM 3065	369.95	100	90	4	35-26 ± 3		6 1/2	2	A/P	Yes	F, S	2 1/2		Yes	As above.			
MM 3080	499.90	150	89	4	30-26 ± 3		8	3	A/P	Yes	F, S	3 1/4		Yes	As above.			
POLYDAX	DT101	70.00	50	94	8	3.5k-27k	T				F	1						
	TWO25M1	75.00	50	92	8	5k-20k	T				F	1						
	TWO25A1	75.00	50	92	8	5k-20k	T				F	1						
	DW74C	35.00	60	93	8	4.5k-20k	T				F	3						
	HIF13JVX	99.99	30	87	4/8	42-5	W	5				F	2 1/2		Yes	For sealed enclosure. As above.		
	HIF17JVX	110.99	30	87	4/8	29-5	W	6 1/2				F	3 1/4		Yes			
	TIW60A	29.99	40	91	4/8	5k-20k	T					F	3/4					
DTW 100 Ti-25 BACAV FFFG	79.99	40	88	4/8	1.5k-20k	T					F	1 1/4						
PREDATOR	PFA-64	59.99	65	89	4	50-5	W 6 1/2				F, S	3		Yes				
	PFA-84	79.99	80	90	4	45-5	W 8				F, S	3 3/4		Yes				
	PFA-104	94.99	100	90	4	40-3	S 10				F, S	4 1/2		Yes				
	PFA-124	112.99	125	91	4	35-2	S 12				F, S	5		Yes				
	PFA-154	139.99	150	92	4	30-2	S 15				F, S	6 3/4		Yes				
PREMIER	TS-W400	300.00	500	96	4	15-3	S 16				F	5						
	TS-903	140.00	120	93		30-26	6 x 9	3	A	No	F	2 1/4						
	TS-902	100.00	100	92		35-23	6 x 9	2	A	No	F	2 1/4						
	TS-603	130.00	120	91	4	35-26	6 1/2	3	A	No	F	2 1/2		Yes				
	TS-602	90.00	100	91	4	35-24	6 1/2	2	A	No	F	1 1/2		Yes				





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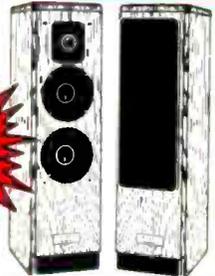
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Atlantic Technology 200 \$995	Memorex AV8 \$69.95	SSI 4000 \$399
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# SPEAKERS

MANUFACTURER	Model	DRIVERS										Notes				
		Price \$ (If Sold Individually)	Price \$ (If Sold in Pairs)	Recommended Maximum Power, Watts Channel	Sensitivity, dB SPL (1 Watt/1 Meter)	Impedance, Ohms	Frequency Response, Hz to kHz, ± dB	Subwoofer Dia. (S) / Woofer Dia. (W) / Midrange Dia. (M) / Tweeter Dia. (T)	Woofer Size, Inches	Woofer (W), 2-Way (T) / 3-Way (S)	Amplified Tweeter (A) / Adjustable Tweeter (P) = P		Separately Mountable Drivers?	Flush Mount (F) / Surface Mount (S) / Convertible (C), Pole (P)	Maximum Required Mounting Depth, Inches	Weatherproofed?
ROCKFORD FOSGATE (Continued)	S1-104/108	79.00		100	91	4/8	35-3	S	10				C	4	Yes	
	S1-84/88	69.00		100	90	4/8	40-2	W	8			C	4	Yes		
	SPPR-64/68	49.00		70	89	4/8	46-5	W	8			C	3	Yes		
	PRD-184/188	555.00		400	95.4	4/8	27-2.5	S	18			C	7 1/4	Yes		
	PRD-154/158	408.00		400	93.5	4/8	30-3.5	S	15			C	6 3/4	Yes		
	PRD-124/128	387.00		400	92.5	4/8	31-2.5	S	12			C	5 3/4	Yes		
	PRD-104/108	252.00		200	92	4/8		S	10			C	4 1/4	Yes		
	PRD-84/88	205.00		200	90	4/8		W	8			C	4	Yes		
	PCH-184/188	272.00		200	94	4/8	22-3	S	18			F	7 1/4	Yes		
	PCH-154/158	188.00		200	92.4	4/8	25-2	S	15			C	6 1/4	Yes		
PCH-124/128	167.00		200	90	4/8	32-4	S	12			C	5	Yes			
PCH-104/108	135.00		150	92	4/8	38-4	W	10			C	4 1/4	Yes			
ROCKSTAR	RST-693HF	39.00	50	93.5	4	60-20	S	6 x 9	3	P	No	F	Yes			
	RST-525HF	28.00	50	93.5	4	60-20	S	5 1/4	3	P	No	F	Yes			
	RST-693MX	37.00	50	93.5	4	50-20	S	6 x 9	3	A	No	F	No			
	RST-4747	45.00	60	93.5	4	50-20	S	5	4	P	No	S	No		Box enclosure.	
SANYO	HD451	29.99	60	89	4	50-20	S	4	W		No	F	1 1/4	Yes		
	HD452A	39.99	60	90	4	50-20	S	2	2		No	F	1 1/4	Yes		
	HD651	39.99	60	91	4	45-20	S	6 1/2	W		No	F	1 1/4	Yes		
	HD953	89.99	150	93	4	40-20	S	6 x 9	3		No	F	3 1/4	Yes		
	HD152	99.99	75	90	4	70-20	S	5	2		No	S		Yes	Bass-reflex enclosure.	
	HD652	54.99	100	92	4	45-20	S	6 1/2	4		No	S	1 1/4	Yes		
SP420	34.99	60	90	4	80-20 ±3	S	4	2		Yes	F	1 1/2	Yes			
SAS/BAZOOKA	T52	239.00	209.00	50	97	4	39-5 ±3	S	5			S		Yes	Bass Tube.	
	T16			100	100	4/8	39-1.5	S	6 1/2			S		Yes	As above.	
	T82		239.00	100	100	4/8	39-1.5	S	6 1/2			S		Yes	As above.	
	T18	329.00		150	102	4/8	39-1.5 ±3	S	8			S		Yes	As above.	
	T82		329.00	150	102	4/8	39-1.5 ±3	S	8			S		Yes	As above.	
	T62A	339.00		40	100	4	39-250 Hz ±3	S	6 1/2			S		Yes	Powered mono subwoofer; variable crossover frequency; bass-reflex enclosure.	
	T62S	129.00		100	100	4	39-1.5	S	6 1/2			S		Yes	Slave unit for model above.	
	T82A	379.00		40	102	4	39-250 Hz ±3	S	8			S		Yes	Powered mono subwoofer; variable crossover frequency; bass-reflex enclosure.	
SAS/BAZOOKA	T82S	169.00		150	102	4	39-1.5 ±3	S	8			S		Yes	Slave unit for model above.	
	T102A	449.00		40	104	4	39-250 Hz	S	10			S		Yes	Powered mono subwoofer; variable crossover frequency; bass-reflex enclosure.	
	T102	229.00		200	104	4/8	39-1 ±3	S	10			S		Yes	Bass Tube; usable as slave unit for model above.	
SAS/ EUPHONIC SERIES	400R	329.00			4			4	2	A/P	Yes	C		Yes		
	650R	379.00			4			6 1/2	2	A/P	Yes	C		Yes		
	525R	349.00	100	87	4	70-20 ±3		5 1/4	2	A/P	Yes	C	2	Yes		
SAVARO	Challenger 1505	1010.		92	2	25-30 ±3		(4)15	3		No				Box enclosure; biamp capable.	
	Challenger 1201	799.95		99	2	25-30 ±3		(4)12	3		No				As above.	
	Hatchback 1508	689.95		250	4	30-30 ±3		(2)15	3		No				As above.	
	Hatchback 1204	499.95		300	99	4	30-30 ±3		(2)12	3	No				Box enclosure.	
	Hatchback 806	379.95		200	98	4	38-30 ±3		(2)8	2	No				As above.	
	Split		459.95	200	99	4	36-30 ±3		(2)10	2		No			Separate enclosure for each channel; for trucks.	
	Street Beat 1005														As above.	
	Split		359.95	200	98	4	38-30 ±3		(2)8	2		No			As above.	
	Street Beat 805															
	Dual 8" Coupler	329.95		200	98	4	38-350 Hz	W	(2)8						Bass tubes; includes crossover.	
	Dual 12" Coupler	399.95		400	99	4	30-350 Hz	W	(2)12						As above.	
	FTC 1205	539.95		300	99	4	30-30 ±3		(2)12	3		No			Enclosure; for Camaros.	
	SJT 12	539.95		300	99	4	30-30 ±3		(2)12	3		No			Box enclosure; for Jeeps and Trackers.	
	Street Beat 1507	619.95		250	92	4	30-30 ±3		(2)15	3		No			Enclosure; for trucks.	
	Street Beat 1209	509.95		300	99	4	35-30 ±3		(2)12	3		No			As above.	
	Split		519.95	200	99	4	36-30 ±3		(2)12	3		No			Separate enclosure for each channel; for trucks.	
	Street Beat 1204															
	RAP 18					4/8			18				F			
	HF 20 Kit	89.95		85	98	4	3k-23k ±3	T			P		C	3 1/2		Kit.
	HF 25	89.95		95	94	4	3k-23k ±3	T			P		F	3 1/4		
	MR 5	89.95		90	94	4	600-6 ±3	M					F	2 1/2		Sealed-back midrange.
	MB 5	59.95		40	90	4	60-5 ±3	M					F	2 1/4		
MB 6	69.95		100	96	4	40-5 ±3	M					F	2 3/4			
MB 10	99.95		250	99	4	35-4 ±3	M					F	4 1/2			
CDAX 4	139.95		45	90	4	55-20 ±3		4		Yes		F				
CDAX 5	159.95		50	92	4	48-20 ±3		5 1/4		Yes		F				
MST 10	39.95		150	95	4			T				F	1/2		For off-axis use.	
PRD 18"	279.95		1k	98	4/8	20-400 Hz ±3	W	18				F	8			
RAP 8"	89.95		240	90	4	37-1.3 ±3	W	8				F	3 1/2			
RAP 10"	99.95		340	91	4/8	32-1.3 ±3	W	10				F	4			
RAP 12"	129.95		400	92	4/8	28-1.2 ±3	W	12				F	4 1/2			
RAP 15"	149.95		500	92	†	25-1 ±3	W	15				F	6			
PRD 8"	89.95		300	98	4/8	30-3 ±3	W	8				F	3 1/2			
PRD 10"	109.95		500	99	4/8	27-3 ±3	W	10				F	4 1/2			
PRD 12"	119.95		500	99	†	25-3 ±3	W	12				F	5			
PRD 15"	149.95		500	98	†	25-3 ±3	W	15				F	6 1/2			
PRD 15" ISD	179.95		500	98	†	25-3 ±3	W	15				F	6 1/2			
SENNET CONCEPTS  (Continued)	SC4	80.00	80	89	4	80-21 ±3		4	2		No	S		Yes	Enclosure.	
	SC46	60.00	60	89	4	85-20 ±3		3 1/2	2		No	P	1 1/4	Yes		
	SC940	60.00	80	89	4	70-21 ±3		4	2		No	F, S	1 1/4	Yes		
	SC950	75.00	100	90	4	50-21 ±3		5	2		No	F, S	1 1/4	Yes		
	SC969	125.00	100	92	4	35-21 ±3		6 x 9	3		No	F, S	2 1/4	Yes		

