A SUPPLEMENT TO Electronic Musician

# 2000 PERSONAL STUDIO BUYER'S GUIDE

## THE ESSENTIAL GEAR GUIDE

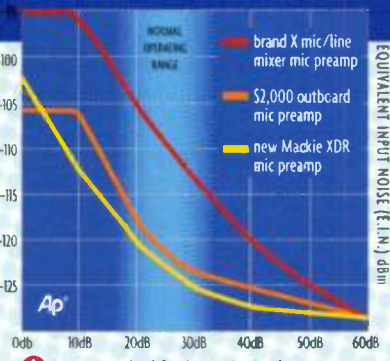
**Info on 1,759 Recording Products!**

**Expert advice on budget acoustic design for the personal studio.**

NEW VLZ PRO

# THE FIRST MIXERS WITH EXPENS

## Two years in the making, XDR™ Extended Dynamic Range the pristine sonics and awesome specs of high-end ou




A new standard for low noise in the critical +20 to +30dB operating range.

### If your hype alarm is going off, we can't really blame you.

The proof is in the listening. Visit your nearest Mackie dealer and audition the XDR™ preamp design in our new VLZ PRO Series compact mixers. Use the most expensive microphone they have. Compare XDR to ultra-expensive outboard mic preamps. Compare it to our compact mixer competition. Bring your golden-eared audiophile friends. We think you'll be amazed. We honestly believe that you've never before heard a mic preamp this good.

### If money is no object, don't read any farther.

If you can afford $1000 a channel for outboard "audiophile" mic preamplifiers, DO IT! Because no matter how much you spend on a microphone, its ultimate performance depends on how it interacts with the preamp it's plugged into.

Yes. We openly admit it: Many high-end mic preamps can effortlessly amplify the slightest sonic nuance, creating an aural panorama that's breathtakingly realistic, excitingly vivid and truly 3-dimensional in scope. For years, they've provided fidelity that just hasn't been possible with the "stock" mic preamps built into mixing consoles.

*Until now.*

### A massive R&D initiative.

We can confidently say that no other company in the world has spent the sheer number of engineering hours —and $250,000 in R&D costs that we just did on a single new microphone preamplifier design.

The XDR team started with blank paper, concerned only with matching or exceeding the performance of $500 to $2000-per-channel esoteric preamps. They went through hundreds of iterations and revs and spent countless hours subjectively listening (and arguing). They started all over again several times. They scoured the world for rare parts. Then they spent more time critically listening and evaluating the

NEW!

## 1604-VLZ PRO

### 16x4x2 · 16 XDR™ preamps

60mm faders • 16 mono chs.. • 4 sub buses • main L/R • 3-band EQ with sweepable midrange (12kHz & 80Hz shelving, 100Hz-8kHz mid) • 18dB/oct.@ 75Hz low cut • 6 aux sends per ch. • Constant Loudness pan controls • 4 stereo aux returns • RCA tape inputs & outputs • 16 channel inserts, 16 high-headroom line inputs • 8 direct outs • TRS balanced outputs • Switchable AFL/PFL Solo • Ctl Room/Phones matrix with Assign to Main Mix & separate outputs • Ctl Rm/Phone level control • 12-LED metering plus Level Set LED & RUDE Solo light • Aux 1 & 2 Pre/Post • Aux Send master section w/level controls • Solo buttons with LEDs • Stereo Aux Return assign section with EFX to Monitor & Main/Submix assign • built-in power supply • solid steel main chassis • BNC lamp socket • Rotatable I/O pod allows 5 different physical configurations

NEW!

## 1402-VLZ PRO

### 14x2x1 · 6 XDR™ preamps

60mm faders • 6 mono & 4 stereo chs. • 3-band EQ @ 12kHz, 2.5kHz & 80Hz • 18dB/oct.@ 75Hz low cut • 2 aux sends per ch. • Constant Loudness pan controls • 2 stereo aux returns • RCA tape inputs & outputs • 6 channel inserts, 6high-headroom line inputs • XLR & TRS balanced outputs • switchable +4/mic level output • ALT 3-4 stereo bus • Switchable AFL/PFL Solo • Ctl Room/Phone matrix with Assign to Main Mix & separate outputs • Ctl Rm/Phone level control • 12-LED metering plus Level Set LED & RUDE Solo light • Aux 1 Pre/Post • EFX to Monitor • sealed rotary controls • built-in power supply • solid steel chassis

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NEW!

## 1202-VLZ PRO

### 12x2x1 · 4 XDR™ preamps

4 mono & 4 stereo chs. • 3-band EQ @ 12kHz, 2.5kHz & 80Hz • 18dB/oct.@ 75Hz low cut filter • 2 aux sends per ch. • Constant Loudness pan controls • 2 stereo aux returns • RCA tape inputs & outputs • 4 channel inserts, 4 high-headroom line inputs • XLR & TRS balanced outputs • switchable +4/mic level output • ALT 3-4 stereo bus • Ctl Room/Phones matrix with Assign to Main Mix & separate outputs • Ctl Rm/Phone level control • 12-LED metering plus RUDE Solo light • Aux 1 Pre/Post • EFX to Monitor • sealed rotary controls • built-in power supply • solid steel chassis

# IVE ESOTERIC MIC PREAMP SOUND

## mic preamp circuitry gives our new VLZ PRO™ Series board microphone preamplifiers.

**WARM, DETAILED SOUND**
**0.0007% THD**
**NEAR DC-TO-LIGHT BANDWIDTH**

**OVER 130dB DYNAMIC RANGE FOR 24-BIT, 196kHz SAMPLING RATE INPUTS**
**ULTRA-LOW IM DISTORTION & E.I.N. AT NORMAL OPERATING LEVELS**
**IMPEDANCE INDEPENDENT**
**BEST RF REJECTION OF ANY MIXER AVAILABLE**

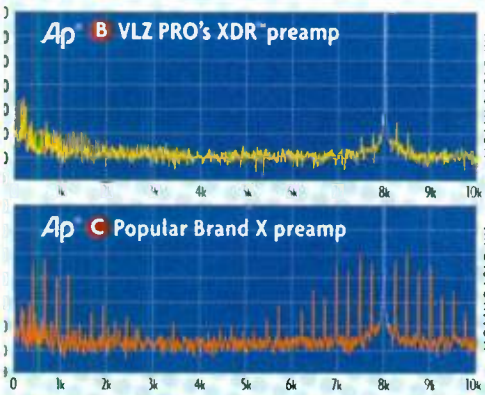
design with every high-end microphone you can think of. Then they brought in veteran recording and live sound engineers for more exhaustive listening tests.

What we ultimately ended up with is not just an awesome sounding design. XDR is also **a)** highly resistant to damage caused by "hot patching" (caused by routing a phantom powered mic through a patch bay); **b)** remarkably independent of cable-induced impedance variations; and **c)** able to reject extremely high RF levels without compromising high frequency response.

### Rejecting RFI without tuning out sound quality.

Because a mic preamp must amplify faint one millivolt input signals up to a thousandfold (60dB), its rectification components can also pick up radio frequency interference (RFI) from AM and FM stations, cell phones and pager transmitters—even microwave ovens—and amplify them to audible levels.

We assaulted RFI on three fronts. First, we incorporate bifilar wound DC pulse transformers with high permeability cores that reject RFI but don't compromise audible high frequency response. Second, we carefully-matched high-precision components for critical areas of the XDR preamplifier. Third, we direct-coupled the circuit from input to output and used pole-zero-cancellation constant current biasing (which also avoids increased intermodulation distortion at high signal levels).




XDR vs. Brand X FFT analysis of mic preamp Intermodulation Distortion. Mixer trims at 30dB, 0dB at inserts. The white spike at 8kHz is the fundamental tone used to "generate" the surrounding distortion artifacts—which the Brand X mic preamp has far more of.

Bottom line for the non-technical: Our new VLZ PRO Series has the best RFI rejection of any compact mixers in the world. Period.

### Controlled Interface Input Impedance.

If a mic preamp isn't designed right, it will actually sound different depending on the impedance of the microphone and the cable load!

XDR's Controlled Interface Input Impedance system accepts an enormous range of impedances without compromising frequency response. Whether the mic/cable load is 50 ohms, 150 ohms or 600 ohms, XDR mic preamp frequency response is down less than one tenth of a dB at 20Hz and 20kHz!

### Ultra-low noise at "Real World" gain settings.

Many mixers that tout low E.I.N. (Equivalent Input Noise) specs can't deliver that performance at normal +20 to +30dB gain settings. Graph A on the other page charts E.I.N. versus gain level for our new VLZ PRO Series vs. a major competitor's mic/line mixer preamps and a "status" outboard mic preamp retailing for about $2,000. As you can see, our XDR design maintains lower noise levels in the critical +20 to +30 gain range than either competitor.

### There's still more:

- **0.0007% Total Harmonic Distortion.** The lowest ever in any compact mixer.
- **Flat response.** Not only are XDR mic preamps flat within a tenth of a dB across the bandwidth of any known microphone, but are also only 3dB down at 10Hz and 192kHz!
- **116dB CMRR** 20Hz to 200kHz and above.
- **Super-low intermodulation distortion** at very high operating levels (charts B&C at left) thanks to instrumentation-style balanced differential architecture, linear biasing and use of DC-coupled pole-zero-cancellation constant current that frees the mic preamp from power supply fluxuations.

