

**CONSTRUCT
A BURWEN
PREAMP**

Audio

THE AUTHORITATIVE MAGAZINE ABOUT HIGH FIDELITY • OCTOBER 1974 \$1.00 ©

48142 



ANNUAL PRODUCT DIRECTORY



speed while a record is playing. Both of these sophisticated units are even equipped with a strobe light directed at the strobe marks for easy viewing. Pioneer's engineers really think of everything.

Electronic speed adjustment for each speed



Automatic features without automatic drawbacks

If you prefer to let your tonearm and turntable do all the work, consider Pioneer's all new PL-A45D. With it you can play your records without ever touching the tonearm. Unlike other single play automatics which depend upon complicated mechanical

linkages to provide the necessary tonearm cycling motion, the PL-A45D uses a separate precision gear motor just to move the tonearm in accordance with your instructions. Its other 4-pole synchronous motor is free to drive only the



Automatic operation—manual precision

Superb S-Shaped tonearms for better tracking

The tonearm of every Pioneer turntable system is the "S-shaped" design, for optimum groove tracking. All are statically balanced and all use adjustable counterweights with direct read-out of tracking force. All have adjustable anti-skate control and oil-damped cueing for the gentlest application of stylus tip to record groove. Lightweight plug-in cartridge shells insure positive electrical contact and optimum stylus position and angle for lower distortion and reduced record wear.



S-shaped tonearm for ideal tracking

The tradition of unexcelled performance

Still, all of these features and refinements alone do not guarantee the performance specifications of Pioneer's new turntables. Each tonearm and turntable platter combination is shock mounted in its specially designed natural grain cabinet (with hinged dust cover). Precision machining of all rotational parts of each unit, plus a program of continuous quality control insure that each Pioneer turntable will meet or exceed its published specifications — a time honored tradition with all Pioneer components.

Manual turntables— choice of the professionals

Engineers, experts and enthusiasts agree: to get the best performance, you need a manual turntable. And to get the best manual turntable, you need a Pioneer. Every Pioneer manual turntable offers a level of precision and performance unparalleled in its price range. And every one is a total system — complete with dust cover and base — and designed for years of professional trouble-free sound reproduction.

Turntable that's right for you.

| Model | PL-A45D | PL-51A | PL-71 |
|------------------|------------------|-----------------|-----------------|
| Drive | Belt | Direct | Direct |
| Motor | 4-pole synchron. | DC Servo | DC Servo |
| Speed Accuracy | ±2% | ±2% | ±2% |
| Tracking | More than 47dB | More than 55dB | More than 60dB |
| Wow | 0.1% (WRMS) | 0.06% (WRMS) | 0.05% (WRMS) |
| Balance | Static Bal. "S" | Static Bal. "S" | Static Bal. "S" |
| Platter Diameter | 8 1/16" | 8 1/16" | 8 3/4" |
| Platter Weight | 12" | 12 1/4" | 12 1/4" |
| Weight | 2 lbs. 3 oz. | 3 lbs. 1 oz. | 3 lbs. 8 oz. |
| Price | \$169.95 | \$249.95 | \$299.95 |



For the best manual turntable get a Pioneer.

The manual turntable is rapidly becoming the first choice of hi-fi enthusiasts everywhere. The reason why is quite simple. Today's enthusiasts are more knowledgeable, more sophisticated and more involved with their music. And only the manual turntable can provide the involvement and performance they demand.

At Pioneer, this trend comes as no surprise. We have long recognized the superiority of the manual turntable. And long recognized a simple fact: a record changer in no way improves performance. It can detract from it.

As a result, we now offer the finest and most complete line of manual turntables available. Manual turntables that are designed with the needs of today's hi-fi enthusiast in mind. Turntables that are engineered for precision response.

When you get right down to it, good record playing equipment really has only two requirements: uniform rotation of a turntable, and accurate tracing of a record groove by a tonearm and its cartridge.

Pioneer's engineers have long recognized that these requirements are best met by single-play turntables and precision engineered tonearms. Our five new belt-drive and direct-drive turntable systems mean you needn't settle for the higher wow

and flutter and the poorer signal-to-noise ratios (rumble) of record changers. Whether you've budgeted \$100 or \$300 for this vital element of your high fidelity system, there's a Pioneer turntable that outperforms any record changer in its price class.

Consider the performance advantages

Belt-drive, featured in Pioneer's PL-10, PL-12D and PL-A45D, means smoother, more uniform platter rotation than can be achieved with typical idler-wheel/pulley arrangements normally found in record changers. Even changers equipped with synchronous motors transmit vibration to the turntable platter. This is picked up as low-frequency rumble by the tonearm and cartridge. By driving the platter with a precision-finished belt, vibration is effectively absorbed before it can be translated to audible rumble.



Belt-drive for rumble-free rotation



Direct-drive motor reduces friction

Pioneer's direct-drive models, PL-51 and PL-71 go even a step further in achieving noise-free, precision platter rotation. The DC electronically controlled servomotors used in these models rotate at exactly the required 33 $\frac{1}{3}$ or 45 rpm platter speed. Their shafts are directly connected to the center of the turntable, with no intermediate pulleys or other speed reduction devices. This means no extra friction-producing bearing surfaces.

Because of the unique technology embodied in these new, direct-drive motors it's possible to control their speed electronically. This is more precise than any mechanical drive system. Both our PL-51 and PL-71 offer individual pitch control for both 33 $\frac{1}{3}$ and 45 rpm speeds. Their turntable platters are edge-fitted with stroboscopic marks, so you can adjust precisely.

Choose the Pioneer

| Model | PL-10 | PL-12D |
|--------------------|-------------------|-------------------|
| Drive system | Belt | Belt |
| Drive motor | 4-pole synch. | 4-pole synch. |
| Speed control | — | — |
| S/N (Rumble) | More than 47dB | More than 47dB |
| Wow & Flutter | 0.1% (WRMS) | 0.1% (WRMS) |
| Tonearm Type | Static Bal. "S" | Static Bal. "S" |
| Tonearm Length | 8 $\frac{1}{2}$ " | 8 $\frac{1}{2}$ " |
| Turntable Diameter | 12" | 12" |
| Turntable Weight | 2 lbs. 3 oz. | 2 lbs. 3 oz. |
| Price: | \$99.95 | \$119.95 |



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best performance,
get a manual
turntable.**



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Audio

October, 1974

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What's unusual, however, is that B·I·C turntables can be programmed to play a single side as many as 6 times... or to play as many as 6 records in series. 'Til now, no belt-drive turntable has been able to do that.

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The program lever (second from the bottom in the picture at left) gives you 22 possible ways to play your records in manual and automatic modes.

By moving the lever to "MAN", the turntable is turned on and can be operated as a manual unit.

By moving the lever to "1", and tapping the cycle button lightly, one record can be played fully automatically.

By moving the lever to 2, 3, 4, 5 or 6, you can play a single record 2, 3, 4, 5 or 6 times.

And this same program lever controls multiple play. If, for example, you want to play 2 records, simply put them on the spindle and move the lever to "2". Or move the lever to "3" and the second record will repeat once. Or move it to "4" and the second record will repeat twice. And so on, and so forth.

Must be seen to be appreciated

This program system is news all by itself. But it's far from the whole story.

The B·I·C tone arm has features found on no other tone arm.

The B·I·C motor is a major improvement over motors in other belt and idler drive turntables.

But features aside, what's truly worth close scrutiny is how all these new ideas are welded into a perfectly balanced system which performs impeccably.

We'll send you more information about the 980 and 960 if you write to:

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But you really must examine them, touch them and compare them, to appreciate their fundamental excellence. After you've looked them over at your B·I·C dealer's (the leading audio specialist in your area) we think you'll be impressed.



This is the 980 with solid state speed control and strobe. About \$200.

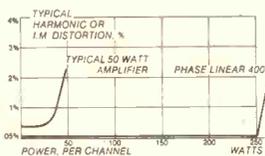
The 960 is identical except for these two features. About \$150.

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Can you live without a 400 watt amplifier?

Maybe. If you don't mind the loss of quality caused by clipping during the more dramatic passages in your favorite records. Julian Hirsch put it this way: "Anyone using a low-efficiency speaker . . . with an amplifier in the 30 to 50 watt class cannot approach realistic listening levels without severe clipping." If you want to listen at a real-life level without distortion, you need at least 400 watts of amplifier power. At \$499, why live with anything less than the Phase Linear 400?



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Audioclinic

Joseph Giovanelli

Cartridge and Receiver Incompatibility

Q. I own a stereo system consisting of an AM-FM receiver, a turntable and two speakers. Because I wanted to expand my system, I bought a Dual 1229 turntable, expecting to use it with my receiver. To my chagrin, I found that records are audible only when the volume of the receiver is turned up to its maximum.

I went to an electronics store for help. I was told that the new turntable had a magnetic cartridge in contrast with the original ceramic cartridge. They also told me that I would need a preamplifier to make the magnetic cartridge function correctly.

My questions are: Why does the cartridge make a difference? Can I avoid purchasing a preamplifier? What exactly does the preamplifier do? How much power does the preamplifier require?—Daniel Feinberg, Southampton, New York

A. There are two basic types of cartridges commonly used in home entertainment equipment. The most commonly used is the crystal or ceramic pickup. It produces a rather high output voltage, perhaps a volt in some cases. The frequency response of the cartridge is reasonably good. It is also less expensive to produce than the other type of cartridge we shall discuss. The ceramic cartridge is mechanically stiffer than the other type, so this is a disadvantage of the "breed."

The other type of cartridge is the magnetic type, which produces only a small amount of signal, perhaps 6/1000 of a volt as an average. Further, such a cartridge must be compensated for in order that it will reproduce phonograph records "flat." Once this compensation has been introduced, the magnetic cartridge produces a wider and flatter frequency response than does the ceramic cartridge. Because of the small amount of signal that such a magnetic cartridge produces, and because of the compensation circuits which are required, it is cheaper to produce a

receiver employing a ceramic cartridge than it is to use the magnetic type. The addition of the magnetic cartridge means that perhaps four more transistors plus a number of resistors and capacitors must be used.

The preamplifier which you were told to buy contains the necessary parts, including amplification, to make the tiny signal from the cartridge suitable for use with your equipment. How good the results will be must be dependent on the quality of the preamplifier, and, of course, on the overall quality of your receiver.

Frequency Equalizers and Reverberation Amplifiers

Q. What are "frequency equalizers" and "reverberation amplifiers?" Why do we use them in a high fidelity music system?—Jean Yves Vachon, Montreal, Canada

A. A frequency equalizer is a device which can boost and cut a number of portions in the audio spectrum. You are familiar with bass and treble tone controls. These operate over relatively large portions of the audio spectrum. Some devices, however, boost and cut just a small portion of the frequency range of the audio spectrum. These equalizers will have several controls, each of which governs its own specific portion of the audio range. As an example of this, some units divide the frequency spectrum into one-octave segments. One might start out at the lower end of the spectrum with a 20-40 Hz boost or cut; then the next range might be 40-80 Hz; next would be 80-160 Hz. All of this would continue to a final octave of 10,000-20,000 Hz.

If you have a problem or question on audio, write to Mr. Joseph Giovanelli, at AUDIO, 134 North Thirteenth Street, Philadelphia, Pa. 19107. All letters are answered. Please enclose a stamped, self-addressed envelope.

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(JBL has perfected an entirely new sound system. The most astonishing part is a new high frequency transducer that can fill a room with the high half of sound. It works – well, it works like a nozzle.)

We're going to talk about acoustics and harmonics and all sorts of heavy stuff for the next minute or two. We'll try to do it with merciful brevity. But at the end we're going to unveil a new \$396 loudspeaker called Jubal.



For that kind of money, you're entitled to know what you're getting into.

First, music.

Half the music you hear is in the low and midrange of sound. "Fundamental tones," they're called: the human voice, a piano, a guitar, a violin, a trumpet, whatever. That's where you hear the basic shape and form of sound.

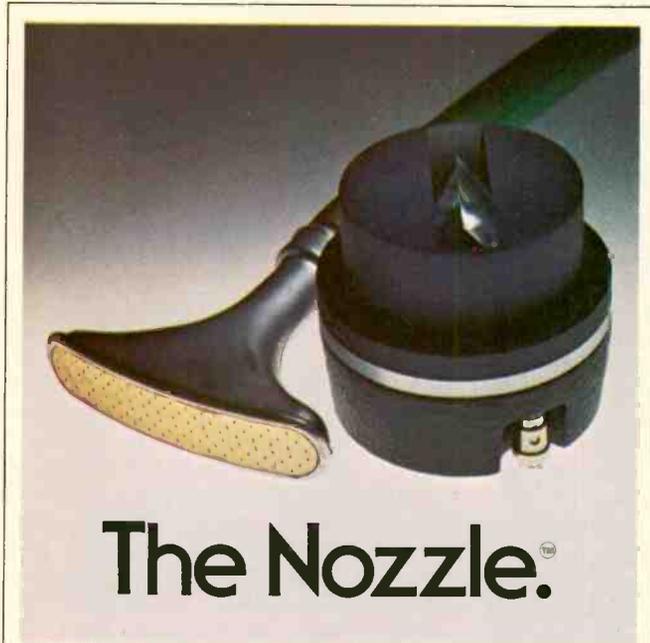
But the character of music, the music of music – overtones, onset tones, all the harmonic shading and texture and subtlety are hidden in the highs. (Without them you couldn't tell a flute from a trumpet from a piano.)

Next, the hard stuff.

Any good sound system is designed to disperse sound throughout the room. What you hear and feel is direct and reflected sound. Together they create ambient sound, the sense of being in the middle of something.

Now, as long as the music is in the low and midrange, the

traditional tweeter will spread it around. But as the tones go higher, the tweeter narrows its range. There's a pea-shooter effect. You have to stand directly in front of the speaker to hear the high highs. They never get to the rest of the room.



The Nozzle.™

It's formal name is the JBL 077 Ultra High Frequency Transducer.

It was developed because the world of recording and listening is still very square. Sound studios, auditoriums and living rooms are box-like.

But sound is conical, circular, radial – the pebble in the pond.

The Nozzle® accepts enormous amounts of high frequency power and disperses it into a near-perfect horizontal pattern.

The result? Pure, bright, transparent, distortion-free high frequency tones throughout the room.

Nice.

Enough words. Go hear the music. Take a favorite tape or record – something you know by heart – and ask your JBL dealer to hook it up to Jubal.

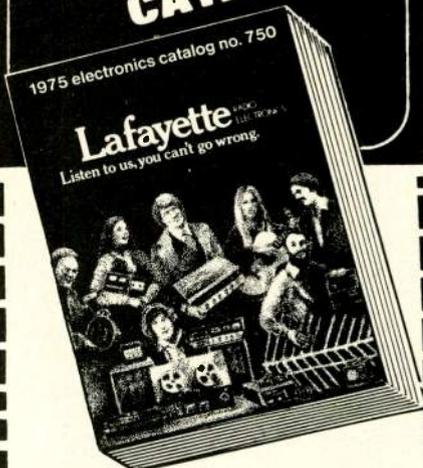
If you think Jubal sounds like something special, friend, you don't know the half of it.



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Tape Guide

Herman Burstein

Contour Effect

Q. Please explain how the physical shape of some record heads produces a "contour effect," and what is different about those heads that do not produce this undesirable effect on low frequency response. Since this effect shows up on the record-playback response only, I have assumed that the recording head is solely responsible. What are the problems associated with maintaining uniform low frequency response down to 20 Hz in a tape recorder?—James Tankersley, Menomonee Falls, Wisconsin

A. The contour effect occurs in playback and is responsible for irregular response at very low frequencies (i.e. long wavelengths recorded on the tape). What happens is that at such frequencies not only the gap of the head responds to the magnetic field on the tape, but also the entire head responds. Therefore the size of the playback head, the shape of the head, and the wrap of the tape about the head affect bass frequencies. Minimizing irregularity of response at low frequencies requires taking the above factors into account and finding an optimum design. Such a design takes good research and engineering. On the whole, the problem decreases as the playback head is made larger.

The problem of maintaining bass response down to 20 Hz involves appropriate bass boost in playback. But such boost also emphasizes hum. Therefore many machines do not try to maintain full response below 50 Hz. In fact, the NAB standard permits playback response to be down 2 dB at 50 Hz and 3 dB at 30 Hz.

Tape Copying

Q. We do a lot of tape copying. Some friends copy at the speed at which the original tape was recorded. Others use a faster speed, such as 7-1/2 ips to copy 3-3/4 ips tape, in order to save time. I was wondering if we lose frequency response or anything else when copying at a faster speed than the original tape.

Also, is there any correlation between tape recorder speeds and turntable speeds? Another problem we have is pickup of radar buzz on our tape recordings. It's a short buzz, increasing in intensity, then ending abruptly. It cycles about every 30 to 60 seconds. Is there any way we can get rid of it?—Dennis G. Mueller, APO San Francisco

A. When you duplicate a 3-3/4 ips tape at 7-1/2 ips, all frequencies are doubled in playback and recording. For example, a 15,000 Hz note becomes 30,000 Hz. This may exceed the frequency response capabilities of your playback and record amplifiers, of your playback head, and perhaps of your record head. Furthermore, there is increased chance of beat frequencies between the oscillator signal and the audio signal. On the other hand, if there isn't much above 10,000 Hz on the original tape, you may be able to copy at increased speed without noticeably adverse results.

There is no correlation between tape and disc speeds.

Perhaps the buzz problem may be alleviated by using capacitors of a few pfd between the input stage of your amplifier and ground.

SOS and SWS

Q. Could you let me know the difference between sound on sound and sound with sound?—Ghislain Gauthier, Chicoutimi, Quebec, Canada

A. Sound on sound signifies that two or more audio signals are recorded in synchronization on the same track. Sound with sound means that two signals are recorded in synchronization on two different tracks.

If you have a problem or question on tape recording, write to Mr. Herman Burstein at AUDIO, 134 North Thirteenth Street, Philadelphia, Pa. 19107. All letters are answered. Please enclose a stamped, self-addressed envelope.



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Behind The Scenes

Bert Whyte

ONCE READ somewhere that over 2,000 different makes of automobiles were produced in this country since the dawning of the "horseless carriage" era. I don't know if the audio industry has spawned 2,000 different makes of loudspeakers, but in the last 25 years we certainly have seen (and heard) a great many variations on the original theme. Speakers seem to be peculiarly the "better mousetrap" of our industry, and hardly a month goes by without an announcement that the "Zilch Company" has been formed to produce their "revolutionary new Zilchophonic Mark One, the ultimate speaker which obsoletes conventional designs." Well, more power to these venturesome souls! The rate of attrition with these loudspeaker companies is appalling, but every once in a while a genuinely worthwhile new design emerges and a company survives and becomes a factor in the industry. The West Coast is home base for such old guard stalwarts as Altec and JBL, and in the last few years the focal point for a number of new loudspeaker companies.

Earlier this year, at the Philadelphia Hi-Fi Show, I had visited the demonstration rooms of Infinity Systems, the California-based speaker manufacturer noted for their innovative designs. I was very impressed with several of their speakers, and when I told Arnold Nudell, the dynamic young president of Infinity, that I expected to be in Los Angeles in May for the AES convention, he kindly invited me to visit his plant in suburban Chatsworth.

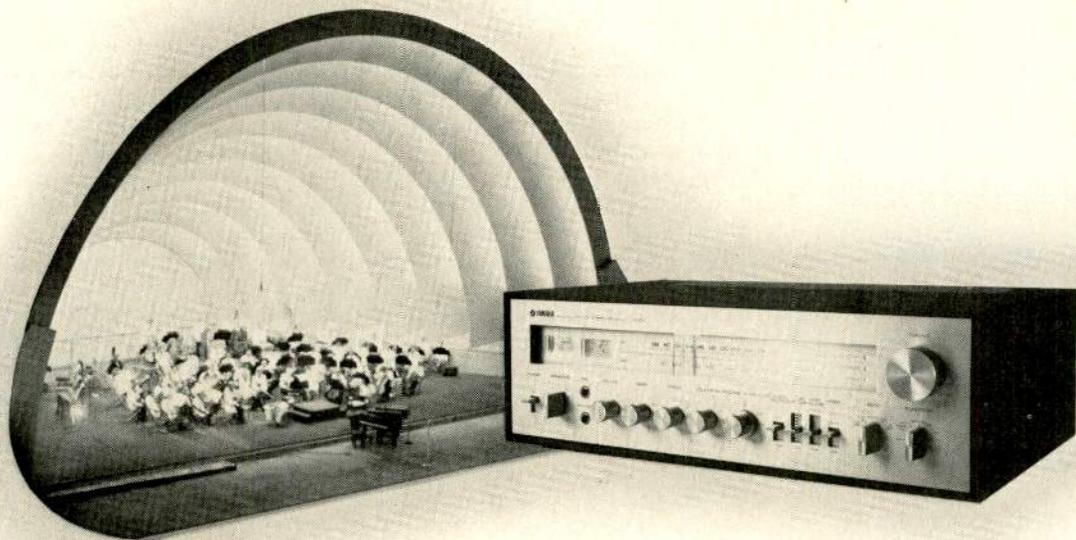
The Infinity plant is located in a pleasant industrial park, and my first sight of their parking lot, replete with 2 Panteras, a BMW 3.0CS, and an Alfa roadster, told me that I would be dealing with "my kind of folk." The Infinity plant has the usual complement of

offices and unusually well-equipped labs (Hewlett Packard Fourier harmonic spectrum analyzer, for example) and extensive production facilities, which nonetheless are bulging at the seams, and the whole complex is due for expansion. The plant also has a sound room, which needless to say, Arnie and I gravitated to in short order. Fortunately, the sound room had decent acoustics, and, with the 15 ips Dolby A tapes we were playing, really did justice to Infinity's premier speaker system, the Servo-Statik I. This system has been on the market since early 1970, and in general it received glowing reviews. However, the first time I heard it at a hi-fi show in Newton, Mass., I was singularly disappointed. It had neither the vaunted bass nor super definition in mid-range and treble that I had expected. I thought something surely must be wrong, and as I eventually learned, the system had been set up incorrectly (not by Infinity) with 3-way balance all askew, and grossly audible distortion. The next time I encountered the Servo-Statik was at the aforementioned Philadelphia show. There the balances were correct and the sound very clean, but the acoustics of the room added unpleasant colorations, especially in the bass frequencies.

In the Infinity sound room I finally was able to hear the Servo-Statik properly, and could understand why the system was praised so extravagantly. The Servo-Statik can be categorized as an electro-static/dynamic hybrid, a configuration gaining in favor these days with versions available from Crown, RTR, SAE, and Janszen, to name a few. However, the Servo-Statik differs from these units in several respects, not the least of which is that it is a 3-way, tri-amplified system.

At this juncture, I should point out that the Servo-Statik I system I heard at Infinity in early May was succeeded a little over a month later at the CES in Chicago by the Servo-Statik 1A. This is an updated version with some significant improvements in a number of areas to provide a higher quality of performance. I will point out the differences between the original and the "A" as we go along.

A four-cubic-foot bass "commode" houses a specially designed 18-in. woofer driven by a massive 26-lb. ceramic magnet. A small sensing element on the voice coil of the speaker is connected in a feedback loop to its own 110-watt rms bass amplifier utilizing an IC operational amplifier at the front end. The output signal of the voice coil sensor indicates the motion of the cone and moving system and any non-linearities are corrected by the driving amplifier and the feedback loop . . . hence the "servo" designation. The servo-control amplifier also functions as a three-way electronic crossover and is housed in a separate decorative cabinet, with sliding level controls for the adjustment of bass and treble relative to the fixed gain mid-range. The bass commode handles frequencies below 100 Hz, with a crossover rate of 12 dB per octave. In the Servo-Statik system, the commode acts as a common mode bass speaker, based on the non-directional character of frequencies below 100 Hz. Incoming left and right signals are matrixed and then amplified and further controlled by the feedback/servo system. I must confess that I have never been kindly disposed to a common-mode, mixed-bass, single speaker. However, in this case, I could not fault it and, in fact, was greatly impressed with the rock-solid fullness and uncommon smoothness of the bass response.



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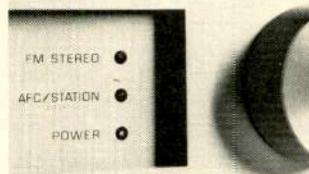
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Compare the specs on the new Yamaha components to any of their competition.

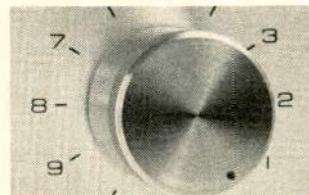
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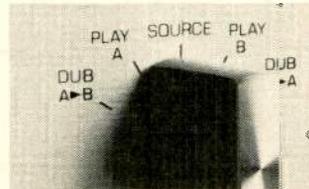


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The CR-800's FM tuner section is the first to utilize negative feedback around the multiplex demodulator. This achieves superb separation (45 dB) and reduces MPX distortion to 0.05%.

And Yamaha Auto Touch tuning allows the electronics to fine tune the station for minimum distortion (and keeps it there).

A ten-position stepped loudness control takes speaker efficiency, room acoustics, and other factors into consideration, to give you the tonal balance of lows, middles, and highs you like at all volume levels.



Multiples and Mixes.

For the multiple tape deck owner, the 800 has a five-position tape monitor selector to easily control two stereo tape record/playback circuits for recording on one or both decks simultaneously, for copying from one recorder to another, or for reproducing or monitoring on either.

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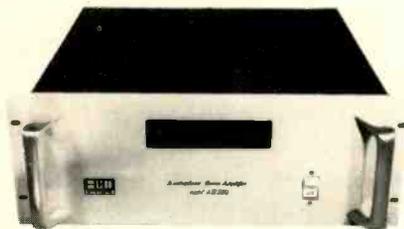
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We were listening to a tape of the Sibelius 1st Symphony, and in several sections there are huge bass drum punctuations around 30-35 Hz, which were reproduced not only cleanly but with gut-thumping impact.

In the updated Servo-Statik 1A system, the servo amplifier and the crossover now employ high voltage FET's instead of op amps, the crossover rate is now 6 dB per octave and because the mid-range electrostatic diaphragms have only half the mass of the original units, enabling higher output at a slightly lower frequency, the bass commode now operates from 70 Hz downward. This lower frequency makes the bass commode even less critical in positioning it in a listening room. I've covered the bass end of the Servo-Statik system, now on to the mid-range and treble descriptions.

The electronic crossover directs frequencies from 70 Hz to 2 kHz to an external stereo power amplifier, which in turn drives electrostatic mid-range panels. These panels might be regarded as the heart of this Infinity speaker. They are a proprietary design, and I watched them being fabricated in a special room at the plant. The ultra-low mass mylar diaphragm is sandwiched between two grids, and then this element is made up in panels approximately 8 by 12 in. The cements and sprays that bond the panels together are highly volatile, and the workers must use breathing masks. Four of the mid-range modules are placed on each side of the 28x37x6 $\frac{1}{2}$ in. deep screens which comprise the left and right sections of the system. The modules are angled to provide broad dispersion. Arrayed down the middle of each screen, between the mid-range modules, are narrow, rectangular electrostatic strip tweeters. These are also an Infinity design, but are subcontracted and manufactured elsewhere. The electronic crossover directs frequencies from the 2 kHz to beyond 30 kHz to another external power amplifier, and the signal then fed into the tweeters. The mid-range modules are of moderate efficiency and can handle efficiency and can handle exceptionally high power without arcing. In fact, Infinity recommends the use of amplifiers such as the Crown DC-300A to drive the mid-range, while the tweeters can handle a maximum of 50 watts rms and a suitable unit would be the Crown D-40. The screens containing the electrostatic elements are open to the rear, and since the elements are bi-polar, some 50 percent of their radiation is reflected, if the screens are within several feet of a wall.

The time I spent listening to the Servo-Statik system was necessarily limited, but I heard a considerable

variety of music through them . . . the aforementioned Dolby A tapes, the new Vol. 3 of the direct-disc-cut Sheffield Records, the superb percussion recording by Mark Levinson, and a number of very high quality pop/rock jazz recordings. As with any speaker system, to really know it you have to live with it, in your own particular acoustic environment, with your own selection of demanding recordings. When the production of the new Servo-Statik 1A gets underway, I'll be eager to put the system to such a test. In the meanwhile, on the basis of what I heard at the Infinity sound room, I am mightily impressed . . . and I don't impress easily! Some speakers excel in some section of the frequency spectrum. The Servo-Statik delivered an utterly clean, convincingly natural and uncolored reproduction of everything from bass drum to triangle. Such superlative sound doesn't come cheaply . . . the Servo-Statik with the recommended quality of external amplifiers will leave you with very little change from \$3,000.00.

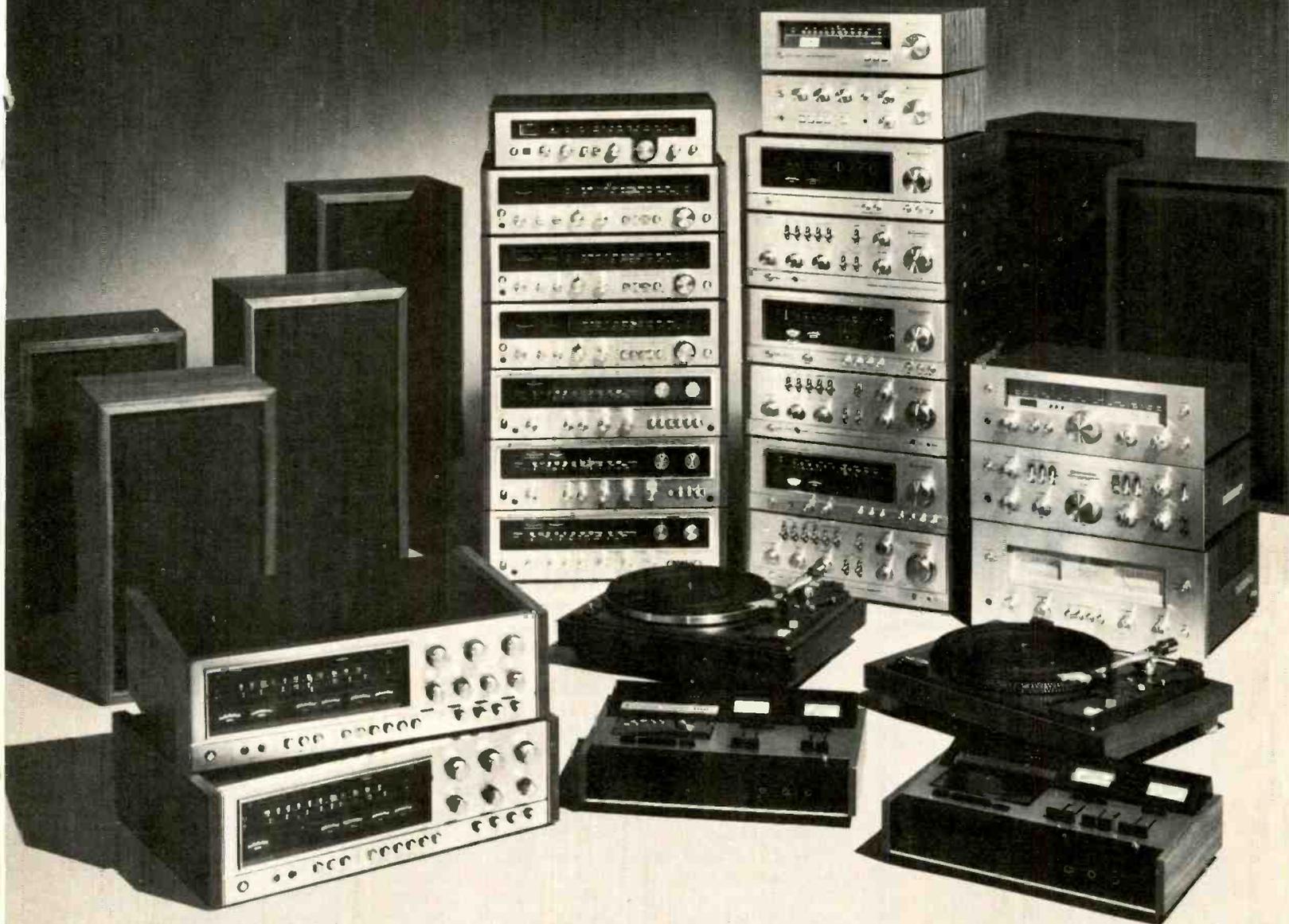
Infinity established their reputation with the Servo-Statik system, but recognizing the limited market for such an expensive speaker, they have produced a series of speakers aimed at the pocketbooks of the average audiophile. In spite of their lower prices, two of the models, the 2000AXT and the Infinity Monitor, offer some interesting innovations.

Common to both speakers is the use of a transmission line tweeter for treble frequencies of 5 kHz upwards. Manufactured by Infinity under license from Ohm Acoustics, it uses the same principle discovered by Lincoln Walsh (of Brook amplifier fame many years ago). However, in the Ohm F speaker, the cone is 12 in. in diameter and is a full-frequency-range device. In the Ohm speaker, the cones are placed with their apex facing up, the Infinity tweeter has its apex pointed down, with the steep sided cone flaring up like a tulip. Acting as a vertical, pulsating cylinder, the metallic tweeter is said to produce coherent sound radiation, much as a laser does in optics. Sound velocities much higher than the speed of sound in air travel up the metallic cone and sounds are emitted from various parts of the cone. Sounds are propagated in true 360 degree omnidirectional fashion, and at the same instants in time, thus there is no time delay distortion, and theoretically at least, it is said to have perfect transient response. In any case, the frequency range of the tweeter is beyond 30 kHz, and the sounds of cymbals, snares, triangles, gongs, etc. I heard from several of the percussion (Continued on page 90)

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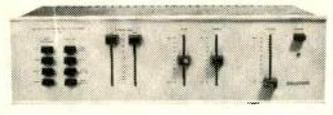
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Edward Tatnall Canby

The Audible Document

Is a recording forever, as they used to say about diamonds? Is a track of recorded sound equal to a line of printed type? Do voice prints have the legal validity of written signatures, or finger prints? Above all, can a recording be considered an *audible document*, continuing evidence of an act of man, in the same sense that a visible manuscript is a document? Will our laws eventually be altered to take account of this astonishing new fact, that after thousands of years of civilization, the spoken word, preserved and, maybe, sworn to, is at last the equal of the written word, preserved?

Will libraries of recorded documents in sound some day have the aura of importance that goes now with libraries of recorded print? Will historical collections of documentation in sound take their scholarly place alongside collections of priceless manuscripts and books? It's beginning.

Why of course, of course, *you* will say (being an audio man). Why not? Well, we are a long ways from it now. Not because of lack of knowledge or of facilities and techniques. Not because of doubtful permanence, either. True, a reel of tape might become a total mystery in time—what is it? Without 60 Hz or 50, drive motors, heads, amplifiers, speakers, the stuff is meaningless. But books are anything but permanent, even when cared for. And the message of books, and of papyrus, stone inscriptions, is as easily lost as the message of tape. Remember the Rosetta stone, scratched in several kinds of writing, which was the clue that unraveled the hieroglyphics, the hen's tracks of earlier times whose meaning had been totally lost? And what about those ancient neighbors of our civilization, the pre-Roman Etruscans in Italy, whose writing is still all

over the place, who were so obviously Greek-influenced in their art and life—and yet whose written language to this day is unreadable, educated guesses notwithstanding?

It seems to me that a tape document has a good chance of survival today, on all counts from electronic reproduction to signall know-how, as did any document in stone or papyrus or paper or metal back thousands of years ago. Survival is not the central point. *Mores* is. Customs, ways of thinking.

For thousand years of written documentation have fixed our institutions in another mold, the visible. The sound document is much, much too new! We do not yet understand it. We may need years, perhaps decades and centuries, before we do, the way people tend to think and act in familiar ruts, the way they build vast, complicated edifices upon the old system and will not, cannot, allow the new to intrude for fear of disastrous collapse. Sound recording is likely to upset a lot of applecarts. It has, already.

Thank the Lord, then, for Mr. Nixon. He has done more than any living man, quite unintentionally, of course, to wrench our thinking towards the new thousand-year concept by sheer overwhelming force. It may well be that when Watergate fades down to a schoolroom echo, the Nixon tapes may still mark a turning point in civilization as we know it, a moment in the category of the publication the Gutenberg Bible—first mass printing of wide importance—and such great dates as 1492, 1066 and so on. What Ford did with the Model T, Nixon is doing with the tape document. Those tapes, made so casually and, one might say, unthinkingly, have at last put the oral document in its totally real place, with the enormous weight of consequence to lend importance.

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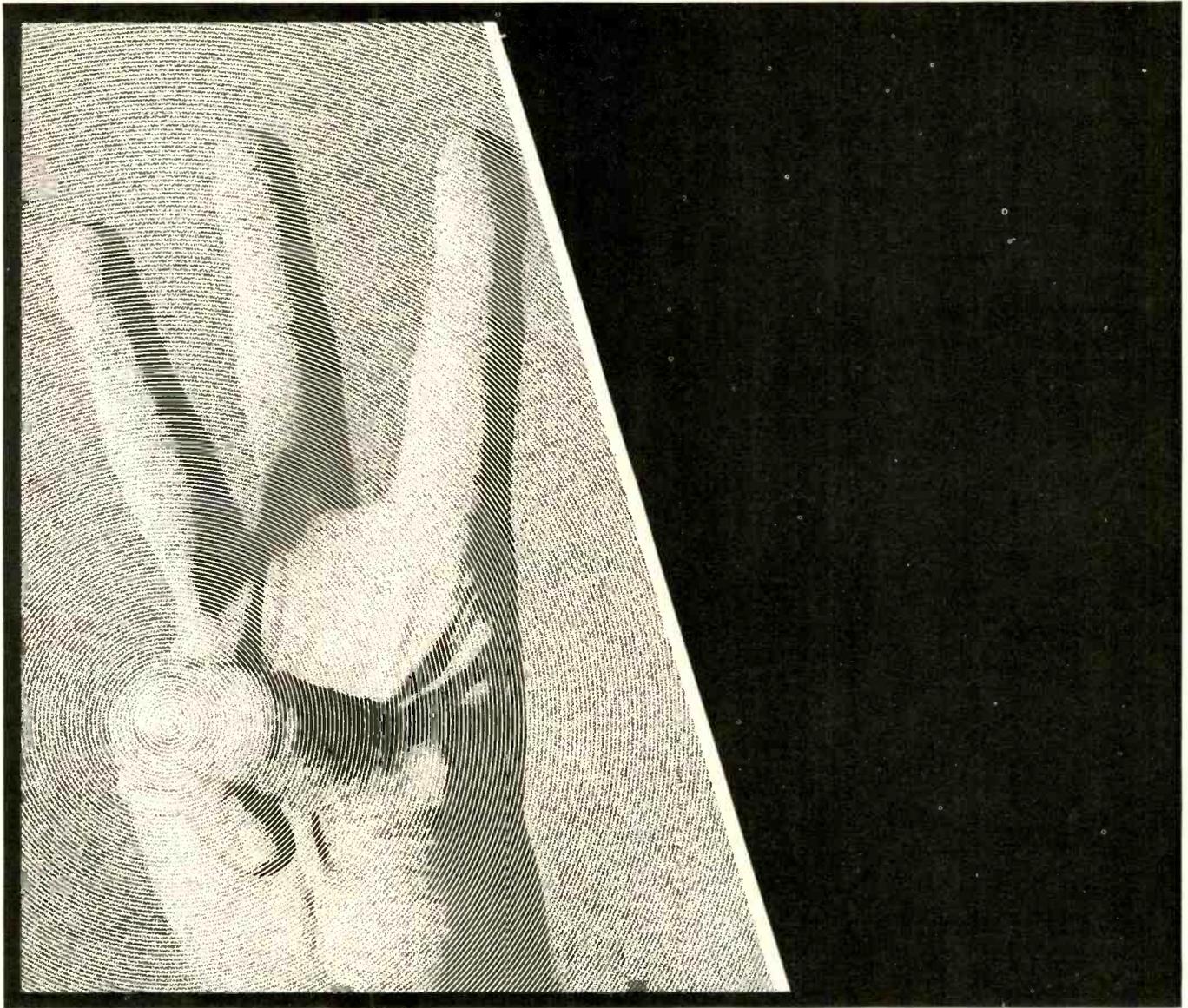
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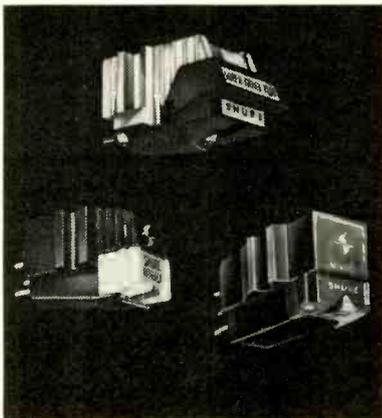
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The written-out transcripts—now we know—are not the real documents! The Nixon tapes themselves are the documents. And the very highest agencies of law have been involved in the working out of this. What a magnificent way to establish the principle that the oral document, recorded, is now the equal of the written document! And how earthshaking, in terms of the very structure of our written-out system of civilization. It takes action on a grand scale to cement such changes, to bring

them at last to our united attention. Or mostly.

A few months back, I received a letter from Columbia University in the City of New York, subtitle, Oral History Research Office, and thereby hangs a wondrous tale. This immense project was begun in 1949 by an enterprising professor of history, Allan Nevins, and by now has accumulated a vast "library" of documentary interviews, over these 25 years and more, made in their own voices by people of importance in many fields,

"oral memoirs by men and women who saw the 20th century happen . . . or made it happen," as Columbia puts it. In the mid-fifties, my own father, a good friend of Prof. Nevins, was asked to give an interview and I well remember the dither in our family over this honor—for this honor—for the project was deliberately aimed at the future, creating history via first-hand oral background material, to be preserved in a place of learning and a first-rate library, available to scholars from all the world. Complete "off the record" protection was part of the package; the express authorization of the interviewees or their heirs. Today, the idea of a tape interview is commonplace. Twenty years back it was new and radical. And the careful historical intent of this particular project (there are others of the sort now) made it really important. To this day, the Columbia recording goes on.

Well, I am one of my father's heirs, and so the letter to me requested permission to make use of my father's interview of twenty-odd years back in a new and brilliant project, with the august *New York Times*. A selected grouping of these interviews was being "published" by the *Times*, not for the public but for direct scholarly use in libraries and other institutions, taking advantage of the latest mass technology. Other groupings were to follow—in which my father's contribution would appear, with permission. Here is what the *Times* folder on the project says, and please read carefully.

"The price for the first edition (200 interviews, some 55,000 pages, about 650 microfiche) is \$1,950. Charter members will pay only \$1,755, a saving of \$520 over the single purchase price." And there is a multiple Index, which adds around \$475 to the cost.

Well, you say, that's not chicken feed. Almost two grand! *Is that all you noticed???* Quite normal library prices for such voluminous material and nothing unusual at all. Don't even bat an eye. Instead, look at that one incredible word, *pages*. Do you begin to get it?

Now I have just about five minutes of my father's recorded voice, taken by myself off the air in 1945. He died in 1961, before tape had got around so far, and he was no audio man. He was a print man, Henry Seidel Canby, over a forty-year career as a writer, literary critic and editor. He founded the *Saturday Review* in the 1920s. He was for 25 years chairman of the editorial board of the *Book of the Month Club*. He wrote book after book, and a thousand editorials, book reviews, articles, one novel and two biographies—every last work in *print*. He never saw a home tape recorder. He did one short series of "live" broadcasts in 1945 and that is where I caught him, on discs, ever so briefly.

Then, at the end of his career, he *taped* this extended interview. Somebody asked him leading questions concerning

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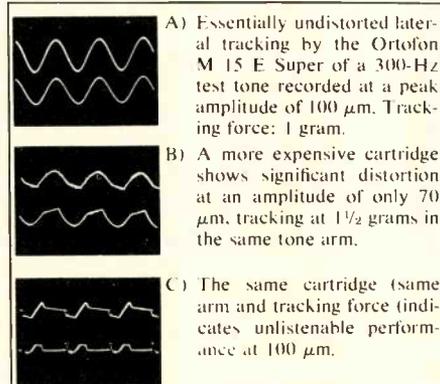
As makers of studio record-cutting equipment (Ortofon supplies equipment to recording companies and studios around the world), we know the capabilities of the newest generation of cutters, which for the first time can clearly put onto records a dynamic range approaching that of master tape. The maximum high-frequency levels these cutters will record also permit the first real approximation of the full "live" intensity of cymbals, brass, snares, and other demanding instruments.

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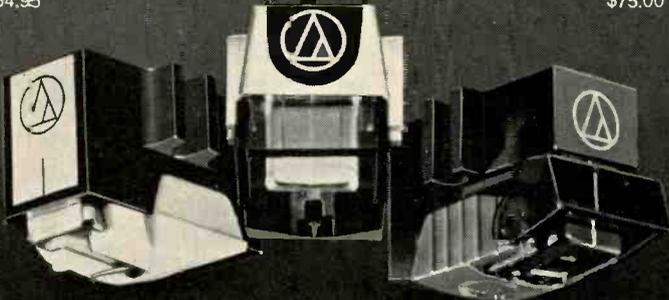
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his experiences in the literary world of the '20s and '30s. He answered ad lib, off the record, informally. What a superb way to grab a bit of a 40-year career on to this new and different medium.

... Pages? What pages? Suddenly it dawned on me. The Columbia Oral History is being circulated by the *New York Times* in written form, via transcripts! Not the original tapes at all. A typed-out transcript, taken from the tapes and put into print. And then onto ultra-modern microfiche pages.

Shades of Richard! Transcripts!! Yep, that's what they are. Incredulous, I phoned in to find out. Not only are they transcripts; they are edited. Not shadily, of course, not unethically at all. The typed material was submitted to the author, who then "corrected" it, to make it right on paper. OK, of course, if you think paper and print. Columbia does. The grammar is corrected, fixed up for print, the unintelligibles are made intelligent, some too-hasty remarks perhaps removed, blue-penciled out, etcetc. And so—we have a *written* document, made out of an oral document. Nothing wrong! Nothing wrong at all. Aside from total historical blindness.

True, the taped-and-typed interview is now a standard journalistic technique, and with superb results, one of the great advances in getting our current happenings from the event to the printed newspaper, or on the air. But the Columbia Oral History isn't quite the same. This is a deliberately collected and produced oral documentation of original material, for the edification of future historians and scholars. Oral edification, one might presume.

Are the tapes then considered the "originals," the official documents, in this collection? It is the tapes which make the project, yes? Vast quantities of them. By all the evidence of present action, it isn't so. Even at this late date, Columbia uses the tapes as a kind of dictation, a transducer from the speaking author to the typist who makes a transcript—the printed transcript is the working product and the active documentation. The entire project revolves around the transcripts—those "pages" of of type. The tapes are scarcely mentioned, in the brochures I have seen. It is the body of official transcripts that the *Times* is distributing to libraries. Not the taped sounds, the oral documents. This is an "oral history" in written terms. but that isn't the half.

Back in the dim 40s (to digress again), I began broadcasting "live" on FM radio, using 78 rpm records plus my own spoken commentary on the music. At first I worked with a station engineer; then a series of table spinning assistants, who did complex segued "phonomon-tages" on two tables, while I talked. We rehearsed for hours. Then came tape—

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and I transferred the entire operation "live" to my own home studio, assistant and all. I had not yet discovered tape editing. I soon did, and in the early 1950s I began doing my own tapes unassisted, via piece-by-piece editing. Yet, do you know, so little did I understand the significance of tape as a permanent record, a document, that I erased all my early shows, in order to use the tape again. Never occurred to me to keep them.

Fortunately, that didn't last long. I saw the light—the very light about which I am writing—and from late 1952 onwards I kept my tapes. I still have most of them, in the hundreds. They are *my* oral documents, my very life, and I hope they will live awhile after me, perhaps.

You may not be entirely astonished, then, when I tell you that the great Columbia Oral History, in all its majesty as a branch of a leading American university and associated with the most monumental of college libraries, the Butler Library, *erased all its tapes* back at the beginning! Why? So they could use the tapes again.

Columbia University! When I think of the miles of tape thrown out in the average studio today . . . Beyond belief. But they did. I got it by phone and I might be wrong, but as I understand it, they erased, and erased, the entire oral documentation of the project, all the way through until 1961. (That's nine years after I saw the light.) They made transcripts of the oral recordings—then junked them. Some oral history! As an audio man, you will share my flabbergastation. I could not believe it.

In any case, they definitely erased my father. Gone, the entire recording, every last bit of him, the only complete extended oral document of this man that ever existed, aside from my scratchy off-air five minutes. All that remains is the edited transcript. It doesn't even have the questions that were asked, just his answers. No tone of voice, no shades of meaning, no significant pauses — all those things that are the virtues and the essence of an oral document, as compared to a written document.

That's about it. In 1961, if I am right, they began to save the tapes. About time! But if I am right, the basic sense still is that the transcripts, as now published by the *Times*, are *the* documents. That's what the *Times* wants. And, as Columbia told me, that's what the scholarly world wants, too. Something solid, in print. And so—the written oral history, transcribed. Very interesting. Very useful. Very blind.

Do you see why I think Mr. Nixon has done us an enormous favor? Could *his* tapes ever be less than the true originals, even including the buzzes? And note that they tried publishing the transcripts. It didn't work. At last, it's oral or nothing. And at last, we begin to understand.

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A Stereo Control System

Richard S. Burwen*

THE HEART of a high quality sound reproduction system is its frequency response. More than any single type of distortion, the frequency response determines whether the reproduction is pleasing and natural. Because there are such great variations among program sources, it is not un-

usual to provide a different frequency response for every record, tape, and program source. Therefore I've designed an extremely flexible three-channel stereo control system which uses miniature a.c. operational amplifier modules for signal mixing and tone-control action to achieve extremely low distortion.

While the ear does not readily detect the rapid variations in frequency response produced by room acoustics, an experienced listener can notice variations in the general trend of the frequency response curve as small as 1 dB between 100 Hz and 5 kHz. To the critical ear, the usual two-tone control system built into most high fidelity systems is inadequate to produce the precise tonal balance needed over the entire audio spectrum. The design described here uses five separate tone controls, each ganged for the three input signals, operating in different frequency ranges, to compensate for variations in program material, room acoustics, speaker response, and listener preferences. This system provides these five controls and an unusual stereo separation control for mixing, blending, or separating monophonic or two- or three-channel stereo signals to produce a natural, pleasant sound.

The major objective in the development of this elaborate stereo control system was to provide complete flexibility in the processing of monophonic and two- or three-channel stereo signals at extremely low distortion and noise levels. The performance and reliability were to be high enough to warrant

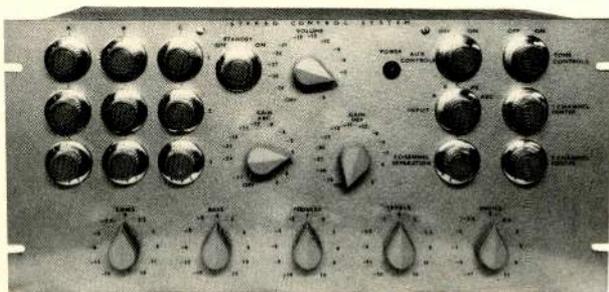


Fig. 1—Stereo Control System controls.

*Consulting Electronics Engineer
12 Holmes Road
Lexington, Mass. 02173

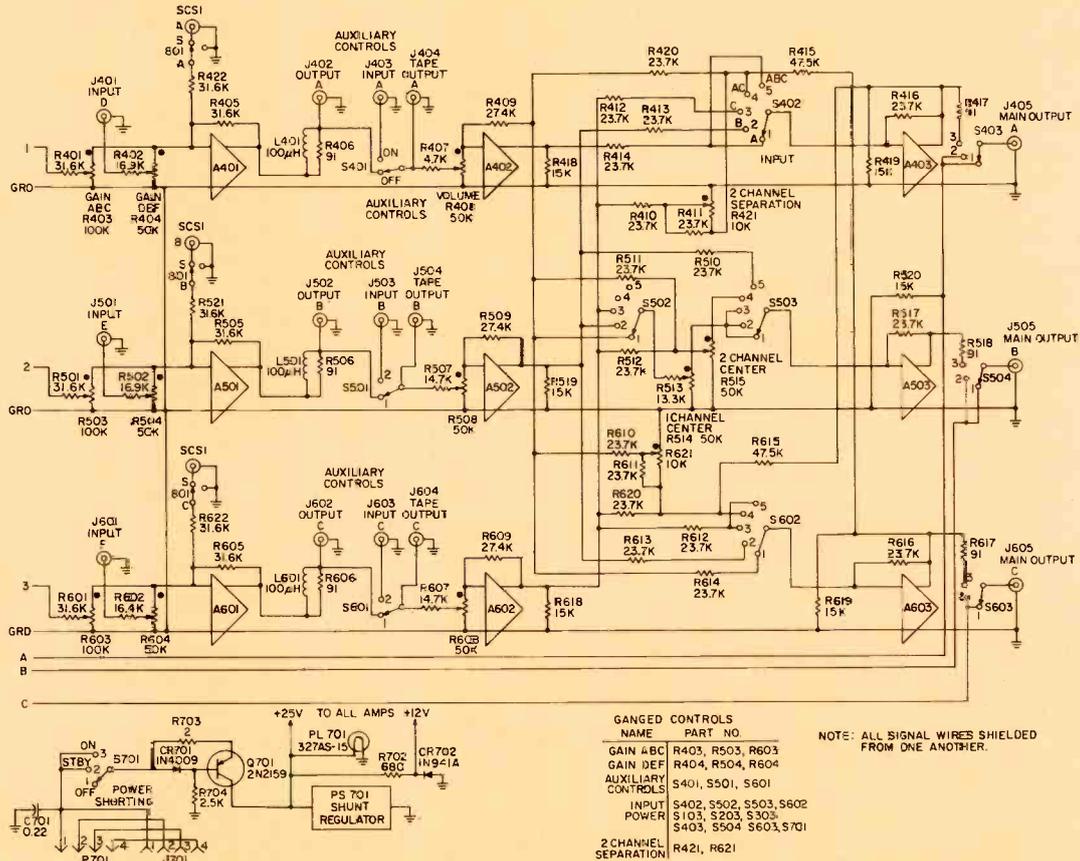
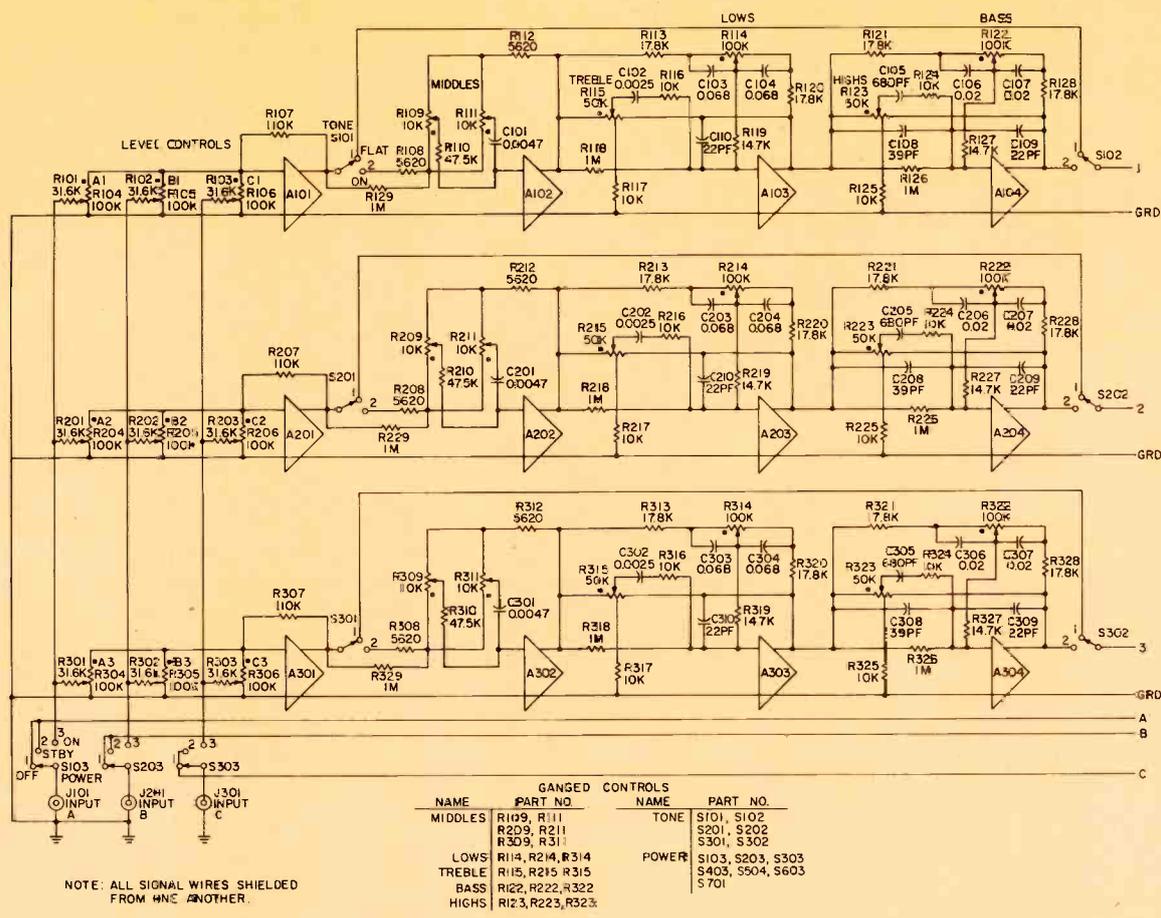


Fig. 2—System schematic.

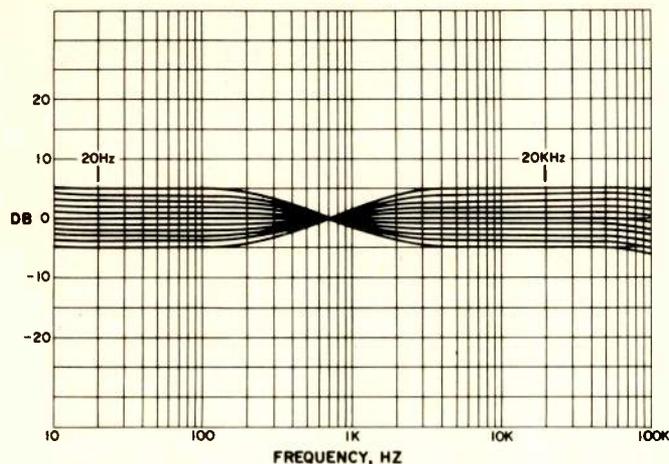


Fig. 3—Frequency response curves produced by MIDDLES control.

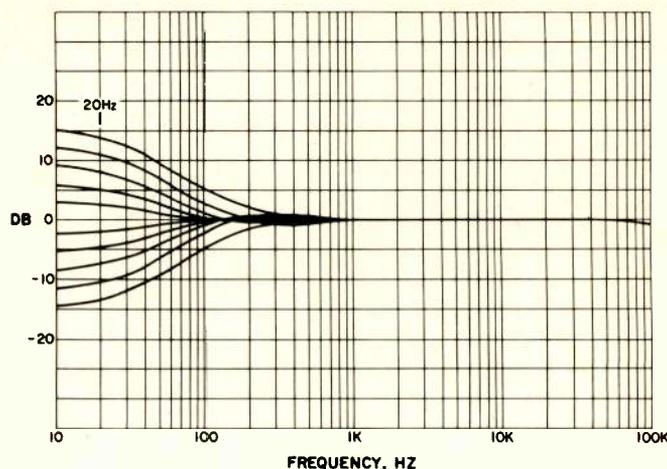


Fig. 4—Frequency response curves produced by LOWS control.

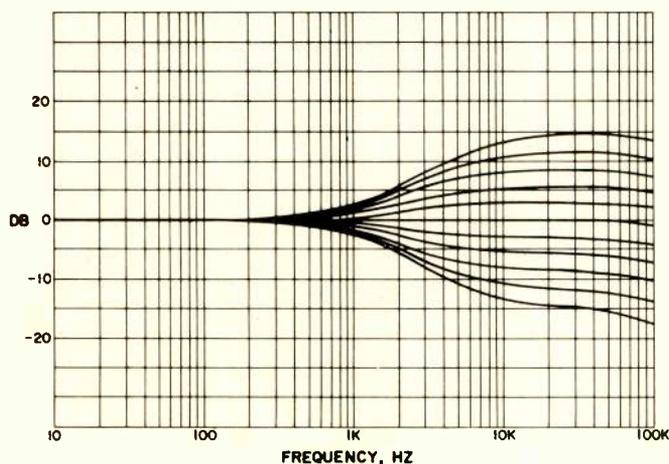


Fig. 5—Frequency response curves produced by TREBLE control.

the use of this system for at least 15 years as part of the author's extensive audio system.

Not for construction by the beginning audiophile, this system uses 89 transistors and 750 precision resistors to meet the stringent performance requirements described below.

Performance Requirements

The stereo control system is designed for use with external preamplifiers which supply input signal levels in the range from 1V to 3V peak. It delivers output signal levels to a tape recorder and to a main line, each 3V peak into load resistances of 5k with at least 5 dB extra output capability.

Because this equipment is only one of as many as 10 or more parts of the recording and reproducing chain, it is required to generate less than 0.1% harmonic distortion over the entire frequency range from 15 Hz to 10 kHz and to deliver full output to 30 kHz. When the frequency response is supposed to be flat, it is to be within 0.1 dB from 15 Hz to 30 kHz. In order to take full advantage of the low noise of a special capacitor microphone preamplifier, the rms signal to rms noise ratio is required to be 100 dB from 200 Hz to 20 kHz and 94 dB from 20 Hz to 20 kHz.

To meet these performance requirements, the signal level through the system must be maintained at the highest practical level and each stage of amplification must have low noise

and a large amount of feedback to reduce harmonic distortion. In short, each stage has to be an operational amplifier.

System Description

Figure 1 shows the chassis and the front panel controls. In the upper left, are nine mixing potentiometers which feed amplifiers A101, A201, and A301 in the schematic, Fig. 2. These controls mix the three incoming stereo signals in any combination into the three amplifier channels. Each amplifier provides a voltage gain of 10 dB and the normal output signal is 3V peak.

Prior to the mixer, the three input signals at J101, J201, and J301 passed through contacts of the d.c. power switch so that in case of a component failure, the switch can be set at OFF or STANDBY and the input signals will pass directly to the main output jacks.

Tone Controls

Following the input mixer, the three stereo channels each feed a set of tone control amplifiers. The action of the MIDDLES control can be seen in the upper channel. The pair of ganged potentiometers, R109 and R111, vary the low frequency gain and the high frequency gain in opposite directions by changing the input and feedback signals at the operational amplifier A102. At the middle position of the potentiometers, the voltages at the two arms are equal and midway between the input and output voltages, thereby producing flat response and unity gain.

The potentiometers actually consist of sections of a six-gang, 21-position step switch with two sections allocated to each of the three stereo channels. The switch changes the response in steps of 1 dB and the set of curves for every step is shown in Fig. 3. All the resistors on the switch and throughout the system, which affect gain or frequency response, are 1 percent metal film so as to produce accurate ganging of the stereo channels.

Next, the signal passes through the LOWS and TREBLE control amplifier A103. These are conventional feedback tone controls with some resistive loading from the center of the treble potentiometer to ground which helps to maintain the half-loss and half-gain points of the treble curves at about 2500 Hz. The LOWS potentiometer is one section of a 3-gang, 21-position switch which controls the three stereo channels and, similarly, the TREBLE potentiometer is one section of a 3-gang switch. Because the tone control amplifier stage A103 is symmetrical and has unity gain, the curves of LOWS boost and cut, Fig. 4, are perfectly symmetrical about the flat response line. The maximum boost and cut at 20 Hz is 13.5 dB

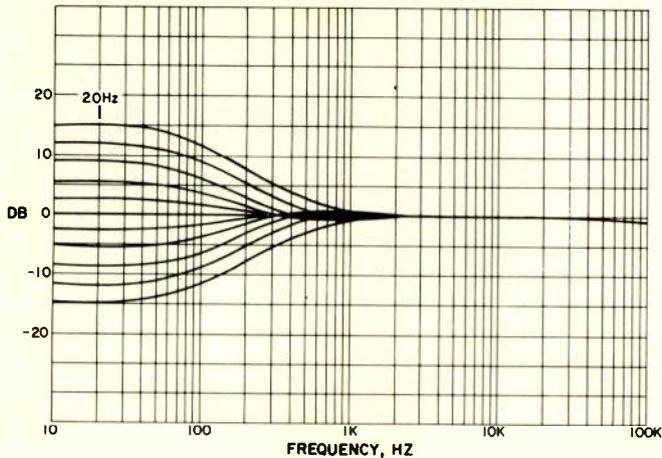


Fig. 6—Frequency response curves produced by BASS control.

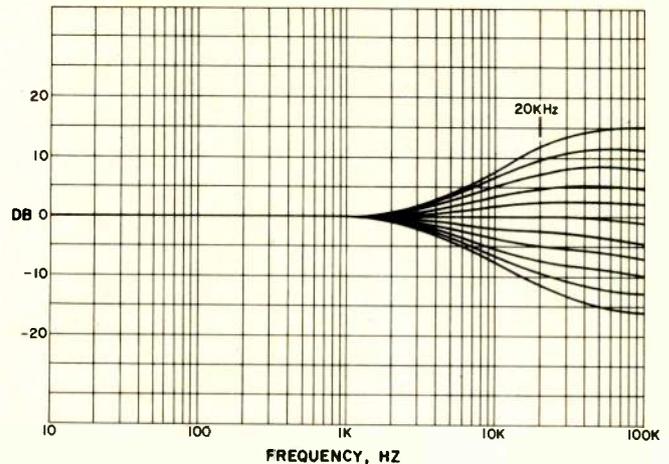


Fig. 7—Frequency response curves produced by HIGHS control.

and occurs in steps of approximately 1.5 dB. The TREBLE control curves shown in Fig. 5 are also symmetrical about the flat response line and the maximum boost or cut at 20 kHz is 14.5 dB.

Next the signal passes through the BASS and HIGHS amplifier A104 which is the same as the previous amplifier but uses different capacitor values to produce the curves in Figs. 6 and 7.

All the capacitors that affect frequency response are matched within 1 percent of one another from channel to channel for accurate ganging. Although there can be quite an accumulation of 1 percent tolerances, statistical averaging of a fortunate combination resulted in matching between channels to within 0.2 dB for the entire stereo system over the range from 20 Hz to 30 kHz.

Note that the tone controls are all independent with virtually no interaction between them and so their response curves are additive. For example, by turning the LOWS, BASS, and MIDDLES controls to maximum and the TREBLES and HIGHS controls to minimum, the gain difference from 20 Hz to 20 kHz can be as great as 65 dB. When all the controls are set at flat, the use of precision parts provides response within ± 0.1 dB from 15 Hz to 30 kHz as shown in the magnified frequency response curve, Fig. 8. If desired, all the tone controls can be switched in and out without changing their settings by means of the TONE switch.

Is all this flexibility necessary? Notes made on the most pleasing tone control settings for various pieces of program material in the author's library show that there are a number of selections that require extreme control settings in either direction but only one or two of the tone controls are set at their extremes.

It must be pointed out that even such a flexible set of response curves as those shown in Figs. 3 through 7 cannot completely compensate for deficiencies in the loudspeaker systems and room acoustics, nor for certain pieces of program material that seem to have prominent resonances. In the author's system, separate equipment is used for speaker and acoustic equalization and fine adjustment is accomplished by a 22-channel half-octave filter set which amounts to 22 more tone controls. The stereo control system is used primarily for equalizing differences among various pieces of program material.

Stereo Blending and Separation

The signal from the tone control section then passes to a main three-gang GAIN control and is mixed at amplifiers

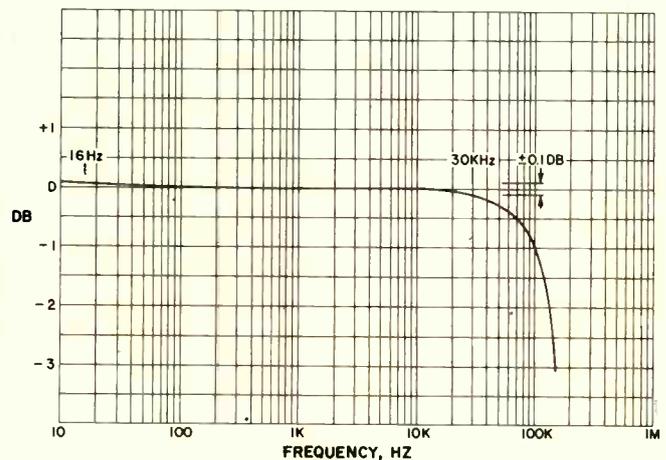


Fig. 8—Magnified view of the flattest response through the tone controls.

A401, A501, and A601 with two other two-channel stereo signals. This feature is particularly useful in mixing together recorded material equalized through the tone controls, and external microphone signals, as well as the signal from a second stereo control system which is part of the author's sound system. Following A401, the signal may go out to auxiliary equipment such as the half-octave filter set, volume expander and compressor, dynamic noise filter, and electronic reverberation. The signal from this external equipment may be switched in and out by the AUXILIARY CONTROLS switch and then it passes to the TAPE OUTPUT used for recording. The signal level at this point is 3V peak.

The main VOLUME control follows the TAPE OUTPUT and feeds amplifier A402 in the upper channel. At this point, a selector switch is used to determine the optimum combination of signals for feeding the external power amplifiers and speakers. For monophonic sound, position A of the INPUT switch sends channel A to all three outputs which are identical but the center channel has a gain control R514. Channels A, B, or C can be selected and used in this manner.

For two-channel stereo, channels A and C deliver the left and right channels and channel B is a mixture of the two adjusted in level via the 2-CHANNEL CENTER control R515. This

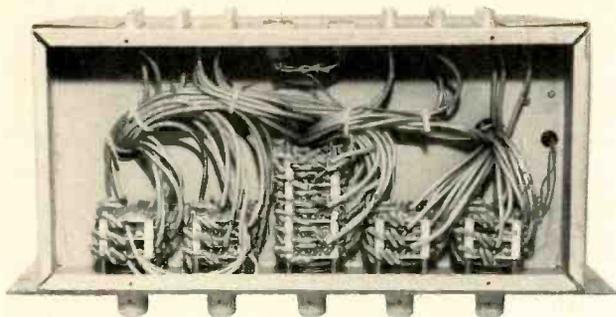


Fig. 9—Bottom view showing ganged tone switches with 1 percent metal film resistors.

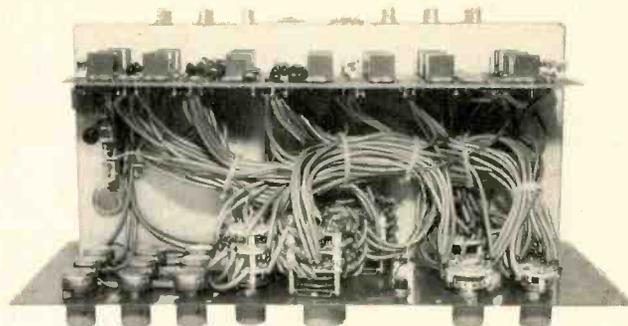


Fig. 10—Top view showing shielded wire bundle.

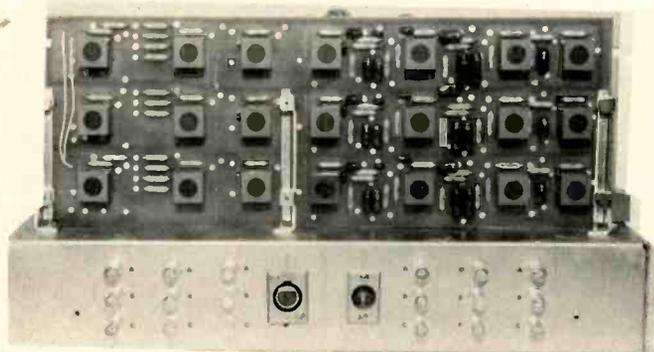


Fig. 11—Rear view showing 21 a.c. operational amplifier modules.

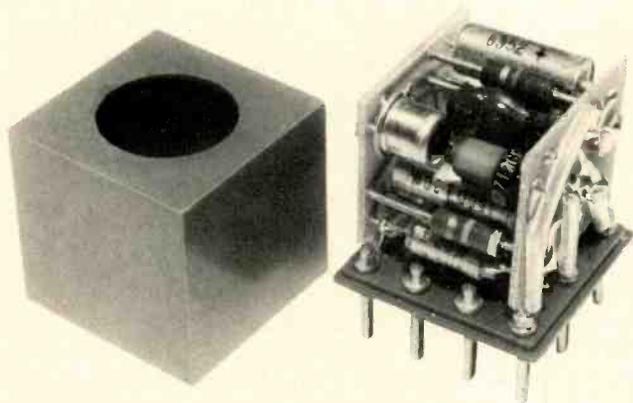


Fig. 12—The a.c. operational amplifier module.

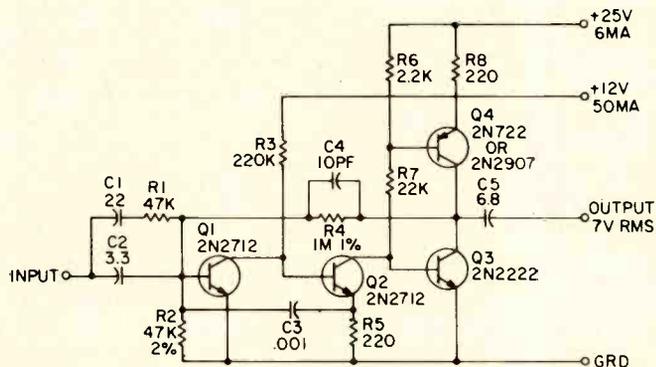


Fig. 13—AC operational amplifier schematic.

control is particularly useful in placing the apparent position of a soloist at the center speaker.

In the author's sound system, there are actually five speaker systems, two for the left, two for the right and one for the center. Because of the tendency to exaggerate the stereo effect, it is frequently necessary to partially blend the two outer channels using the 2-CHANNEL SEPARATION control R421 and R621, which is a pair of ganged potentiometers. On the other hand, there is some program material which exhibits very little stereo effect and benefits from exaggeration. For this material, the separation control can be turned in the opposite direction to blend the two outer channels together in opposite phase. Generally, when opposite phase blending is used, it has been found desirable to increase the level of the center channel. When turning the 2-CHANNEL SEPARATION control from one extreme to the other, the effect on the spread of the sound image can be rather dramatic.

Construction

The construction of the main chassis and printed circuit board are shown in Figs. 9, 10, and 11. The system contains no internal power supply except for a current source Q701 and shunt regulator PS701, Fig. 2. This avoids hum pickup from the magnetic field of the power transformer. Shunt regulation maintains a constant signal-free current in the power supply leads and allows a common supply to be used for many pieces of equipment without interaction due to the power supply impedance. All the internal wiring is shielded to prevent crosstalk between channels which is between -65 and -85 dB at 2 kHz. The system involves a total of 750 1-percent resistors, 21 a.c. operational amplifier modules, and 1 shunt regulator.

The A.C. Operational Amplifier

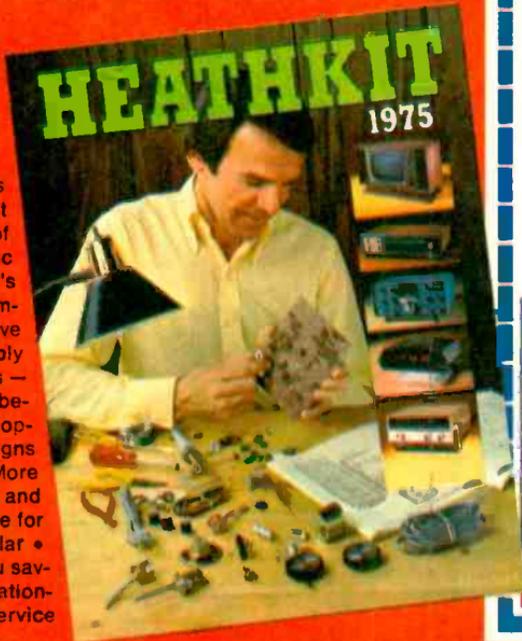
The a.c. operational amplifier module, shown in Fig. 12 and schematically in Fig. 13, provides the tremendous feedback needed to attain the measured 0.003 percent total harmonic distortion through the entire system at 400 Hz. Because the module delivers full output of 7V rms within 1 dB from 10 Hz to 500 kHz, distortion at frequencies as high as 10 kHz is below the measuring equipment limit of 0.025 percent. A most unusual feature of this operational amplifier, in contrast with the many discrete component and integrated types on the market today, is that this one contains input and output coupling capacitors plus an internal 1M feedback resistor, R4. These internal coupling capacitors greatly simplify the stereo control system printed circuit board layout and construction, as well as the schematic. The circuit also incorporates a damping network R1 and C1 as part of the input coupling circuit to eliminate low frequency ringing due to feedback around two coupling capacitors when the operational amplifier is connected in any of the feedback configurations in the stereo control system.

Although this operational amplifier was designed in 1963, and

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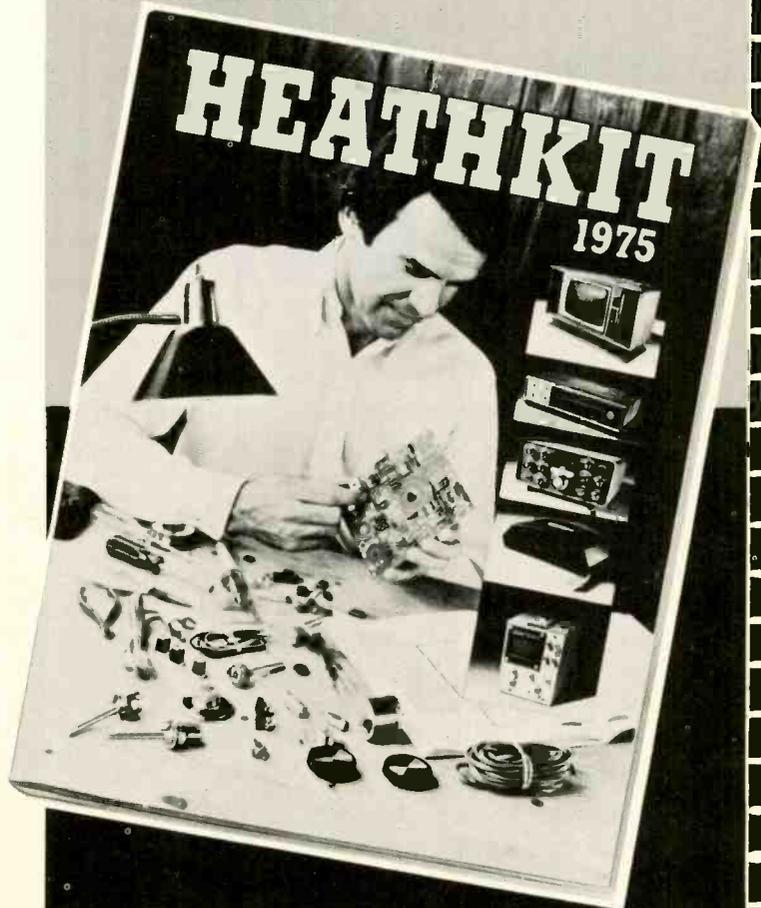
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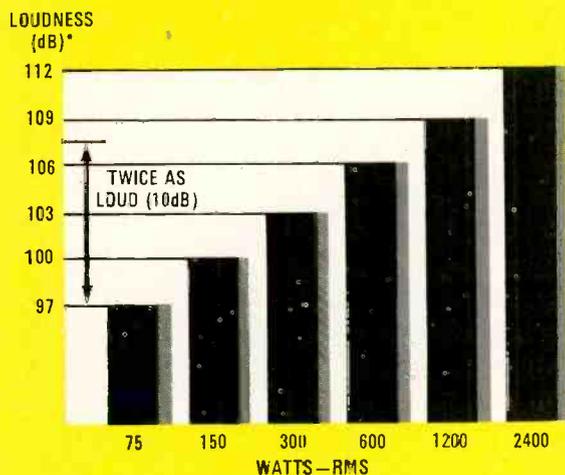
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there has been a great deal of development in discrete component and integrated circuit types since then, there is at this time no integrated circuit operational amplifier that performs quite as well as this single-ended a.c. operational amplifier with respect to the combination of extremely low high frequency distortion and low noise.

Results

Electrically, the system meets the original performance objective including control flexibility, frequency response, and distortion. The signal-to-noise ratio with all the controls in use and set for flat response, and with the gain set for 1V peak input, is 98 dB in a bandwidth from 20 Hz to 20 kHz. At other control settings, the noise level varies from -78 dB, with all the controls set for maximum gain and noise output, to -110 dB when the VOLUME control is set at 0. The square wave response is shown in Fig. 14.