# SPEAKERS

MANUFACTURER	Model	Price, \$ (if sold individually)	Price, \$ (if sold in pairs)	Recommended Maximum Power, Watts Channel	Sensitivity, dB SPL (1 Watt/1 Meter)	Impedance, Ohms	Frequency Response, Hz to kHz, ±dB	DRIVERS										Notes	
								Subwoofer Only (S)	Midrange Only (M)	Tweeter Only (T)	Woofer Size, inches	Woofer (W)	2-Way (2)	3-Way (3)	4-Way (4)	Available Tweeters = P	Separately Mountable Drivers?		Flush Mount (F)
SENNET CONCEPTS (Continued)	SC80	120.00	100 Inc.	95		20-250 Hz ±3	S	8							S		Yes	Powered subwoofer; tube enclosure; includes frequency-adjustable crossover. As above.	
	SC65	90.00	80 Inc.	91		35-250 Hz ±3	S	6½							S		Yes	As above.	
	SC8	80.00	100	92	4	20-250 Hz ±3	S	8							S		Yes	Tube enclosure; dual voice-coils.	
SENTREK	SBT 650	149.95	50 Inc.	90	4	50-250 Hz	S	6¼										Powered mono subwoofer; tube enclosure; low-pass filter adjustable from 100 to 350 Hz.	
	SBT 810	149.95	(2) 50 Inc.	90	4	25-250 Hz	S	8										Powered stereo subwoofer; tube enclosure; low-pass filter adjustable from 50 to 250 Hz.	
	SW 15	89.95	300	95	4 8	25-3	S	15							F	6	No	Dual-impedance voice-coil.	
	SW 12	69.95	250	93	4 8	25-3	S	12							F	5	No	As above.	
	SW 10	49.95	200	92	4 8	30-3	S	10							F	4	No	As above.	
	SW 8	39.95	150	92	4 8	35-3	S	8							F	4	No	As above.	
	SW 6	29.95	100	92	4 8	55-10	S	6½							F	2¼	No	As above.	
	SW 5	19.95	80	90	4 8	65-12	M								F	2	No	As above.	
	SH 22		49.95	60	90	4	20-22								F, S		No	Midrange and tweeter.	
	SH 18		69.95	100	89	4	400-22								P	1½	No	Midrange and tweeter on 4 x 6-inch plate.	
	SH 12		42.95	75	90	4	2k-22k	T							S		No		
	SH 8	9.95	60	91	4	6k-22k	T								S	½	No		
	SC 585	109.95	120	90	4	35-22 ±3			4 x 5½	3					S		No		
	SC 485	84.95	100	89	4	40-22 ±3			4	3					S		No	Honeycomb woofer.	
	SC 385	59.95	60	88	4	50-21 ±3			3	3					S		No		
	SC 200	64.95	80	88	4	50-20 ±3			4	3					S		No		
	SR 698	69.95	100	93	4	40-20 ±3			6 x 9	3					F	3	No		
	SR 621	54.95	60	91	4	60-20 ±3			6½	3					F	2	No		
	SR 620	44.95	60	91	4	60-19 ±3			6½	2					F	2	No		
	SR 106	69.95	100	92	4	50-20 ±3			4 x 10	3					F	2½	No		
	SR 518	42.95	60	90	4	60-18 ±3			5¼	2					F	1½	No		
	SR 467	39.95	40	90	4	65-18 ±3			4 x 6	2					F	1½	No		
	SR 419	39.95	40	90	4	70-18 ±3			4	2					F	1½	No		
	SR 418	24.95	40	88	4	70-16 ±3			4	W					F	1½	No		
	SR 314	19.95	40	88	4	90-15 ±3			3½	W					F	1½	No		
	STS 35	134.95	125	90	4	65-20 ±3			5¼	3					S		No	For trucks.	
	SHERWOOD	SX-6M	110.00	110	89	4	35-10		6½						F				
		SX-5M	90.00	85	90	4	40-12	M							F				
		SX-2T	100.00	100	93	4	1.5k-23k	T							F, S				
		SX-1T	80.00	60	93	4	3k-23k	T							S				
SX-30		45.00	45	91	4	65-20		3½	W						S		Yes		
SX-42		75.00	80	91	4	50-22		4	2					No	S		Yes	Biamp capable.	
SX-52		85.00	100	91	4	45-22		5	2					No	S		Yes	As above.	
SX-62		100.00	120	92	4	40-22		6	2					No	S		Yes	As above.	
SX-93		150.00	150	93	4	35-22		6 x 9	3					No	S		Yes	As above.	
SX-10S		180.00	450	95	4	25-3	S	10						S		Yes	Requires sealed or ported enclosure.		
SX-12S	250.00	500	96	4	20-3	S	12						S		Yes	As above.			
SONY	XS-1012	60.00	50	89	4	50-20		4½	W					F	1¼				
	XS-3012	60.00	60	90	4	40-20		5¼	W					F	1½				
	XS-6012	65.00	60	91	4	40-20		6½	W					F	2				
	XS-6911	75.00	60	91	4	30-20		6 x 9	W					F	2¼				
	XS-33	45.00	35	88	4	70-20		3½	W					F	1½				
	XS-E85	95.00	40	88	4	70-20		3½	W					F	1½				
	XS-44	110.00	35	88	4	55-20		4½	2					No	F	1½		For Audi and Mercedes vehicles.	
	XS-4622	110.00	45	89	4	50-20		4 x 6	2					No	F	1½			
	XS-PL46	155.00	80	91	4	50-22		4 x 6	2					No	F	1½			
	XS-628	120.00	80	89	4	40-21		6½	2					No	F	1½			
	XS-616	100.00	60	90	4	40-20		6½	2					No	F	2	Yes	For Mazda, Ford, and Nissan vehicles.	
	XS-1022	100.00	60	90	4	45-24		4½	2					F	1½	Yes	For marine use.		
	XS-3022	110.00	70	90	4	45-24		5¼	2					F	1½	Yes			
	XS-6024	110.00	120	91	4	35-20		6½	2					F	1½				
	XS-6025	120.00	160	91	4	40-22		6½	2					F	1½				
	XS-6920Mk2	100.00	140	91	4	35-20		6 x 9	2					F	2½	Yes			
	XS-6930Mk2	130.00	160	92	4	30-30		6 x 9	3					No	F	2½	Yes		
	XS-8031	200.00	180	93	4	20-26		8	3					No	F	3½	No	Fits 6 x 9-inch holes.	
	XS-1051	155.00	60	88	4	45-25		4	3					No	F	1½	Yes		
	XS-3051	170.00	75	88	4	38-25		5¼	2					No	F	1½	Yes		
	XS-6051	240.00	130	88	4	35-25		6½	2					No	F	2¼	Yes		
	XS-6951	240.00	140	90	4	28-25		6 x 9	3					No	F	3	Yes		
	XS-HL25	145.00	100	90	4	45-21		5¼	2					Yes	F, S	1½	Yes		
	XS-HL26	175.00	120	90	4	40-21		6½	2					Yes	F, S	2½	Yes		
	XS-HL35	215.00	120	88	4	35-25		5¼	2					Yes	F, S	2½	Yes		
	XS-HL36	230.00	120	89	4	35-25		6½	2					Yes	F, S	2½	Yes		
	XS-HL45	280.00	120	89	4	35-25		5¼	2					Yes	F, S	2½	Yes		
	XS-PL45	220.00	120	88	4	40-25		5¼	2					Yes	F, S	2½	Yes		
	XS-H05	120.00	150	89	4	5k-30k	T							No	P	2	Yes		
	XS-H4	110.00	100	89	4	3k-25k	T							S					
XS-H5	145.00	100	88	4	3k-22k	T							S						
XS-H6	170.00	150	88	4	3k-30k	T							S						
XS-R1	250.00	100	88	4	5k-40k	T							S						
XS-M4Mk2	130.00	120	87	4	80-10	M							F						
XS-LSMk2	140.00	120	88	4	40-8	M		6½					F	1	2¼				
XS-L6Mk2	160.00	120	89	4	35-7	W		8					F		2¼				
XS-L80C	90.00	250	89	4	25-2	S		8					F		3½				
XS-L100C	145.00	300	90	4	20-2	S		10					F		4½				
XS-L300	340.00	300	94	4	18-3	S		12					F		5½				
SOUND BARRIER (Continued)	VR-1000	198.00	150	4		30-22		6 x 9	3	P		No	S		No	No			
	VR-X800	100.00	150	4		30-22		6 x 9	4	P		No	S		No	No			
	VR-X700	78.00	70	4		30-22		6 x 9	3	P		No	S		No	No			