We could go on and on this way. But like we said at the start of this ad...

### Hearing is believing.

Visit your nearest Mackie Dealer. Select a really high-quality condenser mic and try out the new 1604-VLZ PRO, 1402-VLZ PRO and 1202-VLZ PRO Think of them as expensive esoteric mic preamps... with really excellent compact mixers attached.

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**A:** Z-726 double tier "Z" stand with **Z-728** boom and **Z-732** music holder **B:** ZM-WS44* mixer workstation – 44″ wide (*available in 34″ width) and **QL-400** locator stand **C:** **QL-746** super heavy-duty "X" stand with **QLX-2** second tier, **QLX-3** third tier, **QLX-4** boom and, **QLX-5** music holder **D:** Z-WS71L keyboard workstation with **Z-730** locator option (holding mixer) **E:** **RS-954** 20 space rack stand **F:** **BS-317** low amp stand

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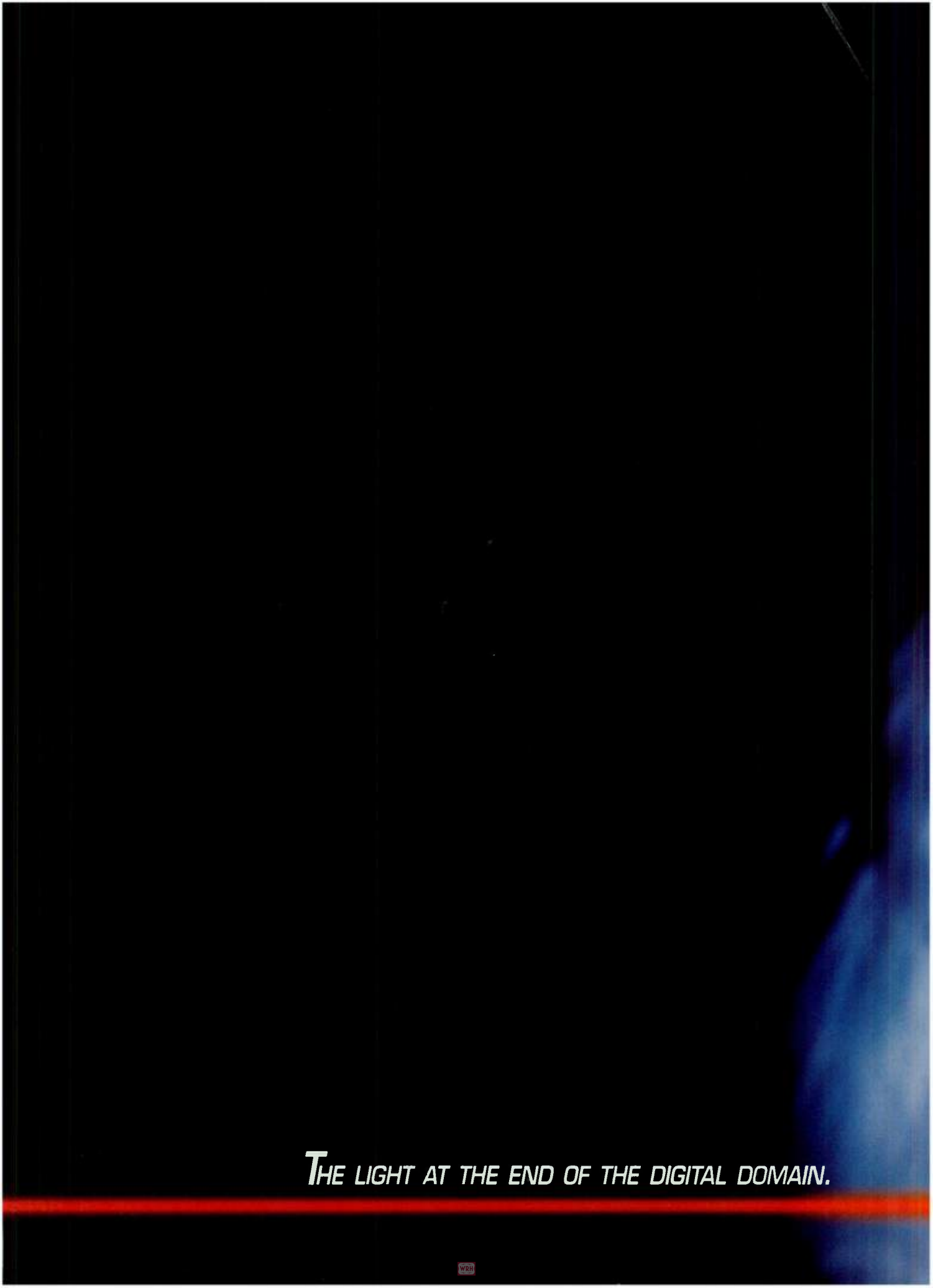
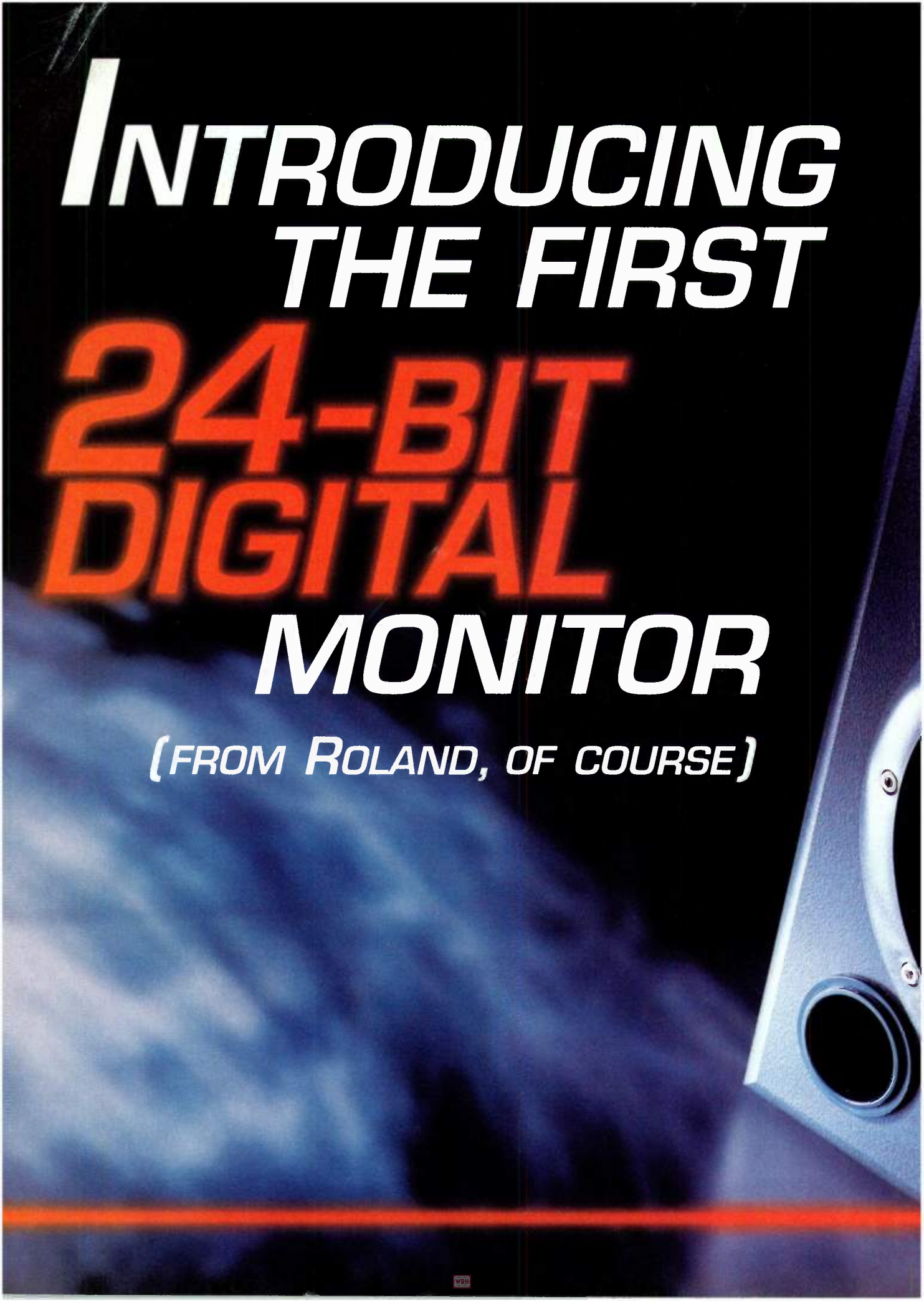

THE LIGHT AT THE END OF THE DIGITAL DOMAIN.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MONITOR
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# Production Notes

2000 PERSONAL STUDIO BUYER'S GUIDE

## HELLO WALLS

### ABSORBING LESSONS ON HOW TO TREAT YOUR ROOM.

Dear **EM** Reader;

You hold in your hands the third edition of *Electronic Musician*'s *Personal Studio Buyer's Guide*. Readers of the first two editions will note some important changes that have been made to the original concept. First, we organized the charts into five sections and added short explanatory introductions to each one. Next, we added several new charts and modified some existing ones to cover a wider range of products than ever. New charts present a wealth of information on synthesizers and samplers, digital mixers, and channel-strips and voice processors. To make room for the new hardware, we moved some software charts to **EM**'s upcoming *Desktop Music Production Guide*. To top it off, we added a Products & Services section, a classified-ad section that features—you guessed it—products and services of interest to personal-studio enthusiasts.