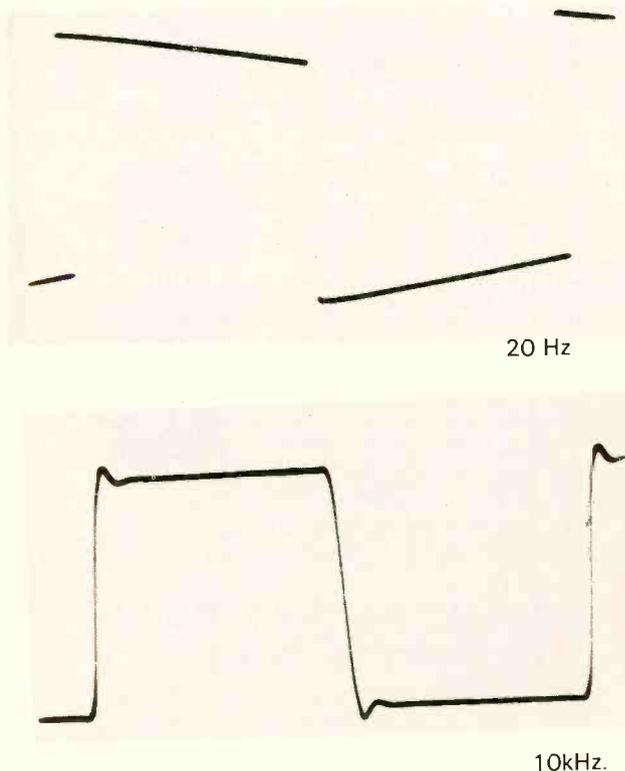
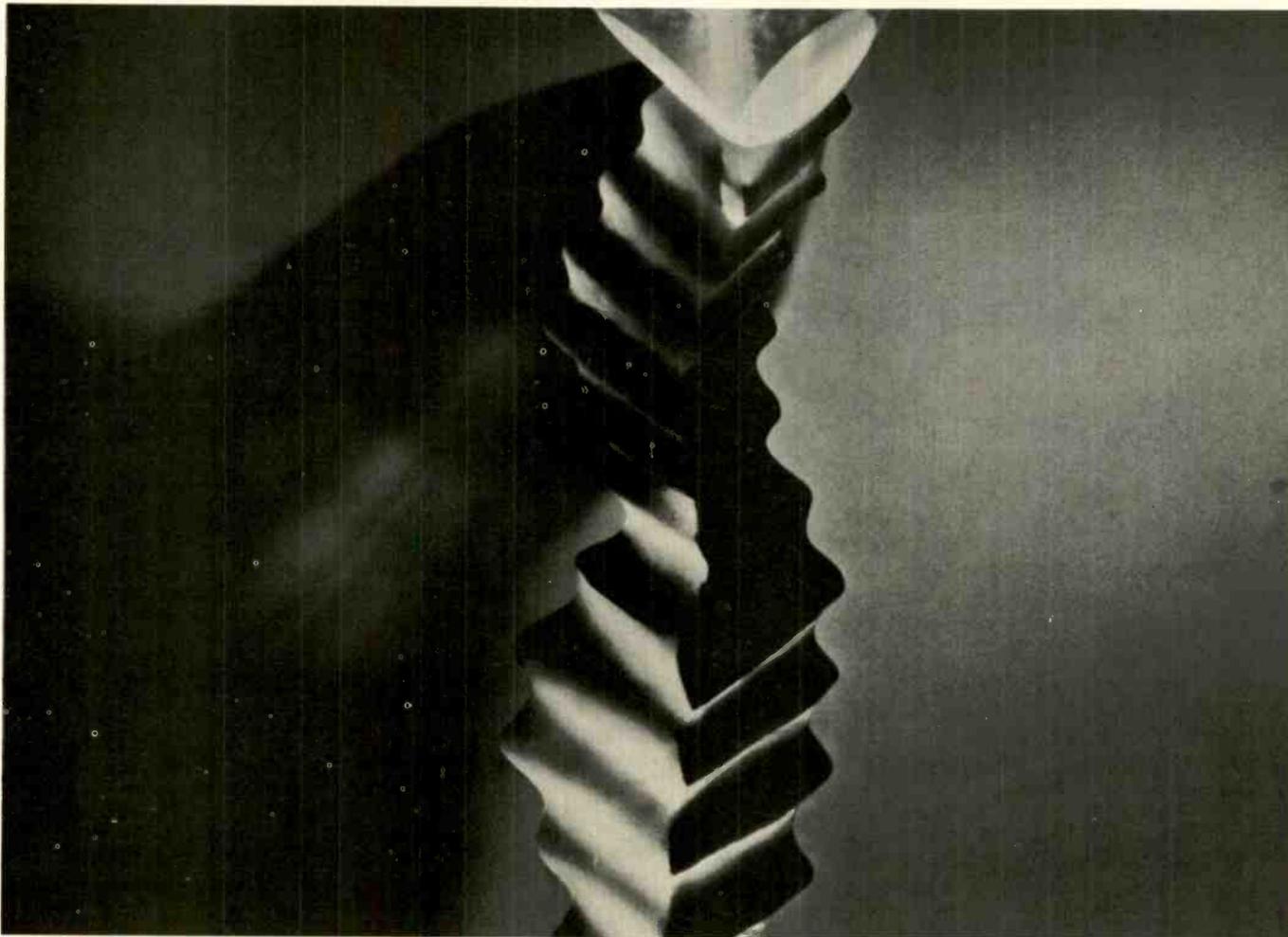


Fig. 14—Square wave response at flat tone control settings.

During the past eight years, two of these Stereo Control Systems have been operated in the author's sound system for over 28,000 hours each and there has been a total of only one failure—a transistor in an operational amplifier. In addition, 10 molded carbon potentiometers have become noisy from infrequent operation and have been replaced. In listening tests, there is no audible difference when the system is switched in and out with flat settings of the controls. After listening to various types of program material and making full use of the controls, it can be stated that the improvement in sound over that produced earlier by less flexible equipment was worth every transistor and resistor. Some pieces of program material which, because of poor recording characteristics, can be irritating to the ear when played through less flexible equipment, have now become pleasurable listening. Eight years of operation have produced no desire to improve upon the performance of the stereo control system.

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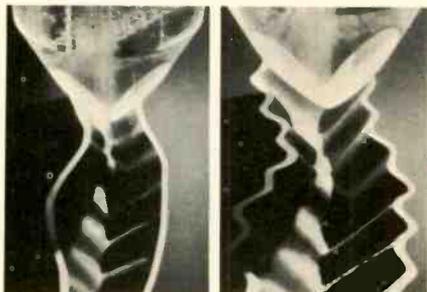
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ANNUAL PRODUCT DIRECTORY

Every year since 1958 AUDIO has presented an Annual Product Directory, listing specifications and showing photos of as many high fidelity products as was possible in the space allotted. This year, we have "thrown open the gates" and are attempting to list every product that legitimately can be called "high fidelity" from every maker we could contact. Because of the sheer number of products, the specifications given were supplied by the maker and are not the result of our testing. However, it is our experience during several years of testing that a unit's performance will generally be as specified. Though methods of measuring certain para-

meters do differ from one maker to another, we have tried to translate them so far as is possible.

In certain categories, letter codes were used to save space. These include various letters to indicate speeds of a tape deck or turntable, B for basic amp, K for kit, D for Dobyization. Four-channel units are marked beneath the model number, with the system type appearing in the "Notes" column. Amplifier power ratings are again in rms wattage, at 8 ohms, either two or four channels driven.

For more complete specifications on any product, the reader is invited to contact the manufacturer at the address listed below.

Directory of Manufacturers

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AKG (See N. American Philips)

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Altec
1515 S. Manchester St.
Anaheim, CA 92803

Astatic Corp.
Harbor & Jackson Sts.
Conneaut, OH 44030

Audioanalyst, Inc.
P.O. Box 262
Brookfield, CT 06804

Audio Dynamics Corp.
230 Pickett District Rd.
New Milford, CT 06776

Audionics
8600 NE Sandy Blvd.
Portland, OR 97220

Audiophile Systems
851 W. 44th St.
Indianapolis, IN 46208

Audio Research Corp.
2843 26th Ave. S.
Minneapolis, MN 55406

Audio-technica U.S., Inc.
33 Shiawassee Ave.
Fairlawn, OH 44313

Audiotex, Div. Hydrometals
400 S. Wyman St.
Rockford, IL 61101

Avid Corp.
10 Tripps Lane
E. Providence, RI 02914

Aztec (see Precision Acoustics)

BGW Systems
P.O. Box 3742
Beverly Hills, CA 90212

B & O of America
2271 Devon Ave.
Elk Grove Village, IL 60007

BSR (USA) Ltd.
Rte. 303
Blauvelt, NY 10913

B & W (see Linear Devices)

Benjamin Electronics
40 Smith St.
Farmingdale, NY 11735

Beyer (see Revox)

Bose Corp.
Framingham Ind. Park
Framingham, MA 01701

R.T. Bozak Mfg. Co.
Box 1166
Darien, CT 06821

Braun Stereo Components
Analog & Digital Sys. Inc
377 Putnam
Cambridge, MA 02139

British Industries Co.
Westbury, NY 11590

CCA Electronics Corp.
716 Jersey Ave.
Gloucester, NJ 08030

Cerwin-Vega
6945 Tujunga Ave.
N. Hollywood, CA 91605

Concord (See Benjamin)

Creative Environments
85 Hoffman Lane S.
Happauge, NY 11787

Crisman Speaker Co.
835 Walnut
Boulder, CO 80302

Crown International
P.O. Box 1000
Elkhart, IN 46517

- Custom Designs Ltd.**
P.O. Box 10734
Houston, TX 77018
- Dahlquist, Inc.**
27 Hanse Ave.
Freeport, NY 11520
- Dathar Acoustics**
145 N. Franklin Tnpk.
Ramsey, NJ 07446
- Dayton-Wright Associates**
P.O. Box 419
Thornhill, Ontario, Canada
- Decca (see Paoli)**
- Design Acoustics**
2909 Oregon Ct.
Torrance, CA 90503
- Dokorder, Inc.**
11264 Playa Ct.
Culver City, CA 90230
- Dual (see United Audio)**
- Dunlap-Clarke Electronics**
40 Creighton St.
Cambridge, MA 02140
- Dynaco, Inc.**
3060 Jefferson St.
Philadelphia, PA 19121
- EMT (see Gotham)**
- EPI, Inc.**
1 Charles St.
Newburyport, MA 01950
- ESS, Inc.**
9613 Oates Dr.
Sacramento, CA 95827
- Eastman Sound Mfg. Co., Inc.**
Harmony Rd.
Mickleton, NJ 08056
- Electro Music**
56 W. Del Mar Blvd.
Pasadena, CA 91105
- Electronic Industries, Inc.**
7516 42nd St. N.
Minneapolis, MN 55427
- Electrostatic Research, Inc.**
38 Cabot St.
Beverly, MA 01940
- Electro-Voice, Inc.**
600 Cecil St.
Buchanan, MI 49107
- Elpa Marketing**
Thorens & Atlantic Aves.
New Hyde Park, NY 11040
- Empire Scientific Corp.**
1055 Stewart Ave.
Garden City, NY 11530
- Equasound**
11436 Victoria
Los Angeles, CA 90066
- Ercona Corp.**
2492 Merrick Rd.
Bellmore, NY 11710
- Fairfax Industries, Inc.**
900 Passaic Ave., Bldg. 18
E. Newark, NJ 07029
- Ferrograph (see Elpa)**
- Frazier, Inc.**
1930 Valley View Lane
Dallas, TX 75234
- Fulton Electronics**
4428 Zane Ave., N.
Minneapolis, MN 55422
- Garrard (see Plessey)**
- Glenburn Corp.**
787 Susquehanna Ave.
Franklin Lakes, NJ 07417
- Gollehon Co.**
209 Front NW
P.O. Box 1964
Grand Rapids, MI 49501
- Gotham Audio Corp.**
741 Washington St.
New York, NY 10014
- Grace (see Sumiko)**
- Gracom Industries**
140-11A Cherry Ave.
Flushing, NY 11355
- Grado Labs**
4614 7th Ave.
Brooklyn, NY 11220
- Group 128, Inc.**
50 Sun St.
Waltham, MA 02154
- Harman/Kardon, Inc.**
55 Ames Ct.
Plainview, NY 11803
- Hartley Products Corp.**
54-56 N. Summit St.
Tenafly, NJ 07670
- Haynes Micro-Electronics**
P.O. Box 457
Lawrence, KS 66044
- Hear Muffs, Inc.**
513 Rogers St.
Downers Grove, IL 60515
- Heath Co.**
Benton Harbor, MI 49022
- Heco (see Gracom)**
- Hegeman Labs, Inc.**
555 Prospect St.
E. Orange, NJ 07017
- Hervic Electronics**
1508 Cotner Ave.
Los Angeles, CA 90025
- Hitachi**
401 W. Artesia Blvd.
Compton, CA 90220
- IMF Products**
7616 City Line Ave.
Philadelphia, PA 19151
- Infinity Systems, Inc.**
9001 Fulbright Ave.
Chatsworth, CA 91311
- Innermedia Electronics**
4503 E. Railroad Ave.
Sacramento, CA 95826
- JBL**
3249 Casitas Ave.
Los Angeles, CA 90039
- JVC America Inc.**
50-35 Queens Midtown Expy.
Maspeth, NY 11378
- JansZen (see Electronic Ind.)**
- Jensen Sound Labs**
4310 Trans World Rd.
Schiller Park, IL 60176
- KLH Research & Development**
30 Cross St.
Cambridge, MA 02139
- KMAL (see Audiophile Sys.)**
- Kenwood Electronics**
72-02 51st Ave.
Woodside, NY 11377
- King Research**
P.O. Box 125
Greenville, OH 45331
- Klein & Hummel (see Gotham)**
- Klipsch & Associates**
P.O. Box 280
Hope, Ark. 71801
- Koss Corp.**
P.O. Box 2320
Milwaukee, WI 53212
- LWE, Div. Acoustron Corp.**
8014 Pinemont
Houston, TX 77040
- Lafayette Radio Electronics**
111 Jericho Tnpk.
Syosset, NY 11791
- H.J. Leak (see Ercona)**
- Lenco (see Benjamin)**
- Linear Design Labs**
20 Willett Ave.
Port Chester, NY 10573
- Linear Devices**
148 Franch St.
New Brunswick, NJ 08901
- Linn Sondek (see Paoli)**
- 3M Company**
2501 Hudson Rd.
St. Paul, MN 55119
- Magitran Co.**
311 E. Park St.
Moonachie, NJ 07074
- Magnepan**
P.O. Box 8642
White Bear Lake, MN 55110
- Magnavox Corp.**
1700 Magnavox Way
Ft. Wayne, IN 46804
- Magnum Opus**
220 W. 19th St.
New York, NY 10011
- Marantz Co.**
8150 Vineland
Sun Valley, CA 91352
- Martin (see Eastman)**
- McKay Dymek Co.**
675 N. Park Ave.
Pomona, CA 91766
- Micro/Acoustics Corp.**
8 West Chester Plaza
Eimsford, NY 10523
- Nagra Magnetic Recorders, Inc.**
19 W. 44th St., Rm. 715
New York, NY 10036
- Nakamichi Research**
220 Westbury Ave.
Carle Place, NY 11514
- Napolex (see Sumiko)**
- Neumann (see Gotham)**
- Nikko Electric Corp. of America**
16270 Raymer St.
Van Nuys, CA 91406
- North American Philips Corp.**
100 E. 42nd St.
New York, NY 10010
- Ohm Acoutics**
206 Classon Ave.
Brooklyn, NY 11205
- Olson Electronics, Inc.**
260 S. Forge St.
Akron, OH 44308
- Onkyo**
25-19 43rd Ave.
Long Island City, NY 11101
- Ortofon**
9 E. 38th St.
New York, NY 10016
- PE (see United Audio)**
- PML (see Ercona)**
- Pacific Electronics**
6601 Bay St.
Emeryville, CA 94608
- Paoli Hi-Fi**
P.O. Box 876
Paoli, PA 19301
- Phase Linear Corp.**
405 Howell Way
Edmond, WA 98020
- Pickering & Co.**
101 Sunnyside Blvd.
Plainview, NY 11803
- Pilot**
66 Fieldpoint Rd.
Greenwich, CT 06830
- U.S. Pioneer Electronics Corp.**
75 Oxford Dr.
Moonachie, NJ 07074
- Plessey, Ltd.**
170 Finn Ct.
Farmingdale, NY 11735
- Polk Audio**
431 Notre Dame Lane
Baltimore, MD 21212
- Precision Acoustics**
16000 W. 5th Ave.
Golden, CO 80401
- QRK Electronics Products, Inc.**
1568 N. Sierra Vista
Fresno, CA 93703
- Quatre**
4704 Van Nuys Blvd.
Sherman Oaks, CA 91403
- Quintessence Group**
1626 N. "C" St.
Sacramento, CA 95814
- RTR Industries**
8116 Deering Ave.
Canoga Park, CA 91304
- Radio Shack (see Allied-Radio Shack)**
- Rectilinear Research Corp.**
107 Bruckner Blvd.
Bronx, NY 10454
- Revox Corp.**
155 Michael Dr.
Syosset, NY 11791
- Rogersound Labs**
6319 Van Nuys Blvd.
Van Nuys, CA 91401
- Romex**
2280 Grand Ave.
Baldwin, NY 11510
- Rotel of America, Inc.**
2642 Central Park Ave.
Yonkers, NY 10710
- SAE, Inc.**
P.O. Box 60271, Terminal Annex
Los Angeles, CA 90060
- Sansui Electronics**
55-11 Queens Blvd.
Woodside, NY 11377
- Sanyo Electric**
1200 W. Walnut St.
Compton, CA 90220

Schober Organ Corp.
43 W. 61st St.
New York, NY 10023

Scintrex Audio
Amherst Ind. Park
Tonawanda, NY 14150

H.H. Scott
111 Powder Mill Rd.
Maynard, MA 01754

Sennheiser Electronics Corp.
10 W. 37th St.
New York, NY 10018

The Sequerra Co.
71/07 Woodside Ave.
Woodside, NY 11377

Sharp Corp.
10 Keystone Place
Paramus, NJ 07652

Sherwood Electronic Labs
4300 N. California
Chicago, IL 60645

Shure Brothers
222 Hartrey Ave.
Evanston, IL 60204

Sony Corp. of America
47-47 Van Dam St.
Long Island City, NY 11101

Soundcraftsmen
1721 Newport Circle
Santa Ana, CA 92705

Sound Systems International
53 E. Oakland Ave.
Salt Lake City, UT 84115

Sound Technology Research
3516 Lagrande Blvd.
Sacramento, CA 95823

Southwest Technical Products Corp.
219 W. Rhapsody
San Antonio, TX 78216

Stanton Magnetics
Terminal Dr.
Plainview, NY 11803

Sumiko
P.O. Box 5046
Berkeley, CA 94705

Suprex Electronics Corp.
151 Ludlow St.
Yonkers, NY 10705

Superscope, Inc.
8150 Vineland Ave.
Sun Valley, CA 91352

GTE Sylvania
700 Ellicott St.
Batavia, NY 14020

Tandberg of America, Inc.
Labriola Ct.
Pelham, NY 10803

TEAC Corp. of America
7733 Telegraph Rd.
Montebello, CA 90640

Technics by Panasonic
200 Park Ave.
New York, NY 10017

Telephonics
770 Park Ave.
Huntington, NY 11743

Telex Communications
9600 Aldrich Ave. S.
Minneapolis, MN 55420

Thorens (see Elpa)

Tomlinson Research
1890 Capitol Circle, SW
Tallahassee, FL 32301

Toshiba America, Inc.
4106 DeLong St.
Flushing, NY 11355

Transaudio (see Quatre)

Transduction Ltd.
P.O. Box 608
Bristol, PA 19007

Trusonics
1100 E. Franklin
Huntington, IN 46750

The Turner Co.
909 17th NE
Cedar Rapids, IA 52402

United Audio Products
120 S. Columbus Ave.
Mt. Vernon, NY 10553

Utah Electronics
1124 E. Franklin St.
Huntington, IN 46750

Venturi (see British Industries)

Vidaire Elec. Mfg. Corp.
150 Buffalo Ave.
Freeport, NY 11520

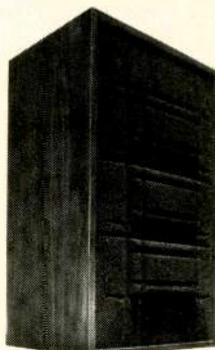
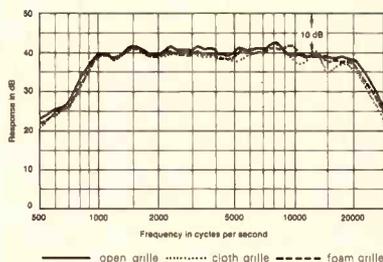
Win Laboratories
1301 Norman Firestone Rd.
Goleta, CA 93017

Wollensak (see 3M Co.)

Yamaha
6600 Orangethorpe Ave.
Buena Park, CA 90620

Dew Foam offers a grille replacement kit for your present speakers

they must have
foam grilles for the best
sound reproduction



Many of the speaker manufacturers have already replaced grille cloth with sculptured foam grilles by Dew Foam. Why? Because open-face foam is almost acoustically perfect as transparent and distortion free as a bare speaker.

It greatly out-performs the standard, out-moded grille cloth.

The graph proves it. Particularly note the all important frequencies between 15,000 and 20,000.

Dew Foam Sculptured Grilles are made of Tenneco's new Velve™ elegantly sculptured in warm ebony brown and striking jet black. Or if you want to have some fun, paint them bright orange, red, blue or any other color to match the decor of your room. Dew Foam grilles are easy to install in your present speakers. Just rip the grille cloth off and adhere the foam. Takes only 10 minutes. Best of all, a replacement kit with one grille costs only \$6.95 to \$14.95 depending on the size.

Give your speakers the sound they deserve by asking your dealer for Dew Foam Sculptured Grilles or write for further information to Dew Foam, 14768 Raymer Street, Van Nuys, California 91405.



Check No. 19 on Reader Service Card

is stereo obsolete?

\$50 out of every \$100 you spend on a hi-fi system may be wasted on an obsolete stereo receiver!

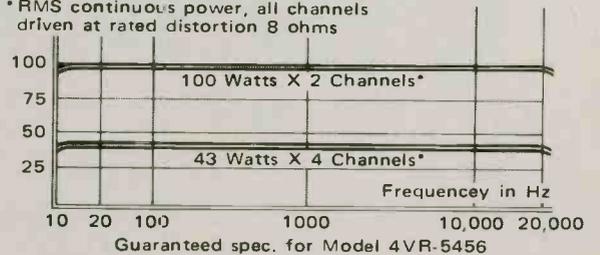
Four-channel receivers with built-in power strapping of the output amplifiers for stereo operation offer stereo output power comparable to the finest stereo receivers at almost the same cost and without any risk of becoming obsolete and robbing you of half the value you're paying for!

That can't happen with a JVC four-channel receiver with our Balanced Transformer-Less . . . BTL . . . circuitry which delivers over twice the output power to your speakers when used for 2-channel operation. Just look at the power output. Start out with a JVC state-of-the-art quad receiver and just two speakers. Later add two additional speakers and at a push of a front panel switch, go to four channel. All JVC four-channel receivers feature a CD-4 disc demodulator, a matrix 1 decoder for SQ and a matrix 2 decoder for RM, EV and QS discs. Plus automatic switching computer (4VR-5446 & 56) so you can play a mixed stack of CD-4 and matrix discs.

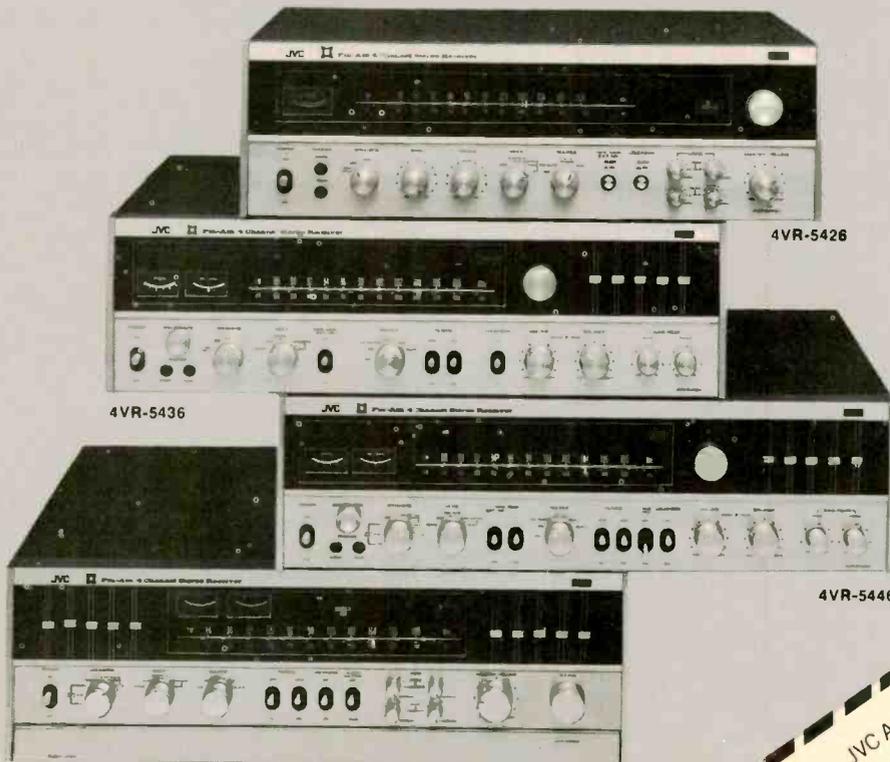
So don't pay for wasted value — consider a four channel receiver with BTL, from JVC, the inventor of CD-4 — rather than an obsolete stereo receiver.

JVC HI-FI the best value your money can buy.

*RMS continuous power, all channels driven at rated distortion 8 ohms



| BTL 20 to 20,000 Hz ± 0 dB | | |
|--------------------------------|--|------------------|
| Model | 2 Channel Output | 4 Channel Output |
| | RMS continuous power, all channels driven at rated distortion, 8 ohms. | |
| 4VR-5426 | 30X2 | 13X4 |
| 4VR-5436 | 35X2 | 15X4 |
| 4VR-5446 | 55X2 | 21X4 |
| 4VR-5456 | 100X2 | 43X4 |



JVC BTL

Balanced Transformer — Less Means No Wasted Watts.

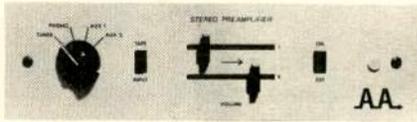
Check No. 28 on Reader Service Card 4VR-5456

JVC America, Inc., 50-35 56th Road, Maspeth, New York 11378
 Please send me a FREE copy of the New JVC Hi-Fi Brochure.

Name _____ Age _____
 Address _____
 City _____ State _____ Zip _____
 Dealer _____

JVC

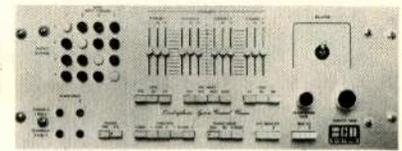
Pre-amplifiers



Ace ZDP



Audio Research SP3



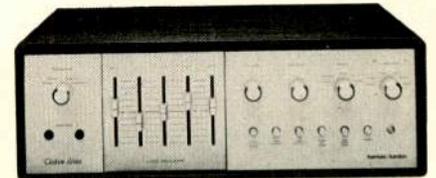
BGW



Bose 4401



Crown IC-150



Harman-Kardon Citation 11

| MANUFACTURER | MODEL | Frequency response, Hz ± 1 dB | Rated output, V | THD at rated output, % | IM at rated output, % | Rated output S/M, phono, dB | Phono sensitivity, mV | Phono overload, mV | Tape-head sens., mV | High-level sens., V | Tape-monitor Z, ohms | Dimensions, w x d x h, in. | Weight, lbs. | Price | NOTES All models solid-state except when model number is preceded by (T). "K" indicates kit price; "W" indicates wired price. |
|-----------------|--------------------------|----------------------------------|-----------------|------------------------|-----------------------|-----------------------------|-----------------------|--------------------|---------------------|---------------------|----------------------|-------------------------------|--------------------|--|--|
| | | | | | | | | | | | | | | | |
| ACE | ZDP-Zero Dist. Preamp | 20-20k ±0 | 2.0 | 0 | 0 | 76 | 10 | 110 | 2.0 | 50k | 11 x 8 x 3 | 3 | 74.95K 99.95W | No tone concls. or high lev. amps; for use w/equalizer. | |
| | BSP-Basic Stereo Pre-amp | 20-20k ±0.1 | 2.0 | 0.05 | 0.05 | 70 | 2.2 | 250 | 0.1 | 50k | 11 x 8 x 3 | 3 | 74.95K 122.50W | No tone concls.; for use w/equalizer. | |
| ACOUSTICAL MFG. | Quad 33 | 30-20k ±0.5 | 0.5 | 0.02 | 0.02 | 90* | 2, 5.6, 100** | 120 | 0.1 | 40k | 10½ x 6½ x 3¼ | 6½ | 215.00 | *0-30 phon wtg., 15.7 kHz bandwidth; ** Depending on input sel. | |
| AUDIO RESEARCH | (T) SP-3 Series A | 5-30k ±0.3 | 5.0 | 0.005 | 0.005 | 70 | 1.2 | 400 | * | 600 | 15½ x 12¼ x 5 | 14 | 695.00 | *0.064 ref. 1 V. out. | |
| BGW | 4XPA 4-chan. | 2-100k ±0.3 | 10 | 0.02 | 0.006 | 82 | 1 | 125 | 0.1 | 50 | 19 x 13 x 7 | 20 | 849.00 | CO-4 demod. or matrix decoder avail.; 4-15W 'phone amps built in; 12 equal. Built in. | |
| BOSE | 440 4-chan. | 20-20k ±0.2 | 2.0 | 0.2 | 0.2 | 2.0 | | | 0.2 | | 18 x 13½ x 6 | 12 | 499.00 | Four full chans.; opt. inboard SQ & CD-4 mods.; opt. rem. bal/vol. | |
| CROWN | IC-150 | 3-100k | 2.5 | 0.05 | 0.01 | 90 | 0.8-8* | 33-330* | 0.22 | 600 | 17 x 8½ x 5¼ | 10 | 299.00 | *Adjustable; opt. wal. cab.; rack mtg. brackets, \$10.; stereo image contl.; 2 tape mon. | |
| DAYTON WRIGHT | SPM | .7-85k ±1.5 | 2.5 | 0.001 | 0.002 | 85 | 0.9 | 140 | 0.6 | 0.6 | 10k | 6 x 10 x 6½ | 12 | 329.00 | Max. out 8.5; no tone concls. |
| | SPS | .8-900k ±1.5 | 2.5 | 0.0005 | 0.0008 | 83 | 0.7 | 110 | 0.6 | 0.6 | 10k | 6 x 10 x 6½ | 12 | 415.00 | Same as above. |
| | SP6 | .6-1mHz ±1.5 | 2.5 | 0.0005 | 0.0008 | 82 | 0.7 | 110 | 0.6 | 0.6 | 10k | 15 x 10 6½ | 18 | 1450.00 | 8 chan. graph eq.; VU mtrs. |
| | DW-535 | 5-75k ±1.5 | 200 mV | .0008 | 0.001 | 78 | 0.15 | 0.8 | | | | 5 | 425.00 | Head end pre-amp for very low output moving coil carts. | |
| DUNLAP-CLARKE | 10 | 5-200k ±3 | 4.0 | 0.05 | 0.05 | 95 | 1.0 | 180 | 0.2 | 600 | | | 599.00 | Equalizers; mtrs. | |
| DYNACO | PAT-5 | 10-50k ±1 | 2.0 | 0.05 | 0.05 | 70 | 2.7 | 100 | 0.2 | 15k | 13½ x 11¼ x 4 | 13 | 179.00K 289.00W | | |
| | PAT-4 | 10-100k ±0.5 | 2.0 | 0.05 | 0.05 | 70 | 4.0 | 80 | 3 | 0.2 | 600 | 13½ x 9 x 4 | 10 | 119.00K 199.00W | |
| | PAS-3X | 10-40k ±0.5 | 2.0 | 0.05 | 0.05 | 70 | 2.0 | 250 | 2 | 0.2 | 47k | 13½ x 9 x 4 | 11 | 119.00K | |
| ÉSS | ESS I.C. Pre-amplifier | 10-50k ±0.5 | 2.5 | 0.005 | 0.003 | 78 | 1.0 | 30 | 0.25 | * | 16½ x 6 x 9 | | | *Same as source; 2 tape out & mon.; 12 dB hi & low filts.; tone contl. bypass swit. | |
| EPICURE | Two | 10-50k ±5 | 2.5 | 0.005 | 0.005 | 85 | 1.7 3.5 | 150 | 0.1 | 600 | | 38 | 1300.00 | 5-in. 'scope; auto sweep gen.; adj. phono cap. | |
| HARMAN/KARDON | Citation 11 | 2-250k ±1 | 6.0 | 0.05 | 0.05 | 72 | 2.5 | 200 | 0.15 | 20k | 16½ x 12 x 4¼ | 20 | 395.00 | 5-step eq.; spkr. swit.; 'phone pwr. | |
| INFINITY | FET Signal Processor | 5-300KC | 5.0 | 0.05 | 0.05 | 80 | 1.0 | 500 | 0.1 | 50k | 17 x 11 x 5 | 30 | 850.00 | Incl. noise red. sys.; expander; tick suppr. | |

Pre-amplifiers



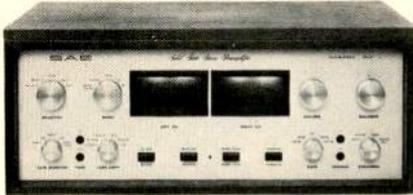
Marantz 3800



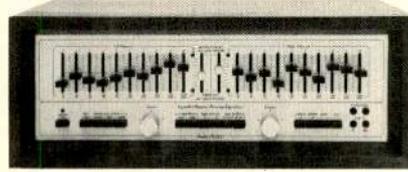
Phase Linear 4000



Technics SU-9600



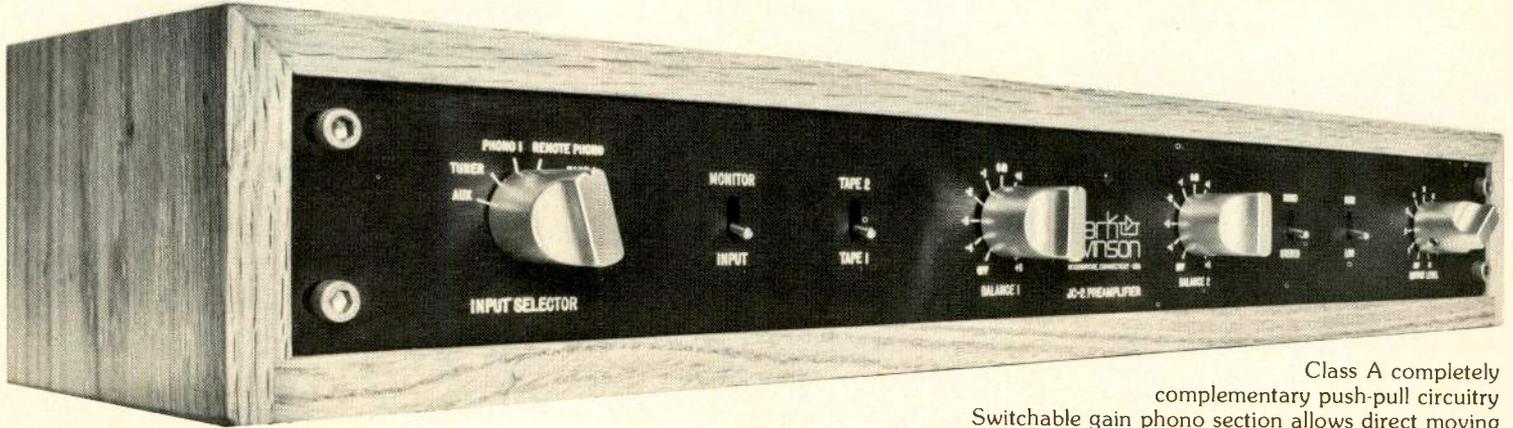
SAE Mk IM



Soundcraftsmen PE2217

| MANUFACTURER | MODEL | SPECIFICATIONS | | | | | | | | | | | | | NOTES |
|-----------------------|------------------------------------|--|--------------------------|------------------------------|------------------------------|-----------------------------|--------------------------|--------------------------|---------------------|-------------------------------------|--------------------------|---|----------------------|--------------------------------------|--|
| | | Frequency response, Hz ± 7 dB | Rated output, V | THD at rated output, % | IM at rated output, % | Rated output S/M, Phono, dB | Phono sensitivity, mV | Phono overload, mV | Tape-head sens., mV | High-level sens., V | Tape-monitor Z, ohms | Dimensions, w x d x h, in. | Weight, lbs. | Price | |
| KENWOOD | 700 C | 20-20k ±0.3 | 5.0 | 0.04 | 0.04 | 75 | 2.5 | 400 | | 0.15 | 100k | 17¼ x 11¼ x 5¼ | 20.9 | 649.95 | |
| LEVINSON | JC-1 LNP-2 | | | | | | | | | | | | | | Pre-preamp for moving-coil cartridges; complete specs. available on request. Complete spec. available on request. |
| MARANTZ | 3800 3600 3300 | 20-20k ±0.25 20-20k ±0.25 20-20k ±0.25 | 3.0 3.0 3.0 | 0.02 0.02 0.02 | 0.01 0.01 .02 | | 3.0 3.0 1.25 | | | 300 mV 300 mV 135 mV | | | 16 16 15 | 649.95 499.95 449.95 | Built-in Dolby sys.; sele. tone turnover points. Select. tone turnover points. |
| PHASE LINEAR | 4000 4-chan. | 20-20k ±1 | 2.0 | 0.25 | 0.25 | 82 | 2.0 | 85 | | 0.2 | 50k | 19 x 7 x 10 | 18 | 599.00 | Peak unlmtr./downward exp.; SQ; logic; act. eq.; dyn. low filt. |
| PHILIPS | SC-102 | 2-80k ±0.5 | 2.0 | 0.05 | 0.02 | 66 | 1.4 | 95 | | 0.06 | 600 | 12½ x 9 x 4 | 10 | 299.50 | Phono gain adj. 52 to 63 dB overload follows 95 mV to 250 mV |
| PIONEER | QC-800A 4-chan. | 10-70k ±1 | 2 | 0.05 | | 80 | 2.5 | | | 0.15 | | 17 x 13¼ x 5½ | 16% | 279.95 | RM & SQ decode; swit. type tone conts.; 2 tape mon.; 4 lvl. conts.; 4-ch. phone jacks; -20 dB muting. |
| QRK | Alpha Ultimate I | 50-15k ±1 50-15k ±1 | * 0.8 | 0.1 0.2 | 0.1 0.1 | 80 75 | 12 12 | * 50 | | | | 4½ x 1½ 2½ 9 x 3 x 3 | 1½ 2½ | 145.00 149.50 | *15 DBM; stereo. Mono; Ultimate II same but stereo, \$199.50. |
| QUINTESSENCE | Pre-Amp-1 | 2-100k ±3 | 8.0 | 0.01 | 0.01 | 70 | 1.0 | 130 | | 0.3 | 10k | 15 x 9 x 5 | 10 | 400.00 | |
| RADFORD (AUDIONICS) | HO22 | 20-32k -1 | 17 | 0.02 | 0.02 | 83 | 2.0 | | | 0.1 | 150 | 17 x 4¼ x 8 | 14 | 449.95 | Dist. below 0.001% up to approx. 10 V out; stereo/binaural 'phone out and swit. |
| REVOX | A722 | 20-20k ±1 | 1.5 | 0.1 | | 65 | 3 | 30dB | | 100 | 100k | 19.7 x 12.8 x 6.2 | 24 | 495.00 | Digital tuner pre-amp |
| SAE | Mk IB Mk IM Mk IXB Mk XXX | 10-100k ±0.25 10-100k ±0.25 10-100k ±0.25 10-100k ±0.25 | 2.5 2.5 2.5 2.5 | 0.02 0.02 0.02 0.03 | 0.02 0.02 0.02 0.03 | 80 80 75 72 | 2.0 2.0 2.0 3.5 | 125 125 100 100 | | 0.25 0.25 0.25 0.55 | 600 600 600 600 | 17 x 5.75 x 10.5 17 x 5.75 x 10.5 17 x 5.75 x 10.5 15 x 4.75 x 8 | 20 20 15 10 | 750.00 600.00 500.00 250.00 | 7-band eq. W/mtrs.; no tone conts. 7-band eq. |
| SONY | TAE8450 TA2000F | 10-100k ±0-1 10-100k +0-2 | 14 4.5 | 0.03 0.03 | 0.05 0.05 | 75 73 | 4.5 1.2 | | | 150 110 | | 17¾ x 13¾ x 6¾ 13¾ x 12¾ x 6 | 26 20 | 1299.50 579.50 | |
| SOUNDCRAFTSMEN | PE2217 | 5-100k ±0.25 | 5.0 | 0.01 | 0.01 | 84 | 1.0 | 110 | 1.0 | 0.1 | 600 | 20 x 11¼ x 7¼ | 28 | 499.50 | 10 oct./chan. eq.; LED bal. crt.; 4 ind. phono pre-amps; dbt. dub.; 100 dB S/N. |
| SOUTHWEST TECHNICAL | K-198 | 10-100k | 5.0 | 0.05 | 0.08 | 65 | 2.0 | 85 | | 0.1-1.0 | 10k | 9½ x 10½ x 5 | 6 | 74.50k | All push-pull comp. diff. circts; DC cpld. if desired; push button tone conts. |
| TEAC | C-200 | 20-20k +0, -0.2 | 10 | 0.05 | | | 2-6 | | | 2-6 | 200 | 17½ x 6 x 14 | 30.8 | 600.00 | L&R vol. controls for phono; 3-pos. swit. phono input; ind. headphone amp. dual dir.-cpld. sym. crty. |
| TECHNICS by PANASONIC | SU-9600 | 2-100k +0, -3 | 1.0 | 0.02 | 0.02 | 76 | 1-3 | 1350 | | 0.1 | 600 | 17¼ x 13¾ x 6¼ | 23.2 | 629.95 | |

The Straight-Line Preamplifier



Class A completely complementary push-pull circuitry
Switchable gain phono section allows direct moving coil cartridge input/Plug-in options for ultra-low noise/high gain moving coil cartridge input/High input impedance for maximum compatibility with tube equipment/Switchable gain line amplifiers/Precise balancing of channels (1dB steps) for correct stereo image

JC-2 PRICE: \$950./ Wood & Lexan Case \$80.

Why do audio components sound different?

Conventional specifications are based primarily on measurements of steady-state (sine wave) signals. Musical information is much more complex and places higher demands on audio circuits. New measurement techniques employing high speed computer oscilloscopes have been devised to analyse and define these demands. This research reveals the answers to the above question. Part of the problem concerns transient intermodulation distortion which involves open-loop frequency response and open-loop distortion (performance without feedback), amounts of feedback, and slew rate. Another part of the problem is second order distortion products.

Mark Levinson equipment is optimized for these parameters plus other essential design considerations such as extremely low noise, and long-term stability. Hand-matched active and passive components not previously used in consumer audio equipment further reduce subtle forms of error and distortion. Each unit is assembled and tested in the tradition of the finest laboratory measuring instruments to insure highest performance and reliability.

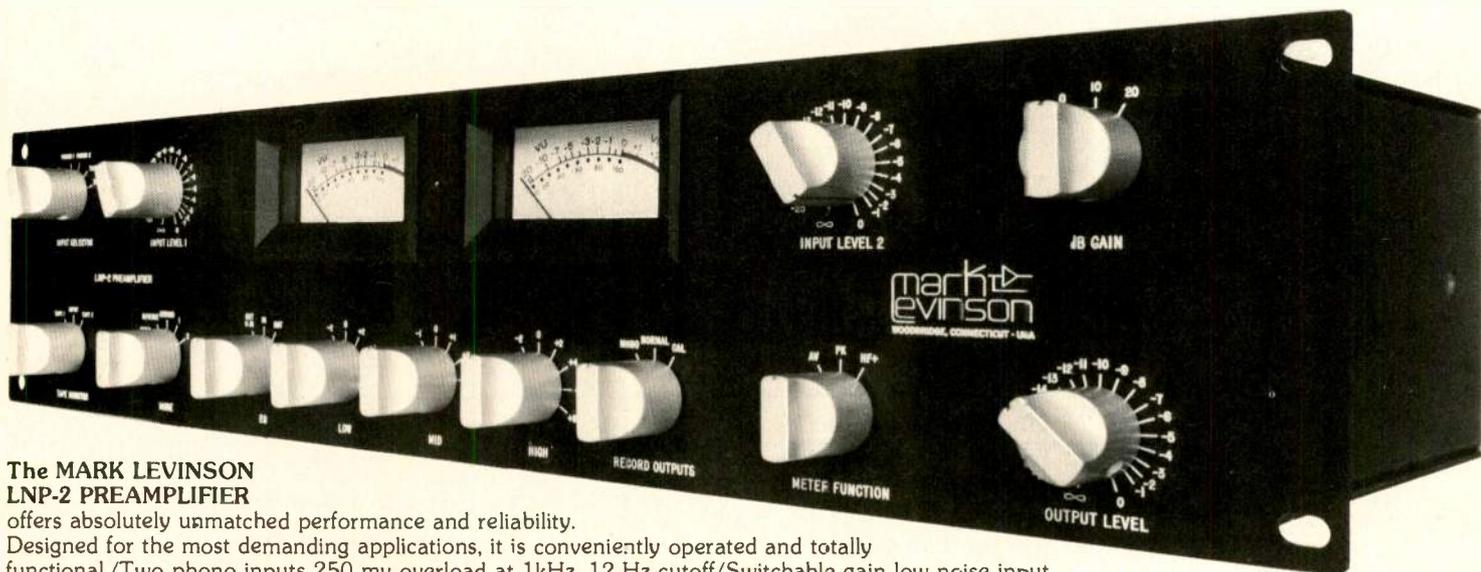
These methods are expensive and time-consuming. It is not possible to use them for large quantity production. If you have to wait for a unit, please remember that we are trying hard to meet the demand, but not with short-cut methods.

The JC-1 CARTRIDGE PREAMPLIFIER allows moving coil cartridges like the SUPEX to be used to full advantage. Class A, complementary push-pull ultra-low noise design . . . \$170.

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AUDIO SYSTEMS ● 55 CIRCULAR AVENUE ● HAMDEN, CONNECTICUT 06514 U.S.A.

The Professional Preamplifier



The MARK LEVINSON LNP-2 PREAMPLIFIER

offers absolutely unmatched performance and reliability.

Designed for the most demanding applications, it is conveniently operated and totally functional. Two phono inputs 250 mv overload at 1kHz, 12 Hz cutoff/Switchable gain low noise input amplifiers/Weston meters with selectable averaging or peak ballistics/ Accurate low distortion tone controls Switchcraft connectors in parallel with phono jacks/600 ohms line driving capability **LNP-2 PRICE: \$2050.**

The LNP-2 and the JC-2 both feature

HIGH QUALITY COMPONENTS

1% tolerance low noise resistors
1% tolerance metallized polycarbonate capacitors
Solid tantalum capacitors
Conductive plastic potentiometers
Coaxial leads for all audio circuits

SUPERIOR CONSTRUCTION

Engraved panels
Anodized aluminum chassis
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Connectors threaded into chassis for firm grounding
Regulated power supply in separate chassis to reduce hum pickup

FIVE YEAR WARRANTY

All Mark Levinson products are guaranteed for five full years from date of purchase. Parts and labor will be furnished free of charge. The manufacturer assumes no responsibility for damaged or abused equipment and reserves the right to determine cause of defects.

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(A) dealers have the complete line of MLAS products on demonstration. Full dealer list from factory on request.

Amplifiers

Notes: (1) All models solid-state except when model number is preceded by (T).
 (2) Basic power amplifiers have model number preceded by (B).
 (3) "K" indicates kit price; "W" wired.



Audio Research D76



Bose 1801



Crown DC300A

| MANUFACTURER | MODEL | RMS power/chan. W, 8 ohms | THD at rated power, % | THD at 1 watt, % | IM at rated power, % | IM at 1 watt, % | Power bandwidth, Hz - kHz | Freq. resp. at 1 watt, Hz ± 1 dB | Rated output S/N, phono, dB | Phono sensitivity, mV | Phono overload, mV | Tape head input, mV | High level input, V | Output Z, ohms | Damping factor | Dimensions, W x D x H, in. | Weights, lbs. | Price | NOTES |
|-----------------|-----------------------|---------------------------|-----------------------|------------------|----------------------|-----------------|---------------------------|----------------------------------|-----------------------------|-----------------------|--------------------|---------------------|---------------------|----------------|------------------------|----------------------------|--------------------|-------|--|
| ACOUSTICAL MFG. | (B) Quad 303 | 45 | 0.03 | 0.03 | 0.03 | 0.03 | 20-35k +0-10 | 100 | | | | | 8 | 26 | 4 3/4 x 12 3/4 x 6 1/4 | 18 | 250 | | |
| AUDIO RESEARCH | (T,B) D-76 | 75 | 0.1 | 0.02 | 0.5 | 0.01 | 20-40k | 2-40k +0-3 | 80 | | | | 4,8 16 | 10 | 19 x 12 1/4 x 7 | 50 | 995.00 | | Rack mt. panel; solid state pwr. supp. |
| BGW | (B) 500R | 200 | 0.1 | 0.1 | 0.1 | 0.1 | 5-25k | 2-65k +0-3 | 110 | | | 2 | 4 | 1000 | 19 x 14 1/4 x 5 1/4 | 42 | 729.00 | | SCR crow bar spkr. protect. w/mag. crt. brkr. Same as above. |
| | (B) 250 | 100 | 0.1 | 0.1 | 0.1 | 0.1 | 5-50k | 2-65k +0-3 | 110 | | | 1.5 | 2 Min. | 500 | 19 x 11 3/4 x 5 1/4 | 27 | 449.00 | | |
| | (B) 750 | 225 | 0.1 | 0.1 | 0.1 | 0.1 | 5-20k | 2-65k +0-3 | 110 | | | 2 | 2 Min. | 1000 | 19 x 14 1/4 x 7 | 46 | 899.00 | | Forced air cooled; bridg. swit; 800W = 20 ohms or 2 x 450W = 20 ohms. |
| | (B) 1000 | 250 | 0.1 | 0.1 | 0.1 | 0.1 | 5-20k | 2-65k +0-3 | 110 | | | 2 | 2 Min. | 1000 | 19 x 17 x 7 | 70 | 1295.00 | | Forced air cooled; LED overid. lghts.; power lvl. controls.; 2 x 750 W = 20 ohms. |
| | 4 x 250 (B) 4-chan | 250 | 0.1 | 0.1 | 0.1 | 0.1 | 5-20k | 2-65k +0-3 | 110 | | | 2 | 4 | 1000 | 19 x 17 x 7 | 70 | 1450.00 | | 4 times 250 W/ch. = 4 or 8 ohms; forced air cooled. |
| BOSE | 1801 | 250 | 0.2 | 0.2 | 0.2 | 0.2 | 5-50k | 20-20k ±0.4 | | | | | 4 | 200 | 18 x 18 1/2 x 7 1/4 | 82 | 986.00 | | |
| | 1800 | 250 | 0.2 | 0.2 | 0.2 | 0.2 | 5-50k | 20-20k ±0.4 | | | | | 4 | 200 | 19 x 15 x 8 1/4 | 80 | 1000.00 | | |
| BOZAK | (B) 929 | 150 | 0.2 | 0.2 | 0.2 | 0.2 | 6-30k | 30-80k | 100 | | | | 8 | 100 | 7 x 7 1/2 x 11 1/2 | 44 | 795.00 | | Incl. output mtrs. |
| CERWIN-VEGA | A-3000 (B) | 450 | 0.2 | 0.2 | 0.08 | 0.02 | DC-20k | DC-60k ±0.1 | | | | 1.5 | 4-8 | 500 | 19 x 11 1/2 x 8 | 50 | 1095.00 | | Dual output mtrs.; mod. plug-in const. |
| | A-1800 (B) | 250 | 0.2 | 0.2 | 0.08 | 0.02 | DC-20k | DC-60k ±0.1 | | | | 1.5 | 4-8 | 500 | 19 x 11 1/2 x 8 | 33 | 499.50 | | |
| CROWN | (B) D-60 | 30 | 0.05 | 0.05 | 0.05 | 0.05 | 5-30k* | 20-20k ±0.1 | 106 | | | 0.775 | 4,8 16 | 200 | 17 x 18 3/4 x 1 1/4 | 10 | 249.00 | | *±1 dB; wal. cab. opt.; phone jack; mono conv. to 90 W 25 V line out (bal.). |
| | D-150 (B) | 75 | 0.05 | 0.05 | 0.05 | 0.05 | 10-20k | 4-100k ±1 | 110 | | | 1.19 | 4,8 16 | 200 | 16 1/2 x 8 x 5 | 22 | 399.00 | | *±1 dB; wal. cab. opt.; mono conv. to 250 W 50 V line out (bal.). |
| | (B) DC 300A | 150 | 0.05 | 0.05 | 0.05 | 0.05 | DC-20k* | DC-100k ±1 | 110 | | | 1.75 | 1-16 | 200 | 19 x 14 x 7 | 45 | 695.00 | | *±1 dB; wal. cab. opt.; mono conv. to 600 W 70 V line out (bal.). |
| DAYTON WRIGHT | DW 415 | 425 | 0.01 | 0.001 | 0.02 | 0.002 | 10-30k | 2-100k ±0.5 | | | | 1.8V | 4 | 1000 | 19 x 10 x 14 | 85 | 1740.00 | | Dual bridged com. sym. amp.; may be used as 4 x 125W. |
| DUNLAP CLARKE | (B) 1000 | 300 | 0.15 | 0.05 | 0.1 | 0.005 | 10-40k | 10-225k ±3 | 100 | | | 1.75 | 8 | 500 | 19 x 15 x 7 | 65 | 799.00 | | Drives any load down to 2 ohms; w/3-speed cooling fans and 2 % prof. mtrs., \$899.00. |
| | (B) 500 | 165 | 0.1 | 0.05 | 0.1 | 0.005 | 10-40k | 10-250k ±3 | 100 | | | 1.2 | 8 | 500 | 19 x 12 x 7 | 35 | 499.00 | | With panel mtrs., \$549.00. |
| | 100 | 150 | 0.1 | 0.05 | 0.1 | 0.005 | 10-40k | 10-250k ±3 | 85 | 1 | 180 | 0.2 | 8 | | 50 | 849.00 | | | |
| DYNACO | Stereo 400 (B) | 200 | 0.18 | 0.05 | 0.1 | .05 | 5-35k | 8-50k ±0.1 | 95 | | | 1.6 | 8 | 80 | 17 x 14 x 7 | 54 | 449.00K 599.00W | | Spkr. protect.; d.c.-activated relay for load protect.; levels; filts.; opt. fans, mtrs. |
| | SCA-80Q 4-chan. | 40 | 0.5 | 0.1 | 0.5 | 0.1 | 8-50k | 15-50k ± 1/2 | 60 | 3.0 | 80 | 0.13 | 8 | 40 | 13 1/2 x 10 x 4 | 16 | 185.00K 299.00W | | Built-in matrix crt. for 4-D sound; with 4 spkrs. |
| | Stereo 120 (B) | 60 | 0.5 | 0.1 | 0.5 | 0.1 | 5-50k | 5-100k ± 1/2 | 100 | | | 1.5 | 8 | 40 | 13 1/2 x 10 1/2 x 4 | 20 | 179.00K 249.00W | | Reg. power supply. |
| | Stereo 80 (B) | 40 | 0.5 | 0.1 | 0.5 | 0.1 | 8-50k | 10-50k ± 1/2 | 90 | | | 1.3 | 8 | 40 | 14 x 8 x 4 | 13 | 139.00K 199.00W | | |
| | (T) SCA-35 | 17.5 | 1.0 | 0.2 | 1.0 | 0.2 | 20-20k | | 70 | 4.0 | 2.5 | 1.0 | 8-16 | | 13 1/2 x 10 1/2 x 4 | 20 | 129.00K | | |
| ESS, INC. | 200 (B) | 100 | 0.05 | 0.05 | 0.05 | 0.05 | 20-20k | 10-75k ±1dB | NA | NA | NA | 1.5v | NA | 100 | 16 1/2 x 12 x 6 | | 399.00 | | |

Amplifiers



Harman-Kardon Citation 12D



Marantz 500

- Notes: (1) All models solid-state except when model number is preceded by (T).
 (2) Basic power amplifiers have model number preceded by (B).
 (3) "K" indicates kit price; "W" wired.

| MANUFACTURER | MODEL | RMS power/chan., W, 8 ohms | THD at rated power, % | THD at 1 watt, % | IM at rated power, % | IM at 1 watt, % | Power bandwidth, Hz - kHz | Freq. resp. at 1 watt, Hz ± 7 dB | Rated output S/N, phono, dB | Phono sensitivity, mV | Phono overload, mV | Tape head input, mV | High level input, V | Output Z, ohms | Damping factor | Dimensions, w x d x h, in. | Weights, lbs. | Price | NOTES | |
|-----------------------|--------------------|----------------------------|-----------------------|------------------|----------------------|-----------------|---------------------------|----------------------------------|-----------------------------|-----------------------|--------------------|---------------------|---------------------|--------------------|----------------------------|----------------------------|--------------------------|---|--|---|
| EPICURE | (B) One | 125 | 0.05 | 0.05 | 0.05 | 0.05 | 10-52k | 10-180k -0-3 | | | | | | 8 | 100 | | | 649.00 | Current and volt. ovrd. ind.; 3-way spkr. sel.; 5-in. scope; auto. sweep gen.; var. phono cap. | |
| HARMAN/KARDON | Citation 12 | 60 | 0.2 | 0.2 | 0.15 | 0.15 | 5-35k | 1-100k ±1 | 100 | | | 1.5 | | 40 | 12% x 12% x 5 1/2 | 30 | 295.00 | | | |
| | Citation 12 Deluxe | 60 | 0.2 | 0.2 | 0.15 | 0.15 | 5-35k | 1-100k ±1 | 100 | | | 1.5 | | 40 | 16 x 13% 4% | 32 | 340.00 | Walnut cabinet included. | | |
| Heath | AA-2010 4-chan. | 35 | 0.25 | 0.1 | 0.2 | 0.1 | 5-45k | 7-50k ±1 | 65 | 2.2 | 155 | 0.18 | | 100 | 18 1/2 x 13% x 6 1/2 | 28 | 359.95K | | 2 complete stereo amps; 4 mtrs. w/3-pos. atten. swit.; handles all matrix material. | |
| | AA-2005 4-chan. | 15 | 0.5 | 0.25 | 0.5 | 0.25 | 5-30k | 7-50k ±1 | 60 | 2.2 | * | 0.2 | | 30 | 19% x 12% x 4% | 24 | 179.95K | *exceeds 5V using input 1vl. contl.; mod. const.; SQ matrix. | | |
| | AA-15 | 50 | 0.5 | 0.2 | 0.5 | 0.2 | 6-30k | 8-40k ±1 | 60 | 2.2 | 155 | 0.2 | | 45 | 16% x 12% x 4% | 21 1/2 | 199.95K | 5 inputs incl. tape mon.; tone flat; loudness; 2 spkr. swit. | | |
| | AA-29 | 35 | 0.25 | 0.1 | 0.2 | 0.1 | 5-30k | 7-60k ±1 | 65 | 2.2 | 155 | 0.18 | | 50 | 16% x 14% x 5% | 22 1/2 | 169.95K | Mod. const.; 6 inputs incl. tape mon.; 2 spkr. swit. | | |
| | AA-1214 | 15 | 0.5 | 0.25 | 0.5 | 0.2 | 5-30k | 7-100k ±1 | 65 | 2.0 | 75 | 0.19 | | 50 | 12% x 12% x 3% | 10 | 99.95K | Tape mon.; stereo 'phone jack; spkr. swit. | | |
| AA-14 | 10 | 1.0 | 0.5 | 1.0 | | 7-90k | 12-60k ±1 | 60 | 4.5 | | 0.3 | | 50 | 12 x 10 1/2 x 3 | 8 1/2 | 64.95K | 'phone jack; spkr. swit. | | | |
| HITACHI | 1A-600 | 32 | 0.5 | 0.1 | 0.15 | | 20-30k | 10-100k +0-1 | 95 | 2.5 | | | | 50 | | | | 239.95 | Mic jack; tape mon.; muting swit.; speaker swit. | |
| | 1A-1000 | 55 | 0.5 | 0.1 | 0.1 | | 20-35k | 10-100k +0-1 | 100 | 2.0 | | | | 50 | | | | 359.95 | Vu mtr.; mic jack; speaker swit. | |
| | IMA-40 4-chan. | 13 | 1.0 | 0.1 | 0.5 | | 25-40k | 20-30k | 65 | | | | | 25 | | | | 239.95 | 4-chan. rear amp; 2/4-chan. tape mon.; speaker swit.; joy stick bal. contl. | |
| INFINITY SYSTEMS INC. | D500 | 250 | 0.1 | 0.1 | 0.1 | 0.1 | | 5-80 KC | | | | 250K | 0.1 ohm | 80 | 17 x 11 x 3 | 24 | 1200.00 | Class D Switching Amplifier | | |
| INTEGRAL SYSTEMS | B200 | 100 | 0.2 | 0.2 | 0.2 | 0.2 | 20-25k | 10-60k ±1 | | | | | | | | | | | | |
| | B400 | 200 | 0.2 | 0.2 | 0.2 | 0.2 | 20-25k | 10-60k ±1 | | | | | | | | | | | | |
| | B700 | 350 | 0.2 | 0.2 | 0.2 | 0.2 | 20-25k | 10-60k ±1 | | | | | | | | | | | | |
| | 410 | 200 | 0.2 | 0.2 | 0.2 | 0.2 | 20-25k | 10-60k ±1 | 80 | 2.0 | 100 | 0.18 | 4-16 | 100 | 19 x 12% x 5 1/2 | 38 | 700.00 | As 400, w. preamp section | | |
| JVC | 4VN-990 4-chan. | 35 | 0.5 | | 0.8 | | 10-30k | 10-50k ±1 | 65 | 2.5 | | 200 | 0.15 | | 50 | | | | 599.95 | SEA equal. frnt. & rear; 12 dB/oct. filt.; 2/4 chan. tape inputs 4 VU mtrs. |
| | VN900 | 60 | 0.05 | | 0.4 | | 10-23k | 3-450k | 65 | 2.5 | 700 | 200 | 0.2 | | 50 | 5% x 16% x 12% | 28 | 399.95 | 7-pos. SEA equal.; 12 dB/oct. filts.; pink noise gen. | |
| | VN700 | 40 | 0.05 | | 0.4 | | 10-23k | 3-450k | 55 | 2.5 | 240 | 200 | 0.2 | | 50 | 5% x 16% x 12% | 22 | 299.95 | 5-pos. SEA equal.; SEA record; 2 spkr. sel.; 12 dB/oct. filts. | |
| | 4VN700 4-chan. | 125 | 0.5 | | 0.8 | | 10-30k | 10-40k | 65 | 2.5 | | 75 | 75 | | 50 | 5 1/2 x 16 1/2 x 12 | 21.4 | 279.95 | 4 VU mtrs.; rem. contl. jack; 2 built-in matrix. | |
| KENWOOD | KA-8006 | 73 | 0.2 | 0.05 | 0.2 | 0.05 | 6-40k | 20-20k | 76 | 2.5 | 250 | 0.15 | 8 | 30 | 17 1/4 x 12 x 6 1/4 | 29.7 | 439.95 | Tape-through crty. | | |
| | KA6006 | 83 | 0.3 | 0.05 | 0.3 | 0.05 | 6-40k | 20-20k | 76 | 2.5 | 250 | 0.15 | 8 | 30 | 17 1/4 x 12 x 6 1/4 | 26 | 359.95 | Same as above. | | |
| | KA-4006 | 35 | 0.5 | 0.05 | 0.05 | 0.05 | 8-45k | 20-20k | 76 | 2.5 | 140 | 0.15 | 8 | 32 | 17 1/4 x 12 | 24.22 | 59.95 | Same as above. | | |
| | (B) 7007 | 175 | 0.1 | 0.05 | 0.1 | 0.05 | 5-30k | 20-20k | 115 | | | | 8 | 40 | 17 1/4 x 14% 59 1/2 | | 749.95 | | | |
| LAYFAYETTE | LA-84 4-chan. | 20 | 0.5 | 0.07 | 1 | 0.08 | 10-35k | 20-20k ±1.5 | 65 | 4 | 84 | 0.5 | 8 | | 15% x 13 x 4 1/2 | 19 | 349.95 | Full logic SQ w/vari-blend and RM decoders; sep. 2- and 4-chan. tape mon.; Opt. CD-4 plug-in mod. | | |
| | LA-1050 | 22 | 0.5 | 0.07 | 1 | 0.08 | 10-30k | 20-20k ±1.5 | 65 | 6 | 85 | 0.5 | 8 | | 12% x 10% x 10% x 4 1/2 | 11 | 149.95 | Spkr. mode select; crt. for 4 dimen. sound; tape in and out; 'phone jack. | | |
| | LA950A | 16.5 | 0.8 | 0.07 | 1 | | 15-30k | 20-20k ±1.5 | 63 | 120 | 64 | 0.5 | 8 | | 12 x 9% x 3% | 10 | 119.50 | Main and rem. spkr. swit.; front panel tape output. | | |

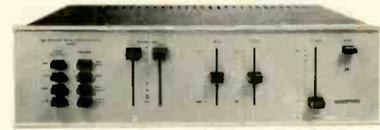
Amplifiers



Nikko TRM-210



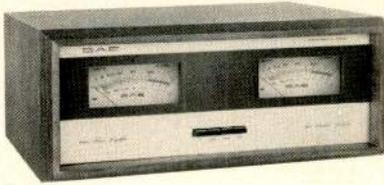
Phase Linear 700B



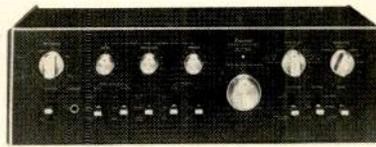
Radford HD250

Notes: (1) All models solid-state except when model number is preceded by (T).
 (2) Basic power amplifiers have model number preceded by (B).
 (3) "K" indicates kit price; "W" wired.

| MANUFACTURER | MODEL | RMS power/chan., W, 8 ohms | THD at rated power, % | THD at 1 watt, % | IM at rated power, % | IM at 1 watt, % | Power bandwidth, Hz - kHz | Freq. resp. at 1 watt, Hz | Rated output S/N, phono, dB | Phono sensitivity, mV | Phono overload, mV | Tape head input, mV | High level input, mV | Output Z, ohms | Damping factor | Dimensions, W x D x H, in. | Weights, lbs. | Price | NOTES |
|---------------------|----------------|----------------------------|-----------------------|------------------|----------------------|-----------------|---------------------------|---------------------------|-----------------------------|-----------------------|--------------------|---------------------|----------------------|---------------------|----------------------|----------------------------|--|---|-------|
| MARANTZ | B-400M | 200 | 0.1 | 0.1 | | | 20-20k ±0.1 | | | | | 180 mV | 8 | 100 | | 50 | 699.95 | Illuminated Left and Right VU meters Gain Controls | |
| | 1070 | 35 | 0.3 | 0.3 | | | 20-20K ±0.1 | | | | | 180 mV | 8 | 45 | | 18 | 269.95 | Built-in Ambience Circuit | |
| | B-400 | 200 | 0.1 | 0.1 | | | 20-20k ±0.1 | | 1.8 | | | 180 mV | 8 | 100 | | 50 | 599.95 | Left and Right Gain Controls | |
| | 1040 | 20 | 0.3 | 0.3 | | | 20-20k ±1 | | 2.1 | | | 150 mV | 8 | 45 | | 16 | 199.95 | Built-in Ambience Circuitry | |
| | 1200B | 100 | 0.1 | 0.1 | | | 20-20k ±0.25 | | 1.35 | | | 134 mV | 8 | 100 | | 32 | 699.95 | | |
| | 1120 | 60 | 0.2 | 0.2 | | | 20-20k ±0.3 | | 1.1 | | | 110 mV | 8 | 40 | | 26 | 449.95 | | |
| | B-250 | 125 | 0.1 | 0.1 | | | 20-20k ±0.1dB | | | | | | 8 | 100 | | | 499.95 | Illuminated Vu Meters | |
| | 1060 | 30 | 0.5 | 0.5 | | | 20-20k ±1 dB | | 1.8 | | | 180 mV | 8 | 45 | | | 229.95 | | |
| | B-240 | 125 | 0.1 | 0.1 | | | 20-20k ±0.1dB | | | | | | 8 | 100 | | | 429.95 | | |
| | 1030 | 15 | 0.5 | 15 | | | 20-20k ±1dB | | 2.1 | | | 180 mV | 8 | 45 | | | 169.95 | | |
| NIKKO | TRM210 | 12 | 1.0 | 0.2 | 1.0 | 0.5 | 20-30k ±1 | 60 | 1.8 | | | | | 25 | 12% x 9 1/2 x 4 1/2 | 9.3 | 129.95 | | |
| | TRM600 | 34 | 0.5 | 0.1 | | | 20-30k | 65 | 2.2 | | | | | | 15 x 11 1/2 x 8 1/2 | 17 | 219.95 | | |
| ONKYO | A-7022 | 52 | 0.1 | 0.03 | 0.05 | | 10-100k | 10-70k +0-1 | 75 | 1.2 | 300 | 100 | 0.1 | 4-16 | 80 | 16% x 14% x 5% | 29 | 359.95 | |
| | A-7055 | 26 | 0.1 | 0.03 | 0.05 | | 10-100k | 10-70k +0-1 | 75 | 1.2 | 230 | 100 | 0.1 | 4-16 | 80 | 15% x 14% x 5% | 25 | 339.95 | |
| PHASE LINEAR | (B) 700B | 350+ | 0.2 | 0.2 | 0.2 | 0.2 | 1-45k | 5-250k | | | | 1.6 | | 1000 | 19 x 7 x 10 1/2 | 48 | 799.00 | VU mtrs; Lev. controls; on/of swit.; mtr. atten. | |
| | (B) 400 | 200+ | 0.2 | 0.2 | 0.2 | 0.2 | 1-45k | 5-250k | | | | 1.75 | | 1000 | 19 x 7 x 10 | 35 | 499.00 | VU mtrs. | |
| PILOT | 225 | 25 | 0.5 | | 0.5 | | 10-30k | 20-20k ±1 | 65 | 2.5 | | 0.3 | 4.8 16 | 35 | 15 x 11 1/2 x 5 1/2 | | 359.90 | | |
| PIONEER | SA-9100 | 60 | 0.1 | 0.04 | 0.1 | 0.04 | 5-40k | 7-80k ±1 | 80 | 2.5 | 250 | 0.15 | 8 | 70 | 17 x 13 x 5 | 30 | 449.95 | Twin stepped tone contls.; 2 tape, 2 aux, 2 phono, -20 dB muting, direct coupled. | |
| | SA-8100 | 40 | 0.3 | 0.05 | 0.3 | 0.05 | 5-40k | 7-80k ±1 | 80 | 2.5 | 250 | 0.15 | 8 | 60 | 17 x 13 x 5 | 26 | 349.95 | Dir. cpd.; 2 tape, 2 phono; -20 dB muting. | |
| | SA-7100 | 20 | 0.5 | 0.05 | 0.5 | 0.1 | 5-70k | 7-80k +0-1 | 80 | 2.5 | 190 | 0.15 | 8 | 40 | 17 x 13 x 5 | 22 | 249.95 | 2 phono, 2 aux., 2 tape; freq. turnover swit., -20 dB muting. | |
| | SA-5200 | 10 | 0.8 | 0.2 | 0.8 | 0.4 | 10-40k | 15-30k ±1 | 70 | 2.5 | 100 | 0.15 | 8 | 30 | 16 x 12 x 5 | 16 | 139.95 | 2 aux, 2 spkr. sys. | |
| | QA-800 4-chan. | 20 | 0.5 | | 0.8 | | 10-50k | 8-70k +1 | 80 | 2.5 | | 0.2 | 8 | 40 | 17 x 13 1/2 x 15 1/2 | 24 | 399.95 | SQ and RM decode, 2 tape mon, 2 phono; 4 level contls. | |
| QM-800A (B) 4-chan. | 30 | 0.5 | 0.03 | 0.5 | 0.06 | 10-50k | 8-60k +0-1 | | | | 0.5 | 8 | 65 | 17 x 13 1/2 x 5 1/2 | 26 | 349.95 | Sens. Swit.; Dir. cpd.; 4 mtrs; dual inputs. | | |
| QUATRE | (B) 200 | 100 | 0.05 | 0.05 | 0.05 | 0.05 | 20-20k | 20-20k ±0.1 | | | | | 8 | 200 | 16 x 12 x 6 | 25 | 290.00 | Compl. dir.-cpd. crtry. | |
| QUINTESSENCE | Power Amp II | 150 | 0.02 | 0.02 | 0.02 | 0.02 | 10-30k | 10-50k +1.5 | | | | | 8 | | 17 x 19 x 13 | 50 | 900.00 | Fan cooled; sep. pwr. supplies. | |



SAE Mk IVDM



Sansui AU-7700

Amplifiers

Notes: (1) All models solid-state except when model number is preceded by (T).
 (2) Basic power amplifiers have model number preceded by (B).
 (3) "K" indicates kit price; "W" wired.

| MANUFACTURER | MODEL | RMS power/chan., W, 8 ohms | THD at rated power, % | THD at 1 watt, % | IM at rated power, % | IM at 1 watt, % | Power bandwidth, Hz - kHz | Freq. resp. at 1 watt, Hz ± 2 dB | Rated output S/N, phono, dB | Phono sensitivity, mV | Phono overload, mV | Tape head input, mV | High level input, V | Output Z, ohms | Damping factor | Dimensions, w x d x h, in. | Weights, lbs. | Price | NOTES | |
|-------------------------|-----------------|----------------------------|-----------------------|------------------|----------------------|-----------------|---------------------------|----------------------------------|-----------------------------|-----------------------|--------------------|---------------------|---------------------|----------------|-------------------------|----------------------------|-----------------|----------------|---|--|
| RADFORD (AUDIONICS) | HD250 | 60 | 0.02 | 0.005 | 0.02 | 0.01 | 20-70k | | 83 | 2.0 | | | | 100 | 4-16 | 50 | 17 x 4 1/2 x 12 | 22 | 695.00 | *Below 0.001 percent; 50W x 2=8 ohms; 85W x 2=4 ohms. *Below 0.001 percent; 100W x 2=8 ohms; 170W x 2=4 ohms. Mfd. by Audionics |
| | (B) HD502 | 50 | * | * | * | * | 20-70k | | 100 | | | | | 1V | 4-16 | 50 | 17 x 4 1/2 x 10 | 30 | 449.95 | |
| | (B) HD1002 | 100 | * | * | * | * | 20-70k | | 100 | | | | | 1V | 4-16 | 50 | 17 x 4 1/2 x 12 | 40 | 695.00 | |
| | (B) ASA 300 | 100 | 0.1 | 0.02 | 0.1 | 0.1 | 10-80k | | 95 | | | | | 2V | 3-16 | 50 | 17 x 5 x 11 | 40 | 399.95 | |
| REALISTIC (RADIO SHACK) | SA-1000 | 20 | 1.0 | | 0.2 | 0.2 | 20-20k | 20-70k ±1.5 | 60 | 1.7 | 200 | 185 | 185 | 8 | | 4 1/2 x 15 1/4 x 11 1/2 | | 159.95 | Built-in Quatravox. | |
| | QA-722 4-chan. | | | | | | 30-20k | 50-15k ±2 | | 5.0 | | 150 | 8 | | | | | 99.95 | | |
| | SA-101 | | | | | | | 25-20k ±3 | | 3.5 | | 250 | 8 | | 3 1/4 x 9 1/4 | | | 59.95 | Mag/er/phono input. | |
| REVOX | (B) A722 | 45 | 0.1* | 0.2* | | | 10-65k | 20-20k +0-0.5 | | | | | | | 9.8 x 12.8 x 6.2 | 24 | 495.00 | *Overall dist. | | |
| ROTEL | RA-1210 | 55 | 0.5 | 0.04 | 0.1 | 0.3 | 5-50k | 3-100k ±3 | 70 | 1 | 130 | 200 | 1.0 | 8 | 35 | 16 1/2 x 12 x 5 | 30 | 399.95 | 2 pwr. transf.; 2 dB step swits.; tape dub. | |
| | RA-810 | 40 | 0.3 | 0.04 | 0.1 | 0.3 | 5-50k | 4-75k -3 | 65 | 2 | 125 | 200 | 1.0 | 8 | | 16 1/2 x 12 x 5 1/2 | 22 | 329.95 | Tape dub. | |
| | RA-611 | 30 | 0.5 | 0.05 | 0.15 | 0.5 | 5-55k | 5-100k -3 | 65 | 2.5 | 100 | 170 | 2.5 | 8 | 35 | 16 1/2 x 9 1/2 x 5 | 18 | 269.95 | Dual bass & treb.; tape dub.; dir. cpd.; wal. cab. | |
| | RA-311 | 18 | 0.1 | 0.05 | 0.3 | 0.6 | 20-50k | 15-70k +0-3 | 65 | 2.5 | 100 | 150 | 2.5 | 8 | 35 | 14 x 7 1/2 x 4 1/2 | 12 | 169.95 | Spk. A-B or A B; tp. filt. loud.; 4-chan. synth.; tape dub.; wal. fin. cab. | |
| SAE | (B) Mk III CM | 200 | 0.1 | 0.1 | 0.05 | 0.05 | 1-100k | 1-100k ±1 | 100 | | | | | 150 | | 17 x 5 1/2 x 13 1/2 | 60 | 950.00 | W/dir. read. mtrs. | |
| | (B) Mk III C | 200 | 0.1 | 0.1 | 0.05 | 0.05 | 1-100k | 1-100k ±1 | 100 | | | | | 150 | | 17 x 5 1/2 x 13 1/2 | 50 | 850.00 | | |
| | (B) MK IVDM | 100 | 0.1 | 0.1 | 0.05 | 0.05 | 1-100k | 1-100k ±1 | 100 | | | | | 150 | | 17 x 5 1/2 x 13 | 37 | 600.00 | W/dir. read. mtrs. | |
| | (B) Mk IVD | 100 | 0.1 | 0.1 | 0.05 | 0.05 | 1-100k | 1-100k ±1 | 100 | | | | | 150 | | 17 x 5 1/2 x 13 | 35 | 500.00 | | |
| | (B) Mk XXXIB | 50 | 0.1 | 0.1 | 0.05 | 0.05 | 1-100k | 1-100k ±1 | 100 | | | | | 150 | | 15 x 4 1/2 x 8 | 18 | 275.00 | | |
| SANSUI | AU-9500 | 80 | 0.1 | | 0.1 | | 5-40k | 15-40k ±1 | 75 | 2.5 | 300 | | 0.1 | 4-16 | 50 | 9 1/2 x 13 1/2 x 5 1/2 | 51.3 | 549.95 | | |
| | AU-7700 | 54 | 0.1 | | 0.1 | | 5-40k | 10-50k +0.5-1.0 | 70 | 2.5 | 300 | | 0.1 | 4-16 | | | | 399.95 | | |
| | AU-6600 | 42 | 0.15 | | 0.15 | | 5-35k | 10-40k | 70 | 2.5 | 300 | | 0.1 | 4-16 | | | | 349.95 | | |
| | AU-5500 | 32 | 0.15 | | 0.15 | | 5-30k | 10-35k +0.5-1.0 | 70 | 2.5 | 200 | | 0.1 | 4-16 | | | | 299.95 | | |
| | AU-505 | 16 | 0.8 | | 0.8 | | | 20-60k ±2dB | 70 | 3.0 | | | 0.2 | 4-16 | | 16 x 11 x 5 1/2 | 17.7 | 189.95 | | |
| | AU-101 | 12 | 1.0 | | | | 25-40k | 20-60k ±2dB | 65 | 3.0 | | | 0.2 | 4-16 | | 16 x 11 x 4 1/2 | 13 | 129.95 | | |
| | QA-7000 4-chan. | 15 | 0.15 | | 0.15 | | 10-30k | 20-40k +1-2 | 70 | 2.5 | 270 | | 0.1 | 4-16 | 100 | 17 1/2 x 12 1/2 x 5 1/2 | 1630.9 | 324.95 | | |
| SCHOBBER | BTR-3D | 70 | .1 | .08 | .07 | .05 | 5-40k ±0.5 | 5-57k ±0.25 | NA | NA | NA | NA | 0.15 to 1.0* | 4-16 | 28 | 5 1/2 x 11 1/2 x 8 | 17 1/2 | 194.90 k | *Adjustable; two-channel; fully protected | |
| | BTR-3M | 70 | .1 | .08 | .07 | .05 | 5-40k ±0.5 | 5-57k ±0.25 | NA | NA | NA | NA | 0.15 to 1.0* | 4-16 | 28 | 5 1/2 x 11 1/2 x 8 | 16 1/2 | 142.00 k | *Adjustable; kit for conversion 2-channel avail.; fully protected | |
| H. H. SCOTT | 2355 | 15 | 0.5 | | 0.3 | | 20-20k | 20-35k ±1 | 60 | 2.5 | 80 | | 0.5 | 4-16 | 20 | 13 1/2 x 10 x 4 1/2 | 12 | 159.95 | | |
| | 2555 | 30 | 0.3 | | 0.3 | | 20-80k | 20-90k | 65 | 2 | 140 | | 0.5 | 4-16 | 20 | 15 1/2 x 9 1/2 x 5 1/2 | 13 | 229.95 | | |
| SHERWOOD | SEL 400 | 100 | 0.25 | | 0.25 | | 5-40k | 10-35k +0-1 | 65 | 1.7, 4 8 | 1.7 | 0.15 | 4, 8, 16 | 30 | 16 1/2 x 5 1/2 x 13 1/2 | 35 | 399.95 | | | |
| | S-9400 | 50 | 0.8 | | 0.6 | | 5-45k | 20-20k ±0.5 | 60 | 1.8 | 80 | 2.1 | 0.2 | 4-16 | 40 | 5 1/2 x 17 1/2 x 14 | 29 | 259.95 | | |

Amplifiers



Yamaha CA-1000

- NOTES (1) All models solid-state except when model number is preceded by (T).
 (2) Basic power amplifiers have model number preceded by (B).
 (3) "K" indicates kit price; "W" wired.