# WIRELESS SPEAKERS

Breakthrough speaker technology sends music wirelessly throughout your home!

## TECHNOLOGICAL BREAKTHROUGH

**M**usic lover's dream! If you're a music lover you've probably considered running a maze of speaker wires all over your house or dragging your speakers from room to room so you could listen to your stereo in your living room, den, bedroom or patio. Frustrated?

In 1991, an electronics company called **Datawave** introduced their line of wireless speakers at the **Consumer Electronics Show**, turning the heads of some of the largest manufacturers in the world.

**These wireless speakers have been touted as "one of the most exciting new products of the 90's."**

Imagine listening to music anywhere in your home or outdoors without miles of speaker wire. You could listen to any component of your stereo system (CDs, records, tapes, AM/FM stereo,... etc.) throughout your home. Like the speakers of your dreams, they have their own built-in amplifier, so you can switch them on and off and control the volume independently at each speaker. These self-amplified speakers cannot be blown out, regardless of your stereo's wattage.

"Our TV and stereo are in the same room and my husband and kids were always fighting before we got the Datawave speakers. Thanks for bringing peace to our family!"  
D. Lance, Madison, WI

## PATENTED DESIGN

The heart of Datawave's breakthrough design is a patented FM technology which broadcasts music wirelessly from a small transmitter to satellite speakers. **The transmitter, about the size of a paperback book, sends the music through walls, floors, and ceilings to the speakers** and simply plugs into a headphone, audio-out or tape-out jack on your stereo, VCR or TV.



WS7 SPEAKER

Now for the big question—How do they sound? These speakers sound great, with deep, rich bass and crystal clear highs. You see, these speakers operate on two selectable frequencies, insuring static-free transmission throughout your home. The speakers are self-powered, with a 150 ft. range through walls, providing total coverage in even the largest homes. These wireless speakers will belt out as much volume as you'll ever need to fill your rooms with music. They even have an amazing built-in detection circuit which automatically cuts them off when you turn off your stereo.

## MUSIC ANYWHERE

**You can operate as many speakers as you like on one transmitter.** In addition, you can utilize one transmitter to mix both left and right channels on each speaker or use two transmitters with as many pairs of speakers as you want to get full stereo separation.

So place one speaker or more in a room or one speaker in every room of the house—the possibilities are limitless!

**All of these wireless speakers are compatible, using the same transmitter, so you can mix and match**

**them to fill your home with music.** So listen to your stereo where you want, and take advantage of the following assortment of innovative wireless speakers.

- **WS7, our classic wireless speaker**, available in either black or white in an attractive, water-resistant enclosure. Designed with a 360 degree sound pattern to blanket a room with clear, crisp music. Operates on 4 C-batteries, which will power the speakers for about three months, or on an optional AC adapter.

- **WSH-7, our wireless shower speaker.** Listen to news or sports programs while in the shower or sing along to your favorite music. This speaker is hung directly from the shower head and is fully waterproof.

- **WRS10, a wireless speaker mounted in a rock-like enclosure.** The **rock speaker** is an ultra-realistic reinforced fiberglass boulder that contains a state of the art FM receiver and weatherproof speaker. The downward firing speaker and acoustic enclosure are designed to resonate and enhance the bass. Designed for



patio, garden, and pool areas, it blends in completely with your surroundings.

"I'm not a gadget guy, but these speakers amazed me. They're not only wireless, but sound great too!" M. Thompson, San Diego, CA

- **WH200, a wireless headphone** that allows you to enjoy private TV sound or music anywhere in or around your home.



"I have a great sound system in my family room, but I'm not always in that room. Now I can listen to my favorite CDs anywhere in my home even on the patio." J. Randal, Reading, PA

## EXCLUSIVE OFFER

For a limited time, we are offering the Datawave line of wireless products directly to consumers **far below retail price! This offer will not be made available in stores!**

Convinced? We think you'll be so amazed and pleased by these technological marvels that we back them up with a **30 day risk-free trial offer.** On top of that, these speakers carry a full one year manufacturer's warranty. When ordering, please mention promotional code **AU1101.**

**Call Toll Free 24 Hours a Day. 800-992-2966**



Item#	Description	Price	S&H
WS7	spkr with transmitter	\$99	\$6
WS7A	extra speaker	69	6
WRS10	rock spkr + trans	159	8
WRS10A	extra rock spkr	129	8
WSH-7	shower spkr + trans	129	6
WSH-7A	extra shower spkr	99	6
WH200	headphone + trans	69	6
WH200A	extra headphone	39	4

To order by mail send a check or money order for the total amount including the S&H, or enclose your credit card # and exp. date.

Please include your name, address, and phone # (VA add 4.5% sales tax). Send to:

**COMTRAD MARKET NETWORK**

2820 Waterford Lake Dr., Suite 106  
Midlothian, Virginia 23113

# SPEAKERS

MANUFACTURER	Model	Price, \$ (If Sold Individually)	Price, \$ (If Sold in Pairs)	Recommended Maximum Power, Watts Channel	Sensitivity, dB SPL (1 Watt, 1 Meter)	Impedance, Ohms	Frequency Response, Hz to kHz, ±dB	DRIVERS										Notes
								Subwoofer Only (S) Minimum Only (M) Maximum Only (W)	Woofer Size, Inches	Woofer (W), 2-Way (2) 3-Way (3), 4-Way (4)	Angle Tweeter(s) = A, Available Tweeter(s) = P	Separately Mountable Drivers?	Flange Mount (F), Surface Mount (S), Conventional (C), Plate (P)	Maximum Required Mounting Depth, Inches	Weatherproofed?			
SOUND BARRIER (Continued)	VR-X600	62.00	75	4	40-22		6 1/2	3	W	P	No	S		No	No			
	VR-X500	46.00	60	4	40-20		6 1/2	3	W	P	No	S		No	No			
	VR-X400	54.00	55	4	45-22		5 1/4	3	W	P	No	S		No	No			
	VR-350	52.00	60	4			4 x 6	3	W	P	No	S		No	No			
	VR-X300	40.00	45	4	40-20		5 1/4	3	W	P	No	S		No	No			
	VR-X200	46.00	45	4	50-22		4	3	W	P	No	S		No	No			
	VR-X100	32.00	35	4	50-20		4	3	W	P	No	S		No	No			
	AR-909	106.00	125	4	30-22		6 x 9	3	W	P	No	S		No	No			
	AR-606	72.00	75	4	40-22		6 1/2	3	W	P	No	S		No	No			
	AR-505	48.00	60	4	40-20		6 1/2	3	W	P	No	S		No	No			
	AR-404	58.00	40	4	50-22		5 1/4	2	W	P	No	S		No	No			
	AR-303	42.00	35	4	70-20		5 1/4	2	W	P	No	S		No	No			
	AR-202	46.00	35	4	50-20		4	2	W	P	No	S		No	No			
	AR-101	34.00	30	4	80-20		4	2	W	P	No	S		No	No			
	SR-360	58.00	60	4			6 1/2	3	W	P	No	S		1 1/2	No			
	SR-320	42.00	40	4			5	3	W	P	No	S		1 1/2	No			
	SR-160	40.00	50	4			6 1/2	3	W	P	No	S		1 1/2	No			
	SR-120	30.00	30	4			5	3	W	P	No	S		1 1/2	No			
SOUNDSTREAM	NT-1	190.00	70	90	4	2.5k-20k	T			A/P		C	1/2	Yes				
	SS4.0	115.00	50	90	4	70-18 ±3		4	W			S	2 1/4	Yes				
	SS5.0	130.00	70	90	4	55-6 ±3	W	5				F	2 1/4	Yes				
	SS510	319.00	70	90	4	55-20 ±3		5	2	A	Yes	F	2 1/4	Yes				
	SS511	419.00	70	89	4	50-20 ±3		5	2		Yes	F	2 1/4	Yes				
	SS8		200	90	4	37-500 Hz ±3	S	8				F	3 1/2	Yes				
	SS10	230.00	250	91	4	32-500 Hz ±3	S	10				F, S	3 7/8	Yes				
	SS12	290.00	300	94	4	26-500 Hz ±3	S	12				F, S	4 3/4	Yes				
	SS15	550.00	1k	98	4	30-500 Hz ±3	S	15				F, S	6 3/4	Yes				
	SS18	795.00	1k	97	4	20-500 Hz ±3	S	18				F, S	8	Yes				
	Granite 8	105.00	100	90	4	40-500 Hz ±3	S	8				F, S		Yes				
	Granite 10	155.00	200	93	4	37-500 Hz ±3	S	10				F, S	4 1/2	Yes				
Granite 12	200.00	250	96	4	33-500 Hz ±3	S	12				F, S	5 1/8	Yes					
Granite 15	250.00	200	92	4	20-500 Hz	S	15				F, S	6 5/8	Yes					
SPARKOMATIC	SK42	49.99	50	89	4	80-20 ±3		4	2		No	F		Yes				
	8525	39.99	50	90	4	50-21 ±3		5 1/4	2		No	F	1 3/4	Yes				
	STW800	79.99	Inc.	92		30-250 Hz ±3	S	8			No	S		Yes				
	STW650	69.99	Inc.	92		35-250 Hz ±3	S	6 1/2			No	S		Yes				
	9440	89.99	40	90	4	60-20 ±3		4	3		No	S		Yes				
	8690	57.99	70	93	4	40-20 ±3		6 x 9	3		No	S	3 3/4	Yes				
	8650	44.99	60	91	4	60-20 ±3		6 1/2	2		No	F	2 1/4	Yes				
	8400	29.99	40	89	4	80-20 ±3		5	2		No	F	1 3/4	Yes				
	SK693	34.99	160	95.3	4	30-17 ±3		6 x 9	3		No	F	3 1/2	Yes				
	SK692	27.99	100	96.6	4	30-15 ±3		6 x 9	2		No	F	1 3/4	Yes				
	SK63	32.99	120	90	4	60-16 ±3		6	3		No	F	2 3/8	Yes				
	SK415	34.99	80	86	8	90-15 ±3		4	W		No	S		Yes				
SK410	29.99	80	86	4	90-15 ±3		4	W		No	S		Yes					
SK400	27.99	80	86	4	90-15 ±3		4	W		No	F	1 3/4	Yes					
SK300	19.99	80	86	4	90-15 ±3		3 1/2	W		No	F	1 1/2	Yes					
9690	89.99	80	92	4	35-21 ±3		6 x 9	3		No	F	3	Yes					
9525	44.99	80	89	4	50-21 ±3		5	2		No	F	1 1/2	Yes					
9400	39.99	60	89	4	70-21 ±3		4	2		No	F	1 1/2	Yes					
SPECO	SK5110CP		69.95	40	90	8	70-18		5 1/4	2		No	F	2 1/2	Yes			
	A5110CPP	33.95	20	90	8	70-18		5 1/4	2		No	S	2 1/2	Yes				
	W5CF3		19.95	10	90	4	75-10		5		No	S		No				
	G860APP	89.95	100	90	4 8	30-3	W	8			No	F	3 3/4	Yes				
	G1060APP	99.50	125	90	4 8	25-3	W	10			No	F	4 3/8	Yes				
	G1260APP	109.50	150	90	4 8	25-3	W	12			No	F	4 7/8	Yes				
G1580APP	169.95	200	90	4 8	20-3	W	15			No	F	5 1/4	Yes					
SPL	ODKD	129.99	150	95	8	1.5k-18k	T			P		F, S	1 3/4	Yes				
	HT-1	49.99	80	96	8	3.5k-18k	T			P		F, S	2 1/8	Yes				
	BT-1	99.99	80	104	8	4k-22k	T			P		F, S	3	Yes				
	PMR	299.99	300	104	8	200-6	M			P		F, S	2 3/4	Yes				
	SPL-205	51.99	120	92	4	50-2	M			P		F, S	2 3/4	Yes				
	SPL-306	75.99	180	97	4	42-6	W			P		F, S	3	Yes				
	SPL-708	139.99	250	95	4	40-3.5	W			P		F, S	3 7/8	Yes				
	SPL-8010	239.99	1k	98	4	25-3	S			P		F, S	4 3/8	Yes				
	SPL-8012	259.99	1.6k	100	4	20-3	S			P		F, S	5 1/8	Yes				
	SPL-16012	299.99	1.6k	100	4	25-3	S			P		F, S	5 3/4	Yes				
	SPL-16015	319.99	1.6k	100	4	18-2.5	S			P		F, S	7	Yes				
	STANFORD ACOUSTICS	18CS00DS	399.95	1.2k	99	4 8	24-900 Hz	S	18				F	12				
15C300		229.95	900	98	4 8	23-1	S	15				F	6 1/2					
12C300DS		269.95	900	98	4 8	27-2	S	12				F	6 1/2					
12C300		199.95	900	96	4 8	28-2	S	12				F	5 7/8					
10C200		139.95	600	97	4 8	21-3	S	10				F	4 1/2					
15S200		129.95	600	96	4 8	25-2.5	S	15				F	6 1/8					
12S200		99.95	600	96	4 8	27-2.5	S	12				F	5 3/4					
10S150		89.95	450	96	4 8	38-3	S	10				F	4 3/8					
8S100		59.95	300	96	4 8	28-3.2	S	8				F	3 1/2					
15S200C		259.95	600	96	4 8	25-2.5	S	15				F	6 1/8					
12S200C		219.95	600	96	4 8	27-2.5	S	12				F	5 3/8					
10S150C		179.95	450	96	4 8	38-3	S	10				F	4 3/8					
8S100C	119.95	300	96	4 8	28-3.2	S	8				F	3 1/2						

# We Sell For Less!

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# WDS

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## If You Don't See It, Ask Us! We Probably Have It!

Due to manufacturers restrictions, we carry many items that we do not list here! Please call for pricing and product information on our complete inventory of car and home stereo, video and camcorders.

### STEREO RECEIVERS



**JVC RX-507** ..... **Special**

New for '92, 80 watts, digital delay, 7 band EQ.

**JVC RX-307** ..... Call

New for '92, 80 watts, 40 presets, 0.03% THD.

**JVC RX-807** ..... Call

New for '92, 120 watts, Dolby Pro Logic, digital delay  
69 key remote with power on/off

### MINI COMPONENT SYSTEMS



**JVC UX-1** ..... **\$439**

Micro system, programmable CD, hyper-bass, 30 presets, 2 way bass reflex speakers

**Denon G-05** ..... In Stock

36 wts/channel, Tuner with 12 presets, Dolby B, music search

**Panasonic SC-CH7** ..... Special

20 watts/channel, CD with 20 track programming, Dolby B/C, tri-chamber bass, 2 way speakers

**Yamaha YST-C11** ..... \$679

CD player, dual auto-reverse cassette deck, 4 band EQ, 2 way ported speakers, tuner with 10 presets

### CASSETTE DECKS



**Aiwa AD-WX77** ..... **\$177**

Dual well, Dolby B/C, fine bias control, full logic

**JVC TDV541TN** ..... \$244

3 head, full logic, Dolby B/C/Hx Pro, MPX

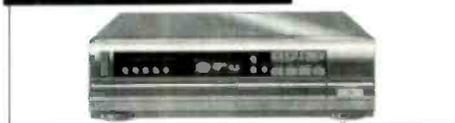
**JVC TDW307** ..... Call

Titanium finish, twin A/R, full logic, continuous play

**Teac V390 CHX** ..... \$99

Center mount mechanism, Auto tape selector

### CD PLAYERS



**Magnavox CDC-552** ..... **\$184**

5 disc changer, 16 bit, 20 track programming, can change 4 during play!

**Teac PDD-700** ..... \$199

5 disc carousel, 18 bit, 8X, multi-function remote

**Sherwood CD 1000** ..... \$99

4X, fully programmable!