The charts contain information about lots of great products, but gear alone does not make a personal studio. Unless you plan on recording and mixing outdoors, you will use your gear in some sort of room, and the configuration of that room can make a big difference in the results you'll get. Therefore, we asked three professional studio designers and two do-it-yourself project studio builders (including *Mix* magazine editor George Petersen) for their advice on how to design and build your studio environment. Their comments appear in our three feature articles.

Last, but far from least, I would like to thank the fine team of people who made this publication possible. Assistant Editor Carl Weingarten contributed many good ideas, acted as our liaison to hundreds of manufacturers, and worked extensively with our database. Programming wunderkind Joe Humphreys created and continually refined that database, while proofreader Lori Fry fed the seemingly endless streams of corrected copy to the amazing Constance Wiggins, who entered these changes. The **EM** editorial staff finessed the data into conformity, and graphic designer Linda Gough turned it into a work of art. Editor Steve O lent many hands—and wore many hats—along the way, and Associate Editor Gino Robair, Copy Chief Patty Hammond, and Assistant Editors Rick Weldon and Carolyn Engelmann offered their considerable editing talents to help polish the feature stories. Production Manager Jane Lowe and Production Assistant Jeremy Nunes made sure that the train left the station on time.

I firmly believe that our efforts have provided you with an extremely useful tool that will help you realize your musical dreams. Most important, though, I hope you enjoy the guide and have fun making music in your personal studio.

Barry Cleveland

Barry Cleveland

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*A supplement to Electronic Musician magazine*

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## Up the value of your mic locker without dropping another nickel into it.

Pit an amateur with $10,000 worth of microphones against the pro with a $1,000 mic and the better recording will emerge from the latter corner, pretty much every time. How? Quite simply, pros use their ears.

The best engineers lean hard and often on their monitors to listen critically and tweak accordingly — placing mics, setting gains, adjusting eq — getting everything dialed in before the first take.

Furthermore, a detailed, accurate monitoring system is what patches flesh and blood into the electrical system and provides a clear window to the sound at every step of the recording process. This is precisely why the best in the business agree that their monitors are the single most critical piece of hardware in the studio.

All of which is supported by the thinking behind NHTPro active studio monitoring systems. From exactly tailored near and mid-field radiation characteristics to totally new and innovative driver control circuitry, NHTPro systems embody all we know about high performance sound reproduction. Which, as anyone who has had the pleasure of hearing them will attest, is considerable.

To find out more, please visit our website @ NHTPro.com or call toll free 1-877-4NHTPro (464-8776).

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*NHTPro's reference monitoring system. The ultimate in high-end sonics for project, production and post studios. The A-20 combines remarkable precision, detail and dynamics with real functionality and useability.*

### *A-20 Control Amplifier*

**Configuration:**
*Modular self-powered near/mid/far-field monitor.*
*2-way 6", acoustic suspension.*

**Amplifier:**
*200w/ch continuous, 400w peak.*
*<.4% THD 100Hz - 10kHz.*
*Hum/noise: <10 dB SPL*

**Monitors:**
*Response: 40Hz - 20kHz.*
*Peak output: 117dB.*
*Magnetic shielding.*

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"CD Architect has numerous Preference settings that make it highly customizable, and its interface puts most major commands within easy reach. It is a powerful and intuitive program and proved quite capable, no matter how complex the job we threw at it."

*– Electronic Musician*

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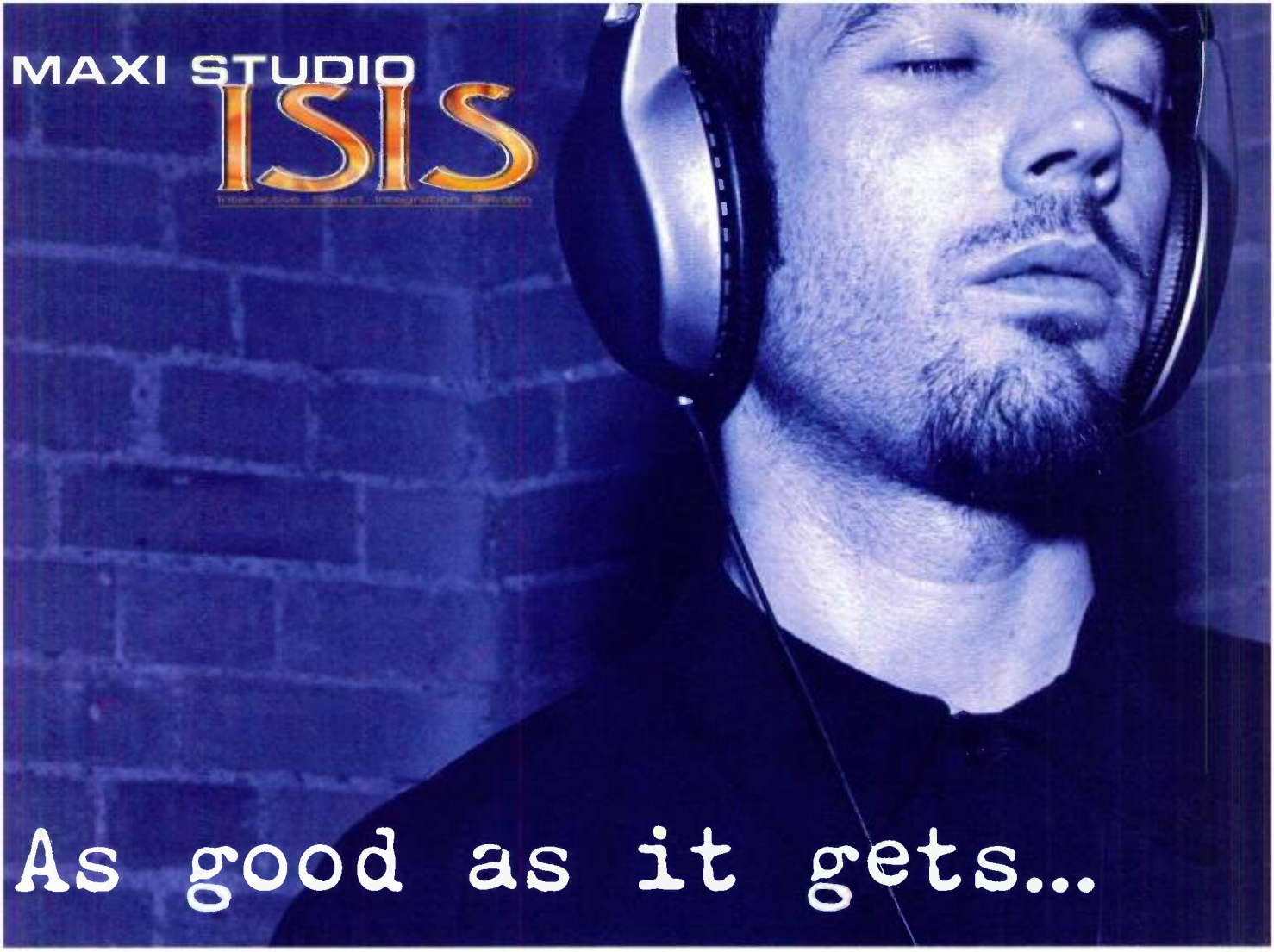


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## Tech Specs

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**External rack**
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- 20-bit Burrbrown™ DAC / ADC converters
- S/PDIF: Consumer mode master or slave 32 / 44.1 / 48 KHz
- MIDI interface = In / Out thru Din

An external rack with 8 full-duplex inputs, 4 outputs and a studio full of other pro connections. Includes S/PDIF (optical & coaxial) in and out that cards priced up to six times more lack. DirectSound3D, A3D, GM and Roland GS support. Bundled with unrivaled software. With the **Maxi Studio ISIS**, you'll be far out of your mind, and deep into pro music.

Console 8/4

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By Chris Pelonis and Geoffrey Goacher

# The Personal Studio Makeover

Most personal-studio builders have neither the budget nor the room to transform their studio into a facility of professional caliber. You can't expect to get million-dollar sound for a few hundred—or even a few thousand—bucks. But there are techniques you can use to greatly improve the acoustics of your studio space, even if it's a rectangular room with parallel walls. These tips will help you get optimal performance from your personal studio, no matter how modest it is.

## Tune your control room like the pros do.

Because, for many people, the control room *is* the studio, we will focus on the acoustical treatment of this all-important space. Think of the control room as the interface between your ears and what gets recorded. With a tuned room, you'll get a true representation of the mix, which is the key to creating high-quality work.