Technics SE-9600

Toshiba SB-500

| MANUFACTURER | MODEL | RMS power, chan. W, 8 ohms | THD at rated power, % | THD at 1 watt, % | IM at rated power, % | IM at 1 watt, % | Power bandwidth, Hz, kHz | Freq. resp. at 1 watt, Hz ± 1 dB | Rated output S/N, phono dB | Phono sensitivity, mV | Tape overload, mV | High level input, mV | Output Z, ohms | Damping factor | Dimensions, w x d x h, in. | Weights, lbs. | Price | NOTES | |
|---------------------|----------------|----------------------------|-----------------------|------------------|----------------------|-----------------|--------------------------|----------------------------------|----------------------------|-----------------------|-------------------|----------------------|----------------|----------------|----------------------------|----------------|-----------|---|---|
| SONY | (B) TAN8250 | 150 | 0.1 | 0.05 | 0.1 | 0.05 | 5-50k | DC-100k +0-1 | | | | | 250 | 17½ x 16 x 6¼ | 55 | 1299.50 | | | |
| | (B) TA3200F | 100 | 0.1 | 0.03 | 0.1 | 0.03 | 5-35k | 5-200k +0-2 | | | | | 170 | 15¾ x 12¾ x 5½ | 31 | 369.50 | | | |
| | TA8650 | 80 | 0.1 | 0.05 | 0.1 | 0.05 | 5-50k | DC-100k +0-11 | 70 | 2.5 | | | 100 | 17¾ x 16 x 6¼ | 45 | 1299.50 | V FET | | |
| | TA1130 | 50 | 0.1 | 0.05 | 0.1 | 0.05 | 7-30k | 10-200k +0-2 | 70 | 1.2 | | | 100 | 15¾ x 12¾ x 5½ | 29 | 429.50 | | | |
| | TA1150 | 30 | 0.2 | 0.1 | 0.2 | 0.1 | 8-35k | 12-150k +0-2 | 70 | 2.0 | | | 100 | 15¾ x 13 x 6 | 19 | 269.50 | | | |
| | TA1055 | 20 | 0.5 | | 0.5 | | 10-40k | 10-40k | 70 | 2.0 | | | 22 | 16 x 11 x 4¼ | 14 | 199.50 | With case | | |
| | TA1066 | 15 | 0.8 | | 0.8 | | 10-60k ±3 | 10-60k ±3 | 70 | 2.5 | | | 22 | 16 x 11 x 4¼ | 14 | 159.50 | With case | | |
| SOUTHWEST TECHNICAL | (B) 210 | 200 | 0.05 | 0.02 | 0.05 | 0.01 | 20-200k | 3-250k | 90 | | | 2.0 | 4 | 100 | | 28 | 154.50k | All push-pull crt. w/compl. cross cpd. diff. input sys. | |
| | (B) 207 | 60 | 0.05 | 0.02 | 0.01 | 0.01 | 10-250k | 0.1-300k | 80 | | | 1.25 | 4 | 100 | | 15 | 75.00k | All push-pull; output mtr.; single chan. | |
| | (B) 215 | 25 | 0.05 | 0.02 | 0.01 | 0.01 | 10-250k | 0.1-300k | 75 | | | 1.0 | 4 | 100 | | 8½ | 69.50k | Same features as 207; stereo amp. w/2 mtrs. | |
| | (B) 140 | 18 | 0.5 | 0.1 | 0.5 | 0.4 | 10-100k | 5-150k | 68 | | | 1.0 | 8 | 75 | | 6 | 41.25k | Output protect. crts. | |
| SUPERSCOPE | QA-450 4-chan. | 10* | 1.0 | | 0.5 | | 30-30k | 20-20k -1 | 65 | 3.5 | 90 | | 160 | 8 | 40 | 14¼ x 12¾ x 5¼ | 299.95 | *25W X 2; discrete, SQ, ambience; 2/4 chan. bridg.; loudness; tape mon.; high freq. filt. swit. | |
| | A-260 | 15 | 0.5 | | 1.0 | | 20-50k | 20-25k -1 | 60 | 4 | 90 | | 100 | 8 | 40 | 14¼ x 11¾ x 5¾ | 189.95 | Quadraphase; loudness; tape mon.; sliding tone contl.; mic jack for PA. | |
| | A-245 | 10 | 1.0 | | 1.0 | | 13-23k | 30-20k -1 | 60 | 2.5 | 100 | | 100 | 8 | 30 | 14½ x 7½ x 4¾ | 119.95 | Tape mon.; mag/cer phono swit.; loudness. | |
| | A-235 | 5 | 1.0 | | 1.0 | | 30-50k | 50-20k -1 | 60 | 3 | 90 | | 90 | 8 | 30 | 14½ x 17½ x 4½ | 89.95 | Mag/cer. phono swit. | |
| TEAC | P-300 | 150 | 0.1 | 0.1 | 0.1 | 0.1 | | | | | | | 4.8, 16 | 40 | 17½ x 6 x 14 | 55 | 750.00 | 2 mtrs.; 3 spkr. conn.; dual dir.-cpd. sym. crty.; front panel inputs; R&L vol. contl.; pwr. limit. swit. | |
| TECHNICS | (B) SE-9600 | 110 | 0.08 | | 0.08 | | 5-150k | 5-150k | 110 | | | 1 | 4-16 | 1-100 | 17¾ x 16¾ x 7¾ | 52 | 799.95 | 4-pos. sel. for output imp. (damping factors); peak rdg. VU mtrs w/3-pos. range swit.; main/rem. spkr. sel. | |
| TELEDYNE (OLSON) | AM-473 | 15 | 0.8 | 0.3 | 0.6 | 0.35 | 20-20k | 17-36k ±1.0 | 58 | 2.5 | 40 | NA | 0.12 | 4-16 | 25 | 18¼ x 11¼ x 4¾ | 18 | 179.98 | Discrete 4 x 15 RMS; w/50 4 output level meters. |
| | AM-479 | 15 | 0.8 | 0.3 | 0.6 | 0.35 | 20-20k | 17-36k ±1.0 | 58 | 2.5 | 40 | NA | 0.12 | 4-16 | 25 | 18¼ x 11¼ x 4¾ | 16 | 109.98 | 2 output level meters. |
| | AM472 | 5.0 | 0.8 | 0.3 | 0.6 | 0.35 | 20-20k | 17-36k ±1.0 | 58 | 2.5 | 40 | NA | 0.12 | 4-16 | 25 | 18¼ x 11¼ x 4¾ | 13 | 79.98 | |
| TOMLINSON | (B) 1002 | 100 | 0.1 | 0.05 | 0.1 | 0.05 | 15-20k* | 10-100k ±1 | 110 | | | | | | 500 | 17 x 11½ x 7 | 46 | 560.00 | *-1 dB; 2 level contls, power swit., mod. constr. |
| TOSHIBA | SB404S 4-chan. | 10* | 0.4 | 0.1 | 0.8 | 0.2 | 10-30k | 10-55k | 65 | 3 | | | 150 | | 20 | 15¾ x 12¾ x 4¾ | 16 | 299.95 | *21 W. in 2-ch. RMS; Cond. cart. equal.; SQ, RM. |
| | SB500 | 30 | 0.2 | | 0.2 | | 10-40k | 10-70k | 65 | 2.5 | | | 150 | | 20 | 15¾ x 12¾ x 4¾ | 16 | 249.95 | Mic mix; tape to tape copy; cond. cart. equal.; multi-freq. resp. |
| YAMAHA | CA1000 | 75 | 0.1 | 0.04 | 0.1 | 0.05 | 5-50k | 10-100k ±0.2 | 80 | 3 | 310 | 120 | | 70 | 17¾ x 12¾ x 5¾ | 34 | 600.00 | Opt. Class A oper w/frnt. panel swit.; FET phono equal. amps; loudness; dual tape crts. | |
| | CA800 | 50 | 0.1 | 0.04 | 0.1 | 0.05 | 5-70k | 10-100k ±0.2 | 80 | 3 | 310 | 120 | | 70 | 17¾ x 12¾ x 5¾ | 29.7 | 470.00 | Same as above plus sep. amp and pre-amp. | |
| | CA600 | 35 | 0.1 | 0.04 | 0.1 | 0.05 | 8-70k | 10-100k +0-1 | 80 | 3 | 310 | 120 | | 70 | 17¾ x 12¾ x 5¾ | 24.2 | 330.00 | Cont. idness contl.; dual tape crts.; sep. amp and pre-amp. | |
| | CA400 | 22 | 0.1 | 0.04 | 0.1 | 0.05 | 8-70k | 10-100k +0.1 | 75 | 3 | 310 | 150 | | | | 23 | 270.00 | | |

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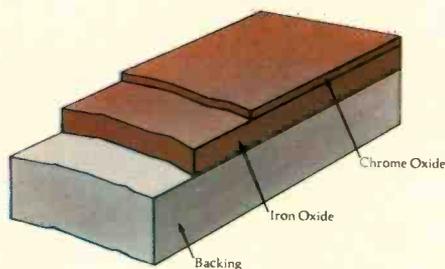
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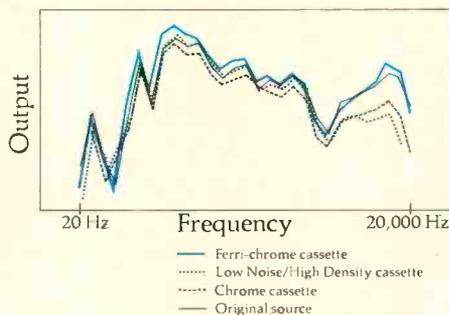
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This ferri-chrome combination gives "Scotch" brand Classic cassettes



fidelity that often deceives the sharpest ear. Included in a variety of test procedures was the use of a Brüel and Kjaer Model 3347 spectrum analyzer. We began with the original play (record) of a broad-spectrum piece of music, first measuring output levels versus frequency from the record, then the Classic cassette recording of the record, and finally, the record recorded on our low noise/high density cassette and on our chrome cassette. Our graph shows the results:



Compatibility is another ferri-chrome bonus. It means Classic cassettes will deliver optimum performance on any quality machine. (On machines with a chrome switch position use the HIGH or NORMAL switch position.)

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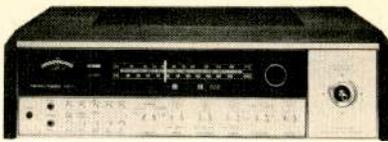


B&O Beomaster 4000



Concord CR-260

| MANUFACTURER | MODEL | AMPLIFIER | | | | | | | | | | | TUNER | | | | | | | | | | | Dimensions, w x d x h, in. | Weight, lbs. | Price | NOTES |
|--------------|------------------|--------------------|-----------------------|----------------------|-----------------|-------------------------|-------------------------------|------------------------------|-----------------------|--------------------|-----------------------------|-------------------|---------------------|----------------|-------------------------|-------|---------------------------|------------------|----------------------------|---------------|-------------------------|--------|--|---|--------------|-------|-------|
| | | RMS Power/chan., W | THD at rated power, % | IM at rated power, % | IM at 1 watt, % | Power bandwidth, Hz-kHz | 1-watt freq. resp., Hz ± 1 dB | Rated output S, N, Phono, dB | Phono sensitivity, mV | Phono overload, mV | IHF sensitivity, ul, stereo | Capture ratio, dB | Frequency resp., Hz | THD Mono 1 kHz | THD stereo 100% mod., % | 1 kHz | Stereo sep., 100% mod., % | Tuning indicator | Akt. chan. selectivity, dB | No. of meters | AM band? | | | | | | |
| AKAI | AA-910DB | 12 | 0.2 | | | 20-45K | 20-70K ±3 | 75 | 3 | | 2 | 2.5 | | 0.4 | 0.8 | 40 | mtr. | 65 | 1 | Yes | 23 x 14.5 x 6.6 | 28.2 | 349.95 | | | | |
| | AA-910 | 12 | 0.2 | | | 20-45K | 20-70K ±3 | 75 | 3 | | 2 | 2.5 | | 0.4 | 0.8 | 40 | | 65 | 1 | Yes | 18 x 6.6 x 14.5 | 23.1 | | | | | |
| | AS-980 | 30 | 0.05 | | | 10-60K | 10-60K -3 | 80 | 3 | | 1.8 | 1.5 | | 0.2 | 0.6 | 40 | | 80 | | Yes | 25.5 x 16.7 x 6.6 | 45.1 | 850.00 | | | | |
| | AS-970 | 25 | 0.05 | | | 10-60K | 10-60K -3 | 75 | 3 | | 1.9 | 2 | | 0.4 | 0.7 | 40 | | 70 | | Yes | 23 x 6.6 x 15.8 | | 599.95 | | | | |
| | AS-960 | 15 | 0.07 | | | 10-60K | 10-60K -3 | 75 | 3 | | 2 | 2.5 | | 0.4 | 0.8 | 40 | | 65 | | Yes | 18.9 x 6.6 x 15.8 | | 499.95 | | | | |
| | AA-930 | 25 | 0.03 | | | 10-60K | 7-80K -3 | 85 | 3 | | 1.8 | 1.5 | | 0.2 | 0.6 | 40 | | 80 | | Yes | 19 x 6.6 x 15.7 | | 399.95 | | | | |
| B&O | 4000 | 40 | 0.1 | 0.3 | 0.3 | 10-35k | 20-30k ±1.5 | 62 | 3 | 60 | 2 | 3 | 20-15k ±1.5 | 0.4 | 0.4 | 40 | Lt & mtr. | 55 | 1 | No | 23 x 10 3/4 x 3 3/4 | 22 | 520.00 | Ambiophonic stereo crty. | | | |
| | 3000-2 | 30 | 0.6 | 0.6 | 0.6 | 10-30k | 30-30k ±1.5 | 62 | 3 | 60 | 2 | 3 | 20-15k ±1.5 | 0.4 | 0.4 | 40 | Lt. & Mtr. | 55 | 1 | No | 23 x 10 3/4 x 3 3/4 | 19 | 430.00 | | | | |
| CONCORD | CR-50 | 5 | 2 | | | 30-25k | 28-25k ±2 | 55 | 3 | | 4.5 | 6 | 20-15k | 1 | 1.5 | 25 | Mtr. | 40 | 1 | Yes | 16 1/2 x 11 1/2 x 4 1/4 | 9 1/2 | | Mag. phono input; tape mon swt.; spkr. sel. | | | |
| | CR-110 | 7 | 1 | | | 27-30k | 28-25k ±1.5 | 60 | 2.8 | | 3 | 3 | 20-15k | 0.8 | 1.5 | 35 | Mtr. | 50 | 1 | Yes | 15 1/2 x 11 1/2 x 5 | 9 1/2 | | Fine tuning; duo-Glo ind.; black-out dial. | | | |
| | CR-210 | 12 | 1 | | | 20-30k | 20-30k ±1.5 | 58 | 2.8 | | 2.9 | 2 | 20-15k | 0.6 | 1 | 35 | Mtr. | 43 | 1 | Yes | 16 1/2 x 12 1/4 x 5 1/4 | 16 | | Fine tuning; duo-glo ind.; elec. crt. brkr. | | | |
| | CR-260 | 25 | 1 | | | 20-35k | 22-40k ±1.5 | 60 | 2.5 | | 2.3 | 1.5 | 20-15k | 0.5 | 1 | 37 | Mtr. | 46 | 2 | Yes | 18 1/2 x 15 x 5 1/2 | 20 | | Same as above. | | | |
| GTE SYLVANIA | RQ3748 4-chan. | 50 | 0.5 | 0.5 | 0.2 | 18-35k | 20-30k ±1.5 | 60 | 2.6 | 90 | 1.9 | 1.5 | | 0.5 | 0.6 | 35 | Mtr. | 55 | 2 | Yes | 21 1/4 x 15 x 6 1/4 | 43 | 599.95 | | | | |
| | RQ3746 4-chan. | 15 | 1 | 1 | | 15-50k | 20-20k ±1.5 | 50 | 3 | 90 | 2.3 | 1.5 | | 0.5 | 0.6 | 35 | Mtr. | 50 | 2 | Yes | 17 3/4 x 15 x 6 | 25 | 499.95 | | | | |
| | RQ3747 4-chan. | 25 | 0.5 | 0.5 | 0.2 | 18-35k | 20-30k ±1.5 | 60 | 2.6 | 90 | 1.9 | 1.5 | | 0.5 | 0.6 | 35 | Mtr. | 55 | 2 | Yes | 21 1/4 x 15 x 6 1/4 | 37 | 379.95 | | | | |
| | RQ3745 4-chan. | 7.5 | 1 | 1 | | 15-50k | 20-20k ±1.5 | 50 | 3 | 90 | 2.3 | 1.5 | | 0.5 | 0.6 | 35 | Mtr. | 50 | 1 | Yes | 17 3/4 x 15 x 6 | 24 | 329.95 | | | | |
| | RS4744 | 60 | 0.25 | 0.25 | 0.15 | 5-30k | 7-70k ±1 | 70 | 2.2 | 80 | 1.8 | 1.5 | | 0.4 | 0.4 | 40 | Mtr. | 55 | 2 | Yes | 17 3/4 x 15 x 6 | 29 | 399.95 | | | | |
| | RS4743 | 30 | 0.25 | 0.25 | 0.15 | 5-30k | 7-70k ±1 | 70 | 2.2 | 80 | 1.8 | 1.5 | | 0.5 | 0.5 | 35 | Mtr. | 55 | 1 | Yes | 17 3/4 x 15 x 6 | 27 | 299.95 | | | | |
| | CR2742A | 22 | 0.5 | 0.5 | | 17-35k | 17-35k ±1.5 | 50 | 2.6 | 60 | 1.9 | 1.5 | | 0.5 | 0.6 | 35 | Mtr. | 55 | 1 | Yes | 16 1/2 x 13 x 5 1/4 | 24 | 229.95 | | | | |
| HITACHI | SR-1100 | 28 | 0.5 | 0.1 | | 20-35k | 10-30k | 70 | 1.8 | | 1.6 | 0.8 | | 0.8 | 42 | Mtr. | 65 | 2 | Yes | | | 449.95 | | | | | |
| | SMR-4040 4-chan. | 5.5 | 0.5 | 0.8 | | 20-30k | 20-20k | 67 | 2.5 | | 2.5 | 1.2 | | 0.8 | 36 | Mtr. | 46 | 1 | Yes | | | 329.95 | RM & SQ swit.; 2 mic jacks; mie mix; opt. remote bal. contl. | | | | |
| | SMR-5240 4-chan. | 7 | 1.0 | 1.0 | | 20-25k | 10-30k | 60 | 2.5 | | 2.2 | 1.2 | | 0.8 | 36 | Mtr. | 46 | 1 | Yes | | | 389.95 | 2/4-chan. tape mon.; mic mix; vol. contl.; SQ/RM swit.; 4-chan. phone jack; opt. remote. | | | | |
| | SMR-7240 4-chan. | 10 | 1.0 | 1.0 | | 20-25k | 10-30k | 60 | 2.5 | | 2.2 | 1.2 | | 0.8 | 36 | Mtr. | 46 | 2 | Yes | | | 439.95 | Same as above plus joystick bal. contl. | | | | |
| | SR-3200 | 5.5 | 1.0 | 0.5 | | 25-40K | 20-30K | 70 | 2.5 | | 2.5 | 1.2 | | 0.8 | 36 | Mtr. | 46 | 1 | Yes | | | 219.95 | FET tuner; 2 tape mon.; spkr. swit.; muting swit.; mode swit.; loudness. | | | | |
| | SR-5200 | 8 | 1.0 | 0.5 | | 20-40k | 20-30k | 70 | 2.5 | | 2.5 | 1.2 | | 0.8 | 36 | Mtr. | 46 | 2 | Yes | | | 269.95 | Same as above. | | | | |
| | SR-700 | 20 | 0.5 | 0.4 | | 20-25k | 15-30k | 60 | 2.5 | | 1.8 | 1.1 | | 0.8 | 40 | Mtr. | 43 | 1 | Yes | | | 359.95 | FET FM tuner; FM mono/stereo auto swit.; FM muting swit.; neg. fd. bk. control. | | | | |
| | SR-800 | 20 | 0.5 | 0.4 | | 20-25k | 15-30k | 60 | 2.5 | | 1.8 | 1.1 | | 0.8 | 40 | Mtr. | 43 | 2 | Yes | | | 399.95 | Same as above plus mic jack. | | | | |



Notes: (1) All models solid-state except when model number is preceded by (T).
 (2) "K" indicates kit price; "W" wired.

Hervic HR150

Harmon/Kardon 900+

| MANUFACTURER | MODEL | AMPLIFIER | | | | | | | | | | | TUNER | | | | | | | | | | Price | NOTES |
|---------------|-----------------|---------------------|-----------------------|----------------------|-----------------|-------------------------|-------------------------------|-----------------------------|-----------------------|--------------------|-----------------------------|-------------------|---------------------|------------------------|--------------------------|---------------------------|------------------|----------------------------|---------------|---------------------|----------------------------|--------------|--|--|
| | | RMS Power, Chan., W | THD at rated power, % | IM at rated power, % | IM at 1 watt, % | Power bandwidth, Hz-kHz | I-watt freq. resp., Hz ± 1 dB | Rated output S/N, Phono, dB | Phono sensitivity, mV | Phono overload, mV | IHF sensitivity, ul, stereo | Capture ratio, dB | Frequency resp., Hz | THD Mono, 100% mod., % | THD Stereo, 100% mod., % | Stereo sep., 100% mod., % | Tuning indicator | All. chan. selectivity, dB | No. of meters | AM band? | Dimensions, w x d x h, in. | Weight, lbs. | | |
| KLH | 52 | 33 | 1.0 | 0.8 | 0.4 | 20-20k | 20-20k ±2 | 65 | 3.5 | 60 | 2.0 | 2.5 | 0.5 | 0.8 | 35 | Mtr. | 46 | 2 | Yes | 17 1/4 x 13 x 5 1/4 | 25 | 319.95 | Tape dub.; 4-chan. enhance. swit. FM muting, tape dub.; 4-chan. enhance. swit. | |
| | 55 | 13 | 1.0 | 0.5 | 0.5 | 20-20k | 20-20k ±2 | 55 | 2.5 | 50 | 2.5 | 4 | 0.6 | 1.0 | 30 | Mtr. | 45 | 1 | Yes | 16 3/4 x 13 x 5 1/4 | 20 | 219.95 | | |
| | 52A | 35 | 1.0 | 0.8 | 0.4 | 20-20k | 20-20k ±2 | 65 | 3.5 | 60 | 2 | 2.5 | 0.5 | 0.8 | 35 | Mtr. | 46 | 2 | Yes | 17 3/4 x 13 x 5 1/4 | 25 | 349.95 | | |
| | 55A | 15 | 1.0 | 0.5 | 0.5 | 20-20k | 20-20k ±2 | 55 | 2.5 | 50 | 2.5 | 4 | 0.6 | 1.0 | 30 | Mtr. | 45 | 1 | Yes | 16 3/4 x 13 x 5 1/4 | 20 | 259.95 | | |
| HARMAN/KARDON | 800+ 4-chan. | 22 | 0.5 | 0.15 | 0.15 | 10-40k | 1-100k ±1 | | | | 2.0 | 2.5 | 30-15k | 0.6 | 0.7 | 35 | Mtr. | 50 | 1 | Yes | 18 1/2 x 16 1/4 x 6 1/4 | 39 | 499.95 | CD-4; SQ; 50 watts stereo power. CD-4; SQ; Quieting mtr. 90 watts stereo power. Twin-power. Twin-power. |
| | 900+ 4-chan. | 32 | 0.5 | 0.15 | 0.15 | 10-40k | 1-100k ±1 | | | | 1.8 | 1.6 | 30-15k | 0.4 | 0.5 | 37 | Mtr. | 60 | 1 | Yes | 10 1/2 x 17 | 45 | 749.95 | |
| | 930 | 45 | 0.5 | 0.15 | 0.15 | 10-40k | 1-100k ±1 | 65 | — | 90 | 1.8 | 2.0 | 15-30k | 0.5 | 0.6 | 38 | Mtr. | 50 | 2 | Yes | 17 x 13 1/4 x 4 3/4 | 29 | 479.95 | |
| | 630 | 30 | 0.5 | 0.15 | 0.15 | 10-40k | 1-100k ±1 | 60 | — | 85 | 2.0 | 2.5 | 25-25k | 0.6 | 0.7 | 35 | Mtr. | 50 | 1 | Yes | 17 x 13 1/4 x 4 3/4 | 28 | 359.95 | |
| | 330B | 20 | 0.5 | 0.5 | 0.5 | 25-20k | 20-20k ±1 | 55 | 3.3 | 70 ±1 | 2.5 | 3.0 | — | 1.0 | 1.5 | 35 | Mtr. | 50 | 1 | Yes | 15 3/4 x 13 1/2 x 4 1/2 | | 199.95 | |
| HEATH | AA-1500A | 60 | 0.25 | 0.1 | 0.1 | 8-30k | 9-80k ±1 | 63 | 1.8 | 145 | 1.8 | 1.5 | 20-15k | 0.5 | 0.5 | 40 | Mtr. | 90 | 2 | Yes | 18 1/2 x 13 1/2 x 5 1/2 | 32 | 399.95 | Mod. const.; L-C filt. in AM & FM; PLL MPX; tone mon.; tone flat. Mod. const.; cer. filt.; PLL MPX; SQ. Mod. Const.; FM 9-pole L-C filt.; preassem. front end; 2 spkr. swit. Mod. const.; cer. filts.; preassem. front end; 2 spkr. swits. Cer. filts.; PLL MPX. |
| | AR-2020 4-chan. | 15 | 0.5 | 0.5 | 0.25 | 5-30k | 7-50k ±1 | 60 | 2.2 | | 2.0 | 2.0 | 20-15k | 0.5 | 0.5 | 40 | Typ. | | Yes | 20 x 14 x 5 | | 249.95 | | |
| | AR-29 | 35 | 0.25 | 0.2 | 0.1 | 5-30k | 7-60k ±1 | 65 | 2.2 | 155 | 1.8 | 1.5 | 20-15k | 0.5 | 0.5 | 40 | Mtr. | 70 | 2 | Yes | 16 3/4 x 14 1/2 x 5 1/2 | 26 1/2 | 319.95 | |
| | AR-1302 | 20 | 0.25 | 0.25 | 0.1 | 5-30k | 6-35k ±1 | 65 | 2.4 | 155 | 1.9 | 1.8 | 20-15k | 0.5 | 0.5 | 40 | Mtr. | 60 | 2 | Yes | 16 3/4 x 14 1/2 x 5 1/2 | 26 1/2 | 259.95 | |
| | AR-1214 | 15 | 0.5 | 0.5 | 0.2 | 5-30k | 7-100k ±1 | 65 | 2.0 | 75 | 2.0 | 2.0 | 20-15k | 0.5 | 1.0 | 40 | | | Yes | 17 x 13 x 3 3/4 | 13 | 179.95 | | |
| HERVIC | HR150 | 150 | 0.25 | 0.25 | 0.06 | 8-45k | 5-100k ±0.5 | 85 | | | 2 | 2 | 20-15k | 0.25 | | 32 | Mtr. | 100 | 2 | No | | | 849.95 | |
| JVC | 5426-X 4-chan. | 17 | 1.0 | 1.0 | | 10-40k | 20-30k | 65 | | | 2.2 | 2 | | 0.5 | 0.5 | 40 | Mtr. | | 1 | Yes | 6 3/4 x 18 1/2 x 15 1/2 | 26.8 | 399.95 | CD-4 & matrix; PLL IC FM & AM. sect.; BTL dbl. fnt. pwr. in stereo. Auto CD-4/matrix switching; dual SEA concls. Auto CD-4/matrix swit.; SEA record; noise red. swit. Same as above. |
| | 5456-X 4-chan. | 48 | 0.5 | 0.8 | | 5-45k | 10-50k | 65 | | | 1.8 | 1.2 | 10-50k | | 0.3 | 38 | Mtr. | 70 | 2 | Yes | 7 1/2 x 20 1/4 x 15 1/2 | 44 | 799.95 | |
| | 5446-X | 26 | 0.5 | 0.8 | | 10-30k | 10-30k | 65 | | | 2 | 2 | 10-15k | | 0.5 | 35 | Mtr. | 70 | 2 | Yes | 6 3/4 x 20 x 15 1/2 | 34.8 | 679.95 | |
| | 5436X 4-chan. | 17 | 0.5 | 0.8 | | 10-30k | 10-30k | 65 | | | 2 | 2 | 10-15k | | 0.5 | 35 | Mtr. | 65 | 2 | Yes | 6 3/4 x 20 x 15 1/2 | 31.5 | 569.00 | |
| KENWOOD | S-7310 | 43 | 0.5 | 0.5 | | 7-50k | | 65 | 2 | 90 | 1.8 | 1.2 | 20-15k | 0.25 | 0.5 | 40 | Mtr. | 65 | 1 | Yes | 17 1/2 x 13 1/2 x 5 1/4 | 35 1/2 | 369.95 | Dir.-cpld. amp. Same as above. |
| | S7110 | 20 | 0.9 | 0.9 | | 9-50k | | 65 | 2 | 90 | 2 | 1.5 | 20-15k | 0.4 | 0.6 | 40 | Mtr. | 60 | 1 | Yes | 17 1/2 x 13 1/2 x 5 1/4 | 27 1/2 | 229.95 | |
| | S-7210 | 31 | 0.8 | 0.8 | | 8-50k | | 65 | 2 | 110 | 1.9 | 1.4 | 20-15k | 0.3 | 0.6 | 40 | Mtr. | 65 | 1 | Yes | 17 1/2 x 13 1/2 x 5 1/4 | | 299.95 | |
| | KR-7400 | 65 | 0.3 | 0.3 | 0.07 | 10-35k | 10-40k ±1 | 70 | 2.5 | 250 | 1.7 | 1.3 | 20-15k | 0.3 | 0.5 | 40 | Mtr. | 80 | 2 | Yes | 19 x 13 1/2 x 6 | 31 | 519.95 | |
| | KR-6400 | 52 | 0.3 | 0.3 | 0.07 | 10-30k | 10-40k | 70 | 2.5 | 250 | 1.9 | 1.5 | 20-15k | 0.3 | 0.5 | 35 | Mtr. | 65 | 2 | Yes | 19 x 13 1/2 x 6 | 30 | 449.95 | |
| | KR-5400 | 37 | 0.5 | 0.5 | 0.07 | 10-30k | 10-40k | 70 | 2.5 | 250 | 1.9 | 1.5 | 20-15k | 0.3 | 0.5 | 35 | Mtr. | 65 | 1 | Yes | 19 x 13 1/2 x 6 | 25.4 | 379.95 | |
| | KR-4400 | 27 | 0.5 | 0.5 | 0.08 | 10-30k | 10-40k | 70 | 2.5 | 160 | 2.1 | 2 | 20-15k | 0.4 | 0.6 | 35 | Mtr. | 55 | 1 | Yes | 19 x 13 1/2 x 6 | 22.3 | 299.95 | |
| | KR-3400 | 22 | 0.8 | 0.8 | 0.1 | 10-30k | 10-40k | 70 | 2.5 | 160 | 2.5 | 3 | 20-15k | 0.4 | 0.6 | 33 | Mtr. | 45 | 1 | Yes | | | 259.95 | |
| | KR-2400 | 16 | 1 | 1 | 0.1 | 10-30k | 10-40k | 70 | 2.5 | 160 | 2.5 | 3 | 20-15k | 0.4 | 0.6 | 33 | Mtr. | 45 | 1 | Yes | | | 219.95 | |
| KR-1400 | 10 | 1 | 1 | 0.5 | 25-30k | 25-35k | 70 | 2.5 | 160 | 2 | 3 | 20-15k | 0.4 | 0.6 | 33 | Mtr. | 45 | 1 | Yes | | | 179.95 | | |

Receivers

Notes: (1) All models solid-state except when model number is preceded by (T).
(2) "K" indicates kit price; "W" wired

| MANUFACTURER | MODEL | AMPLIFIER | | | | | | | | | | | TUNER | | | | | | | | | | | NOTES | | |
|---------------|--------------------|-------------------|-----------------------|----------------------|-----------------|------------------------|-----------------------------------|-----------------------------|-----------------------|--------------------|-----------------------------|-------------------|---------------------|------------------------|--------------------------|--------------------------|------------------|----------------------------|---------------|----------|----------------------------|--------------|---------------------------------------|--|--|--|
| | | RMS Power/chan. W | THD at rated power, % | IM at rated power, % | IM at 1 watt, % | Power bandwidth, Hz-Hz | 1-watt freq. resp., Hz ± 1 dB | Rated output S/N, Phono, dB | Phono sensitivity, mV | Phono overload, mV | IHF sensitivity, uV, stereo | Capture ratio, dB | Frequency resp., Hz | THD Mono, 100% mod., % | THD Stereo, 100% mod., % | Stereo sep., 1000 Hz, dB | Tuning indicator | Air. chan. selectivity, dB | No. of meters | AM band? | Dimensions, w x d x h, in. | Weight, lbs. | Price | | | |
| LAFAYETTE | LR-5000 4-chan. | 35 | 0.3 | 1.0 | 0.06 | 10-40k | 20-20k ± 1.5 | 60, 65 | 0.6 to 4 | 14 100 | 1.65 | 1.5 | 50-15k | 0.2 | | 40 | Mtr. | 60 | 2 | Yes | 21 1/2 x 15 1/2 x 5 1/2 | 31 | 599.95 | Full logic SQ & RM built in; Opt. CD-4; self-reset. pwr. overrid. crt. | | |
| | LR-3000 4-chan. | 15 | 0.8 | 1.0 | 0.1 | 10-35k | 20-20k ± 1.5 | 60 65 | 0.6 to 4 | 10 70 | 2.2 | 2.5 | 50-15k | 0.25 | | 35 | Mtr. | 40 | 1 | Yes | 17 1/2 x 14 x 4 1/2 | 19 | 449.95 | Same as above less overrid. crt. | | |
| | LR-3500 | 47 | 0.5 | 1.0 | 0.06 | 12-50k | 20-20k ± 1.5 | 65 68 | 2.5 6 | 46 105 | 1.65 | 1.5 | 50-15k | 0.25 | | 40 | Mtr. | 60 | 2 | Yes | 19 1/2 x 14 1/2 x 5 1/2 | 25 | 399.95 | 2 sets tape rec. outputs for simul. rec. or tape dupl.; mute. | | |
| | LR-1100 | 22 | 0.5 | 1.0 | 0.08 | 10-35k | 20-20k ± 1.5 | 60 65 | 2.5 6 | 42 85 | 1.75 | 1.5 | 50-15k | 0.5 | | 40 | Mtr. | 60 | 1 | Yes | 17 x 14 x 5 | 16 | 299.95 | Main & rem. spkr. swit.; tape mon.; frt. panel tape & phone outputs. | | |
| LEAK (Ercona) | 2000 | 30 | 0.5 | 0.1 | 0.1 | 10-40k | 10-40k ± 2 | 65 | 2.2 6 | | 1.6 | 1.5 | | 0.5 | 0.5 | 35 | Mtr. | 50 | 1 | Yes | | | | | | |
| MAGNAVOX | 1580 | 60 | 0.5 | 0.8 | | 20-20k | 20-25k ± 2 | 70 | 2.5 | | 1.8 | 1.5 | | 0.2 | 0.3 | 50 | Mtr. | 75 | 1 | Yes | 19 x 15 x 6 | 30 | 479.95 | | | |
| | 1570 | 35 | 0.5 | 0.8 | | 20-20k | 20-25k ± 2 | 70 | 2.5 | | 1.8 | 1.5 | | 0.2 | 0.3 | 50 | Mtr. | 75 | 1 | Yes | 19 x 15 x 6 | 28 | 399.95 | | | |
| | 1630 4-chan. | 25 | 0.5 | 0.8 | | 20-20k | 20-25k ± 2 | 70 | 2.5 | | 1.8 | 1.5 | | 0.2 | 0.3 | 50 | Mtr. | 75 | 1 | Yes | 22 1/2 x 15 x 6 | 35 | 599.95 | | | |
| | 1620 4-chan. | 12 | 0.5 | 0.8 | | 20-20k | 20-25k ± 2 | 70 | 2.5 | | 1.8 | 1.5 | | 0.2 | 0.3 | 50 | Mtr. | 75 | 1 | Yes | 22 1/2 x 15 x 6 | 33 | 499.95 | | | |
| MARANTZ | 4400 4-chan. | 50 | 0.15 | 0.15 | | 7-70k | 20-20k ± 0.25 | | 2 | | 1.8 | 1.5 | 10-15k | 0.2 | 0.3 | 42 | Scope | 75 | | Yes | | 1250.00 | Built-in Dolby; 2 x 125W. | | | |
| | 2325 | 125 | 0.15 | 0.15 | | 7-70k | 20-20k ± 0.25 | | 1.8 | | 1.8 | 1.5 | 10-15k | 0.15 | 0.3 | 42 | Mtr. | 75 | 2 | Yes | | 799.95 | Built-in Dolby; Sel. tone tnovr. pts. | | | |
| | 2275 | 75 | 0.25 | 0.25 | | 7-70k | 20-20k | | 1.8 | | 1.9 | 1.5 | 10-15k | 0.25 | 0.35 | 42 | Mtr. | 75 | 2 | Yes | | 649.95 | Sel. tone tnovr. pts.; Dolby FM swit. | | | |
| | 4300 4-chan. | 40 | 0.15 | 0.15 | | 7-70k | 20-20k ± 0.25 | | 2 | | 1.9 | 1.5 | 10-15k | 0.2 | 0.3 | 42 | Mtr. | 70 | 2 | Yes | | 899.95 | Built-in Dolby. | | | |
| | 4270 4-chan. | 25 | 0.3 | 0.3 | | 8-60k | 20-20k ± 0.5 | | 2 | | 1.9 | 1.5 | 10-15k | 0.3 | 0.4 | 40 | Mtr. | 60 | 2 | Yes | | 699.95 | Built-in Dolby; PLL; FM decoder. | | | |
| | 4240 4-chan. | 17 | 0.5 | 0.5 | | 10-60k | 20-20k ± 1 | | 2 | | 1.9 | 1.5 | 10-15k | 0.3 | 0.4 | 40 | mtr. | 60 | 2 | Yes | | 599.95 | Built-in Dolby. | | | |
| | 2240 | 40 | 0.3 | 0.3 | | 10-70k | 20-20k ± 0.5 | | 1.8 | | 1.9 | 1.5 | 20-15k | 0.3 | 0.4 | 40 | Mtr. | 60 | 2 | Yes | | 499.95 | Dolby FM swit. (25 uS, 75uS). | | | |
| | 2220B | 20 | 0.5 | 0.5 | | 15-60k | 20-20k ± 1 | | 1.8 | | 2 | 2.5 | 20-15k | 0.3 | 0.5 | 40 | Mtr. | 50 | 2 | Yes | | 349.95 | | | | |
| NIKKO | STA 9090 | 65 | 0.5 | 0.5 | 0.1 | | 10-50k ± 1 | 65 | 3 | | 1.8 | 1.8 | | 0.2 | 0.5 | 40 | Mtr. | 70 | 2 | Yes | 19 x 15 1/2 x 6 1/2 | 33 | 499.95 | | | |
| | STA 2020 | 8 | 1 | | 0.5 | | 10-50k | 60 | 2 | | 3.5 | 4.5 | | 0.8 | | 30 | Mtr. | 30 | 1 | Yes | 17 3/4 x 15 x 5 1/2 | 17.3 | 189.95 | No fuses. | | |
| | STA 8080 | 45 | 0.5 | 0.5 | 0.2 | | 10-50k ± 1 | 65 | 2.2 | | 1.8 | 2.5 | | 0.5 | | 38 | Mtr. | 50 | 2 | Yes | 18 x 14 1/2 x 5 1/2 | 24 | 399.95 | | | |
| | STA 1010 | 6 | 2 | | | | 40-20k | 60 | 3 | | 3.5 | 3 | | 0.08 | | 35 | Mtr. | 40 | 1 | Yes | 17 1/2 x 11 x 5 1/2 | 10 1/2 | 159.95 | Tone contrl. amp.; IC FET equipped. | | |
| | STA 4030 | 18 | 1 | | 0.5 | | 20-30k | 60 | 2.2 | | 2.1 | 3 | | 0.5 | | 38 | Mtr. | 40 | 1 | Yes | 17 3/4 x 15 x 5 1/2 | 18 | 219.95 | Crt. brkrs. | | |
| | STA 5050 | 24 | 0.8 | | 0.2 | | 20-30k | 60 | 2 | | 2.1 | 3 | | 0.5 | | 38 | Mtr. | 40 | 1 | Yes | 17 3/4 x 15 x 5 1/2 | 19.8 | 249.95 | Dir.-cpfld.; compl. OCL; 2 deck tape rec., mon., dub. | | |
| | STA 6060 | 34 | 0.5 | | 0.2 | | 10-40k ± 1 | 65 | 2.2 | | 2.1 | 3 | | 0.5 | | 38 | Mtr. | 40 | 1 | Yes | 18 x 14 1/2 x 5 1/2 | 22 | 319.95 | OCL pwr. amp.; PLL FM stereo demod. | | |
| ONKYO | TX-666 | 53 | 0.2 | 0.3 | 0.2 | 10-60k | 10-40k ± 1 | 100 | 2.5 | 200 | 1.8 | 1.0 | 30-15k ± 0.5 | 0.15 | 0.4 | 40 | Mtr. | 75 | 2 | Yes | 18 1/2 x 15 1/2 x 5 1/2 | 34 | 469.95 | | | |
| | TX-560 | 48 | 0.2 | | | 20-40k | 15-30k ± 1 | 65 | 2.5 | 100 | 1.8 | 1.5 | 20-15k ± 1 | 0.3 | 0.7 | 40 | Mtr. | 70 | 2 | Yes | 18 1/2 x 14 1/2 x 5 1/2 | 26.5 | 449.95 | | | |
| | TX-440 | 28 | 0.5 | 0.4 | | 20-20k | 20-30k ± 1 | 65 | 2.5 | 100 | 2.0 | 2.0 | 20-25k ± 1.5 | 0.4 | 0.8 | 40 | Mtr. | 65 | 2 | Yes | 18 1/2 x 14 1/2 x 5 1/2 | 26 | 349.95 | | | |
| | TX-330 | 21 | 0.5 | | | 20-20k | 20-30k ± 1 | 65 | 2.5 | 100 | 2.5 | 2.0 | 20-15k ± 2 | 0.4 | 0.8 | 35 | Mtr. | 60 | 2 | Yes | 18 1/2 x 14 1/2 x 5 1/2 | 23.1 | 299.95 | | | |
| | TX-220 | 13 | 1.0 | | | 20-20k | 25-30k ± 1 | 60 | 2.5 | | 3.0 | 2.0 | 20-15k ± 2 | 0.4 | 0.8 | 35 | Mtr. | 60 | 1 | Yes | 16 1/2 x 13 1/2 x 5 1/2 | 22.5 | 219.95 | | | |
| | TS-500 4-chan. | 25 | 0.5 | 0.4 | | 20-20k | 20-30k ± 1 | 65 | 2.5 | 100 | 1.8 | 2.0 | 20-15k ± 1.5 | 0.4 | 0.8 | 40 | Mtr. | 65 | 1 | Yes | 21 x 16 1/2 x 5 1/2 | 38 | 749.95 | | | |



ONE OF THE FINEST RECEIVERS YOU CAN FIND. IF YOU CAN FIND IT.

The Concord CR-260 is damn hard to find, because we're just as particular about the stores who sell it as we are about the quality of workmanship that goes into it.

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And when it's receiving a stereo station the dial pointer changes from amber to red.

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and another for center of channel tuning. Other deluxe touches are the detents on the bass and treble controls that help you reset any combination exactly.

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You'll want the full story on all the CR-260's features before you begin your search; just drop a line to: Concord Products, Benjamin Electronic Sound Co., 40 Smith Street, Farmingdale, N.Y. 11735.

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THE CONCORD CR-260.
Damn hard to find. Damn hard to beat.

*Manufacturer's suggested retail; slightly higher in the west.

Receivers

Notes: (1) All models solid-state except when model number is preceded by (T).
(2) "M" indicates kit price; "W" wired.

| MANUFACTURER | MODEL | AMPLIFIER | | | | | | | | | | | TUNER | | | | | | | | | | | NOTES |
|-------------------|-------------------|--------------------|-----------------------|----------------------|-----------------|-------------------------|---------------------------------|-----------------------------|-----------------------|--------------------|----------------------------|-------------------|---------------------|------------------------|--------------------------|---------------------------|------------------|----------------------------|---------------|-------------------------|----------------------------|--------------|---|---|
| | | RMS Power/chan., W | THD at rated power, % | IM at rated power, % | IM at 1 watt, % | Power bandwidth, Hz-kHz | I-weight freq. resp., Hz ± 1 dB | Rated output S/N, Phono, dB | Phono sensitivity, mV | Phono overload, mV | IHF sensitivity, vV stereo | Capture ratio, dB | Frequency resp., Hz | THD Mono, 100% mod., % | THD Stereo, 100% mod., % | Stereo sep., 100% mod., % | Tuning indicator | Air. chain selectivity, dB | No. of meters | AM band† | Dimensions, w x d x h, in. | Weight, lbs. | Price | |
| PACIFIC | 767 4-chan. | 25 | 0.5 | 0.5 | 0.12 | 20-20k | 10-40k ±0.5 | 61 | 2.5 | 100 | 2.0 | 3 | 20-15k | 0.3 | 0.5 | 37 | Mtr. | 50 | 1 | Yes | 18 1/2 x 13 1/2 x 5 1/2 | 25 | 229.95 | Dir.-cpld. SCR output prot.; muting; 2-4 ch. swit. |
| | 868 4-chan. | 34 | 0.5 | 0.5 | 0.12 | 20-20k | 10-45k ±0.5 | 62 | 2.5 | 100 | 1.9 | 2 | 20-15k | 0.3 | 0.5 | 39 | Mtr. | 50 | 2 | Yes | 19 1/2 x 14 1/2 x 5 1/2 | 32 | 289.95 | Same as above plus hi filt. |
| | 969 | 44 | 0.5 | 0.5 | 0.12 | 20-20k | 5-50k ±0.5 | 65 | 2.5 | 100 | 1.6 | 1.8 | 20-15k | 0.3 | 0.5 | 40 | Mtr. | 70 | 2 | Yes | 20 1/2 x 14 1/2 x 5 1/2 | 45 | 359.95 | Same as above plus multi. blend swit.; mdr. contrl. |
| PILOT | 254 | 65 | 0.4 | 0.5 | | 10-40k | 20-20k ±1 | 70 | 2.5 | | 1.8 | 1.5 | 20-15k | 0.4 | 0.8 | 38 | Mtr. | 65 | 2 | Yes | 18 1/2 x 17 1/2 x 7 | 42 | 499.90 | |
| | 365 4-chan. | 15 | 0.5 | 0.5 | | 23-25k | 20-20k ±1 | 65 | 2.5 | | 2.2 | 2 | 20-15k | 0.5 | 0.8 | 35 | Mtr. | 50 | 1 | Yes | 18 1/2 x 17 1/2 x 7 | 37 | 439.90 | SQ & RM |
| | 366 4-chan. | 30 | 0.5 | 0.5 | | 10-40k | 15-25k +1 | 70 | 2.5 | | 1.8 | 1.5 | 20-15k | 0.4 | 0.8 | 36 | Mtr. | 65 | 2 | Yes | 18 1/2 x 17 1/2 x 7 | 44 | 579.90 | SQ & RM |
| | 430 4-chan. | 30 | 0.5 | 0.5 | | 10-40k | 20-25k ±1 | 65 | 2.5 | | 1.8 | 1.5 | 20-15k | 0.4 | 0.7 | 40 | Mtr. | 75 | 2 | Yes | 18 1/2 x 17 1/2 x 7 | 46 | 799.90 | Full logic SQ; built-in CD-4 w/auto swit. |
| | 252 | 25 | 0.5 | 0.5 | | 20-25k | 20-20k ±1 | 65 | 2.5 | | 2.2 | 2 | 20-15k | 0.5 | 0.8 | 35 | Mtr. | 50 | 1 | Yes | 18 x 13 1/2 x 5 1/2 | 29 | 309.90 | |
| | 525 | 25 | 0.5 | 0.5 | | 10-30k | 20-20k ±1 | 65 | 2.5 | | 2.2 | 2 | 20-15k | 0.4 | 0.7 | 40 | Mtr. | 65 | 1 | Yes | 18 x 13 1/2 x 5 1/2 | 29 | 349.90 | PLL MPX |
| | 253 | 35 | 0.5 | 0.5 | | 15-30k | 20-20k ±1 | 65 | 2.5 | | 1.8 | 1.5 | 20-15k | 0.4 | 0.8 | 36 | Mtr. | 65 | 2 | Yes | 18 x 13 1/2 x 5 1/2 | 30 | 389.90 | |
| | 540 | 40 | 0.3 | 0.5 | | 10-40k | 20-20k ±1 | 65 | 2.5 | | 1.8 | 1.5 | 20-15k | 0.4 | 0.7 | 40 | Mtr. | 65 | 2 | Yes | 18 x 13 1/2 x 5 1/2 | 30 | 419.90 | PLL MPX |
| PIONEER | QX-949 4-chan. | 40 | 0.3 | 0.3 | 0.05 | 7-40k | 7-25k +0.5 -1 | 70 | 2.5 | 100 | 1.8 | 1 | 20-15k | 0.2 | 0.4 | 40 | Mtr. | 80 | 2 | Yes | 21 1/2 x 17 1/2 x 6 1/2 | 49 | 749.95 | CD-4, RM, SQ built-in; 3 tape mon.; pwr. boost crt for stereo; hi, lo filts. |
| | CX-747 4-chan. | 20 | 0.5 | 0.5 | 0.05 | 7-40k | 10-25k +0.5 -1 | 70 | 1.5 | 100 | 1.9 | 1 | 20-15k | 0.2 | 0.4 | 40 | Mtr. | 60 | 1 | Yes | 21 1/2 x 16 1/2 x 6 1/2 | 42 | 649.95 | CD-4, RM, SQ built-in; pwr. boost for stereo; 2/4 ch. tape mon.; phone jacks. |
| | QX-646 4-chan. | 10 | 1 | 1 | | 15-20k | 10-100k ±3 | 70 | 2.5 | | 2.2 | 3 | | 0.6 | 0.8 | 40 | Mtr. | 40 | 1 | Yes | 20 1/2 x 14 1/2 x 5 1/2 | 27 | 499.95 | CD-4, RM, SQ built-in; tape mon.; pwr. boost for stereo; FM muting; 2 sets 4 spkrs. |
| | SX-1010 | 100 | 0.1 | 0.1 | .05 | 5-40k | 7-100k | 70 | 2.5 | 250 | 1.7 | 1 | 20-15k | 0.2 | 0.3 | 40 | Mtr. | 90 | 2 | Yes | 20 1/2 x 17 1/2 x 7 | 49 | 699.95 | Main & sub. dual tone concls.; PLL MPX; 2 tape mon. w/dupl.; muting; 3 spkr. prs. |
| | SX-939 | 70 | 0.3 | 0.1 | 0.1 | 5-40k | 7-100k | 70 | 2.5 | 250 | 1.8 | 1 | 20-15k | 0.2 | 0.4 | 40 | Mtr. | 80 | 2 | Yes | 20 1/2 x 16 1/2 x 7 | 40 1/2 | 599.95 | Same as above. |
| | SX-838 | 50 | 0.3 | .30 | .05 | 5-40k | 10-70k | 70 | 2.5 | 170 | 1.8 | 1 | 20-15k | 0.2 | 0.4 | 40 | Mtr. | 80 | 2 | Yes | 20 1/2 x 16 1/2 x 7 | 35 1/2 | 499.95 | Sel. tone contl. trnovr.; 2 tape mon.; mic input; FM muting; PLL MPX; 3 spkr. prs. |
| | SX-737 | 35 | 0.5 | 0.5 | 0.05 | 5-60k | 15-40k +0.5 -1 | 70 | 2.5 | 170 | 1.9 | 1 | 20-15k | 0.2 | 0.4 | 40 | Mtr. | 60 | 2 | Yes | 19 1/2 x 17 1/2 x 6 1/2 | 29 | 399.95 | 2 tape mon.; mic jack; hi filt.; FM muting; 2 spkr. prs.; BLL, MPX |
| | SX-636 | 25 | 0.5 | 0.5 | 0.07 | 5-60k | 20-30k +0.5 -1 | 70 | 2.5 | 110 | 1.9 | 1 | 20-15k | 0.2 | 0.4 | 40 | Mtr. | 60 | 2 | Yes | 19 x 16 x 5 1/2 | 24 1/2 | 349.95 | 2 tape mon.; hr filt. mic jack; 2 spkr. prs.; loudness; FM muting; PLL MPX |
| | SX-535 | 20* | 0.8 | 0.8 | 0.08 | 10-70k | 30-25k ±1 | 70 | 2.5 | 110 | 1.9 | 1 | 20-15k | 0.2 | 0.4 | 40 | Mtr. | 60 | 2 | Yes | 19 x 16 x 5 1/2 | 22 1/2 | 299.95 | *40-20k; 2 tape mon.; 2 spkr. prs.; loudness; mic jack; FM muting; PLL MPX |
| | SX434 | 15* | 0.8 | 0.8 | 0.1 | 10-70k | 30-25k ±1 | 70 | 2.5 | 100 | | 1 | 20-15k | 0.2 | 0.4 | 40 | Mtr. | 60 | 1 | Yes | 17 x 14 x 5 1/2 | 18 | 239.95 | *40-20k; mic jack; tape mon.; 2 spkr. prs.; loudness; FM muting |
| Sound Project 300 | 7* | 1 | 1 | 0.5 | 25-60k | 30-20k ±1 | 70 | 2.5 | | 2.3 | 3.5 | | 0.6 | 0.8 | 40 | Mtr. | | 1 | Yes | 17 1/2 x 12 1/2 x 5 1/2 | 13 1/2 | 189.95 | *40-20k; tape mon.; 2 spkr. prs.; loudness; phone jack. | |

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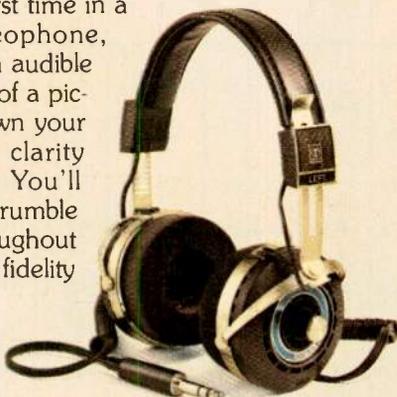
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Receivers

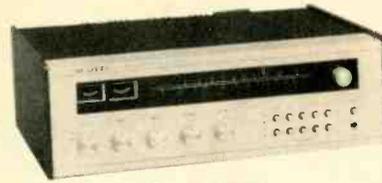
Notes: (1) All models solid-state except when model number is preceded by (T).
 (2) "K" indicates kit price; "W" indicates wired price.



Sansui QRX 7001



Sanyo DCX 3500k



Scott R77S



Sharp SA-4520

| MANUFACTURER | MODEL | AMPLIFIER | | | | | | | | | | TUNER | | | | | | | | | | Dimensions, w x d x h, in. | Weight, lbs. | Price | NOTES |
|--------------|------------------|--------------------|-----------------------|----------------------|-----------------|-------------------------|-------------------------------|-----------------------------|-----------------------|--------------------|-----------------------------|-------------------|---------------------|------------------------|--------------------------|--------------------------|------------------|----------------------------|---------------|-------------------------|-------------------------|----------------------------|---------------------------------|---|-------|
| | | RMS Power, chan. W | THD at rated power, % | IM at rated power, % | IM at 1 watt, % | Power bandwidth, Hz-kHz | I-wgt. freq. resp., Hz ± 1 dB | Rated output S/N, Phono, dB | Phono sensitivity, mV | Phono overload, mV | IHF sensitivity, uV, stereo | Capture ratio, dB | Frequency resp., Hz | THD Mono, 100% mod., % | THD Stereo, 100% mod., % | Stereo sep., 1000 Hz, dB | Tuning indicator | All- chan. selectivity, dB | No. of meters | AM band? | | | | | |
| RADIO SHACK | QTA-770 4-chan. | 30 | 1.0 | | | 20-20k | 20-20k | | 2/5 | | 1.9 | 1.5 | | 0.8 | | 35 | Mtr. | 80 | 1 | Yes | | | 599.95 | Built in CD-4 & SQ | |
| | STA-200 | 26 | 1.0 | | | 20-20k | 20-30k ±1 | | 2/5 | | 1.9 | 1.2 | | 0.8 | | 35 | Mtr. | 60 | 1 | Yes | 6 3/4 x 18 1/2 x 13 1/2 | | 459.95 | | |
| | STA-225 | 50 | 1.0 | | | 20-20k | 20-30k ±1 | | 2.5 & 5 | | 1.9 | 1.2 | | 0.8 | | Mtr. | 60 | 1 | Yes | 5 1/4 x 19 x 15 | | 399.95 | Built in Quatravox 4-ch. synth. | | |
| | QTA-753 4-chan. | 15 | 1.0 | | | 20-20k | 20-20k ±2 | | 2/5 | | 2.5 | 2 | | 0.8 | | 35 | Mtr. | 55 | 1 | Yes | 5 1/4 x 19 x 14 1/2 | | 339.95 | SQ, Quatravox; Auto-Magic. | |
| | STA-250 | 44 | 1.0 | 0.2 | | 20-20k | 17-35k ±1.5 | 50 | | 2.5 & 5 | | 1.9 | 1.5 | 1.0 | 0.6 | 40 | Mtr. | 55 | 1 | Yes | 5 1/4 x 16 1/4 x 15 1/2 | | 319.95 | Built in Quatravox; 2 sets phono in-puts. | |
| | STA-82 | 22 | 1.0 | | | 20-20k | 20-30k ±1 | 60 | 4 | | 2.5 | 2 | | 0.6 | | 35 | Mtr. | 50 | 1 | Yes | 5 x 17 1/2 x 12 1/2 | | 299.95 | Auto-Magic tuning. | |
| | STA-76 | 12 | 1.0 | | | 20-20k | 15-35k ±2 | 60 | 3 | | 2.5 | 3 | | 1.0 | | 34 | Mtr. | 50 | 1 | Yes | 5 1/4 x 18 1/4 x 13 1/2 | | 249.95 | | |
| | QTA-720 4-chan. | 5 | 1.0 | | | 20-20k | 20-20k ±3 | | 3 | | 3.5 | 3 | | 0.8 | | 30 | Mtr. | 40 | 1 | Yes | 5 x 17 x 13 1/2 | | 229.95 | SQ. | |
| | STA-47 | 12 | 1.0 | | | 20-20k | 15-30k ±2 | 60 | | | 3 | 3 | | 1.0 | | 34 | Mtr. | 45 | 1 | Yes | 4 1/4 x 17 x 11 | | 199.95 | Quatravox 4-chan. synth. | |
| | STA-20 | 7 | 1.0 | | | 20-20k | 15-30k ±2 | 60 | | | 3.5 | 3 | | 1.0 | | 34 | Mtr. | 45 | 1 | Yes | 5 1/4 x 16 1/4 x 12 | | 159.95 | | |
| STA-15 | | 1.0 | | | 30-20k | 20-22k ±2 | 45 | | | 3.5 | 3.5 | | 1.0 | | 30 | Mtr. | 30 | 1 | Yes | 4 1/2 x 16 1/4 x 10 1/4 | | 119.95 | Quatravox. | | |
| ROTEL | 802 | 50 | 0.5 | 0.1 | 0.1 | 5-50k | 4-75k 3+0 | 65 | 2.2 | 130 | 1.7 | 1.5 | 20-18k | 0.2 | 0.5 | 38 | Mtr. | 70 | | Yes | 16 1/2 x 12 x 5 1/2 | 26 | 449.95 | Hi. lo filt. tone defeat; audio & FM mute; dual ganged bass & treble. | |
| | 602 | 35 | 0.5 | 0.1 | 0.1 | 5-50k | 10-100k | 65 | 2.5 | 130 | 1.8 | 1.5 | 20-18k | 0.2 | 0.5 | 40 | Mtr. | 70 | | Yes | 22 1/2 x 13 x 5 1/2 | 23 | 399.95 | PLL; dir.-cpld OCL; split elect. pwr. sply.; step. dual gang. bass & treble. | |
| | 402 | 25 | 0.5 | 0.2 | 0.2 | 5-50k | 10-75k +0.3 | 65 | 2 | 85 | 2 | 2 | 20-70k | 0.3 | 0.5 | 35 | Mtr. | 70 | 1 | Yes | 18 1/2 x 11 1/2 x 4 1/2 | | 259.95 | PLL; preamp out, main amp in; dual gang. bass & treble. | |
| | 202 | 15 | 1 | 0.3 | 0.3 | 20-45k | 20-70k +0.3 | 65 | 2 | 80 | 2.9 | 3 | 30-70k | 0.3 | 0.5 | 35 | Mtr. | 40 | | Yes | 18 1/2 x 11 x 4 1/2 | 13 | 219.95 | Sep. crt. in amp; FET front end; hi filt.; loudness; tape dub. | |
| SANSUI | QRX-7001 4-chan. | 35 | 0.4 | 0.4 | | 10-35k | 15-35k ±1 | 70 | 2.5 | | 1.9 | 1.5 | 30-15k 0.5±-3.0 | 0.3 | 0.5 | 40 | Mtr. | 70 | 2 | Yes | | | 879.95 | 4 ch. receiver, QS, SQ—Vario-matrix built in. CD-4 built in RMS power at 20-20k all ch. dr. | |
| | QRX-6001 4-chan. | 25 | 0.5 | 0.5 | | 10-35k | 15-30k ±1 | 70 | 2.5 | | 2.0 | 1.5 | 30-15k 0.5±-3.0 | 0.3 | 0.5 | 40 | Mtr. | 70 | 2 | Yes | 20 1/2 x 13 1/2 | 40.8 | 759.95 | Same as QRX-7001 | |
| | QRX-3500 4-chan. | 20 | 0.5 | 0.5 | | 10-33k | 30-30k ±1.5 | 70 | 2.5 | 100 | 2.2 | 2.0 | 30-12k | 0.4 | 0.6 | 35 | Mtr. | 50 | 1 | Yes | | | 549.95 | 4 ch. receiver, QS, SQ—Vario-matrix built in. | |
| | QRX-3000 4-chan. | 10 | 0.8 | 0.5 | | 20-30k | 30-30k ±1.5 | 70 | 2.5 | 100 | 2.5 | 2.5 | 30-12k | 0.5 | 0.8 | 35 | Mtr. | 50 | 1 | Yes | 20 x 13 x 5 1/2 | 25.4 | 429.95 | Same as QRX-3500 | |
| | 881 | 60 | 0.3 | 0.3 | | 10-40k | 15-30k ±1.0 | 70 | 2.5 | 200 | 1.8 | 1.5 | 30-15k | 0.3 | 0.5 | 40 | Mtr. | 70 | 2 | Yes | | | 499.95 | | |
| | 771 | 35 | 0.5 | 0.5 | | 15-40k | 15-30k ±1.5 | 70 | 2.5 | 200 | 2.0 | 2.0 | 30-12k 10±-3.0 | 0.4 | 0.6 | 35 | Mtr. | 60 | 1 | Yes | 8 1/4 x 11 1/4 x 5 1/2 | 26.4 | 379.95 | | |
| | 661 | 25 | 0.5 | 0.5 | | 15-40k | 15-30k ±1.5 | 70 | 2.5 | 150 | 2.2 | 2.5 | 30-12k ±1.0-3.0 | 0.5 | 0.7 | 35 | Mtr. | 50 | 1 | Yes | 17 1/2 x 11 1/4 x 5 1/2 | 22 | 329.95 | | |
| | 551 | 16 | 0.8 | 0.8 | | 25-30k | 15-30k ±1.5 | 70 | 2.5 | 90 | 2.5 | 2.5 | 30-12k | 0.4 | 0.7 | 40 | Mtr. | 60 | 1 | Yes | 16 1/4 x 11 1/4 x 5 1/2 | | 259.95 | | |
| 441 | 11 | 1.0 | 0.8 | | 30-25k | 25-30k ±2 | 70 | 2.5 | 9.0 | 2.5 | 2.5 | 30-15k | 0.4 | 0.7 | 40 | Mtr. | 60 | 1 | Yes | 16 1/4 x 11 1/4 x 5 1/2 | 17.0 | 219.95 | | | |
| 210 | 10 | 1.0 | | | 30-25k | 25-30k ±2 | 65 | 3 | | | | | 1.0 | | 30 | Mtr. | 35 | 1 | Yes | 17 1/2 x 11 1/4 x 5 | 13.5 | 179.95 | | | |

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Receivers

Notes: (1) All models solid-state except when model number is preceded by (T).
 (2) "K" indicates kit price; "W" wired.



Superscope QR-450



Tandberg TR-1055



Technics SA-8500X

| MANUFACTURER | MODEL | AMPLIFIER | | | | | | | | | | TUNER | | | | | | | | | | Dimensions, w x d x h, in. | Weight, lbs. | Price | NOTES | | | | | | | | | | | |
|-----------------|-----------------------|--------------------|-----------------------|----------------------|-----------------|-------------------------|------------------------|----------------------------|-----------------------|--------------------|-----------------------------|-------------------|---------------------|------------------------|--------------------------|--------------------------|------------------|----------------------------|---------------|----------|-------------------------|----------------------------|--------------|-------|-------|--|--|--|--|--|--|--|--|-------------------------------------|---|--------------------------------------|
| | | RMS Power/chan., W | THD at rated power, % | IM at rated power, % | IM at 1 watt, % | Power bandwidth, Hz-MHz | 1-watt freq. resp., Hz | Rated output SM, Phono, dB | Phono sensitivity, mV | Phono overload, mV | IHF sensitivity, ov. stereo | Capture ratio, dB | Frequency resp., Hz | THD Mono, 100% mod., % | THD Stereo, 100% mod., % | Stereo sep., 1000 Hz, dB | Tuning indicator | Alt. chan. selectivity, dB | No. of meters | AM band? | | | | | | | | | | | | | | | | |
| SANYO | DCX 3300KA 4-chan. | 64 | 1.0 | 1.0 | 0.25 | 20-40k | 20-45k | 70 | 3 | | 2 | | | 0.8 | 0.8 | 30 | Mtr. | 45 | 1 | yes | 19% x 12% x 6 | 30 | | | | | | | | | | | | | | |
| | DCX 3500K 4-chan. | 70 | 1.0 | 1.0 | 0.25 | 20-40k | 18-50k | 70 | 3 | | 2 | | | 0.8 | 0.8 | 33 | Mtr. | 45 | 1 | yes | 19% x 12% x 6 | 31 | | | | | | | | | | | | | | |
| | DCX 2700K 4-chan. | 30 | 1.0 | 1.0 | 0.4 | 30-30k | 25-30k | 70 | 5 | | 2.7 | | | 1.0 | 1.0 | 30 | Mtr. | 38 | 1 | yes | 18 x 14% x 5 | 15 | | | | | | | | | | | | SQ & CD-4. | | |
| | DCX 3000KA 4-chan. | 40 | 1.0 | 1.0 | 0.4 | 25-40k | 25-40k | 70 | 5 | | 2.2 | | | 0.8 | 0.8 | 30 | Mtr. | 40 | 1 | yes | 18% x 13% x 4% | 16 1/2 | | | | | | | | | | | | | Same as above. | |
| SCOTT | R77S | 70 | 0.3 | 0.3 | | 15-30k | 8-40k ±1 | | | | 1.9 | 1.2 | 20-15k | 0.3 | 0.4 | 40 | Mtr. | 75 | 2 | yes | 18 x 15 5% | 40 | 599.95 | | | | | | | | | | | MOS FET frnt. end; 3 sets spkrs. | | |
| | R75S | 50 | 0.3 | 0.3 | | 15-30k | 8-40k ±1 | | | | 1.9 | 1.2 | 20-15k | 0.3 | 0.4 | 40 | Mtr. | 75 | 2 | yes | 18 x 15 5% | 36 | 499.95 | | | | | | | | | | | | Same as above. | |
| | R74S | 40 | 0.3 | 0.3 | | 15-30k | 8-40k ±1 | | | | 1.9 | 1.2 | 20-15k | 0.3 | 0.4 | 40 | Mtr. | 75 | 2 | yes | 18 x 15 x 5% | 32 | 399.95 | | | | | | | | | | | | Same as above. | |
| SHARP | SA-4520 4-chan. | 5 | 5 | 3.3 | 1.15 | 35-35k | 30-20k ±3 | 61 | 2/4 | 50 | 3 | 6 | 50-15k | 1.0 | 1.5 | 28 | Mtr. | | 1 | yes | 18% x 14% x 5 1/2 | 18 1/2 | 279.95 | | | | | | | | | | | | RM, SQ; 3 level indicators. | |
| SONY | SQR 8750 4 chan. | 30 | 0.2 | 0.2 | | 15-40k | 10-50k +0.3 | 72 | 5 | | 1.9 | 1.2 | 40-15k | 0.2 | 0.5 | 40 | Mtr. | 75 | 5 | yes | 20 1/2 x 15 x 7 1/2 | 48 | 699.50 | | | | | | | | | | | | Full logic SQ; Multipath Ind. | |
| | SQR 6750 4 chan. | 20 | 0.2 | 0.2 | | 15-30k | 10-50-50k +0.3 | 70 | 5 | | 2.2 | 1.5 | 40-15k | 0.3 | 0.6 | 38 | Mtr. | 50 | 1 | yes | 20 1/2 x 15 x 7 1/2 | 44 | 569.50 | | | | | | | | | | | | Same as above. | |
| | SQR 4750 4-chan. | 15 | 0.8 | 0.8 | | 15-30k | 20-50k +0.3 | 70 | 5 | | 2.2 | 1.5 | 40-15k | 0.3 | 0.6 | 38 | Mtr. | 50 | 1 | yes | 6 x 18 x 13% | 29 | 279.50 | | | | | | | | | | | | Full Logic SQ. | |
| | STR 7065 | 60 | 0.2 | 0.2 | | 15-35k | 10-10k +0.1 | 72 | 2 | | 2 | 1 | 20-15k | 0.2 | 0.5 | 38 | Mtr. | 70 | 2 | yes | 18 x 14% x 6 1/4 | 34 | 549.50 | | | | | | | | | | | | W/Wood case. | |
| | STR 7055 | 35 | 0.2 | 0.2 | | 15-35k | 10-100k +0.1 | 70 | 2 | | 2 | 1 | 20-15k | 0.2 | 0.5 | 38 | Mtr. | 70 | 1 | yes | 18 x 14% x 6 1/4 | 33 | 449.50 | | | | | | | | | | | | Same as above. | |
| | STR 7045 | 30 | 0.2 | 0.2 | | 15-35k | 10-60k +0.3 | 70 | 1.8 | | 2.2 | 1.5 | 20-15k | 0.2 | 0.5 | 38 | Mtr. | 70 | 1 | yes | 18 x 14% x 6 1/4 | 31 | 369.50 | | | | | | | | | | | | Same as above. | |
| | STR 6046A | 20 | 0.8 | 0.8 | | 10-25k | 10-80k | 60 | 2.5 | | 2.2 | 1.5 | 30-15k | 0.3 | 0.8 | 35 | Mtr. | 60 | 1 | yes | 17 x 14 x 6 | 20 | 279.50 | | | | | | | | | | | | Same as above. | |
| | STR 6036A | 15 | 0.8 | 0.8 | | 10-25k | +0.3 | 60 | 2.5 | | 2.2 | 1.5 | 30-15k | 0.3 | 0.8 | 35 | Mtr. | 60 | 1 | yes | 17 x 14 x 6 | 19 | 249.50 | | | | | | | | | | | | Same as above. | |
| SOUND CRAFTSMEN | 2000A 4-chan. | 20 | 0.2 | 0.4 | 0.08 | 25-30k | 15-50k ±1 | 65 | 3 | | 2.2 | 3 | 20-15k | 0.6 | 0.9 | 36 | Mtr. | 45 | 1 | yes | 17 1/2 x 12 1/2 x 5 | 16 | 299.50 | | | | | | | | | | | | Matrix; wal. case incl.; 120-240 V. | |
| | 3000A 4-chan. | 30 | 0.2 | 0.2 | 0.07 | 15-45k | 9-100k | 67 | 2.5 | | 2 | 2 | 15-15k | 0.3 | 0.5 | 38 | Mtr. | 50 | 2 | yes | 17 1/2 x 12 1/2 x 5 | 21 | 349.50 | | | | | | | | | | | | Same as above plus split. pwr. sply; 3 phono inputs; 2 tape inputs; dir.-cpid. | |
| SUPERSCOPE | QA-450 4-chan. | 10 | 1 | 1 | I | 20-30k | 10-50k -1 | 70 | 2.5 | 90 | 2 | 2.5 | 10-40k | 0.5 | 0.5 | 35 | Mtr. | 45 | 1 | yes | | | 339.95 | | | | | | | | | | | | Joystick bal.; tape mon. | |
| | QRT-440 4-chan. | 6 | 1 | 1 | 1 | 20-70k | 20-20k -1 | 65 | 2.2 | 90 | 5 | 8 | 20-20k | 1 | 1.5 | 32 | Mtr. | 25 | 1 | yes | | | 329.95 | | | | | | | | | | | | 2/4 ch. 8 tk player; SQ, amb., discrete; joystick bal.; fly- wheel tuning. | |
| | RT-840 | 6 | 1 | 1 | 1 | 20-30k | 50-20k -8 | 70 | 1.5 | 90 | 5 | 4 | 30-15k | 1 | 1.5 | 30 | Mtr. | 25 | 1 | yes | | | 249.95 | | | | | | | | | | | | | |
| | R-310 | 6 | 1 | 1 | 1 | 30-30k | 30-30k -1 | 70 | 2.7 | 90 | 5 | 4 | 30-15k | 1 | 1.5 | 32 | Mtr. | 25 | 1 | yes | | | 169.95 | | | | | | | | | | | | | |
| | R350 | 35 | 1 | 1 | | 15-40k | 20-20k -1 | 65 | 2.5 | 90 | 2.8 | 3 | 20-15k | 0.6 | 1 | 32 | Mtr. | 45 | 1 | yes | 23 x 19 x 12 1/2 | 25 | 299.95 | | | | | | | | | | | | | Same as R-340 plus hi filt. swit. |
| TANDBERG | TR-1055 | 55 | 0.2 | 0.2 | 0.2 | 4-40k | 7-70k ±1.5 | 68 | 2-8 | 0.1 | 2 | 0.9 | 20-15k | 0.2 | 0.3 | 40 | Mtr. | 80 | 2 | yes | 17% x 12 1/2 x 5 1/4 | 22 1/2 | 629.90 | | | | | | | | | | | | | |
| | TR1020A | 40 | 0.2 | 0.2 | 0.2 | 7-30k | 7-30k -1.5 | 68 | 1.8-7.2 | 0.1 | 2 | 0.9 | 20-15k | 0.2 | 0.3 | 40 | Mtr. | 80 | 2 | yes | 17% x 12 1/2 5% | 21 1/2 | 529.90 | | | | | | | | | | | | | |
| | TR2075* | 75 | 0.2 | 0.2 | 0.2 | 4-40k | 5-100k -1.5 | 68 | 1.5-8 | 0.16 | 2 | 0.9 | 20-15k | 0.15 | 0.2 | 40 | Mtr. | 80 | 2 | yes | 20% x 13% x 6 | | 899.00 | | | | | | | | | | | | | *Advance specs. |



EVEN A MILLIONAIRE MIGHT NOT BE ABLE TO BUY THE MIRACORD 50H MARK II.

Not because it cost so much. But because it might be a little bit difficult to locate.

We'll admit that trying to track down a Miracord can be a trifle trying. But it's well worth the search. Because the fact is, that feature for feature, there isn't a better automatic turntable in its price range than the Miracord 50H Mark II.

Here's why:

The Miracord Magic Wand spindle holds hours of music. Ten records at a time. And it lifts out of the way; you remove the record stack without pulling them up through the spindle.

Miracord and only Miracord in its price class has an incomparable hysteresis synchronous motor. Professional studios and broadcasters rely on this kind of motor for absolute long-term speed accuracy.

Our speed control varies 5% with lighted stroboscopic speed monitoring on 33 and 45 rpm.

Our operating cam is metal, not plastic.

We can repeat a record continuously. Or replay a record in the middle of a stack without dropping the next record.

With Miracord's simple cartridge installation, overhang problems are eliminated. All you do is mount the cartridge, then adjust a micrometer screw to the built-in overhang gauge. It's as fast as it is accurate.

The 50H Mark II has a feather-light viscous-damped arm descent to the record surface. And the light-touch push-button panel reduces the chance of the arm skittering across the grooves.

Those are just some of the reasons that make the Miracord 50H Mark II so popular. If you'd like the full story on our full line, just write to us at: Miracord Products, Benjamin Electronic Sound Co., 40 Smith Street, Farmingdale, N.Y. 11735.

The Miracord 50H Mark II. When you find one, you don't have to be a millionaire to afford it.



THE MIRACORD 50H MARK II.

Damn hard to find. Damn hard to beat.

Receivers



Toshiba SA-504



Notes: (1) All models solid-state except when model number is preceded by (T).
(2) "K" indicates kit price; "W" wired.

Yamaha CR-1000

| MANUFACTURER | MODEL | AMPLIFIER | | | | | | | | | | | TUNER | | | | | | | | | | | NOTES |
|-----------------------|------------------|-------------------|-----------------------|----------------------|-----------------|-------------------------|-----------------------|-----------------------------|-----------------------|--------------------|----------------------------|-------------------|---------------------|------------------------|--------------------------|--------------------------|------------------|----------------------------|---------------|----------|----------------------------|--------------|--------|--|
| | | RMS Power/chan. W | THD at rated power, % | IM at rated power, % | IM at 1 watt, % | Power bandwidth, Hz-kHz | 1-watt freq resp., Hz | Rated output S/N, Phono, dB | Phono sensitivity, mV | Phono overload, mV | HF sensitivity, vly stereo | Capture ratio, dB | Frequency resp., Hz | THD Mono, 100% mod., % | THD Stereo, 100% mod., % | Stereo sep., 1000 Hz, dB | Tuning indicator | Alt. chan. selectivity, dB | No. of meters | AM band? | Dimensions, w x d x h, in. | Weight, lbs. | Price | |
| TECHNICS BY PANASONIC | SA-8500X 4-chan. | 34 | 0.5 | 0.7 | | 5-40k | 7-70k +0-3 | 70 | 2 | H: | 1.9 mono | 1.5 | 20-15k | 0.3 | 0.4 | 40 | Mtr. | 65 | 1 | yes | 21% x 15% x 3/4% | 40 | 739.95 | CD-4, 2 matrix; 4 VU mtrs.; 2 spkr. sets; dir-cpld; OCL amps; 3 4-chan. tape crts; wal. cab. incl. |
| | SA-6700X 4-chan. | 32 | 0.5 | 0.7 | | 7-40k | 15-50k +0-3 | 70 | 2.5 | H: | 1.8 mono | 1.5 | 20-15k | 0.3 | 0.4 | 40 | Mtr. | 65 | † | yes | 17% x 16% x 6% | 35.6 | 669.95 | AFD scope; phase swit. adj. for any matrix sig.; 2 sets spkrs; OCL amp. input. |
| | SA-8000X 4-chan. | 16 | 0.5 | 0.7 | | 5-40k | 10-50k +0-3 | 70 | 1.5 | H: | 1.9 | 1.8 | 20-15k | 0.3 | 0.4 | 40 | Mtr. | 65 | 5 | yes | 19% x 15% x 6% | 30 | 549.95 | 42 W/chan in BTL; built in CD-4; AFD decoder; 4 vu mtrs.; dir-cpld.; wal. cab. incl. |
| | SA-7300X 4-chan. | 10 | 0.5 | 0.7 | | 5-25k | 7-70k +0-3 | 70 | 2 | | 1.9 mono | 1.5 | 20-15k | 0.3 | 0.4 | 40 | Mtr. | 65 | 6 | yes | 19% x 15% x 6% | 28 | 529.95 | 24 N/chan. in BTL; built in CD-4; 2 matrix crts.; 4 VU mtrs.; 2 tape mon., wal. cab. |
| | SA5200A | 13 | 0.8 | 1 | | 5-30k | 10-50k +0-3 | 70 | 3 | | 1.9 mono | 2 | 20-15k | 0.4 | | 35 | Mtr. | 60 | 1 | yes | 16% x 14% x 5% | 17.6 | 219.95 | 2 tape mon. w/club; mic inputs. |
| | SA-5400X 4-chan. | 11 | 0.8 | 1 | | 7-28k | 10-50k +0-3 | 70 | 2.5 | | 2 mono | 2 | 20-15k | 0.4 | 0.7 | 37 | Mtr. | 65 | 1 | yes | 16% x 13% x 5% | 19 1/2 | 319.95 | 25 w/chan. in BTL; 2 tape mon.; 2 matrix crts.; dir-cpld.; wal. cab. |
| | SA-6000X 4-chan. | 14 | 0.5 | 0.7 | | 7-30k | 8-50k +0-3 | 70 | 1.5 | | 1.9 mono | 1.8 | 20-15k | 0.3 | 0.4 | 40 | Mtr. | 65 | 1 | yes | 17 x 15% x 5% | 24 1/2 | 399.95 | 35 w/chan. in BTL; AFD decoder; 2 tape mon.; dir-cpld.; wal. cab. |
| TELEDYNE (OLSON) | RA-707 | 2.5 | 1.0 | 0.8 | 0.6 | 40-15k | 25-18k | 52 | 2.0 | 32 | 3.5 | 4.0 | 20-20k | 0.8 | 0.9 | 25 | Mtr. | 40 | 1 | yes | 13 1/4 x 10 3/4 | 6 | 69.95 | |
| | RA-930 | 5 | 0.8 | 0.6 | 0.4 | 20-36k | 17-20k ±1.0db | 60 | 1.75 | 40 | 2.5 | 3.0 | 20-20k | 0.65 | 0.9 | 32 | Mtr. | 45 | 1 | yes | 18 x 10 1/2 x 5% | 25 | 239.99 | w/8-tk. player. |
| | RA-632 4-chan. | 15 | 0.8 | 0.6 | 0.35 | 19-35k | 17-20k ±1.0 | 60 | 1.75 | 40 | 2.0 | 2.5 | 20-20k | 0.5 | 0.75 | 32 | Mtr. | 50 | 2 | yes | 18 1/4 x 11 1/4 x 4% | 15 | 179.99 | SQ decoder; joystick balance. |
| | RA-660 4-chan. | 5 | 0.8 | 0.6 | 0.4 | 20-36k | 17-20k ±1.0 | 60 | 1.75 | 40 | 2.5 | 3.0 | 20-20k | 0.65 | 0.9 | 32 | Mtr. | 45 | 1 | yes | 18 1/4 x 11 1/4 x 4% | 14 | 139.99 | SQ decoder; joystick balance. |
| | RA-618 | 15 | 0.8 | 0.6 | 0.35 | 19-35k | 17-20k ±1.0 | 60 | 1.75 | 40 | 2.0 | 2.5 | 20-20k | 0.5 | 0.75 | 32 | Mtr. | 50 | 2 | yes | 18 1/4 x 11 1/4 x 4% | 15 | 139.99 | |
| TOSHIBA | SA514 4-chan. | 23 | 0.4 | | | 10-30k | | 65 | 2.5 | | 2 | 2 | 20-15k | 0.3 | 0.5 | 35 | Mtr. | 60 | 2 | yes | 20 x 14 x 4% | | | 55W, 2 chan.; CD-4, SQ, RM; cond. cart. equil. |
| | SA504 4-chan. | 28 | 0.4 | | | 12-80k | 20-40k ±1 | 65 | 2.5 | | 1.8 | 1.5 | 20-15k | 0.2 | 0.5 | 35 | Mtr. | | 2 | yes | 20 x 14 x 4% | 33 | 569.95 | 65W, 2 chan.; SQ, RM; cond. cart. equil. |
| | SA304 4-chan. | 10 | 0.8 | | | 20-30k | 20-40k | 60 | 3.0 | | 2.5 | 2.5 | 20-15k | | 0.5 | 30 | Mtr. | | 1 | yes | 15 1/4 x 11 1/4 x 4% | 18 | 349.95 | 20W, 2-chan.; SQ, RM; cond. cart. equil. |
| | SA300 | 12 | 0.8 | 0.8 | | 15-25k | 20-50k +1-3 | 65 | 3 | | 2.5 | 3 | 20-15k | 0.4 | 1.0 | 35 | Mtr. | | 1 | yes | 15 1/4 x 11 1/4 x 4% | 15.6 | 219.95 | |
| YAMAHA | CS70R 4-chan. | 12 | 1.0 | 1.0 | 0.1 | 30-40 | 40-20k ±3 | 72 | 3 | 90 | 2.5 | 3 | | 0.5 | 0.8 | 35 | Mtr. | 60 | 1 | yes | 17 1/2 x 15 1/2 x 5% | | 370.00 | Key type pwr. swit.; digital clock. |
| | CR1000 | 75 | 0.1 | 0.1 | 0.05 | 5-50k | 10-100k +0-1 | 80 | 3 | 280 | 1.7 | 1 | 20-15k | 0.15 | 0.3 | 45 | Mtr. | 80 | 2 | no | 20 x 13 1/4 x 6% | 41.8 | 850.00 | Auto-touch tuning; cont. loudns. contl.; 2 tape crts. w/dub. |
| | CR800 | 50 | 0.1 | 0.1 | 0.05 | 5-70k | 10-100k +0-1 | 75 | 3 | 240 | 1.7 | 1 | 20-15k | 0.15 | 0.3 | 45 | Mtr. | 80 | 2 | yes | 18 1/4 x 11 1/4 x 6% | 30.8 | 580.00 | Same as above. |
| | CR600 | 35 | 0.1 | 0.1 | 0.05 | 5-70k | 10-100k +0-1 | 75 | 3 | 135 | 2 | 1.5 | 20-15k | 0.3 | 0.5 | 40 | Mtr. | 75 | 2 | yes | 18 1/4 x 11 1/4 x 6% | 27.5 | 460.00 | Auto-touch tuning; 2 tape crts. w/dub. |
| | CR400 | 18 | 0.1 | | 0.1 | 15-20k | 20-50k +0.5-3 | 72 | 3 | 135 | 2.5 | 2 | 20-15k | 0.3 | 0.8 | 40 | Mtr. | 65 | 2 | yes | 17 1/2 x 11 1/4 x 6% | 20.9 | 330.00 | |

The single-play turntables only a great changer company could have made.