**JVC XLM 407** ..... Call

6 + 1 CD Changer, music calendar, random play, remote

### INTRODUCING COMPUTERS!

#### 486SX Complete System!

- 486SX20 MHz
- 4MB Memory
- 100MB hard drive
- 3.5" & 5.25" Floppies
- 1024 x 768 512K video
- 28 VGA color monitor
- Two button mouse
- MS Windows/PFS Window Works



**\$1999**

**386SX/100MB Computer** ..... \$999

**Panasonic KXP1123** 24pin printer ..... Call!

**Panasonic KXP1624** 24pin wide printer ... Call!

**Panasonic KXP4420** Laser printer ..... Call!

### SPEAKERS

#### JBL L100f3

Factory authorized closeout!

Light walnut finish!

**\$699/pr**



**JBL 4800** ..... \$339/pr.

Final closeout! 3 way tower speakers, 10" woofer

**Bose AM-3 Series II** ..... \$449

Subwoofer system, 100 watts

### CAR AUDIO



**Clarion 9731** ..... **\$187**

A/R, Dolby, bass and treble controls, RCA out.

**JVC XLG-2000** ..... \$257

CD tuner, random play, seek and scan, 22 watts.

**Alphasonik PMA 2050E** ..... \$146

50 watts per channel amp, 0.05% THD

### PERSONAL ELECTRONICS

#### Sony D 802 Car Discman

Car cord and cassette adaptor included

**\$229**



**Sony D-66**, 3 way power ..... \$176

**Pana KXT4200**, Cordless answer/phone ... \$169

**Whistler 35E**, Compact, detector ..... \$148

  or C.O.D. Some items closeout, some limited items

**WDS, 2417 W. Badger Rd.  
Madison, WI 53713**

\*10-Day Return Policy: Returned items accepted within 10 days of purchase. (Must get prior authorization.) Original condition. 10% restocking fee. Shipping and handling not refundable.

# SPEAKERS

MANUFACTURER	Model	Price, \$ (if Sold Individually)	Price, \$ (if Sold in Pairs)	Recommended Maximum Power, Watts/Channel	Sensitivity, dB SPL (1 Watt/1 Meter)	Impedance, Ohms	Frequency Response, Hz to kHz, ± dB	DRIVERS										Notes		
								Subwoofer (W), (S), Midrange (M), Tweeter (T)	Woofer Size, Inches	Woofer (W), 2-Way (2), 3-Way (3), 4-Way (4)	Applied Tweeter(s) = A, Pinpoint Tweeter(s) = P	Separately Mountable Drivers?	Flush Mount (F), Surface Mount (S), Conceivable (C), Plate (P)	Maximum Required Mounting Depth, Inches	Weatherproofed?					
STANFORD ACOUSTICS (Continued)	65C100		119.95	300	98	4 8	65-3.5	W	6 1/2											
	65C50M		99.95	100	98	4 8	85-10	M												
	65S50M		49.95	100	90	4 8	75-10	M												
	5S50M		39.95	100	89	4/8	160-10	M												
	4C50M		69.95	100	100	4 8	200-17	M												
	4C25M		55.95	50	100	4 8	250-10	M												
	4S25M		29.95	50	91	8	200-10	M												
	3S20M		21.95	40	89	4	200-8	M												
	AMTP46		79.95	40	92	4	200-22	M	3	2										
	SDT25B40		59.95	80	96	8	3.5k-20k	T												
	ATP46		79.95	80	96	8	3.5k-20k	T												
	TMT25B50		119.95	100	100	4	4.2k-20k	T												
	TMT25B60		99.95	75	93		2k-21k	T												
	MT15		14.95	60	92		4.5k-20k	T												
	AST15		42.95	40	93		3k-20k	T												
	AST17		34.95	40	94		3k-20k	T												
	3S20BR		27.95	20		8		M												
	4S30BR		35.95	30		8		M												
	5S40BR		45.95	80		8		M												
	6S50BR		65.95	80		8		M												
8S50BR	42.95	100	89	8	8		W	6 1/2												
8S75BR	59.95	150	89	8	8		W	8												
DS5T	219.95	150	95	4	8		W	8												
									2	P	Yes									Midrange and tweeter.
STREET WAVE	TR1000		249.00	125		4	40-29		(2)10	2		No	S							
	TR800		199.00	100		4	45-29		(2)8	2		No	S							
	CR650		159.00	50		4	55-29		(2)6 1/2	2		No	S							
	CR1000	249.00	125		4	4	40-29		(2)10	2		No	S							
SYMPHONY	Baritone SY12		191.00	200	93	4 8	18-1	S	12											
	Baritone SY10		173.00	200	93	4 8	25-1	S	10											
	Tenor SY6.5		102.00	70	90	4	25-4	W	6 1/2											
	Tenor SY5.2		95.00	60	94	4	50-4	W	5 1/4											
	Alto SY4.5	139.00	60	92	4	4	150-16	W												
TARGA	AP-4		30.00	75		4		M												
	AP-5		35.00	85		4		M												
	AP-6		40.00	125		4		W	6											
	AP-8		80.00	150		4		W	8											
	AP-10		90.00	200		4		W	10											
	AP-12		120.00	275		4		W	12											
	MM-6		40.00	125		4		W	6											
	MM-8		50.00	150		4		W	8											
	MM-10		75.00	175		4		S	10											
	MM-12		92.00	250		4		S	12											
	MM-15		107.00	300		4		S	15											
	MM-20			35.00	60		4		T											
	MM-30	70.00		50		4			T											
	MM-40		40.00	60		4			M											
	MM-55		50.00	100		4			W	5 1/4										
	AA-8		40.00	175		4			S	8										
	AA-10		70.00	200		4			W	10										
	AA-12		90.00	275		4			S	12										
	MM-46		80.00	100		4			W	4										
	MM-69		100.00	150		4			W	5										
	Q-41		32.00	90		4		120-16 ± 3		4										
	Q-42		40.00	100		4		120-19 ± 3		4										
	Q-52		49.00	110		4		70-19 ± 3		5 1/2										
	Q-61		47.00	120		4		40-16 ± 3		6 1/2										
	Q-62		60.00	150		4		50-19 ± 3		6 1/2		W								
	Q-63		70.00	175		4				6 1/2		3								
	Q-91		65.00	120		4		40-16 ± 3		6 x 9		W								
	Q-92		87.00	160		4		40-19 ± 3		6 x 9		2								
	Q-93		105.00	220		4		40-19 ± 3		6 x 9		3								
	T-6	120.00		200	91	8		28-180 Hz ± 3	S	6										
T-8	170.00		300	94	8		24-200 Hz ± 3	S	8											
T-10	200.00		400	98	8		20-200 Hz ± 3	S	10											
TA-60	180.00		50 Inc.		8		28-190 Hz ± 3	S	6											
TA-80	240.00		100 Inc.		8		25-200 Hz ± 3	S	8											
TA-100	310.00		100 Inc.		8		24-200 Hz ± 3	S	10											
XB-20	150.00		350		8		40-19 ± 3		(2)8	2										
XB-30	230.00		400		8		35-19 ± 3		(2)10	2										
XB-40	250.00		500		8		25-19 ± 3		(2)12	2										
TB-25	160.00		350		8		35-19.5 ± 3		(2)8	2										
TB-35	240.00				8		25-19.5 ± 3		(2)10	2										
TB-45	280.00		500		8		25-20 ± 3		(2)12	2										
TB-50	330.00		550		8		25-20 ± 3		(2)12	3										
TC AUDIO	HB103	400.00	200	93	4		40-20 ± 3		(2)10	3		No	S							
	FT102		150	93	4		50-20 ± 3		10	2		No	S							
	IWB82	350.00	150	93	4		55-20 ± 3		8	2		No	S							
	SW82	250.00	150	93	4		55-20 ± 3		8	2		No	S							
TEKTON	18	745.00	600	90	8		12-1	S	18											
	21	1060.	1.2k	92	8		12-500 Hz	S	21											
THUMP (Continued)	THUMP-8	245.00	175	96	4		20-125 Hz ± 3	S	(2)8											