## BASIC CONSIDERATIONS

Before we get into acoustics, you'll need to make sure that you don't have any weak links in your monitoring system. First of all, monitoring systems for critical listening must have a fairly flat frequency response from at least 60 Hz (or lower) to 16 kHz (or higher). The power amp should also have as flat a frequency response and as low a distortion spec as possible. Fortunately, most studio-grade near-field monitors and power amps on the market do a fine job of meeting these specifications. Therefore, selecting the "right" system is often just a matter of personal taste.

It is also important to set up the monitoring system symmetrically within the room. The distance between speakers should be the same as the distance from each speaker to your ears, thereby forming an equilateral triangle (see **Fig. 1**). For near-field monitoring, the distance between speakers should be about two to four feet, depending on their size and dispersion and what is ergonomically most feasible. Also, the center of this equilateral triangle should be equidistant from each of the room's walls.

However, even when high-quality gear is placed symmetrically in the room, your setup may well fall short of sonic accuracy. The overall sound may be boomy and muddy, the bass too loud or too soft, the high end dull or harsh, and the imaging blurry and undefined. Room acoustics can play a significant role in creating and reducing these problems.

**Christopher Cross's personal studio. Notice how sound absorbers are strategically placed on the walls and ceiling as well as in the corners.**

In pro studios, room acoustics are considered a top priority. Typically, the owners spend a good deal of money on professional consultation, premium construction, and first-rate sonic treatments, sparing no expense to achieve a trouble-free, acoustically "neutral" monitoring environment. Luckily, acoustic problem solving is not outside the financial realm of the personal-studio owner. Expect to spend at least the same sum of money for acoustical treatment as you did for your monitors.

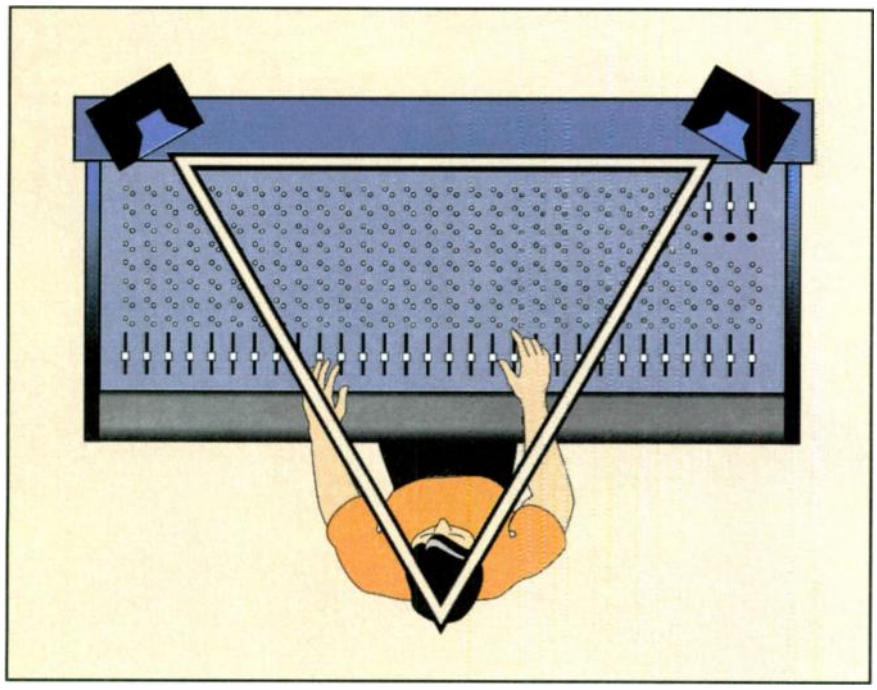

**FIG. 1: The distance between speakers should be the same as the distance from each speaker to your ears, thus forming an equilateral triangle. The center of this equilateral triangle should be equidistant from each of the room's walls.**

## SPEAKER PLACEMENT

Your first consideration should be the orientation of the speakers in the room. Assuming that your space is rectangular, it is best to have the speakers pointing down the longest dimension so that low frequencies have a chance to develop before hitting the back wall. Next, consider the position of your speakers in relation to the listener, and adjust them until you get the most accurate bass response. This is critical for every studio.

The way that low frequencies behave in a room is dictated largely by the room's dimensions. Certain frequencies, due to the lengths of their respective sound waves, get reinforced as they move among the room's boundaries—the walls, floor, and ceiling—creating resonant boosts in volume at those frequencies (see **Fig. 2**). These resonances are commonly referred to as *standing*

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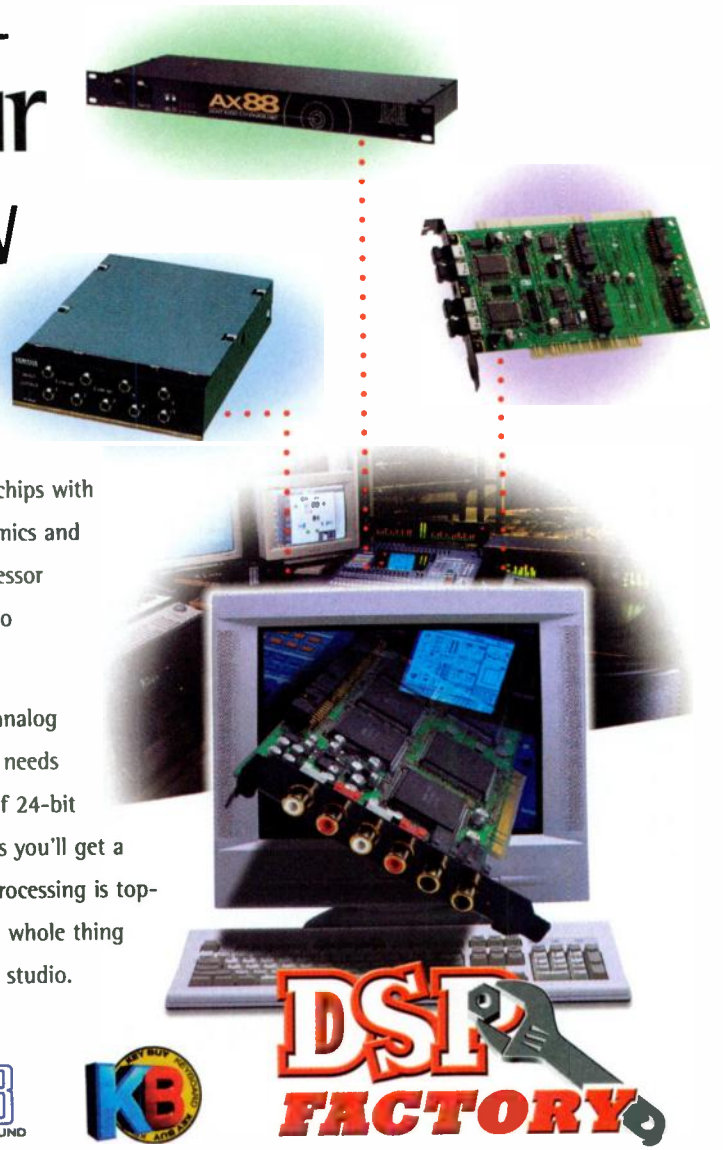


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*waves*. You can estimate the most prominent resonant frequencies of a room by using the equation

$f_1 = 1{,}130/2L = 565/L$.

In this formula, $f_1$ represents the resonant frequency, and *1,130* is the speed of sound through air under "normal" conditions (which are defined as one atmosphere of pressure at sea level at 21 degrees Celsius). *L* represents the length of the room in feet. For example, if the room is 10 feet long, there will be a natural resonant volume boost in the room at 56.5 Hz. In addition, natural boosts in volume will occur at multiples of this frequency: $f_2$ = 113 Hz, $f_3$ = 169.5 Hz, $f_4$ = 226 Hz, and so on.

The resonances become more closely spaced together and their volumes diminish as you move up the frequency spectrum. In small rooms, therefore, resonances are typically less problematic above 200 Hz.

Low frequencies are omnidirectional by nature. When you are using free-field rather than flush-mounted speakers, low frequencies reflect from all nearby room boundaries. The result is that the bass sounds as though it's coming from different directions (see **Fig. 3**). These slightly delayed reflections of the original signal cause comb-filtering peaks and dips within the range of frequencies above the modal resonance range (typically 200 Hz in a small room) to an upper limit of about 500 Hz. The increasingly directional nature of sound above 400 Hz makes speaker/boundary interference less of a problem for mid and high frequencies.