Garrard Zero 100SB, \$20995

Garrard's new single-play turntables are so advanced in their solution of basic engineering problems that only a leading manufacturer of automatic changers (yes, *changers*) could have produced them.

This may sound paradoxical to the partisans of single play, but it's a perfectly realistic view of the situation. The truth is that it's easier to make a single-play turntable that works (never mind outstanding performance for the moment) than a record changer that works.

The very qualities that make the single-play turntable the preferred choice of certain users—straightforwardness of design, lots of room for relatively few parts, fewer critical functions, etc.—also permit an unsophisticated maker to come up more easily with an acceptable model. Take a heavy platter and a strong motor, connect them with a belt... you get the picture.

As a result, there are quite a few nice, big, shiny and expensive single-play turntables of respectable performance in the stores today.

A thoroughbred single-play automatic is another matter.

We're talking about a turntable that gives you not only state-of-the-art performance in terms of rumble, wow, flutter, tracking and so on, but also the utmost in convenience, childproof and guest-proof automation, pleasant handling, efficient use of space, balanced good looks and, above all, value per dollar.

Here we're back on the home grounds of the changer maker. He alone knows how to coordinate a lot of different

turntable functions and niggling little design problems without wasted motions, space and expenditures. The kind of thing Garrard is the acknowledged master of.

No other proof of this argument is needed than a close look at the new Garrard Zero 100SB and 86SB.

Yes, they have heavy, die-cast, dynamically balanced platters. Yes, they have belt drive. Yes, they have -64dB rumble (DIN B Standard). And the Zero 100SB has Garrard's unique Zero Tracking Error Tonearm, the first and only arm to eliminate even the slightest amount of tracking error in an automatic turntable.

But that's not the whole story.

What gives these turntables the final edge over other single-play designs is the way they're automated.

Both are fully automatic in the strictest sense of the term. Your hand need never touch the tonearm. The arm indexes at the beginning of the record, returns to the arm rest at the end of the record and shuts off the motor, all by itself. The stylus can't flop around in the lead-out groove.

There are also other subtle little features like the ingeniously hinged dust cover (it can be lifted and removed even on a narrow shelf), the integrated low-profile teak base, the exclusive automatic record counter (in the Zero 100SB only) and the finger-tab control panel. Plus one very unsubtle feature.

The price.

Garrard
Division of Plessey Consumer Products

For your free copy of The Garrard Guide, a 16-page full-color reference booklet, write to Garrard, Dept. G-10, 100 Commercial Street, Plainview, N.Y. 11803.

Garrard 86SB
\$15995



Multi-Play Turntables



BIC 980



Dual 1228



BSR McDonald 810QX



Elac 820

| MANUFACTURER | MODEL | Speeds (see letter code) | | Platter diameter, in. | Wow and flutter at 33 1/3, % | Rumble (NAB) dB | Max. tracking error, deg./in. | Pivot-stylus dist., in. | Arm type | Tracking force range | | Arm resonance, Hz | Max. stack records | Change cycle at 33 1/3, secs | Clearance below board, in. | Clearance above board, in. | Overall W x D, in. | Overall height, in. | Price | NOTES |
|--------------|--------------------|--------------------------|--------|-----------------------|------------------------------|-----------------|-------------------------------|-------------------------|-----------------|----------------------|----|-------------------|--------------------|------------------------------|----------------------------|----------------------------|--------------------|---------------------|---|------------------|
| | | A | B | | | | | | | g | g | | | | | | | | | |
| BSR McDONALD | 810QX | B | 12 | 0.15 | -55 | 0.5 | 8 1/2 | Cntr. wt. | 0-4 | 7 | 6 | 14 | 3 | 4 1/4 | 17 1/2 x 14 1/2 | 8 3/4 | 22 | 294.80 | Seq. cam sys.; dual volt. motor; stylus wear ind.; quad ready. | |
| | 710QX | B | 12 | 0.15 | -55 | 0.5 | 8 1/2 | Cntr. wt. | 0-4 | 7 | 6 | 14 | 3 | 4 1/2 | 17 1/2 x 14 1/2 | 8 3/4 | 19 | 249.80 | Same as above. | |
| | 4620W 4-chan. | B | 11 | 0.18 | -54 | 1.0 | 7 1/2 | Cntr. wt. | 0-6 | 11 | 5 | 8 | 3 | 4 | 15 1/2 x 14 | 7 3/4 | 15 | 173.80 | Incl. CD-4 cart. & cables; 2620W (stereo), \$148.80; both w/var. pitch contl. | |
| | 2660F | B | 11 | 0.18 | -54 | 1.0 | 7 1/2 | Cntr. wt. | 0-6 | 11 | 5 | 8 | 3 | 4 | 16 1/2 x 15 | 7 1/2 | 16 | 147.80 | Front oper. contls.; var. pitch contl.; stylus wear ind. | |
| | 4310X 4-chan. | A | 10 | 0.26 | -50 | 1.0 | 7 1/2 | Spg. | 0-6 | 11 | 6 | 8 | 4 | 4 | 16 1/2 x 14 1/4 | 7 1/2 | 15 | 135.80 | Incl. 4-ch. cart. & cables; 2310X (stereo), \$98.80. | |
| | 2520W | B | 11 | 0.23 | -52 | 1.0 | 7 1/2 | Spg. | 0-6 | 11 | 6 | 8 | 4 | 4 | 15 1/4 x 14 | 7 3/4 | 15 | 118.80 | Var. pitch contl. | |
| | 2360F | A | 10 | 0.26 | -50 | 1.0 | 7 1/2 | Spg. | 0-6 | 11 | 6 | 8 | 4 | 4 | 16 1/2 x 15 | 7 1/2 | 16 | 125.80 | Front-oper. contls. | |
| | BRITISH INDUSTRIES | 960 | B | 12 | 0.03 | -65 | 0.35 | 8.6 | Dyn. cntr. bal. | 0-4 | 9 | 6 | 14 | 1 1/2 | 5* | 15 1/2 x 12 1/2 | 6 1/2 | 11 | 149.95 | *W/auto spindle. |
| 980 | | B | 12 | 0.03 | -65 | 0.35 | 8.6 | Dyn. cntr. bal. | 0-4 | 9 | 6 | 14 | 1 1/2 | 5* | 15 1/2 x 12 1/2 | 6 1/2 | 12 1/2 | 199.95 | Elec. speed contl. w/var. ±3%; built-in ill. strobe; *w/auto spindle. | |
| DUAL | 1229Q | A | 12 | 0.04 | -55 | 0.3 | 8 3/4 | Bal. & Spg. | 1-12 | 8-14 | 6 | 13 | 3 | 5 | 14 1/2 x 12 | 8 | 19 | 259.95 | Gimbal susp.; adj. vert. track. ang.; 6% pitch contl.; sync. mtr.; cueing; ill. strobe. | |
| | 1228 | A | 10 1/2 | 0.06 | -45 | 0.5 | 8 1/4 | Bal. & Spg. | 1-12 | 8-14 | 6 | 11 | 2 1/2 | 5 | 13 x 10 3/4 | 7 1/2 | 14 | 189.95 | Same as above. | |
| | 1226 | A | 10 1/2 | 0.08 | -45 | 0.5 | 8 1/4 | Bal. & Spg. | 1-8 | 8-14 | 6 | 11 | 2 1/2 | 5 | 13 x 10 1/4 | 7 1/2 | 13 | 159.95 | Pitch contl.; damp. cueing; spe. anti-skate for con. & ellip. | |
| | 1225 | A | 10 1/2 | 0.08 | -45 | 0.5 | 8 1/4 | Bal. & Spg. | 1-8 | 8-14 | 6 | | 2 1/2 | 5 | 13 x 10 1/4 | 7 1/2 | 13 | 129.95 | Pitch contl.; damp. cueing; built-in anti-skate. | |
| ELAC | 50H MkII | A | 12 | 0.06 | -40 | 0.4 | 8 | Bal. & Spg. | 1/2-6 1/2 | 8 | 10 | 10 | 2 1/2 | 5 1/2 | 14 1/2 x 12 1/2 | 8 1/2 | 18 | | | |
| | 760 | A | 12 | 0.06 | -44 | 0.4 | 8 | Bal. & Spg. | 1/2-6 1/2 | 8 | 10 | 10 | 2 1/2 | 5 1/2 | 14 1/2 x 12 1/2 | 8 1/2 | 18 | | | |
| | 820 | B | 11 | 0.07 | -40 | 0.5 | 8 | Bal. | 1-4 | 10 | 10 | 12 | 2 1/2 | 5 1/2 | 13 1/2 x 10 1/2 | 8 1/2 | 15 | | | |
| | 625 | D | 10 1/2 | 0.07 | -38 | 0.5 | 7 1/2 | Bal. | 1/2-6 1/2 | 10 | 10 | 12 | 2 1/2 | 5 1/2 | 13 1/2 x 11 1/2 | 8 1/2 | 15 | | | |
| | 770H | A | 12 | 0.06 | -40 | 0.4 | 8 | Bal. & Spg. | 1/2-6 1/2 | 8 | 10 | 10 | 3 1/2 | 5 1/2 | 14 1/2 x 12 1/2 | 9 1/2 | 19 | | | |
| GARRARD | Zero 1000 | B | 11 1/2 | 0.06 | -62* | 0 | | Bal. & calib. wt. | 0-3 | | | | | 4 1/2 | 14 1/2 x 13 1/4 | 6 1/4 | 11 1/2 | | *DIN B. | |
| | 292 | A | 11 1/2 | 0.06 | -62* | 0 | | Bal. & calib. wt. | 0-4 | | | | | 4 1/2 | 14 1/2 x 13 1/4 | 6 1/4 | 11 1/4 | | *DIN B. | |
| | 82 | A | 10 1/2 | 0.08 | -58* | | | Bal. & calib. wt. | 0-4 | | | | | 4 1/2 | 14 1/2 x 13 1/4 | 6 1/4 | 10 | | *DIN B. | |
| | 70 | A | 10 1/2 | 0.08 | -57* | | 7 1/2 | Bal. & Spg. | 1 1/2-5 | | | | | 4 | 13 1/2 x 11 1/2 | | 8 | | *DIN B. | |
| | 62 | A | 10 1/2 | 0.09 | -56* | | | Spg. | 2-10 | | | | | 4 | 13 1/2 x 11 1/2 | | 7 1/4 | | *DIN B. | |
| | 40B | A | 10 1/2 | 0.1 | -55* | 1.1 | | Spg. | 2-10 | | | | | 4 1/2 | 13 1/2 x 12 1/2 | | | | *DIN B. | |

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| 8 | | | 23 | | | 38 | | | 53 | | | 68 | | | 83 | | | 98 | | | 113 | | | 128 | | |
| 9 | | | 24 | | | 39 | | | 54 | | | 69 | | | 84 | | | 99 | | | 114 | | | 129 | | |
| 10 | | | 25 | | | 40 | | | 55 | | | 70 | | | 85 | | | 100 | | | 115 | | | 130 | | |
| 11 | | | 26 | | | 41 | | | 56 | | | 71 | | | 86 | | | 101 | | | 116 | | | 131 | | |
| 12 | | | 27 | | | 42 | | | 57 | | | 72 | | | 87 | | | 102 | | | 117 | | | 132 | | |
| 13 | | | 28 | | | 43 | | | 58 | | | 73 | | | 88 | | | 103 | | | 118 | | | 133 | | |
| 14 | | | 29 | | | 44 | | | 59 | | | 74 | | | 89 | | | 104 | | | 119 | | | 134 | | |
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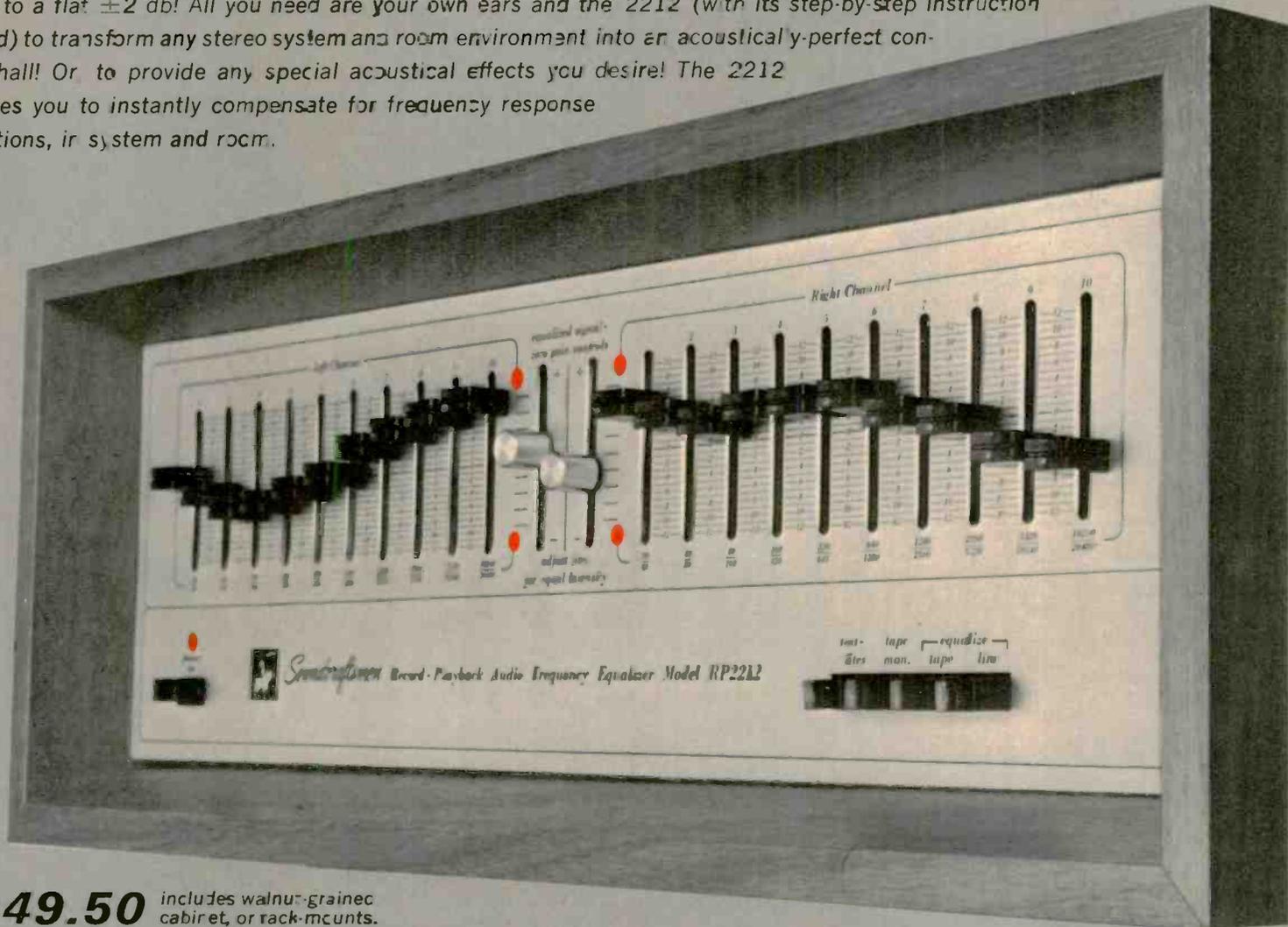


Soundcraftsmen presents the new **RP2212** —

Recording and Playback Equalizer

PERFECT tailoring of octave-wide bands... Infinitely variable adjustment flexibility

Allows a full 24 db range of equalization for each of the 10 octave-bands per channel, plus an additional 18 db range of full-spectrum boost or cut to compensate for acute response non-linearities due to deficiencies in the entire recording-reproducing process... Now, in a few minutes, you can accurately "tune" the frequency response of your stereo system and room environment to a flat ± 2 db! All you need are your own ears and the 2212 (with its step-by-step instruction record) to transform any stereo system and room environment into an acoustically-perfect concert hall! Or to provide any special acoustical effects you desire! The 2212 enables you to instantly compensate for frequency response variations, in system and room.



\$349.50 includes walnut-grained cabinet, or rack-mounts.

SPECIAL FEATURES

- DISCRETE-OCTAVE EQUALIZATION CONTROL of ten octaves on each channel, ± 12 db each octave
- FULL-SPECTRUM LEVEL CONTROL for each channel
- AUTOMATIC CONTINUOUS MONITORING by Light-Emitting Diodes — (L.E.D.'s) — for visual warning of overload in output circuits
- VISUAL ZERO-GAIN EQUALIZATION BALANCING on music, white noise or pink noise
- LINE OR TAPE equalization selector
- TAPE MONITORING at any time.

SPECIFICATIONS

TOROIDAL and ferrite-core inductors, ten octave-bands per channel.

FREQUENCY RESPONSE: $\pm \frac{1}{2}$ db from 20-20,480 Hz \pm zero setting.

HARMONIC DISTORTION: Less than .1% THD @ 2 v., Typ: 0.5% @ 1 v.

IM DISTORTION: Less than .1% @ 2 v., Typ: .05% @ 1 v.

SIGNAL-TO-NOISE RATIO: Better than 90 db @ 2 v. input.

MASTER OUTPUT LEVEL: "Frequency-spectrum-level" controls for left and right channels, continuously variable 18 db range, for unity gain compensation from minus 12 db to plus 6 db.

SIZE: designed to coordinate with receivers, comes installed in handsome walnut-grained wood receiver-size case, 7 $\frac{1}{4}$ " x 20" x 11 $\frac{3}{4}$ ", or rack mount.

2012 Same as 2212, except no L.E.D.'s, no Tape Equalize on front panel, and size is 5 $\frac{1}{4}$ " x 18" x 11". **\$299.50**

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The "Why's and How's of Equalization", an easy to understand explanation of the relationship of acoustics to your environment. This 8 page booklet also contains many unique ideas on "How the RP2212 Equalizer can measurably enhance your listening pleasure," "How typical room problems are eliminated by Equalization," and a "10-point self-rated Equalization Evaluation Check-List."



Soundcraftsmen

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Multi-Play Turntables



Glenburn 2155A



Magnavox MX-1230



Garrard Zero 100C



Hitachi PS-14



Realistic Lab-38

| MANUFACTURER | MODEL | Speeds (see letter code) | Platter diameter, in. | Wow and flutter at 33 1/3, % | Rumble (NAB) dB | Max tracking error, deg./in. | Pivot-stylus dist., in. | Arm Type | Tracking force range | Arm resonance, Hz | Max. stack records | Change cycle at 33 1/3, secs | Clearance below board, in. | Clearance above board, in. | Overall W x D, in. | Overall height, in. | Price | NOTES | |
|--------------|------------------------|--------------------------|-----------------------|------------------------------|-----------------|------------------------------|-------------------------|-------------|----------------------|-------------------|--------------------|------------------------------|----------------------------|----------------------------|--------------------|---------------------|--|--|--|
| | | | | | | | | | | | | | | | | | | | SPEEDS |
| GLENBURN | 2155A/Quad | D | | | | | Ball race pivot | 1 1/2 | | | | | | | | | 142.35 | Visc. damped cueing lev.; incl. base, dust cvr., cart., low cap. cables, a.c. cable. | |
| | 2155A | D | | | | | Ball race pivot | | | | | | | | | | 112.80 | Visc. damp.; incl. cart., dust cvr. base, audio & a.c. cables. | |
| | 2155S | D | | | | | Ball race pivot | | | | | | | | | | 59.95 | Visc. damp.; incl. all cables. | |
| | 2110A | D | | | | | Ball race pivot | | | | | | | | | | 84.00 | Visc. damp.; incl. cart., dust cvr., base, audio & a.c. cables. | |
| | 1120A | D | | | | | Ball race pivot | | | | | | | | | | 64.95 | Visc. damp.; incl. cer. cart., base, cables. | |
| | 1100A | D | | | | | Ball race pivot | | | | | | | | | | 54.95 | Incl. cer. cart., dust cvr., base and cables. | |
| | 1100S | D | | | | | Ball race pivot | | | | | | | | | | 34.95 | Same as above less base and dust cvr. | |
| JVC | 5244 4-chan. | B | 11 | 0.09 | | 8 | Dyn. Bal. | 1-3 1/2 | 6 | | | | | 16 3/4 x 15 | 7 1/4 | 18 | 279.95 | Built-in CD-4 demod.; outer rotor motor. | |
| MAGNAVOX | 1230 | A | 11 | 0.15 | -55 | 7 1/2 | Bal. | 4-5 | 10 | 10 | 1 1/2 | 4 | 18 1/2 x 14 1/4 | 8 3/4 | 21 1/2 | 149.95 | Incl. base, dust cvr. and Shure M-75 cart. | | |
| PE (IMPRO) | 3060 | A | 10% | 0.08 | 59 | 0.5 | 8 1/4 | Bal. & Spg. | 0-3 | 8-14 | 6 | 13 | 2 1/2 | 4 | 13 x 10 1/2 | 6 1/2 | 10 1/2 | 199.95 | Sep. anti-skate for con. & ellip.; sync. mtr.; gimbal arm; adj. track angle. |
| | 3046 | B | 10% | 0.12 | 58 | 0.5 | 8 1/4 | Bal. & Spg. | 0-5 | 8-14 | 6 | 13 | 2 1/2 | 4 | 13 x 10 1/2 | 6 1/2 | 9 1/2 | 149.95 | Pitch contl. rotat. single play spindle; damp cue; anti-skate; bal. diecast platter. |
| | 3044 | B | 10% | 0.15 | 56 | 0.5 | 8 1/4 | Bal. & Spg. | 0-5 | 8-14 | 6 | 13 | 2 1/2 | 4 | 13 x 10 1/2 | 6 1/2 | 9 1/2 | 109.95 | As above but ind. mtr. |
| | 3048 | B | 10% | 0.08 | 59 | 0.5 | 8 1/4 | Bal. & Spg. | 0-3 | 8-14 | 6 | 13 | 2 1/2 | 4 | 13 x 10 1/2 | 6 1/2 | 10 1/2 | 169.95 | As above but lam. platter; 3-pos. anti-skate. |
| RADIO SHACK | Realistic/Miracord 46 | A | 12 | 0.1 | -50 | 0.6 | Bal. & Spg. | 1/4-1 1/2 | 6 | 12 | | | | 16 3/4 x 14 | 20 | 198.50 | Incl. base, cart.; var. pitch contl. | | |
| | Realistic/Miracord 40C | D | 12 | 0.1 | -50 | 0.6 | Bal. & Spg. | 1-1 1/2 | 6 | 12 | | | | 16 3/4 x 14 | 20 | 139.95 | Incl. base & cart. | | |
| | LAB-38 | B | 11 | 0.18 | -29 | | Bal. & Spg. | 1-1 1/2 | 6 | | | | | 16 1/2 x 14 1/2 | 10 1/2 | 99.95 | Incl. base & cart.; built-in stroke disc. | | |
| | LAB-34 | A | 11 | 0.18 | -29 | | Bal. & Spg. | 1 1/2-3 | 6 | | | | | 16 3/4 x 14 | 8 | 74.95 | Incl. base & cart. | | |

The ultimate others only approach.

An exceptional turntable requires the match of precision, refined strength and sensitivity. The Thorens TD-125 AB Mark II electronic transcription turntable has achieved the ultimate in this delicate balance.

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We've harnessed the strength of Thorens' unique 16-pole synchronous motor by reducing the motor speed from

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But strength must be tempered with sensitivity. To minimize acoustic feedback caused by vibration, a highly refined split-level suspension system isolates the tonearm and platter from a chassis housing the drive system.

All of this attention to detail is further evidenced in the TD-125 AB Mark II's ultimate tonearm. Unlike many high quality tonearms which employ springs or counterweights for anti-skating compensation, the Thorens TP-16 gimbal suspension tonearm utilizes a frictionless, magnetic system to

guarantee precise stylus contact in the absolute center of the record groove at all times.

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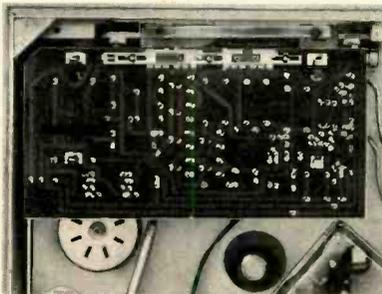
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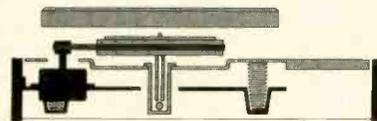
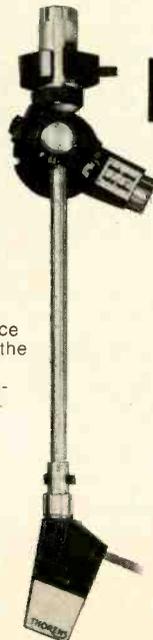
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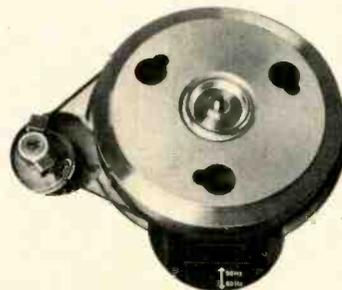
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Split-level suspension system isolates the tonearm and platter from the drive system for shock-free operation.



Simplified operation with all controls conveniently accessible on the front panel. Features sliding lever cueing control.



The belt-driven 16-pole synchronous motor provides almost instant start-up. Precise speed in 1.5 seconds!

Manual Turntables & Tonearms

SPEEDS
 A - 33, 45, 78 D - 16, 33, 45, 78
 B - 33, 45 E - 16, 33, 45
 C - 33 only F - cont. variable

| MANUFACTURER | TURNTABLES | | | | | | | | | | | | | TONE ARMS | | | | | | | | | | NOTES |
|-----------------------------------|------------|--------------------------|---------------------------|-----------------|------------|-----------------------|----------------------|-----------|------------------------|----------------------------|--------------|---------------------------|---------------------|-------------------------|------------------|-----------------|-----------------------|-------------------------------|------------------------------|-------------------|--------------------------|----------------------|---|---|
| | MODEL | Speeds (See letter code) | Wow & Flutter at 33 1/3 % | Rumble (MAG) dB | Motor type | Platter diameter, in. | Platter weight, lbs. | Drive | Arm mounting provision | Dimensions, w x d x h, in. | Weight, lbs. | MODEL (for separate arms) | Overall length, in. | Pivot-stylus dist., in. | Vertical bearing | Lateral bearing | Stylus force method | Max. tracking error, deg./in. | Cartridge weight range, gms. | Arm resonance, Hz | Stylus force range, gms. | Weight, if sep., oz. | Price | |
| ACOUSTIC RESEARCH | XA | B | 0.03 | -38 | sync | 11 1/4 | 4 | belt | integ | 12 1/2 x 16 1/4 x 5 1/4 | 13 1/2 | | 12 | 9 | ball | sleeve | cntr. wt. | 0.3 | 5-9 | 6 | 0-6 | 109.95 | W/dust cvr. | |
| | XB | B | 0.03 | -38 | syn | 11 1/4 | 4 | belt | integ | 12 1/2 x 16 1/4 x 5 1/4 | 14 | | 12 | 9 | ball | sleeve | cntr. wt. | 0.3 | 5-9 | 7 | 0-6 | 119.95 | Cuing lift; dust cvr. | |
| AUDIO-TECHNICA | | | | | | | | | | | | AT1005 | 12 1/4 | 9 1/2 | pivot | rad. ball | static bal. | 1 1/2 | 5-20 | 7 | 0-3 | 79.95 | Low cap. for use w/ CD-4 carts. | |
| | | | | | | | | | | | | AT1009 | 13 | 9 1/2 | pivot | rad. ball | static bal. | 1 1/2 | 4-20 | 7 | 0-2.5 | 139.95 | As above plus pneu. cuing. | |
| B&O | 4002 | B | 0.025 | 65* | sync | 12 | 5 | belt | integ | 19 1/4 x 15 x 4 | 26.5 | | 6.5 | 6 | ndl. | roller | bal. & spg. | 0.04 | 4 | 13 | 0-1.5 | 650.00 | *DIN B. | |
| | 3000 | B | 0.15 | 60* | sync | 12 | 3 | belt | integ | 17 1/4 x 13 x 4 1/4 | 20 | | 11 | 9 | ndl. | ball | bal. & spg. | 1.5 | 8 | 13 | 0-3.5 | 265.00 | *DIN B. | |
| DECCA (PAOLI) | | | | | | | | | | | | Int'l | 11 1/2 | 9 | uni-pivot | uni-pivot | bal. | 0.5 | 2-20 | 14 | 0.4 | 130.00 | Visc. damp., adj. mag. anti-skate. | |
| DUAL | 701 | B | 0.03 | -70 | elec | 12 | 9.7 | dir. | integ | 16.5 x 14.4 x 5.8 | 24 | | 12 1/2 | 8 1/2 | ndl. pt. | ndl. pt. | bal. & spg. | 0.16 | 2-10 | 0* | 0-3 | 400.00 | *res. can. fits; ill. strobe; auto start/stop; incl. base & dust cvr. | |
| | 601 | B | 0.06 | -63 | sync | 12 | 4.5 | belt | integ | 14.7 x 12.2 x 5.8 | | | 12 1/2 | 8 1/2 | ndl. pt. | ndl. pt. | bal. & spg. | 0.16 | 2-10 | 8-14 | 0-3 | 270.00 | Auto stop/ start/cont. play; ill. strobe. | |
| EMPIRE | 598 III | B | 0.1 | -72 | hys syn | 12 | 7 | flex belt | integ | 17 1/2 x 15 x 8 | 30 | | 12 | 9 | ball | ball | bal. & spg. | 0.7 | 4-14 | 6 | 0-6 | 399.95 | Incl. 4000D/ III cart. | |
| GARRARD | Zero 100SB | B | 0.06 DIN | -64 | sync | 11 1/2 | 4 | belt | integ | 17 1/2 x 15 x 7 | 25 | | 11 | 7 1/2 | ball | ball | bal. & wt. | | | 10 | 0-3 | 209.95 | Incl. base & dust cover. | |
| | 86SB | B | 0.06 DIN | -64 | sync | 11 1/2 | 4 | belt | integ | 17 1/2 x 15 x 7 | 25 | | 10 1/2 | 8 1/2 | ball | ball | bal. & wt. | | | | 0-4 | 159.95 | As above. | |
| JVC | JLB44 | B | 0.05 | | dir drive | 12 | | | integ | 7 1/2 x 19 1/4 x 16 1/4 | 28.6 | G-840F | | | ball | ball | bal. | 1.2 | 8 | | 0-6 | 119.95 | Low cap. cables for CD-4 CD-4 ready; low mass, low frict. arm. | |
| | VL-5 | B | 0.09 | | sync | 12 | | | integ | 7 1/2 x 18 1/2 x 14 1/2 | 15 | | | | | | | | | | | | 119.95 | CD-4 ready. |
| KLH | Sixty | B | 0.1 | -58 | sync | 12 | 3.5 | belt | integ | 17 x 13 1/2 x 6 1/4 | | | 12 | 9 | ndl. pt. | sleeve | bal. | 0.7 | all | 13 | 0.5-4 | 10% | 149.95 | Auto lift & off, cue; dust cvr. |
| KENWOOD | KP5022 | B | 0.05 | 58 | dc | 12 | 3.5 | dir. | integ | 19 x 13 1/2 x 6 1/4 | 19.8 | | 12 | 8 1/2 | ball | ball | bal. | 1.5 | | 7 | 0-3 | 19.8 | 299.95 | |
| | KP3022 | B | 0.08 | 48 | hys | 12 | 3.5 | belt | integ | 7 1/2 x 14 1/2 x 6 1/4 | 19.2 | | 12 | 8 1/2 | ball | ball | bal. | 1.5 | | 7 | 0-3 | 19.2 | 199.95 | |
| LENCO | L75 | F | 0.07 | -38 | ind | 11 3/4 | 8.8 | idler | integ | 17 1/2 x 13 1/2 x 6 1/2 | 32 | | 8 | | knife | ball | bal. | | | | | 0-5 | | |
| | L78 | F | 0.06 | -40 | ind | 11 3/4 | 8.8 | idler | integ | 17 1/2 x 13 1/2 x 6 1/2 | 32 | | 8 | | knife | ball | bal. | | | | | | 0-5 | |
| LINN-SONDEK (PAOLI OR AUDIOPHILE) | LP-12 | C | 0.03 | -60 | syn | 12 | 9 | belt | sep. | 17 1/2 x 14 x 5 1/2 | 24 | | | | | | | | | | | | 325.00 | Incl. dust cvr.; single point oil bath bearing. |
| PHILIPS | 209S | B | 0.08 | -43 | d.c. | 11 1/2 | | belt | integ | 17 1/2 x 12 1/2 x 6 1/2 | 18 | | | | | | | | | | | | | |
| | 212 | B | 0.1 | -40 | d.c. | 11 1/2 | | belt | integ | 15 1/4 x 13 1/4 x 5 1/4 | 13 | | | | | | | | | | | | | |
| PIONEER | PL-71 | B | 0.05 | 60 DIN wtd | dc servo | 12 1/4 | 3 1/2 | dir. | integ | 18 1/2 x 16 1/2 x 7 1/4 | 24 1/4 | | 8 1/2 | | ball | ball | cntr. wt. static bal. | | 4-32 | | 0+ | 299.95 | Var. speed diect. contld.; damped cue; cab. & dust cover. | |
| | PL-51 | B | 0.06 | 55 DIN wtd. | dc servo | 12 1/4 | 3 | dir. | integ | 18 x 16 x 7 | 23 | | 8 1/2 | | ball | ball | cntr. wt. static bal. | | 4-14 | | 0+ | 249.95 | Same as above. | |
| | PL-A45D | B | 0.1 | 47 | sync | 12 | 2 1/2 | belt | integ | 19 x 16 1/4 x 7 | 22 1/2 | | 8 1/2 | | ball | ball | cntr. wt. static | | 4-10 | | 0+ | 169.95 | 2 mtrs.; auto or man.; dust cvr. | |

Keep on trackin'

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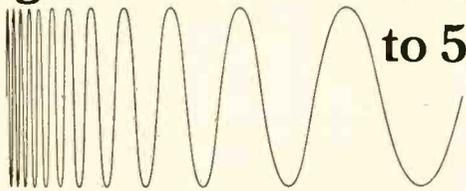
Empire's new wide response 4000D* series phono cartridge features our exclusive "4 Dimensional"TM diamond stylus tip.



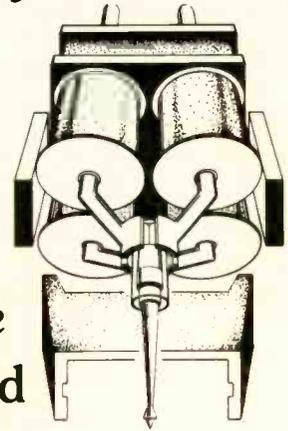
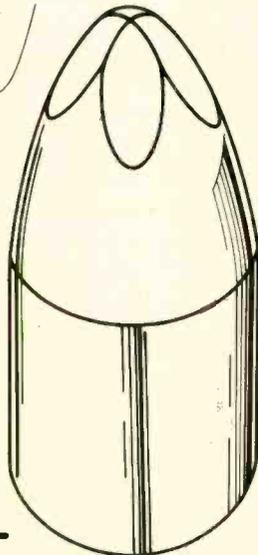
ing prevents any discernible record wear. Every Empire long-playing cartridge is fully shielded with 4 poles, 4 coils and 3 magnets (more than any other brand).

This phenomenal cartridge will track any record below 1

gram and trace all the way to 50,000 Hz.



Empire's "4 Dimensional"TM diamond has a 0.1 mil radius of engagement yet the very low force required for track-



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* Plays any 4 channel system perfectly. Plays stereo even better than before.

Manual Turntables & Tonearms

SPEEDS
 A - 33, 45, 78 D - 16, 33, 45, 78
 B - 33, 45 E - 16, 33, 45
 C - 33 only F - cont. variable

| MANUFACTURER | MODEL | TURNTABLES | | | | | | | | | | | TONE ARMS | | | | | | | | | | | NOTES |
|-----------------------|----------------|--------------------------|----------------------------|-----------------|-------------|-----------------------|----------------------|------------|------------------------|----------------------------|--------------|---------------------------|---------------------|-------------------------|------------------|-----------------|---------------------|-------------------------------|-------------------------|-------------------|---------------------------------------|---|--------|-------------------------|
| | | Speeds (see letter code) | Wow & Flutter at 33 1/3, % | Rumble (NRB) dB | Motor type | Platter diameter, in. | Platter weight, lbs. | Drive | Arm mounting provision | Dimensions, w x d x h, in. | Weight, lbs. | MODEL (for separate arms) | Overall length, in. | Pivot-stylus dist., in. | Vertical bearing | Lateral bearing | Stylus force method | Max. tracking error, deg. in. | Cartridge weight error, | Arm resonance, Hz | Stylus force range, gms. | Weight, if sep., oz. | Price | |
| QRK | 12C | A | 0.1 | 37 | hys sync | 12 | 6 | idler | * | 15 1/4 x 15 1/4 x 6 | 10 | S-320 | 12 | 9 | ball | ball | bal. & spg. | 5-20 | 10 | 0-3 | 65.00 | *Upon request. | | |
| | | | | | | | | | | | | S-260 | 16 | 13 | ball | ball | bal. & spg. | 5-20 | 7 | 0-3 | 75.85 | | | |
| ROTEL | RP-1000G | B | 0.1 | -43 | hys sync | 12 | 3 | belt | integ | 18 1/2 x 14 x 8 | 18 | 12 | 9 | ball | ball | bal. & spg. | 1.0 | 4-8 | 0-5 | 129.95 | Auto ret./off CD-4 ready, anti-skate. | | | |
| SANSUI | SR-717 | B | 0.035 | | 20-pole dc | 12 | | dir. drive | | 20 x 15 1/2 x 7 1/4 | 28.9 | | | | | | 1.5 | | | 319.95 | | | | |
| | SR-313 | B | 0.06 | | 4-pole sync | 12 | | belt | | 18 1/4 x 15 x 7 1/4 | 19.7 | | | | | | | | | 199.95 | | | | |
| SANYO | TP80SB | B | 0.1 | | hys sync | | | | integ | 18 1/2 x 15 x 7 1/4 | 22 | | | | | bal. | | | 0.5-4 | | Low internal cap. | | | |
| SHURE | | | | | | | | | | | | SME 3009 Imp. | 9 | knife | ball | bal. wt. | 4-9 | | 0-1.5 | 32 | 140.00 | Non-detach. shell. | | |
| | | | | | | | | | | | | SME 3009/2 Slim | 9 | knife | ball | bal. wt. | 4-9 | | 0-1.5 | 32 | 152.00 | Detach shell. | | |
| SONY | PS2251 | B | 0.04 | -58 | servo | 12 1/2 | 3.5 | dir. | integ | 19 1/4 x 16 x 7 1/4 | 33 | | | | | | | | | | 349.50 | | | |
| | PS5520 | B | 0.1 | -43 | hys sync | 11 1/2 | 2.3 | belt | integ | 17 3/4 x 16 x 7 | 19 | | 11 1/2 | 8 1/2 | | bal. | | 4-14 | | 0-3 | 169.50 | | | |
| | PS5550 | B | 0.06 | 55 | servo | 11 1/2 | 2.3 | belt | integ | 18 1/2 x 15 x 5 1/2 | 20 | | 13 1/2 | 9 1/2 | | bal. | | 4-14 | | 0-3 | 249.50 | | | |
| | PS1100 | B | 0.2 | 35 | ind. | 11 1/2 | | idler | integ | 17 x 14 x 6 | 14 | | 11 1/2 | 8 1/4 | | bal. | | | | | | W/cart. | | |
| SOUND SYSTEMS | N-3000 | C | 0.09 | -71 | hys sync | 12 | | dual idler | integ | | | | 1.5 | knife edge | roller | bal. | 0.01 to 7 | 10 to 2.5 | 0- | | 349.95 | | | |
| TECHNICS BY PANASONIC | SP-10 | B | 0.03 | -70* | dir. | 12 | 6 | dir. | opt. base | 14 x 14 x 4 | 20 | | | | | | | | | | 419.95 | Ill. strobe; low cap. cables; *DIN B. | | |
| | SL-1100A | B | 0.03 | -70* | dir. | 13 1/2 | 4.4 | dir. | integ | 20 1/2 x 15 1/4 x 7 1/4 | 28.7 | | 9 1/2 | | | bal. | 1.75 | | 10 | 0-5 | 359.95 | As above plus anti-skate, damp. cue., SC-110A same but w/o arm, \$299/95. | | |
| | SL-1300 | B | 0.03 | -70 | dir. | | | dir. | integ | 17 3/4 x 14 x 5 1/2 | 21 | | 9 | pivot | pivot | bal. | 1.6 | 4.5-13 | 10 | 0-3 | 299.95 | As above plus auto sing. play; mem. rpt. | | |
| | SL-1200A | B | 0.03 | -70 | dir. | 13 | 3.86 | dir. | integ | 16 1/4 x 13 1/2 x 7 1/4 | 22 | | 8 1/4 | | | bal. | 2.0 | | 10 | 0-5 | 279.95 | Ill. strobe damp. cue; anti-skate, low cap. cab. | | |
| THORENS (ELPA) | TD-125AB Mk II | E | 0.06 | -65 wtd | sync | 12 | 7 | belt | integ | 18 x 14 x 5 | 32 | TP-16 | 12 | 9.06 | ball | ball | bal. & spg. | 0.2 | 14 max | 8 | 0-4 | 10% | 410.00 | Incl. base. |
| | TD-160C | B | 0.06 | -55 wtd | sync | 12 | 7 | belt | integ | 17 x 13 1/2 x 7 3/4 | 16 1/2 | TP-16 | 12 | 9.06 | ball | ball | bal. & spg. | 0.2 | 14 max | 8 | 0-4 | 10% | 230.00 | Incl. base. & dust cvr. |
| | TD-165C | B | 0.06 | -55 wtd | sync | 12 | 6.6 | belt | integ | 17 x 12 1/2 x 7 3/4 | 20 | TP-11 | 12 | 9 | ball | ball | bal. & spg. | 0.2 | 14 max | 10 | 0-4 | 10% | 199.95 | Incl. base. & dust cvr. |
| TOSHIBA | SR80 | B | 0.1 | 50 | hys | 12 1/2 | | belt | integ | 19 1/2 x 15 1/2 x 7 1/4 | 17 1/2 | | | ball | ball | bal. | 1.5 | | | 0-3 | 299.95 | Incl. elect. cond. cart. and equal. | | |
| | SR50 | B | 0.09 | 55 | dc servo | 12 | | belt | integ | 22 x 15 1/2 x 7 1/2 | 26 1/2 | | | ball | ball | bal. | 1.5 | | | 0-2 | 449.95 | Incl. piezo cart. & equal. | | |
| | SR40E | B | 0.1 | 45 | hys | 12 | | belt | integ | 18 1/2 x 15 1/2 x 7 1/4 | 22 | | | ball | ball | fixed | 1.5 | | | fixed | 199.95 | Incl. IC cart. & equal. | | |
| WIN LABS | Lab 10 | C | 0.06 | -70 | dual sync | 12 | 1 | dir. | integ | 17 1/4 x 15 1/2 x 6 1/2 | 7 | | 8 1/4 | | | static bal. | 1.19 | | | 0-6 | 150.00 | | | |
| YAMAHA | YP800 | B | 0.03 | | dc servo | 12 1/2 | 4.4 | dir. | integ | 18.9 x 14.6 x 6.9 | 27.6 | | 9.5 | | | bal. & spg. | 1.5 | 3-24 | | 0-3 | 500.00 | Hyd.—cue lev.; mirror scope strobe; dual elec. speed contls. | | |
| | YP701 | B | 0.08 | | sync | 12 | | belt | integ | 19 x 16 1/4 x 6 1/4 | 20.2 | | | | | bal. & spg. | 5-15 | | | 0-4 | 220.00 | | | |

The lowest-priced Dual may well be the turntable you're ever likely to



Dual 1225, \$129.95

The least you should require of a turntable is the assurance that its tonearm can track flawlessly with the most sensitive cartridges available, and that its drive system will introduce no audible rumble, wow, or flutter. To accept less means risking damage to your precious record collection and producing sounds from your system which were never recorded.

Happily, the lowest-priced Dual, the 1225, provides this assurance and much more at just \$129.95. For it is the perfect example of Dual's basic design concept: to build every Dual turntable with more precision than you are ever likely to need.

In the case of the 1225, this means a vernier-adjust, counter-balanced tonearm capable of flawless tracking at as low as one gram. Stylus pressure is applied exactly as in costlier Duals: around the vertical pivot,

maintaining perfect balance in all planes. Anti-skating force is also applied exactly as in the highest-priced Dual: with separate calibrations for conical, elliptical and CD-4 styli.

Other features the 1225 shares with the more costly Duals include pitch control, viscous-damped cueing and a precision drive system. The 1225's hi-torque motor maintains speed within 0.1%, even when line voltage varies as much as 20%, and its hefty 3-3/4 lb. platter provides effective flywheel action that minimizes the audible effect of any possible speed variations.

All of this explains why even Dual's lowest-priced models have been so well accepted by audio experts. (Many tell us their original Duals which were bought early in their careers are still in service.)

Considering all this, why do so many serious music lovers spend as much as \$259.95 for the 1229Q? (Readers of the leading music/audio magazines own more Duals—at

every price level, quality turntables.) Although the 1225 has all the precision your records need, the 1229Q has refinements that you may well want. For example, the 1229Q is a full-sized turntable with a 12" dynamically-balanced platter, driven by the powerful Continuous-Pole/synchronous motor. Its gimbal-mounted 8-3/4" long tonearm can track at as low as 0.25 gram, and has provision for adjusting its vertical tracking angle. It also has an illuminated strobe, and cueing is damped in both directions to prevent bounce.

Dual's other two multi-play turntables, the 1226 at \$159.95 and the 1228 at \$189.95, offer one or more of these refinements. Which may bring you to this question: having decided that you and your records deserve a Dual, which one should you buy?

For the answer, we suggest you visit your franchised United Audio dealer where the new generation of Dual turntables is now on display.



United Audio Products
120 So. Columbus Ave.,
Mt. Vernon, N.Y. 10553
Exclusive U.S. Distribution Agency for Dual



Dual 1226, \$159.95

Dual 1228, \$189.95

Dual 1229Q, \$259.95

Check No. 59 on Reader Service Card

| MANUFACTURER | MODEL | SPECIFICATIONS | | | | | | | | | | | | | NOTES | | | |
|-----------------|-------------|---------------------------------|-------------------|----------------------------|------------------------|----------------------------------|-------------------------------|--|---------------------------|------------------|------------|------------------|-----------|----------------------------|-------------------------|--------------|--------------------|---|
| | | IHF sensitivity, μ V Stereo | Capture ratio, dB | Att. Chan. selectivity, dB | AM suppression, dB IHF | Frequency response, Hz \pm 2dB | Stereo separation, 1000 Hz dB | Stereo separation, 1000 Hz THD, mono, 100% mod., % | THD, stereo, 100% mod., % | Tuning indicator | S/N, dB | Number of meters | AM band?? | Dimensions, w x d x h, in. | | Weight, lbs. | Price | |
| ACOUSTICAL MFG. | Quad FM3 | 2.0 | 3 | 46 | 40 | 20-15k \pm 1 | 40 | 36 | 0.3 | 0.3 | Twin Imps. | * | | no | 10 1/4 x 6 1/2 x 3 1/4 | 6 | 250.00 | *40 dB at 4 μ V input; 70 dB at 250 μ V input. |
| DYNACO | AF-6 | 1.75 | 1.5 | 58 | 65 | 50-15k \pm 1 | 40 | 30 | 0.5 | 0.5 | lt. & mtr | 65 | 1 | yes | 13 1/2 x 11 x 4 | 13 | 240.00K 350.00W | |
| | FM-5 | 1.75 | 1.5 | 58 | 65 | 50-15k \pm 1 | 40 | 30 | 0.5 | 0.5 | lt. & mtr | 65 | 1 | no | 13 1/2 x 9 x 4 | 11 | 175.00K 279.00W | |
| EPICURE | Three | 1.0 | 1 | 100 | 80 | 20-15k \pm 0.75 | 55 | 45 | 0.1 | 0.1 | | | | yes | | 37 | 1000.00 | Dscilloscope; 4-chan. compat. |
| GOTHAM | SE200 | 1.3 | | 60 | 50 | 30-15k \pm 0.5 | 40 | 40 | 0.6 | 0.6 | mtr | 54 | 5 | no | 19 x 12 x 8 1/2 | 40 | 700.00 | Bal. outputs; mtrs: L & R vol. ind., sig. lev., disc. "0" tuning. |
| HARMON/KARDON | Citation 14 | 2 | 1.5 | 60 | 60 | 4-80k \pm 1 | 45 | 30 | 0.25 | 0.35 | mtr | 70 | 2 | no | 16 x 13 1/2 x 4 1/2 | 30 | 525.00 | Dolby NR; "Quieting mtr."; 400 Hz tone oscillator. "Quieting" mtr.; 400 Hz tone oscillator. |
| | Citation 15 | 2 | 1.5 | 60 | 60 | 4-80k \pm 1 | 45 | 30 | 0.25 | 0.35 | mtr | 70 | 2 | no | 16 x 13 1/2 x 4 1/2 | 30 | 395.00 | |
| HEATH | AJ-1510 | 1.8 | 1.5 | 95 | 60 | 20-15k \pm 1 | 40 | 30 | 0.3 | 0.35 | * | 65 | 1 | no | 16 1/2 x 14 1/2 x 6 | 16 | 539.95K | *Crystal-contld. PLL tuning; 4-digit readout; 3-pos. pre-select cards; PLL MPX. Preassem. FET FM frontend; crys. filts. Mod. constr.; preassem. FM front end w/FET r.f.; 9-pole L-C filt.; 3 FM i.f. ICs. Preassem. front end w/FET r.f.; cer. filts.; PLL MPX. |
| | AJ-15 | 1.8 | 1.5 | 70 | 50 | 20-15k \pm 1 | 40 | 25 | 0.5 | 1.0 | mtr | 65 | 2 | no | 16 1/2 x 12 1/2 x 4 1/2 | 11 1/2 | 199.95K | |
| | AJ-29 | 1.8 | 1.5 | 70 | 50 | 20-15k \pm 1 | 40 | 30 | 0.5 | 0.5 | mtr | 60 | 2 | yes | 16 1/2 x 14 1/2 x 5 1/2 | 14 1/2 | 179.95K | |
| | AJ-1214 | 2.0 | 2 | 60 | 50 | 20-15k \pm 1 | 40 | | 0.5 | 1.0 | | 65 | | yes | 12 3/4 x 13 x 3 3/8 | -7 1/4 | 89.95K | |
| HITACHI | FT-600 | 1.8 | 1.5 | 45 | | | 40 | | 0.8 | | mtr | 70 | 1 | yes | | | 249.95 | Muting swit.; noise filt. |
| JVC | VT-900 | 1.7 | 0.8 | 70 | 55 | 20-15k \pm 1 | 38 | 25 | 0.3 | 0.5 | lt. & mtr | 65 | 1 | | 5 1/2 x 16 1/2 x 12 1/2 | 19.5 | 399.95 | Digital readout; FM 4-chan. ready; var.; fixed & scope outputs. |
| | VT-700 | 1.7 | 0.7 | 70 | 55 | 20-15k \pm 1 | 38 | 25 | 0.3 | 0.5 | mtr | 65 | 2 | yes | 5 1/2 x 16 1/2 x 12 1/2 | 16.5 | 249.95 | 4-chan. ready; mpx hi blend; front panel lev. conti. |
| KENWOOD | 700T | 1.8 | 1.3 | 100 | 65 | 20-15k +0-1.5 | 45 | 35 | 0.15 | 0.25 | LED | 73 | 1 | yes | 17 1/4 x 11 1/4 x 5 1/2 | 19.6 | 749.95 | Deviation mtr. Same as above. PLL/DSD; stereo demod. |
| | KT-8007 | 1.5 | 1 | 100 | 65 | 20-15k +0 -1.3 | 47 | 38 | 0.15 | 0.2 | mtr | 75 | 2 | yes | 17 1/4 x 11 1/4 x 6 1/4 | 17.8 | 419.95 | |
| | KT-6007 | 1.7 | 1.3 | 70 | 58 | 20-15k +0 -1.5 | 45 | 38 | 0.15 | 0.2 | mtr | 70 | 2 | yes | 17 1/4 x 11 1/4 x 6 1/4 | 17.6 | 319.95 | |
| | KT-4007 | 2 | 2 | 60 | 55 | 20-15k +0-2 | 40 | 30 | 0.15 | 0.4 | mtr | 65 | 2 | yes | 17 1/4 x 11 1/4 x 6 1/4 | 17.6 | 229.95 | |
| LAFAYETTE | CT-010 | 1.5 | 1.5 | 70 | | 50-15k \pm 1 | 40 | 26 | 0.2 | | mtr | 65 | 2 | yes | 15 1/2 x 13 x 4 1/2 | 11 1/4 | 269.95 | 25 μ S Dolby de-emphasis; PLL MPX decoder; front panel tape outputs. |
| | LT-725B | 1.7 | 2.5 | 40 | | 50-15k \pm 2 | 35 | 22 | 0.25 | | mtr | 65 | 1 | yes | 12 1/2 x 9 1/2 x 3 3/8 | 10 | 149.95 | Comb. AM sig. str. and ctr. chan. tuning mtr. for FM. |
| MARANTZ | 120B | 1.8 | 1.5 | 75 | 60 | 10-15k | 42 | 0.2 | | 0.3 | * | | | yes | | 20 | 549.95 | *Scope has 2- and 4-chan. disp. multipath, sig. str. & ctr. chan. tuning. PLL FM decoder crty; Quadradial output. Quadradial output. |
| | 115B | 1.9 | 1.5 | 60 | 50 | 20-15k | 42 | | 0.3 | 0.4 | mtr | | 2 | yes | | 21 | 299.95 | |
| | 105B | 3.5 | 3 | 48 | 55 | 25-15k | 40 | | 0.6 | 0.8 | mtr | | 1 | yes | | 12 | 169.95 | |
| McKAY/DYMEK | AM3 | | | | | 40-8.7k \pm 3 | | | | | mtr | | 1 | yes | 16 1/4 x 8 x 4 1/2 | 7 | 255.00 | Wide range, hi sens. AM tuner. DA3 antenna-r.f. output to AM tuner, \$155.00. |
| NIKKO | FAM220 | 2.3 | 3.0 | 40 | | | 38 | | 0.5 | | mtr | 60 | 1 | yes | 12 1/2 x 10 1/4 x 4 1/2 | 6.8 | 129.95 | |
| | FAM500 | 2.0 | 2.0 | 50 | | | 38 | | 0.5 | | mtr | 60 | 2 | yes | 15 x 12 1/2 x 8 1/2 | 12 | 169.95 | |
| ONKYO | T-4055 | 1.7 | 1.2 | 80 | 55 | 20-15k +0-2 | 40 | 35 | 0.2 | 0.5 | mtr | 70 | 2 | yes | 16 1/2 x 14 x 5 1/2 | 20 | 219.95 | |
| PILOT | 211 | 1.8 | 1.5 | 65 | | 20-15k \pm 1 | 38 @ 400 Hz | | 0.4 | 0.8 | mtr | 65 | 2 | yes | 15 x 11 1/2 x 5 1/2 | | 199.90 | |
| PIONEER | TX-9100 | 1.5 | 1.0 | 90 | 65 | 20-15k +0.2 -2 | 40 | 30 | 0.2 | 0.3 | mtr | 75 | 2 | yes | 17 x 13 x 5 1/2 | 19 | 349.95 | Output lev. conts.; 2-lev. mute; mpx noise filt.; PLL MPX. |
| | TX-8100 | 1.8 | 1.0 | 80 | 55 | 20-15k +0.2 -2 | 40 | 30 | 0.2 | 0.4 | mtr | 70 | 2 | yes | 17 x 13 x 5 1/2 | 17 | 249.95 | Output lev. conti.; mpx noise filt.; fixed & var. outputs. |
| | TX-7100 | 1.9 | 1.0 | 60 | 55 | 20-15k +0.2 -2 | 40 | 30 | 0.2 | 0.4 | mtr | 70 | 2 | yes | 17 x 13 x 5 1/2 | 17 | 199.95 | Output lev. AM & FM; mpx noise filt.; muting; fixed & var. outputs; lev. conti. |
| | TX-6200 | 1.9 | 1.5 | 60 | 50 | 20-15k +0.2 -2 | 40 | 30 | 0.2 | 0.4 | mtr | 70 | 1 | yes | 17 x 13 x 5 1/4 | 15 | 139.95 | Muting; mpx filt.; fixed & var. output lev. |

We're too British to boast. So here's what the experts say about us.

Rather than appear immodest, we'll let the experts who write for the audio publications tell you about two automatic turntables we're quite proud of—our 810QX and 710QX Transcription Series models.

High Fidelity magazine says:

"The new cam system (in the 810QX) is credited with providing smoother and quieter operation than in past models. Average flutter was very low at 0.05%; total audible rumble by the CBS-ARLL method was -52db. The arm has negligible friction laterally and vertically, and requires a 0.3 gram stylus force for automatic trip. Taking it all together—performance, features, styling—the BSR 810QX moves into ranking place among the best automatics we know of."

Stereo Review magazine says:

"The BSR 810QX has an unusually complete array of operating controls and adjustments, yet is simple to use. The wow and flutter were very low—respectively 0.03 and 0.045% at 33½ rpm and 0.05 and 0.04% at 45 rpm. The BSR 810QX, undeniably a well-constructed and attractively styled record player, was also a very easy one to operate. The controls had a smooth, positive feel and action."

Audio magazine says:

"Wow and flutter (of the 710QX) measured a low 0.06% and 0.08% respectively. Rumble measured -35 db (unweighted) corresponding to an audible rumble loudness level of about -59 db. Calibration of the tracking force dial was very accurate and tracking error itself was under 0.5 degrees per inch over the whole record."

Stereo Review magazine says:

"710QX lateral tracking error was a very good 0.4 degrees per inch at the 2.5 inch (or inner groove) radius, and was under 0.5 degrees per inch over the entire record.

The turntable had an unweighted rumble of -32 db. With RLL weighting for relative audibility, the rumble was -55 db, which is typical of the best automatic turntables. The wow and flutter were completely negligible—respectively 0.06 and 0.095% at 33½ rpm, and 0.05 and 0.06% at 45 rpm. Let it suffice to say that we found the mechanical functions of the BSR 710QX to be flawless and its overall ease of operation excellent."

This is a modest way to tell you how good our Transcription Series 810QX and 710QX really are. We would be pleased to send you detailed specifications, just drop us a note.
BSR(USA)Ltd.,Blauvelt,NY.10913

BSR
McDONALD



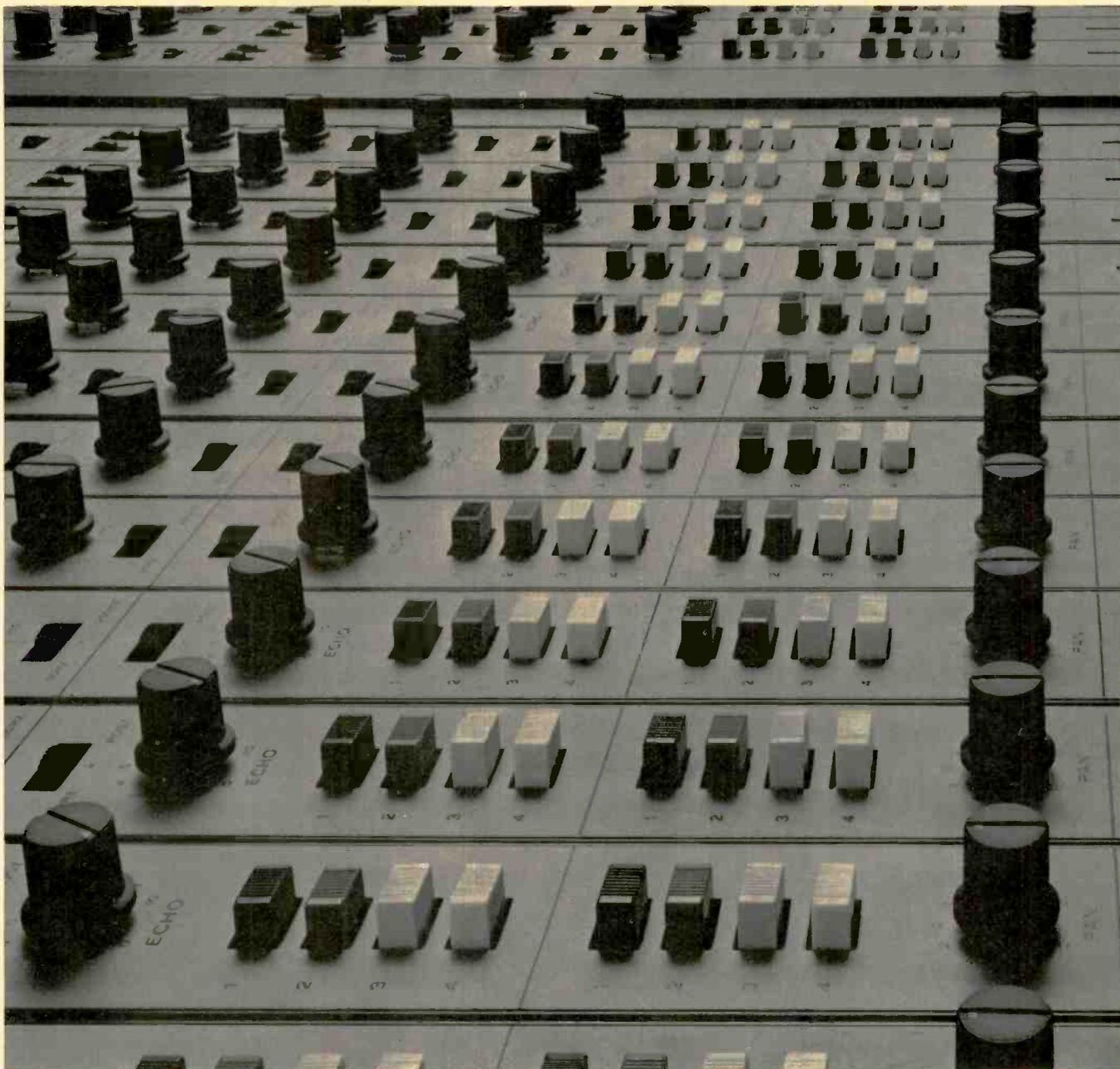
BSR 710QX

BSR 810QX



Tuners

| MANUFACTURER | MODEL | IHF sensitivity, μ V, Stereo | Capture ratio, dB | Aft. chan. selectivity, dB | AM suppression, dB, IRTF | Frequency response, Hz \pm 700 | Stereo separation, 1000 Hz, dB | Stereo separation, 1000 Hz, dB | THD, mono, 100% mod., 1 kHz | THD, stereo, 100% mod., 1 kHz | Tuning indicator | S/N, dB | Number of meters | AM band? | Dimensions, w x d x h, in. | Weight, lbs. | Price | NOTES |
|------------------|---------|----------------------------------|-------------------|----------------------------|--------------------------|----------------------------------|--------------------------------|--------------------------------|-----------------------------|-------------------------------|------------------|---------|------------------|------------------------|----------------------------|--------------|---|--|
| RADIO SHACK | TM-1000 | 2 | 2 | 50 | | | 35 | 1.0 | | mtr | 65 | 1 | yes | 4" x 15 1/4" x 11 1/2" | | 159.95 | | |
| | TM-101 | | | 15 | | | 30 | 1.5 | | | 50 | | yes | 3 1/2" x 9 3/4" x 7" | | 59.95 | | |
| REVOX | A720 | * | 1 | 60 | 54 | 30-15k \pm 1 | 40 | 0.2 | 0.2 | mtr | 70 | 2 | no | 19.7 x 12.8 x 6.2 | 24 | 1395.00 | *10 μ V for 30 dB S/N; digital syn. | |
| ROTEL | 1220 | 1.5 | 1.0 | 90 | 65 | 20-18k \pm 1 | 40 | 30 | 0.3 | 0.5 | mtr | 70 | 2 | yes | 16 1/2" x 12" x 5 1/2" | 17 | 329.95 | Built-in pre-amp; 3-pos. muting; headphone jack; mpX filt. |
| | 622 | 1.7 | 1.0 | 80 | 60 | 30-18k \pm 1 | 40 | 30 | 0.3 | 0.5 | mtr | 70 | 2 | yes | 16 1/2" x 9 1/2" x 5 1/2" | 11 | 269.95 | Muting lev.; lin. dial scale; wal. cab. incl. |
| | 322 | 2.0 | 1.5 | 50 | 60 | 40-15k \pm 1 | 40 | 30 | 0.5 | 1.0 | mtr | 65 | 1 | yes | 14" x 7 1/2" x 4 1/2" | 8.8 | 169.95 | FET front end; mpX filt.; muting; wal. fin. cab. incl. |
| | 222 | 4.0 | 4 | 40 | 60 | 50-15k | 35 | 28 | 1.0 | 1.5 | mtr | 63 | 1 | yes | 13" x 6 1/2" x 4 1/2" | 7 | 129.95 | Lin. dial scale; wal. fin. cab. incl. |
| SAE | Mk VIB | 1.6 | 1.5 | 140 | 100 | 20-15k \pm 0.5 | 50 | 38 | 0.1 | 0.15 | scope | 75 | 0 | no | 17" x 5.75" x 10.5" | 25 | 1050.00 | Digital readout. |
| | Mk VIII | 1.8 | 1.5 | 100 | 100 | 20-15k \pm 0.5 | 45 | 35 | 0.15 | 0.2 | mtr | 70 | 2 | no | 17" x 5.75" x 10.5" | 23 | 650.00 | Same as above. |
| SANSUI | TU-9500 | 1.7 | 1.5 | 80 | | 30-15k \pm 0.5 - 2 | 40 | 30 | 0.2 | 0.3 | mtr | 75 | 2 | yes | 19 1/4" x 13 1/4" x 5 1/2" | 20.8 | 349.95 | |
| | TU-7700 | 1.8 | 1.5 | 80 | | 20-15k | 40 | | 0.2 | 0.3 | mtr | 75 | 2 | yes | | | 329.95 | |
| | TU-5500 | 1.9 | 2.0 | 60 | | 20-15k | 40 | | 0.3 | 0.5 | mtr | 70 | 2 | yes | | | 279.95 | |
| | TU-505 | 2.5 | 2.5 | 50 | | 30-15k \pm 1 - 2.5 | 35 | | 0.6 | 0.8 | mtr | 65 | 1 | yes | 16" x 11" x 4 1/2" | 12.1 | 179.95 | |
| H. H. SCOTT | T33S | 1.8 | 1.2 | 75 | 75 | 20-15k \pm 1 | 40 | | 0.25 | 0.35 | | 70 | 2 | no | 17 1/2" x 11 1/2" x 5 1/2" | 20 | 999.95 | Digital readout; dig. freq. synth; PLL tuning; tunes auto, man. or pre-punched cards. |
| SEQUERRA | Model 1 | 2.0 | 0.8 | 130 | 70 | 30-15k \pm 0.3 | 53 | 36 | 0.08 | 0.12 | * | 70 | | no | 16 1/4" x 5 1/4" x 14 1/2" | 32 | 2000.00 | *Oscilloscope and digital readout; opt. panoramic adaptor, \$500.00. |
| SHERWOOD | SEL 300 | 1.5 | | 85 | 65 | 20-20k \pm 1 | 40 | | | | mtr | 70 | 2 | no | 16 1/4" x 14" x 5 1/4" | 25 | 499.00 | Digital |
| | S-2400 | 1.8 | 1.5 | 65 | 60 | 20-15k \pm 1 | 40 | | | | mtr | 70 | 2 | yes | 17 1/2" x 14" x 5 1/2" | 24 | 229.95 | |
| SONY | ST5055 | 2.2 | 1.0 | 70 | 45 | 30-15k \pm 2 | 35 | | 0.4 | 0.6 | mtr | 68 | 1 | yes | 16" x 11" x 4 1/4" | 11 | 199.50 | W/case. |
| | ST5066 | 2.2 | 1.5 | 55 | 45 | 30-15k \pm 2 | 35 | | 0.5 | 0.8 | mtr | 68 | 1 | yes | 16" x 11" x 4 1/4" | 11 | 159.50 | W/case. |
| | ST5130 | 1.5 | 1.0 | 100 | 60 | 20-15k \pm 1 | 42 | | 0.2 | 0.3 | mtr | 75 | 2 | yes | 15 1/4" x 13 1/2" x 6" | 17 | 369.50 | |
| | ST5150 | 2.0 | 1.0 | 70 | 56 | 20-15k \pm 1 | 40 | | 0.3 | 0.5 | mtr | 70 | 2 | yes | 15 1/4" x 13 1/2" x 6" | 16 | 269.50 | |
| SUPERSCOPE | T-220 | 2.8 | 3 | 35 | 35 | 20-15k \pm 1.5 | 32 | 20 | 0.5 | 1.0 | mtr | 60 | 1 | yes | 20 1/2" x 19" x 12 1/4" | 18.7 | 179.95 | Mono/stereo push swit.; FM muting swit.; 4-chan. FM output jack; adj. output lev. |
| | T-210 | 5 | 6 | 25 | 35 | 30-15k \pm 1.5 | 30 | 15 | 2.0 | 2.0 | mtr | 60 | 1 | yes | 14 1/4" x 1 1/4" x 4 1/2" | 5.3 | 119.95 | Full size sig.-str. mtr.; bal. flywheel tuning; AFC for FM. |
| TEAC | T-100 | 2.0 | 1.5 | | | 20-15k \pm 0-1 | 45 | 30 | 0.1 | 0.2 | dial | 75 | 3 | yes | 17 1/2" x 6" x 14" | 30.8 | 650.00 | Ind. vol. contl for AM & FM; PLL; adj. FM muting. |
| TETEDYNE (OLSON) | RA-927 | 2.0 | 2.5 | 50 | 50 | 20-20k | 32 | 28 | 0.5 | 0.75 | mtr | 55 | 1 | yes | 18 1/4" x 11 1/4" x 4 1/4" | 12 | 59.99 | |
| TOSHIBA | ST500 | 1.8 | 1.5 | | 50 | 20-15k \pm 1 | 35 | | 0.2 | 0.5 | mtr | 66 | 2 | yes | 15 1/4" x 12" x 4 1/4" | 14 1/4 | 6239.95 | Var. output lev.; hi-blend. |
| YAMAHA | CT7000 | 1.7 | 1.0 | 80 | 60 | 30-10k \pm 0.5 - 1 | 50 | 35 | 0.08 | 0.3 | mtr | 75 | 2 | no | | | 1200.00 | Swit. i.f. mode; MPX decoder w/N.F.; auto-touch tuning; two outputs; multipath term. |
| | CT800 | 1.7 | 1.0 | 80 | 55 | 20-15k \pm 1.5 - 1.5 | 45 | 35 | 0.15 | 0.5 | mtr | 72 | 2 | yes | 17 1/4" x 12 1/4" x 5 1/4" | 16 1/2 | 370.00 | Dual gated MOS FET front end; auto touch tuning; Fm multipath term; mpX decoder w/N.F.; two outputs. |
| | CT600 | 2 | 1.5 | 75 | 55 | 20-15k \pm 1.5 - 3 | 40 | 28 | 0.3 | 0.5 | mtr | 66 | 2 | yes | 17 1/4" x 12 1/4" x 5 1/4" | 16 1/2 | 270.00 | Dual gated MOS FETs in front end; auto touch tuning; Fm multipath term. |



The Model 10 Mixing Console

When you've got more talent than money

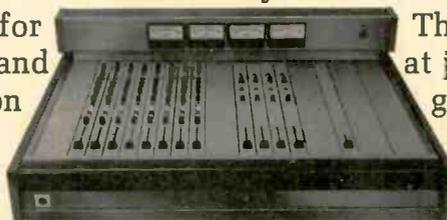
Any mixing console is simply a creative tool. Getting the most out of it calls for imaginative insight into music and skill in the practical application of sound.

If you've got the talent but you don't have the money,

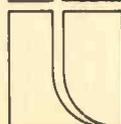
you're exactly who we built this board for.

The basic 8-in, 4-out board starts at just \$1890. From there you can go to 24-in, with options and accessories enough to fill a studio.

The TASCAM Model 10. It gets your inside outside.