# SPEAKERS

MANUFACTURER	Model	Price, \$ (If Sold Individually)	Price, \$ (If Sold in Pairs)	Recommended Watts, Channel	Sensitivity, dB SPL (1 Watt 1 Meter)	Impedance, Ohms	Frequency Response, Hz to kHz, ±dB	DRIVERS										Notes
								Engelwood Day (S) Woofer Only (W) Midrange Only (M), Tweeter Only (T)	Woofer Size, Inches	Woofer (W) 2-Way (2), 3-Way (3), 4-Way (4)	Angled Tweeters = A, Piezoelectric Transducers = P	Separately Mountable Drivers?	Fits Mount (F), Surface Mount (S), Concealable (C), Plug (P)	Maximum Required Mounting Depth, Inches	Weatherproofed?			
THUMP (Continued)	THUMP-10	290.00	200	97	4	20-125 Hz ±3	S	(2)10										As above.
	THUMP-12	339.00	250	98	4	20-125 Hz ±3	S	(2)12										As above.
	TH-820	29.95	175	96	4	30-4	W	8				F, S	3 3/4	No				
	TH-1030	41.95	200	96	4	30-4	W	10				F, S	3 3/4	No				
	TH-1230	49.95	250	97	4	24-5	W	12				F, S	4 1/2	No				
	TH-1540	89.95	350	98	4	24-5	S	15				F, S	5 1/2	No				
	Pro PTH-8R	34.95	175	96	4	30-4	W	8				F, S	3 3/4	Yes				
	Pro PTH-10R	48.95	200	97	4	30-5	W	10				F, S	3 3/4	Yes				
	Pro PTH-12R	57.95	250	98	4	24-5	W	12				F, S	4 1/2	Yes				
	Pro PTH-15R	94.95	350	99	4	24-5	S	15				F, S	5 1/2	Yes				
TOBY	Ranger	440.00	240	99	4	47-110 Hz	S	(2)10						No			Dual voice-coils.	
	Sheriff	240.00	120	94	4	47-110 Hz	S	10						No			As above.	
	Constable	240.00	120	93	4	50-140 Hz	S	10						No			As above.	
	Pistol	215.00	100	91	4	45-110 Hz	S	8						No			As above.	
	LowMan	275.00	120	90	4	34-85 Hz	S	10						No			As above.	
TOSHIBA	TS710	69.95	200	90	4	28-2	S	10				F	4 3/4	No				
	TS712	79.95	300	90	4	21-1.5	S	12				F	4 3/4	Yes				
	TS730	279.95	200	88	4	50-22		10	2			S		Yes			For trucks.	
	TS693	129.99	150	90	4	40-20		6 x 9	3	P		F	3	No				
	TS692	99.95	100	90	4	40-20		6 x 9	2	P		F	3	No				
	TS662	79.95	75	88	4	55-20		6 1/2	2	P		F	2 1/4	No				
	TS641	49.95	40	89	4	100-20		4	W			F	1 3/4	No				
ULTIMATE SOUND	PW1550	129.95	300	97	4	20-2.5 ±3	S	15				F	6				With dual 4-ohm voice-coils, \$149.95 each.	
	PW1250	99.95	250	96	4	20-3 ±3	S	12				F	5 1/4				As above but \$109.95 each.	
	PW1035	79.95	225	95	4/8	25-3 ±3	S	10				F	4 3/4				As above but \$99.95 each.	
	PW8035	69.95	200	94	4/8	30-3 ±3	W	8				F	4				As above but \$79.95 each.	
	PM6525	44.95	85	92	4	40-5 ±3	M	M				F	3					
	PM5210	29.95	55	91	4	80-10 ±3	M	M				F	2 1/4					
	PM4010	24.95	45	91	4	100-10 ±3	M	M				F	2 1/4					
	M1001	19.95	40	90	4	120-12 ±3	M	M				F	2 1/4					Sealed-back midrange.
	CS42	99.95	100	91	4	50-20 ±3		4				Yes						
	CS52	129.95	120	92	4	45-20 ±3		5				Yes						
	CS62	179.95	170	93	4	40-23 ±3		6				Yes						
	TCS852	249.95	300	94	4	20-20 ±3		8				†						Tube enclosure. †Midrange and tweeter can be installed separately.
	CS852	249.95	300	94	4	20-20 ±3		(2)8	3			Yes						
	CS1052	249.95	300	94	4	20-20 ±3		10	3			Yes						
	M82S	169.95	150	93	4	50-20 ±3		8	2			No						Woofer has dual voice-coils.
	M102S	199.95	175	93	4	30-25 ±3		10	2			No						Ported box enclosure.
	M103S	249.95	200	93	4	30-25 ±3		10	3			No						As above.
	M8HB	199.95	150	93	4	40-25 ±3		8	2			No						As above; for hatchbacks.
	M10HB	249.95	200	93	4	30-25 ±3		10	2			No						As above.
	M12HB	299.95	250	95	4	20-22 ±3		12	3			No						As above.
	The Box B800S	119.95	100	90	4	45-20 ±3		8	2			No						Separate box enclosure for each channel.
	The Box B1003S	199.95	150	93	4	25-20 ±3		10	3			No						As above.
	The Box B821H	149.95	100	92	4	30-20 ±3		8	2			No						As above.
	The Box B1203H	249.95	175	95	4	20-20 ±3		12	3			No						Box enclosure; for hatchbacks.
	Monster MW1230	54.95	130	94	4	20-2.5 ±3		12				F	3 3/4					As above.
	Monster MW1025	34.95	120	93	4	25-3 ±3		S	10			F	3 3/4					
	Monster MW8020	29.95	100	93	4	30-3 ±3		S	8			F	3 1/2					
	MM8012	54.95	50	92	4	30-2.2 ±3		S	8			F						
	MM1020	34.95	75	93	4	25-3 ±3		S	10			F						
	MM1220	24.95	90	95	4	20-2.5 ±3		S	12			F						
	T6	99.95	150	100	4			S	6			F						Tube enclosure.
	T8	129.95	350	101	4			S	8			F						As above; with dual voice-coils, \$169.95 each.
	T12DV	219.95	400	102	4			S	12			F						Dual voice-coils.
	PB6		70					S	6			F						Includes amp with high- and low-level inputs; box enclosure.
	PB8		70					S	8			F						As above.
PT6		70					S	6			F						Includes amp with high- and low-level inputs; tube enclosure.	
PT8		70					S	8			F						As above.	
PT46	64.95	50	90	4	60-22 ±3		T	3 1/2			P	2 1/4						
PT57	94.95	60	92	4	45-22 ±3		T	4			P	1 3/4						
PT69	104.95	75	93	4	40-23 ±3		T	5 1/4			P	1 3/4						
Neo-Titan	99.95	120	92	4	4k-23k ±3		T				C	5 1/4					Fits 6 x 9-inch hole.	
UT845P	42.95	75	91	4	2k-20k ±3		T				C	7 1/4					Includes crossover.	
UT746P	29.95	60	97	4	5k-23k ±3		T				C	7 1/4					As above.	
SST1	24.95	60	97	4	5k-23k ±3		T				C	3/4					As above.	
RT2	69.95	75	92	4	2.5k-20k ±3		T				C						As above.	
UT745P	19.95	50	92	4	1k-20k ±3		T				F	5 1/4						
UT810P	42.95	60	96	4	1.6k-20k ±3		T				F	7 1/4						
UT996P	69.95	100	96	4	5k-22k ±3		T				F	3/4					Piezoe horn.	
KSN1025A	16.95	150	92	4	1.8k-30k ±3		T				F	3 3/4						
KSN1134	13.95	150	92	4	1.9k-30k ±3		T				F	2					Piezoe with acoustic lens.	
KSN1056A	9.95	150	92	4	4k-30k ±3		T				F	2					Round piezo.	
KSN1005	7.95	100	92	4	4k-25k ±3		T				F	2 1/4					Square piezo.	
ULTIMATE SOUND NEW SUPREMES (Continued)	U6920TX	69.95	75	94	4	20-23 ±3		6 x 9	3		No	F	3 1/4					
	U6920CX	59.95	75	94	4	20-21 ±3		6 x 9	2		No	F	3 1/4					
	U6510TX	54.95	40	93	4	20-23 ±3		6	3		No	F	2 1/4					
	U6510CX	49.95	40	93	4	20-21 ±3		6	2		No	F	2 1/4					