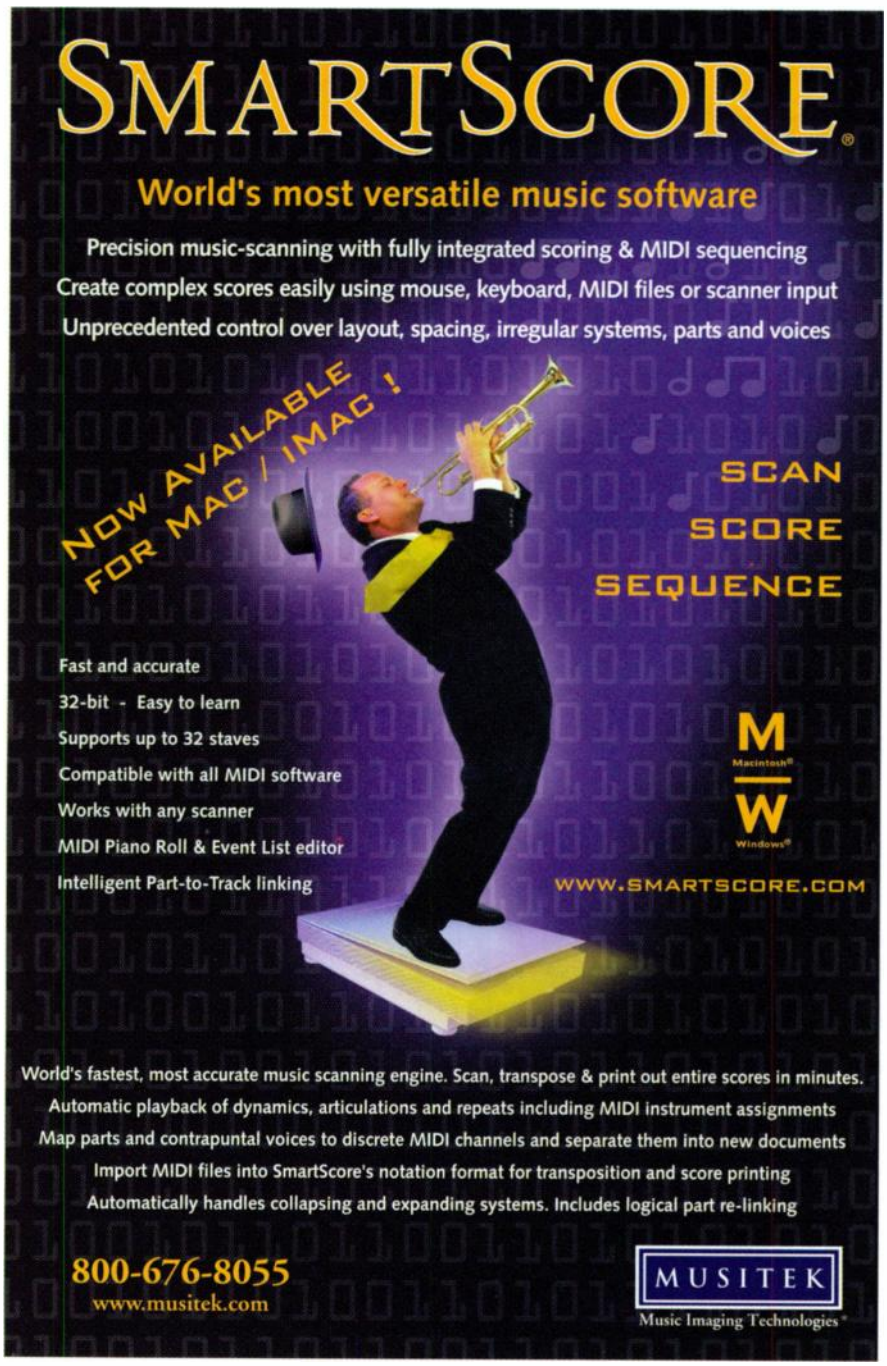
Speaker/boundary interference and standing waves can cause deviations in frequency response as high as 15 dB. This amount of variation could keep you guessing about proper levels for all the bass frequencies you mix. Our goal is to locate the speaker position that suffers the least from these types of interference.

## SOFTWARE ROUTE

First we will find the best listening position and then acoustically treat the walls and ceiling based on this position. You can locate the sweet spot using specialized studio-design software that does predictive analysis; such programs include *Acoustic-X* (Pilchner Schoustal Architectural Acoustics), *Visual Ears* (KB Acoustics), and *Room Optimizer* (RPG Diffusor Systems). These programs ask you for the dimensions and characteristics of the room so that the software can mathematically determine which position in the room is the most accurate for listening.

To find the sweet spot in real time, you will need to have a real-time analyzer (RTA), a calibrated measurement microphone, and a pink-noise generator. If you have furniture and equipment in the room already, using an RTA will give you greater accuracy in positioning your listening station. You can also use the real-time approach for verification of the software analysis.

Set the microphone where you would prefer to be sitting. Then run pink noise through one speaker only, and move that speaker in 4 to 6-inch increments in every direction until you find the position where the bass response is flattest. Once you have located the best spot for the first speaker, measure its distance from the microphone, and mirror it with



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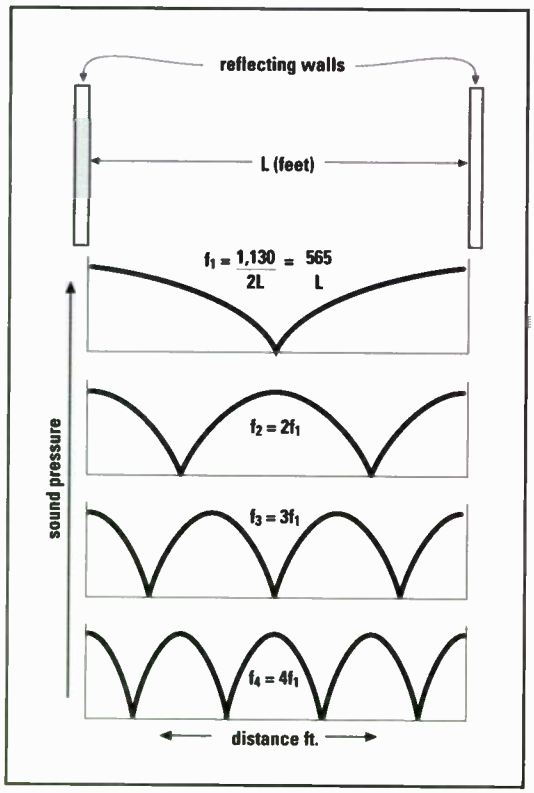


FIG. 2: When wavelengths are twice as long as the distance between room boundaries, a "standing wave" reinforcement of the wavelengths occurs at that frequency and its harmonics, resulting in a boost in their volume.

the other speaker to form an equilateral triangle.

Another approach is to place one of the speakers where you want it and then search for the optimal seating position by moving the microphone. When you find the sweet spot, measure and place the other speaker to form your equilateral triangle.

If you're using enclosed monitors with separate woofers and tweeters—known as *discrete* rather than *coaxial* or *concentric* monitors—position them so that the speakers are in a vertical line, one on top of the other. (Putting them on their sides, with the woofer and tweeter going in a horizontal direction, creates phase problems.) Be sure that the speakers are placed high enough to project over the console.

## RAYS VS. WAVES

After you've established the speaker and listening positions, the next step is to treat the room to reduce unwanted reflections. You'll need to address two areas of acoustics: *ray acoustics* and *wave acoustics*. Understanding how sound behaves in the rectangular confines of a personal studio, where dimensions are usually fixed and space is tight, is the key to the proper application of sonic treatment.

**Ray acoustics.** Ray acoustics apply to the mid and high frequencies. These frequencies have very short wavelengths that arrive at a boundary surface completely developed. These frequencies behave in much the same way as beams of light—for example, hard and irregular surfaces diffuse and scatter beams randomly, whereas more absorptive surfaces are less reflective (see **Fig. 4**).

The biggest detriment to mid- and high-frequency accuracy is the presence of *early reflections*. When you listen to your monitors, you hear the direct sound from the speakers followed by reflections of that sound from the walls, ceiling, and other hard surfaces of the room. When reflections arrive at your ears "early"—within 20 milliseconds of the direct sound—you hear them as part of the direct sound. Because sound waves travel at approximately one foot per millisecond, most of the first reflections that make their way to the listening position in a small room qualify as early reflections.

Commonly, the frequency range of early reflections extends from 500 Hz on up. This range critically affects the accuracy of the monitoring system's imaging as well as its mid- and high-frequency tonality. Early reflections often add audible comb-filter distortion to the direct signal, tainting the frequency response with a variety of boosts and dips. Early reflections also tend to blur the stereo imaging between the speakers, making it difficult to hear the exact position of sounds within the stereo field.

If you have the luxury of constructing a studio from the ground up, you can minimize early reflections by avoiding parallel surfaces. When modifying an existing room, though, you'll have to apply acoustical treatment to the walls and ceiling. Additionally, you'll need to know the dispersion characteristics of your monitors when determining which areas to treat; fortunately, these specs are provided by most monitor manufacturers.

**Wave acoustics.** Wave acoustics deal with the behavior of low frequencies—from 20 to 500 Hz. If the room's acoustics are balanced, the bass and low-mids will be full and warm. If the room has significant frequency boosts in this range, the resulting sound will be boomy, muddy, or both. Dips in low frequencies will result in a thin and hollow sound. The goal is to flatten out the room's low-frequency response so that you don't erroneously mix your music to compensate for boosts or dips caused by the acoustic environment.