 **TASCAM** CORPORATION



5440 McConnell Avenue
Los Angeles, Calif. 90066

Check No. 57 on Reader Service Card

Phono Cartridges

| MANUFACTURER | MODEL | Frequency response, Hz | | Separation, 1000 Hz, dB | Separation, 10 MHz, dB | Output, mV/cm/sec. | Tracking force range, gms. | Load resistance, ohms | Stylus type (see letter code) | Stylus radius (radii) mils | Replacement | Weight, gms. | Price | NOTES |
|----------------|-----------------------------|------------------------|------------------|-------------------------|------------------------|--------------------|----------------------------|-----------------------|-------------------------------|----------------------------|-------------|-----------------|------------------------------|--|
| | | ± 2 dB | ± 2 | | | | | | | | | | | |
| ASTATIC | 181 | 60-12k | 25 | | 31 | 2-3 | 143k | C | 0.7x 3.0 | user | 1.7 | | | Piezo. cer.; nom. resp. rel to RIAA; no elec. equal. reg. |
| | 17 | 60-12k | 25 | | 100 | 3-4 | 1 meg | C | 0.7x 3.0 | user | 4.7 | | | Same as above. |
| AUDIO DYNAMICS | 550XE | 10-20k ± 2 | 25 | | 5* | ¾-2 | 47k | E | 0.3x 0.7 | user | | 35.00 | | *at 5.5 cm/sec. |
| | 220XE | 10-18k ± 3 | 20 | | 6* | 1.2 | 47k | E | 0.3x 0.7 | user | | 22.00 | | *Same as above; 220x same but conical. \$16.00. |
| | XLM | 10-20k ± 2 | 25 | | 3.5* | .6 | 47k | E | 0.3x 0.7 | user | 3.8 | 50.00 | | *Same as above. |
| | VLM | 10-20k ± 2 | 25 | | 3.5* | 1 | 47k | E | 0.3x | user | 3.8 | 46.00 | | *Same as above. |
| | SUPER XLM | 10-20k ± 2 | 25 | | 2.5* | ½-1¼ | 47k | ** | | user | | 75.00 | | *Same as above; ** for discrete 4 chan. |
| | K8 | 15-18k ± 4 | 20 | | 5* | 2-4 | 47k | ** | 0.7 | user | | 24.95 | | *Same as above; **spherical. |
| | K7E | 15-18k ± 4 | 20 | | 5* | 1½-3 | 47k | E | 0.4x 0.8 | user | | 29.95 | | *Same as above. |
| | K5E | 10-20k ± 3 | 25 | | 4.5* | 1-2½ | 47k | E | 0.3x 0.7 | user | | 39.95 | | *Same as above. |
| | K3E | 10-20k ± 2.5 | 25 | | 4.5* | 1-2 | 47k | E | 0.3x 0.7 | user | | 49.95 | | *Same as above. |
| Q-30 | 10-20k ± 3 | 25 | | 4.5* | 1-2 | 47k | ** | 0.5 | user | | 27.00 | | *Same as above; **spherical. | |
| AUDIO-TECHNICA | AT12S 4-chan. | 15-45k | 22 | 15 | 3.5 | 1¼-2 | 47k 100k | S* | | user | 5.5 | 64.95 | | *Shibata; for stereo, matrix & discrete 4-chan. |
| | AT13EA | 10-45k | 25 | 15 | 3.5 | 1-2 | 47k | E | 0.2x 0.7 | user | 4.8 | 64.95 | | Low mass; grain oriented nude diamond stylus. |
| | AT14SA 4-chan. | 5-45k | 25 | 17 | 2.7 | 1-2 | 47k 100k | S* | | user | 5.5 | 75.00 | | *Shibata; for stereo, matrix & discrete 4-chan; low mass; grain oriented nude diamond stylus. |
| | AT15SA 4-chan. | 5-45k | 25 min. | 17 | 2.7 | 1-2 | 47k 100k | S* | | user | 8.5 | 100.00 | | *Shibata; same as above plus indiv. freq. resp. curve. |
| | AT10 | 20-20k | 20 | 12 | 4.8* | 2½-4 | 47k | C | 0.7 | user | 5.5 | 24.95 | | * 5cm/sec.; dual magnet gener. sys. |
| | AT11 | 15-25k | 20 | 12 | 4.8* | 2-3 | 47k | C | 0.7 | user | 5.5 | 34.95 | | Same as above. |
| | AT11E | 15-28k | 20 | 12 | 4.8* | 2-3 | 47k | E | 0.4x 0.7 | user | 5.5 | 44.95 | | Same as above. |
| | AT12E AT20SLA 4-chan. | 15-30k 5-50k | 22 27 min. | 12 20 | 3.5* 2.7 | 1¼-2 1-2 | 47k 100k | E S* | | user user | 5.5 8.5 | 54.95 175.00 | | Same as above. *Shibata; limited ed.; sel. AT15SA for highest perf. parameters; supplied w/freq. resp. curve. |
| B&O | MMC 6000 | 20-45k | 25 | 20 | 0.6 | 0.7-1.5 | 100k | P* | | none | 4 | 85.00 | | *Pramanik-diamond stylus for CD-4; ETM=0.22 mg. |
| | SP-12 | 15-20k | 25 | 20 | 1.0 | 1-1.5 | 47k | E | 0.2x 0.7 | user | 8.5 | 85.00 | | Naked diamond stylus. |
| | SP-14 | 20-16k | 20 | 15 | 1.0 | 1.5-2.5 | 47k | C | 0.6 | user | 8.5 | 45.00 | | |
| | SP-10 | 15-20k | 25 | 20 | 1.0 | 1-1.5 | 47k | C | 0.6 | user | 8.5 | 75.00 | | Naked diamond stylus. |
| DECCA (PAOLI) | London Export MK5 | 30-18k | 25 | 20 | 1.5 | 2.5-3.0 | 47k | C | 0.5- 0.6 | FIY. | 5.0 | 135.00 | | With response curve; positive scanning, no cantilever; 1.0 mgm tip mass; hand polished diamond. |
| | London MK 5 | 30-16k | 20 | 18 | 1.5 | 2.5-3.0 | 47k | C | 0.6 | FIY. | 5.0 | 109.50 | | Positive scanning; no cantilever; 1.0 tip mass; hand polished diamond. |
| ELAC | STS-255-17 | 20-20k | 22 | 22 | 1.8 | 1.5-3 | 47k | C | 0.7 | user | 6.5 | | | |
| | STS-355-E | 20-22k | 24 | 24 | 1.1 | 1-2 | 47k | E | 0.24x 0.72 | user | 6.5 | | | |
| | STS-455-E | 10-25k | 26 | 20 | 1.1 | ¾-1.5 | 47k | E | 0.24x 0.72 | user | 6.5 | | | |
| | STS-555-E | 10-27k | 26 | 22 | 1.0 | ½-1 | 47k | E | 0.24x 0.72 | user | 6.5 | | | |
| EMPIRE | 4000D/III 4-chan. | 5-50k ± 2 | 35 | 25 | 1.0 | ¾-1¼ | 100k | * | 0.1 | user | 7 | 149.95 | | *4-dimensional; discrete. |
| | 4000D/II 4-chan. | 5-45k ± 2 | 35 | 25 | 1.0 | ¾-1¼ | 100k | * | 0.1 | user | 7 | 124.95 | | *Same as above. |
| | 4000D/I 4-chan. | 10-40k | 35 | 25 | 1.0 | ¾-1¼ | 100k | * | 0.1 | user | 7 | 84.95 | | *Same as above. |
| | 2000E/III 4-chan. | 5-35k | 35 | 25 | 1.5 | ¾-1¼ | 47k | E | 0.2x 0.7 | user | 7 | 69.95 | | Matrix. |
| | 2000E/II 4-chan. | 6-33k | 35 | 25 | 1.5 | ¾-1¼ | 47k | E | 0.2x 0.7 | user | 7 | 54.95 | | As above. |
| | 2000E/I 4-chan. | 8-32k | 35 | 25 | 1.5 | ¾-1¼ | 47k | E | 0.2x | user | 7 | 39.95 | | As above. |
| | 1000ZE/X | 5-40k | 35 | 25 | 1.2 | 0.1-1½ | 47k | E | 0.2x 0.7 | user | 7 | 99.95 | | |

| MANUFACTURER | MODEL | Frequency response, Hz | | Separation, 1000 Hz, dB | | Separation, 10 kHz, dB | | Output, mV/cm/sec. | | Tracking-force range, gms. | | Load resistance, ohms | | Stylus type (see letter code) | | Stylus radius (radii) mils | | Replacement | | Weight, gms. | | Price | | NOTES STYLUS TYPE C - Conical E - Elliptical | |
|--------------------------|------------------------|------------------------|----|-------------------------|------|------------------------|------|--------------------|--------------|----------------------------|--|-----------------------|---------|-------------------------------|--------|---|--|-------------|--|--------------|--|-------|--|---|--|
| | | ± 2 dB | | | | | | | | | | | | | | | | | | | | | | | |
| GRACE (SUMIKO) | F8/F 4-chan. | 10-50k | 30 | 28 | 0.7 | 1-2½ | 100k | S* | | | | | | user | 6.5 | 129.95 | *Shibata; for CD-4 and stereo. | | | | | | | | |
| | F8/E 4-chan. | 20-45k | 30 | 27 | 0.8 | ¾-1.5 | 47k | E | 0.2x 0.8 | | | | | user | 6.5 | 99.95 | For CD-4 and stereo. | | | | | | | | |
| GRADO | F8/L | 20-20k | 30 | 26 | 1.0 | ½-1¼ | 47k | E | 0.2x 0.8 | | | | | user | 6.5 | 79.95 | | | | | | | | | |
| | FTR+1 | 10-45k | 20 | 20 | 2.5* | 1-2 | 700 | C | 0.5 | | | | user | 4.5 | 11.95 | *3.54 CMV (45 degrees). | | | | | | | | | |
| | FCR+1 | 10-45k | 20 | 20 | 2.5* | 1-2 | 700 | C | 0.5 | | | | user | 4.5 | 39.95 | *Same as above. | | | | | | | | | |
| | F3E+ | 10-50k | 20 | 20 | 2.5* | ¾-2 | 700 | E | 0.3x 0.7 | | | | user | 4.5 | 50.00 | *Same as above. | | | | | | | | | |
| JVC | 4MD 20-X 4-chan. | 20-60k | 30 | 20 | 2.0* | 1½-2 | 500 | S** | | | | | | user | | 79.95 | *50 mV/sec.; CD-4; **Shibata | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| MICRO/ACOUSTICS | QDC-1E | 5-20k ±2 | 30 | 20 | 3.5* | ¾-1¼ | 47k | E | 0.2x 0.7 | | | | | user | 6.8 | 110.00 | *5 cm/sec. | | | | | | | | |
| | QDC-1G 4-chan. | 5-50k ±3 | 30 | 25 | 3.0* | 1-2 | 47k | ** | * | | | | | user | 6.8 | 120.00 | *Same as above; **Quadrant point for CD-4. | | | | | | | | |
| ORTOFON | M15E Super | 20-20k | 25 | 19 | 0.8 | 0.75- 1.5 | 47k | E | 0.3x 0.7 | | | | | user | 5 | 90.00 | Conical version avail., \$80.00. | | | | | | | | |
| | SL15E MKII | 20-20k | 25 | 22 | 1.1* | 1.5-2 | 47k | E | 0.3x 0.7 | | | | factory | 7 | 100.00 | *Output measured w/STM-72Q transf., \$35.00; con. version avail. | | | | | | | | | |
| | VMS 20 E | 20-20k | 25 | 15 | 1.0 | 0.75- 1.5 | 47k | E | 0.3x 0.7 | | | | user | 5 | 65.00 | | | | | | | | | | |
| PICKERING | UV15/2400Q 4-chan. | 10-50k | 35 | | 3.8* | 1-3 | | ** | | | | | | | | 124.95 | *5.5cm/sec; **quadrangular for CD-4; Dustomatic brush. | | | | | | | | |
| | UV15/2000Q 4-chan. | 20-45k | 30 | | 3.8* | 1-3 | | ** | | | | | | | | 69.90 | Same as above. | | | | | | | | |
| | XV15/1200E | 10-30k | 35 | 25 | 4.4* | ½-1¼ | 47k | E | 0.2x 0.7 | | | | user | 5 | 79.95 | *5.5 cm/sec. | | | | | | | | | |
| | XV15/400E | 10-25k | 35 | 25 | 5.5* | 1-2 | 47k | E | 0.2x 0.7 | | | | user | 5 | 54.95 | *Same as above. | | | | | | | | | |
| | UV-15/750E | 10-25k | 35 | 25 | 4.4* | ½-1¼ | 47k | E | 0.4x 0.7 | | | | user | 5 | 65.00 | *Same as above. | | | | | | | | | |
| PIONEER | Micro 4 AME | 20-20k | 30 | 24 | 5.5* | 1-2 | 47k | E | 0.4x 0.7 | | | | user | 5 | 49.95 | *Same as above. | | | | | | | | | |
| | PC-Q1 4-chan. | 10-50k | 25 | | | 1-2.1 | 100k | * | | | | | user | | 69.95 | *Parabolic stylus; CD-4 capability. | | | | | | | | | |
| QRK | F-3 | 20-20k | 25 | 25 | 4 | 2-2¼ | 47k | C | 0.6 | | | | user | 5.5 | 29.95 | | | | | | | | | | |
| SHURE | V-15 TYPE III | 10-25k | 28 | 20 | 3.5* | ¾-1¼ | 47k | E | 0.7 x 0.2 | | | | user | 6 | 77.50 | *mV/chan. at 1k/5 cm/sec. peak vel. | | | | | | | | | |
| | M91ED | 20-20k | 25 | | 5.0* | ¾-1¼ | 47k | E | 0.7x 0.2 | | | | user | 5.5 | 54.95 | *Same as above. | | | | | | | | | |
| | M75ED TYPE 2 | 20-20k | 25 | | 5.0* | 1½-3 | 47k | E | 0.7 x 0.4 | | | | user | 6 | 44.95 | Built-in snap-down stylus guard; *same as above. | | | | | | | | | |
| | M93E | 20-20k | 25 | | 6.2* | 1½-5 | 47k | E | 0.7x 0.4 | | | | user | 6 | 39.95 | *Same as above. | | | | | | | | | |
| | M55E | 20-20k | 25 | | 6.6* | ¾-2 | 47k | E | 0.7x 0.2 | | | | user | 7 | 29.95 | *Same as above. | | | | | | | | | |
| | M44E | 20-20k | 25 | | 9.3* | 1¼-4 | 47k | E | 0.7x 0.4 | | | | user | 7 | 24.95 | *Same as above. | | | | | | | | | |
| STANTON | 681-EEE | 10-22k | 35 | | 3.8* | ¾-1¼ | 47k | E | 0.2x 0.7 | | | | user | 5 | 82.00 | Indiv. calibrated at fcty. *at 5.5 cm/sec. | | | | | | | | | |
| | 681-EE | 10-10k ±½ | 35 | 26 | 0.82 | ¾-1¼ | 47k | E | 0.2x 0.7 | | | | user | 5 | 72.00 | | | | | | | | | | |
| | 600-EE | 20-20k | 35 | | 1.0 | 1.2 | 47k | E | 0.3x 0.7 | | | | user | 5 | 55.00 | | | | | | | | | | |
| | 500-EE | 20-20k | 35 | 22 | 1.0 | 1-2 | 47k | E | 0.3x 0.7 | | | | user | 5 | 40.00 | | | | | | | | | | |
| | 780-4DQ 4-chan. | 10-50k | 35 | | 3.8* | 1-3 | | ** | | | | | user | 5 | 125.00 | *at 5.5 cm/sec; **quadrangular for CD-4; "Longhair" brush. | | | | | | | | | |
| TECHNICS BY PANASONIC | EPC-450C-II 4-chan. | 0-50k ±2.5 | 20 | 15 | | 1½-2½ | | S* | 0.75x 0.7 | | | | user | 3.2 | 64.95 | *Shibata; CD-4; strain gauge semicond. reg. bias from demod. | | | | | | | | | |
| TOSHIBA | C401S | 20-35k | 25 | | 8 | 1½-2 | 47k | E | 0.3x 0.8 | | | | user | 6.5 | 129.95 | Electret cond. cart.; incl. equal. SZ-200. | | | | | | | | | |

Open-Reel Tape Recorders

SPEEDS BY LETTER CODE:

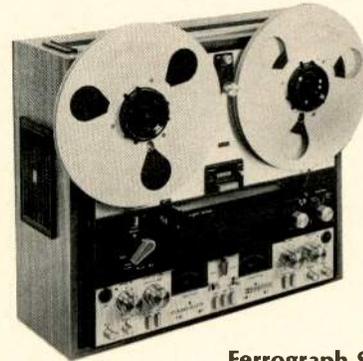
| | A | B | C | D | E | F | G | H | J |
|-------|---|---|---|---|---|---|---|---|---|
| 15 | | | | | x | x | x | | |
| 7-1/2 | x | x | x | | x | x | x | | |
| 3-3/4 | x | x | x | | x | | x | x | |
| 1-7/8 | x | | x | x | | | x | x | |
| 15/16 | | | x | | | | | | |



Akai GX-400DX



Dokorder 7500



Ferrograph Super Seven

| MANUFACTURER | MODEL | Speeds (see letter code) | Power amp(s) built in ? | Max. reel size, in. | No. of heads | No. of tracks | No. of motors | Drive motor type | Drive to capstan | Frequency response Hz to kHz, ± 1 dB | Wow and flutter, % | Signal-to-noise ratio, dB* | Fast wind, 1200 ft., sec. | Mic input Z, ohms | Rec. level indicator type | Dimensions, W x D x H, in. | Weight, lbs. | Price | NOTES |
|--------------|----------------------------------|--------------------------|-------------------------|---------------------|--------------|-----------------|------------------------|---------------------|------------------|--------------------------------------|--------------------------|-------------------------------|------------------------------------|-------------------|---------------------------|--|---|---|-------|
| AKAI | GX-210D | B no | 7 | 1 4 3 | Hys | Idler | 30-25k ±3 | 0.08 | 50 | 75 | 0.3V /4.7k | 2 Mtrs. | 14.5 x 8.9 x 14.6 | 33.9 | 459.95 | | | Auto rev.; tape sel.; auto stop; pause. | |
| | GX-600D | B no | 10% | 3 4 3 | Hys | Idler | 30-23k ±3 | 0.07 | 56 | 120 | 0.3V /4.7k | 2 Mtrs. | 17.4 x 9 x 18.7 | 48.4 | 625.00 | | SOS; sound mix; dual mon.; auto stop; pause. | | |
| | GX-600DB | B no | 10% | 3 4 3 | Hys | Idler | 30-23k ±3 | 0.07 | 56 | 120 | 0.3V /4.7k | 2 Mtrs. | 17.4 x 9 x 18.7 | 48.4 | 725.00 | | Same as above plus Dolby. | | |
| | 4000DS | B no | 7 | 3 4 1 | Ind. | | 30-23k ±3 | 0.15 | 50 | 120 | 0.8V /5k | 2 Mtrs. | 15.9 x 7.6 x 12.4 | 25 | 299.95 | | Dual mon.; tape sel.; SOS; SWS; sound mix; auto off; pause. | | |
| | 4000DB | B no | 7 | 3 4 1 | Ind. | | 30-23k ±3 | | 55 | 120 | 0.4mV /4.7k | 2 Mtrs. | 16 x 7.7 x 12.8 | 26.4 | 369.95 | | Same as above plus Dolby. | | |
| | 4400 | B Opt. | 7 | 3 4 1 | Ind. | | 30-23k ±3 | | 50 | 180 | 0.4mV /5k | 2 Mtrs. | 16.3 x 7.6 x 14.3 | 30.1 | 369.95 | | Convert-a-deck cap.; tape sel.; dual mon.; SOS; SWS; sound mix; auto off; pause. | | |
| | 1721W | B no | 7 | 2 4 1 | Ind. | | 30-21k ±3 | 0.14 | 50 | 80 | 0.5mV /100k | 2 Mtrs. | 14.1 x 9.8 x 14.4 | 29 | 314.95 | | Tape sel.; EQ amp.; PA convert.; auto off; pause. | | |
| | GX-400DSS | E no | 10% | 4 4 3 | Servo | Dual caps. | 20-27k ±3 | 0.035 | 55 | 75 | 0.5mV /4.7k | 4 Mtrs. | 18 x 9.5 x 23.2 | 68.7 | 1495.00 | | Quadra-sync dub; air-damp. tension lev.; auto rpt. & rev.; sound mix, tape sel. | | |
| | GX-280DSS 4-chan. 1730DSS | B no no | 7 7 | 4 4 3 4 4 1 | Servo Hys | Direct Idler | 20-25k ±3 30-22k ±3 | 0.1 0.12 0.12 | 55 50 50 | 90 75 75 | 0.5mV /10k 0.4mV /30k | 4 Mtrs. 4 Mtrs. 4 Mtrs. | 17.4 x 10 x 20.2 16.8 x 4 x 9.6 | 49.5 19 | 850.00 419.95 | | Dual mon.; 4-ch. rpt. crt./2-ch. cont. rev. PB; auto off/stop; SOS; sound mix. Auto off; phone jacks; pause. | | |
| CROWN | SX724 | B Opt. | 10% | 3 4 3 | Hys | Belt | 20-25k ±2 | 0.09 | 60 | 45 | 350k | 2 Mtrs. | 19 x 9 x 15 3/4 | 45 | 1095.00 | | Dual mic/line mix.; 5-in. vu mtrs.; also in 1/2 tk. | | |
| | SX-824 | B Opt. | 10% | 3 4 3 | Hys | Belt | 20-25k ±2 | 0.09 | 60 | 45 | 350k | 2 Mtrs. | 19 x 9 x 15 3/4 | 48 | 1495.00 | | Compl. logic; wal. cab.; ctr. opt.; also in 2 tk. | | |
| | CS-824 | E Opt. | 10% | 3 4 3 | Hys | Belt | 40-30k ±2 | 0.06 | 60 | 45 | 350k | 2 Mtrs. | 19 x 9 x 17 1/2 | 52 | 1995.00 | | Built-in rem. rec.; plus-in modules for all func.; mic mod. opt.; Compl. logic. | | |
| | SX-822 | F Opt. | 10% | 3 4 3 | Hys | Belt | 30-30k ±2 | 0.06 | 60 | 45 | 350k | 2 Mtrs. | 19 x 9 x 17 1/2 | 52 | 1995.00 | | Compl. logic; also in 1/2 tk. | | |
| | SX 744 4-chan. CS 844 4-chan. | B Opt. E Opt. | 10% 10% | 3 4 3 3 4 3 | Hys Hys | Belt Belt | 20-25k ±2 40-30k ±2 | 0.09 0.06 | 60 60 | 45 45 | 350k 350k | 4 Mtrs. 4 Mtrs. | 19 x 9 x 21 19 x 9 x 24 1/2 | 51 64 | 1995.00 2995.00 | | 8 mic inputs. Built-in rem. rec.; plug-in modules; trac-sync opt.; bal. misc opt. | | |
| DOKORDER | 7100 4-chan. | B | 7 | 3 4 3 | Hys sync | eddy current | 30-23k ±3 | 0.08 | 58 | 95* | 10k | 2 Mtrs. | 16 1/2 x 6 1/4 x 17 3/4 | 40 3/4 | | *1800 ft.; 4-chan. PB; Solenoid oper.; echo SOS; SWS; tape/source mon. | | | |
| | 7140 4-chan. | B | 7 | 3 4 3 | Hys sync | eddy current | 30-23k ±3 | 0.08 | 55 | 95* | 10k | 4 Mtrs. | 16 1/2 x 6 1/4 x 17 3/4 | 40.7 | | *As above; 4-chan. rec./PB; mult-sync; SOS; echo; 4VU mtrs; tape/source mon., bias swit.; solenoid contl. | | | |
| | 7200 | B | 7 | 4 4 3 | sync | eddy current | 40-24k ±3 | 0.08 | 55 | 95* | 10k | 2 Mtrs. | 16 1/2 x 6 1/4 x 17 3/4 | 40.8 | | *As above; source/tape mon.; auto. cont. PB; tape bias sel. swit.; auto off; echo; SWS; SOS; 2VU mtrs. pause. | | | |
| | 7500 | B | 7 | 6 4 3 | Hys sync | eddy current | 40-24k ±3 | 0.08 | 55 | 95* | 10k | 2 Mtrs. | 16 1/2 x 6 1/4 x 17 3/4 | 41.9 | | *As above; tape/source mon.; tape bias sel.; auto off; pause; echo; SOS; SWS; line/mic mix. | | | |
| | 9200 | B | 7 | 6 4 3 | Hys sync | eddy current | 30-24k ±3 | 0.06 | 58 | 95* | 600, 10k | 2 Mtrs. | 17 x 16 1/2 x 20 | 55 | | *As above; auto. mem.; cont. PB; pause; mic/line mix; echo; SOS; SWS; rem. contl. opt.; built-in demagnetizer. | | | |
| | 1120 | F | 10% | 3 4 3 | sync | eddy current | 30-23k ±3 | 0.04 | 60 | 140* | 600 | 2 Mtrs. | 16 1/2 x 6 1/4 x 17 3/4 | 55 | | *As above; echo; SOS; SWS; bias swit.; lockable pause; tape source mon.; auto off. | | | |
| | 1140-H 4-chan. | F | 10% | 3 3 | sync | eddy current | 30-23k ±3 | 0.04 | 60 | 140* | 600 | 4 Mtrs. | 17 1/2 x 15 1/4 x 20 | | | *As above; tape/source mon.; echo; SOS; SWS; full logic; solenoid contl.; pause; bias sel.; auto tape lift. | | | |

ONKYO gives you 4 new ways to enjoy the sound of the '70's!



Model TX-330
AM/FM Stereo Receiver
Superb stereo with built-in 4 ch. Matrix synthesizer! Has a direct cpld. diff'l amplifier; 2 tape monitors & dubbing; fine FM Muting & Sensitivity; accepts 2 sets of speaker systems. Delivers 21 Watts RMS power per channel @ 8Ω; 0.5% THD.
\$299.95



Model TX-560
AM/FM Stereo Receiver
Distinguished quality in a class by itself! Accepts 3 sets of speaker systems. Has direct cpld. diff'l amplifier; built-in thermal protection; transient killers; 2 tape monitors, dubbing, R/L separable controls. Provides 48 Watts RMS power per chan'l @ 8Ω; 0.2% THD; 1.5μV FM Sensitivity.
\$449.95



Model 8
2-Way Bass Reflex
Speaker System
A first for Onkyo... with tuned port for rich, overall response. 30W (max) power capacity; 8" woofer (ported cap); 2" cone tweeter; 2-Way crossover network. Equally effective with low power. Smartly styled resonance-free cabinet has walnut-grained, vinyl finish.
\$89.95



Model 25A
3-Way "Linear" Suspension
Speaker System
The incomparable sound of our top rated Model 25 in a smartly re-styled, modern cabinet with luxurious walnut-grained finish. Has hearty bass and superb balance; 14" molded woofer; domed radiator mid-range and tweeter; 3-Way crossover network. Handles 60W (max.) power with ideal transient response.
\$249.95

And years from now, these superb Onkyo components will still be *new* — in quality, performance and reliability! That's because Onkyo consistently provides the most advanced design equipment — each including unusually fine quality innovations... years ahead of their time. These latest models are a prime example — offering outstanding performance and distortion-free response at a sensible price. Prove it to yourself and audition Onkyo today. Compare the craftsmanship, the attention to detail, the feel of genuine quality. Look at the specifications and features, and read the experts opinions. Your one logical choice is Onkyo... Artistry in Sound. A full line of receivers, tuners and amplifiers; the revolutionary TS-500 fully automatic 4-Ch. Receiver; and exciting, 2 and 3 Way Scepter speaker systems — for the sound of the 70's!



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Onkyo Sales Section/Mitsubishi International Corp.
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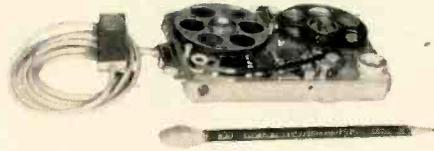
Open-Reel Tape Recorders

SPEEDS BY LETTER CODE:

| | A | B | C | D | E | F | G | H | J |
|-------|---|---|---|---|---|---|---|---|---|
| 15 | | | | | x | x | x | | |
| 7-1/2 | x | x | x | | x | x | x | | |
| 3-3/4 | x | x | x | | x | | x | x | |
| 1-7/8 | x | | x | x | | | x | x | |
| 15/16 | | | x | | | | | | |



Telex/Magnecord 2001



Nagra SNN

| MANUFACTURER | MODEL | Speeds (see letter code) | | | Power ampl. built in ? | Max. reel size, in. | No. of heads | No. of tracks | No. of motors | Drive motor type | Drive to capstan | Frequency response Hz to kHz, ± dB | Wow and flutter, % | Signal-to-noise ratio, dB* | Fast wind, 1200 ft., sec. | Mic input Z, ohms | Recording level indicator type | Dimensions, W x D x H, in. | Weight, lbs. | Price | NOTES |
|-------------------|-------------------|--------------------------|------|--------|------------------------|---------------------|--------------|---------------|---------------|------------------|------------------|---------------------------------------|--------------------|----------------------------|---------------------------|-------------------------|--------------------------------|---|---|-------|-------|
| | | E | F | G | | | | | | | | | | | | | | | | | |
| FERROGRAPH (ELPA) | 7502AHW | E | no | 10 | 3 | 2 | 3 | Ind. | Idler | 30-20k ±2 | 0.08 | 55 | 60 | 10k | 2 Mtrs. | 20 1/4 x 10 x 17 1/2 | 55 | 1025.00 | Dolby "B" opt, \$125.00; pwr. amps & spkrs. opt. \$50.00 | | |
| | 7504AW | A | no | 10 | 3 | 4 | 3 | Ind. | Idler | 30-20k ±2 | 0.08 | 55 | 60 | 10k | 2 Mtrs. | 20 1/4 x 10 x 17 1/2 | 55 | 1025.00 | Same options as above. | | |
| JVC | 1555 | B | no | 7 | 4 | 4 | 3 | Hys | | 30-22k ±3 | 0.12 | 52 | 80 | 600 | 2 Mtrs. | 17 1/2 x 16 1/2 x 7 1/4 | 34 | 499.95 | Auto reverse; mixer; solenoid oper.; low noise tape swit. | | |
| | 1553 | B | no | 7 | 3 | 4 | 3 | Hys | | 20-24k ±3 | 0.09 | 55 | 80 | 600 | 2 Mtrs. | 17 1/2 x 16 1/2 x 7 1/4 | 33 | 499.95 | Front panel adj. bias; built-in test osc.; remote contrl. | | |
| | 1406 4-chan. | B | no | 7 | 3 | 4 | 1 | Ind. | | 20-20k | 0.09 | 52 | 160 | 10k | 4 Mtrs. | 7 1/2 x 16 x 13 1/2 | 22 | 429.95 | | | |
| | 1696 | B | no | 7 | 3 | 4 | 1 | Ind. | | 20-20k ±3 | 0.13 | 54 | 80 | 2 Mtrs. | 12 x 15 x 7 | 19 | 249.95 | SOS, SWS. | | | |
| NAGRA | SH Scientific | G | no | 7 | 4 | 3 | 1 | DC Servo | Dir.* | 2.5-35k ±2 | 0.02 | 62 | 120 | 100k | 2 ndl. Mtrs. | 12.6 x 8.8 x 4.4 | 14 | 3859.00 | *Ext. of motor shaft; 2 tks dir. rec.; 1 tk FM; d.c.-4kHz 1 rig timing. | | |
| | IV-SL Stereo | E | no | 7 | 4 | 3 | 1 | DC Servo | Dir.* | 25-20k ±2 | 0.02 | 72 | 120 | 50 | 2 ndl. Mtrs. | 12.6 x 8.6 x 4.4 | 14 | 3440.00 | *As above; 2 tks dir. rec.; 1 tk FM; d.c.-25k; motion pix & TV code sync capable. | | |
| | 4.2L Sync | E | no | 7 | 4 | 1** | 1 | DC Servo | Dir.* | 30-20k ±2 | 0.02 | 72 | 120 | *** | 1 Mtrs. | 12.6 x 8.8 x 4.4 | 14 | 2487.00 (base) | *As above; **plus pilot ***depends on preamp, full tk w/neo-pilot film sync track. | | |
| | SNN Mini | H | no | 2 1/2 | 3 | 4 | 1 | DC Servo | Dir.* | 80-15k ±2 | 0.1 | 60 | 45** | 1 Mtrs. | 5.8 x 4 x 1.02 | 1.2 | 1584.00 | *As above; **525 ft.; film sync capable; records 150 mil tape on open reel. | | | |
| PIONEER | RT-1050 | F | no | 10 1/2 | 3 | 2 | 3 | Hys sync | Belt | 30-22k ±3 | 0.04 | 57 | 90 | 20k | 2 Mtrs. | 18 x 9 1/2 x 18 | 49 | 699.95 | Opt. 4-tk plug-in hds.; 1/2-tk rec./PB; 4-step EQ; peak ind; mtr. sel. 3-step bias select. | | |
| | RT-1020/H | F | no | 10 1/2 | 3 | 4 | 3 | Hys sync | Belt | 30-22k ±3 | 0.04 | 55 | 90 | 20k | 2 Mtrs. | 17 1/4 x 9 x 17 | 46 1/4 | 649.95 | 3-step EQ; 2-step bias; 4-ch. PB; mic/line input contrl.; output lev. contrl.; lockable pause. | | |
| | RT-1020/L 4-chan. | B | no | 10 1/2 | 3 | 4 | 3 | Hys sync | Belt | 40-20k ±3 | 0.08 | 55 | 70 | 20k | 2 Mtrs. | 17 x 9 x 16 | 46 | 649.95 | 4-ch. PB; SOS; rec bias seq. sel.; mic/line input contrl.; output lev. contrl.; lockable pause. | | |
| | RT-1011/L | B | no | 10 1/2 | 3 | 4 | 3 | Hys sync | Belt | 40-20k ±3 | 0.08 | 55 | 90 | 20k | 2 Mtrs. | 17 x 9 x 17 | 41 | 599.95 | Rec. bias & EQ sel.; mic/line input contrl.; output lev. contrl.; lockable pause. | | |
| RADIO SHACK | 999B | A | no | 7 | 3 | 4 | 1 | Ind. | Belt | 40-20k | 0.2 | 47 | 160 | 10k | 2 Mtrs. | 13 1/4 x 7 1/2 x 16 | 20 | 239.95 | | | |
| | 494 4-chan. | A | no | 7 | 3 | 4 | 1 | Ind. | Belt | 50-18k | 0.13 | 48 | 150 | 10k | 4 Mtrs. | 14 1/4 x 6 1/2 x 16 | 27 | 329.95 | | | |
| REVOX | A77 | B; F | Opt. | 10 | 3 | 2/4 | 3 | Servo | Direct | 30-20k +2 -3 | 0.06 | 66 | 60 | 50; 600; 100k | 2 Mtrs. | 17 x 14.6 x 7.3 | 34 | 899.00 | | | |
| | A77D | B | no | 10 | 3 | 2/4 | 3 | Servo | Direct | 30-20k +2 -3 | 0.08 | 70 | 60 | 50; 600; 100k | 2 Mtrs. | 17 x 14.6 x 7.3 | 34 | 1099.00 | | | |
| | A700 | E | no | 10 | 3 | 2/4 | 3 | Servo | Direct | 30-22k +2 -3 | 0.06 | 66 | 60 | 50; 600; 100k | 2 Mtrs. lts. | 19.7 x 18.9 x 7.1 | 54 | 1695.00 | | | |

SPEEDS BY LETTER CODE:

| | A | B | C | D | E | F | G | H | J |
|-------|---|---|---|---|---|---|---|---|---|
| 15 | | | | | x | x | x | | |
| 7-1/2 | x | x | x | | x | x | x | | |
| 3-3/4 | x | x | x | | x | | x | x | |
| 1-7/8 | x | | x | x | | | x | x | |
| 15/16 | | x | | | | | | | |



Realistic 999B



Revox A-700



Sony TC-756



Tandberg 3600XD

| MANUFACTURER | MODEL | Speeds (see letter code) | Power amp(s) built in ? | Max. reel size, in. | No. of heads | No. of tracks | No. of motors | Drive motor type | Drive to capstan | Frequency response Hz to kHz, ± dB | Wow and flutter, % | Signal-to-noise ratio, dB | Fast wind, 1200 ft., sec. | Mic. input Z, ohms | Rec'ing level indicator type | Dimensions W x D x H, in. | Weight, lbs. | Price | NOTES |
|---------------------|---------------------|--------------------------|-------------------------|---------------------|--------------|---------------|---------------|------------------|------------------|------------------------------------|--------------------|---------------------------|---------------------------|--------------------|------------------------------|---------------------------|--------------|-----------------------------------|---|
| SANSUI | QD-5500 4-chan | B | no | 7 | 3 | 4 | 3 | * | Belt | 20-20k ±3 | 0.07 | 60 | 90 | 50k | 4 Mtrs. | 16% x 10% x 21% | 53.4 | 799.95 | *1 hys, 2 ind. |
| SHARP | RS-730 | A | yes | 7 | 2 | 4 | 1 | Ind. | Idler | 40-15k ±3 | 0.18 | 45 | 120 | 200 | 2 Mtrs. | 15% x 10% x 15% | 34 | 249.95 | SWS; auto off. |
| SONY | TC-756 | F | no | 10 1/2 | 3 | 4 | 3 | Ind. | A.C. Servo | 30-30k ±3 | 0.03 | 59 | 75 | lo | 2 Mtrs. | 17% x 8% x 17% | 52.9 | 899.95 | |
| | TC-558 | B | no | 7 | 6 | 4 | 3 | eddy current | A.C. Servo | 30-25k ±3 | 0.05 | 56 | 60 | lo | 2 Mtrs. | 17% x 13% x 6% | 41.5 | 769.95 | Auto rev.; full logic; F & F hds.; EQ & bias swits. |
| | TC-640B | B | no | 7 | 3 | 4 | 3 | outer rotor | Hys sync | 30-20k ±3 | 0.07 | 55 | 90 | lo | 2 Mtrs. | 14% x 9% x 15 1/2% | 35.5 | 449.95 | SOS; echo; EQ swit. |
| | TC-580 | A | no | 7 | 4 | 4 | 3 | reel - drive | A.C. Servo | 30-25k ±3 | 0.06 | 56 | 60 | lo | 2 Mtrs. | 17% x 18% x 8% | 37.4 | 599.95 | Auto rev.(6-head func.); EQ swit. |
| | TC-458 | B | no | 7 | 4 | 4 | 1 | | A.C. Servo | 30-25k ±3 | 0.06 | 56 | 150 | lo | 2 Mtrs. | 15% x 8 16% | 32 | 499.95 | Auto rev.; EQ swit. |
| | TC-388-4 4-chan. | B | no | 7 | 3 | 4 | 1 | | Ind. | 20-25k ±3 | 0.09 | 55 | | lo | 4 Mtrs. | 16% x 8% x 19% | 34.1 | 679.95 | 4-ch. play & rec; pan pots; mic atten.; eQ swit. |
| | TC-377 | A | no | 7 | 3 | 4 | 1 | | Ind. | 30-25k ±3 | 0.09 | 55 | 120 | lo | 2 Mtrs. | 16% x 15% x 8 1/4 | 22 | 399.95 | F & F heads; mic atten.; EQ swit. |
| | TC-353D | A | no | 7 | 3 | 4 | 1 | | Ind. | 30-25k ±3 | 0.12 | 55 | 150 | lo | 2 Mtrs. | 15% x 13% x 7% | 16.5 | 319.95 | Mic/line mix; auto off; EQ swit. |
| | TC-280 | A | no | 7 | 2 | 4 | 1 | | A.C. Ind. | 40-21k ±3 | 0.1 | 55 | 150 | lo | 2 Mtrs. | 15% x 14% x 7% | 18.8 | 249.95 | F & F head; EQ swit.; Auto off. |
| TC-277-4 4-chan. | A | no | 7 | 2 | 4 | 1 | | A.C. Ind. | 50-18k ±3 | 0.12 | 55 | 150 | lo | 4 Mtrs. | 15% x 7% x 15 1/2 | 23.1 | 469.95 | 4-ch. PB/rec.; EQ sit.; auto off. | |

Open-Reel Tape Recorders

SPEEDS BY LETTER CODE:

| | A | B | C | D | E | F | G | H | J |
|-------|---|---|---|---|---|---|---|---|---|
| 15 | | | | | x | x | x | | |
| 7-1/2 | x | x | x | | x | x | x | | |
| 3:3/4 | x | x | x | | x | x | x | x | |
| 1-7/8 | x | | x | x | | | x | x | |
| 15/16 | | x | | | | | | | |



Technics RS-1030US



Telex-Viking 433



Toshiba PR-884

| MANUFACTURER | MODEL | Speeds (see letter code) | | | Power amp(s) built in ? | Max. reel size in. | No. of heads | No. of tracks | No. of motors | Drive motor type | Drive to capstan | Frequency response Hz to kHz ± 1 dB | Wow and flutter, % | Signal-to-noise ratio, dB* | Fast wind, 1200 ft., sec. | Mic. input Z, ohms | Rec'g level indicator type | Dimensions W x D x H, in. | Weight, lbs. | Price | NOTES |
|--------------|---------------|--------------------------|----|--------|-------------------------|--------------------|--------------|---------------|-------------------|------------------|------------------|-------------------------------------|--------------------|----------------------------|---------------------------|-------------------------|----------------------------|---------------------------|--|-------|-------|
| | | A | B | C | | | | | | | | | | | | | | | | | |
| TANBERG | 9200XD | A | no | 7 | 3 | 4 | 3 | Hys | Speed tran. wheel | 30-22k ±2 | 0.06 | 73 | 55 | 50-600 | 2 Mtrs. | 15 3/4 x 7 x 16 1/2 | 34 | 949.00D | 9100X same w/o Dolby, \$799.00. | | |
| | 3600XD | A | no | 7 | 3 | 4 | 1 | Ind. | Speed tran. wheel | 30-22k ±2 | 0.07 | 73 | 105 | 50-600 | 2 Mtrs. | 15 3/4 x 7 x 16 1/2 | 20 | 599.50D | | | |
| | 3300X | A | no | 7 | 3 | 4 | 1 | Ind. | Speed tran. wheel | 40-22k ±2 | 0.07 | 64 | 105 | 50-600 | 2 Mtrs. | 15 3/4 x 7 x 16 1/2 | 20.2 | 469.90 | | | |
| TEAC | 3340S | F | no | 10 1/2 | 3 | 4 | 3 | Hys | fly wheel | 30-26k ±3 | 0.04 | 63 | 100 | 600 | 4 Mtrs. | 17 1/4 x 20 1/2 x 8 3/8 | 50 | 1149.50 | Simul sync; logic crty; rem. contl.; EQ & bias swits. | | |
| | 3300S | B | no | 10 1/2 | 3 | 2 | 3 | Hys | fly wheel | 40-24k ±3 | 0.06 | 65 | 100 | 600 | 2 Mtrs. | 17 1/4 x 17 1/4 x 8 3/8 | 44 | 699.50 | Logic crty.; rem. contl.; punch-in rec.; EQ & Bias swits. | | |
| | 4300 | B | no | 7 | 4 | 2 | 3 | Hys | fly wheel | 40-24k ±3 | 0.06 | 65 | 100 | 600 | 2 Mtrs. | 17 1/4 x 19 1/4 x 8 1/2 | 50 | 679.50 | Cont. auto rev.; switab EQ & bias; hi & norm. mtr. swit. | | |
| | 2300S | B | no | 7 | 3 | 2 | 3 | Hys | fly wheel | 40-24k ±3 | 0.08 | 65 | 90 | 600 | 2 Mtrs. | 18 x 15 3/4 x 8 3/4 | 39 | 499.50 | Adj. bias & EQ; mic/line mix; punch-in rec.; logic crty. | | |
| TECHNICS | RS-1030US | F | no | 10 | 4 | 2 1/4 | 3 | Hys | Belt | 25-26k ±3 | 0.08 | 58 | | 600-50k 5k-20k | 2 Mtrs. | 16 1/2 x 11 x 23 1/4 | 70.4 | 999.95 | 1/2 tk. rec/PB; 4 tk PN, HPF hds.; solenoid contl.; logic; opt. rem. tape sel.; mic mix. | | |
| TELEX | 2001 4-chan. | A | no | | | 4 | 3 | Hys sync | Belt | 25-18k ±2 | 0.18 | 48 | 80 | hi z | 2 Mtrs. | 19 1/2 x 14 1/2 x 8 | 48 | 839.95 | Inc. wal. base; die-cast main frame; solenoid contl., model 2002 w/half tk heads. | | |
| | 433 | C | no | 7 | 3 | 4 | 3 | Ind. | Belt | 40-18k ±3 | 0.2 | 54 | 70 | hi z | 2 Mtrs. | 15 3/4 x 8 3/4 x 14 3/4 | 30 | 414.70 | Incl. wal. base; rec/PB mono & stereo; SOS; echo. | | |
| | 423 | C | no | 7 | 2 | 4 | 3 | Ind. | Belt | 50-15k ±3 | 0.2 | 50 | 70 | hi z | 2 Mtrs. | 15 3/4 x 8 3/4 x 14 3/4 | 29 | 309.70 | Inc. wal. base. | | |
| TOSHIBA | PT884 4-chan. | A | no | | | 4 | 1 | Hys | Belt | 50-20k | 0.09 | 56 | 180 | 10k | 4 Mtrs. | 15 x 8 3/4 x 16 1/4 | 33 | 499.95 | Tape bias contl.; SOS; echo. | | |
| | PT862D | A | no | | | 4 | 1 | Hys | Belt | 20-25k | 0.09 | 56 | 180 | 10k | 2 Mtrs. | 15 3/4 x 7 3/4 x 14 | 26 1/2 | 269.95 | Same as above plus auto off. | | |

Cassette & Cartridge Recorders



BSR McDonald TD8QW

Advent 201

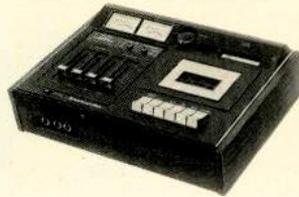
Akai GCX-75D

| MANUFACTURER | MODEL | If cassette, X; If cartridge, number of tracks | Channels - 1, 2, or 4? | Frequency Response, Hz, ± 7 dB | MWow & Flutter, % | S/N, dB | CrO ₂ Tape bias/equal.? | LW Tape bias/equal.? | If stereo, crosstalk, dB | Does Unit Record? | Power Amp Built In? | Rated power Output, W rms? | Dimensions, WxDxH, inches? | Weight, lbs.? | Price? | NOTES "D" after the price indicates Dolbyized. |
|----------------|-----------|--|------------------------|------------------------------------|-------------------|---------|------------------------------------|----------------------|--------------------------|-------------------|---------------------|----------------------------|----------------------------|---------------|--------|--|
| ADVENT | 201 | X | 2 | 35-15k ± 2 | 0.15 | 60 | yes | yes | | yes | no | 13 3/4 x 9 1/4 x 4 1/2 | 18 | 299.95D | | Auto off; peak rdg. mtr. |
| | 202 | X | 2 | 35-15k ± 2 | 0.2 | 60 | yes | yes | | no | * | 9 x 10 1/2 x 4 | 10 | 130.00D | | *Avail. w./headphone amp., 202HP, \$150.00, auto off. |
| AKAI | CR-80 DSS | | 4 | 30-16k ± 3 | 0.25 | 47 | | | | yes | no | 19.4 x 11.2 x 5.5 | 24 | 329.95 | | Rec. & PB in 2 & 4-chan; FF; auto stop/cont. play; 2/4 chan sel. |
| | CR-81D | | 2 | 50-16k ± 3 | 0.25 | 47 | | | | yes | no | 13.6 x 10.3 x 5.4 | 17.6 | 209.95 | | auto stop/cont. play; FF; auto and man. prog. sel. |
| | GXR-82D | | 2 | 40-17k ± 3 | 0.25 | 47 | | 45 | | yes | no | 13.6 x 10.5 x 5.3 | 18 | 249.95 | | pause conti.; 2 VU mtrs.; auto stop/cont. play; 2 vol. contis.; L & R mic jacks; auto & man. prog. sel. |
| | GXC-75D | X | 2 | 30-16k ± 3 | 0.1 | 50 | | | | yes | no | 18.1 x 11.9 x 5.8 | 17.6 | 429.95D | | ADRSys.; elec. rev. mode sel. for 1-way cyc. cont. PB; auto and man. rev. rec. & PB; color ind. panel; OLS swit.; mem. wind. |
| | GXC-65D | X | 2 | 30-18k ± 3 | 0.12 | 50 | | | | yes | no | 16.6 x 11.6 x 7.2 | 20.2 | 349.95D | | ADRS; GX hds.; auto stop/cont. play; auto rev. rec./PB. |
| | GXC-46D | X | 2 | 30-18k ± 3 | 0.12 | 50 | | | | yes | no | 16.4 x 12 x 5.3 | 15.8 | 319.95D | | ADRS; OLS swit.; tape sel.; auto stop & tape end ind.; pause w/lock. |
| | GXC-38D | X | 2 | 30-18k ± 3 | 0.12 | 58 | | | | yes | no | 16.1 x 8.7 x 4.4 | 11 | 269.95D | | Auto stop; OLS swit. |
| | CS-33D | X | 2 | 40-15k ± 3 | 0.15 | 54 | | | | yes | no | 16.1 x 8.7 x 5 | 10.6 | 209.95D | | Tape sel.; auto stop. |
| BRS McDONALD | TD8QW | | 4 | 50-10k ± 3 | 0.3 | 38 | no | no | 35 | no | no | 10 1/2 x 8 1/4 x 3 3/8 | 7 3/4 | 99.95 | | |
| | TD8SW | | 2 | 50-10k ± 3 | 0.3 | 40 | no | no | 35 | no | no | 8 1/4 x 9 3/4 x 3 3/8 | 6 3/4 | 59.95 | | |
| | TD8S | | 2 | 50-10k ± 3 | 0.3 | 40 | no | no | 35 | no | no | 7 3/4 x 10 1/2 x 3 3/8 | 6 3/4 | 49.95 | | |
| BANG & OLUFSEN | 2200 | X | 2 | 30-15k DIN 45511 | 0.12 | 62 | yes | yes | | yes | no | 19.7 x 9 x 3 | 13 | 450.00 | | Mem.; auto off; peak rdg. mtrs.; high dens. ferrite hds. |
| CONCORD | CD-1000 | X | 2 | 30-16k ± 3 | 0.09 | 58 | yes | yes | | yes | no | 16 1/2 x 12 3/4 x 5 1/2 | 22 | | | Dolby; front ldg.; solenoid-assit. piano keys; ferrite hds.; auto stop; mem. rev. ctr.; 2 VU mtrs. |
| DOKORDER | MK-60 | | 2 | 30-18k | **0.1 | 60* | yes | | | yes | | 16 x 11 3/4 x 4 | 14.3 | | | *With Dolby; **with CrO ₂ ; mic/line mix; auto off; 2 VU mtrs.; lockable pause; tape cntr.; phone jack |
| | MK-50 | | 2 | 30-18k | **0.1 | 60* | yes | | | yes | | 16 x 11 3/4 x 4 | 10 | | | *As above; **as above; auto off; tape sel. swit.; 2 VU mtrs.; lockable pause; tape cntr. |
| DUAL | 901 | X | 2 | 20-14k* | 0.07 | -50** | yes | | -60 | yes | no | 16.5 x 4.5 x 11.2 | 15 | 450.00D | | *20-15.5k w/CrO ₂ ; **59 w/Dolby; auto rev.; cont. rpt.; bi-dir. rec.; ALC; built-in osc. |
| GLENBURN | SP-12 | | 2 | 50-12k | 0.25 | | no | no | | no | no | 4 x 8 x 10 | 7 | 49.95 | | |
| HARMAN KARDON | HK1000 | X | 2 | 30-15k ± 1.5 | 0.13 | 58 | yes | yes | 60 | yes | no | 15 1/4 x 10 1/4 x 4 1/4 | 12.5 | 349.95D | | Auto off; mem.; const. rec. drive. |

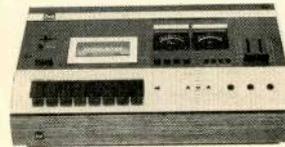
Cassette & Cartridge Recorders



Concord



Dokorder MK-50



Dual 901

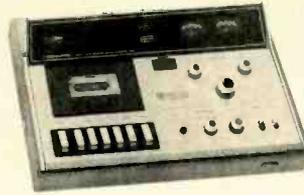


Harman-Kardon HK-1000

| MANUFACTURER | MODEL | If cassette: X, if cartridge, number of tracks | | Channels - 1, 2, or 4? | Frequency Response, Hz. ± 1 dB | Wow & Flutter, Hz. | S/N, dB | C-0? Tape bias/equal? | LW Tape bias/equal? | If stereo, crossstalk, dB | Does Unit Record? | Power Amp Built In? | Rated power Output, W rms? | Dimensions, WxDxH, inches? | Weight, lbs.? | Price? | NOTES "D" after the price indicates Dolbyized. |
|-----------------|-----------------|--|-----|------------------------|--------------------------------|--------------------|---------|-----------------------|---------------------|---------------------------|-------------------|---------------------|----------------------------|----------------------------|---------------|--|---|
| | | | | | | | | | | | | | | | | | |
| HEATH | AD-1530 | X | 2 | | 40-14k ±3 | 0.25 | 48 | yes | yes | | yes | no | | 14 x 9½ x 5½ | 14 | 249.95K | Dolby; mic inputs; dual mtrs. |
| | AD-110 | X | 2 | | 30-12k ±3 | 0.25 | 45 | no | yes | | yes | no | | 13½ x 11 x 3½ | 7½ | 139.95K | Dual mtrs.; mic inputs. |
| | GD-28 | 8 | 2 | | 50-10k ±6 | 0.3 | 40 | | | | no | no | | 10½ x 8½ x 4½ | 6½ | 59.95K | Play only. |
| HITACHI | TRQ-252 | X | | | 40-12k | 0.3 | 46 | | | | yes | | | 7½ x 10½ x 3½ | 6½ | 119.95 | 2 VU mtrs.; tape cntr.; FF; pause; auto stop. |
| | TRQ-262 | X | | | 20-18k | 0.15 | 50 | | | | yes | | | 13½ x 9½ x 3½ | | 139.95 | same as above. |
| | TRQ-2020 | X | | | 40-16k | 0.15 | 45 | | | | yes | | | 15 x 9½ x 3½ | 9½ | 149.95 | same as above |
| | TRQ-2040 | X | | | 20-16k | 0.12 | 50 | | | | yes | | | 16 x 10½ x 3½ | 11.9 | 229.95D | Same as above plus tape sel. swit. & Dolby; slide vol. contl.; remov. head cover; mem. rewind. |
| | D-128 | 8 | | | 50-10k | 0.3 | 38 | | | | no | | | 8½ x 10½ x 4½ | 7 | 49.95 | Channel ind. and sel.; wood cab. |
| | TPQ-124 | 8 | | | 40-13k | 0.18 | 55 | | | | no | | | 11¼ x 10½ x 3½ | 11 | 79.95 | same as above plus eject button. |
| | TPQ-144 4-chan. | 8 | 2/4 | | 40-12k | 0.15 | 55 | | | | no | | | 11¼ x 10 x 3½ | 11 | 119.95 | same as above plus program & chan. ind.; walnut cab. |
| | TRQ-134 | 8 | 4 | | 40-12k | 0.15 | 53 | | | | yes | | | 15½ x 11 x 4½ | 12.1 | 149.95 | Same as above plus FF; auto stop; dual VU mtrs; slide val. contl.; phone jack; 2 mic jacks; wal. cab. |
| TRQ-154 4-chan. | 8 | 4 | | 40-12k | 0.2 | 55 | | | | yes | | | 16 x 11 x 4½ | 12 | 199.95 | Auto 2/4-chan. swit.; auto stop; FF; 3-digit tape timer; pause; 2 VU mtrs. | |
| JVC | 1656 | X | 2 | | 30-16k | 0.24 | 55 | yes | yes | 60 | yes | no | | 4¾ x 15½ x 9½ | 8.2 | 229.95 | ANRS; auto stop. |
| | 1245 | 8 | 2 | | 30-15k | 0.19 | 58 | no | no | 50 | yes | no | | 4¾ x 13½ x 9½ | 11 | 249.95 | ANRS; FF; pause; auto eject. |
| | 1669 | X | 2 | | 30-16k | 0.13 | 60 | yes | yes | | yes | no | | 5½ x 16½ x 12 | 14 | 499.95 | Solenoid oper.; dual drive; ferrite hds. |
| | 1667 | X | 2 | | 30-16k | 0.15 | 60 | yes | yes | | yes | no | | 5½ x 17 x 10½ | 10 | 249.95 | ANRS. |
| | 1668 | X | 2 | | 30-16k ±3 | 0.13 | 60 | yes | yes | | yes | no | | 5½ x 17 x 5 | 12.8 | 329.95 | ANRS; Ferrite hds.; mem. ctr. |
| | 1240 | 8 | 2 | | 30-15k | 0.19 | 52 | no | no | 50 | yes | no | | 4¾ x 13½ x 9 | 10.8 | 169.95 | FF; pause; auto eject. |
| KENWOOD | KX-910 | X | 2 | | 30-16k | 0.11 | 58 | * | * | | yes | no | | 16¼ x 10 x 5 | 11.7 | 299.95D | Tape run ind.; ferrite hd.; cueing; auto off; peak ID; auto lev.; *auto equal.; mem rew.; mic/line mix. |
| | KX-710 | X | 2 | | 30-16k | 0.13 | 58 | * | * | | yes | no | | 16¼ x 10 x 5 | 11.7 | 249.95D | *Auto equal.; auto off; peak ID; auto lev.; mem. rew.; ferrite hd.; cueing.; tape run ind. |
| LAFAYETTE | RKD-50 | X | 2 | | 30-12k ±3 | 0.12 | 59 | yes | yes | 40 | yes | * | | 14¾ x 10 x 3½ | 14 | 259.95 | *Headphone amp only; mem. rew.; 4-pole hys. motor; 2 mtrs. |
| | RKD-750 | X | 2 | | 50-13k ±5 | 0.25 | 55 | yes | no | 30 | yes | * | | 12½ x 9 x 4 | 8 | 159.95 | *Same as above; 2 mtrs. |
| | RKD-985 | 8 | 4 | | 30-11k | 0.25 | 55 | | | 30 | yes | * | | 13 x 8½ x 5½ | 10½ | 199.95 | *Same as above; 2 mtrs. |
| | RKD-990 | 8 | 4 | | 30-12k | 0.25 | 45 | | | 45 | yes | no | | 12 x 9½ x 3½ | 13.2 | 159.95 | 2 mtrs; mic/aux mix.; stop/play swit; rpt./cont. tk mode sel. |



Nakamichi 1000



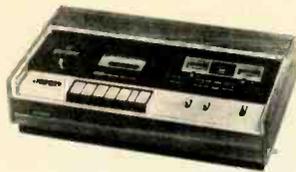
Realistic SCT-7



Sanyo RD-4350

| MANUFACTURER | MODEL | If cassette, X; if cartridge, number of tracks | Channels - 1, 2, or 4? | Frequency Response, Hz. ± 7 dB | Wow & Flutter, Hz. | S/N, dB | Cr0? Tape bias/equal.? | LN Tape bias/equal.? | If stereo, crosstalk, dB | Does Unit Record? | Power Amp Built In? | Rated power Output, W rms? | Dimensions, HxDxW, inches? | Weight, lbs.? | Price? | NOTES "D" after price indicates Dolbyized |
|--------------|----------|--|------------------------|--------------------------------|--------------------|---------|------------------------|----------------------|--------------------------|-------------------|---------------------|----------------------------|----------------------------|---------------|----------|---|
| | | | | | | | | | | | | | | | | |
| NAKAMICHI | 1000 | X | 2 | 35-20k ±3 | 0.1 DIN | 60 | yes | yes | 60 | yes | no | | 20 1/2 x 8 1/2 x 11 1/2 | 39 | 1100.00D | 3-head; Dolby & DNL; dbl. capst. rec. hd. az. alignmt. beacon; IC logic contl.; 2 d.c. mtrs. |
| | 700 | X | 2 | 35-20k ±3 | 0.1 DIN | 60 | yes | yes | 60 | yes | no | | 20 1/2 x 5 x 10 1/2 | 28 | 690.00D | 3-head; Dolby; dbl. capst.; rec. hd. az. alignmt. beacon; IC logic contl.; 2 d.c. mtrs. |
| | 500 | X | 2 | 40-17k ±3 | 0.08 wrms | 58 | yes | yes | 60 | yes | no | | 15 x 10 x 4 1/2 | 15 1/2 | 399.00D | Focused-gap hd.; full rng. 45 dB pk. mtrs.; d.c. servo mtr.; pk. limiter. |
| | 550 | X | 2 | 40-17k ±3 | 0.08 wrms | 60 | yes | yes | 60 | yes | no | | 12 1/2 x 13 1/2 x 3 1/2 | 11 1/2 | 499.00D | Focused-gap hd.; full rng. 45 dB pk. mtrs.; 3-way pwr. supply (a.c. batt., car); spec. mic amp w/130 dB dyn. range. |
| OLSON | RA-959 | X | 2 | 50-13k | 0.25 | 48 | no | no | 28 | yes | no | | 8 1/4 x 16 1/2 x 5 1/2 | 8 | 69.99 | |
| PIONEER | CT-F7171 | X | | 40-13k ±3 | 0.1 | 48* | yes | yes | | yes | no | | 17 x 12 1/2 x 5 1/2 | 18 1/2 | 369.95D | *58 w/Dolby; auto stop; peak lev. limit; peak LED ind.; rec. & PB lev. contls.; front load; VU mtrs. |
| | CT-5151 | X | | 63-13k ±3 | 0.12 | 48* | yes | yes | | yes | no | | 15 1/2 x 9 1/2 x 3 1/2 | 10 1/2 | 269.95D | Auto stop; peak lev. limit; peak LED ind.; rec. & PB lev. contl.; dual VU mtrs.; *58 w/Dolby. |
| | CT-4141A | X | | 63-12k ±3 | 0.13 | 48* | yes | yes | | yes | no | | 15 1/2 x 9 1/2 x 3 1/2 | 10 1/2 | 239.95D | Auto stop; tape run ind.; rec. & PB slide lev. contls.; dual VU mtrs.; *58 w/Dolby. |
| | CT-3131A | X | | 63-12k ±3 | 0.13 | 47 | yes | yes | | yes | no | | 15 1/2 x 9 1/2 x 3 1/2 | 9 3/4 | 179.95 | Noise filt.; ref. lev. mtrks.; pause contl.; dual VU mtrs. |
| RADIO SHACK | SCT-7 | X | 2 | 30-15k ±3 | 0.9 | 52 | yes | yes | | yes | no | | 5 1/2 x 16 1/2 x 11 1/2 | | 319.950D | Auto stop. |
| | SCT-6C | X | 2 | 30-15k ±2 | 0.14 | 56 | yes | yes | | yes | no | | 16 1/2 x 10 1/2 x 4 1/2 | | 249.95D | Auto stop. |
| | SCT-5C | X | 2 | 50-12k ±2 | 0.2 | | yes | yes | | yes | no | | 13 1/2 x 9 1/2 x 3 1/2 | | 159.95 | Auto stop. |
| | TR-801 | 8 | 2 | 50-12k | 0.2 | | no | no | | yes | no | | 4 3/4 x 16 1/2 x 10 | | 149.95 | |
| | TR-882 | 8 | 2 | 50-10k | 0.2 | 35 | no | no | | yes | no | | 3 1/2 x 13 1/2 x 8 1/2 | | 99.95 | |
| | TR-888 | 8 | 2 | 100-8k | 0.3 | 40 | no | no | | no | no | | 9 x 5 1/2 x 11 | | 99.95 | Plays 3 cartridges. |
| SANSUI | SC-737 | X | 2 | 35-14k ±3* | 0.11 | 50 | yes | | 38 | yes | no | | 18 1/2 x 11 1/2 x 4 1/2 | 17.8 | 299.95D | *W./Cr0? |
| SANYO | RD4250 | X | 2 | 40-15k ±3 | 0.2 | 50 | yes | | | yes | no | | 17 x 9 x 5 | 12 | | Dolby. |
| | RD4300 | X | 2 | 40-15k ±3 | 0.15 | 50 | | | | yes | no | | 17 x 9 x 5 | 12 | | Dolby. |
| | RD4350 | X | 2 | 40-15k ±3 | 0.15 | 50 | | | | yes | no | | 17 x 9 x 5 | 12 | | Dolby. |
| | RD8200 | 8 | 2 | | 0.2 | 45 | | | | no | no | | 13 x 12 1/2 x 4 1/2 | 10 1/2 | | |
| SHARP | RT-480 | X | 2 | 45-15k ±3 | 0.15 | 56 | yes | yes | 34 | yes | no | | 19 1/2 x 10 1/4 x 4 1/2 | 13 1/4 | 249.95D | Auto program finder; auto off. |
| | RT-811 | 8 | 2 | 50-10k | 0.25 | 40 | | | 30 | yes | no | | 14 x 9 1/2 x 4 1/2 | 12 | 144.95 | Auto off/eject; pause swit. |

Cassette & Cartridge Recorders



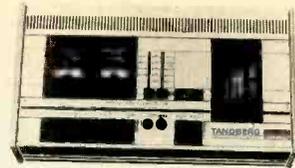
Sharp RT-480



Sony 228



Sony TC-203SD



Tandberg TCD-310

| MANUFACTURER | MODEL | If cassette, # of tracks | Channels - 1, 2, or 4? | Frequency Response, Hz. ± 7 dB | Wow & Flutter, % | S/N, dB | CrO: Tape bias/ equal. ? | LN Tape bias/ equal. ? | If stereo, crosstalk, dB | Does Unit Record? | Power Amp Built In? | Rated power Output, W rms? | Dimensions, WxDxH, inches? | Weight, lbs. ? | Price? | NOTES "D" after price indicates Dolbyized |
|--------------|--------------------------|--------------------------|------------------------|--------------------------------|------------------|----------|--------------------------|------------------------|--------------------------|-------------------|---------------------|----------------------------|---|----------------|---|--|
| SONY | TC-177SD | X | 2 | 30-17k ±3 | 0.07 | 59 | yes | yes | yes | no | | 17 1/4 x 12 1/2 x 6 1/2 | 22 | 699.95D | 3 F&F hds., 3-pos. EQ & bias; mic/line mix; tape src. mon.; closed loop dual capstan; line-out vol. contl. | |
| | TC-203SD | X | 2 | 20-17k | 0.08 | 54 | yes | yes | yes | no | | 17 1/4 x 12 1/2 x 6 1/2 | 20.6 | 399.95D | 3 EQ swits.; front load; F&F hds.; peak limiter; mic/line mix. | |
| | TC-137SD | X | 2 | 20-17k | 0.07 | 55 | yes | yes | yes | no | | 16 1/4 x 11 3/4 x 5 1/2 | 15.5 | 399.95D | 3-pos. Eq; F&F hd.; peak limiter; mic/line mix. | |
| | TC-182AV | X | 1 | 60-12k | | 46 | yes | yes | yes | yes | | 13 3/4 x 12 1/4 x 5 1/2 | 13 | 299.95 | Built-in slide sync.; PA, Sonymatic rec. contl. w/defeat swit.; auto total off. | |
| | TC-131SD | X | 2 | 40-15k | 0.22 | 58 | yes | yes | yes | no | | 15 1/4 x 9 x 3 3/4 | 9 | 239.95D | F&F hd.; peak limit.; auto total off. | |
| | TC-129 | X | 2 | 40-14k | 0.22 | 45 | yes | yes | yes | no | | 13 3/4 x 9 1/4 x 4 | 8.6 | 149.95 | F&F hd.; auto off; adj. & remov. dust cover. | |
| | TC-121A | X | 2 | 40-13k | 0.22 | 45 | yes | yes | yes | no | | 13 x 9 3/8 | 7.3 | 129.95 | Peak limiter; Auto off. | |
| | TC-208 | 4 | 2 | 50-10k | 0.25 | 50 | | | | no | no | | 8 3/4 x 9 1/2 x 4 | 7.8 | 89.95 | Prog. sel button; Prog. rpt.; FF Prog. Ind. lamp; auto tk swit. |
| | TC-258 4-chan. TC-228 | 4 A | 4 2 | 40-12k 30-13k | 0.25 0.17 | 50 45 | | | | no yes | no no | | 8 3/4 x 9 1/2 x 4 14 1/4 x 8 3/4 x 4 3/4 | 8.2 11.2 | 119.95 199.95 | Same as above plus 2/4-chan. ind. lamp; switg. Man. rec. lev. contls.; FF; 3-way eject; prog. ind. lamps; VU mtrs.; Prog. sel.; pause w/lock. |
| SUPERSCOPE | CD-302 | X | 2 | 40-10k | 0.2 | 48* | yes | no | yes | no | | 12 1/2 x 8 3/4 x 3 1/4 | 6 | 189.95D | *60 w/Dolby; Auto off; peak limiter; CrO: Swit; Auto rec. lev.; wal. case incl. ill. cassette compartment, in & out Dolly deprocessor | |
| | CD-301 | X | 2 | 40-10k | 0.2 | 48 | yes | no | yes | no | | 12 1/2 x 8 3/4 | 6 | 139.95 | Same as above without Dolby | |
| | TD-48 4-chan. | 8 | 4 | 30-10k | 0.2 | 48 | no | no | no | no | | 4 3/4 x 7 1/4 x 9 3/8 | 6 | 99.95 | FF-rot. 2/4-chan. switg. | |
| | TD-28 | 8 | 2 | 30-10k | 0.2 | | no | no | no | no | | 4 3/4 x 7 1/4 x 9 3/8 | 6 | 74.95 | FF; rpt. | |
| TANDBERG | TCD-310 | X | 2 | 40-13.5k ±2 | 0.15 max. | 63* | yes | yes | 60 | yes | no | 16 1/8 x 9 3/4 x 4 1/4 | 14 1/2 | 499.00D | *w/Dolby. | |
| TEAC | 450 | X | 2 | 30-15k ±3 | 0.07 | 60 | yes | yes | yes | no | | 17 3/4 x 4 3/4 x 10 1/4 | 16 1/2 | 449.50D | Dolby FM copy swit.; built-in mic/line mix; LED for peak lev. readout. | |
| | 360S | X | 2 | 30-15k ±3 | 0.07 | 60 | yes | yes | yes | no | | 17 3/4 x 3 3/4 x 10 1/4 | 16 1/2 | 379.50D | Built-in rec. calib. sig. gen.; mem. rew.; LED peak lev. ind. | |
| | 160 | X | 2 | 30-16k | 0.15 | 58 | yes | yes | yes | no | | 16 1/2 x 4 3/4 x 10 1/4 | 12 1/2 | 259.50D | | |
| TECHNICS | RS676US | X | 2 | 40-13k +2 -4 | 0.08 | 58 | yes | yes | yes | no | | 16 1/2 x 14 3/8 x 5 1/2 | 23 | 459.95D | 5 basic specs guaranteed; front load; Dolby FM calib. & decode; mpx filt.; peak-lev. mtr.; mem. play; Auto. CrO ₂ /Fe O ₃ sel.; Auto off; lockable pause; mie mix; opt. remote. | |
| | RS279US | X | 2 | 20-16k | 0.1 | 59 | yes | yes | yes | no | | 16 1/2 x 13 1/2 x 5 1/4 | | 499.95D | 3 hds.; dir.-drive motor; mem. rew.; Auto stop; pause; remote opt. | |
| | RS610US | X | 2 | 50-12k ±3 | 0.15 | 57 | yes | yes | yes | no | | 13 3/4 x 11 1/2 x 4 3/4 | 13 3/4 | 249.95D | 5 basic specs guaranteed; vertical style; all front panel contls, auto stop; lockable pause. | |
| | RS263US | X | 2 | 50-10k ±3 | 0.2 | 54 | yes | yes | yes | no | | 14 x 9 3/4 x 5 | 10 | 199.95D | Mem. rew.; auto stop; lockable pause. | |
| | RS858US 4-chan. | 8 | 2/4 | 30-12k | 0.15 | 45 | | | yes | no | | 21 1/2 x 11 1/4 x 4 3/4 | 20 3/4 | 299.95 | 2/4-chan. rec./play; lockable pause; FF; Auto eject/cont. play; 4 Vu mtrs.; noise suppr.; digital counter. | |



Telex 48-H



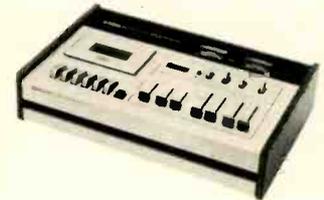
Wollensak 8080



Technics RS-676US



Toshiba PT-480



Yamaha TB-700

| MANUFACTURER | MODEL | If cassette X; if cartridge, number of tracks | Channels - 1, 2, or 4? | Frequency Response, Hz. ± 7 dB | Wow & Flutter, % S/N, dB | Crp? Tape bias/equal.? | LM? Tape bias/equal.? | If stereo, crossstalk, dB | Does Unit Record? | Power Amp. Built In? | Rated power Output, W rms? | Dimensions, WxDxH, inches? | Weight, lbs.? | Price? | NOTES "D" after price indicates Dolbyized |
|--------------|---------------|---|------------------------|--------------------------------|--------------------------|------------------------|-----------------------|---------------------------|-------------------|----------------------|----------------------------|----------------------------|---------------|---------|---|
| TELEX | 48D | 8 | 2 | 50-15k ±3 | 0.3 42 | no | no | 40 | no | no | | 18¼ x 16¼ x 9 | 31 | 262.45 | Auto 8-tk changer (4 sequence modes); holds 12 carts.; incl. wal. case & dust cover. |
| | 48H | 8 | 2 | 50-10k ±3 | 0.3 42 | | | 40 | no | yes | 10 | 18¼ x 16¼ x 9 | 32 | 314.95 | As above but w/pwr. amp; tone, bal. & vol. conts. |
| TOSHIBA | PT490 | X | 2 | 30-15k | 0.1 55 | yes | yes | 35 | yes | no | | 16¾ x 11½ x 5½ | 18 | 349.95D | Auto rev. rec./PB; auto off. |
| | PT470 | X | 2 | 30-15k | 0.1 55 | yes | yes | 35 | yes | no | | 16¾ x 11½ x 5½ | 18 | 249.95D | Cue & rev. (MQS); auto off. |
| | PT415 | X | 2 | 30-15k | 0.1 50 | yes | no | 40 | yes | no | | 14½ x 10¼ x 4 | 10 | 199.95 | DNL; auto off. |
| | PT406 | X | 2 | 50-10k | 0.15 45 | yes | no | 35 | yes | no | | 13¾ x 9¾ x 4¼ | 9 | 159.95 | Auto off. |
| | PE1150 | 8 | 2 | 100-10k | 0.3 40 | no | no | 30 | yes | no | | 15¾ x 10¾ x 4¼ | 11 | 149.95 | Rec.; FF; Pause |
| | PT114 4-chan. | 8 | 4 | 100-10k | 0.2 45 | | | | no | no | | 9½ x 10 x 4 | 13 | 99.95 | 2/4-chan. PB. |
| | KT84 | 8 | 2 | 40-12k | 0.3 40 | | | 45 | no | no | | 13¾ x 8¾ x 4¼ | 12 | 79.95 | Tape storage. |
| | KT805 | 8 | 2 | 50-10k | 0.3 40 | no | no | | yes | no | | 15¾ x 10 x 5½ | 12¾ | 139.95 | FF; rec.; rpt. |
| WOLLENSAK | KT403DC | X | 2 | 50-10k | 0.3 40 | no | no | | yes | no | | 11¾ x 7¾ x 4¼ | 5½ | 119.95 | Auto off; hi built. |
| | 4765 | X | 2 | 30-05 x 12 | 0.07 60 | yes | yes | 65 | yes | no | | 17¼ x 10¼ x 6½ | 16 | 389.95D | FM Dolby end-of-tape sens.; adj. headphone output; patented dual direct drive. |
| | 4775 | X | 2 | 40-17 ±3 | 0.12 60 | yes | yes | 65 | yes | no | | 16 x 10¾ x 5¾ | 11 | 289.95D | FM Dolby, mem. rew.; 3-pos. input swit. |
| | 8080 | 8 | 2 | 30-15k | 0.1 60 | | | 65 | yes | no | | 19¾ x 10¼ x 5 | 17 | 344.95D | Tape record equal. of Scotch brand Classic and standard tapes; FM Dolby; record cuing; FF. |
| YAMAHA | 8075 | 8 | 2.4 | 30-15k ±3 | 0.1 60 | | | 65 | yes | no | | 19¾ x 10¼ x 5 | 17 | 299.95D | 2-chan. rec. & play, 4-chan. play; tape rec. equal. for Scotch brand Classic and standard tapes; Dolby FM; dig. unit ctr; FF. |
| | TB700 | X | 2 | 30-13k | 0.15 48* | yes | yes | | yes | no | | 15¾ x 9¾ x 4½ | 11 | 340.00D | *58 w/Dolby; auto off; peak lim. rec.; 3-pos. tape sel.; pitch conti.; pause conti. |

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INTERNATIONALE TESTBERICHTE ÜBER DAS 901 BOSE DIRECT/REFLECTING® LAUTSPRECHER SYSTEM.

"For the first time the critics all over the world are unanimous in (their) verdict on a loudspeaker."*

BELGIUM

La Revue des Disques de la Haute-Fidélité - Jaques Dewèvre
"It is grand! It is no longer recorded music... the orchestra is there in front; and the atmosphere of the concert hall, all around!"

DENMARK

Hobby bladet + Lyd & Tone - Claus Sørensen
"The 901 can produce lower notes than any speaker I have ever listened to... the class is elite...."

HOLLAND

Disk - Jan de Kruif
"The BOSE speakers belong to the small group of the best and most valuable speakers we know. Without doubt, for some it will be the very best."

FRANCE

Revue du Son - Jean-Marie Marcel und Pierre Lucrain
"...901 with (its) equalizer system is absolutely tops... sets new standards for loudspeaker music reproduction."

AUSTRIA

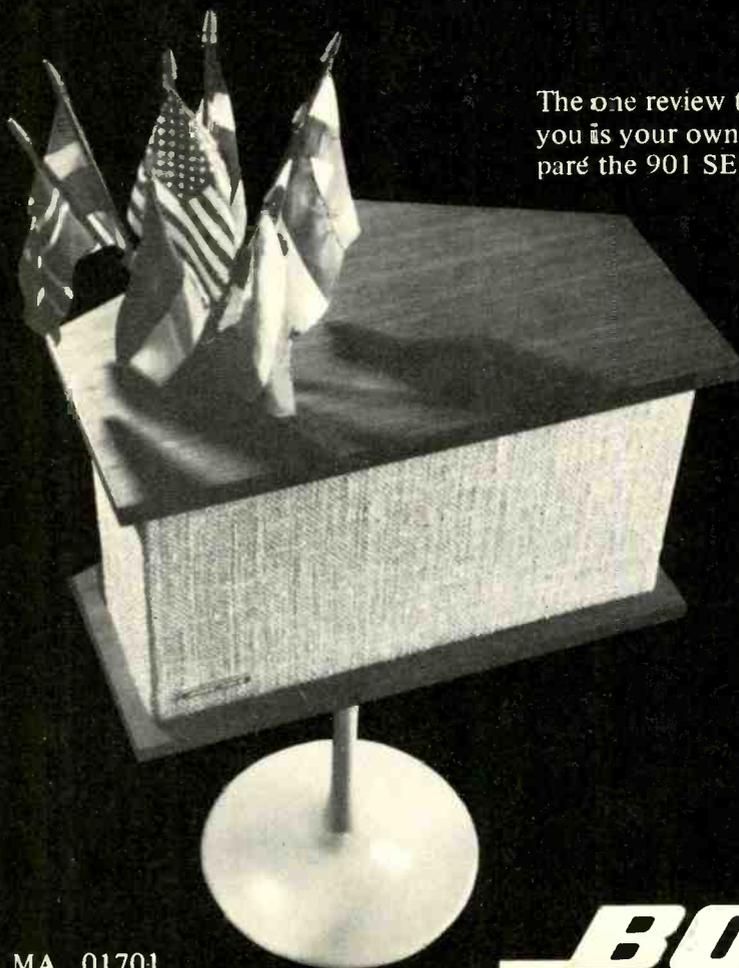
*Oberösterreichische - Nachrichten Linz
"BOSE contains more technical innovations than any other speaker of the last 20 years."

U.S.A.

Stereo Review - Firsch-Houk Laboratories
"...I must say that I have never heard a speaker system in my own home which could surpass, or even equal, the BOSE 901 for overall 'realism' of sound."

The one review that really will convince you is your own. We invite you to compare the 901 SERIES II with any conventional speaker, and hear the difference for yourself.

For information on the BOSE 901® and BOSE 501 Direct/Reflecting® speakers, and other BOSE products, circle your reader service card or write us at Dept. A.



Meet the family



Our companies have been in the microphone and tape recorder business now for over forty years.

In that time we have built up quite a family . . . professional mixers, tape recorders, microphones, headphones—the lot.

All of these products are made to the same high acoustic and mechanical quality that has set standards throughout the world. For example, if your finances do not quite run to a new Revox tape recorder, try to find a secondhand one—in stock condition it will outperform other makes of new equipment at the same price!

All of our family is described in great detail in a series of technical data sheets and application charts. If you are at all interested in better equipment, we will send you this information. Just mail the attached coupon to: Revox Corporation, 155 Michael Dr., Syosset, New York 11791.

Please tell me where I can see and buy Revox A700
 Revox A77
 Beyer Good used machines*
 Beyer Microphones
 Lamb Headphones
 Lamb Mixer

Name _____

Address _____

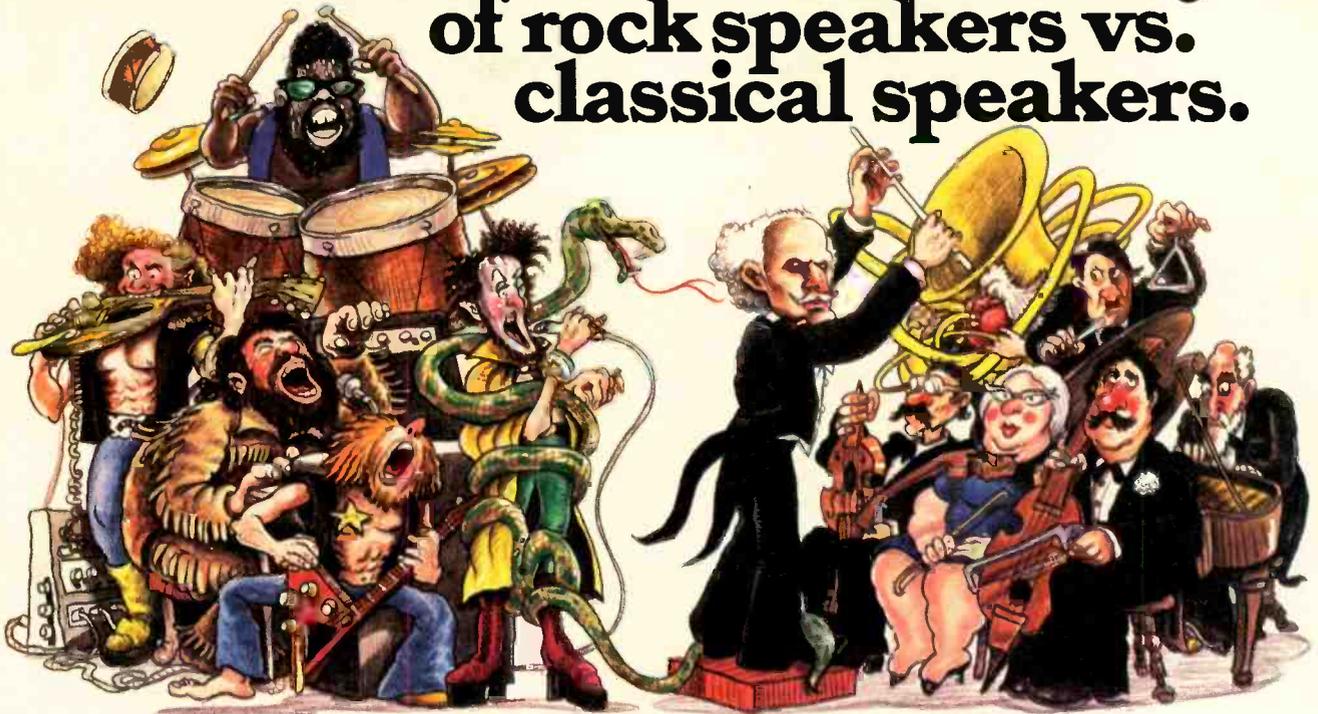
*As and when available from our dealers.

(Continued from page 12)
 recordings we played were exceptionally clean, with razor-sharp definition. Also common to both of these Infinity speakers is a bass transmission line, with special woofer whose cone has been treated to increase its stiffness-to-mass ratio. Both speakers crossover to their respective mid-range drivers at 500 Hz. In the 2000AXT, the mid-range driver is a special 4.5-in. cone, whereas in the "Monitor" system the mid-range is a 1½-in. strengthened dome, with a 5-lb. magnet. In the Infinity sound room, both speakers . . . the \$299 2000AXT and the \$429 Monitor, were exceptionally well-balanced performers, with extended solid bass, a mid-range that gave fine definition and projection without coloration, and of course the superb transient response and transparent top end of the Walsh tweeter. I must add that the splendid sound I heard from these speakers was partly because they were being driven by Infinity's newest and most exotic product, their Class D switching amplifier. Infinity has gone even further into electronics, with an FET preamplifier, which was not yet operational while I was there, and this new-to-consumer-audio switching amplifier.

Class D amplification is pulse-width modulation. Instead of using transistors as ordinary linear amplifiers, the transistor is used as a *switch* . . . either it is on, or it is off. By having the audio signal control *when* the transistor switches large voltages and currents, the signal is amplified. In this way all the non-linearities in bi-polar transistors are circumvented. Although this amplifier is capable of 250 watts rms per channel, with the switching technique making the unit nearly 96 percent efficient, the unit runs slightly warmer than when cold, without external heat sinking! A d.c. to d.c. power supply for the amplifier weighs a mere 2 lb., as compared to the 40-plus-lb. behemoths usually found in amplifiers of this power. In fact, the entire switching amplifier looks no larger than a somewhat undernourished preamplifier and weighs in at about 14 lb. total. Engineering vice-president John Ulrick, went over this remarkable switching amplifier for me in his lab, including showing me a memory hold display of the harmonic distortion on the Fourier harmonic spectrum analyzer . . . there was *many* a spike to be seen!

Obviously a company of considerable technical depth, and with the present backing of Eastern Air Devices, Infinity Systems is an organization of great potential. I enjoyed my most educational visit with them, as well as the ride back to the L.A. Hilton in John Ulrick's finely tuned Pantera!

The Rectilinear 5: end of the myth of rock speakers vs. classical speakers.



The new Rectilinear 5 is capable of playing very, very loud. Rock-festival loud. Even with a medium-powered amplifier.

At the same time, it's uncannily accurate. It sounds sweet, unstrained and just plain lifelike at all volume levels.

The temptation is great, therefore, to one-up that prestigious manufacturer who some time ago announced "The first *accurate* speaker for rock music."

But we refuse to perpetuate that mythology. It's perfectly obvious that the Rectilinear 5 reproduces classical music just as accurately as rock. We could never see how a voice coil or a magnet would know the difference between Jimi Hendrix and Gustav Mahler.

So we'd rather use this opportunity to set things straight once and for all.

Thus:

There's no such thing as a rock speaker or a classical speaker. Any more than there's a late-show TV set or a football-game TV set.

There are, however, speakers that impose a hard, sizzling treble and a huge bass on *any* music. And others that round off the edges and soften up the transient details of *any* music. That's the probable origin of the myth;

but these aren't rock and classical speakers, respectively.

They're *inaccurate* speakers.

It's true that an aggressive treble and a heavy bass are characteristic of most rock music, even when heard live. It's also true that some record producers exaggerate these qualities, sometimes to a freakish degree, in their final mix of the recorded sound.

But that doesn't mean the speaker can be allowed to add its own exaggerations on top of the others.

A loudspeaker is a conduit. Its job is to convey musical or other audio information unaltered. If the producer wants to monkey around with the natural sound that originally entered the microphones, that's his creative privilege. He'll be judged by the musical end results. But if the speaker becomes creative, that's bad design.

By the same token, if some classical record producers prefer a warm, pillowy, edgeless string sound, that

doesn't mean your speakers should impart those same qualities to cymbals, triangles or high trumpets. (Stravinsky's transients can be as hard as rock.)

And if you like to listen at very high volume levels

(after all, that's what rock is about—but so is *Die Götterdämmerung*),

you still don't need a speaker that achieves high efficiency through spurious resonances. What you need is something like the Rectilinear 5.

Everything in this remarkably original design was conceived to end the trade-off between efficiency and accuracy. The four drivers are made to an entirely new set of specifications. The filter network that feeds the drivers is

Equally wrong: Classical sound made vague and spineless by the speaker.

totally unlike the traditional crossover network. Even the cabinet material is new and different.

Of course, those who feel threatened by all this fuss about accuracy and naturalness will point out that the monitor speakers preferred by engineers and producers in recording studios are usually of the zippy, super-aggressive variety.

That's perfectly true, but the reason happens to be strictly nonmusical.

"I use the XYZ speaker only as a tool," a top producer explained to us. "I wouldn't have it in my house. It really blasts at you when you crank up the volume, so that any little glitch on the tape hits you over the head. After eight hours in the studio, that's what it takes to get your attention. I know how to deal with those unpleasant highs; they're in the speaker, not on my tape."

It's easy enough to find out for yourself.

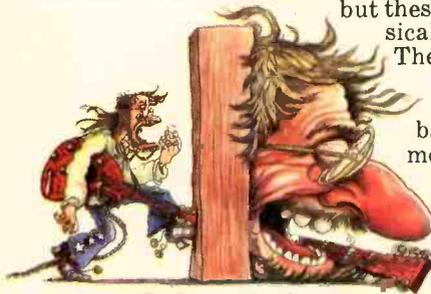
Any reputable dealer will let you hear the Rectilinear 5 side by side with a "rock" or "monitor-type" speaker. Adjust each speaker by ear to the *same* high volume level, making sure the amplifiers are of good quality. Then listen. To rock or classical.

Then and there, the myth will crumble.

RECTILINEAR®

Rectilinear Research Corp., 107 Bruckner Blvd., Bronx, N.Y. 10454
Canada: H. Roy Gray Limited, Ontario

Rectilinear 5 Contemporary Laboratory Series bookshelf/floor speaker system, \$299.00. Delta Dispersion Base (patent pending) optional.