# SPEAKERS

MANUFACTURER	Model	DRIVERS										Notes		
		Price, \$ (if Sold Individually)	Price, \$ (if Sold in Pairs)	Recommended Minimum Power, Watts/Channel	Sensitivity, dB SPL (1 Watt/1 Meter)	Impedance, Ohms	Frequency Response, Hz (to kHz), ±dB	Subwoofer Only (S), Midrange Only (M), Tweeter Only (T)	Woofer Size, Inches	Whizzer (W) 2-Way (2), 3-Way (3), 4-Way (4)	Angle/Tweeter(s) = A, Phase Tweeters = P		Separately Mountable Drivers?	Flush Mount (F), Surface Mount (S), Conceivable (C), Plate (P)
ULTIMATE SDUND/ NEW SUPREMES (Continued)	U5006CX	49.95	35	92	4	25-21 ±3		5 1/4	2		No	F	1 3/4	
	U4606CX	44.95	45	91	4	25-21 ±3		4 x 6	2		No	F	1 3/4	
	U4006CX	42.95	45	91	4	25-21 ±3		4	2		No	F	1 3/4	
	U4006W	34.95	45	91	4	30-18 ±3		4	W		No	F	1 3/4	
	U3506W	29.95	30	90	4	35-18 ±3		3	W		No	F	1 3/4	
	SPD202	89.95	50	92	4	45-20 ±3		4	W	2	No	S	1 3/4	Box enclosure.
ULTIMATE SDUND/ REFLEX	KL1580	219.95	1k	96.2	4	20-2 ±3	S	15			F	6 1/2		
	KL1280	169.95	1k	95.6	4	20-3 ±3	S	12			F	5 1/2		
	KL1050	139.95	700	95	4	25-3 ±3	S	10			F	4 3/4		
	KL8050	119.95	700	93	4	30-3 ±3	W	8			F	4 1/8		
	KM6525	59.95	150	93.7	4	40.5.5 ±3	M				F	2 3/4	Sealed-back midrange. As above.	
	KM5210	34.95	100	93.2	4	70-10 ±3	M				F	2 1/4	As above.	
KM4010	29.95	75	90.2	4	100-10 ±3	M				F	2 1/8	As above.		
U. S. BLACK MAGIC	BM-3500B	9.95	30	90	4	120-18		3 1/2	W		F	1 3/8	No	
	BM-4000B	10.50	40	89	4	90-18		4	W		F	1 3/4	No	
	BM-4200		42.95	50	90	4	80-22		4	2	No	F	1 3/4	No
	BM-5250		49.95	60	90	4	65-20		5 1/4	2	No	F	2	No
	BM-5720		55.00	70	90	4	65-19		5 x 7	2	No	F	2 3/8	No
	BM-6400B	16.50	60	91	4	65-18		6 1/2	W		No	F	1 3/4	No
	BM-6420		59.95	70	91	4	65-20		6 1/2	2	No	F	1 1/8	No
	BM-6430		69.95	90	91	4	55-22		6 1/2	3	No	F	2 1/2	No
	BM-6920		83.95	120	92	4	38-20		6 x 9	2	No	F	3 3/8	No
	BM-6930		99.99	130	92	4	38-24		6 x 9	3	No	F	3 3/8	No
	BM-6921		68.25	100	93	4	50-20		6 x 9	2	No	F	2 7/8	No
	BM-6931		79.95	120	93	4	50-22		6 x 9	3	No	F	2 7/8	No
	BM-6520R	42.00	160	89	4	44-5	W	6 1/2			No	F	2 7/8	No
	BM-8030R	48.95	200	91	4	31-2.5	S	8			No	F	3 3/4	No
	BM-1042R	69.95	250	91	4	28-2.5	S	10			No	F	4 1/4	No
	1250R	74.95	300	92	4	20-2	S	12			No	F	4 7/8	No
	BMI-652		99.95	160	90	4	50-18		6 1/2	2	No	F	2 3/4	No
	BMI-653		122.95	180	90	4	50-20		6 1/2	3	No	F	2 3/4	No
	BMI-692		145.95	200	90	4	45-18		6 x 9	3	No	F	3 3/4	No
	BMI-693		169.95	220	90	4	45-20		6 x 9	3	No	F	3 3/4	No
	BMI-300		89.95	60	92	4	1k-20k			2	P	C	1 3/4	No
	BMI-410B		49.95	60	91	4	100-10	M			No	F	1 3/4	No
	BMI-460		99.95	60	90	4	90-20		4 x 6		No	F	1 7/8	No
	BMI-65	64.95	200	90	4	45-6	S	6 1/2			No	F	3	No
	BMI-690	84.95	240	90	4	35-4.5	S	6 x 9			No	F	3 3/8	No
	BMI-80	79.95	240	90	4	20-3	S	8			No	F	3 3/4	No
	BMI-10	99.95	300	91	4	20-3	S	10			No	F, S	4 3/8	No
	BMI-12	116.95	400	91	4	20-3	S	12			No	F, S	4 7/8	No
	BMI-290		120	4	2k-22k	S	T				No	F, S	No	No
	BMI-692A		200	4	30-22			6 x 9	2		No	C, S	3 3/8	No
	BMA-042D		50	4	75-20			4	2		No	F	1 3/4	No
	BMA-0525		60	4	65-20			5 1/4	2		No	F	2	No
	BMA-0642		70	4	60-20			6 1/2	2		No	F	1 3/4	No
	BMA-0643		90	4	50-20			6 1/2	3		No	F	2 1/2	No
	BMA-0690		100	4	35-18			6 x 9	2		No	F	2 7/8	No
	BMA-0691		120	4	35-20			6 x 9	3		No	F	2 7/8	No
	BMA-0692		150	4	30-18			6 x 9	2		No	F	3 1/4	No
	BMA-0693		160	4	30-20			6 x 9	3		No	F	3 1/4	No
	BMA-8F		240	4	45-3			8	3		No	F, S	3 3/4	No
	BMA-10F		300	4	35-2.5		S	10			No	F, S	4 1/2	No
BMA-12F		400	4	30-2		S	12			No	F, S	4 7/8	No	
U. S. D.	WaveGuide	1500.00	100	110	8	600-20 ±3					S		No	2 1/2 x 18-inch enclosure tweeter driver, 10-inch-deep enclosure for under-dash mounting.
	USD15pro	430.00	400	105	4/8	20-3 ±3	S	15			F	5	No	
	USD12pro	340.00	300	100	4/8	20-3 ±3	S	12			F	4	No	
	USD10pro	290.00	300	100	4/8	40-5 ±3	W	10			F	4	No	
	USD820	80.00	100	91	4/8	30-5 ±3	W	8			F	3 3/4	No	
	USD8pro	200.00	150	89.6	4/8	30-1.8 ±3	S	8			F	3 3/4	No	
	USD1040	100.00	150	91.5	4/8	20-3 ±3	S	10			F	4	No	
	USD1060	150.00	200	93.3	6	20-3	S	10			F	4	No	
	USD1260	200.00	200	94.7	6	20-3	S	12			F	4	No	
	USD1240	130.00	150	89.8	4/8	20-3	S	12			F	4	No	
VIETA	L120XAL	180.00	250	94	4	25-1	S	13			F	5 1/2	No	
VISONIK	DAVID 5001	370.00	50	82	4	50-25		4	2		No	S		Yes
	DAVID 5202	260.00	60	85	4	50-20		4	2		No	P	1 1/2	
	DAVID 5202 + DCN	280.00	80	84	4	50-20		4	2		No	P	1 1/2	
	DAVID 7200	420.00	100	88	4	50-20		5 1/4	2		Yes	↑	2 1/2	Includes external crossover. ↑Flush-mount woofer, surface-mount tweeter. As above.
WEST COAST AUDIO LABS	SP400	179.00	75	89	4	55-20		4 1/2	2	P	Yes	F	2 1/4	
	SP500	229.00	120	92	4	40-20		5 1/4	2	P	Yes	F	2 3/8	
	SP600	279.00	150	91	4	33-20		6 1/2	2	P	Yes	F	2 7/8	
	LF400	79.00	75	90	4	55-4		4 1/2			F	2 1/4		
	LF500	119.00	120	89	4	40-4	W	5 1/4			F	2 3/8		
	LF600	159.00	150	89	4	33-4	W	6 1/2			F	2 7/8		
	HF13	29.00	30	92	8	2.5k-20k	T				F	5/8		
	HF20	69.00	70	93	4	2.5k-20k	T				F	3/4		
	SF20	89.00	50	92	4	2k-20k	T				F	7/8		
	SF25	119.00	75	92	8	2.5k-20k	T				F	1		
	HP1004	129.00	300	91	4	18-4	S	10			F			
YAMAHA	YCS-3030	60.00	40	93	4	6k-20k	T				S		Yes	
	YCS-3510	50.00	50	90	4	80-20		3 1/2	W		F	1 3/4	Includes crossover.	
	YCS-4021	80.00	80	89	4	70-20		4	2		F	1 3/4	No	
	YCS-4040	80.00	80	88	4	70-20	M				F	1 3/4	No	
	YCS-4621	100.00	70	89	4	70-20		4 x 6	2		F	1 5/8	No	
	YCS-4625	70.00	70	87	4	70-20		4 x 6	W		F	1 5/8	No	
YCS-5020	90.00	80	90	4	60-20		5	2		F	1 3/4	Yes		