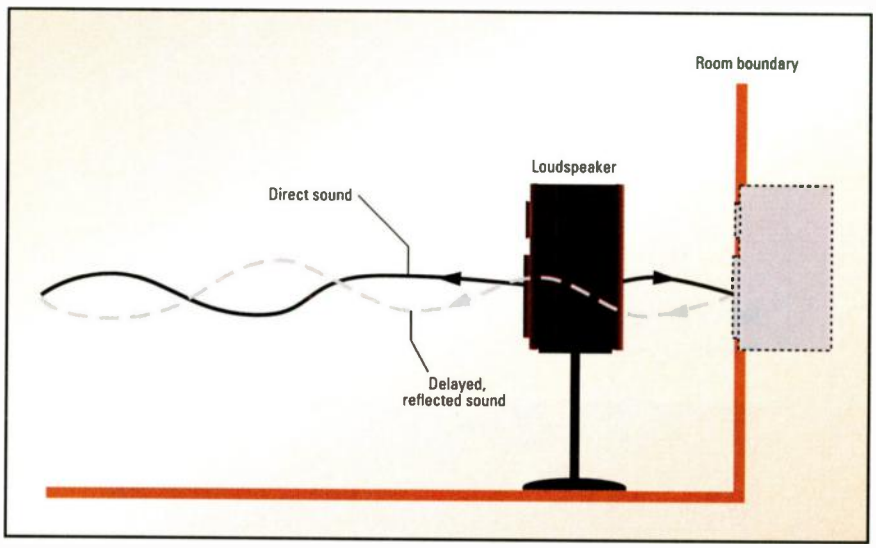


FIG. 3: The omnidirectional nature of low frequencies causes them to reflect from all nearby room boundaries.

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## PLACING ABSORPTION

For now, let's assume that your speakers have a 90-degree dispersion in the mid to high frequencies. From the front of the monitor, position a laser pointer or a small flashlight to point 45 degrees to the right wall, then 45 degrees to the left wall, and then 45 degrees to the ceiling. These are prime areas where absorption will eliminate annoying early reflections from the listening area.

In large commercial studios, if the first splay of the side wall is 135 degrees from the face of a speaker, the dispersion of the mid and high frequencies will run parallel to that wall. When designing a room from the ground up, you would want to apply absorption to this area to clean up any mid- to high-frequency reflections that are more than 90 degrees from the speaker face, as well as any reflections that may occur from other parts of the room. In a personal studio with parallel walls, this treatment is absolutely mandatory.

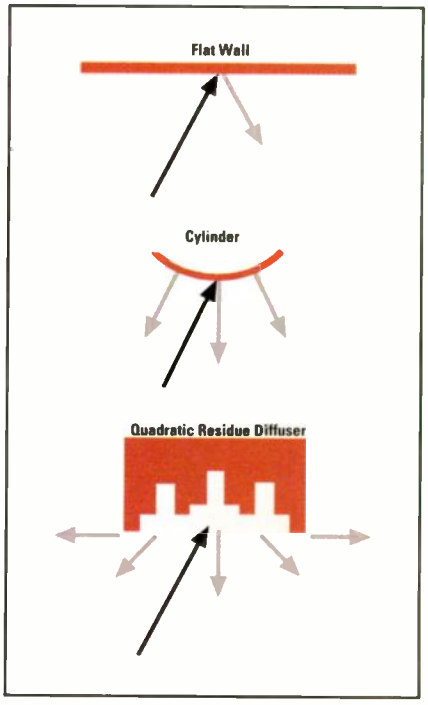


FIG. 4: Diffusers and cylinders scatter reflections in many directions.

The most common way of dealing with these reflections is by covering one or two inches of fiberglass (typically one with a density of three to six pounds per cubic foot) with panel fabric (a fire-rated material that is acoustically transparent). If you are on a tight budget, you can substitute duct liner or sound-deadening board. If you have the space to spare, you can create hinged panels that allow you to easily change the way you offset the parallel surfaces.

## LOW DOWN

To absorb low frequencies in a commercial studio, the room's dimensions are used to focus the frequencies into an area where a bass trap has been built. However, a bass trap takes up quite a bit of space and therefore may not be practical in a personal studio. Instead, you can apply a combination of broadband bass absorption and full-band absorption/diffusion in the back of the room. But keep in mind that the modal response of a room can change as you bring in more equipment and people, thereby reducing the effectiveness of tuned absorbers.

One of the places that low frequencies accumulate is in the corners of the room. An affordable method of controlling the corners is to line them with loose insulation. Place a panel of 4-inch

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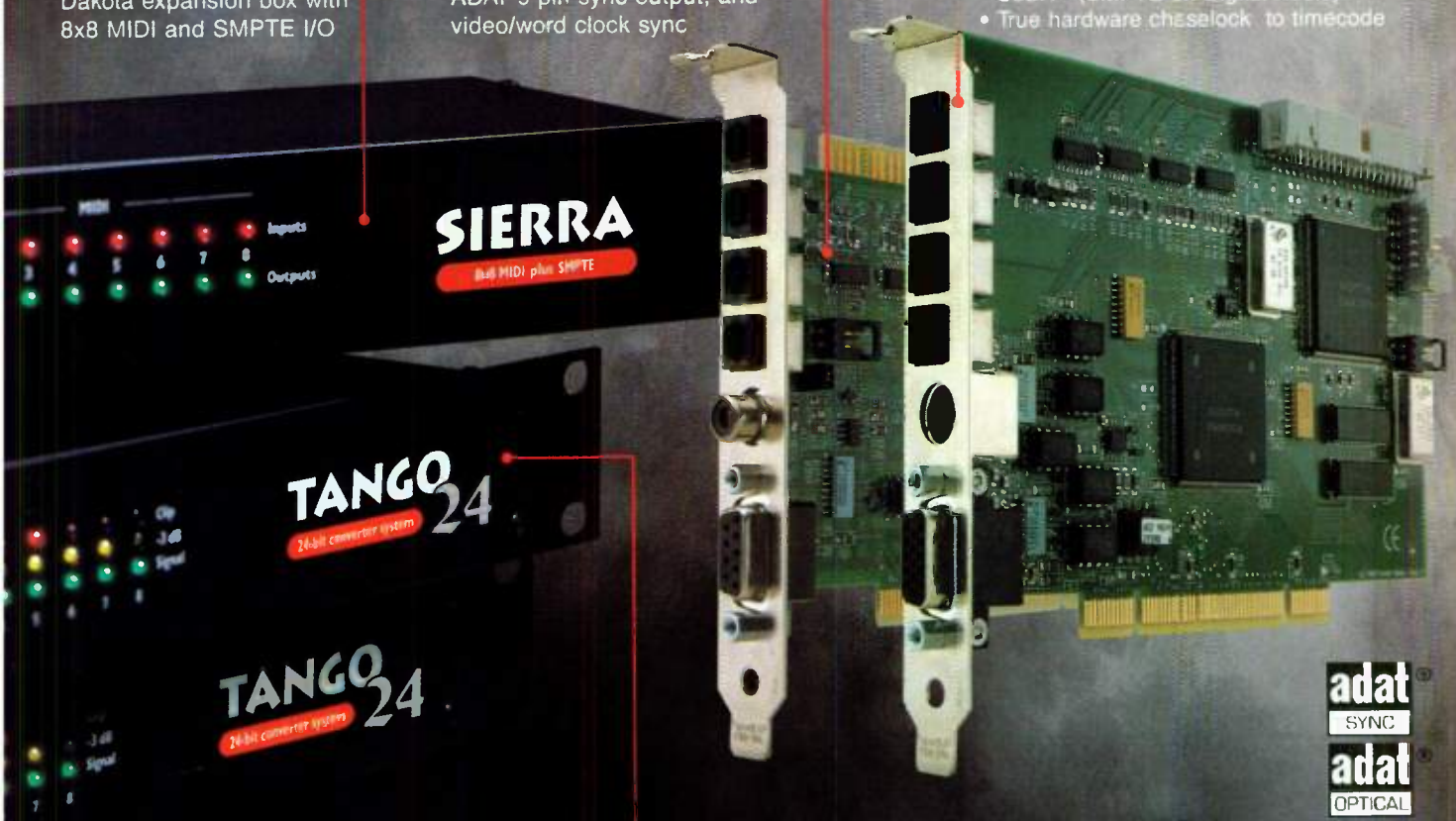


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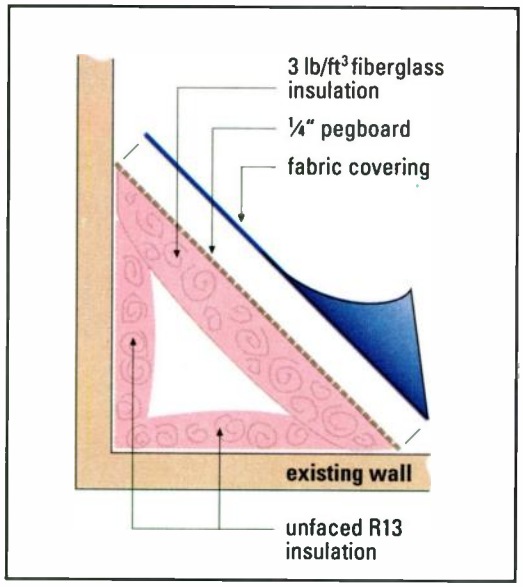


**FIG. 5: Bass traps for the rear corners of the studio should include a layer of pegboard covered with panel fabric. Unfaced insulation lines the wall inside the trap.**

fiberglass (with a density of three pounds per cubic foot) covered in panel fabric across each corner. In the rear corners behind the listener, the fiberglass panels should have a pegboard surface behind the cloth (see **Fig. 5**). The effect will be less absorption in the mid and high frequencies and a bit more ambiance in the rear of the room. The corner traps in the front of the room do not need the pegboard (see **Fig. 6**). Another option for the rear wall is to build a pegboard or thin plywood V shape and then line it with fiberglass. This offsets the parallel surfaces and increases bass absorption.