Wrong: Freaky sound made even freakier by the speaker.

Speakers

| MANUFACTURER | MODEL | WOOFER | | MID-RANGE | | TWEETER | | Overall freq. resp., Hz to kHz ± 7 dB | Ampl. pow. for avg. room, W (RMS cont) | Pwr. handling capacity | Crossover frequency (ies), Hz | Impedance, ohms | Enclosure dimensions, W x D x H, in. | Wood finish | Grille material/color | Weight, lbs. | Price | NOTES | | |
|--------------------------|----------------------|---------------|---------------------------|----------------|---------------|---------|---------------|---------------------------------------|--|------------------------|-------------------------------|-----------------|--------------------------------------|-----------------|-----------------------|--------------|-------------|----------|--|---|
| | | Diameter, in. | Resonance (in system), Hz | Enclosure type | Diameter, in. | Type | Diameter, in. | | | | | | | | | | | | Type | |
| ACOUSTICAL MANUFACTURING | Quad | | | ES | | | | 45-18k ±3 | 15 | * | | 15 | 34½ x 10½ x 31 | Beech | Alum. Brn. BIK. | 40 | 710.00 pr. | *33V | | |
| ACOUSTIC RESEARCH | 1/one | 12 | 42 | Acous. susp. | 1½ | Dome | ¾ | Dome | * | 30 | * | 575; 5k | 8 | 14 x 25 x 11½ | Wal. | Cloth blk. | 56 | 329.00 | Woofers cont., *data avail. on request. | |
| | LST | 12 | 42 | Acous. susp. | (4) 1½ | Dome | (4) ¾ | Dome | * | 50 | * | 575; 5k | 8 | 27½ x 20 x 9¾ | Wal. | Cloth linen | 90 | 600.00 | 6-pos. freq.-resp. swit.; *data avail. on request. | |
| | LST-2 | 10 | 56 | Acous. susp. | (3) 1½ | Dome | (3) ¾ | Dome | * | 25 | * | 525; 5k | 8 | 25½ x 18½ x 9¾ | Wal. | Cloth linen | 56 | 400.00 | 3-pos. freq.-resp. swit.; *data avail. on request. | |
| | 3a | 12 | 42 | Acous. susp. | 1½ | Dome | ¾ | Dome | * | 25 | * | 575; 5k | 4 | 14 x 25 x 11½ | Oil Wal. | Cloth | 53 | 285.00 | *Data avail. on request. | |
| | 5 | 10 | 56 | Acous. susp. | 1½ | Dome | ¾ | Dome | * | 20 | * | 650; 5k | 8 | 13½ x 24 x 11½ | Oil Wal. | Cloth | 39 | 199.00 | *Data avail. on request. | |
| | 2ax | 10 | 56 | Acous. susp. | 3½ | Cone | ¾ | Dome | * | 20 | * | 1.4k; 5k | 8 | 13½ x 24 x 11½ | Oil Wal. | Cloth | 36½ | 149.00 | *Data avail. on request. | |
| | 8 | 10 | 54 | Acous. susp. | | | 1¼ | Cone | * | 15 | * | 1.8k | 8 | 13½ x 24 x 11½ | Wal. | Cloth | 32 | 119.00 | *Data avail. on request. | |
| | 6 | 8 | 56 | Acous. susp. | | | 1¼ | Cone | * | 15 | * | 1.5k | 8 | 12 x 19½ x 7½ | Wal. | Cloth | 20 | 95.00 | *Data avail. on request. | |
| ADVENT | Advent | | 43 | Acous. susp. | | | ¾ | Dome | | 30-20k ±4 | 20 | * | 1k | 8 | 14¼ x 11½ x 25½ | Wal. | Cloth beige | 44 | 125.00 | Also in wal. vinyl, \$110; *avail. on request. |
| | Smaller Advent | | 43 | Acous. susp. | | | ¾ | Dome | | 30-20k ±4 | 15 | | 1.4k | 4 | 11½ x 9¼ x 20 | Wal. Vnl. | Cloth beige | 26 | 76.00 | *Avail. on request. |
| | Advent/2 | | 58 | Acous. susp. | | | (2) 1½ | Cone | | 40-20k | 10 | * | 1.5k | 8 | 11½ x 7¼ x 19 | Wte. Metal | 18 | 59.50 | *Avail. on request. | |
| AKAI | SW-126 | 8 | | | | | 4x 2¾ | Horn | | 40-20k | | | 5k | 8 | 11¼ x 19¼ x 7¾ | Wal. | Cloth Brn. | 15½ | 135.00 | |
| | SW-136 | 10 | | | 5 | | 2 | Horn | | 40-20k | | | 1.2k; 5k | 8 | 13¾ x 22 x 10½ | Wal. | Cloth Brn. | 23 | 159.95 | |
| ALLISON ACOUSTICS | One | (2) 10 | 49 | Acous. susp. | (2) 3½ | Dome | (2) 1 | Dome | | 30 | | 375; 3.75k | 8 | 19 x 10¼ x 40 | | | | 350.00 | | |
| | Two | (2) 8 | 55 | Acous. susp. | (2) 3½ | Dome | (2) 1 | Dome | | 30 | | 375; 3.75k | 8 | 16 x 9¾ x 36 | | | | 275.00 | | |
| ALTEC | 3577A Stonehenge III | 15 | | Duct. port | | | 2 | Horn | | 10 | 65 | 1.5k | 8 | 18¼ x 14¼ x 46¼ | Oak | Foam Brn. | 130 | 595.00 | Uses 604-8B unit. | |
| | 891A | 12 | | Acous. susp. | | | 2 | Cone | | 12½ | 50 | 1.6k | 8 | 14½ x 12½ x 25½ | Wal. | Foam Blk. | 46 | 149.00 | | |
| | 891A Stonehenge II | 12 | | Duct. port | | | 2 | Cone | | 10 | 45 | 1.8k | 8 | 16 x 14¼ x 37½ | Teak | Cloth Brn. | 75 | 329.00 | | |
| | 887A Capri | 8 | | Acous. susp. | | | 2 | Cone | | 12½ | 45 | 2.5k | 8 | 10 x 9 x 19 | Wal. | Cloth Brn. | 23 | 89.00 | | |
| AUDIOANALYST | A76X | 10 | 52 | Acous. susp. | | | 2 | Cone | | 44-18k ±3 | 15 | 40 | 1.8k | 8 | 12¼ x 11¼ x 21 | Wal. Vinyl | Cloth Blk. | 32 | 94.00 | |
| | A100X | 10 | 48 | Acous. susp. | 2 | Cone | 1½ | Cone | | 40-20k ±3 | 10 | 50 | 1.5k; 7.5k | 8 | 13¾ x 12 x 23¾ | Wal. Vinyl | Cloth Blk. | 37 | 138.00 | |
| | A200X | 12 | 46 | Acous. susp. | 5 | Cone | 2 (2)1½ | Cone | | 38-20k ±3 | 10 | 100 | 800; 2k; 7.5k | 8 | 15 x 12¾ x 27 | Wal. | Cloth Blk. | 53 | 249.00 | |
| AUDIO DYNAMICS | 303AX | 10 | | Acous. susp. | | | 2½ | Cone | | 37-20k ±3 | 10 | 45 | 1.5k | 8 | 13 x 11¼ x 23¾ | Wal. | Cloth Blk. | 37 | 100.00 | |
| | XT10 | 10 | | Acous. susp. | | | (2) 2½ | Cone | | 37-20k ±3 | | | | 8 | 13 x 11¼ x 23¾ | Wal. | Foam | | 115.00 | |
| | XT9 | 10 | | Acous. susp. | | | 2½ | Cone | | 45-20k ±3 | | | | 8 | 13 x 11¼ x 23¾ | Wal. | | | 89.00 | |
| | XT6 | 6 | | Acous. susp. | | | 2½ | Cone | | 42-20k ±3 | | | | 6 | 8½ x 8½ x 12½ | Wal. | | | 58.00 | |
| | WDDS-12 | 12 | | Acous. susp. | | | (2) 1½ | Dome | | 30-25k ±2 | | | 600; 5k | 6 | | Wal. | Foam | | 300.00 | Opt. floor stand. |
| | WDDS-11 | 12 | | Acous. susp. | | | (2) ¾ | Dome | | 38-25k ±2½ | | | 600; 5k | 6 | | Wal. | | | 200.00 | |
| AUDIONICS | TL90 | 11 | 42 | Trans. line | 4 | Cone | 1 | Dome | | | | 500; 4.7k | 8 | 14½ x 13½ x 44 | Rose. | Cloth | 100 | 399.95 | | |
| | TL50 | 8 | 42 | Trans. line | 5 | Cone | 2 | Cone | | | | 500; 3k | 8 | 12 x 12 x 48 | Rose. | Cloth | 80 | 249.95 | | |
| AUDIO RESEARCH | Tympani T-1B | * | | Bipole ** | | | *** | Bipole | | 38-22k ±5 | 75 | 350 | 1.6k | 8 | 3 units **** | Var. | | 130 pr. | 1,155.00 pr. | *1008 sq. in.; **Magne-planar; ***88 sq. in.; bi-amp ppt. ****each unit 72x16x1 in. |
| | Tympani T-III A | * | | Bipole ** | 504 sq. in. | Bipole | *** | Bipole | | 38-20k ±4 | 75 | 600 | 1.6k | 8 | 4 units **** | Var. | | 177 pair | 1,695.00 pair | Requires bi-amp. * |
| | Tympani T-III A-W | * | | Bipole ** | | Bipole | *** | Bipole | | 38-3k ±4 | 75 | 300 | 100/200 | 8 | 1 unit **** | Var. | | 91 | 845.00 | ** ** ** ** as above. |

Speakers are a matter of taste.

Yours.

No other component in your high fidelity system will influence your enjoyment of music as much as your choice of speakers. Every speaker design has its own individual characteristics, and actually imposes its own personality on any music you play.

What kind of a sound do you prefer? The tight sound of an acoustic suspension speaker? The open sound and flexibility of an omni-radial speaker? Or the presence and realism of a multi-directional speaker?

No matter which you choose, Sansui makes a speaker to match your taste. And they are all superior in performance, delivering sharp definition, and a smooth, but crystal clear dynamic attack over a wide range.

Yes, speakers are a matter of taste. Only you can decide which one of the seven Sansui speakers is really the best speaker you ever heard. So stop in at your nearest Sansui dealer...and listen.

SANSUI ELECTRONICS CORP.

Woodside, New York 11377 • Gardenc, California 90247

SANSUI ELECTRIC CO., LTD., Tokyo, Japan • SANSUI AUDIO EUROPE S.A., Antwerp, Belgium

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Sansui

Speakers

| MANUFACTURER | MODEL | WOOFER | | | | | MID-RANGE | | TWEETER | | Overall freq. resp. Hz to kHz ± 1 dB | Ampl. pwr. for avg. room W | Pwr. handling capacity (RMS cont) | Crossover frequency (Hz) | Impedance, ohms | Enclosure dimensions W x D x H, in. | Wood finish | Grille material color | Weight, lbs. | Price | NOTES |
|----------------------|-----------|---------------|---------------------------|----------------|---------------|--------------|-----------------|--------------|------------|------------|---|----------------------------|--------------------------------------|--------------------------|-----------------|--|-------------|-----------------------|--|-------|-------|
| | | Diameter, in. | Resonance (in system), Hz | Enclosure type | Diameter, in. | Type | Diameter, in. | Type | | | | | | | | | | | | | |
| AUDIO SYSTEMS | 244 | 12 | 40 | Reflex | 6 | Cone | 3½ x 2½ | | 20-20k ±3 | 5 | 30 | 2k; 5k; | 8 | 14 x 12 x 24 | Wal. | Foam or Cloth | 32 | 129.95 | | | |
| | 243 | 12 | 45 | Reflex | 6 | Cone | 3½ | | 20-19k ±3 | 5 | 30 | 2k; 5k | 8 | 14 x 12 x 24 | Wal. | Foam or Cloth | 29 | 109.95 | | | |
| AVID | 103 | 10 | 45 | Acous. susp. | 4½ | Cone | 1 | Dome | 35-18k ±5 | 20 | 150 | 500; 3.5k | 8 | 15 x 9½ x 25 | Wal. | Brn. | 38 | 145.00 | W. base; changeable grille cloth, fused. | | |
| | 60 | 9x6 * | | Duct. port | | | 2½ | Cone | 60-17k ±5 | 5 | 35 | 8k | 8 | 27½ x 8½ x 8¼ | Wal. | Brn. or Beige | 16 | 59.95 | | | |
| | 100 | 8 | 59 | Acous. susp. | | | 1¾ | Cone | 40-18k ±5 | 10 | 75 | 2.5k | 8 | 12¾ x 8½ x 21 | Wal. | Brn. | 22 | 79.50 | Changeable grille cloth. | | |
| | 102 | 10 | 45 | Acous. susp. | | | 1 | Dome | 35-18k ±5 | 15 | 100 | 2.2k | 8 | 15 x 9½ x 25 | Wal. | Brn. | 36 | 115.00 | Changeable grille cloth; fused. | | |
| | 104 | 12 | 35 | Acous. susp. | 3¾ | Cone | (1) 1 (2) 1½ | Dome Cone | 28-18k ±4 | 20 | 200 | 500; 3.5k; 9k | 8 | 20 x 15 x 26½ | Wal. | Brn. | 65 | 275.00 | Slate top; fused. | | |
| AZTEC | Minuet | 8 | | Acous. susp. | | | 3 | Cone | 35-18k ±5 | 10 | 25 | 1.5k | 8 | 11 x 18 x 9½ | Wal. | Cloth Blk. | 19 | 146.00 pair | | | |
| | du Lane | 8 | | Acous. susp. | 8 | Cone | 3 | Cone | 30-19k ±5 | 10 | 30 | 1k; 3k | 8 | 13½ x 23 x 9½ | Wal. | Cloth Blk. | 30 | 194.00 pair | | | |
| | Picasso | 10 | | Damp. port | 6 | Cone | 3x5 | Horn | 30-20k ±5 | 10 | 40 | 1k; 3k | 8 | 13½ x 23½ x 11½ | Wal. | Cloth Blk. | 38 | 278.00 pair | | | |
| BANG & OLUFSEN | 5700 | 10 | | * | 2¼ | Dome | ¾ | Dome | 20-20k ±4 | 3 | 60 | 500; 7k | 4-8 | 26 x 15 x 12 | ** | Cloth Blk. | 50 | 300.00 | *Passive radiator; **Rosewood, teak, or oak | | |
| | 4702 | (2) 7½ | | Acous. susp. | 5 | Cone | 1½ | Dome | 35-20k ±5 | 3 | 60 | 500; 4k | 4 | 23 x 11½ x 11½ | * | Cloth Blk. | 28½ | 220.00 | *Rosewood, teak, or oak; wte. lacquer. | | |
| | 3702 | 8 | | Acous. susp. | 3¾ | Cone | 1 | Dome | 40-20k ±5 | 3 | 40 | 750; 5k | 4 | 19¾ x 10 x 10 | * | Cloth Blk. | 20 | 125.00 | *Rosewood, teak or oak; wte. lacquer. | | |
| | 2702 | 7 | | Acous. susp. | | | 1½ | Dome | 45-20k ±5 | 3 | 25 | 3k | 4 | 16 x 8 x 8 | * | Cloth Blk. | 12 | 100.00 | *Rosewood, teak or oak; wte. lacquer. | | |
| BIC VENTURI | Formula 6 | 12 | | Duct. port | 5 (2) | Cone Horn | (2) 1¾ | Dome | 20-23k | 3 | 125 | 750; 1.5k 15k | 6 | 15¾ x 14¾ x 26¾ | Wal. | Foam var. | 64 | 273.25 | Opt. pedestal base. | | |
| | Formula 4 | 10 | | Duct. port | | Horn | 1¾ | Dome | 25-23k | 6 | 100 | 1.5k 15k | 6 | 13¾ x 13 x 25 | Wt. | Foam | 45 | 149.95 | As above. | | |
| | Formula 2 | 8 | | Duct. port | | Horn | 1¾ | Dome | 30-23k | 7½ | 75 | 1.5k; 15k | 6 | 12 x 11½ x 19¾ | Wal. | Foam var. | 30 | 112.50 | As above. | | |
| BOSE | 901 | | | * | (9) 4½ | Cone | | | | 25 | 270 | | 8 | 20½ x 12½ x 12½ | Wal. | Cloth beige or Brn. | 33 | 550.00 pair | *Direct/reflecting, no cover; **w. active equalizer. | | |
| | 501 | 10 | 55 | Acous. susp.* | | | (2) 3 | Cone | | 20 | 100 | 1.7k | 4 | 14¾ x 14¾ x 34 | Wal. | Cloth Brn. | 38 | 298.00 | *Direct reflecting, floor standing. | | |
| BOZAK | B-201 | 8 | 50 | Reflex | | | 2½ | Cone & Dome | 45-20k | 12 | 60 | 1.8k | 8 | 20¼ x 11¾ x 10 | Vinyl | Foam Brn. | 30 | 99.50 | | | |
| | B-301F | 12 | 45 | Acous. susp. | 4 | Cone | 2½ | Dome & Cone | 40-20k | 15 | 60 | 800; 2.5k | 8 | 23¾ x 14¾ x 11½ | Wal. | Foam Brn. | 40 | 188.50 | | | |
| | B-401 | 12 | 45 | Acous. susp. | 6 | Cone | 2½ | Cone & Dome | 40-20k | 15 | 60 | 800; 2.5k | 8 | 25¾ x 18 x 13¾ | Wal. | Foam Brn. | 65 | 283.00 | | | |
| BRAUN | L810A | (2) 8 | 50 | Acous. susp. | 2 | Dome | 1 | Dome | 20-25k | 15 | 50 | 550; 4k | 4 | 25½ x 14¾ x 11¾ | Wal. or Wte. | Cloth Blk or Beige | 53 | 315.00 | *DIN 45500. | | |
| | L710A | (2) 7 | 55 | Acous. susp. | 2 | Dome | 1 | Dome | 25-25k * | 15 | 40 | 550; 4k | 4 | 21¾ x 12¼ x 10½ | Wal. | Cloth Blk. or Beige | 38½ | 239.00 | *As above. | | |
| | LV1020 | 12 | 50 | Acous. susp. | 2 | Dome | 1 | Dome | 20-25k | 15; 35; 75 | 20; 35; 75 | 400; 4k | 4 | 29¾ x 15 x 11¾ | Blk or Wal. | Alum. | 71 | 750.00 | *Built-in equalizers and tri-amp system. | | |
| B&W (Linear Devices) | DM70 | 13 | | Acous. susp. | | | | ES | 22-18k ±2 | 60 | 100 | 400* | 8 | 27 x 15½ x 32½ | Wal. & Wte. | Cloth Brn. Blk. | 80 | 750.00 | *18-dB/oct. phase corrected cover. | | |
| CERWIN-VEGA | 211R | 12 | 54 | Duct. port. | 3x9 | Horn * | 2½ | Dhorn | 32-20k ±3½ | 5 | 100 | 1.5k 3k | 8 | 15 x 15½ x 26 | Wal. | Foam Red/Blk. | 60 | 269.50 | *Reflecting | | |
| | 24 | 12 | 66 | Duct. port. | | | 2½ | Dhorn | 38-20k ±4 | 5 | 40 | 2.5k | 8 | 14½ x 12 x 25 | Wal. | Cloth Blk. | 40 | 119.50 | | | |
| | 320 | 12, 15 or 18 | 38 | Duct. port. | 2x6 | Horn * | (2) 2½ | Dhorn | 30-20k ±3 | 10 | 250 | 200; 1.5k; 4k | 8 | ** | Wal. | Cloth red/blk. | 130 | 650.00 | *Reflecting; **18x6x14½ top; 25x25x20 bottom. | | |
| CONCORD | CS-10 | 8 | | Duct. port. | | | 3½ | Cone | 50-18k ±3 | 10 | 40 | 3.5k | 8 | 12¾ x 11¾ x 23½ | Wal. | Foam Brn. | 34 | | | | |
| | CS-20 | (2) 8 | | Duct. port. | | | 3½ | Cone | 40-18k ±3 | 10 | 80 | 3.5k | 8 | 13½ x 11¾ x 24¾ | Wal. | Foam Brn. | 40 | | | | |

We give you the softest soft to the loudest loud. Choose any model. You won't get 'clipped.'

Today's best recordings can reproduce music's full dynamic range, from the softest soft to the loudest loud. Most of today's popular low and moderate efficiency speaker systems can't. But BIC VENTURI™ speakers do.

A speaker's dynamic range depends mainly on its efficiency and power handling capacity. Low-efficiency speakers can't get started without a good deal of input power. And, they tend to get stifled when driven beyond their capability.

BIC VENTURI speakers are efficient! They need as little as one fifth the amplifier power of most air suspension systems for the same sound output. So, you can listen louder without pushing your amplifier to the point where it starts clipping the tops and bottoms of musical peaks.

Today's popular, low-efficiency speakers require about a 50-watt per channel amplifier to deliver lifelike sound levels. Even our Formula 2 will deliver that same sound level with only 25 watts of amplifier power; the Formula 4 with 20 watts and our Formula 6 with only 9 watts! With BIC VENTURI, your amplifier can loaf along with plenty of reserve "headroom" to reproduce musical peaks cleanly, effortlessly. It's as if your present amplifier suddenly became two to five times as powerful. BIC VENTURI can handle lots of power, too. A typical, low-efficiency system is rated for a maximum safe power input of about 50 watts. Feed it more power and you're likely to push it into distortion, or even self-destruction!

With a BIC VENTURI you can turn up the power, without distortion or speaker damage. Even our compact Formula 2 can safely handle 75 watts per channel. With that much power feeding it, it will deliver 210% more sound output than a low-efficiency system will at its

power limit. Drive our super efficient Formula 6 at its maximum, and it will deliver nearly 1300% more sound power!

That's the loud half of the story.

With soft music (or when you turn down the volume) you want to hear it soft.

With most speakers, turn down the volume slowly and you reach a point where the sound suddenly fades out because the speakers aren't linear anymore.

But BIC VENTURI's are. The sound goes smoothly softer, without any sudden fadeout, retaining all the subtle nuances that add to the character of the music.

But, even though BIC VENTURI speakers remain linear, there is a point where your ears do not. At lower sound levels, your ears lose their bass and treble sensitivity. So, our DYNAMIC TONAL BALANCE circuit (pat. pend.) takes over. As the volume goes down it adjusts frequency response, automatically to compensate for the ear's deficiencies. The result: aurally "flat" response, always!

Our Formula 2 is the most efficient of its size. The Formula 4 offers even greater efficiency and power handling. And the most efficient is the Formula 6. The Formula 1, our newest and smallest model, outperforms all other speakers of its size and in its under-\$75 price class. BRITISH INDUSTRIES CO. Westbury, N.Y. 11590. Div. of Avnet, Inc. Canada: C.W. Pointon, Ltd., Ont.

B·I·C VENTURI



Speakers

| MANUFACTURER | MODEL | WOOFER | | | | MID-RANGE | | TWEETER | | Overall freq. resp., Hz to kHz ±, dB | Ampl. pwr. for avg. room W (RMS cont) | Pwr. handling capacity (RMS cont) | Crossover frequency (res.), Hz | Impedance, ohms | Enclosure dimensions W x D x H, in. | Wood finish | Grille material/color | Weight, lbs. | Price | NOTES |
|------------------------|-------------------|---------------|---------------------------|----------------|---------------|--------------|---------------|--------------|------------|---|--|--------------------------------------|--------------------------------|-----------------|--|--------------|-----------------------|---------------|---|-------|
| | | Diameter, in. | Resonance (in system), Hz | Enclosure type | Diameter, in. | Type | Diameter, in. | Type | | | | | | | | | | | | |
| CREATIVE | 77 | 10 | 50 | Acous. susp. | 4 | Cone | 2½ | Cone | 35-19k | 5 | 30 | 4k; 8k | 8 | 22 x 12¼ x 9½ | Wal. | Cloth var. | 26½ | 119.95 | | |
| | 88 | 12 | 45 | Acous. susp. | 6 | Cone | 2½ | Cone | 30-20k | 7 | 40 | 1k; 4k | 8 | 23¼ x 14¼ x 12¼ | Wal. | Cloth var. | 39 | 149.95 | | |
| | 100 | 12 | 40 | Acous. susp. | 5 | Cone | 1 | Dome | 30-20k | 10 | 50 | 700; 3k | 8 | 23¼ x 14¼ x 12¼ | Wal. | Cloth var. | 45 | 219.95 | | |
| | 99 | 15 | 34 | Acous. susp. | 5 | Cone | 3 1 | Cone Dome | 30-20k | 15 | 55 | 700; 3k | 8 | 20¼ x 17 x 25½ | Wal. | Cloth var. | 70 | 249.95 | | |
| CRISMAN | Va | 12 | 45 | Reflex | 4 | Cone | 3 | Cone | 40-23k ±7 | 10 | 60 | 800; 3.2k | 8 | 29 x 15 x 15 | Wal. | Cloth Blk | 48 | 159.00 | 2 cont.-adj. covers. | |
| | Ila | 8 | 55 | Reflex | | | 3 | Horn | 50-23k ±9 | 5 | 40 | 3.2k | 8 | 21 x 12 x 12 | Wal. | Cloth Grn. | 24 | 79.00 | | |
| | IIB | 8 | 55 | Reflex | 4 | Cone | 3 | Horn | 50-23k ±6 | 5 | 40 | 800; 3.2k | 8 | 21 x 12 x 12 | Wal. | Cloth Blk. | 27 | 99.00 | 2 cont.-adj. covers. | |
| | IVa | 12 | 45 | Reflex | | Cone | 3 | Horn | 40-23k ±9 | 10 | 60 | 3.2k | 8 | 29 x 15 x 18 | Wal. | Cloth Blk | 45 | 119.00 | | |
| | VII | 15 | 30 | Reflex | 10x4 | Horn | 3 | Horn | 30-23k ±5 | 15 | 75 | 1.5k; 3.2k | 8 | 31 x 18 x 18 | Wal. | Cloth Blk. | 63 | 199.00 | 2 cont.-adj. covers. | |
| CROWN | ES 212 | (2) 10 | 45 | Acous. susp. | | | | (12) ES | 22-30k | 150 | 300 | 375 | 4 | 26 x 21 x 42 | Wal. | Cloth Blk. | 110 | 595.00 | Solid State protect cir. | |
| CUSTOM DESIGNS | 215 | (2) 15 | 46 | Acous. susp. | (4) 4½ | Cone | (4) 1¾ | Cone | 30-20k ±2½ | 15 | 200 | 400; 5k | 4 | 24 x 48 x 16 | Wal. Rose. | Cloth Blk. | | 1,400.00 pair | | |
| | 210 | (2) 10 | 50 | Acous. susp. | | | (2) 3½ | Dome | 45-20k ±3½ | 30 | 100 | 2.5k | 4 | 15 x 48 x 12 | Wal. | Cloth Blk. | | 440.00 pair | | |
| DAHLQUIST | DQ-10 | 10 | 43 | * | 2 | Dome | ¾ | Dome ** | 30-27k | 60 | | 400; 1k; 6k; 12k | 8 | 31½ x 9 x 30¼ | Wal. | Cloth Blk. | 52 | 395.00 | *Phased array; **5-way, w. PZ super tweeter. | |
| | DQ-6 | 10 | 41 | * | 5 | Cone | 2½ | Cone | 30-20k | 25 | | 1k; 5k | 8 | 15 x 12 x 25 | Wal. | Foam Blk. | 45 | 200.00 | Xover is 3rd order Butterworth *As above. | |
| DATHAR | DA-I | (6) 5 | 26 | Reflex. | | | (6) 2¼ | Cone | 22-22k ±3 | 10 | 130 | 1.5k | 8 | 15 x 13¼ x 25 | Wal. | Foam var. | 57½ | 660.00 | Mirror-image design; fused. | |
| | DA-II | (2) 8 | 40 | Reflex. | | | (4) 2¼ | Cone | 38-22k ±3 | 8 | 70 | 1.5k | 8 | 13 x 12 x 28 | Wal. | Foam | 45 | 320.00 | As above. | |
| DAYTON-WRIGHT | X6-8 Mk IIB | (10) 7x18 | | ES | | | (2) 1 | PZ | 25-30k ±4 | 12 | 400 | 16.5k | 4 | 35½ x 9½ x 39½ | Alum. Blk. | Blk. | 63 | 2370.00 | Corner unit. | |
| | EqP1 | (2) 10 | 30 | Acous. susp. | | | | | 20-100 ±4 | 8 | 100 | 80 | 4 | 18 x 24 x 18 | Blk. | Blk. | 45 | 339.00 | Infra-woofer. | |
| | EQP3 | (2) 12 | 14 | Trans. line | | | | | 16-100 ±3 | 8 | 120 | 80/ 100 | 4 | 25½ x 18 x 49½ | Blk. | Blk. | 70 | 780.00 | | |
| DESIGN ACOUSTICS | D-12 | 10 | 45 | Reflex * | 5 | Cone | (9) 2½ | Cone | 30-15k ±2 | 20 | 50 | 800; 1.6k | 8 | ** | Wal. | Var. | 55 | 798.00 | *Omnidirect.; **22 in. sphere on pedestal; 30 in. high overall. | |
| | D-6 | 10 | 50 | Reflex | 5 | Cone | (5) 2½ | Cone | 40-15k ±3 | 15 | 40 | 800; 2k | 8 | 24½ x 16½ x 12 | Wal. | Blk. or Brn. | 51 | 558.00 | | |
| | D-4 | 10 | 45 | Acous. susp. | 5 | Cone | (3) 2½ | Cone | 45-15k ±3 | 20 | 30 | 800; 2k | 8 | 17½ x 9½ x 38 | Wal. | Beige | 60 | 398.00 | | |
| DYNACO | A-25XL | 10 | | Damp. port. | | | 1 | Dome | 44-18k ±5 | 12 | 50 | 1.5k | 8 | 11½ x 10 x 20 | Wal. | Linen Beige | 25 | 99.00 | | |
| | A-25 | 10 | | Damp. port. | | | 1½ | Dome | 44-15k ±5 | 20 | 35 | 1.5k | 8 | 11½ x 10 x 20 | Wal. | Linen Beige | 24 | 89.00 | Rosewood or teak, \$99.00. A-25VW, vinyl/walnut, \$79.95. | |
| | A-35 | 10 | | Acous. susp. | | | 1½ | Dome | 38-17k ±5 | 20 | 35 | 1.2k | 8 | 12½ x 10 x 22½ | Wal. | Linen Beige | 30 | 120.00 | *Dual chamber. | |
| | A-10 | 6½ | | Damp. port. | | | ¼ | Dome | 60-15k ±5 | 15 | 25 | 2.5k | 8 | 8½ x 8 x 15 | Wal. | Linen Beige | 30 pr. | 119.00 pair | A-10VW, vinyl/walnut, \$110.00 pair. | |
| | A-50 | (2) 10 | | Acous. susp.* | | | 1½ | Dome | 35-17k ±5 | 25 | 50 | 1k | 8 | 21½ x 10 x 28 | Wal. | Linen Beige | 47 | 189.00 | *Dual chamber. | |
| ELECTRO-MUSIC | Leslie DVX 570 | 15 | 28 | Duct. port * | 8 3 | Cone Cone | (2) 1½ | Dome | 50-20k ±3 | 15 | 50 | 250; 1k; 5k | 4 | 30 x 20½ x 33 | Wal. | Cloth Blk. | 110 | 425.00 | *Variable-axis dipole. | |
| | Leslie DVX 580 | 15 | 28 | Duct. port * | 8 3 | Cone Cone | (2) 1½ | Dome | 50-20k ±3 | 15 | 50 | 250; 1k; 5k | 4 | 29 x 20½ x 33¼ | Wal. | Cloth Blk. | 85 | 397.50 | *Variable-axis dipole. | |
| | Leslie Plus 2 470 | 15 | 55 | Reflex * | (2) 6x9 | Cone | 1½ | Dome | ** | ** | ** | 800; 4k | ** | 33 x 29½ x 19½ | Wal. | Cloth Blk. | 235 pair | 995.00 pair | *Moving bass-freq. reflector; **Built-in amp, 50Wrms. | |
| | Leslie Plus 2 430 | 12 | 55 | Reflex * | | | | Horn | ** | ** | ** | 800 | ** | 29½ x 24½ x 18½ | Wal. | Cloth Blk. | 210 pair | 695.00 pair | *Moving bass-freq. reflector; **built-in amp, 50 W rms. | |
| ELECTROSTATIC RESEARCH | ER-139 | 10 | 46 | Acous. susp. | | | (8) | ES | 30-30k | 20 | 100 | 2k | 8 | 16 x 16 x 28 | Wal. | Foam Blk. | 46 | 319.80 | | |

Frequency response isn't everything.

If you're a real stereo buff, you know that flat frequency response means flat, uncolored sound.

Like several other manufacturers, we too try to build the flattest, most linear frequency response we can into our speakers.

But we don't stop there. Because we know that great sound depends on more than just frequency response.

Transient response, for instance.

It's all in your head

To understand transient response, it's important to understand how you hear.

You see, you don't really hear with your ears. You hear with your brain.

For instance, it's the brain that helps you identify what you're listening to. The direction it's coming from. And that re-creates that illusion of "being there."

The thing is, every musical note is really a complex tone. A basic tone — the fundamental — plus subtle musical overtones — harmonics — that give very instrument a unique personality.



Not only that, musical notes are constantly starting and stopping. When they do, the number and intensity of the harmonics change.

This basic tone, together with all those changing harmonics, is called a transient. The brain takes all of them into account in interpreting any sound the ear receives.

On making things imperfectly clear

It's when a speaker can't react quickly or accurately enough to all those changing musical notes, all those transients, that distortion can occur.

And distortion means muddy-sounding music. With little definition or clarity.

A bad situation made worse when a speaker over-reacts to all those changing tones. The speaker actually adds tones of its own. And that's bad.

Most experts feel the best way to measure transient response is with tone bursts. Pure tones of various frequencies are rapidly switched on and off to simulate the transient nature of voice and instrument signals.

In Pattern A, the speaker hasn't reproduced accurately. It's completely overshoot the level of the input signal. And the result is a sizzling, hot sound. Totally colored.

In Pattern B, the speaker has taken too long to react. This "hangover" can cause considerable blurring. So what you hear is dull and lifeless.

Now look at Pattern C. The speaker here has reacted both quickly and accurately. And the result is exceptional clarity and definition. The kind that Avid builds into all of its speakers.

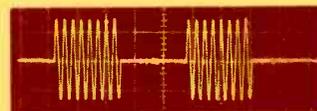
The proof is in the hearing

Now you know there's a lot more to a speaker than just flat frequency response. Like good transient response.

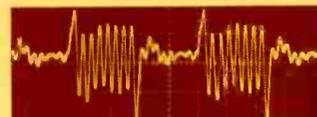
But even the best, most accurate transient response in the world isn't the be-all and end-all of a superb speaker. There's more.

The point is, we're a company that is committed to one thing and one thing only. The design and construction of the clearest, best-sounding stereo speaker systems in their price range.

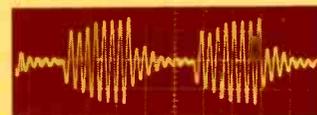
But you've got to hear for yourself. So go to your hi-fi store and listen to an Avid.



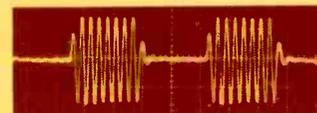
Input Signal



Pattern A



Pattern B



Pattern C

Then some other speaker in the same price category.

Then decide. We don't think you're going to have any trouble at all.

AVID

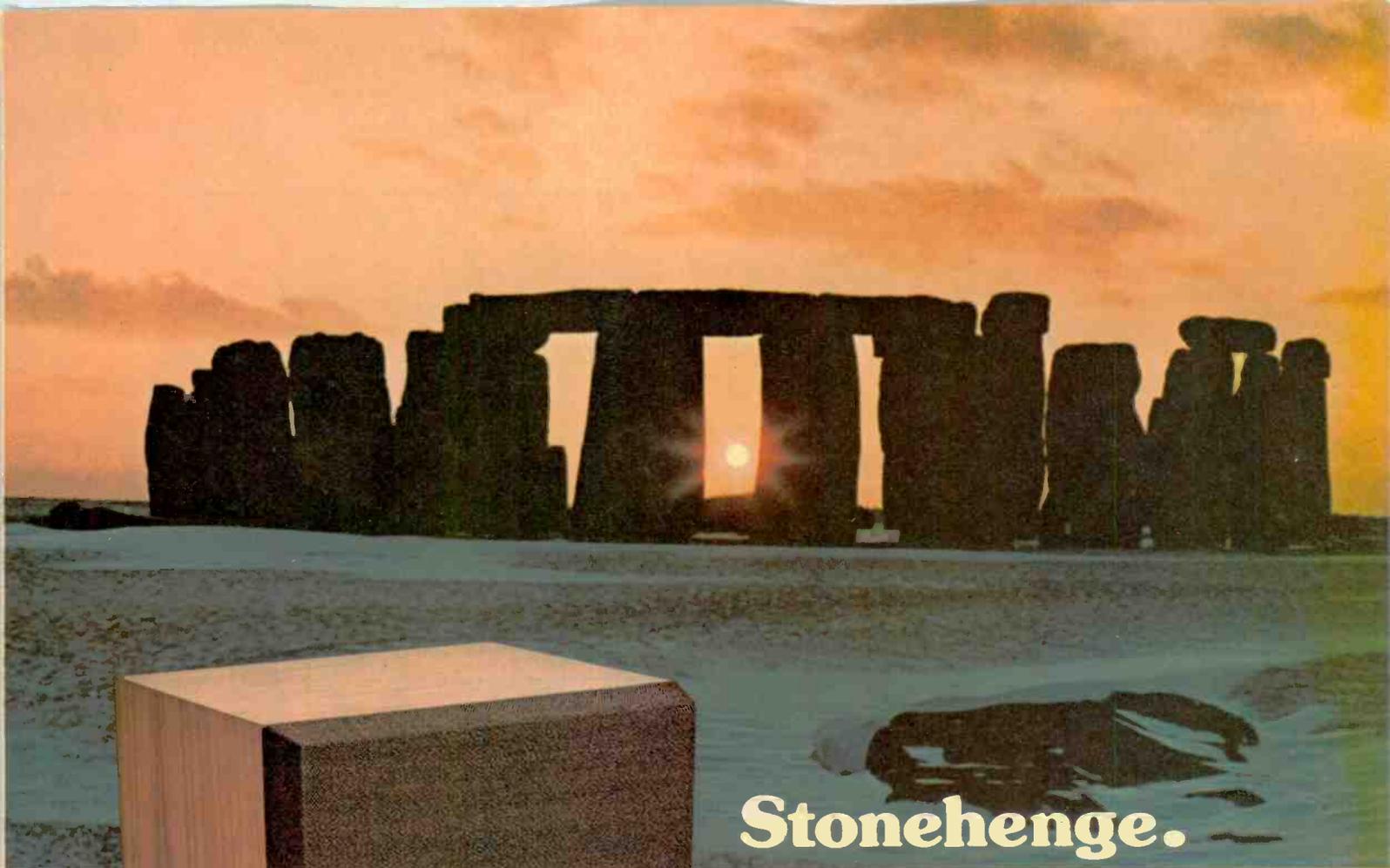
CORPORATION

10 Tripps Lane, East Providence, R.I. 02914
Distributed in Canada by:
Kairon Electronics, Montreal, Quebec.



Speakers

| MANUFACTURER | MODEL | WOOFER | | | MID-RANGE | | TWEETER | | Overall freq. resp., Hz to kHz ± 3 dB | Ampl. pwr. for avg. room, W | Pwr. handling capacity (RMS cont) | Crossover frequency (res), Hz | Impedance, ohms | Enclosure dimensions, W x D x H, in. | Wood finish | Grille material/color | Weight, lbs. | Price | NOTES |
|----------------|---------------|---------------|---------------------------|----------------|---------------|-------|---------------|-----------|--|-----------------------------|--------------------------------------|-------------------------------|----------------------|---|------------------|-----------------------|--------------|--------------------------------------|---|
| | | Diameter, in. | Resonance (in system), Hz | Enclosure type | Diameter, in. | Type | Diameter, in. | Type | | | | | | | | | | | |
| EMPIRE | 6000 M/II | 12 | 30 | Reflex | 4 | Cone | 2 | Cone | 30-20k ±5 | 5 | 100 | 450; 5k | 8 | 18 dia. x 24 3/8 | Wal. | | 60 | 159.95 | *Cylinder, w. imported marble top. |
| | 6500 | 12 | 30 | Reflex | 4 | Cone | 2 | Cone | 30-20k ±5 | 5 | 100 | 450; 5k | 8 | 17 1/4 dia. x 25 1/2 | Plas. | | 50 | 159.95 | *Cylinder; waterproof. |
| | 7500 M/II | 15 | 25 | Acous. susp. | 5 | Dome | 1 | Dome | 25-20k ±5 | 5 | 125 | 450; 5k | 8 | 20 dia. x 26 3/4 | Wal. | | 90 | 249.95 | *Cylinder, w. imported marble top. |
| | 9500 M/II | (2) 12 | 20 | Acous. susp. | (2) 5 | Dome | (2) 1 | Dome | 20-20k ±5 | 5 | 250 | 450; 5k | 8 | 30 x 20 3/4 x 28 | Wal. | | 120 | 399.95 | W. imported marble top. |
| EPICURE | 50 | 6 | 55 | Acous. susp. | | | 1 | | 50-18k ±3 | 10 | 50 | 1.8k | 8 | 10 x 13 x 8 | Wal. | Blk. | 15 | 65.00 | |
| | 100 | 8 | 47 | Acous. susp. | | | 1 | | 45-18k ±3 | 10 | 50 | 1.8k | 8 | 9 x 11 x 21 | Wal. | Blk. | 25 | 99.00 | |
| | 150 | 8 | 35 | Acous. susp. | | | 1 | | 38-19.5k ±3 | 10 | 70 | 1.8k | 8 | 11 x 15 x 25 | Wal. | Blk. | 30 | 149.00 | |
| | 201 | (2) 8 | 32 | Acous. susp. | | | (2) 1 | | 30-19.5k ±3 | 25 | 100 | 1.8k | 4/16 | 11 x 18 x 28 | Wal. | Blk. | 40 | 219.00 | Bi-directional. |
| | 202 | (2) 8 | 35 | Acous. susp. | | | (2) 1 | | 35-19.5k ±3 | 30 | 100 | 1.8k | 4/16 | 15 x 15 x 25 | Wal. | Blk. | 40 | 239.00 | |
| | 602 | (2) 8 (1) 6 | 30 | Acous. susp. | | | (3) 1 | | 30-19.5k ±3 | 35 | 200 | 1.8k | 4 | 15 x 24 x 16 | Wal. | Blk. | 60 | 299.00 | |
| | 400+ | (4) 6 | 35 | | | | (4) 1 | | 27-19.5k ±3 | 40 | 250 | 1.8k | 8 | 14 x 14 x 38 | Wal. | Blk. | 90 | 399.00 | Omnidirectional. |
| | 1000 | (4) 8 | 18 | Acous. susp. | | | (4) 1 | | 22-20k ±3 | 30 | 300 | 1.8k | 8 | 18 x 18 x 75 | Wal. | Blk. | 180 | 1000.00 | Omnidirectional. |
| | 60 | 6 | 55 | Acous. susp. | | | 1 | | 50-18k ±3 | 10 | 50 | 1.8k | 8 | 9 x 7 x 17 | Vinyl | Blk. | 15 | 69.95 | |
| | 90 | 8 | 47 | Acous. susp. | | | 1 | | 45-18k ±3 | 10 | 50 | 1.8k | 8 | 11 x 9 x 21 | Vinyl | Blk. | 25 | 89.95 | |
| | 110 | 8 | 35 | Acous. susp. | | | 1 | | 38-18k ±3 | 10 | 70 | 1.8k | 8 | 14 x 10 x 24 | Vinyl | Blk. | 30 | 129.95 | |
| | 180 | (2) 8 | 35 | Acous. susp. | | | (2) 1 | | 38-18k ±3 | 25 | 100 | 1.8k | 8 | 14 x 12 x 25 | Vinyl | Brn. | 38 | 189.95 | |
| | Microtower I | | 70 | | (2) 4 1/2 | Cone | | | 50-14k ±3 | 3 | 50 | 200 | 8 | 8 x 8 x 32 | Vinyl | Blk. | 21 | 69.95 | |
| Microtower II | | 70 | | (2) 4 1/2 | Cone | (2) 1 | | 45-18k ±3 | 10 | 60 | 200; 3k | 8 | 8 1/2 x 8 1/2 x 34 | Vinyl | Blk. | 28 | 129.95 | | |
| Microtower III | | 50 | | (4) 4 1/2 | Cone | (2) 1 | | 35-18k ±3 | 15 | 70 | | 8 | 12 x 12 x 37 | | | 46 | 209.95 | | |
| EQUASOUND | 2 | 10 | | Reflex | 4 | Cone | (3) 1 | Dome | 30-20k ±3 | 5 | 50 | | 4 | 13 x 13 x 42 | Wal. | Cloth Var. | 65 | 329.00 | |
| | 103 | 10 | | Reflex | 4 | Cone | 1 | Dome | 32-30k ±3 | 5 | 50 | | 4 | 25 x 13 x 14 1/2 | Wal. | Cloth Var. | 45 | 199.00 | |
| ESS | amt 5 | 12 | | Acous. susp. | | | | * | 45-24k ±3 1/2 | 15 | | 1.5 | 4 | 14 1/2 x 12 1/2 x 24 | Wal. | Cloth Blk. | | 189.00 | *Heil air-motion transformer power ring; fused. |
| | amt 1 tower | 10 | | Trans. line | | | | * | 35-24k ±2 1/2 | 20 | | 700 | 4 | 14 3/4 x 14 1/4 x 43 3/4 | Wal. | Cloth Blk. | | 375.00 | *Heil air-motion transformer; fused. |
| | amt 1 | 10 | | Reflex | | | | * | 45-24k ±2 1/2 | 20 | | 700 | 4 | 14 3/4 x 14 1/4 x 31 | Wal. | Cloth Blk. | | 315.00 | *Heil air-motion transformer; fused. |
| | amt 3 | (2) 10 | | Reflex | 6 | Cone | | * | 40-24k | 20 | | 250; 1k | 4 | 15 1/2 x 15 1/4 x 39 1/4 | Wal. | Cloth Blk. | | 435.00 | *Heil air-motion transformer; fused. |
| amt 4 | 10 | | Acous. susp. | | | | * | 45-24k ±3 | 20 | | 1k | 4 | 15 1/2 x 12 1/2 x 27 | Wal. | Cloth Blk. | | 259.00 | *Heil air-motion transformer; fused. | |
| E-V | Sentry III | 15 | 40 | Reflex * | 8 1/2 x 32 | Horn | 4x6 | Horn | 40-18k ±3 | 2 | 50 | 600; 3.5k | 8 | 34 1/2 x 20 1/2 x 28 1/2 | Wal. | Cloth Blk. | 156 | 600.00 | *4th order Butterworth opt. SEQ equalizer for 28 Hz, \$60.00. |
| | Interface A | 12 | 32 | Reflex * | 8 | Cone | (2) 2 | Dome | 32-20k ±3 | 10 | 25 | 1.5k | 8 | 14 x 7 1/2 x 22 | Wal. | Cloth Blk. | 70 | 450.00 pair ** | **12-in cone is passive W. equalizer. |
| | E-V16A | 12 | 30 | Acous. susp. | 5 | Cone | 2 1/4 | Cone | 30-20k ±5 | 10 | 25 | 700; 3k | 8 | 25 x 13 3/4 x 14 1/2 | Wal. Vinyl | Cloth Brn. | 36 | 139.95 | |
| | E-V15A | 10 | 40 | Acous. susp. | 5 | Cone | 2 1/4 | Cone | 40-20k ±5 | 10 | 25 | 700; 3k | 8 | 24 x 11 3/4 x 13 1/2 | Wal. Vinyl | Cloth Brn. | 31 | 119.95 | |
| | E-V 14A | 10 | 40 | Acous. susp. | | | 2 1/2 | Cone | 40-18k ±5 | 10 | 25 | 1.5k | 8 | 24 x 11 3/4 x 13 1/2 | Wal. Vinyl | Cloth Brn. | 30 | 89.95 | |
| | E-V 13A | 8 | 50 | Acous. susp. | | | 2 1/2 | Cone | 50-18k ±5 | 10 | 20 | 1.5k | 8 | 19 x 8 1/2 x 10 | Wal. Vinyl | Cloth Brn. | 15 | 59.95 | |
| | E-V 11A | 6 | 70 | Reflex | | | | Coax | 70-16k ±5 | 5 | 10 | 5k | 8 | 15 1/2 x 6 3/4 x 8 1/2 | Wal. Vinyl | Cloth Brn. | 8 | 39.00 | |
| | Musicaster IA | 12 | 80 | Reflex | | | | Coax | 80-10k | 20 | 4k | | 8 | 21 1/2 x 8 1/2 x 21 1/2 | Olive Metal Blk. | | 29 | 93.00 | Musicaster IIA, w. horn tweeter to 16k, \$117.00. |



Stonehenge.

Britain's ageless Stonehenge. Eternal monument to man's quest for ultimate understanding of his world.

Altec's Stonehenge I. Fulfilling the quest of another age — for the ultimate speaker system to reproduce today's dynamic music. With all the power and precision originally captured by modern recording technology. Starting at the bottom, a hefty 12-inch frame bass driver delivers powerfully virile lows and mid-range. At 1800 Hz, the signal crosses over to an all-new direct radiator that produces crisp, definitive highs. The dividing network is front-mounted, with continuously variable high-frequency attenuation control. All totally designed to achieve a new level of accuracy in sound reproduction.

Altec's Stonehenge II. An ultimate in visual styling, as well. A tall, slender column, elegant and graceful. Stunningly crafted on all four sides of luxurious hand-rubbed Afrosian Teak, accented by a rich Raw Cocoa grille. And it occupies less than 1.4 square feet of floor area. Perfect for the small space dweller and quad enthusiast.

Stonehenge I. A new look. A new sound. An ancient mystery inspiring a classic of contemporary technology. From Altec.

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ALTEC
the sound of experience.



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Speakers

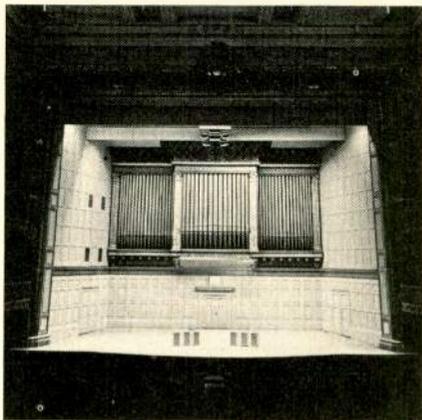
| MANUFACTURER | MODEL | WOOFER | | | | | MID-RANGE | | TWEETER | | Overall freq. resp., Hz to kHz | | Ampl. pow. for avg. room, W | Pwr. handling capacity (RMS cont) | Crossover frequency (res), Hz | Impedance, ohms | Enclosure dimensions, W x D x H, in. | Wood finish | Grille material color | Weight, lbs. | Price | NOTES |
|--------------|-------------------|---------------|---------------------------|----------------|---------------|-----------|---------------|-----------|-------------|------|--------------------------------|-----------------|-----------------------------|-----------------------------------|-------------------------------|-----------------|--------------------------------------|-------------|--|--------------|-------|-------|
| | | Diameter, in. | Resonance (in system), Hz | Enclosure type | Diameter, in. | Type | Diameter, in. | Type | ± dB | ± dB | | | | | | | | | | | | |
| FAIRFAX | FX100B | 8 | 50 | Duct. port | | | 3½ | Cone | 40-20k | 7 | 30 | 2k | 8 | 12 x 10 x 22 | Oil. Wal. | Foam Brn. | 30 | 99.95 | | | | |
| | FX300 | 10 | 47 | Duct. port | | | 3½ | Cone | 34-20k | 7 | 50 | 2k | 8 | 14 x 10½ x 22 | Oil. Wal. | Foam Brn. | 42 | 119.95 | | | | |
| | FTA-2 | (2) 8 | 45 | Acous. susp. | 5 | Cone | 3½ | Cone | 30-20k | 10 | 50 | 1k; 5.5k | 8 | 14 x 12 x 24 | Oil. Wal. | Foam Brn. | 45 | 159.95 | | | | |
| | FX350 | 10 | 39 | Reflex | 5 | Cone | 3½ | Cone | 24-20 | 10 | 60 | 1k; 5.5k | 8 | 14 x 12 x 36 | Oil. Wal. | Foam Brn. | 70 | 189.95 | | | | |
| | FX400 | (2) 10 | 35 | Duct. port | 5 | Cone | 3½ | Cone | 20-20k | 8 | 80 | 1k; 5.5k | 8 | 28 x 14 x 28 | Oil. Wal. | Foam Brn. | 105 | 269.95 | | | | |
| | F2A | 8 | 55 | Duct. port | | | 3½ | Cone | 40-20k | 7 | 25 | 5.5k | 8 | 12 x 9 x 18 | Oil. Wal. | Foam Brn. | 25 | 79.95 | | | | |
| | Wall of Sound | (6) 8 | 35 | Acous. susp. | (2) 5 | Cone | (2) 3½ (2) 1 | Cone Dome | 20-20k | 20 | 100 | 800; 2k; 5k; 9k | 6.5 | 30 x 6½ x 52 | Oil Wal. | Cloth Brn. | 125 | 399.95 | | | | |
| FRAZIER | Mk IV-A | 10 | | Duct. port | | | 3x7 | Horn | 40-17k | | 25 | 2k | 8 | 14 x 24 x 12 | Oil. Wal. | Foam Var. | 43 | 138.95 | Removable grille. | | | |
| | Mk V-A | 12 | | Duct. port | (2) 4 | Cone | 3x7 | Horn | 30-17k | | 30 | 800; 3.3k | 8 | 14 x 25¼ x 12 | Oil. Wal. | Foam Var. | 56 | 240.00 | Removable grille. | | | |
| | Concerto | 10 | | Duct. port | | | 3x7 | Horn | 30-17k | | 25 | 1.5k | 8 | 21½ x 16 x 16 | Oil. Wal. | Foam Var. | 53 | 217.50 | Also in util. version; removable grille. | | | |
| FULTON | 60 | 6½ | | Acous. susp. | | | | | 60-151 | 7½ | 30 | | 8 | 8 x 15 x 8 | Wal. | Blk. | 12 | 118.00 pair | | | | |
| | 80 | 8 | | Acous. susp. | | | (2) 2¼ | Cone | 50-22k | 10 | 50 | 1.6k | 8 | 10 x 18 x 9 | Wal. | Blk. | 18 | 178.00 pair | | | | |
| | 100 | 10 | | Acous. susp. | | | (4) 2¼ | Cone | 40-22k | 12 | 60 | 1.2k | 8 | 14 x 22 x 9 | Wal. | Blk. | 30 | 278.00 pair | | | | |
| | 120 | 12 | | Acous. susp. | 5 | Cone | (2) 2¼ | Cone | 30-22k | 17 | 80 | 300; 5k | 8 | 15 x 25 x 12 | Wal. | Blk. | 45 | 498.00 pair | | | | |
| GOLLEHON | 8218/M | 15 | 55 | Reflex | 28x12 | Horn | 3x7 | Horn | 40-20k | 25 | 150 | * | 8 | 33 x 25 x 55 | Gray | None | 190 | 660.00 | *Adj. 500 or 5k, concls. mid. Hi outputs. | | | |
| | 8220 | 15 | 70 | | 28x12 | Horn | 3x7 | Horn | 50-20k | 25 | 100 | * | 8 | 28 x 25 x 47 | Gray | None | 150 | 500.00 | *As above. | | | |
| GTE SYLVANIA | AS125B | 12 | 42 | Acous. susp. | 1½ | dome | 1 | dome | 30-20k +5 | 10 | 100 | 600; 6k | 8 | 15½ x 12½ x 27¼ | Wal. | Cloth Brn. | 64 | 179.95 | | | | |
| | AS210A | 10 | 42 | Acous. susp. | — | | 1½ | dome | 33-15k ±3 | 10 | 100 | 1.5k | 8 | 15½ x 11½ x 24 | Wal. | Foam Brn. | 51 | 99.95 | | | | |
| | AS225A | 12 | 36 | Acous. susp. | 4½ 1½ | cone dome | 1 | dome | 30-20k +5 | 10 | 150 | 350; 2k; 9k | 8 | 17½ x 28½ | Wal. | Cloth Brn. | 84 | 249.95 | | | | |
| HARTLEY | Concertmaster VI | 24 | 13 | Acous. susp. | 10 | Cone | 7 1 | Cone Dome | 16-25k ±3 | 20 | 60 | 250; 3k; 6k | 8 | 40½ x 29 x 18 | Wal. | Gold, Brn. | 150 | 965.00 | Concertmaster V, similar \$940.00. Both w. 12 dB/oct. cover. | | | |
| | Concertmaster IV | 18 | 17 | Acous. susp. | 10 | Cone | 7 1 | Cone Dome | 20-25k ±3 | 20 | 60 | 250; 3k; 6k | 8 | 34 x 29 x 16 | Wal. | Gold Brn. | 140 | 910.00 | Concertmaster III, similar \$885.00. | | | |
| | Concertmaster Jr. | 10 | 28 | Acous. susp. | 3 | Cone | 1 | Dome | 30-25k ±4 | 15 | 30 | 2.5k; 6k | 8 | 30 x 24 x 14 | Wal. | Blk. | 85 | 350.00 | Holton A, similar, \$335.00. | | | |
| | Holton Jr. | 10 | 30 | Acous. susp. | 3 | Cone | 1 | Dome | 35-25k ±4 | 15 | 30 | 2.5k; 6k | 8 | 30 x 15 x 12 | Wal. | Blk. | 50 | 285.00 | | | | |
| | Zodiac A | 10 | 30 | Acous. susp. | | 1 | Dome | | 35-25 ±5 | 10 | 30 | 2.5k | 8 | 30 x 24 x 14 | Wal. | Brn. | 85 | 200.00 | | | | |
| | Zodiac C | 10 | 30 | Acous. susp. | | | 1 | Dome | 35-25k ±5 | 10 | 30 | 2.5k | 8 | 30 x 24 x 14 | Wal. | Brn. Gold | 85 | 220.00 | | | | |
| | Zodiac 74 | 10 | 35 | Acous. susp. | | | 1 | Dome | 38-25k ±5 | 10 | 30 | 2.5k | 8 | 30 x 15 x 12 | Wal. | Foam Blk. | 50 | 128.00 | | | | |
| HAYNES | 500D | 8½ | 50 | Acous. susp. | | | 1½ | Dome | 50-15k ±7.5 | 13 | 250 | 1250 | 4 | 12½ x 8¼ x 20 | Wal. | Cloth Brn. | 35 | 129.50 | Xover has elec. damping; dual fuses. | | | |
| | 750B | 10 | 45 | Acous. susp. | | | 1½ | Dome | 50-15k +5 | 18 | 250 | 12.5k | 4 | 14 x 9½ x 23 | Wal. | Cloth Brn. | 45 | 169.50 | As above. | | | |
| | 1500 | 10 | 45 | Acous. susp. | 1½ | Dome | (2) 1 | Dome | 50-17.5k ±5 | 25 | 250 | 12.5k; 7.5k | 4 | 14 x 9½ x 23 | Wal. | Cloth Brn. | 50 | 231.00 | As above. | | | |
| HEATH | AS-101 | 15 | | Reflex | | | | Horn | 35-22k | 5 | 50 | 800 | 8 | 27½ x 14½ x 29½ | Pecan | cloth blk-gold | 101 | 319.95k | Kit version of Altec system. | | | |
| | AS-103A | 12 | 42 | Acous. susp. | 1½ | dome | ¾ | dome | 20-20k | 25 | 100 | 575; 5k | 4 | 14 x 11½ x 25 | Wal. | cloth blk-gold | 53 | 199.95 | Kit version of AR-3A. | | | |
| | AS-48 | 14 | | Reflex | | | 2 | cone | 40-20k | 5 | 40 | 2k | 8 | 14 x 12 x 23½ | Pecan | cloth brn. | 42 | 234.95k | Kit version of JBL system. | | | |
| | AS-104 | 10 | 46 | Acous. susp. | 4½ | cone | 3½ | cone | 30-18k | 10 | 100 | 500; 4.5k | 8 | 13½ x 11½ x 24 | Wal. | cloth brn. | 36 | 99.95 | | | | |

'Many professional audio people, including our reviewer, use the AR-3a as a standard by which to judge other speaker systems'

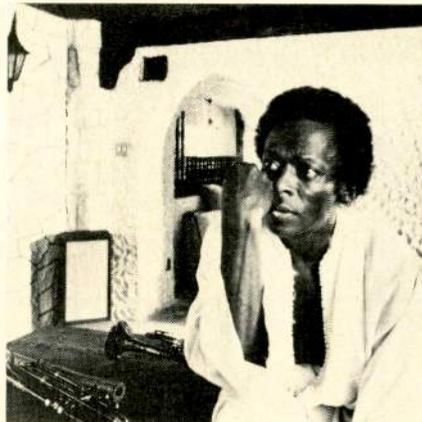
From the beginning, AR speaker systems have been characterized by independent reviewers, like *Electronics Illustrated* quoted above, as embodying the state of the art in home music reproduction.

Standard of performance

Soon after the AR-1 was introduced, as AR's first 'top-of-the-line' speaker system, the *Audio League Report* stated, 'We do not specifically know of any other speaker system which is comparable to [the AR-1] from the standpoint of extended low frequency response, flatness of response, and most of all, low distortion.'



Symphony Hall, Boston. Six AR-3a's are used for modern compositions involving electronic music.



Miles Davis, at home with his AR-3a speakers.

Twenty years later

In a recent review of the AR-3a, published in *Stereo Review*, Hirsch-Houck Laboratories made the following observation:

'For the benefit of newcomers to the audio world, the AR-3a is the direct descendant of the AR-1, the first acoustic suspension speaker system, which AR introduced in 1954. The AR-1 upset many previously held notions about the size required for a speaker to be capable of reproducing the lowest audible frequencies. The 'bookshelf'-size AR speakers set new standards for low distortion, low-frequency reproduction, and in our view have never been surpassed in this respect.'

Durability of accomplishment

AR's research program is aimed at producing the most accurate loudspeaker that the state of the art permits, without regard to size or price. *Consumer Guide* recently confirmed the effectiveness of this approach, stating that 'AR is the manufacturer with the best track record in producing consistently high-quality speakers,' and noted that 'the AR-3a was judged by our listening panelists to be the ultimate in performance.'

Audio magazine called the AR-3a 'a new high standard of performance at what must be considered a bargain price.' Hear it today at your audio dealer. You'll see what we mean when we say that the AR-3a is the best home speaker system AR knows how to make.



The AR-3a. *Consumer Guide's* 'ultimate in performance'.

Acoustic Research

10 American Drive
Norwood, Massachusetts 02062

International Office:
High Street, Houghton Regis,
Bedfordshire, England

In Canada:
A. C. Simmonds & Sons Ltd.
Toronto



Speakers

| MANUFACTURER | MODEL | WOOFER | | | | MID-RANGE | | TWEETER | | | | Impedance, ohms | Enclosure dimensions, W x D x H, in. | Wood finish | Grille material color | Weight, lbs. | Price | NOTES |
|--------------|----------------|---------------|---------------------------|----------------|---------------|-----------|---------------|-----------|--------------------------|--|------------------------|-----------------|--------------------------------------|-----------------|-----------------------|--------------------|--------------------------|---|
| | | Diameter, in. | Resonance (in system), Hz | Enclosure type | Diameter, in. | Type | Diameter, in. | Type | Overall resp., Hz to kHz | Ampl. pwr. for avg. room, W (RMS cont) | Pwr. handling capacity | | | | | | | |
| HECO/GRACOM | P5302 | 10 | — | Acous. susp. | 2 | dome | 1 | dome | 22-25k | 2½ | 70 | 500; 5k | 4 | 23 x 12 x 10 | Wal. | Alum. | 425.00 | |
| | P4302 | 8 | — | Acous. susp. | 2 | dome | 1 | dome | 28-25k | 2½ | 50 | 500; 5k | 4 | 17½ x 10 x 7½ | Wal. | Alum. | 310.00 | |
| | P3302 | 6¾ | — | Acous. susp. | 1½ | dome | 1 | dome | 38-25k | 2½ | 45 | 1.1k; 4k | 4 | 15½ x 8 x 7 | Wal. | Alum. | 258.00 | |
| | P2302 | 6¾ | — | Acous. susp. | 1½ | dome | ¾ | dome | 40-25k | 2½ | 35 | 1.1k; 4k | 4 | 14 x 9 x 7 | Wal. | Alum. | 215.00 | |
| | SM635 | 8 | — | Acous. susp. | — | — | 1 | dome | 40-25k | 3½ | 40 | 1.2k | 4 | 17 x 9 x 8 | Wal. | Alum. | 147.00 | |
| | SK225 | 7 | — | Acous. susp. | — | — | 1 | dome | 45-25k | 2½ | 30 | 2k | 4 | 15 x 8 x 6½ | Wal. | Cloth brn. | 90.00 | |
| | SK215 | — | — | Acous. susp. | 6 | cone | — | — | 50-15k | 2½ | 15 | — | 4 | 10 x 7 x 4 | Wte. | Cloth gray | 55.00 | |
| | P5302SL | 10 | — | Acous. susp. | 2 | dome | 1 | dome | 22-25k | 2½ | 70 | 500; 5k | 4 | 23 x 12 x 10 | Bik. | Alum. | 470.00 | Studio monitor. |
| | P7302SLV | (2) 8 | — | Acous. susp. | 2 | dome | 1 | dome | 20-25k | * | * | 550; 3.5k | * | 26 x 14 x 10½ | Bik. or wte. Bik. | Alum. | 1012.00 | *Tri-amp built in; preamp inpt 5 kilohms. |
| D100 | 14 | 50 | Acous. susp. | (4) 5 | cone | 2½ x 1¾ | horn | 20-20k | — | 100* | 800; 8k | 4 | 32 x 16 x 11 | Plas. blk. | Plas. blk. | 572.00 | *for 115 dB SPL 1 mtr. | |
| HEGEMAN | 1A | 8 | 28 | Acous. susp. | — | — | 1 | dome | 30-20k +2½ | 25 | 25 | 5k | 8 | 11 x 8¾ x 26 | Wal. | Foam blk. | 25 | 318.00 pair |
| | 2 | 10 | 24 | Acous. susp. | — | — | 2 | dome | 25-20k +2½ | 25 | 30 | 3.5k | 8 | 14 x 12 x 34 | Wal. | Foam blk. | 42 | 588.00 pair |
| HITACHI | SS-32 | 6½ | — | Acous. susp. | — | — | 2 | — | — | — | 20 | — | — | — | — | — | 99.95 pair | |
| | SS-52 | 8 | — | Acous. susp. | — | — | 2½ | — | — | — | 30 | — | — | — | — | — | 119.95 pr. | |
| | HS-220 | 8 | — | Acous. susp. | — | — | 2½ | — | 60-20k | — | 20 | 3k | 8 | 11 x 10 x 19 | Wal. | Cloth, gray | 15.5 | 79.95 ea. |
| | HS-320 | 8 | — | Bass reflex | — | — | 2 | cone | 50-20k | — | 20 | 4k | 8 | 13 x 23 x 10 | Wal. | Cloth gray | 26.4 | 119.95 ea. |
| | HS-420 | 10 | — | Bass reflex | 5 | cone | 2 | cone | 40-20k | — | 40 | 2k, 8k | 8 | 15 x 27 x 10 | Wal. | Cloth gray | 33 | 169.95 ea. |
| | HS-300 | * | — | Bass reflex | — | — | 2 | cone | 45-19k | — | 50 | 3.8 | 8 | 12 x 27 x 11 | Wal. | Cloth brn. | 29 | 189.95 ea. |
| | HS-350 | * | — | Bass reflex | — | — | 2 | horn | 40-20k | — | 50 | 3.5k | 8 | 15 x 24 x 10 | Wal. | Cloth gray | 33 | 239.95 ea. |
| HS-500 | 8 | — | Bass reflex | — | — | 2¾ | horn | 35-20k | — | 50 | 3k | 8 | 15 x 25 x 14 | Wal. | Cloth brn. | 48.5 | 359.95 ea. | |
| IMF | Monitor Mk III | 9 x 16 | 16 | Trans line | 6 | cone | 1 x ¾ x ¾ | dome dome | * | 35 | 50 | 375; 3.5k 13k | 8 | 19¾ x 17½ x 42 | Wal. | Cloth blk. | 140 | 950.00 |
| | Studio IIIA | 8 | 23 | Trans line | 5 | cone | 1½ x ¾ | dome dome | * | 35 | 40 | 375; 3k 13k | 8 | 15 x 14 x 36 | Wal. teak | Cloth blk. | 70 | 440.00 |
| | ALS 40A | (2) 8 | 28 | Trans line | 5 | cone | 1½ | dome | * | 35 | 40 | 180; 375; 3k | 8 | 13½ x 13½ x 26½ | Wal. teak | Cloth blk. | 40 | 300.00 |
| | Super compact | 8 | 28 | Reflex | 5 | cone | 1½ | dome | * | 35 | 40 | 375; 3k | 8 | 11¾ x 11 x 18 | Wal. | Cloth | 30 | 200.00 |
| INFINITY | Pos II | 10 | — | damp. port | — | — | 2½ | cone | 45-19k +4 | 12 | 100 | 1.5k | 8 | 24 x 13 x 12 | Wal. | Bik. | 45 | 98.00 |
| | 1001A | 12 | — | Trans. line | — | — | (2) | cone | 30-21k +4½ | 20 | 100 | 1.3k | 8 | 26 x 18 x 12 | Wal. | Bik. | 55 | 139.95 |
| | 2000AXT | 12 | — | Trans. line | 5 | cone | — | Walsh | 35-21k +3½ | 25 | 200 | 500; 5k | 8 | 27¾ x 20 x 14 | Wal. | Bik. | 65 | 299.00 |
| | Column | (2) 8 | — | Trans. line | (2) 2½ | cone | — | Walsh | 35-21k +4 | 12 | 100 | 1.8k; 7k | 4 | 11 x 11 x 40 | Wal. | Bik. | 55 | 239.00 |
| | Monitor | 12 | — | Trans. line | 1½ | dome | — | Walsh | 26-32k +4 | 60 | 200 | 500; 5k | 8 | 14 x 14 x 39 | Wal. | Bik. | 70 | 429.00 |
| INNER- | Tri-planar I | 12 | — | Acous. susp. | (2) 4½ | cone | (2) 2 | PZ | 35-20k +3 | 20 | 150 | 500 5k | 8 | 29¾ x 21 x 25½ | Wal. | Nylon Bik or Beige | 68 | 249/side |
| | Tri-planar IIB | 8 | — | Acous. susp. | (2) 4½ | cone | (2) 2 | PZ | 40-27k +3 | 10 | 100 | 500 5k | 8 | 16 x 8¾ x 33½ | Wal. | Nylon or Bge. | 35 | 129.95/side |

Speakers

| MANUFACTURER | MODEL | WOOFER | | | | MID-RANGE | | TWEETER | | Overall freq. resp., Hz to kHz ± 7 dB | Appl. pwr. for avg. room, W | Pwr. handling capacity (RMS cont) | Crossover frequency (res.), Hz | Impedance, ohms | Enclosure dimensions, W x D x H, in. | Wood finish | Grille material/color | Weight, lbs. | Price | NOTES |
|--------------|---------------------|---------------|---------------------------|----------------|---------------|-----------|---------------|--------------|-----------|--|-----------------------------|--------------------------------------|--------------------------------|-----------------|---|----------------------|-----------------------|--------------|-------|-------|
| | | Diameter, in. | Resonance (in system), Hz | Enclosure type | Diameter, in. | Type | Diameter, in. | Type | | | | | | | | | | | | |
| JANSZEN | Z210a | 10 | 52 | Acous. susp. | — | — | 32 sq. in. | ES | 38-20k ±3 | 15 | 50 | 1.8k | 7 | 12½ x 10¼ x 17½ | Wal. | Foam steel blk. | 25 | 119.95 | | |
| | Z210ah | 10 | 45 | Acous. susp. | — | — | 32 sq. in. | ES | 35-20k ±3 | 20 | 60 | 1.8k | 7 | 13½ x 11 x 24 | Wal. | Foam steel blk. | 39 | 149.95 | | |
| | Z410 | 10 | 45 | Acous. susp. | — | — | 64 sq. in. | ES | 35-20k | 20 | 75 | 1.8k | 7 | 13¼ x 11 x 24 | Wal. | Foam steel blk./brn. | 41 | 179.95 | | |
| | Z412a | 12 | 43 | Acous. susp. | — | — | 64 sq. in. | ES | 33-20k ±3 | 20 | 100 | 1.8k | 5 | 14 x 11¼ x 27½ | Wal. | Foam steel blk./brn. | 44 | 249.95 | | |
| JBL | L16 Decade 16 | 8 | | Duct. port | — | — | 1½ | cone | | 4 | 35 | 2.5k | 8 | 19¼ x 10¼ x 10½ | Dak | Cloth brn. | 28 | 135.00 | | |
| | L26 Decade 26 | 10 | | Duct. port | — | — | 1½ | cone | | 3 | 35 | 2k | 8 | 24 x 13¼ x 12½ | Oak | Cloth var. | 42 | 156.00 | | |
| | L36 Decade 36 | 10 | | Duct. port | 5 | cone | 1½ | cone | | 3 | 50 | 1.5k; 6k | 8 | 24 x 13½ x 13½ | Wal. | Cloth var. | 45 | 198.00 | | |
| | L65 Jubal | 12 | | Duct. port | 5 | cone | * | | | 2 | 75 | 1k; 6.5k | 8 | 17½ x 13½ x 24½ | Wal. | Cloth var. | 67 | 372.00 | | |
| | L100 Century | 12 | | Duct. port | 5 | cone | 1½ | cone | | 2 | 50 | 1.5k; 6k | 8 | 23½ x 13½ x 14½ | Wal. | Foam var. | 55 | 297.00 | | |
| | L120 Acquarius Q | 10 | | Duct. port | 5 | cone | 1½ | cone | | 4 | 50 | 1k; 8k | 8 | 12 x 12 x 43½ | Wal. or wte. | Cloth var. | 71 | 600.00 | | |
| | L200 Studio Monitor | 15 | | Duct. port | | | | Horn w. lens | | 1 | 100 | 12k | 8 | 23 x 21¼ x 32¼ | Wal. | Foam var. | 139 | 657.00 | | |



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Huntington, Ind. 46750

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Speakers

| MANUFACTURER | MODEL | WOOFER | | | | | MID-RANGE | | TWEETER | | Overall freq. resp., Hz to kHz ± 7 dB | Ampl. pwr. for avg. room Pwr. handling capacity (RMS cont) | Crossover frequency (ies), Hz | Impedance, ohms | Enclosure dimensions, W x D x H, in. | Wood finish | Grille material/color | Weight, lbs. | Price | NOTES ES: Electrostatic PZ: Piezoelectric |
|-------------------------|--------------|---------------|---------------------------|----------------|---------------|-----------------|---------------|-----------|-----------|----|--|--|-------------------------------|--------------------|---|------------------|-----------------------|--------------|---|---|
| | | Diameter, in. | Resonance (in system), Hz | Enclosure type | Diameter, in. | Type | Diameter, in. | Type | | | | | | | | | | | | |
| JENSEN | Serenata | 15 | 30 | Duct. prot. | 8 | Cone | 5 (2) 1 | Cone Dome | 27-30k | 10 | 100 | 300; 15k; 4k | 8 | 23 x 17 x 31 | Wal. | Cloth blk. | 85 | 426.00 | | |
| | 6 | 15 | 40 | Acous. susp. | 8 | Cone | 5 (2) 1 | Cone Cone | 27-30k | 10 | 75 | 300; 1k; 4k | 8 | 20½ x 15 x 27 | Wal. | Cloth blk. | 74 | 249.00 | | |
| | 5 | 12 | 45 | Acous. susp. | (2) 5 | Cone | 1 | Dome | 32-30k | 10 | 60 | 500; 4k | 8 | 15 x 13 x 26 | Wal. | Cloth blk. | 52 | 189.00 | | |
| | 4 | 10 | 50 | Acous. susp. | 5 | Cone | 1 | Dome | 36-30k | 10 | 50 | 500; 4k | 8 | 13 x 12 x 24 | Wal. | Cloth char. brn. | 46 | 129.00 | | |
| | 3 | 10 | 65 | Acous. susp. | -- | -- | 3½ | Cone | 36-20k | 10 | 40 | 800 | 8 | 12¼ x 10¼ x 22½ | Wal. | Cloth beige | 31 | 99.00 | | |
| | 2 | 8 | 70 | Acous. susp. | -- | -- | 3½ | Cone | 38-20k | 10 | 35 | 1.2k | 8 | 11 x 8¾ x 18¾ | Wal. vinyl | Cloth beige | 22 | 69.00 | | |
| | 1 | 8 | 95 | Acous. susp. | -- | -- | 3 | Whiz. | 40-18k | 10 | 30 | 6k | 8 | 10 x 14½ x 8½ | Wal. vinyl | Cloth beige | 14 | 42.00 | | |
| JVC | JVC 3 | 10 | | Acous. susp. | | | 2½ | Dome | 30-20k | 10 | 25 | 2k | 8 | 20½ x 12½ x 11½ | Wal. | Org. blue | 30 | 259.95 | | |
| | SX 3 | 10 | | Acous. susp. | | | 2 | Dome | 35-20k | 10 | 25 | 2k | 8 | 20½ x 12½ x 11½ | Wal. | | 29% | 319.95 | | |
| | 5313 Mk III | (4) 5 | | Acous. susp. * | | | (4) 2 | | 30-20k | 20 | 40 | 5k | 8 | 13½* | Blk. | | 26% | 459.95 | *Spherical shape. | |
| KENWOOD | KL-77 | 12 | 45 | Acous. susp. | 3 | Cone | 2 | Cone | 27-18k | 20 | 60 | 1k; 60 | 8 | 15 x 12 x 26 | Wal. | Ben. | 40 | 129.95 | | |
| | KL-55 | 10 | 50 | Acous. susp. | -- | -- | 3½ | Cone | 35-18k | 20 | 60 | 1.5k | 8 | 12¾ x 10¾ x 23¾ | Wal. | Brn. | 32 | 89.95 | | |
| | KL-44 | 10 | 55 | Acous. susp. | -- | -- | 3½ | Cone | 40-18k | 20 | 60 | 1.5k | 8 | | Wal. | Brn. | 26 | 69.95 | | |
| KING RESEARCH | Frankmann | (8) 12 | 27 | Acous. susp. | (8) 8 | Cone | (8) 2 x 1¼ | Horn | 20-18k | 10 | 200 | 200; 5k | 8 | * | Wal. oak or birch | Brn. | 250 | 1600.00 set* | *Set of 1 bass unit, 52¼ x 25¼ x 31; 2 mid/hi satellites, 10 x 6¾ x 43¼. Util. model, \$1300. | |
| KLEIN & HUMMEL (GOTHAM) | OY | 10 | 20 | Acous. susp. | 4 | Cone | | Horn | 40-16k ±2 | | * | 500; 8k | 4 | 19 x 9 x 12 | Wal. | Metal silver | 44 | 695.00 | *W 2 30-w. amps, xover built-in. | |
| KLH | 5 | 12 | 44 | Acous. susp. | (2) 3 | Cone | 1¾ | Cone | | 25 | | 600; 2.5k | 8 | 26 x 11½ x 12¼ | Wal. | Cloth brn. | 54 | 225.00 | | |
| | 6 | 12 | 55 | Acous. susp. | -- | -- | 1¾ | Cone | | 15 | | 1.5k | 8 | 23½ x 11½ x 12¾ | Wal. | Cloth brn. | 40 | 149.95 | | |
| | 6V | 12 | 55 | Acous. susp. | -- | -- | 1¾ | Cone | | 15 | | 1.5k | 8 | 23½ x 11½ x 12¾ | Wal. vinyl | Cloth brn. | 40 | 129.95 | | |
| | 17 | 10 | 60 | Acous. susp. | -- | -- | 1¾ | Cone | | 10 | | 1.5k | 8 | 23½ x 9 x 11¾ | Wal. | Cloth wte. | 27 | 89.95 | | |
| | 32 | 8 | 59 | Acous. susp. | -- | -- | 1¾ | Cone | | 12 | | 1.8k | 8 | 19¾ x 7¼ x 1¾ | Wal. | Cloth brn. | 21 | 125.00 pair | Packed in pairs. | |
| | 31 | 8 | 60 | Acous. susp. | -- | -- | 1¾ | Cone | | 12 | | 1.8k | 8 | 17½ x 8¼ x 10¾ | Wal. | Cloth/foam brn. | 22 | 99.95 pair | Packed in pairs. | |
| | 28 | (3) 10 | 36 | Acous. susp. | -- | -- | (3) 1¾ | Cone | | 30 | | 1.5k | 8 | 18¾ x 16¾ x 25½ | Wal. | Foam brn. | | 299.95 | W. pedestal. | |
| | 33 | 10 | 54 | Acous. susp. | -- | -- | 1¾ | Cone | | 12 | | 1.5k | 8 | 23¾ x 10¼ x 12¾ | Wal. | Cloth brn. | 33 | 110.00 | | |
| | 38 | 10 | 50 | Acous. susp. | -- | -- | 1¾ | Cone | | 12 | | 1.75k | 8 | 12¾ x 8¾ x 21¼ | Wal. | Cloth brn. | 28 | 149.95 pair | Packed in pairs. | |
| | Marlboro 101 | 9 | | Acous. susp. | -- | -- | 1½ | Cone | | 8 | | 1.6k | 8 | 12 x 7¾ x 21¼ | Wal. Vinyl | Cloth brn. | 20 | 129.95 pair | Packed in pairs. | |
| | Marlboro 102 | 9 | | Acous. susp. | -- | -- | (2) 1½ | Cone | | 10 | | 1.6k | 8 | 12¾ x 9¾ x 24½ | Wal. Vinyl | Cloth brn. | 29 | 89.95 | | |
| | Marlboro 103 | 11 | | Acous. susp. | 5 | Cone | 1 | Cone | | 15 | | 500; 4k | 8 | 14¼ x 11½ x 26% | Wal. vinyl | Cloth brn. | 47 | 149.95 | | |
| | Research XCB | 8 | | Reflex | -- | -- | 2 | Cone | | 10 | | 2k | 8 | 11 x 7¼ x 19½ | Oak | Cloth brn. | | 89.95 | | |
| | Research XCM | 12 | | Reflex | 5 | Cone | | Horn | | 15 | | 800; 5k | 8 | 14 x 8 x 28 | Oak | Cloth brn. | | 199.95 | | |
| | Research XCS | 12 | | Reflex | 5 | Cone | | Horn | | 25 | | 400; 5k | 8 | 14 x 14 x 39 | Oak | Cloth brn. | | 299.95 | | |
| Research X1 | 8 | | Acous. susp. | -- | -- | (2) 1¼ 1¾ | Cone Cone | | 12 | | 1.75k | 8 | 11½ x 7¾ x 20½ | Wal. | Cloth brn. | | 89.95 | | | |
| Research X2 | 10 | | Acous. susp. | -- | -- | (2) 1¼ 1¾ | Cone Cone | | 15 | | 1.8 | 8 | 12¾ x 9¾ x 22½ | Wal. | Cloth brn. | | 109.95 | | | |
| Research X3 | 12 | | Acous. susp. | -- | -- | (2) 1¼ | Cone | | 20 | | 1.5k | | 8 | 14¼ x 12¼ x 25% | Wal. | Cloth brn. | | 129.95 | | |
| Research X4 | 12 | | Acous. susp. | -- | -- | (2) 1¼ | Cone | | 25 | | 1.5k | 8 | 14¼ x 12¼ x 26% | Wal. | Cloth brn. | | 149.95 | | | |

For those people who don't care how much their audio equipment costs as long as it's the best, we offer a line of audio equipment which we don't care how much it costs to build.