# SPEAKERS

MANUFACTURER	Model	Price \$ (If Sold Individually)	Price \$ (If Sold in Pairs)	Recommended Watts Channel	Sensitivity, dB SPL (1 Watt 1 Meter)	Impedance, Ohms	Frequency Response, Hz to kHz, ±dB	DRIVERS										Notes
								Summer Only (S) Midrange Only (M) Tweeter Only (T)	Woofer Size, Inches	Woofer (W) 3-Way (3), 4-Way (4)	Amplifier Tweeter(s) = A Piezoelectric Tweeter(s) = P	Separately Mountable Drivers?	Flush Mount (F), Surface Mount (S), Convertible (C), Plug (P)	Maximum Required Mounting Depth, Inches	Weatherproofed?			
YAMAHA (Continued)	YCS-5050	90.00	100	88	4	60-18	M	6 1/2	W			F	1/4	No				
	YCS-6010	70.00	80	92	4	50-20		8				F	1/4	Yes				
	YCS-6020	100.00	120	92	4	50-20		8 1/2				F	1/4	Yes				
	YCS-6022	150.00	120	90	4	55-20		8 1/2				F	1/4	Yes				
	YCS-6060	120.00	100	90	4	55-18		8 1/2				F	1/4	Yes				
	YCS-6920	120.00	180	93	4	35-20		6 x 9	2			F	2 1/4	Yes				
	YCS-6921	140.00	180	93	4	35-20		6 x 9	2			F	2 1/4	Yes				
	YCS-800	200.00	200	92	4	20-1	W	8				F	3 1/2	Yes				
	YCS-1010	240.00	200	93	4	35-1	S	10				F	4 1/2	Yes				
	YCS-1212	250.00	200	91	4	35-1	S	12				F	4 1/2	Yes				
	YTB-A100	325.00	200	91	4	60-20		10	2				No	No	Box enclosure; for trucks.			
YHB-A880	450.00	200	92	4	50-20		(2)8	2				No	No	Box enclosure; for hatchbacks.				
YHB-A1010	450.00	280	93	4	40-20		(2)10	3				No	No	As above.				
Z-BOX	C4-911-UDF2	800.00	150	89	4	150-21			2	†	No	S				Replaces upper door panels of Porsche Carrera C2 and C4 and Porsche 911. †Angled midrange and tweeter.		
	C4-CSW	800.00	300	89	4	40-200 Hz	S	8				S				Replaces rear side panels of Porsche Carrera C2 and C4 and Porsche 911.		
	C4-SW-2	1050.	400	90	4	30-200 Hz	S	10				S				Replaces rear seating of Porsche Carrera C2 and C4 and Porsche 911.		
	911C-R3(A)	1250.	500	89	4	40-21		8	3	†	No	S				Enclosure; replaces rear deck of Porsche 911. †Angled midrange and tweeter.		
	928-S4-SW	650.00	300	89	4	40-200 Hz	S	8				S				Enclosed subwoofer; replaces rear wall panel of Porsche 928 and 928S4.		
	928-F2	450.00	150	89	4	150-21			2	†	No	S				For upper door panels of Porsche 928. †Angled midrange and tweeter.		
	928-R2	525.00	150	89	4	150-21			2	†	No	S				Enclosure for rear side panels of Porsche 928. †Angled midrange and tweeter.		
	MON-UDF2	750.00	150	89	4	150-21			2	†	No	S				Replaces upper door panels of Ferrari Mondial. †Angled midrange and tweeter.		
	MDN-SW	750.00	300	89	4	50-200 Hz	S	8				S				Enclosed subwoofer for Ferrari Mondial console.		
	348-F2	750.00	150	89	4	150-21			2	†	No	S				Replaces upper door panels of Ferrari 348. †Angled midrange and tweeter.		
	348-R2	425.00	100	89	4	200-21			2	†	No	S				Enclosure for rear deck of Ferrari 348. †Angled midrange and tweeter.		
	348-SW	500.00	300	88	4	60-200 Hz	S	6				F				Enclosed subwoofer for Ferrari 348 console.		
	348-SW-2	1000.	600	89	4	40-200 Hz	S	6				S				Enclosed subwoofer for rear storage shelf of Ferrari 348.		
	SL-500-SW	1000.	800	95	4	30-100 Hz	S	10				S				Enclosed subwoofer; replaces rear storage compartment of Mercedes SL-500.		
	300E-R3	1300.	500	89	4	50-21		8	3	†	No	S				Enclosure; replaces rear deck of Mercedes 300E. †Angled midrange and tweeter.		
	300CE-R3	1300.	500	89	4	50-21		8	3	†	No	S				Enclosure; replaces rear deck of Mercedes 300CE. †Angled midrange and tweeter.		
	M5-F3	750.00	500	89	4	60-21		6	3	†	No	S				For front doors of BMW M5. †Angled woofer, midrange, and tweeter.		
	635-UDF2	750.00	150	89	4	150-21			2	†	No	S				Replaces upper door panels of BMW 635. †Angled midrange and tweeter.		
	635-R3	1200.	500	89	4	40-21		8	3	†	No	S				Enclosure; replaces rear deck of BMW 635. †Angled midrange and tweeter.		
	VET-R4	1100.	1.2k	90	4	30-21		10	4	†	No	S				Enclosure for rear hatch of Corvette; amp rack space provided. †Angled subwoofer, woofer, midrange, and tweeter.		
	VET-F2	425.00	150	89	4	150-21			2	†	No	S				For upper door panels of Corvette. †Angled midrange and tweeter.		
	TA-SW-2	750.	800	90	4	35-20C Hz	S	15				S				Enclosed subwoofer for rear storage compartment of Camaro and Firebird.		
	T-Bird F-3	800.00	100	90	4	150-21			3	A	No	S				Enclosure; overlays front half of Thunderbird doors.		
T-Bird R-2	475.00	60	90	4	150-21			2	†	No	S				For rear seat back of Thunderbirds. †Angled midrange and tweeter.			
Mustang F-3	550.00	100	90	4	150-21		6	3	†	No	S				Enclosure for Mustang doors. †Angled midrange and tweeter.			
Mustang SW-2	550.00	300	90	4	30-200 Hz	S	(2)8				S				Wraps around Mustang rear cargo area.			
TA-F3	450.00	60	89	4	150-21			3	†	No	S				For Trans Am doors. †Angled woofer, midrange, and tweeter.			
300ZX-F3	550.00	100	90	4	150-21		6	3	†	No	S				For doors of Nissan 300ZX. †Angled midrange and tweeter.			
300ZX-R2	400.00	60	89	4	150-21			2	†	No	S				Replaces panel behind front seat of Nissan 300ZX. †Angled midrange and tweeter.			
300ZX-SW2	550.00	300	90	4	30-200 Hz	S	(2)8				S				Separate enclosure for each channel; for corners of Nissan 300ZX cargo area.			
2000-LDU	450.00	800	89	4	80-21		6	2	†	No	S				Enclosure for lower doors. †Angled woofer and tweeter.			
628-LDU	400.00	400	89	4	80-21		6	2	†	No	S				As above. †Angled woofer and tweeter.			

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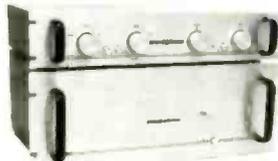
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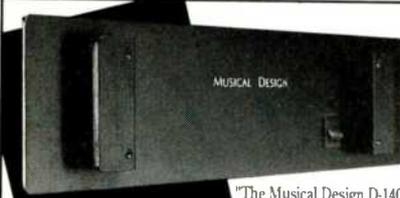
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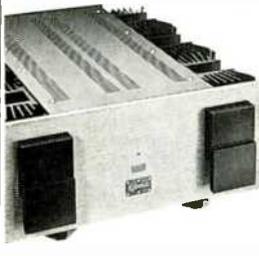
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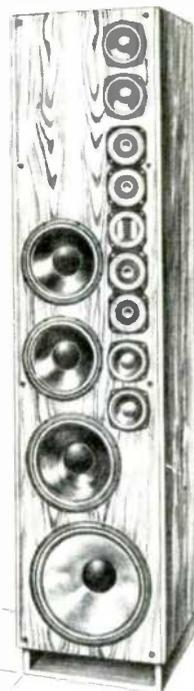
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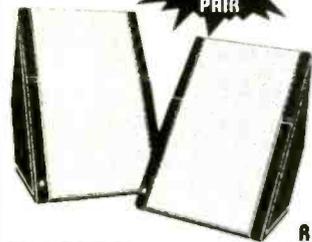
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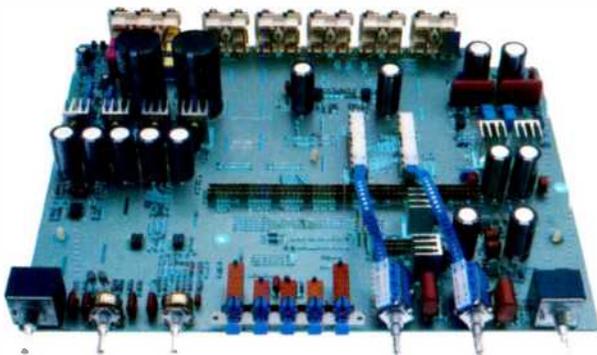
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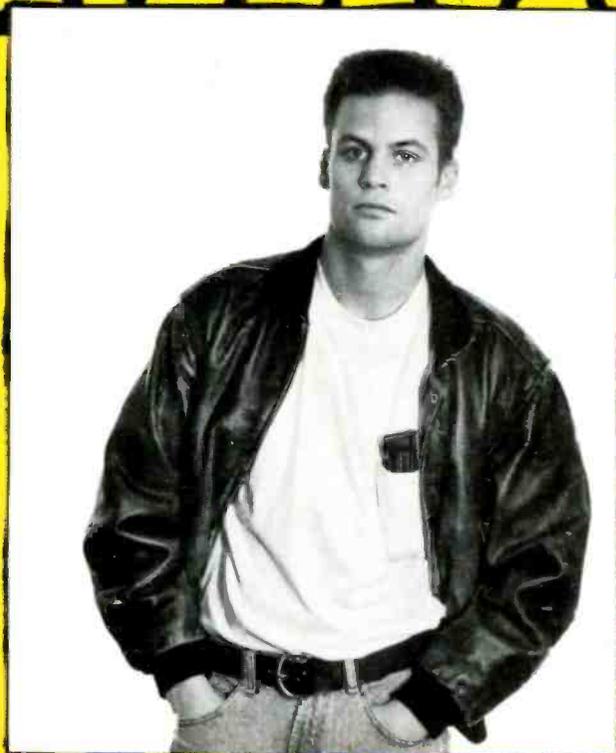
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