For an accurate listening environment, eliminating the standing waves between the floor and ceiling is essential, especially around the console and speaker areas. If you have a standard 8-foot ceiling, there are few affordable options for treatment. The preferred method is to attach panels of 4-inch cloth-covered fiberglass (again, with a density of three pounds per cubic foot) on the ceiling.

In the rear 30 to 50 percent of the room, install RPG's Binary Amplitude Diffsorbor (BAD) panels over the fiberglass ceiling treatment. (RPG calls the panels *diffsorbors* because they combine the characteristics of reflection, absorption, and diffusion into one product.) Keep the ceiling panels at least two feet away from the walls to avoid a dead room.

The final area requiring treatment is the front wall. Equipment racks and the back side of the console typically end up sending reflections toward the front wall. A panel similar to those used on the side walls will help. You can also use flannel-backed velvet curtains that weigh at least 14 ounces per square yard. By hanging the curtains over a couple of inches of fiberglass treatment, you extend the low-frequency absorption and further eliminate front-to-back standing waves.

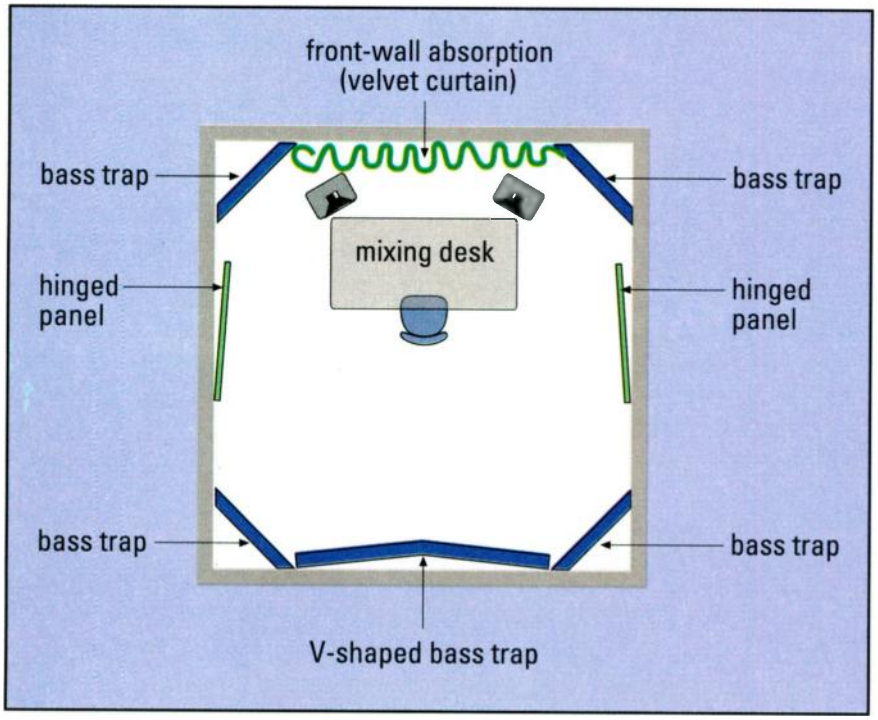


**FIG. 6: You can significantly improve room acoustics and monitoring accuracy by using corner bass traps, strategically placed absorbers, and back-wall diffusers. Notice how the hinged panels can handle sound emitted from speakers that have a 90-degree dispersion.**

## EQUIPMENT

Once you've positioned your speakers and acoustically treated the walls and ceiling, you're ready to install your equipment. Keep its layout as symmetrical as possible, and keep your racks and other furniture to a fairly low profile. A height of 30 inches is ideal; nothing should be taller than 36 inches. If possible, mount your monitors on stands behind the console, rather than placing them on the console by the meter bridge, as this will diminish the reflections from the console's surface. Avoid cavernous spaces entirely—any large, empty racks or similar items should be filled with something, even if it's only blank panels.

Arrange your equipment as ergonomically as possible. Position your gear so that it's within easy reach, but be careful not to close yourself in. Finally, to keep things tidy, you may want to run the wiring down one side of the room while keeping the other side clear for traffic.

## MISSION ACCOMPLISHED

If you're creating your studio on a limited budget, you need to be realistic about what you can accomplish. With a little know-how and some creative exploration, however, you can turn any room into a reasonably accurate listening environment. ■

**Chris Pelonis** *is a studio designer and acoustician, and founder and president of Pelonis Sound and Acoustics.* **Geoffrey Goacher** *is the founder of Acoustical Research Associates, which specializes in research and communications on audio and acoustics for critical listening environments.*

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# Personal Studio Acoustics

By Bob Hodas

When I was asked to write an article on acoustic fixes for small home studios, I said, "No problem, I've analyzed plenty of small rooms." Then I was asked to write it from the perspective of someone who couldn't afford a professional room analyzer, and I said, "Oh s__t."

Although there are very few rules of thumb, I'm going to try to give you some guidance in solving some of your acoustic problems on your own. This process requires some intensive listening at times, but, hey, there's no time like the present to hone those skills. Make your ears your analyzer. Also, because this article is aimed at the "do it yourselfer," the acoustic solutions I will present are the cheapest I can think of, and therefore, some assembly is required.

*(This article was originally published in the February 1999 issue of* Mix *magazine and is reprinted here with the permission of the publisher.)*

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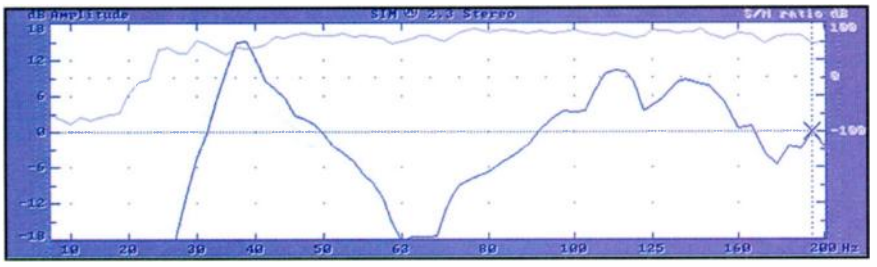


FIG. 1: Shown here is the bass response of a speaker placed along the short wall of a 9 × 15–foot room.

## SPEAKER SETUP

It is very important that you become completely familiar with the speakers you are going to use. Take a good look at the manufacturer's frequency response charts, but remember that these are anechoic measurements. As soon as you put your speakers in a room with boundaries (walls), the bass response will start to change significantly. Bass response will build up even more when you place a speaker against a wall (half-space loading) or in a corner (quarter-space loading). But the response charts are useful for knowing what the limitations are. For example, a Yamaha NS-10 monitor will roll off dramatically below 125 Hz, so you don't have to be too concerned about deep bass problems when positioning this speaker. You also want to pay close attention to the recommended position for proper phase alignment. You want to make sure that this alignment point intersects your ear level. For some speakers it's directly aligned with the tweeter. For others it's a point between the woofer and tweeter. This is dependent on the design of the monitor, so check the manufacturer's literature.

Before even thinking about acoustic treatments, you need to optimize the speaker positions in your room. The first step is to determine which wall your speakers should be on. If your room is square, it doesn't matter. If your room is rectangular, it all depends on the dimensions. To figure out which wall to use, place one speaker on each wall and at listening height in approximate position. Run a mono send from your CD player to one speaker at a time and do some serious listening to the bass. You should be able to get a feel for which speaker has a flatter bass response. More bass is not necessarily better. Listen for a smooth and connected bass response from the mids on down. **Figures 1** and **2** are examples of just how different the frequency response can be when the monitors are placed along different walls in a room measuring 9 × 15 feet.

For Dustin Hoffman, the word was "plastics." Well, I have just one word for you: symmetry. If you do just one thing right, it should be to set your room up as symmetrically as possible.

*The bass response can vary radically depending on whether the door is open or closed.*

What does this mean, exactly? Your speakers must be placed symmetrically in the room, or they will have different frequency responses. This means that your music will sound different in the left and right speakers, your "center" image will be off-center, and your product will not properly collapse to mono. And don't believe the rumor that near-field monitors aren't affected by room acoustics; that goes against the laws of physics. So break out the old tape measure, and make sure that the left and right speakers are equidistant from both the side walls and the front wall.