Epicure Corporation is that division of Epicure Products, Inc. that has been designated as spawning ground for all the company's state-of-the-art products.

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enal power bandwidth and tremendous current and thermal capability.

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Then there's our speaker line that ranges in price up to \$1000 each. This line includes our new Model 400 Plus — an improved version of a speaker that

was already top-rated by Stereo Review.

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Speakers

ES: Electrostatic
PZ: Piezoelectric

| MANUFACTURER | MODEL | WOOFER | | | MID-RANGE | | TWEETER | | Overall freq. resp. Hz to kHz ± dB | Ampl. pwr. for avg. room, W | Pwr. handling capacity (RMS cont) | Crossover frequency (Hz) | Impedance ohms | Enclosure dimensions W x D x H, in. | Wood finish | Grille material color | Weight, lbs. | Price (per pair?) | NOTES |
|--------------------|----------------|---------------|---------------------------|-----------------|---------------|--------------|---------------------|------------|---------------------------------------|-----------------------------|--------------------------------------|--------------------------|----------------|--|--------------|-----------------------|--------------|-------------------|--|
| | | Diameter, in. | Resonance (in system), Hz | Enclosure type | Diameter, in. | Type | Diameter, in. | Type | | | | | | | | | | | |
| KLIPPSCH | Klipschorn | 15 | | Horn | | Horn | | Horn | 35-17k ±5 | 2 | 150 | 400; 6k | 8 | 31½ x 28 x 52 | Wal. * | * | | 1040.00 | *Var. finishes, grilles affect price. |
| | Belle Klipsch | 15 | | Horn | | Horn | | Horn | 45-17k ±5 | 2 | 150 | 400; 6k | 8 | 30½ x 18½ x 35½ | * * | * | 125 | 840.00 | *As above. |
| | Cornwall | 15 | | Port | | Horn | | Horn | 38-15k +25 | 4 | 150 | 600; 6k | 8 | 25½ x 15½ x 35½ | * * | * | | 525.00 | *As above. |
| | Heresy | 12 | 65 | Acous. susp. | | Horn | | Horn | 50-17k ±5 | 8 | 100 | 700; 6k | 8 | 15½ x 13½ x 21½ | * * | Blk. grn. | | 297.00 | *Var. finishes affects price. |
| | La Scala | 15 | | Horn | | Horn | | Horn | 45-17k ±5 | 2 | 150 | 400; 6k | 8 | 23½ x 24½ x 34½ | Birch | | | 525.00 | |
| LAFAYETTE | 999 | 15 | | Acous. susp. | 8 5 | Cone Cone | 1¾ | | 18-22k ±5 | 25 | 100 | 400; 900; 7k | 8 | 20 x 16 x 31½ | Wal. | Foam brn. | 77 | 219.95 | |
| | 888 | 12 | | Acous. susp. | 6 5 | Cone Cone | 1¾ | | 20-20k ±5 | 20 | 100 | 400; 4k; 7k | 8 | 24 x 12 x 15½ | Wal. | Foam brn. | 52 | 169.95 | |
| | 777 | 10 | | Acous. susp. | 6 | Cone | 1¾ | | 26-20k ±5 | 10 | 80 | 800; 4k | 8 | 23 x 12 x 15 | Wal. | Foam brn. | 36 | 119.95 | |
| | 666 | 10 | 21 | Acous. susp. | 6 | Cone | 1¾ | | 28-20k ±5 | 15 | 60 | 800; 5k | 8 | 22 x 11 x 14 | Wal. | Foam brn. | 31 | 99.95 | |
| LEAK (ERCONA) | Leak 600 | 13 | 19 | Acous. susp. | 3½ | | 2 | Dome | 40-20k | 4 | 70 | 850; 3.5k | 4.8 | 25½ x 14½ x 12½ | Wal. | Cloth brn. | 55 | 295.00 | |
| LINEAR DESIGN LABS | 749A | 9 | | Acous. susp. | -- | -- | -- | -- | 30-20k | 30 | 200 | -- | 8 | 19½ x 12½ x 12 | Oil wal. | Cloth brn. | 43 | 425.00 pair | |
| | 1243 | 12 | | Acous. susp. | 4½ | Cone | 2½ | Cone | 30-20k | 12 | 30 | -- | 8 | 15 x 11 x 25½ | Wal. | Cloth brn. | 48 | 350.00 pair | |
| LWE (ACOUSTRON) | I-B | 15 | | Acous. susp. | 6 | Cone | 3 | Horn | 20-20k ±5 | 40 | 50 | 2k; 3.5k | 4 | 19 x 26½ x 16 | Wal. | Cloth brn. | 73 | 350.00 | |
| | X | 12 | | Acous. susp. | 6 | Cone | 3 | Horn | 25-20k ±5 | 25 | 40 | 2k; 3.6k | 4 | 14 x 24 x 12½ | Wal. | Cloth Blk. | 45 | 250.00 | |
| | III-B | 12 | | Acous. susp. | 6 | Cone | 2 | Cone | 25-17k ±5 | 25 | 40 | 2k; 3.5k | 4 | 14 x 24 x 12½ | Wal. | Cloth brn. | 45 | 200.00 | |
| MAGNAVOX | MX2830 | 15 | 43 | Acous. susp. | 2 | Dome | 2 | Cone | 20-20k | | 100 | 1.5; 4.5k | 8 | 29 x 20½ x 15½ | Wal. blk. | Foam | 55 | 499.95 pair | |
| | MX2820 | 12 | 45 | Acous. susp. | 2 | Dome | 2 | Cone | 25-20k | | 75 | 1.5k; 4.5k | 8 | 25½ x 15½ x 13½ | Wal. | Foam blk. | 40 | 399.95 pair | |
| | 2810 | 10 | 47 | Acous. susp. | 2 | Dome | 2 | Cone | 30-20k | | 50 | 1.5k; 4.5k | 8 | 23½ x 15½ x 12½ | Wal. | Foam blk. | 35 | 299.95 | |
| MAGNEPAN | MG2167 | * | | Bipole ** | -- | -- | *** | ** | 50-18k ±4 | 50 | 200 | 2.4k | 6 | 22 x 2 x 71 | Oak | | 40 | 625.00 pair | *500 sq. in.;** Magne- planar;*** 85 sq. in.; blk. base is 14 x 22 in. |
| MAGNUM OPUS | Lab Mon | (4) 10 | 30 | | 5 | Cone | 3 3 | PZ Dome | 26-45k ±8 | 5 | 150 | 500; 2k; 4k | 8 | 28½ x 13½ x 15½ | Wal. | Cloth blk. | 72 | 459.95 | Circuit breaker; dB mtrs. |
| | Lab 8 | (2) 10 | 38 | | 5 | Cone | 3 (2) 3 (2) 3 | PZ Dome | 25-45k ±6 | 12 | 100 | 750; 3k; 4k | 4 | 15½ x 13½ x 28 | Wal. | Cloth blk. | 65 | 359.95 | Circuit breaker. |
| | Lab 33 | 10 | 45 | Acous. susp. | 5 | Cone | 3 3 | PZ Dome | 30-45k ±6 | 15 | 50 | 500; 2k; 4k | 8 | 14½ x 24 x 11 | Wal. | Cloth blk. | 95 | 199.95 | Circuit breaker. |
| | Lab 1200 | 10 12 | 25 | | 5 | Cone | 3 | PZ | 20-45k ±6 | 20 | 150 | 750; 3k; 4k | 4 | 18 x 18½ x 32 | Wal. | Cloth blk. | 95 | 559.95 | Bass contl. |
| | Opus 200 | 10 | 100 | | -- | -- | 3 | Dome | 28-20k | 8 | 100 | 2k | 4 | 14½ x 11 x 24 | Wal. | Cloth blk. | 42 | 179.95 | |
| MARANTZ | Imperial 9 | (2) 10 | | Port | (4) 3½ | Cone | (2) 1¾ | Dome | 30-18k ±3 | | 100 | | 8 | 25 x 18 x 30 | Wal. | Foam | 118 | 499.95 | |
| | Imperial 8 | 12 | | Port | (3) 3½ | Cone | (2) 1¾ | Dome | 35-20k ±5 | | 75 | | 8 | 19 x 14 x 27 | Wal. | Foam | 70 | 319.95 | |
| | Imperial 7 | 12 | | Port | 3½ | Cone | 1¾ | Dome | 35-20k ±5 | | 50 | | 8 | 14 x 11 x 25 | Wal. | Foam | 42 | 199.95 | |
| | Imperial 6G | 10 | | Port | | | 1¾ | Dome | 35-20k ±5 | | 50 | | 8 | 14 x 11 x 25 | Wal. | Foam | 38 | 139.95 | |
| | Imperial 5G | 8 | | Port | | | 1¾ | Dome | 35-20k ±5 | | 15 | | 8 | 12 x 9 x 23 | Wal. | Foam | 32 | 99.95 | |
| | Imperial 4G | 8 | | Port | | | 1¾ | Dome | 40-18k ±5 | | 15 | | 8 | 11 x 8 x 19 | Wal. | Foam | 20 | 59.95 | |

THE LAST LOUDSPEAKER (REVIEWED).

When we introduced the Ohm F a few months ago, we called it the last loudspeaker.

We explained that this new invention (U. S. Patent 3,424,873) is the last loudspeaker in the same sense as the wheel was the last device for transmitting rotary or rolling motion.

Like the wheel, we said, our speaker is a mathematically perfect engineering concept, utterly simple and unimprovable. Only its physical construction can evolve further, not the design itself. When a single cone reproduces 30 to 20,000 Hz without crossovers and has a cylindrical output in perfect phase with the input signal at all frequencies ("coherent sound"), the design can be considered final.

Since then, our claims for the Ohm F have found support in the authoritative editorial pages of Stereo Review. In the November 1973 issue, the Equipment Test Reports by Hirsch-Houck Laboratories asserted:

"The Ohm F can do some things that no other speaker in our experience is capable of."

After acknowledging that "the cone has not been designed to function as a 'piston' (as virtually all other cones are), but should be viewed as a terminated acoustic transmission line," the review states that "the Ohm F produced one of the flattest extended curves we have ever seen ... it has a uniform energy output across the full audio-frequency range..."

Square-wave tests of the Ohm F against "several other fine

speakers we had on hand," in the words of the review, showed that "only the Ohm F was able to produce a reasonable facsimile of a square wave." This plus the toneburst response of the speaker "tended to confirm . . . that it has transient-response capabilities surpassing those of the best conventional (piston) speakers."

Further excerpts from the Ohm F test report:

"In our simulated live-vs.-recorded test it rated A to A+ . . . with one of the larger power amplifiers, able to deliver 100 watts or more, the sound began to warrant the use of such words as 'awesome' . . . achieves state-of-the-art performance."

The conclusion of the review requires some reading between the lines:

"As to whether or not the Ohm F is therefore the 'best' speaker available—we will leave that to the ears of audiophiles; we are prepared to say, however, without reservations, that it is easily one of the best."

Think about that. Wouldn't any responsible journal hesitate to declare categorically that a totally new and unfamiliar product is the best, period? Even if they thought so?

The Ohm F comes in a striking, tapered column cabinet, about 3½ feet high, and is priced at \$400. If your local dealer doesn't carry it yet, write us and we'll help you.

We want your next loudspeaker to be the last loudspeaker.

Ohm Acoustics Corp.,
241 Taaffe Place,
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*Prices slightly higher on the West Coast



Speakers

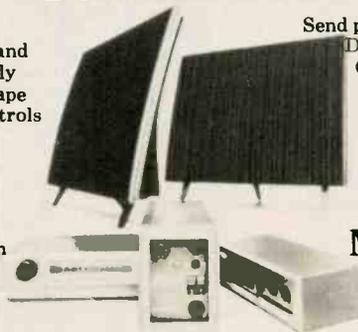
| MANUFACTURER | MODEL | WOOFER | | | | | MID-RANGE | | TWEETER | | Overall freq. resp., Hz to kHz ±, dB | Amp. pwr. for avg. room W (RMS cont) | Pwr. handling capacity Crossover frequency (res), Hz | Impedance ohms | Enclosure dimensions W x D x H, in. | Wood finish | Grille material color | Weight, lbs. | Price (per pair?) | NOTES ES: Electrostatic PZ: Piezoelectric |
|---------------------|-----------------------|---------------|--------------------------|----------------|---------------|------|---------------|-----------|-----------|-----|---|---|---|----------------|--|-------------|-----------------------|--------------|-------------------|---|
| | | Diameter, in. | Resonance (in system) Hz | Enclosure type | Diameter, in. | Type | Diameter, in. | Type | | | | | | | | | | | | |
| MARTIN (Eastman) | Micro-Max 111 | 8 | 63 | Acous. susp. | | 2 | Dome | 38-18k ±5 | 5 | 28 | 12.5k | 8 | 11 x 9 x 18 | Wal. | Brn. | 23 | 79.00 | | | |
| | Laboratory MK II. 231 | 10 | 57 | Acous. susp. | 5 | Cone | 1 | Horn | 35-18k ±5 | 6 | 36 | 1k, 4.5k | 8 | 12½ x 10 x 21½ | Wal. | Brn. | 30 | 139.00 | | |
| | Crescendo 431 | 10 | 50 | Acous. susp. | 5 | Cone | | Horn | | 8 | 46 | 750; 4.5k | 8 | 15 x 12 x 25½ | Wal. | Brn. | 45 | 199.00 | | |
| | Exorcist 471 | 15 | 44 | Acous. susp. | 5 | Cone | (2) | Horns | 28-20k ±5 | 10 | 64 | 450; 4.5k | 8 | 18 x 14 x 28 | Wal. | Brn. | 60 | 319.00 | | |
| | Magnificat 821 | (2) | 46 | Acous. susp. | 5 | Cone | (2) | Dome | 28-20k ±6 | 5 | 64 | 750; 4.5k | 4 | 18 x 15 x 37½ | Wal. | Brn. | 90 | 349.00 | | |
| | Sound Tower 841 | (4) | 58 | Acous. susp. | 5 | Cone | (2) | Dome | 28-20k ±7 | 5 | 81 | 2k; 5k | 8 | 16 x 8 x 52 | Wal. | Brn. | 85 | 379.00 | | |
| | | 12 | | | | | 2 | | | | | | | | | | | | | |
| MICRO-ACOUSTICS | FRM-1 | 10 | 48 | Acous. susp. | | (5) | Cone | 35-18k ±4 | 20 | 100 | 1.7k | 4 | 13¾ x 12¼ x 25¼ | Wal. Vinyl | Var. | 39 | 165.00 | | | |
| | FRM-2 | 10 | 50 | Acous. susp. | | (3) | Cone | 40-16k ±4 | 10 | 60 | 1.7k | 8 | 15¾ x 12¼ x 15¾ | Wal. Vinyl | Brn. | 37 | 129.00 | | | |
| | FRM-3 | 10 | 50 | Acous. susp. | | (2) | Cone | 45-15k ±4 | 10 | 60 | 1.7k | 8 | 15¾ x 11½ x 25¼ | Wal. Vinyl | Brn. | 35 | 99.00 | | | |
| OHM | B | 12 | 37 | Acous. susp. | | 1 | Dome | 35-18k ±4 | | | 1.7k | 8 | | Wal. | | | 200.00 | | | |
| | B+ | 12 | 37 | Acous. susp. | 2 | Cone | 1 | Dome | 35-18k ±3 | | 1.7k; 5k | 8 | | Wal. | | | 220.00 | | | |
| | C | 10 | 43 | Acous. susp. | | 1 | Dome | 41-18k ±4 | | | 1.7k | 8 | | Wal. | | | 150.00 | | | |
| | C+ | 10 | 43 | Acous. susp. | 2 | Cone | 1 | Dome | 41-18k ±3 | | 1.7k; 5k | 8 | | Wal. | | | 170.00 | | | |
| | D | 10 | | Acous. susp. | | 3 | Cone | 50-16k ±4 | | | 1.7k | 8 | | Wal. | | | 110.00 | | | |
| | E | 8 | 60 | Acous. susp. | | 3 | Cone | 52-16k ±4 | | | 1.7k | | | Wal. | | | 80.00 | | | |
| | F | 12x 17 | 35 | Walsh | | | | | 33-20k ±4 | 50 | 125 | | 4 | | Wal. | | | 400.00 | | |



Numbers

Set up a QUAD 33 with +1 on the treble control, and you will obtain a response precisely defined; readily and accurately repeatable. This response has a shape rather different from most run of the mill tone controls and there are, as you may guess, good reasons for this.

Then as the listener is not expected to know just what a given response curve does to the signal off the record, we provide a button marked "cancel". This enables him to make a direct comparison with the original and so learn just which recording defects need what correction. A QUAD user gets the best out of every record - every time - and enjoys the music to the full.

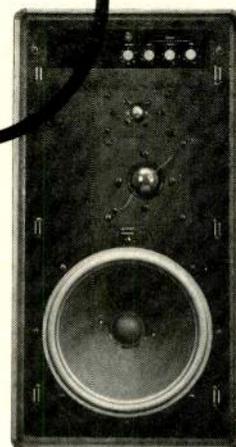


Send postcard for illustrated leaflet to:
Dept (A U) Acoustical Manufacturing
Co. Ltd., Huntingdon PE18 7DB.
Telephone: (0480) 52561.

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for the closest approach
to the original sound
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INVISIBLE SOUND



For the first time in your life, you can hear music the way it was recorded.

Until now, the very best high fidelity loudspeakers have been described as transparent. We've taken a giant step beyond transparency - to the Invisible Sound of ADS and BRAUN speakers.

Music passes through our speakers with such natural clarity the speakers seem to disappear. Once you experience the ear-opening sound of live-quality music in your own living room, you'll never be satisfied with conventional speakers again.

The Invisible Sound of ADS emanates from the genius of chief designer, Franz Petrik - whose ears, by the way, are insured by Lloyd's of London.

Franz Petrik has developed a 1-inch soft-dome tweeter so light it behaves like it has no mass at all. He's designed a 2-inch midrange dome with such wide dispersion it radiates nine times as much power as a conventional cone driver of the same area. He's come up with a revolutionary new sealing fluid which damps our dome drivers so well they have amplifier-like ultra-low distortion. And he's responsible for our exclusive woofer cone compound which is rigid at low frequencies and self-damping at high frequencies. These are a few examples of the kind of innovative design and precision engineering which make the ideal invisibility of ADS and BRAUN sound a reality.

We'll be happy to describe our complete line of speakers in detail, and send you the names of the selected group of ADS dealers in your city. Write: ADS, Analog & Digital Systems, Inc. (ADS & BRAUN Loudspeakers), 377 Putnam Avenue, Cambridge, Massachusetts 02139. Phone: 617/492-0970.

THE

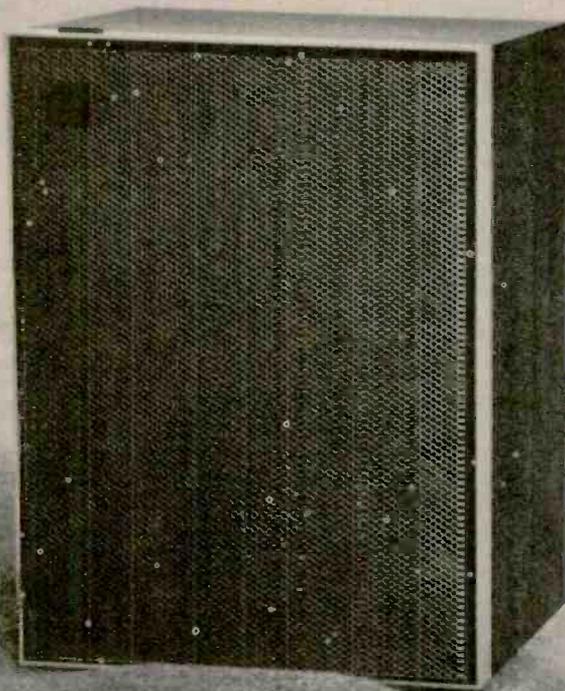
SOUND OF **ADS** AND **BRAUN**

Speakers

ES: Electrostatic
PZ: Piezoelectric

| MANUFACTURER | MODEL | WOOFER | | MID-RANGE | | TWEETER | | Overall freq. resp. Hz to kHz ± 7 dB | Ampl. pwr. for avg. room W | Pwr. handling capacity (RMS cont) | Crossover frequency (res.) Hz | Impedance, ohms | Enclosure dimensions W x D x H, in. | Wood finish | Grille material color | Weight, lbs. | Price (per pair?) | NOTES | |
|---------------------|----------------|---------------|---------------------------|----------------|---------------|-----------|---------------|---|----------------------------|--------------------------------------|-------------------------------|------------------|--|--------------------------|-----------------------|-------------------|-------------------|-------------------|---|
| | | Diameter, in. | Resonance (in system), Hz | Enclosure type | Diameter, in. | Type | Diameter, in. | | | | | | | | | | | | Type |
| OLSON | SS-072 | 12 | 36 | Acous. susp. | 5 | Cone | 2 | Horn | 25-17k | 10 | 50 | 750; 2.5k | 8 | 14 1/4 x 11 1/4 x 23 3/4 | Wal. | Cloth Brn. | 40 | 249.95 | |
| | SS-175 | 12 | 40 | Acous. susp. | 5 | Cone | 2 1/2 | Cone | 40-20k | 6 | 50 | 1k; 3k | 8 | 11 1/4 x 11 1/4 x 25 1/2 | Wal. | Cloth/wood Brn. | 40 | 177.98 | |
| | SP-069 | 12 | 38 | Acous. susp. | 4 | Cone | 2 1/4 | Cone | 25-20k | 6 | 40 | 800; 2.2k | 8 | 11 1/2 x 14 x 25 | Wal. | Cloth Wte. | 48 | 139.98 | |
| | SS-171 | 6 1/2 | 35 | Acous. susp. | | | 3 1/2 | Cone | 60-18k | 8 | 20 | 1k | 8 | 12 1/4 x 9 x 18 3/4 | Wal. | Cloth Brn. | 15 | 67.98 | W. passive radiator. |
| ONKYO | M-30 | 12 | 46 | Acous. susp. | 3 1/2 x | Horn | 2 1/4 | Horn | 20-20k | 10 | 60 | 700; 5k | 8 | 16 1/2 x 15 1/2 x 28 1/2 | Wal. | Cloth Beige | 51 | 299.95 | |
| | M-25A | 14 | 53 | | 2 | Dome | 1 | Dome | 30-20k | 10 | 60 | 700; 7k | 8 | 25 1/2 x 14 1/4 x 11 1/2 | Wal. | Cloth Brn. | 54.5 | 249.95 | |
| | M-20 | 12 | 60 | | 2 | Dome | 1 | Dome | 35-20k | 10 | 50 | 700; 7k | 8 | 23 3/4 x 13 1/2 x 11 1/2 | Wal. | Cloth Beige | 40 | 199.95 | |
| | M-15 | 10 | 58 | | 1 1/2 | Dome | 1 | Dome | 30-20k | 10 | 40 | 1k; 7k | 8 | 22 1/2 x 11 1/2 x 12 1/2 | Wal. | Cloth Brn. | 33 | 129.95 | |
| | M-8 | 8 | | Reflex | | | 2 | Cone | 35-20k | 10 | 30 | 6k | 8 | 11 1/2 x 9 1/2 x 21 1/2 | Wal. | Cloth Brn. | 16 | 89.95 | |
| | Radian III | (2) 6 1/2 | | Reflex | | | (2) 3 | Cone | 60-20k | 10 | 30 | 1.5k | 8 | 9 1/2 x 11 1/2 x 33 1/2 | Wal. | Cloth Beige | 29 | 119.95 | |
| PHILLIPS (NORELCO) | RH-532 | 8 | 35 | Acous. susp.* | 5 | Cone | 1 | Dome | 35-18k ±6 | * | * | 500; 3.5k | 3k ** | 11 1/4 x 8 1/2 x 15 | Wal. | Metal Char. | 26 | 365.00 | *Motional feedback, w. integ. amps; **3 kilohm amp input. |
| PIONEER | R-700 | 12 | | Reflex | | Horn | | Horn | 35-20k | | | 700; 14k | 8 | 14 x 13 x 26 | Wal. | Cloth Brn. & Blk. | 50 | 249.95 | Removable grille. |
| | R-500B | 10 | | Reflex | 5 | Cone | 3 | Horn | 35-20k | | | 650; 6k | 8 | 13 x 12 x 24 | Wal. | Cloth Blk. & Brn. | 38 | 169.95 | Removable grille. |
| | R-399 | 10 | | Reflex | | | 3 | Horn | 45-20k | | | 4.2k | 8 | 13 x 10 x 22 | Wal. | Cloth Org. & Blk. | 26 | 119.95 | R-300B, removable brn./blk. grille, \$119.95. |
| | CS-630X | 15 | | Acous. susp. | (2) 5 | Cone | (2) | Horn Cone | 20-22k | | | 770; 3.3k; 12k | 8 | 28 1/2 x 13 x 19 | Wal. | * | 63 | 279.95 | *Wood lattice, brn. grille. |
| | CS-99A | 15 | | Acous. susp. | 5 4 | Cone Cone | 2 1/2 | Horn Dome | 25-22k | | 100 | 800; 2k; 5k; 10k | 8 | 16 1/2 x 11 1/2 x 24 1/2 | Wal. | * | 51 1/2 | 239.95 | *Removable lattice and pleated grille. |
| | CS-A700 | 12 | | Acous. susp. | 4 3/4 | Cone | | Horn | 35-20k | | 60 | 500; 4.5k | 8 | 26 x 15 x 12 1/2 | Wal. | * | 37 | 189.95 | *Removable lattice and pleated grille; triamp terminals. |
| | CS-A500 | 10 | | Acous. susp. | 4 3/4 | Cone | 3 | Cone | 40-20k | | 50 | 800; 6k | 8 | 22 1/2 x 12 1/2 x 13 | Wal. | * | 32 | 149.95 | *Removable lattice and pleated grille; triamp terminals. |
| | CS-66G | 10 | | Acous. susp. | 6 1/2 | Cone | 1 | Cone | 35-20k | | 40 | 1.85k; 6.85k | 8 | 22 x 11 1/2 x 12 1/4 | Wal. | * | 29 | 119.95 | *Removable lattice and pleated grille. |
| | CS-44G | 8 | | Acous. susp. | | | 2 1/2 | Cone | 35-20k | | 25 | 3.2k | 8 | 17 3/4 x 10 1/4 x 11 | Wal. | * | 19 | 79.95 | *Removable lattice and pleated grille. |
| | Project 100 | 10 | | Acous. susp. | | | 1 1/2 | Dome | 30-20k | | 35 | 700 | 8 | 23 x 10 1/2 x 13 | Wal. | Blue | 40 | 129.95 | Removable grille. |
| Project 80 | 10 | | Acous. susp. | | | 1 1/2 | Dome | 35-20k | | 30 | 700 | 8 | 20 3/4 x 11 x 11 1/4 | Wal. | Brn. | 25 | 99.95 | Removable grille. | |
| Project 60 | 8 | | Reflex | | | 2 1/2 | Horn | 50-20k | | 20 | 5k | 8 | 18 1/2 x 8 1/2 x 10 1/2 | Wal. | Blue | 11 1/4 | 79.95 | | |
| POLK AUDIO | Nine | 8 | 38 | * | (4) 4 1/2 | Cone | 3 | PZ | 47-27k ±2 | 5 | 100 | 180; 3.5k | 8 | 10 1/2 x 9 x 33 1/2 | Wal. | Cloth Blk. | 40 | 165.00 | *Passive radiator. |
| PRECISION ACOUSTICS | 112 | 12 | | Acous. susp. | 6 | Cone | 2 | Cone | 25-20k ±4 | 25 | 50 | 450; 6k | 8 | 15 x 11 1/4 x 22 1/2 | Wal. | Cloth Blk. | 45 | 575.00 pair | W. 102A active equalizer. |
| | 210 | (2) 10 | | Acous. susp. | 6 | Cone | 2 | Cone | 20-20k ±4 | 25 | 70 | 450; 6k | 8 | 17 x 11 1/4 x 25 | Wal. | Cloth Blk. | 55 | 675.00 pair | W. 102A active equalizer; mirror image design. |
| | 212 | (2) 12 | | Acous. susp. | (2) 6 | Cone | 2 | Horn | 20-22k ±4 | 25 | 100 | 450; 6k | 8 | 21 x 15 1/2 x 29 | Wal. | Cloth Blk. | 85 | 975.00 pair. | As above. |
| | 215 | (2) 15 | | Acous. susp. | (2) 6 | Cone | (2) 2 | Horn | 20-22k ±4 | 25 | 200 | 450; 6k | 8 | 24 x 16 1/2 x 34 | Wal. | Cloth Blk. | 130 | 1300.00 pair | As above. |
| QUADRAFLEX | RS4 | 10 | 35 | Acous. susp. | | | 3 | Cone | 40-20k ±4 | 10 | 30 | 700 | 6 | 13 3/4 x 11 x 23 1/4 | Wal. | Foam Blk. | 30 | 179.90 pair | |
| | RS5 | 10 | 33 | Acous. susp. | 4 1/2 | Cone | 3 | Cone | 30-22k ±4 | 10 | 45 | 650; 6k | 6 | 14 1/4 x 11 1/4 x 24 3/4 | Wal. | Foam Blk. | 40 | 249.90 pair | *Acous. susp. |
| | RS6 | 12 | 28 | Acous. susp. | 6 | Cone | 1 3/4 | Cone | 24-22k ±3 | 8 | 60 | 500; 5k | 8 | 15 1/2 x 12 1/2 x 26 1/2 | Wal. | Foam Blk. | 46 | 339.90 pair | L-pad contis. |
| | Lab Standard I | 12 | | Acous. susp. | 5 | Cone | 1 3/4 | Cone | 30-25k ±4 | 6 | 75 | 500; 12k | 8 | 14 1/4 x 12 1/4 x 23 1/4 | Wal. | Cloth Blk. | 50 | 436.00 pair | L-load contis. |
| QUATRE | 8000 | 8 | 32 | Duct. port | 5 | Cone | 1 | Dome | 35-20k ±5 | 10 | 60 | 400; 2.5k | 8 | 13 x 10 1/4 x 23 3/4 | Blk. | Foam Var. | 50 | 195.00 | |

MEET DAVID



The Philips Motional Feedback™ System. It challenges the giants.

Don't be bullied into believing that size alone means quality. The Philips Motional Feedback System is only 11½ x 15 x 8½ inches small. Yet it stands up to speakers many more times its size.

The reason is a piezo electric transducer in the apex of the woofer. This enables the Philips unit to literally "listen" to itself...and electronically correct any distortion. You've got to hear it to believe it.

But the piezo electric "sensor" is only part of the story. There's also a 3-way speaker system (woofer, mid-range and tweeter); electronic and passive crossover networks. Plus integral bi-amplification...A 20 watt amp to

drive the tweeter and mid-range; Another 40 watt amp for the woofer...A total of 60 watts of continuous sine wave power.

The result is a powerful, high performance sound system in a walnut finished 0.764 cubic foot cabinet. At better audio dealers now. The size will speak for itself.

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TM - N. V. Philips-Holland

Speakers

ES: Electrostatic
PZ: Piezoelectric

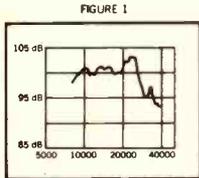
| MANUFACTURER | MODEL | WOOFER | | | MID-RANGE | | TWEETER | | Overall Imp. resp. Hz to kHz 2-7, 08 | Ampl. pwr. for avg. room, W | Pwr. handling capacity (RMS cont) | Crossover frequency (ies), Hz | Impedance, ohms | Enclosure dimensions, W x D x H, in. | Wood finish | Grille material color | Weight, lbs. | Price (per pair?) | NOTES |
|----------------------------|----------------|-----------------|---------------------------|----------------|---------------|------------|-------------------|--------------|---|-----------------------------|--------------------------------------|-------------------------------|-----------------|---|-------------|-----------------------|--------------|-------------------|--|
| | | Diameter, in. | Resonance (in System), Hz | Enclosure type | Diameter, in. | Type | Diameter, in. | Type | | | | | | | | | | | |
| REALISTIC (RADIO SHACK) | Optimus 9 | 12 | | | | Cone | | Dome | 20-20k | | | | 8 | 19 x 9 x 28 | Wal. | | 179.50 | | |
| | Nova 8 | 12 | | | | Cone | | Cone | 20-20k | | | | 8 | 14 x 11 1/2 x 25 | Wal. | | 119.50 | | |
| | Nova 7B | 10 | | | (2) 3 | Cone | | Cone | 20-20k | | | | 8 | 12 1/2 x 11 1/2 x 22 1/2 | Wal. | | 119.50 | | |
| | Optimus 1B | 10 | | | | | | | 20-20k | | | | 8 | 14 x 11 1/2 x 25 | Wal. | | 114.50 | | |
| | Optimus 1B | 8 | | | | | | | 30-20k | | | | 8 | | Wal. | Cloth | 89.95 | | |
| | Optimus 2B | 8 | | | | | | | 30-20k | | | | 8 | 20 x 22 x 10 | Wal. | Cloth | 69.95 | | |
| RECTILINEAR | X/a | 10 | 45 | Duct. port | | | 3 | Cone | 45-17k ±4 | 10 | 85 | 1.8k | 8 | 12 x 10 1/2 x 23 | Wal. | Cloth Tan | 28 | 89.00 | |
| | Mini III | 8 | 50 | Acous. susp. | 5 | Cone | 2 | Cone | 50-18k ±4 | 20 | 70 | 400; 8k | 4 | 12 x 9 1/2 x 19 | Wal. | Cloth Brn. | 25 | 109.00 | |
| | XII | 10 | 45 | Duct. port | 5 | Cone | 2 1/2 | Cone | 35-18k ±4 | 10 | 85 | 350; 7.5d | 8 | 14 x 10 3/4 x 25 | Wal. | Cloth Brn. | 40 | 149.00 | |
| | 5 | 12 | 41 | Acous. susp. | 1 1/2 | Dome | 1 | Dome | 30-20k ±2 | 15 | 150 | 200; 1.8k | 6 | 25 x 15 x 14 1/2 | Wal. | Cloth Blk. | 55 | 299.00 | Base \$20.00 |
| | 7 | 12 | 38 | Acous. susp. | (2) 1 1/2 | Dome | (2) 1 | Dome | 30-20k ±2 | 15 | 150 | 200; 1.8k; 10k | 6 | 18 x 15 x 35 | Wal. | Cloth Blk. | 80 | 379.00 | |
| REVOX | AXA4-3 | 10 | | Acous. susp. | 1 1/2 | | 1 | Dome | 50-20k ±3 | | 50 | 900; 6k | 4 | 12 x 10 x 22 | Wal. | Foam Brn. | 25 | 300.00 | |
| ROGERSOUND LABS | Studio Monitor | 12 | 50 | Reflex | 4 1/2 | Cone | 3 | Dome | 50-20k ±2 1/2 | 6 | 75 | 800; 5k | 8 | 25 x 14 1/2 x 12 | Var. | Blk. Foam or cloth | 45 | 209.95 | *Price depends on wood. |
| | Ranger | 10 | 52 | Reflex | 4 1/2 | Cone | 3 | Dome | 50-20k ±2 1/2 | 6 | 55 | 800; 5k | 8 | 25 x 14 1/2 x 12 | Oak | Cloth Blk. | 39 | 149.95 | |
| | Max Tower | 12 | 37 | | 8 | Trans. ine | 2 1/2 | Cone | 20-22k ±4 | 30 | 80 | 125; 5k | 8 | 18 x 48 x 12 | Var. | Cloth Blk. | 85 | 399.95 | *Price depends on wood. |
| | Mini Monitor | 8 | 65 | Reflex | | | 3 | Dome | 50-20k ±4 | | | | 8 | 22 x 12 1/2 x 10 1/4 | Wal. | Foam Blk. | 29 | 99.95 | |
| | Max | 12 | 37 | | 4 1/2 | Cone | 3 2 1/2 | Dome Cone | | 4 8 | 35 | 1.6k 600; 5k | 8 | 32 x 18 x 12 | Wal. | Foam Blk. | 60 | 269.95 | |
| ROMEX-VEGA | RV-47 | 12 | 70 | Duct. port | 6 | Cone | (2) 4 | Cone | 3-20k | 5 | 100 | 875; 7k | 8 | 26 x 21 1/2 x 12 1/2 | Wal. | Cloth Blk. or Sand | 50 | 299.50 | RV-45, same but trad. cab., \$299.50. |
| | RV-27 | 10 | 80 | Duct. port | 6 | Cone | 4 | Cone | 35-22k | 5 | 50 | 1.75k; 7k | 8 | 23 3/4 x 13 3/4 x 13 3/4 | Wal. | Cloth Blk. Sand | 35 | 199.50 | RV-25, same but trad. cab., \$199.50. |
| | RV-11 | 8 1/2 | 90 | Duct. port | | | 4 | Cone | 40-22k | 5 | 25 | 1.75k | 8 | 14 3/4 x 13 x 9 1/2 | Wal. | Cloth Blk. or Sand | 31 | 219.95 pair | RV-8, slightly smaller, trad. cab., \$219.95 pair. |
| RTR | 400E | 12 (4) 10 | 50 | Acous. susp. | 5 3/4 x 5 3/4 | ES | 3 (5) 2 1/2 | PZ Cone | 30-25k ±3 | 20 | 100 | 470; 7.8k | 7 | 18 x 27 1/2 x 12 | Wal. | Cloth Blk. | 55 | 279.00 | |
| | 280DR | (4) 10 | 40 | Reflex | | | (5) 2 1/2 3 | Cone PZ | 22-25k | 25 | 100 | 2.5k; 7.5k | 8 | 16 1/2 x 16 1/2 x 39 | Wal. | Cloth Blk. | 95 | 329.00 | |
| | HPR-12 | (2) 12 | | Reflex | 5 | Cone | 3 | PZ | 30-25k | 15 | 100 | 1.5k; 7.5k | 8 | 14 1/2 x 13 x 36 | Wal. | Cloth Blk. | 72 | 249.00 | 1 passive radiator. |
| | EXP-8 | 8 | 50 | Acous. susp. | | | 3 1/2 | Cone | 40-18k ±4 | 15 | 60 | 2.2k | 8 | 11 1/2 x 8 1/2 x 19 3/4 | Wal. | Cloth Blk. | 25 | 89.00 | |
| SAE | Mk 10 | 12 | | Acous. susp. | 5 | Cone | 2 1/2 | Cone | | 20 | | 120 1.44k | 8 | 25 x 14 1/2 x 12 | Wal. | Cloth Blk. | 49 | 400.00 | |
| | Mk II | 12 | | Acous. susp. | 5 | Cone | 2 1/2 | Cone | | 30 | | 120; 1.44k | 4 | 27 x 17 x 12 1/4 | Wal. | Cloth Blk. | 55 | 550.00 | |
| | Mk 14 | 12 | | Acous. susp. | 5 | Cone | (6) | ES | | 100 | | 120; 240; 480; 1.44k | 8 | 42 3/4 x 24 x 18 | Wal. | Cloth Blk. | 150 | 1,650.00 | Elect. prot. cir. |
| SANSUI | SP-3400 | 14 | | Reflex | 4 (2) 4 | Cone | 2x2 Horn | Horn | 25-20k | 6 | | 700; 2k; 6.5k | 8 | 17 1/2 x 11 1/2 x 25 1/4 | Wal. | Wood carved | 58 1/2 | 269.95 | Acous. lens. |
| | SP-2500 | 10 | | Reflex | (2) 5 | Cone | (2) 2 | Horn | 30-20k | 6 | | 700; | 8 | 16 3/4 x 10 3/4 | Wal. | Wood | 51 1/2 | 229.95 | Acous. lens. |
| | SP-1700 | 12 | | Reflex | (2) 4 | Cone | (2) 2 | Cone | 30-20k | 6 | | 700; 6.5k | 8 | 16 3/4 x 10 3/4 x 25 1/4 | Wal. | Wood Carved | 46 1/2 | 199.95 | Acous. lens. |
| | SP-1200 | 10 | | Reflex | (2) 4 | Cone | (2) 2 | Dome | 35-20k | 6 | | 700; 6.5k | 8 | 15 1/2 x 10 3/4 x 23 1/4 | Wal. | Wood carved | 42 3/4 | 179.95 | Acous. lens. |
| | SF-2 | (2) 8 | | * | | | 2 1/4 | Dome | 50-20k | 6 | | 2k | 8 | 15 3/4 x 15 3/4 x 24 1/4 | Wal. | | 34 1/2 | 199.95 | *Omni-radial. |
| | SF-1 | (2) 6 1/2 | | * | | | 2 1/4 | Cone | 55-20k | 6 | | 2k | 8 | 14 1/2 x 14 1/2 x 23 1/4 | Wal. | | 31 1/2 | 159.95 | *Omni-radial. |

RTR brings electrostatics down to earth in the 400E.



The true audiophile in his complete and free enjoyment of good music shall always be a dreamer. And because of a proven contribution to the art of high fidelity, many of these dreams are "electrostatic." But the practicability of electrostatics has often separated the audiophile from his dream.

RTR dreams too. For RTR is nothing more (or less) than a collection of dedicated, hard working audiophiles. But RTR is also "electrostatic," in fact the largest producer of push-pull electrostatics in the USA. Thus we are pleased to announce the marriage of "electrostatic" to "practicability," and it's called the "400E." The 400E contains the latest state-of-the-art components, and yet is designed to function in any system of reasonable power and quality-yielding extreme clarity and realism at a reasonable cost. \$279

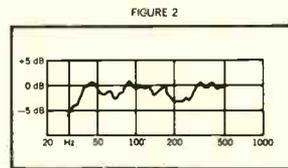


400E Piezoelectric High Frequency Response. Measured on axis with 400E network.

Solid State Tweeter

Employing a piezoelectric tweeter on the extreme high end, the response curve for this transducer is shown in Fig. 1 (we have separated the curves so you can see how each kind of transducer performs in the 400E system). While the response is strong out to 25,000 Hz, its extreme linearity is of utmost importance. But, as with any fine transducer, the successful employment of the piezoelectric is not automatic. A totally unique constant impedance drive network was a necessary development because a piezoelectric device is basically capacitive, not unlike electrostatics. With this network, the piezoelectric faithfully reflects the full high-frequency capability of your amplifier.

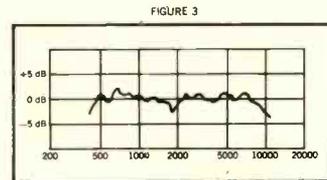
Without this network, oscillations can result, possibly leading to amplifier failure. Then by limiting the operating range to those frequencies above 7800 Hz, all harmonic distortion products are pushed well into the near inaudible range above 15 KHz. The overall result is stability (constant impedance), high efficiency, low distortion and ruler-flat linearity.



400E Low Frequency Response RTR No. 2404A 12" Woofer tested in a 400E system. Measurement made 4 foot on axis atop RTR's 400 ft² test platform.

Magnetic Woofer

The woofer integrated in the 400E was especially designed and is manufactured in its entirety by RTR. This unit has several special features. A two inch voice coil is wound on an epoxy impregnated core, and is capably controlled by a sizable magnetic structure. These coils are hand-centered and attached to the spiders with a compound designed to keep them attached through the 1812 Overture. The response curve, as tested in the 400E, is shown in Fig. 2. Please note that the pertinent test conditions are always clearly stated.



400E Electrostatic Midrange Energy Response Characteristic. Based on on axis response and calculated directivity patterns ± 2 dB. Type HF-150 electrostatic radiator with 400E network. Directivity increases beginning at 2000 Hz.

400E Specifications

- Enclosure:**
Hand-rubbed walnut veneers
- Size:**
18" x 27 1/2" x 12" deep
- Shipping Weight:**
55 lbs.
- Frequency Response:**
30 to 25,000 Hz
- Speaker Complement:**
One 12" woofer, four 5 3/4" x 5 3/4" electrostatic mid-range panels, one 3" piezoelectric super tweeter
- Crossover Frequency:**
470-7800 Hz
- Impedance:**
7 ohms minimum
- Recommended Amp Power:**
20w to 100w RMS per channel
- Controls:**
Mid-range and tweeter level, speaker protect circuit breaker
- Options:**
Black base at slightly additional cost

Electrostatic Mid-Range

The mid-range, to the audiophile the most critical range, is most often ignored. But the 400E was born with the RTR Model HF150 mid-range radiator. In conjunction with one of the world's largest chemical houses, RTR developed a new high flexibility, ultra-thin diaphragm material which, when incorporated in the HF150 driver, results in a more linear lower mid-range performance and lightning-quick transients (see Fig. 3). So from 470 Hz to 7800 Hz, the 400E provides a seamless transparent reproduction of the electrical input. And that's what the 400E is all about.

Visit your RTR franchised dealer and experience a touch of reality. Experience the 400E, a product of RTR Industries, Inc., the Total Capability company.

For a dealer list and complete information, write: RTR Industries, Dept. APD, 8116 Deering Ave., Canoga Park, CA 91304.

RTR products are distributed in Canada by Caldwell A/V Equipment Ltd., 1080 Bellany Rd. No., Scarborough, Ontario.

Check No. 45 on Reader Service Card



Speakers

ES: Electrostatic
PZ: Piezoelectric

| MANUFACTURER | MODEL | WOOFER | | | | | MID-RANGE | | TWEETER | | Overall freq. resp., Hz to kHz ± 1.0dB | Amp. pwr. for avg. room, W (RMS cont) | Crossover frequency (ies), Hz | Impedance, ohms | Enclosure dimensions, W x D x H, in. | Wood finish | Grille material color | Weight, lbs. | Price (per pair?) | NOTES |
|------------------|-------------|---------------|---------------------------|-----------------|---------------|----------|---------------|--------|---------------|----|---|--|-------------------------------|--------------------|---|------------------------|-----------------------|----------------|----------------------------|-------|
| | | Diameter, in. | Resonance (in system), Hz | Enclosure type | Diameter, in. | Type | Diameter, in. | Type | | | | | | | | | | | | |
| SCHOBER | LSS-10A | 12 | 32 | Reflex | 8 | Cone | | Horn | 30-18k | 2 | 40 | 250; 3.5k | 8 | 24 x 16 x 34 | Wal. | Cane Beige | 60 | 243.20 | Kit, horn tweeter optional | |
| | LSS-100 | (2) 12 | 32 | Reflex | 8 | Cone | (2) | Horns | 30-18k | 1 | 100 | 150; 1k; 3.5k | 8 | 32 x 16 x 54 | Wal. | Cane Beige | 150 | 685.00 | Kit | |
| SCOTT | S71 | 12 | 38 | Acous. susp. | 4½ | Cone | (2) 1 | Dome | 28-20k ±5 | 20 | 100 | 900; 4.5k | 8 | 25x 15½ x 11¾ | Wal. | Linen Gray | 46 | 399.90 | | |
| | S61 | 10 | 38 | Acous. susp. | 4½ | Cone | 1 | Dome | 30-20k ±5 | 18 | 75 | 1k; 5k | 8 | 25 x 14½ x 11½ | Wal. | Linen Gray | 43 | 339.90 | | |
| | S52 | 10 | 42 | Acous. susp. | | | 1½ | Dome | 30-17k ±5 | 18 | 60 | 1k | 8 | 24 x 14½ x 10½ | Wal. Vinyl | Plas. Brn. | 40 | 299.90 | | |
| | S42 | 8 | 55 | Acous. susp. | susp. | | 1 | | 35-20k ±5 | 10 | 35 | 2.2k | 8 | 22 x 11¼ x 8½ | Wal. Vinyl | Plas. Brn. | 22 | 229.90 | | |
| SHARP | SP-400 | 8 | 60 | Acous. susp. | | | 4 | Dome | 40-20k | 5 | 15 | 3.5k | 8 | 10½ x 9 x 19 | Wal. | Cloth Brn. | 20 | 59.95 | | |
| SONY | SSU 1800 | (2) 10 | | Acous. susp. | 2 | Dome | ¾ | Dome | 30-20k | 30 | 100 | 550; 4000 | 8 | 15½ x 12½ x 27½ | Wal. | Cloth Brn. | 60 | 399.00 | | |
| | SSU 1600 | 12 | | Acous. susp. | 2 | Dome | ¾ | Dome | 35-20k | 25 | 75 | 550; 4000 | 8 | 14½ x 12 x 26 | Wal. | Cloth Brn. | 50 | 299.00 | | |
| | SSU 1400 | 10 | | Acous. susp. | 1½ | Dome | 2 | Dome | 40-20k | 20 | 60 | 1k; 4k | 8 | 14 x 11 x 24½ | Wal. | Cloth Brn. | 38 | 219.00 | | |
| | SSU 1200 | 10 | | Acous. susp. | | | 3 | Cone | 45-18k | 15 | 50 | 1k | 8 | 13 x 10 | Wal. | Cloth | 29 | 159.00 | | |
| | SSU 1000 | 8 | | Acous. susp. | 3 | Dome | | | 50-18k | 15 | 50 | 1500 | 8 | 12 x 18 | Wal. | Cloth Brn. | 17 | 99.50 | | |
| SOUNDCRAFTSMEN | SC-12ES | 12 | | Acous. susp. | 5 | Cone | * | ES | 30-20k ±3 | 20 | 200 | 500; 1k | 8 | 28 x 14 x 18 | Oil. Wal. | Foam Brn. | 76 | 399.50 | *144 sq. in. | |
| | SC-7 | 12 | | Acous. susp. | 5 | Cone | 3½ | Dome | 20-20k | 10 | 60 | 500; 4.5k | 8 | 25½ x 11¼ x 15 | Oil. Wal. | Foam Brn. | 56 | 229.00 | Changeable grille. | |
| | SC-4 | 12 | | Acous. susp. | 5 | Cone | 2¼ | Cone | 20-20k | 10 | 50 | 750; 6k | 8 | 23½ x 12½ x 15 | Oil. Wal. | Foam Brn. | 53 | 169.50 | Changeable grille. | |
| | SC-10A | 10 | | Acous. susp. | | | 2¼ | Cone | 20-20k | 10 | 50 | 2.5k | 8 | 20¼ x 10 x 12½ | Oil. Wal. | Foam Brn. | 33 | 119.50 | Changeable grille. | |
| | SC-1 | 6 | | Acous. susp. | | | 1 | Whiz. | 50-17.5k | 5 | 20 | 3k | 8 | 8 x 7½ x 11½ | Oil. Wal. | Cloth Brn./ Wte. | 17 | 34.50 | | |
| | 9711 | 8 | | Duct. port | | | | | 45-15k | 3 | 20 | | 8 | 20¼ x 9½ x 10 | Oil. Wal. | Cloth Brn./ Wte. | 19 | 54.50 | | |
| | 9534 | 8 | | Duct. port | | | 3 | Cone | 40-18k | 5 | 30 | 3k | 8 | 23½ x 11¼ x 11¼ | Oil. Wal. | Cloth Brn./ Wte. | 27 | 69.50 | | |
| 9535-2 | 12 | | Duct. port | | | (2) 6 | Horn | 30-20k | 5 | 35 | 3k | 8 | 25 x 11¼ x 14¼ | Oil. Wal. | Cloth Brn./ Wte. | 33 | 99.50 | | | |
| STARK DESIGNS | SR-1 | 10 | | Acous. susp. | 5 | Cone | 1 | Dome | 40-20k | 15 | 40 | 650; 5.6k | 8 | 15 x 10¾ x 24 | Wal. | Foam Var. | 42 | 135.00 | | |
| | SR-2 | 12 | | Acous. susp. | 5 | Cone | 1 | Dome | 30-20k | 15 | 50 | 650; 5.6k | 8 | 15 x 13 x 24 | Wal. | Foam Var. | 48 | 180.00 | | |
| | SR-3 | 12 | | Acous. susp. | (2) 5 | Cone | (2) 1 | Dome | 30-20k | 15 | 60 | 650; 5.6k | 8 | 16½ x 13 x 24 | Wal. | Foam Var. | 57 | 225.00 | | |
| STR | Omega I | (2) 12 | 30 | Acous. susp. | (2) 4½ | Cone | (3) 1½ | PZ | 23-20k ±5 | 15 | 200 | 600; 6k | 4 | 15½ x 31¼ x 31¼ | Wal. | Cloth Blk. | 150 | 998.00 pair | Fused tweeter. | |
| | Sigma I | 12 | 50 | Duct. port | 4½ | Cone | (3) 1½ | PZ | 30-20k ±3 | 15 | 200 | 1k; 4k | 8 | 15½ x 15½ x 31¼ | Wal. | Cloth Blk. | 85 | 598.00 pair | Fused mid and tweeter. | |
| | P12 | 12 | 31 | Acous. susp. | 4½ | Cone | (3) 1½ | PZ | 27-20k ±3 | 15 | 100 | 600; 4k | 8 | 15½ x 15½ x 31¼ | Wal. | Cloth Blk. | 80 | 498.00 pair | Fused mid and tweeter. | |
| | P10 | 10 | 50 | Duct. port. | 4½ | Cone | (2) 1½ | PZ | 35-20k ±5 | 10 | 50 | 1k; 4k | 4 | 13¾ x 15½ x 25½ | Wal. | Cloth Blk. | 65 | 358.00 pair | Fused tweeter. | |
| | Alpha | 10 | 50 | Duct. port. | 4½ | Cone | 1½ | PZ | 35-20k ±5 | 5 | 50 | 1k; 4k | 4 | 12½ x 14¼ x 23½ | Wal. | Cloth Blk. | 45 | 258.00 pair | Fused tweeter. | |
| SUPERSCOPE | S-310 | 10 | 26 | Reflex | 3½ | | 2 | Cone | 40-18k ±5 | 5 | 30 | 2k; 7k | 8 | 14½ x 11 x 24½ | Wal. | Cloth Brn. | 43 | 169.95 | | |
| | S-212 | 12 | 35 | Reflex | | | 2 | Cone | 35-20k ±10 | 4 | 30 | 2k | 8 | 14½ x 11 x 23½ | Wal. | Cloth Brn. | 40 | 119.95 | | |
| | S-28 | 8 | | Reflex | | | | | 45-20k | | | 5k | 8 | | Wal. | Cloth Brn. | 23 | 79.95 | | |
| | S-18 | 8 | | Reflex | | | | | 55-17k | | | | 8 | | Wal. | Cloth Brn. | 17 | 99.95 pair | | |
| | S-26 | 6½ | 80 | Reflex | 6 | Cone | 3 | | 60-18k ±10 | 1½ | 10 | 5k | 8 | 11¼ x 6¼ x 19½ | Wal. Brn. | Cloth | 9½ pair | 69.95 | | |
| | S-16 | 6 | 10 | Reflex | | | | Whiz | 100-16k ±5 | 1 | 7 | | 8 | 9 x 6¼ x 15½ | Wal. | Cloth Brn. | 7 | 59.95 pair | | |

COMPARE THE NEW ER-139

the smooth electrostatic highs, the extended bass (32 Hz),
the 360° radiation pattern

Many speakers excel in one of these acoustic features; the ER-139 excels in *all* three, yet costs only \$139.90!

Utilizing a new patent by Arthur A. Janszen, one of the world's most respected authorities in high fidelity, the ER-139 employs eight "Constant Q" electrostatic tweeters in a circular array for 360° radiation of high frequencies, plus a highly-refined, downward directed, rear-radiating woofer for like distribution of lows. With a crossover of 2000 Hz, the combination is almost unbelievable... a distortion free, omnidirectional system with a remarkable uniform and smooth frequency and power response across the entire range of human hearing, from 32 Hz to 20,000 Hz!

Listen and you'll hear totally clean, completely uncolored sound. Brilliant, effortless highs... rich, full mid-ranges... dry, resonant bass... incredible clarity and transparency... exactly what the program material supplies. And this system is designed to operate at power input from as low as 15 watts (RMS, both channels combined) all the way up to 100, at eight ohms.

A-B the ER-139 against any speaker on the shelf before you buy or recommend any other speaker. We ask for no more consideration than that. The rest is up to you, your hearing, and your assurance that you know what you like.

a listening comparison note

Exceptional flat response, extreme absence of distortion, and omnidirectional distribution of power work together to produce the totally uncolored sound of the ER-139 Speaker System. However, in your test, coloration can be caused by other factors. To hear the ER-139's at their best, care must be taken not to introduce coloration by improper speaker placement, inadequate associated equipment, or pre-colored program material.

Use a moderately priced amplifier, and a good magnetic cartridge of equally flat response. Find the best room placement for the speaker cabinets (possibly in corner positions) by experimenting. Start about eight inches from the walls and reposition the ER-139's. When the right placement for the room is achieved, you'll

know it! The ER-139 is designed for home use, typically a reflective environment; damped (non-reflective) environments will reduce the multiple reflections of highs and modify the incredible blend that is designed into this system.

Electrostatic Research Company



Box 51, Dept. A., 38 Cabot Street
Beverly, MA 01915

Rush me complete information on the new ER-139 and a list of dealers in my area

NAME _____

ADDRESS _____

CITY _____

STATE _____ ZIP _____

WITH ANY SPEAKER ON THE SHELF



Check No. 21 on Reader Service Card

Speakers

PZ Piezoelectric
ES. Electrostatic

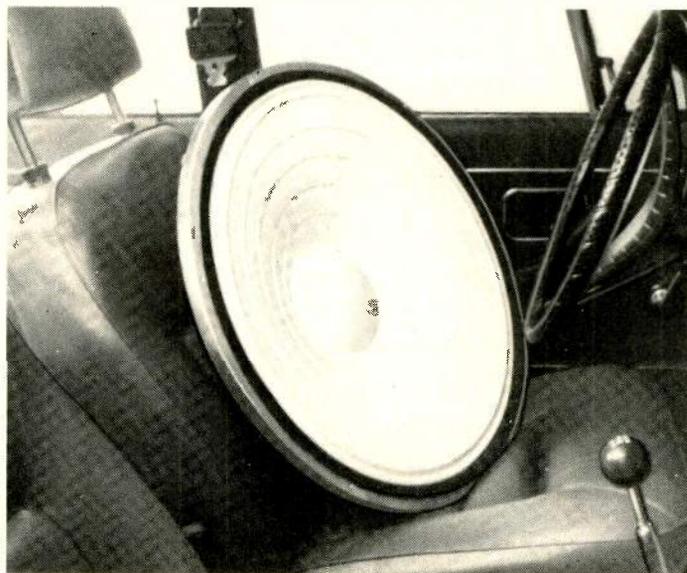
| MANUFACTURER | MODEL | WOOFER | | MID-RANGE | | TWEETER | | Overall freq. resp., Hz to 1kHz ± dB | Ampl. pwr. for avg. room W | Pwr. handling capacity (RMS cont) | Crossover frequency (res.) Hz | Impedance, ohms | Enclosure dimensions W x D x H, in. | Wood finish | Grille material/color | Weight, lbs. | Price (per pair?) | NOTES | |
|--------------------------|---------------------|---------------|---------------------------|-----------------|---------------|---------|-----------------------|---|----------------------------|--------------------------------------|-------------------------------|---------------------------|--|-----------------------------|-----------------------|-----------------------|-------------------|----------------|---|
| | | Diameter, in. | Resonance (in System), Hz | Enclosure type | Diameter, in. | Type | Diameter, in. | | | | | | | | | | | | Type |
| TECHNICS BY PANASONIC | T-500 | (2) 12 | 38 | Acous. susp. | 5 | Cone | (2) 2 (2) 1 3/4 | * | 35-20k ±3 | 10 | 100 | 600; 8k 8k | 8 | 18 3/4 x 14 1/2 x 29 | Wal. | Foam Cloth Var. | 70 | 429.95 | *Dome-center cone & ring; remov. grille. |
| | T-400 | 12 | 42 | Acous. susp. | 5 | Cone | 3 1/2 (2) 2 | Cone * | 38-20k ±3 | 10 | 90 | 700; 3k; 7.5k | 8 | 15 x 13 1/2 x 27 | Wal. | Foam Cloth Var. | 53 | 279.95 | *Dome-center cone; remov. grille. |
| | T-300 | 10 | 48 | Acous. susp. | 3 | Cone | 2 | * | 40-20k ±3 | 10 | 50 | 1.5k; 7.5k | 8 | 13 3/4 x 12 1/2 x 24 3/4 | Wal. | Foam Cloth Var. | 37 | 179.95 | *Dome-center cone; remov. grille. |
| | T-200 | 10 | 52 | Acous. susp. | | | 1 3/4 | Ring | | 10 | 40 | 1.8k | 8 | 12 x 10 1/2 x 21 3/4 | Wal. | Foam Cloth Var. | 30 | 99.95 | Remov. grille. |
| TRANSDUCTION | T-16 | 15 12 | | Trans. line | 5 | Cone | 1 3/4 | Dome Dome | 12-25k ±3 | 15 | 200 | 80; 380; 4k; 13k | 6 | 22 x 22 x 46 | Wal. | Cloth Blk. | 200 | 700.00 | Liquid-cooled drivers; fluid-damped diaphragm; aperiodic trans. line. |
| | T-4 | 12 | | Trans. line | 5 | Cone | 1 | Dome | 25-20k ±3 | 15 | 100 | 380; 4k | 6 | 15 x 13 1/4 x 30 | Wal. | Cloth Blk. | 65 | 250.00 | As above. |
| | T-3 | 12 | | Trans. line | 5 | Cone | 1 | Dome | 30-20k ±3 | 15 | 80 | 380; 4k | 6 | 14 3/4 x 12 x 24 | Wal. | Cloth Blk. | 45 | 250.00 | As above. |
| UTAH | MP-3000 | 15 | 60 | Reflex | 5 | Cone | (2) 1 | Horn | 20-20k | 10 | 50 | 2.5k 7k | 8 | 20 1/2 x 14 x 27 | Wal. | Foam Var. | 70 | 199.95 | W. base. |
| | MP-2000 | 12 | 60 | Acous. susp. | 5 | Cone | 1 | Horn | 30-20k | 10 | 30 | 2.5k; 5k | 8 | 15 1/4 x 12 x 24 | Wal. | Foam Var. | 42 | 139.95 | |
| | H54-B | 12 | 60 | Reflex | 3 1/2 x 8 | Horn | 1 | Horn | 25-19.5k | 5 | 45 | 2.5k; 5k | 8 | 15 x 14 x 25 3/4 | Wal. | Foam Var. | 49 | 159.95 | |
| | Trusonic JR-200M | 12 | 60 | Reflex | 5 | Cone | 1 | Horn | 20-20k | 10 | 50 | 2.5k; 7k | 8 | 15 1/4 x 12 x 24 | Wal. | Foam Var. | 46 | 149.95 | |
| | Trusonic JR-100M | 10 | 60 | Reflex | 5 | Cone | 1 | Dome | 30-20k | 10 | 40 | 1.5k; 5k | 8 | 14 x 10 x 23 | Wal. | Foam Var. | 33 | 119.95 | |
| YAMAHA | NS690 | 12 | 40 | Acous. susp. | 3 | Dome | 1 1/4 | Dome | 35-20k | | 60 | 800; 6k | 8 | 13 3/4 x 11 1/2 x 24 3/4 | Wal. | Cloth Blk. | 48 | 560.00 pair | |
| | NS670 | 10 | 45 | Acous. susp. | 2 1/2 | Dome | 1 1/4 | Dome | 40-20k | | 50 | 800; 6k | 8 | 12 1/2 x 10 1/2 x 22 3/4 | Wal. | Cloth Blk. | 42 | 460.00 pair | |

The Driver that Conquered the Lowlands

The Hartley 24-inch Woofer-Driver has a response curve beginning at 16 cycles. It performs in the lowest octave and a half and that's where the sound of music begins.

Suspension is important to a driver's performance. Hartley's patented magnetic system and 14 pound magnet provide the quickest restoring action of *any* suspension system on the market.

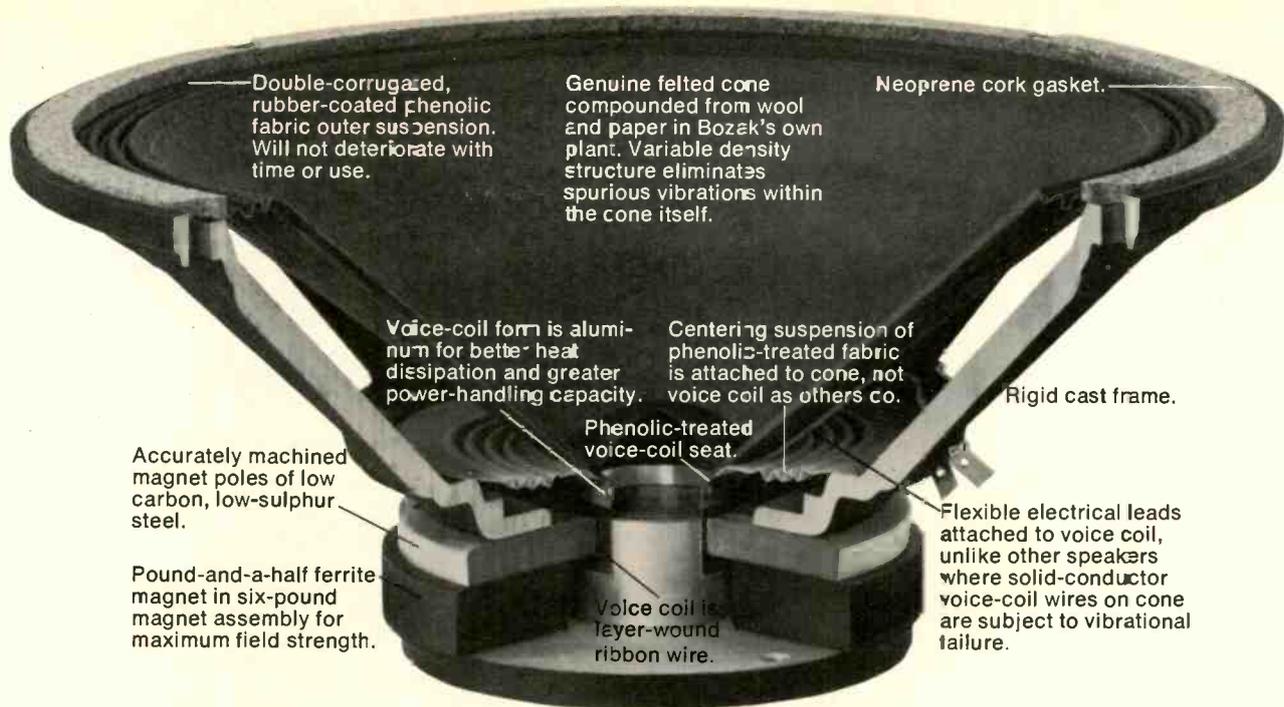
If you're interested in the sound of music where it begins, call or write us for a brochure and test drive the Hartley Woofer-Driver in either 18 or 24 inch models.



Check No. 26 on Reader Service Card

Hartley Products Corporation 54-56 N. Summit Street, Tenafly, N.J. 07670, 201-871-3442

Coral Audio Corp., Tokyo-Osaka, Japan • Royal Asia Ltd., Taipei, Taiwan • Interdyn, Melbourne Australia



Double-corrugated, rubber-coated phenolic fabric outer suspension. Will not deteriorate with time or use.

Genuine felted cone compounded from wool and paper in Bozak's own plant. Variable density structure eliminates spurious vibrations within the cone itself.

Neoprene cork gasket.

Voice-coil form is aluminum for better heat dissipation and greater power-handling capacity.

Centering suspension of phenolic-treated fabric is attached to cone, not voice coil as others do.

Rigid cast frame.

Accurately machined magnet poles of low carbon, low-sulphur steel.

Phenolic-treated voice-coil seat.

Flexible electrical leads attached to voice coil, unlike other speakers where solid-conductor voice-coil wires on cone are subject to vibrational failure.

Pound-and-a-half ferrite magnet in six-pound magnet assembly for maximum field strength.

Voice coil is layer-wound ribbon wire.

Our woofer. Like no other.



The famed B-199A woofer is the bass driver in Bozak speakers systems as small as the Tempo II, illustrated, and as large as the Concert Grand, the finest speaker system ever designed for use in the home.

There are good, scientific reasons why Bozak loud-speaker systems not only sound more natural, but also are virtually indestructible in normal use.

A look at the construction of the famed Bozak B-199A 12-inch bass speaker – like no other – will give you some insight into the superiority that is Bozak.

Among all woofers it stands supreme in its ability to reproduce the lower register of musical notes in their stark reality. Each tone is clear and distinct without the underlying monotonous boom which so often destroys the naturalness of otherwise distinguished speaker systems.

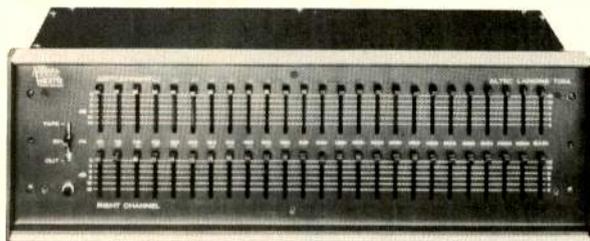
The Bozak component speakers – woofer, midrange and tweeter – put them all together in a system, and there is no finer instrument for the reproduction of sound.

You can add to your own expertise by reading our booklet, *How to Evaluate a Loudspeaker System*. It's free. Write: Bozak, Inc., Department 7, Box 1166, Darien, Connecticut 06820.

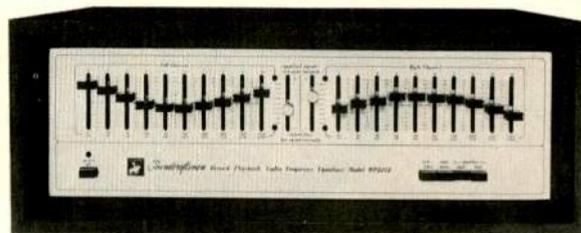
It's tough to compare something in a class by itself.

Bozak[®]

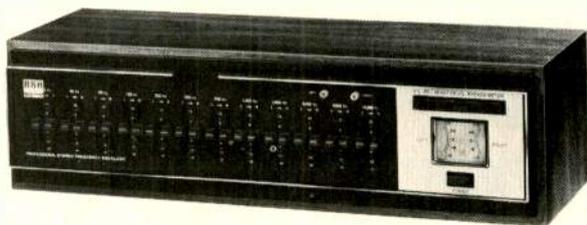
Equalizers



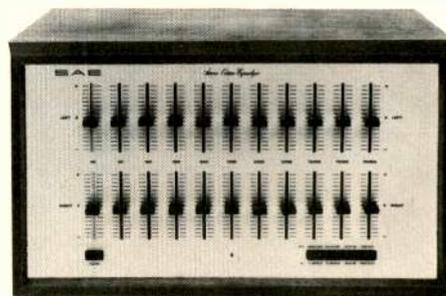
Altec-Lansing Acouta-Voicette



Soundcraftsmen RP2212



BSR FEW-3



SAE Mk XXVIII

| MANUFACTURER | MODEL | Channels | Bands | Bandwidth, octaves | Range, dB ± | Maximum Output, rms. | THD, % | S/N, rated output | Dimensions, WxDxH in. | Weight | Price | NOTES |
|---------------------|----------|----------|-------|--------------------|-------------|----------------------|--------|-------------------|-----------------------|--------|--------|--|
| ALTEC | 729A | 2 | 24 | 1/3 | -14 | 4.5 | 0.5 | 80 | 18 1/2 x 8 x 5 1/4 | 13 | 875.00 | Active filters; overall gain by built-in amp.; tape mon. |
| BSR | FEW III | 2 | 12 | 3/4 | 12 | 9 | 0.007 | 80 | 10 12 1/4 5 1/4 | 5 | 199.95 | W. test disc; 2 mtrs.; front panel swits. EQ line or recorder, tape mon.; bypass; mtr. on/off. |
| | FEW II | 2 | 5 | 1 1/4 | 12 | 9 | 0.007 | 80 | 9 19 1/2 7 1/2 | 9 | 99.95 | Tape mon. |
| CUSTOM DESIGNS | AE-1 | 2 | 4 | | +24 -12 | 6 | 0.05 | 75 | | | 225.00 | Cascaded variable bandwidths from 1 to 2 octaves. |
| | AE-9 | 2 | 9 | 1 | 12 | 10 | 0.0095 | 65 | | | 250.00 | |
| DAYTON-WRIGHT | S6 | 2 | 8 | 1.2 | 12 | 8.5 | 0.001 | 85 | 12 x 10 x 6 1/2 | 12 | 575.00 | |
| | X-80 | 2 | 2 | — | — | 8.5 | 0.001 | 90 | 7 x 5 x 2 | 5 | 172.00 | Fixed-freq. electronic x-over; stereo input, stereo output above 80 Hz, mono (mixed) output below 80 Hz. |
| JVC | SEA-10 | 2 | 7 | | 12 | | 0.09 | 70 | 5 1/4 x 7 1/2 x 10 | 5.7 | 129.95 | Tape mon. |
| QUINTESSENSE | EQ-1 | 2 | 5 | | 12 | 8 | 0.02 | 100 | 15 x 5 x 9 | 8 | 400.00 | RIAA record compensator; inductorless circuitry. |
| SAE | Mk VII | 2 | 11 | 1 | 16 | 2.5 | 0.05 | 90 | 17 x 5 1/4 x 7 | 16 | 500.00 | Ganged controls. |
| | Mk XXVII | 2 | 11 | 1 | 16 | 2.5 | 0.05 | 90 | 17 x 8 3/4 x 7 | 19 | 550.00 | |
| SOUND-CRAFTSMEN | 22-12 | 2 | 10 | 1 | 12 | 5 | 0.01 | 90 | 20 x 11 1/4 x 1 1/4 | 26 | 349.50 | LED balancing circ.; Rec./PB facil. on front panel; w. eq. record; spectrum level controls. |
| | RP 20-12 | 2 | 10 | 1 | 12 | 5 | 0.01 | 90 | 18 x 11 1/4 x 5 1/4 | 23 | 299.50 | Spectrum level controls; w. eq. record. |
| | RP 10-12 | 1 | 10 | 1 | 12 | 5 | 0.01 | 90 | 18 x 11 1/4 x 5 1/4 | 23 | 349.50 | VU meter; front panel Rec./PB facil. |
| SOUTHWEST TECHNICAL | R216 | 2 | 9 | 1 | 12 | 7 | 0.05 | 65 | 21 x 4 x 5 | 5 | 99.50 | All active-filter circ.; no inductors. |

The Three Advent Speakers

When products become best-sellers largely on the strength of word-of-mouth advertising, and when people consistently go out of their way to write the company and say thanks for making them, you have reason to believe that something special is going on.

The something special is this:

The three speakers described below do exactly what they are represented to do.

The Advent Loudspeaker

The original Advent was designed to compete in every audible respect with the most expensive speakers available, at a fraction—often a very small fraction—of their cost. Its useful frequency range is as wide as any speaker's, and its sound is clean, clear, and beautifully defined, with a musical balance that is satisfying not just with the best recordings or one kind of musical material, but with the whole range of music and the various ways of recording it. Its bass response is approached by only a handful of speakers at any price, and surpassed by none.

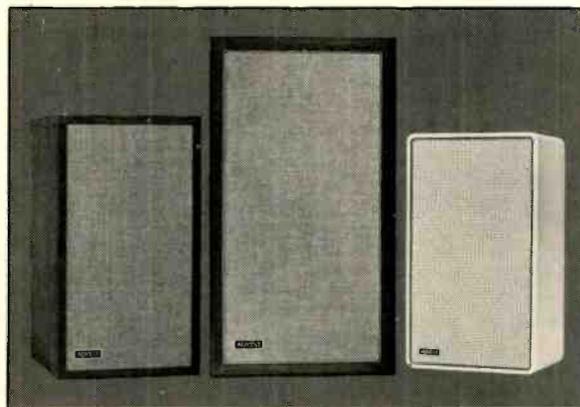
It costs \$107 to \$130, depending on cabinet finish and what part of the country it's shipped to.

The Smaller Advent Loudspeaker

The Smaller Advent was designed to do exactly what the original Advent does, at half the size and two-thirds the cost, except that it will not play quite as loud. Its range and overall sound are the same as the original (not close, but the same), and for anything short of roof-raising volume levels in really big rooms, you would be very hard-pressed to hear any difference between original and Smaller.

The Smaller Advent costs \$74 to \$79.

Advent Corporation, 195 Albany Street, Cambridge, Massachusetts 02139.



The Advent/2

This is the newest Advent and it sounds just like the other two except that it doesn't have the final half-octave of bass response that they do. It's designed to get the absolute maximum of useful performance at lowest cost, and its own low price is made lower still by the fact that it works superbly with low-cost, low-power amplifiers and receivers. It comes in a beautiful, warm-white molded cabinet instead of the usual low-cost imitation wood finish, and since the enclosure does what a wood one does at far lower weight, it's much easier to mount on a wall or shelf.

The Advent/2 hasn't had as much time as the other Advents to get word-of-mouth going. But it will. What it does is enable people to put together a stereo system for \$350 or less that isn't a "starter" or a compromise for a tight budget, but a joy to live with ever after.

The Advent/2 costs \$58 to \$59.50.

To check the accuracy of the above statements, just take along your eyes and ears and (whatever shape it's in these days) your common sense to the nearest Advent dealer. We will be happy to send you his name, and literature on our speakers, if you will write us.

Thank you.

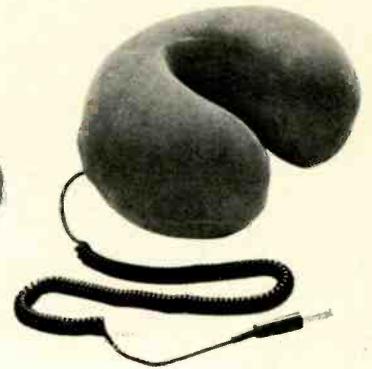
Headphones



Avid 885



Revox DT-204

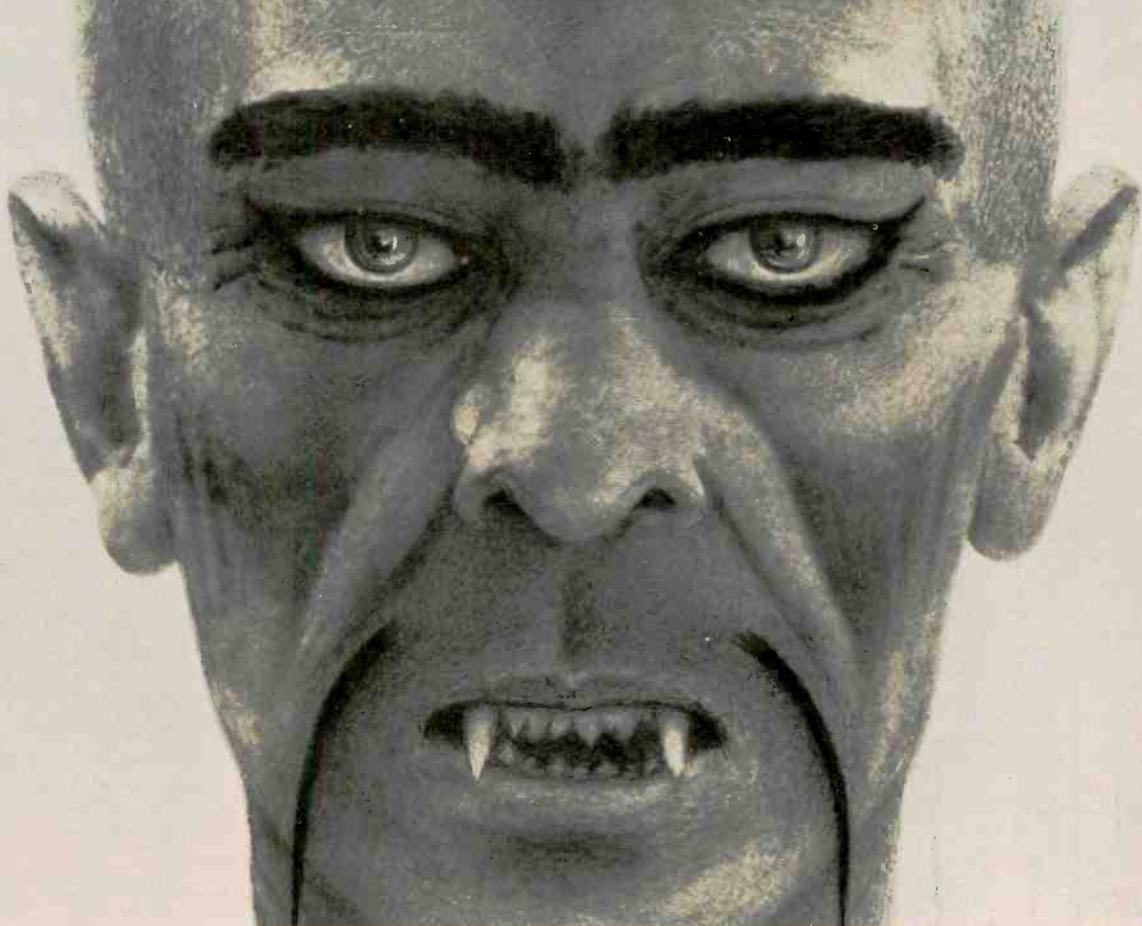


Hear Muffs 1A

Audio-technica AT-703

| MANUFACTURER | MODEL | Type | Frequency response, Hz ± 1 dB | Impedance, ohms | Sensitivity mW input for 100 dbm out | Maximum input, mW | Distortion, % | Cord length, ft. | Weight, oz. | Price | NOTES |
|----------------|---------------------|-----------------|----------------------------------|-------------------------|---|-------------------|---------------|------------------|-------------|--------|---|
| AKG (PHILIPS) | K-180 | Dyn. | 16-20k ±5 | 600 | 0.06 | 20 | 1 | 7 | 21 | 69.00 | Presence contrl. changes transducer-ear distance. |
| AUDIO-TECHNICA | AT-701 | Dyn. | 30-20k ±3 | 4-16 | 1.4 | 200 | 0.5 | 9 | 9 | 39.95 | Adaptor for mtchg. hi imp. input of cond. to any amp output; 'phone/spkr. swit. Does not req. adaptor. |
| | AT-702 | Dyn. | 25-20k ±2.5 | 4-16 | 1.4 | 200 | 0.5 | 9 | 9 | 49.95 | |
| | AT-703 | Dyn. | 20-20k ±2.5 | 4-16 | 1.8 | 200 | 0.5 | 14 | 9 | 69.95 | |
| | AT-706 | Elec. | 10-22k ±1.5 | 4-16 | 15.2 | 10000 | 0.1 | 6 | 10.3 | 129.95 | |
| | AT-707 | Elec. | 30-22k ±3 | 4-16 | 11.3 | 800 | 0.3 | 15 | 10.9 | 79.95 | |
| AUDIOTEX | 30-5205 Marquis | Dyn. | 20-20k | 8 | | | | 6 | | 39.95 | Open-air type, adj. padded band. |
| | 30-5206 Mark IV | | 10-18k | 8 | | | 1 | 10 | | 59.95 | Adj. padded band. |
| | 30-5204 Mark III | | 20-18k | 8 | | | | 12 | | 34.95 | Adj. padded band. |
| | 30-5200 Mark I | | 30-15k | 8 | | | | 10 | | 15.95 | Adj. padded band. |
| | | | | | | | | | | | |
| AVID | 885 | Dyn. | 30-17.5k | 300 | 0.3* | 330 (10V) | 0.5 | 15 | 15 | 14.95 | *For 100 dB. |
| | Pro 730 | Dyn. | 20-18.5k | 300 | 0.3 | 330 (10V) | 1.0 | 15 | 16 | 26.95 | *For 100 dB. |
| BEYER (REVOX) | DT302 | Dyn. | 20-20k | 600 | | | 1.0* | 2.3 | | 29.95 | Open-air headphones; *115dB. |
| | DT204 | Dyn. 4-chan. | 20-20k | | | | 0.3* | 10 | 14 | 120.00 | Volume controls for front chan.; *120dB. |
| | DT48 | Dyn. | 16-20k ±2dB | 8, 25, 200 | | | 0.2* | 11 | 15 | 120.00 | Padded headband, ear cushions; *120dB. |
| | DT480 | Dyn. | 20-20k | 8, 25, 200 | | | 0.2* | 12 | 16.5 | 90.00 | *120dB. |
| | DT100 | Dyn. | 30-20k | 8, 100, 400, 2000 | | | 0.2* | 12 | 10 | 64.00 | Modular construction; *120dB. |
| | DT900 | Dyn. | 30-18k | 600 | | | 0.4* | 7 | 9 | 29.95 | *120dB. |
| BEYER (GOTHAM) | DT48S | Dyn. | 16-18k | 5 | 0.063 | 200 | 3 | 10 | 17 | 120.00 | Accessories: TR 48/2, Stereo transformers for use with 600 ohm line; UG8, speaker switch box. |
| HEAR-MUFFS | QM-5000 4-chan. | Dyn. | 20-20k ±3 | 4-16 | | 1000 | 1.0 | 8½ | 33 | 54.95 | Choice of colors. |
| | QM-440 4-chan. | Dyn. | 20-20k ±3 | 4-16 | | 1000 | 1.0 | 8½ | 32 | 49.95 | Same as above. |
| | HM-4000 | Dyn. | 20-20k ±3 | 4-16 | | 1500 | 1.0 | 10 | 28 | 37.95 | Same as above. |
| | HM-1A | Dyn. | 20-18k | 4-16 | | 1000 | 1.0 | 10 | 23 | 29.95 | Same as above. |
| HITACHI | HD-50 | | 20-20k | | | | | | | 19.95 | 2/4 chan. swit. |
| | HD-60 | | 20-20k | | | | | | | 29.95 | |
| | HD-404 4-chan. | | 20-20k | | | | | | | 69.95 | |
| JVC | 5944 4-chan. | 4-chan. | 20-20k | 8 | | | 1.0 | 67" | 12 | 49.95 | |

Malcolm Scholl, Audioanalyst, As Seen Through The Eyes Of His A-200X Speaker



He can torture a tweeter out of its bird.

Malcolm Scholl, Human Being

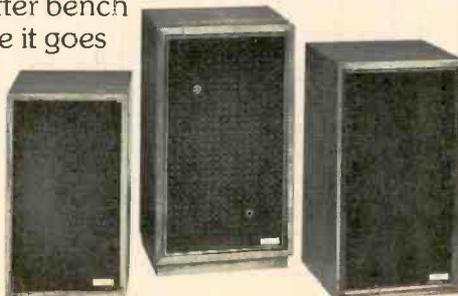


Called an "audio wizard" by Sight & Sound Marketing, this engineering genius will put a crossover panel through fifty changes, if necessary, before he'll give it his Six Year Warranty.

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P.O. Box 262, Brookfield, Conn. 06804
Monstrous About Perfection

Headphones



**Koss HV
1LC**



Marantz SE-15



Realistic LV-10

| MANUFACTURER | MODEL | Type | Frequency response, Hz ± 7 dB | Impedance, ohms | Sensitivity mW input for 100 dBm out | Maximum input, mW | Distortion, % | Cord length, ft. | Weight, oz. | Price | NOTES |
|-----------------------|--------------------|--------|----------------------------------|-----------------|---|-------------------|---------------|------------------|-------------|---------------|--|
| KOSS | ESP-9 | ES | 10-19k ±5 | 8 | 1400 | 10000 | 0.2 | 6 | 19 | 175.00 | |
| | ESP-6A | ES | 30-19k ±5 | 8 | 465 | 10000 | 0.2 | 10 | 27 | 130.00 | |
| | HU/1LC | Dyn.* | | 150 | 4 | 85 | 0.4 | 10 | 10.7 | 54.95 | *Wide-range Decilite drivers. |
| | HV/1A | Dyn.* | | 175 | 3.6 | 77 | 0.4 | 10 | 9.3 | 49.95 | *Same as above. |
| | HV/1 | Dyn. | | 175 | 7 | 150 | 0.6 | 10 | 9.3 | 44.95 | |
| | PRO/4AA | Dyn. | | 250* | 3.5 | 1200 | 0.6 | 10 | .9 | 65.00 | *600 ohm vers. avail. (PRO/600AA), \$70.00. |
| | Phase/2 | Dyn.* | | 150 | 150 | 10000 | 0.6 | 10 | 24 | 75.00 | *Panoramic Source Contis.; amb. exp. swit. |
| | K/2*2A | Dyn. | | 85 | 1.0 | 1200 | 0.6 | 10 | 22 | 90.00 | |
| | 4-chan. PRO/5Q | Dyn. | | 85 | 1.0 | 1200 | 0.6 | 10 | 21 | 75.00 | |
| | 4-chan. K/6LCQ | Dyn. | | 85 | 2.1 | 700 | 0.6 | 10 | 22 | 49.95 | |
| | 4-chan. KO/727B | Dyn. | | 130 | 0.025 | 120 | 1.0 | 10 | 19 | 34.95 | |
| | K/6LC | Dyn. | | 110 | 0.02 | 80 | 1.0 | 10 | 17 | 29.95 | |
| K/6 | Dyn. | | 130 | 0.08 | 500 | 1.0 | 10 | 15 | 19.95 | | |
| SP/3XC | Dyn. | | 130 | 0.16 | 500 | 1.0 | 10 | 15 | 15.95 | | |
| LAFAYETTE | F-4400 4-chan. | Dyn. | 20-20k | 4-16 | 88 dB | | 0.5 | 9½ | 26 | 44.95 | Foam filled; incl. plugs. |
| | F-990 | Dyn. | 20-20k | 8 | | | 1.0 | 5 | | 29.95 | Foam filled; 3½-in. transducers. |
| | F-600 | Dyn. | 20-20k | 200 | | | 1.0 | 6½ | 19 | 24.95 | Open-air; foam. |
| MARANTZ | SE1S | ES | 5-20k | 8 | 2.8V | | 1 | 15 | 14 | 129.95 | W. EE-1 headphone energizer. |
| | SD5 | Dyn. | 30-15k | 8 | 0.15V | | 1 | 15 | 14 | 39.95 | |
| NAPOLEX (SUMIKO) | ES-100 | ES | 40-20k ±3 | 8 | 1.5W | 40W | 0.8 | ... | ... | 129.95 | W. ESD-100 power supply adapter. |
| OLSON | PH-219 | ES | 25-19.5k | 4-16 | 40 | 1500 | 1 | 10 | 5 | 59.98 | W. energizer. |
| PEARL-PML (ERCONA) | D-42 deluxe | Dyn. | 30-20k | 200 | 0.3 | | 2 | 6 | 9½ | 29.95 | Mono or stereo. |
| | RDF 224 | Dyn. | 20-18k | 8 | 1 | 100 | 1 | 8 | 12 | 24.95 | Coil cord; mono/stereo swit. |
| PICKERING | OA1 | Dyn. | 30-19k | 8 | * | 300 | 1 | 7 | 10¼ | 19.95 | Open-air type. 4901 remote control unit, separate vol. tone contis, stereo/mono swit., 17-ft. coil cord, use with low Z phones, \$19.95. |
| | 4955 | Dyn. | 30-18k | 8 | * | 5W | 1 | 10 | 28 | 64.95 | Two-way system, *100 dB for 0.11V in. |
| | OA3 | Dyn. | 20-20k | 15 | * | 200 | 0.5 | 10 | 7.5 | 44.95 | *100 dB for 0.10 V in.; open-air type; w. adapter plug for port. radio, TV, recorder. |
| | OA2 | Dyn. | 30-19k | 8 | * | 300 | 1 | 7 | 10½ | 24.95 | Open-air type; w. adapter plug for port. radio, TV, recorder. |
| PIONEER | SE-700 | Dyn. | 20-20k | 4-16 | * | 30V | | 10 | 13 | 79.95 | *100 dB/3 V.; carrying case. |
| | SE-Q404 4-chan. | Dyn. | 20-20k | 4-16 | * | 500 | | 10 | 24 | 69.95 | *105 dB/0.3V.; 2/4 chan. swit.; vol. contis. |
| | SE-505 | Dyn. | 20-20k | 8 | | 500 | | 16 | 16 | 59.95 | 2-way; level & tweeter contis. |
| | SE-405 | Dyn. | 20-20k | 8 | * | 500 | | 16 | 16 | 44.95 | *113 dB/0.3V.; level contis. |
| | SE-305 | Dyn. | 20-20k | 8 | | 500 | | 12 | 14 | 34.95 | |
| | SE-205 | Dyn. | 20-20k | 4-16 | | 500 | | 8 | 16 | 24.95 | |
| | SE-L401 | Dyn. | 20-20k | 4-16 | * | 200 | | 10 | 11 | 39.95 | *111 dB/0.3V.; open air earpieces; adjt. band; carrying case. |
| SE-L201 | Dyn. | 20-20k | 4-16 | * | 200 | | 10 | 11 | 29.95 | *111 dB/0.3V. | |
| REALISTIC | PRO-1 | Dyn. | 10-24k | 8 | | | | 10 | | 54.95 | Liquid filled. |
| | Nova-44 4-chan. | Dyn. | 20-20k | 8 | | | | 15 | | 44.95 | |
| | LV-10 | Dyn. | | 8 | | | | | | 39.95 | High vel. |
| SANSUI | SS-2 | Dyn. | 20-18k | 8 | | 500 | 1.0 | 6 | 12.6 | 16.95 | |



Stanton Dynaphase 60



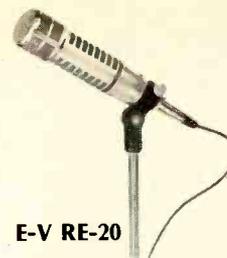
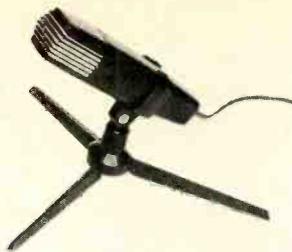
Technics EAH-420



Toshiba HR-40

| MANUFACTURER | MODEL | Type | Frequency response, Hz ± 7 dB | Impedance, ohms | Sensitivity mW input for 100 dBm out | Maximum input, mW | Distortion, % | Cord length, ft. | Weight, oz. | Price | NOTES |
|-----------------------|-------------------|----------|----------------------------------|-----------------|---|-------------------|---------------|------------------|-------------|--|---|
| SCINTREX | XQ-4 | Dyn. | | 4.1k | 13 | 45 | 0.6 | 14 | 19 | 79.95 | 4 separate acoustic-suspension drivers; quad or stereo swit. |
| | SX-4 | Dyn. | | 4-600 | 12 | 43 | 0.8 | 14 | 19 | 49.95 | Stereo or "experiential sound" swit. |
| | 98 | Dyn. | | 4-300 | 6.5 | 50 | 1 | 14 | 16 | 39.95 | |
| | Supra | Dyn. | | 4-200 | 0.5 | 4 | 0.4 | 10 | 6 | 29.95 | High velocity drivers. |
| | 88 | Dyn. | 15-18k | 4-300 | 4 | 330 | 0.9 | 14 | 9 | 24.95 | Auto EQ in bass and treble. |
| SENNHESIER | HD414 | Dyn. | 20-20k ±4 | 2000 | 0.8 | 100 | 1 | 10 | 5 | 45.95 | "Open-air" principle. |
| | HD424 | Dyn. | 16-20k ±4 | 2000 | 1 | 100 | 1 | 10 | 6.5 | 74.95 | "Open-air" principle. |
| | HD44 | Dyn. | 40-15k ±4 | 640 | 4 | 150 | 1 | 10 | 1.2 | 26.95 | "Open-air" principle. |
| STANTON | 65-4C | | 20-20k | 15 | 0.1V | 1.25V | 0.5 | 11 | 19 | 69.95 | 2/4 chan.; 4 spkrs. |
| | 4-chan. 60 | Dyn. | 40-11k | 8 | 0.11V | 500 | 1.0 | 10 | 28 | 64.95 | Sep. 2-way woofer & twtr. in each cup w/ L/C crsvr. |
| | 50 | Dyn. | 60-10k ±3 | 8 | 0.11V | 500 | 1.0 | 10 | 21 | 54.95 | Vol. contrl. on earcups. |
| | 40 | Dyn. | 60-10k ±3 | 8 | 0.11V | 500 | 1.0 | 10 | 21 | 44.95 | |
| SUPREX | TL-3 | Dyn. | 25-20k | 100 | 7 | 250 | -- | 15 | 10 | 40.00 | "Open air" type. |
| | EP-5 | Dyn./ES | 10-24k | 8 | 3V | -- | -- | 15 | 17 | 80.00 | Dynamic woofer/electronic tweeter; speaker/phones switch. |
| | PRO-VII | Dyn. | 15-23k | 100 | 6 | 250 | -- | 15 | 17 | 65.00 | Dynamic woofer/ceramic tweeter. |
| | PEP-79E | ES | 10-11k | 8 | 2V | -- | -- | 15 | 8½ | 90.00 | Speaker/phones switch. |
| | PEP-77E | ES | 10-22k ±5 | 8 | 2V | -- | -- | 15 | 8½ | 125.00 | Console w. vol. controls accepts a phones, speaker/phones switch. |
| | Uni Pro | Dyn. | 15-20k | 100 | 6 | 250 | -- | 15 | 14 | 50.00 | |
| | 927 | Dyn. | 25-19k | 10 | 15 | 1000 | -- | 10 | 16 | 35.00 | Dynamic woofer/ceramic tweeter. |
| | Pro 60 | Dyn. | 15-22k | 10 | 15 | 1000 | -- | 15 | 18 | 60.00 | Dynamic woofer/ceramic tweeter. |
| | QT-4B | Dyn. | 20-18k | 20 | 10 | 250 | -- | 15 | 16 | 65.00 | Quad/stereo switch. |
| | 4-chan. ST-F-2 | Dyn. | 25-17k | 20 | 10 | 250 | -- | 15 | 9 | 30.00 | Available in 600 ohms, ST-F-2-H, \$32.50. |
| | 930 | Dyn. | 40-14k | 8 | 10 | 1000 | -- | 7 | 13 | | |
| | QT-4 | Dyn. | 25-17k | 20 | 10 | 250 | -- | 15 | 16 | 50.00 | |
| | 4-chan. SST | Dyn. | 20-20k | 10 | 15 | 1000 | -- | 15 | 19 | 40.00 | Dynamic woofer/ceramic tweeter w. ind. Vol. & tweeter controls. |
| ST-V | Dyn. | 20-18k | 8 | 10 | 1000 | -- | 15 | 18 | 30.00 | W. ind. vol. controls. | |
| SW-IV | Dyn. | 30-16k | 8 | 10 | 1000 | -- | 10 | 14 | 24.95 | | |
| ST-N | Dyn. | 30-15k | 8 | 10 | 1000 | -- | 7 | 13 | 19.95 | | |
| TEAC | HP-100 | Dyn. | 25-20k | 8-16 | * | 500 | | 13 | | 29.50 | *115 dB at 1 kHz at 1 mW. |
| TECHNICS BY PANASONIC | EAH-80A | Electret | 20-20k | 4-16 | * | 5W | 0.8 | 13 | 12½ | 79.95 | *101 dB for 1 V, 500 Hz; signal powered; no power supply needed; w. control box, balance, vol., speaker on/off swits. |
| | EAH-420 | Dyn. | 20-20k | 4-16 | * | 1W | 1 | 10 | 23¾ | 79.95 | *104 dB for 1 mW; 1 woofer, front & back tweeters in each earcup; 2/4 chan. swit. |
| TELEPHONICS | TEL-101F | Dyn. | 20-20k | 100 | * | 400 | 0.2 | 6 | 21 | 89.95 | *1 mW for 100 dB SPL. |
| | 4-chan. | | | | | | | | | | |
| | TEL-111 | * | 18-24k | 8 | ** | 15W | 0.2 | 6 | 17 | 87.50 | *Electret-condenser; **100 V rms; comes w. impedance-matching box. |
| | TEL-26 | Dyn. | 20-20k | 8 | * | 300 | 0.2 | 9 | 16 | 36.95 | *1 mW for 100 dB SPL; 2 tone & vol. contrls.; stereo/mono swit. |
| | TEL-14 | Dyn. | 20-20k | 8 | * | 300 | 0.2 | 9 | 19 | 29.95 | 2-way system in each cup; *1 mW for 100 dB SPL. |
| TEL-29 | Dyn. | 30-18.5k | 8 | * | 200 | 0.5 | 7 | 17 | 19.95 | *mW for 100 dB SPL; indiv. vol. contrls. | |
| TELEX | Studio I | Dyn. | 20-22k | 3-16 | | 1000 | 1 | 15 | 24 | 73.45 | Vol. & tone contrls. each chan.; coil cord; storage case. |
| | Studio II | Dyn. | 20-22k | 3-16 | | 1000 | 1 | 15 | 24 | 62.95 | Coil cord; storage case. |
| | 400 | Dyn. | 30-20k | 3-16 | | 1000 | 1 | 15 | 16 | 47.20 | Vol. contrls. each chan.; coil cord. |
| | 300 | Dyn. | 30-18k | 3-16 | | 1000 | 1 | 15 | 15 | 36.70 | Coil cord. |
| | 200 | Dyn. | 50-15k | 3-16 | | 500 | 2 | 10 | 11 | 26.20 | Vo. contrls. each chan.; coil cord. |
| TOSHIBA | HR40 | Dyn. | 20-20k | 8 | 1 | 300 | | 6.6 | 27½ | 54.95 | 2/4-chan. swit. |
| | 4-chan. | | | | | | | | | | |
| | HR50 | Dyn. | 20-20k | 8 | 1 | 250 | | 6.6 | 20¾ | 29.95 | Stereo/binaural swit. |
| HR80 | Dyn. | 20-20k | 8 | 15 | 250 | | 6.6 | 13 | 17.95 | | |
| VIDAIRE | 871 | Dyn. | 18-20k | 4-8 | | 500 | | 10 | | 50.30 | Carrying case. |
| | 4-chan. 859 | Dyn. | 15-20k | 4-8 16 | | 700 | | 10 | | 55.85 | |

Microphones



Advent MDC-1

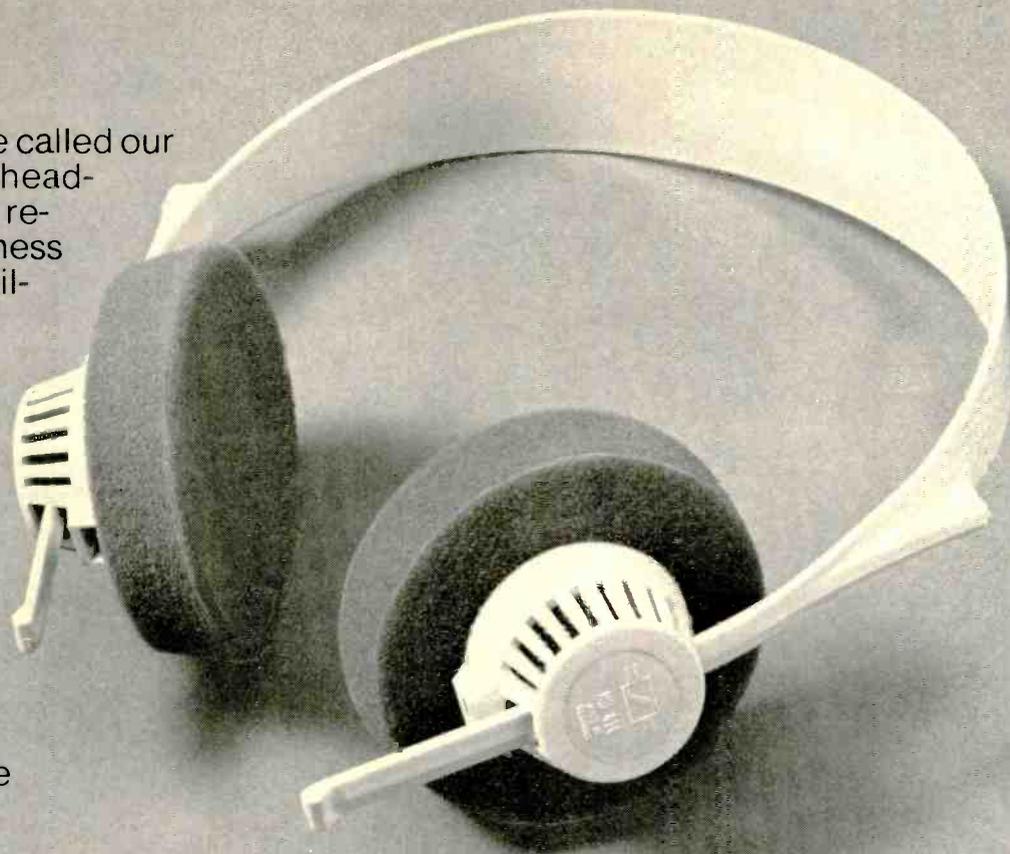
E-V RE-20

| MANUFACTURER | MODEL | Directional pattern | Operating principle | Case material | External finish | Impedance, ohms | Frequency response, Hz to kHz, ± 1 dB | EIA Sensitivity, dBm | Mic. connection | Cable length, ft. | Cable plug type | Dimensions, in. | Weight, oz. | Mounting method | Price | NOTES |
|---------------|-------------|---------------------|---------------------|---------------|-----------------|-----------------|---------------------------------------|----------------------|-----------------|-------------------|-----------------|-----------------|-------------|-----------------|----------------|--|
| ADVENT | MDC-1 | Card. | Dyn. | Metal | Blk. | 500 | 50-16k | | Atch. | 20 | Phone | 5½ x 1¼ | 10 | | 90.00 pair | Matched pair w. case, desk stands. |
| AKG (Philips) | D-707 | Card. | Dyn. | Metal | Matte chrome | 200 | 50-15k ± 3.5 | -52 | XLR | 15 | Not furn. | 6 x 1½ | 6 | ¾ x 27 | 49.00 | TS, HiZ w. swit., \$69.00. |
| | D-1000 | Card. | Dyn. | Metal | Matte chrome | 200 | 40-16k ± 3.5 | -51 | XLR | 15 | Not furn. | 6 x 1½ | 9½ | ¾ x 27 | 69.00 | 3-pos. Lo rolloff swit.; TS, HiZ w. swit., \$89.00. |
| | D-200 | Card. | 2-way dyn. | Metal | Matte chrome | 200 | 30-15k ± 3 | -55 | XLR | 15 | Not furn. | 7¼ x 1½ | 8 | ¾ x 27 | 79.00 | TS, HiZ w. swit., \$99.00. |
| | C-451E | Card. | Cond. | Metal | Matte chrome | 200 | 30-20k ± 2.5 | -38 | XLR | Not furn. | Not furn. | 5½ x ¾ | 4½ | ¾ x 27 | 205.00 | Modular system, phantom powering. |
| ASTATIC | 810 | Card. | Dyn. | Zinc | Satin Chrome | 150/40k | 40-15k | 147 | Swcft. A4M | 18 | none | 5½ x 1¼ | 8 | ¾ x 27 | | Gen. purpose; good rear reject.; 810S w. swit. |
| | 820 | Omni. | Dyn. | Steel | Satin Chrome | 150/40k | 40-18k | 154/158 | Fixed | 18 | None | 9 x ¾ | 6 | ¾ x 27 | | 820S w. swit., removable cable. |
| | 840 | Omni. | Dyn. | Alum. | Satin chrome | 150 | 50-12k/50-16k | 153 | Fixed | 30 | None | 2¾ x ¾ | 1¼ | Lav./clip | | Lavalier type; sual response 840S w. swit. |
| | 850 | Card. | Dyn. | Zinc | Satin chrome | 150/40k | 40-15k | 147 | Swcft. A4M | 18 | None | 6½ x 2½ | 9½ | ¾ x 27 | | Lavalier type; dual response; Ball-head filter; gen. purpose; good rear reject.; 850S w. swit. |
| | 860 | Omni. | Dyn. | Steel | Satin chrome | 150/40k | 40-18 | 154/158 | Fixed | 18 | None | 10 x 1½ | | ¾ x 27 | | Ball-head filter; 860S w. swit., removable cable. |
| | 857 | card. | Dyn. | Zinc | Satin chrome | 150/40k | 50-15k | 150/153 | Swcft. A3M | 18 | None | 6½ x 2½ | 9½ | ¾ x 27 | | Ball-head filter; low & high Z models; 857S w. swit. in cable con. |
| | 77 | Card. | Dyn. | Zinc | Satin chrome | 38/150/40k | 30-15k | 144 | Amph. MC3M | 20 | None | 8 x 2½ x 2¾ | 23 | ¾ x 27 | | On/off swit. w. lock in base. |
| | 335 | Omni. | Dyn. | Zinc | Grey & chrome | 38/40k | 60-12k | 151/153 | Fixed | 8 | None | 4¾ x 1¼ | 12 | Lav./¾ x 27 | | Low & high Z models; swit. has lock. Model 333, ceramic; 332, crystal. |
| AUDIOTEX | 30-2314 | Card. | Dyn. | Alum. | Brush. alum. | Hi/Lo | 50-13k | -58 | | 20 | Phone | | | | 39.95 | Built-in wind screen; vol. cont.; on/off swit.; desk/floor stand. |
| | 30-2312 | Omni. | Dyn. | Alum. | Brush. alum. | Hi/Lo | 55-13k | -62 | | 15 | Phone | | | | 34.95 | On/off swit.; windscreen; swivel adptr. |
| | 30-2310 | Card. | Dyn. | Alum. | Brush. alum. | Hi | 80-13k | -58 | | 10 | Phone | | | | 29.95 | On/off swit.; desk std. w. swivel adptr. |
| BEYER (REVOX) | 3500 | Uni. | Dyn. | Metal | Chrome | 600 | 40-18k | -149 | XLR | 16½ | Not furn. | 6¾ x 1 | 8-¾ | | 165.00 | w. wind screen, clamp, table stand. |
| | M550S | Omni. | Dyn. | Metal | Blk. chrome | 500 | 50-16k ± 3 | -152 | Atach. | 15 | Phone | 5 x 1 | 8 | | 37.50 | W. tripod, clamp. |
| | M260 | Hyper card | Rib. | Metal | Matte blk. | 200 | 50-18k ± 3 | -153 | XLR | 16½ | Not furn. | 7 x 1 | 8 | | 110.00 | M260SM, w. on/off & bass cut swit, also avail. |
| | M160 | Super card. | Doub. rib. | Metal | Matte blk. | 200 | 40-18k ± 2 | -152 | XLR | 16½ | Not furn. | 6 x 1 | 6 | | 230.00 | |
| | M500 | Super card. | Rib. | Metal | Matte blk. | 200 | 40-18k ± 2½ | -153 | XLR | 16½ | Not furn. | 7½ x 2 | 8 | | 140.00 | 4-stage, built-in popscreen. |
| | M69 | Card. | Dyn. | Metal | Matte blk. | 200 | 40-16k ± 3 | -144 | XLR | 16½ | Not furn. | 7 x 1 | 8 | | 95.00 | M69SM, w. on/off & bass cut swit., also avail. |
| | M101 | Omni. | Dyn. | Metal | Matte blk. | 200 | 40-20k ± 2 | -150 | XLR | 16½ | Not furn. | 4½ x ¾ | 3½ | | 115.00 | W. windshield. |
| | X1N | Card. | Dyn. | Metal | Matte blk. | 200 | 30-18k ± 2 | -148 | XLR | 16½ | Not furn. | 7 x 1¼ | 11 | | 80.00 | X1HLC, w. Hi & Lo Z swit., also avail. |
| | M201 | Hyper card. | Dyn. | Metal | Matte blk. | 200 | 40-18k ± 2½ | -149 | XLR | 16½ | Not furn. | 6 x 1 | 8 | | 165.00 | w. windshield. |
| | M810 | Card. | Dyn. | Metal | Matte blk. | 500 | 50-16k ± 3 | -148 | DIN | 16½ | Phono | 5 x 1¼ | 9 | | 65.00 | W. windshield, quick release clamp. |
| M67 | Card. | Dyn. | Metal | Matte blk. | 200 | 40-18k ± 3 | -148 | XLR | 16½ | Not furn. | 8 x 1½ | 11 | | 120.00 | W. windshield. | |
| M88 | Super card. | Dyn. | Metal | Matte blk. | 200 | 30-20k ± 2 | -144 | XLR | 16½ | Not furn. | 7 x 2 | 9 | | 218.00 | | |
| E-V | RE20 | Card. | Dyn. | Steel | Beige | Lo | 45-18k ± 3 | -150 | A3M | 18 | | 8½ x 2 | 26 | | 285.00 | *Var-D (R); 10 freq. tilt-down swit. |

(Continued on page 126)

BEST.

Unanimously, critics have called our HD 414 the world's best headphones. Praising its wide response, unusual smoothness and superior transient abilities. No less important, from their standpoint, is the HD 414's exceptional comfort, thanks to its exclusive open-air* design that eliminates uncomfortable ear seals, and keeps the unit's weight to just 5 ounces. Review after review, in magazine after magazine, has helped make the HD 414 one of high fidelity's most remarkable success stories.



*U.S. Patent No. 3,586,794

BETTER.

The reviews aren't in yet, because the HD 424 is so new. But even our conservative engineers believe the HD 424 is something better. Thanks to significant technical advances that provide even greater accuracy and linearity at extremely high and low frequencies. There's an additional measure of comfort, as well, with even lower pressure on the ears, thanks to wider, thinner ear cushions and improved earpiece geometry. Plus a comfort-cushioned headband, that feels as good as it looks. Naturally, the HD 424 costs a bit more.



Check No. 50 on Reader Service Card

Try them once, and you'll probably be spoiled for any other kind of headphones. Then the choice is easy. You can buy the HD 414 and have the best. Or pay a little more, and have something better. Either way, you can't lose. Sennheiser Electronic Corporation, 10 West 37th Street, New York, N.Y. 10018 (212) 239-0190. Manufacturing Plant: Bissendorf, Hannover, West Germany.

Microphones



Group 128-SD-140

Neumann KM-86

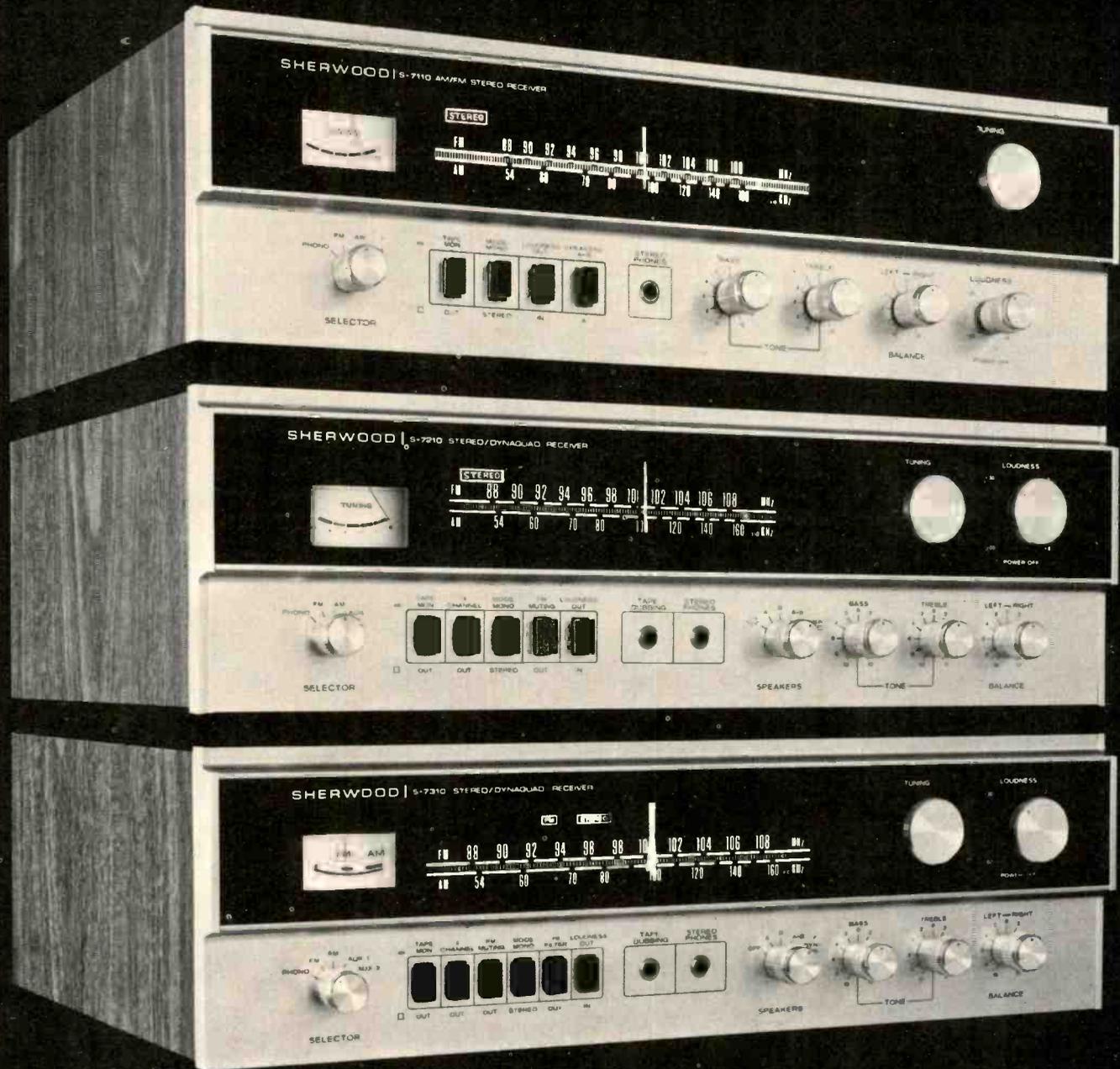
| MANUFACTURER | MODEL | Directional pattern | Operating principle | Case material | External finish | Impedance, ohms | Frequency response, Hz to kHz, ± 7 dB | EIA Sensitivity, dBm | Mic connection | Cable length, ft. | Cable plug type | Dimensions, in. | Weight, oz. | Mounting method | Price | NOTES | |
|---------------------|----------|---------------------|---------------------|---------------|-----------------|-----------------|---------------------------------------|----------------------|----------------|-------------------|-----------------|-----------------|----------------|-----------------|----------|---|---------|
| E-V (cont.) | RE-15 | Super card. | Dyn. | Steel | Beige | Lo | 80-15k ±3 | -150 | A3M | 18 | | 6 1/2 x 1 1/2 | 6 | | 169.80 | *Var-D (R). Re-10, same for less exacting work, \$99.60. RE-16, super windscreen. RE-11, 10, windscreen, \$106.50. *Lavalier, w. neck cord, belt clip, std. clip, pouch. *Vari-D 661, same w. on/off swit., \$64.80 Built-in windscreen. 626A, same for less exacting work, integral cable, \$36.30 W. on/off swit. W. removable on/off swit. *Lavalier type, w. belt clip, cord, & std. clip. | |
| | RE-55 | Omn. | Dyn. | Steel | Beige | Lo | 40-20k ±3 | -149 | A3M | 18 | | 10 1/2 x 1 1/4 | 8 1/2 | | 162.00 | | |
| | DO-54 | Omn. | Dyn. | Steel | Beige | Lo | 50-15k ±3 | -149 | A3M | 15 | | 5 3/4 x 1 1/2 | 6 1/2 | | 72.00 | | |
| | 635A | Omn. | Dyn. | Steel | Beige | Lo | 80-13k ±3 | -149 | A3M | 15 | | 6 x 1 1/2 | 6 | | 56.70 | | |
| | 649B | Omn. | Dyn. | Alum. | Beige | Lo | 70-10k ±3 | -155 | | | 30 | | 2 1/4 x 3/4 | 1 | * | | 81.00 |
| | 660 | Super Card. | Dyn. | Zinc | Satin chrome | Hi/Lo | 90-13k ±3 | -150 | A3M | 15 | | | 6 1/2 x 1 1/2 | 10 1/2 | | | 64.80 |
| | 644 | Card. | Dyn. | Zinc/brass | Gray | Hi/Lo | 40-12k ±3 | -148 | MC4F | 15 | | | 16 x 2 1/4 | 41 | 3/8 x 27 | | 87.60 |
| | 671 | Card. | Dyn. | Zinc | Satin chrome | Hi/Lo | 60-14k ±3 | -155 | A3M | 15 | | | 6 1/2 x 2 | 8 | | | 54.75 |
| | 670 | Card. | Dyn. | Alum. | Brass | Hi/Lo | 60-14k ±3 | -151 | A3M | 15 | | | 7 1/4 x 1 1/2 | 6 | | | 49.20 |
| | 627B | Card. | Dyn. | Zinc | Satin chrome | Hi/Lo | 60-13k ±3 | -152 | A3M | 15 | | | 6 3/4 x 1 1/2 | 7 1/2 | | | 43.20 |
| | 636 | Omn. | Dyn. | Steel | Satin chrome | Hi/Lo | 60-13k ±3 | -154 | MC4M | 15 | Not furn. | | 10 1/2 x 1 1/2 | 15 | 3/8 x 27 | | 55.80 |
| | 631A | Omn. | Dyn. | Zinc | Satin chrome | Hi or Lo | 80-13k ±3 | -149 | A3M | 15 | | | 6 x 1 1/2 | 6 | | | 43.20 |
| 647A | Omn. | Dyn. | Steel | Beige | Hi or Lo | 70-10k ±6 | -155 | | | 18 | Not furn. | 3 3/4 x 3/4 | 2 | * | | | |
| FULTON | FMI-1400 | Omn. | Elect. cond. | Alum. | Gold | 250 | 18-22k | -55 | XLR | 4 | XLR | 8 x 1/4 | 6 | 3/8 x 27 | 199.00 | Handles 145 dB SPL. | |
| GROUP 128 | SD-140 | Omn. | Elect. cond. | Alum. | Anod. | 1k | 40-16k ±3 | -49 | Phone | 6 | Not furn. | 10 x 1/4 | 2 | 3/8 x 27 | 134.50 | SD-140Z, bal. lines, LoZ, XLR-3 conn., \$189.00. Dual element noise & feedback cancelling 8A unit. SD-280Z, LoZ, bal. lines, XLR-3 conn., \$235.00. SD-419Z, LoZ, bal. lines, XLR-3 conn., \$273.50 *Direct contact mike for acoustic guitar. P800Z, LoZ, XLR-3 conn., \$154.45. | |
| | SD-280 | Omn. | Elect. cond. | Alum. | Anod. | 1k | 40-16k ±3 | -49 | Phone | 6 | Not furn. | 10 x 1/4 | 2 | 3/8 x 27 | 195.00 | | |
| | SD-419 | Omn. | Elect. cond. | Alum. | Anod. | 1k | 10-35k ±3 | -49 | Phone | 6 | Not furn. | 10 x 1/4 | 2.2 | 3/8 x 27 | 219.00 | | |
| | P800 | Contact | Elect. cond. | Alum. | Anod. | 1k | 40-16k ±3 | -49 | Phone | 6 | Not furn. | 1/4 x 3/4 | 1/2 | * | 99.50 | | |
| LAFAYETTE | MU-101 | Card. | Dyn. | Zinc | Nickel | 600/50k | 150-10k ±6 | -75 | XLR | 15 | Not furn. | 7 x 1 1/2 | 9 | | 39.75 | On-off swit., mylar diaphragm. | |
| | MO-102 | Omn. | Dyn. | Alum. | | 600/50k | 40-13k ±6 | -74 | XLR | 15 | Not furn. | 7 x 1 1/2 | 6 1/2 | | 39.75 | | |
| | ML-1 | Omn. | Elect. cond. | Alum. | | 600 | 50-15k | -80 | Atch. | 15 | Phone | 1 1/2 x 2 2/3 | 1/2 | | 19.50 | | |
| NEUMANN (GOTHAM) | U-87 | * | Cond. | Metal | Satin chrome | 150/250 | 40-16k | -137 | XLR3 | 25 | XLR3 | 8 x 2 1/4 | 20 | 3/8 x 27 | 540.00 | *Omn., card, fig. 8. Int. batt. space; -10 dB pad and Lo freq. swit. 10 dB pad swit., needs a.c. or batt. As above. As above w. lo freq. rolloff for PA use. *Omn., Fig. 8, card.; -10 dB pad; nickel membrane capsules. *Omn., Fig. 8, card.; -10 dB pad. Stereo mike. *Omn., card. in X/Y or M/S mode. | |
| | KM-83 | Card. | Cond. | Metal | Satin chrome | 200 | 20-20k | -137 | XLR3 | 25 | XLR3 | 4 1/4 x 3/4 | 3 | 3/8 x 27 | 315.00 | | |
| | KM-84 | Card. | Cond. | Metal | Satin chrome | 200 | 40-20k | -137 | XLR3 | 25 | XLR3 | 4 1/4 x 3/4 | 3 | 3/8 x 27 | 341.00 | | |
| | KM-85 | Card. | Cond. | Metal | Satin chrome | 200 | 40-20k | -137 | XLR3 | 25 | XLR3 | 4 1/4 x 3/4 | 3 | 3/8 x 27 | 341.00 | | |
| | KM-88 | * | Cond. | Metal | Satin chrome | 200 | 40-16k | -140 | XLR3 | 25 | XLR3 | 5 1/4 x 3/4 | 3 1/2 | 3/8 x 27 | 500.00 | | |
| | KM-86 | * | Cond. | Metal | Satin chrome | 200 | 40-20k | -137 | XLR3 | 25 | XLR3 | 7 1/4 x 1 1/4 | 7 1/2 | 3/8 x 27 | 510.00 | | |
| | SM-69FET | * | Cond. | Metal | Satin chrome | 200 | 40-16k | -131 | | | 33 | XLR3 | 10 x 1 1/2 | 16 | 3/8 x 27 | | 1305.00 |

What price glory?

\$229⁹⁵: Power output both channels driven: 20+20 @ 8 ohms 1 KHz, 17-17 @ 8 ohms, 40-20,000 Hz. Distortion at rated output: 1%; FM Sensitivity (-30 dB Sig/Noise) 2.0 uv. Sherwood S-7110

\$299⁹⁵: Power output both channels driven: 31+31 @ 8 ohms 1 KHz, 26+26 @ 8 ohms, 40-20,000 Hz. Distortion at rated output: 0.8%; FM Sensitivity (-30 dB Sig/Noise) 1.9 uv. Sherwood S-7210

\$369⁹⁵: Power output both channels driven: 43+43 @ 8 ohms 1 KHz, 38+38 @ 8 ohms, 20-20,000 Hz. Distortion at rated output: 0.5%; FM Sensitivity (-30 dB Sig/Noise) 1.8 uv. Sherwood S-7310



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Microphones



Olson EO-350



Shure SM-61

| MANUFACTURER | MODEL | Directional pattern | Operating principle | Case material | External finish | Impedance, ohms | Frequency response, Hz to kHz, ± 1 dB | EIA Sensitivity, dBm | Mic connection | Cable length, ft. | Cable plug type | Dimensions, in. | Weight, oz. | Mounting method | Price | NOTES |
|--------------------------|---------|---------------------|---------------------|---------------|-----------------|-----------------|---------------------------------------|----------------------|----------------|-------------------|-----------------|-----------------|-------------|-----------------|---------|--|
| Neumann (Gotham) (cont.) | U-47FET | Card. | Cond. | Metal | Satin chrome | 200 | 40-16k | -137 | XLR3 | 25 | XLR3 | 6¼ x 2¼ | 24.6 | ¾ x 27 | 474.00 | -10 dB pad between capsule/amp; -6 dB pad between amp/ console. |
| | KMS-85 | Card. | Cond. | Metal | Satin chrome | 200 | 40-16k | -137 | XLR3 | 25 | XLR3 | 8¼ x 1 x 1½ | 10.4 | ¾ x 27 | 470.00 | |
| | KMA | Omni | Cond. | Metal | Gray | 200 | 40-16k | -140 | Atch. | | Tuchel | 1¼ x ¾ x ¾ | 2 | Clip | 283.00 | Lavalier; BS-18 battery supply, \$158.00. |
| | KML | Card. | Cond. | Metal | Gray | 200 | 40-16k | -137 | Atch. | | Tuchel | 2 x ¾ | 2 | Clip | 324.00 | Lavalier; BS-45A battery suppl, \$71.25. |
| | KU80 | * | Cond. | Metal | Blk. | 200 | 40-16k | -137 | XLR3 | 25 | XLR3 | * | 160 | | 1545.00 | *Binaural system w. mikes in rubber human head. |
| | QM69 | * | Cond. | Metal | Satin chrome | 200 | 40-16k | -140 | Tuchel | | XLR3 | 10 x 1¼ x 1¼ | 16 | ¾ x 27 | 1526.00 | *Four-channel mike system; w. 4 cardioids in clover leaf pattern. |
| OLSON | EO-100 | Uni. | Elect. | Alum. | Anod. gold | 600 | 65-15k | 50 | Can. | 18 | — | 8¼ x 1½ | 6 | | 36.00 | |
| | EO-200 | Omni. | Elect. | Alum. | Anod. gold | 600 | 60-15k | 59 | Can. | 18 | — | 8¼ x 1½ | 6 | | 39.60 | |
| | EO-300 | Omni. | Elect. | Alum. | Anod. gold | 600 | 70-13k | 55 | — | 10 | ¼ in. | 3¼ x 1 | 1 | Lav./clip | 24.00 | tie-clasp/lavalier. |
| | EO-340 | Uni. | Elect. | Alum. | Anod. gold | 600 | 55-16k | 50 | Can. | 18 | — | 8¼ x 1½ | 6 | | 39.60 | |
| | EO-350 | Uni. | Elect. | Alum. | Anod. gold | 600 | 50-15k | 50 | Can. | 18 | — | 7 x 1½ | 6 | | 30.00 | |
| | MC-056 | Uni. | Dyn. | Alum. | Anod. gold | 600 | 80-16k | 55 | Can. | 18 | | 8¼ x 1½ | 10 | | 39.60 | |
| PEARL | DC-21 | Card. | Cond. | Alum. | Chrome | 30/50/200/* | 30-k ±3 | | Att. | 20 | Preh. | 2¾ x ¾ | 1¾ | Adpt. | 159.50 | *Bal.; HiZ unbal.; a.c. or batt. power. DC20, omni, \$149.50 |
| | TC4 USV | Var. | Cond. | Alum. | Satin | 50/ | 30-20k | | Tuchel | 20 | Preh. | 1¾ x 5% | 5 | Adpt. | 385.00 | Studio FET using a.c. power; remote pattern control at power supply. |
| | EC71 | Card. | Cond. | Alum. | Chrome | 30/50/200/600* | 40-18k | | Att. | 20 | Preh. | 2¾ x ¾ | 1¾ | Adpt. inc. | 119.00 | *Bal.; HiZ unbal. a.c. or batt. power. EK71, omni, \$109.50 |
| | D44 | Card. | Dyn. | Alum. | Blk. | 50/200/ | 50-16k | | Att. | 12 | | 5 | 4¾ | Adpt. inc. | 39.75 | W. on/off swit. |
| PIONEER | CM-1 | Omni/uni | Elect. Cond. | | Chrome | 600 | 20-20k | -69* | Phone | 20 | — | 8.4 x 1.1 | 10½ | — | 99.95 | *0 dB = 1V/μ bar; w. batt. |
| | CM-2S | Hyper card. | Elect. cond. | | Blk. paint | 1k | 20-20k | -68* | Phone | — | — | — | 12 | — | 69.96 | *0 dB = 1V/μ bar; stereo; w. batt. |
| REALISTIC (RADIO SHACK) | 1049 | Omni. | Dyn. | | | 200 | 50-10k | | | 20 | Phone | 8 x 1½ | | | 29.95 | Built-in swit. reverb. w. battery. |
| | 1050 | Omni. | Elect. cond. | | | 600 | 20-13k | | | | | | | | 15.95 | |
| | 1044 | Omni. | Elect. cond. | Die cast | | Hi/Lo | 30-15k | | Can. | 15 | | | | | 29.95 | 10k hour operation on AA batts.; w. pop screen, desk stand. 1045, same but card., \$34.95. |
| SENNHEISER | MKH-815 | Beam | Cond. | Metal | Chrome | 10 | 50-20k | -115 | XLR | — | — | 22 x ¾ | 13 | | 599.00 | |
| | MKH-415 | Super card. | Cond. | Metal | Chrome | 10 | 40-20k | -121 | XLR | — | — | 5 x ¾ | 6½ | | 499.00 | |
| | MD441 | Super card. | Dyn. | Metal | Chrome | 200 | 30-20k | -146 | XLR | 15 | Not furn. | 7 x 2 x 1.8 | 16 | | 247.00 | |
| | MD421 | Card. | Dyn. | Metal/plas. | Satin blk. | 200 | 30-17k | -146 | XLR | 15 | Not furn. | 7 x 2 x 1.8 | 18½ | | 176.00 | |
| | MD416 | Card. | Dyn. | Metal | Chrome | 200 | 50-15k | -146 | XLR | 15 | Not furn. | 11 x 1.3 x 1.4 | 11 | | 159.00 | |
| SHURE | SM 53 | Card. | Dyn. | Alum. | Matte Metal | 150 | 70-16k | | Can. | 20 | Can | 7¼ x 1½ | 8 | | 171.00 | |
| | SM 58 | Card. | Dyn. | Zinc | Dark Gray | 50/150 | 50-15k | | Can. | 20 | Can | 6¾ x 2 | 15 | | 107.40 | |
| | SM 61 | Omni. | Dyn. | Alum. | Matte Metal. | 150 | 50-14k | | Can. | 20 | Can | 1¼ x 7¾ | 5.6 | | 73.80 | |



Sony ECM-280



Technics RP-3850E

Microphones

| MANUFACTURER | MODEL | Directional pattern | Operating principle | Case material | External finish | Impedance, ohms | Frequency response, Hz to kHz, ± 1 dB | EIA Sensitivity, dBm | Mic connection | Cable length, ft. | Cable plug type | Dimensions, in. | Weight, oz. | Mounting method | Price | NOTES |
|--------------------------|----------|---------------------|---------------------|----------------------------|----------------------|-----------------|---------------------------------------|----------------------|----------------|-------------------|-----------------|-----------------|-------------|-----------------|-------------------------|--|
| Shure | 300 | * | Dyn. | Zinc | Zinc | 50/150/250 | 40-15k | | Can. | 20 | Can. | 9¼ x 1½ | 16 | ½" PIPE | 115.20 | *Bi-directional. |
| | 330 | Super Card. | Dyn. | Zinc | Zinc | 50/150/250 | 30-15k | | Can. | 20 | Can. | 7¼ x 1¾ | 16.5 | ½" PIPE | 91.20 | |
| | 545 S | Card. | Dyn. | Zinc | Satin Chrome | 25/200 | 50-15k | | AMPH. | 15 | AMPH. | 3¼ x 5 | 15 | | 68.40 | |
| | 548 SD | Card. | Dyn. | Zinc | Satin chrome | 25/200 | 40-15k | | Can. | 15 | Can. | 6¼ x 1½ | 9 | | 80.40 | |
| | 565 | Card. | Dyn. | Zinc | Satin chrome | 25/200 | 50-15k | | AMPH. | 15 | AMPH. | 2 x 6 | 10.5 | | 72.60 | |
| | 576 | Omni. | Dyn. | Zinc | Dark Gray | 50/150 | 40-20k | | Can. | 15 | Can. | ¾ x 6¼ | 7 | | 134.40 | |
| | 585 SAV | Card. | Dyn. | Zinc | Satin Chrome | 40k | 50-13k | | AMPH. | 15 | AMPH. | 6¼ x 2¾ | 13.5 | | 55.65 | W. vol. cont. |
| SONY/ SUPERSCOPE | ECM-280 | Card. | Elect. cond. | Alum. | Satin | 200 | 30-18k ±3 | -56 | | 16½ | Not furn. | 6 x 1 | 5.1 | | 99.95 | |
| | ECM-270 | Card. | Elect. cond. | Alum. | Satin | 200 | 40-16k ±3 | -57 | | 16½ | Not furn. | 6½ x 1 | 4.4 | | 79.95 | |
| | ECM-250 | Card. | Elect. cond. | Alum. | Satin | 200 | 50-14k ±3 | -57 | | 16½ | Mini | 6 x 1½ | 5.1 | | 59.95 | |
| | ECM-220 | Card. | Elect. cond. | Alum. | Satin | 200 | 50-12k ±3 | -57 | | 16½ | Phone | 7¼ x 1½ | 9.6 | | 49.95 | Dual Z. |
| | ECM-16 | Omni. | Elect. cond. | Alum. | Satin | 600 | 50-13k | -57.8 | | 6 | Mini | 1½ x ½ | 1 | Tie clasp | 34.95 | |
| | ECM-18 | Card. | Elect. Cond. | Alum. | Satin | 250 | 50-12k ±3 | -56.8 | | 6½ | Mini | 6½ x ¾ | 5.3 | | 27.95 | Built-in windscreen. |
| | ECM-33P | Card. | Elect. cond. | Alum. | Satin | 250 | 20-20k ±5 | -54 | XLR | 20 | Not furn. | 7 x 1 | 6½ | | 129.95 | -8 dB pad swit. |
| | ECM-99 | Card. | Elect. cond. * | Alum. | Satin | 600 | 50-12k | -53 | | 10 | Mini | 7¾ x 1¼ | 10 | | 49.95 | *Stereo mike. |
| | ECM-200 | Card. | Elect. cond. | ABS plas. | | Lo | 50-10k ±3 | -53 | | 6½ | Mini | 5¾ x 1½ | 4.2 | | 22.95 | ECM-200S, w. on/off swit., \$22.95. |
| ECM-170 | Omni. | Elect. cond. | Alum. | Satin | 200 | 20-16k ±3 | -56 | | 16½ | Not furn. | 6 x 1 | 5.6 | | 79.95 | Speech/music swit. | |
| TECHNICS BY PANASONIC | RP-3850E | Card. | Elect. Cond. | | Chrome | 600 | 20-16k | * | Can. XLR | 16 | Phone | 8½ x ¾ | 7 | ¾ x 27 | 149.95 | *-72 dB re 0 dB = 1V/μbar, lo-cut swit.; -10 dB sensitivity swit.; wind screen. |
| | RP-3830E | Card. | Elect. cond. | | Chrome | 600 | 50-15k | * | Swcft. A3F | 16 | Phone | 8½ x ¾ | 7 | ¾ x 27 | 99.95 | As above, less low-cut swit. *-74 dB re 0 dB = 1V/μbar. RP-3550E similar but fixed wind screen, \$79.95. |
| TURNER | TC11 | Card. | Dyn. | Alum. | Enam. | 150 | 50-15k | -149 | A3F | 20 | A3M | 6 | 7 | | 75.00 | T111S, swit., \$78.00. |
| | 35 | Omni. | Dyn. | Alum. | Gold paint | 150/25k | 50-12k | -154 | Atach | 25 | Not furn. | 3 x ¾ | 1¾ | Lav. | 45.00 | Dual Z. |
| | 500 | Card. | Dyn. | Zinc alloy | Satin chrome | 150/40k | 40-15k | -151 | A4F | 20 | Not furn. | 6¾ x 1½ | 12 | ¾ x 27 | 63.00 | S500 w. rotary on/off swit. |
| | 603H | Card. | Dyn. | Zinc alloy | Satin chrome w. blk. | 40k | 50-15k | -151 | A3F | 20 | Not furn. | 6x 1¾ | 14 | ¾ x 27 | 57.00 | 603L, 150 ohm, \$57.00. |
| | 45 | Card. | Dyn. | Bk. cyclocac w. alum. head | | Hi | 100-13k | -151 | Atch. | 20 | phone | 7 x 1¼ | 6 | ¾ x 27 | 27.00 | |
| 2300 | Omni. | Dyn. | Steel | Satin chrome | 40k | 50-15k | -151 | A3F | 20 | Not furn. | 6 x 1¼ | 8 | ¾ x 27 | 51.00 | 2302, 150 ohm, \$51.00. | |
| VIDAIRE | 855 | Card. | Dyn. | | Brn. flock | 50k 600 | 50-15k | | Inc. | | | | | | 58.70 | |
| | 892D | Card. | Dyn. | | | 50k 600 | 80-15k | | Inc. | | furn. | | | | 44.65 | |

The Column

Fred DeVan



OTEN ROCK articles pivot on the easiest hinge to cop out around in the world. They take a verbal paint roller, dip it into multicolored dripping downers and slather it on our favorite targets. You can pick yours and do as you like! I'll opt for being politely attentive and overly receptive. If I don't like what I hear, I simply run to something better and smile at the world. Why pay attention to those who give you back the least? Not discounting all the mus-biz trips and uglies that are part of the musical form of today, you must salute the vast amount of true musical talent that permeates the racks of record stores world-wide. There is certainly much to be said about the utilization and application of much of that talent, but we live in a society of waste. Partly as a reaction to waste, rock has generated many musical aggregations that function as a unit within and outside of their music. Literal opposites Elton John and Bernie Taupin, who rarely see each other when not on tour. Bernie just sends parcels of lyrics to Elton by post (I'm not sure I believe that). The Allmans certainly are

among the first to come to mind, but they are Johnny Come-Latelys to The Dead and The Airplane and others. Tower Of Power is one of many big bands who literally live together. The Incredible String Band was or is a commune in the rolling hills of England. The guys in Philadelphia who seem to have a musical midas touch call themselves Gamble, Huff and Bell Family.

Edgar Winter made a musical statement about his future and his realities in 3:20, the tune was *Keep on Playin' That Rock and Roll*. This is about that statement, Johnny and Edgar Winter and the people around them.

The Winter thing exists as a total under the umbrella of organic management. Organic management is Steve Paul, the invisible. The headliners (dependent on what week it is) are The Johnny and Edgar Winter Groups. The ever present busyman of rock who among other things is the overall producer of their music, Rick Derringer. The leg men are two wizards by the names of Rick Dobbis and Teddy Slaytos. Just as nobody in music has successfully imitated Johnny

or Edgar's music, no one has imitated Rick and Teddy as the wiz-biz kings. They are great. There is one other guy who is really a satellite entity. Since he does not come out on film, nor form an image in a mirror (P.R. men never do—courtesy to photographers, I guess), this is what happens to his name in ink?—[101010 0101]3 base 110.

The Jonny Winter Group, The Edgar Winter Group, and now back again Rick Derringer as a solo artist (he, don't forget, wrote and recorded that all American wonder of ten (?) years ago—*Hang On Sloop*) exist so much as separate entities that they are each on different labels within the CBS family. Johnny is on Columbia, Edgar on Epic, and Rick on the proprietary label, Blue Sky. The support troops are no more just support troops than a motor is to a turntable. Whoever sees turntable motors? Their relationship is about the same as the motor, they are integrally linked to the spinning stars. Dan Hartman (Edgar's group) is as prolific a writer as Edgar or Rick. Randy Hobbs (Johnny's group) played with Derringer since they were kids. Their first group was called Rick and The Raiders (nee:

The McCoys). Both are bass players. The other support men are Edgar, Rick, and Johnny working as sidemen on each others' albums, and the two newest recipients of organic persuasion are Chuck Ruff and Richard Hughes—both fantastically talented drummers who are growing as musicians and are yet to be fully heard in another venue. Able assist is given by Bobby Caldwell on Rick's and Johnny's latest albums, but he has other employment elsewhere!

So much is known about Johnny, from his enormous splash into the "big time" to his personal problems and bout with drugs, probably what really needs to be said again is that Johnny is winning the war and is definitely not blown out. The rest and retrospection shows in his music. Remember his statement (penned by Derringer) *Still Alive and Well* is getting whiskers and he is more alive and well now. Kinda rekindles hope that time heals all wounds.

As was dictated by the size of his check when he signed with Columbia, Johnny's appearance on the national scene was one of the first big bang personality explosions. The way he played the blues was unique but his marrying of blues and rock was, to me, the trick that put Johnny on a well-deserved pedestal. His guitar and voice are now legend. His **Second Winter** album a classic. His life in rock common gossip. His bout with drugs similar to many others who got bent up by the pressures of being a rock star. His recovery was painful but beneficial. His music, a convoluted search for more and better. His groups always adding new color to grey blues standards while blowing the lid off the limits of the rock idiom.

Johnny Winter is a superstar not because some press agent said so, not because of the media, not because of the huge sums of money that Columbia spent to foster that recognition. Johnny made it because of himself. He would have made it without the trappings of megabucks. It would have taken longer but his guitar and his voice would have done the trick, since they have a direct connection with his insides and Johnny creates with his head and his guts. Most of all his guts.

Johnny Winters' music is more emotion than music. It's communication of his feelings. His blues are very charged-up, emotional extensions of the black blues great he learned from. His guitar has all the white lightin' and grits of Albert or BB King (they're not related) and the electric eccentric of Jimi Hendrix or Jimmy Page. His voice is a matrix of many Bo Diddleys and Otis Reddings enhanced by a heavy dose of Johnny Winter. His push and fervor sets

(Continued on page 132)



W-D-W Discography



| | |
|---|------------------|
| Johnny Winter (Columbia) | |
| Johnny Winter (6/69) | CS-9826 |
| Second Johnny Winter (2-discs, three sides) | KCS-9947 |
| Johnny Winter, And | C-30221 |
| Johnny Winter Live | C-30475 |
| Still Alive and Well | CQ-32188 (quad) |
| Saints and Sinners | CQ-32715 (quad) |
| (Others in Swann-2 I have never heard. All were recorded before 6/69.) | |
| Edgar Winter (Epic) | |
| Entrance (7/70) | BN-26503 |
| White Trash | E-30512 |
| White Trash-Roadwork (2 discs) | EGQ-31249 (quad) |
| They Only Come Out At Night | EQ-3184 (quad) |
| Shock Treatment | PEQ-32461 (quad) |
| Rick Derringer (Blue Sky) | |
| All American Boy | ZQ-32481 (quad) |
| Rick Derringer and the McCoys (Mercury) | |
| Outside Stuff (2 discs) | SRM 2-7506 |
| Jerry LaCroix (Mercury) | |
| The Second Coming | SRM 1-701 |
| (This is the only album where all three of them play as sidemen and that's why it has been included.) | |

INTROSPECTION. Thijs Van Leer. Columbia SQ, CQ32346, \$6.98.

Is there any reason why the members of one of the hottest, most inventive rock groups should not spin into other areas of music? Thijs Van Leer is a Rock Star! He is the flashing rock musician, who in live performance with the Dutch rock group Focus, interchanges organ, harmonium, mellotron, various flutes, piano, and also sings. This album is called **Introspection**, and Van Leer is culling from his classical and jazz roots to make a solo album on which he exhibits his comfort and prowess on flute.

The album is both a display of respect for Hubert Laws and modern chamber reworkings of European classical music style. It is very good. It is very European, and you would expect it on a label like Nonesuch, not Columbia. It is not a Creed Taylor production. Which is to say that Creed does not totally corner the market on good taste. It's contemporary without being extreme. Bach and Fauré are represented well, and since the comparison is inevitable, Laws does the Pavane—well—different. The compositions by Van Leer come right out of the Focus group's bag of tricks, so much so they are called Focus I & Focus II. Other Versions of Focus II can be found on **Moving Waves** (Sire SAS-7401) and **Focus Live at the Rainbow** (Sire SAS-

7408). **Focus I** appears twice on **In and Out of Focus** (Sire SAS-7404) which was released in 1970. All the versions are different in construction, instrumentation, and especially dynamics. All are of interest as a study in the development of the basic theme. They range in length from 2:44 to 9:45 and in makeup, from lush strings to exuberant rock quartet. The lead melody goes from flute to voice to electric guitar.

This album is like a connecting link in a collector's shelf between Hubert Laws, Jeremy Steig, and the rock group Focus. The SQ sound of this quadraphonic release is as gentle, lush, and gimmickless as four-channel can be. The mix is great if you just want to listen. It is not a quadraphonic spectacular with rotating sounds, movement of instruments, and trick locations. It's clean, articulated, and comfortable. In a way, it's too European when compared to Rudy Van Gelder's engineering on the Laws CTI sets. However, there is only one Van Gelder. On the merits of all of Van Leer's various formats, there is only one Van Leer. He may have indeed recorded more of his scope than either Laws or Stieg without ever spreading himself thin or overreaching his capabilities. In fact, put all his music together and **Introspection** has its logical place as a showcase for ideas that end up as snippets on the Focus albums.

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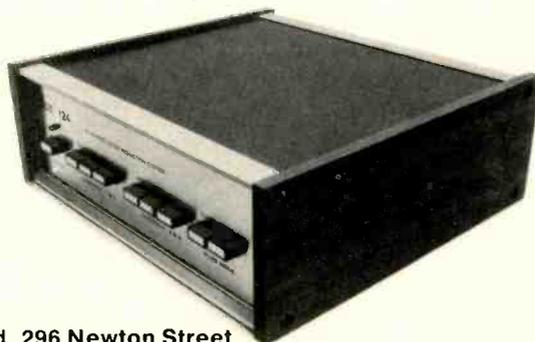
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him outside of being a sound-alike to anyone (save brother Edgar), although he could have succeeded staying put playing the blackest of black blues for the masses, he kept on adding more to whatever he touched. Indeed the first band he and Edgar had was called The Black Plague (in case you had not noticed, Johnny and Edgar are albinos). Years later Edgar, with help from Johnny, turned that around and formed White Trash. Neither of them ever lost their sense of reality or humor, and that comes through their music more than any other single quality except the total commitment and seriousness that they maintain. Black Plague could have stayed where it was, a copy group with flair, and in time the stardom would have come. The basic Winter energy precluded any possibility of standing still and made the music machine of today what it is. A throbbing, driving, evolving group of energetic, accomplished personalities that at the age of thirty Johnny is a spiritual grandfather to.

Edgar (Mr. Self-discipline) is rock music's original reluctant suitor. From his shotgun wedding into the rock scene on the Johnny Winter album called, believe it or not, **Johnny Winter**, to his latest solo effort, **Shock Treatment**, he has steadfastly remained an eclectic creator. His keyboard and alto work on **Second Winter** (especially *I'm Not Sure*) is still some of the most inspired rock instrumental work on record. That wild three-sided record was a trend setter of many kinds and should remain as important a document in the development of recorded music as *Sgt. Pepper*, *Layla*, *Supersession*, *Tommy*, *Music Of My Mind*, and Issiac Stern's performance of Alban Berg's *Violin Concerto*. Edgar's first solo album, **Entrance**, laid out the basic fabric of what was yet to come. He had his own jazz band in Texas before he went full time with Johnny and the rock-blues thing was initially a compromise of his jazz-bent head. But Edgar's early story is told well on side two of the **White Trash** album. Two lines immediately come to mind, one is, "Why am I fighting to live if I am livin' to fight" from *Dying To Live* and secondly, "Way back in my mind I could hear the people say—keep on playin' that Rock and Roll, keep doin' what you been told" from *Keep Playin' That Rock and Roll*. And did he play rock and roll? Yes, indeed, he did and transformed it to raunch and roll while en route to his latest album, **Shock Treatment**. Within the span of the five solo albums he has to date is a panoramic view of the development of a musician. Each record produces a surprising new area of Edgar's musical prowess which was broad and solid from the start.

Classical Reviews

Edward Tatnall Canby

Bach: Das Kantatenwerk (Complete Cantatas) Vol. 8; Gottlob! nun geht, BWV 28; Wir danken dir, BWV 29; Freue dich, BWV 30. Wiener Sängerknaben, Chorus Viennensis, Concentus Musicus Wien, Harnoncourt. Telefunken SKW 8, 2 discs, stereo, \$11.98 with complete score and texts.

Halfway through side 2 of this album I threw out an entire almost-completed article for this space, in favor of what follows. This is perhaps the finest, most profoundly exciting Bach recording of my long life, and that's a lot. It is merely Vol. 8 of an infinite series, to encompass hundreds of these vocal/instrumental church works, the largest part of Bach's musical output. The rest are, or will be, essentially as good. No matter! This is the one that hit me, really stunned me, at this moment in time.

Look! I am sick and tired of dismal market reports on the state of classical music in our forlorn country. I don't care if Bach represents 0.01 percent of our market or even less. So what! If you want market analyses, you can find them all over and in truth they tend towards the dismal. But keep in mind that Bach himself, and any other older musician you wish to name, is absolutely unaffected one way or the other; he remains, his music remains, precisely what it was before. Much more important, *you the listener* (finances aside), if you have any guts and faith in your own ears, should also be unaffected. Does it matter, as you listen in your home, whether a given disc has sold a million copies or a dozen? You are your own master.

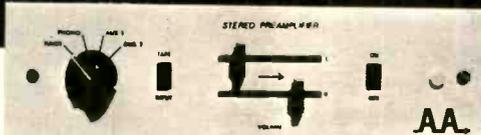
If you aren't, then don't follow these record reviews. Go look at the market charts and buy what sells—at the moment. Sorry to be so emphatic; but I continue to live by two faiths, one is in the immense potency of good music, well performed (and I include plenty of pop music, don't think otherwise), and the other is in the ability of most people to enjoy and to understand any really important music, given inclination, time, and good will. If you are craven enough to feel you shouldn't enjoy a record because it's only one percent of some market or other, then go study the charts. You'll be better off.

This recording? First, technically superb engineering, beautifully balanced sound in marvelous acoustics, silent discs, as good as they come (in Europe). Then, the musical performance, top achievement in a long tradition going back through hundreds of earlier recordings by this unique grouping of Viennese and Dutch musicians.

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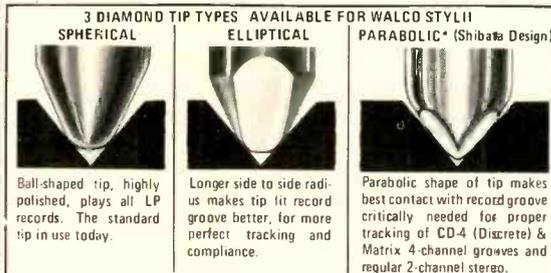
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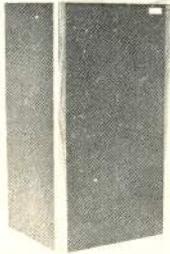
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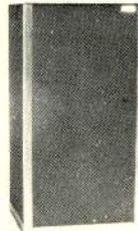
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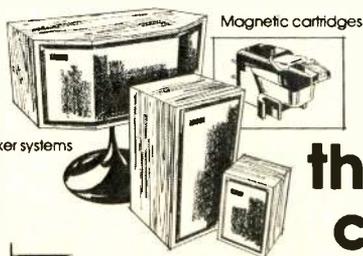
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greatest, crackling (so to speak) with excitement and dedication, yet absolutely controlled and economical. You find it in the greatest jazz performances, don't you? You find it here. I defy you to miss it.

For those who know a bit of Bach, double excitement. Side 2 opens with a vast orchestral bustle with brass—so familiar! It is the often played Partita III for solo violin, blossomed out full size, a Bach adaptation. The second segment, big chorus piece, is the *Gratias* and *Dona nobis* of the B Minor Mass in its original form. Then—solo arias: a tenor who sings with extraordinary intensity, a boy soprano with the most unearthly, soaring accuracy . . .

Bach composed some 300 cantatas, many of which lasted a day or a week and vanished. Do we need all the hundreds that remain? How about the market? For that, go ask Telefunken.

Rodrigo: Concierto de Aranjuez; Fantasia para un gentilhombre. Alexandre Lagoya, guitar, Orch. Nationalde l'Opera de Monte Carlo, De Almeida. Philips 6500 454, stereo, \$7.95.

Curious how the "classical" guitar engenders predictable music, basically old fashioned, essentially harmonic and almost always with a Spanish lilt, even when "modern" composers take on the composing. These works, dating from as late as the 1950s, sound just as you will guess ahead of time. Maybe it's because of that endlessly potent guitar force (not counting pop and electric!) Andres Segovia. They all write for him what they think *he* wants. And so does everybody else. One of these two works was composed—see?—"at the suggestion of Andres Segovia."

The 20th century does intrude, of course. But mainly in the complex and elaborate texture of the orchestral music, not in the musical idiom. (Of course the big, complex orchestra is in itself wholly out of date now, what with microphones and reverb and what-not. But let *that* pass.) Every recent guitar concerto I have heard is that way. Fancy orchestra. Fancy guitar technique. Simple tunes and nice, old-fashioned harmonies, with the Spanish lilt. Oh yes—there is dissonance. Hafta throw in some dissonance, to show you can. The earlier of these two works (1939) has its momentary dissonances in this fashion but, as is normal, they always seem to tail off into nice old consonant fruitiness.

There is, to be sure, an alternative way to keep the dissonance at bay—do a reconstruction of something really old. Hence the piece about the "gentilhombre," which refashions the music of Gaspar Sanz, a guitarist of the 17th century.

Jazz & Blues

Martha Sanders Gilmore

Jerry Hahn: *Moses*

Musicians: Jerry Hahn, guitar; Mel Graves, bass; George Marsh, drums; Merl Saunders, organ, synthesizer.
Songs: *Moses; Prime Time; Slick & Sharp; Blues Suite; Full Moon and Empty Arms; Sunshine Superman; Joy Spring; All Blues; Honey Suite.*
Fantasy 9426, stereo, \$5.98.

Upon listening to this very fine recording, one discovers that one **Jerry Hahn** is a most persuasive and highly efficacious guitarist, a musician who will stun you with his electrifying pyrotechnics and will in turn mesmerize you with his soothing jazz-like treatment of popular ballads.

For one thing and to be sure, Jerry Hahn is a down-to-earth, honest-to-goodness picker from way back, deftly combining the rococo electronic twangs and zings of today with countrified licks and harmonies and jazz improvisatory excursions. The secret to the success of this excellently contrived album lies not only in the genius of Hahn but in the fellow members of his foursome, Hahn's backup men, skillful and talented individuals all. Providing Hahn very able assistance are Merl Saunders on organ and synthesizer, and from the Brotherhood Band none other than Mel Graves on bass, and George Marsh on drums. Most in evidence, however, is the latter. George Marsh plies his instrument alongside Hahn's guitar mercurially and empathetically throughout.

Hahn fairly wings his way over his sidemen in the inspired and inspirational *Moses* in which he makes use of a wah-wah in some remarkably soulful playing which reminds one of the artistry of a Roy Buchanan. Graves is right in there, plunking out good bass notes, the band functioning as a skin-tight unit. *Prime Time* is frenetic yet funky with Marsh's drums driving

it along like a train, then slowing it down to a sauntering gait.

Slick & Sharp is an absolutely fascinating piece, a rather contorted boogie with Hahn producing excellently conceived dynamics, permitting his sound to fade in and fade out, making it cry. Graves plays some beautifully notable bass as Marsh's drums echo him.

Blues Suite is a rapid exercise-like piece with tempos mixed together, tempos changing. Hahn plays some fast skittering lines, letting his guitar whine sympathetically while Graves walks along quickly on acoustic bass, taking a solo break against Marsh's cymbals. It all moves right along, chord-wise and crab-wise.

Hahn gives *Full Moon and Empty Arms* a slow, moody, Indian-like treatment for about a minute and a half, then moves directly into *Sunshine Superman* which has a saucy, cry-baby air about it. Then into the jazz idiom goes Hahn in a bright and joyful *Joy Spring* which has a free open-ended quality about it. Saunders takes a few bars here on organ.

Hahn completely captures the rocking chair charm and motion of Miles Davis' *All Blues*, insinuating to say the least. To all extents and purposes *Honey Suite* is quite the contrast to its predecessor *All Blues*, a random-sounding piece with a little bit o' this, a little bit o' that thrown in and replete with weird effects by the synthesizer and Hahn doing all sorts of non-routine things with a wah-wah. There is also a judicious use of special silences as Hahn and Graves finish it off with a chamber music-like segment between guitar and bowed bass.

The sound on the album has a clean, sharp resonance about it which will full well inspire you as this latter-day Moses should.

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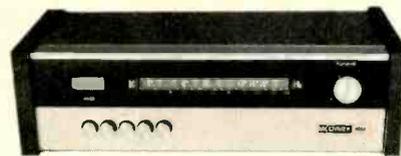
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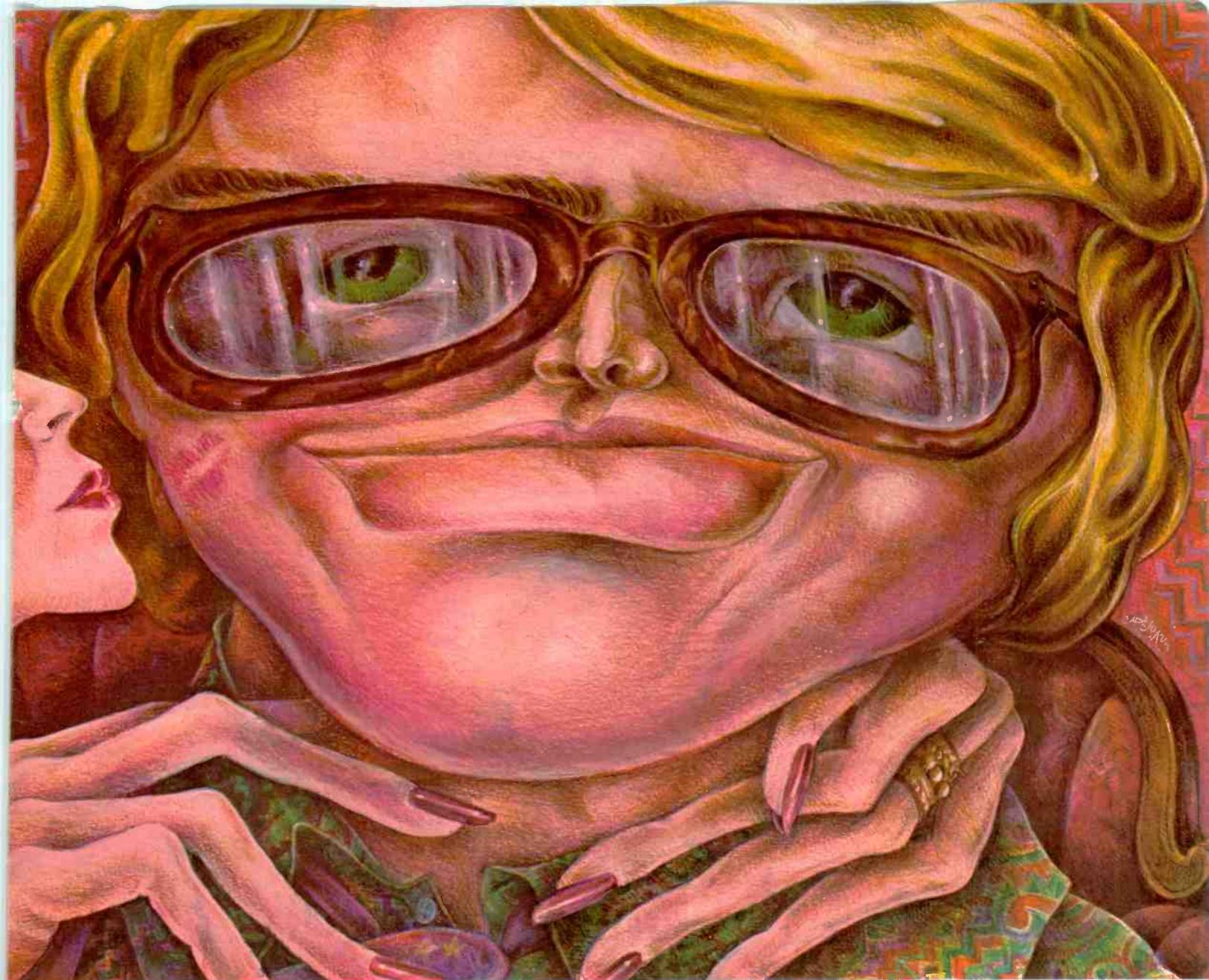
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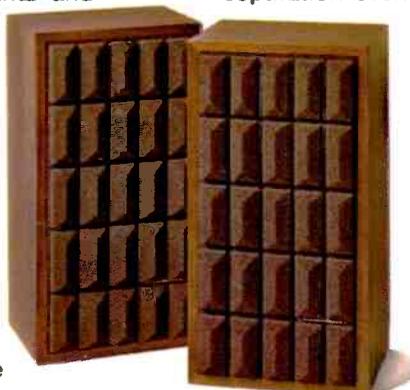
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