Why is this necessary? It's due to the fact that, below 200 Hz, your speakers are fairly omnidirectional. The signals that bounce off the front and side walls are going to mix in with the direct output of the speaker. This delayed signal will cause comb filtering. The time delay, and thus the frequency, of interaction is dependent on the distance of the speakers from the walls. If the left and right speakers are at different distances from the walls, the cancellations will occur at different frequencies. This is also true for first-order reflections above 400 Hz, which I will address later. **Figures 3** and **4** illustrate what happens to the bass when speakers are placed asymmetrically in a room.

Now you need to determine how far out from the front wall the speakers should go. This will require more listening tests. Listen to both speakers in stereo. You should move the speakers six inches at a time forward or back. In a small room, these increments can make a big difference. Once again, you are trying to find the smoothest response. I realize that there may not be much space, but do the best you can. Believe it or not, sometimes the best place for a speaker is right up against the front wall.

At this point, I'd like to offer a word or two on the evils of console reflections. **Figures 5** and **6** show why your speakers are better off several inches behind the meter bridge. Now, I realize that you can't do this if you have one of those all-in-one-workstation pieces of furniture, but you should be aware of these tight reflections bouncing into your face. If you have the freedom, move the speakers back. I have a 2 × 2–foot plastic mirror that I like to lay

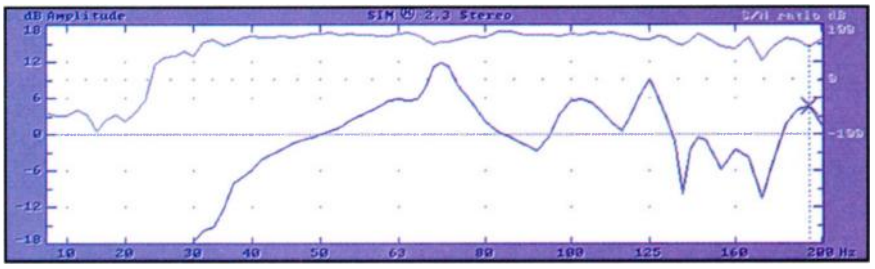
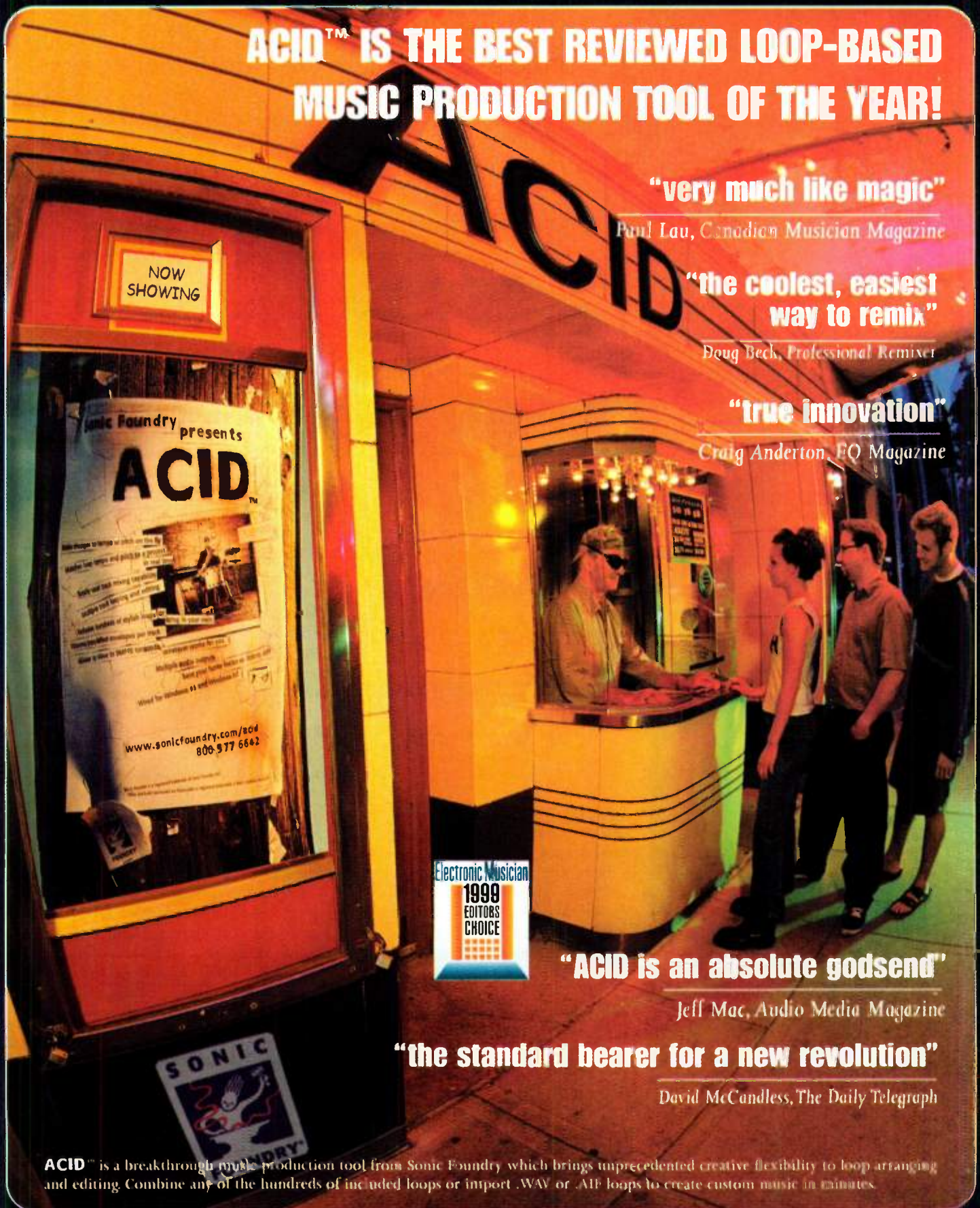


FIG. 2: This is the response of a speaker placed along the long wall of the same room. Note the more contiguous bass response.

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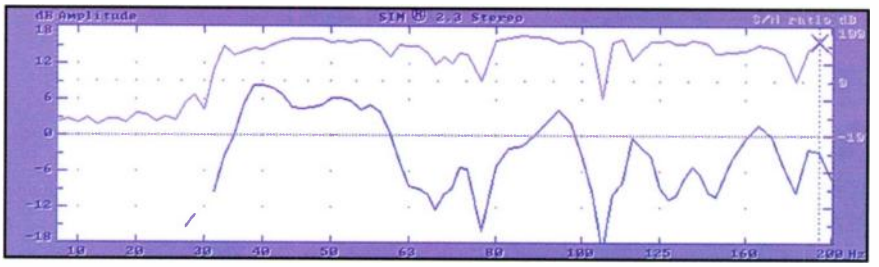

FIG. 3: Here is the frequency response with the left speaker asymmetrically placed in room.

on top of the console surface. If I sit at the console and can see the tweeters in the mirror, I know I'll need to move those speakers back until there's no reflection.

In order to get good stereo imaging, you should sit so that the positions of your head and your monitors form an equilateral triangle. To optimize your listening position (also known as the "sweet spot"), measure the width of your room and place a mic stand in the center, two to three feet back from the console arm rest. You want a nice wide sweet spot, so the width of your console or workspace will determine exactly how far back you sit. The measured distance from tweeter to tweeter should equal the distance from each tweeter to the mic stand—the distance will depend on your room size and the width of your console.

*Believe it or not, sometimes the best place for a speaker is right up against the front wall.*

Remember also that the typical small monitor is designed to be used at a distance no greater than six feet. As you adjust the speakers, keep in mind that each speaker needs to be the same distance from the side walls. Now aim the speakers at the mic stand, maintaining the proper phase alignment for the given monitors.

Doors are an important factor in your room. The bass response can vary radically depending on whether the door is open or closed. More often than not, doors are in corners and have a greater effect on one speaker than the other. You want to avoid that, so I recommend keeping doors closed, but you should still do some listening to figure this out.

## ACOUSTIC ISSUES

Now that you have your speakers in place, you'll need to address the first-order reflections. These are the reflections that arrive at the mix position within the first 19 ms of the direct signal. (These signals will have traveled about 21.5 feet more than the distance between the monitor and the sweet spot.) Your brain cannot differentiate between a direct and a reflected signal in this short space. The result is that the reflection is convolved into the direct signal, just like a delay line. Of course, this causes comb filtering and, therefore, cancellations in the frequency

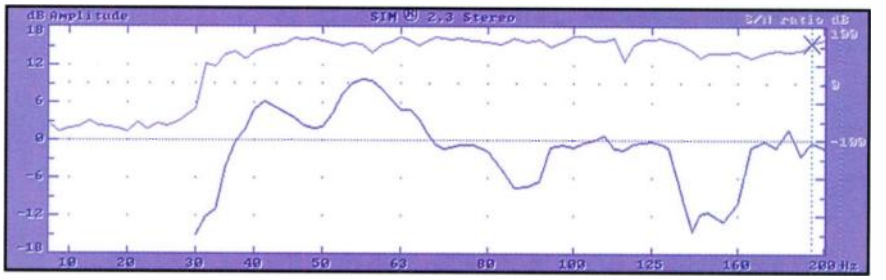

FIG. 4: This example shows the response with the right speaker asymmetrically placed in room. Note the significant difference compared with Figure 3.

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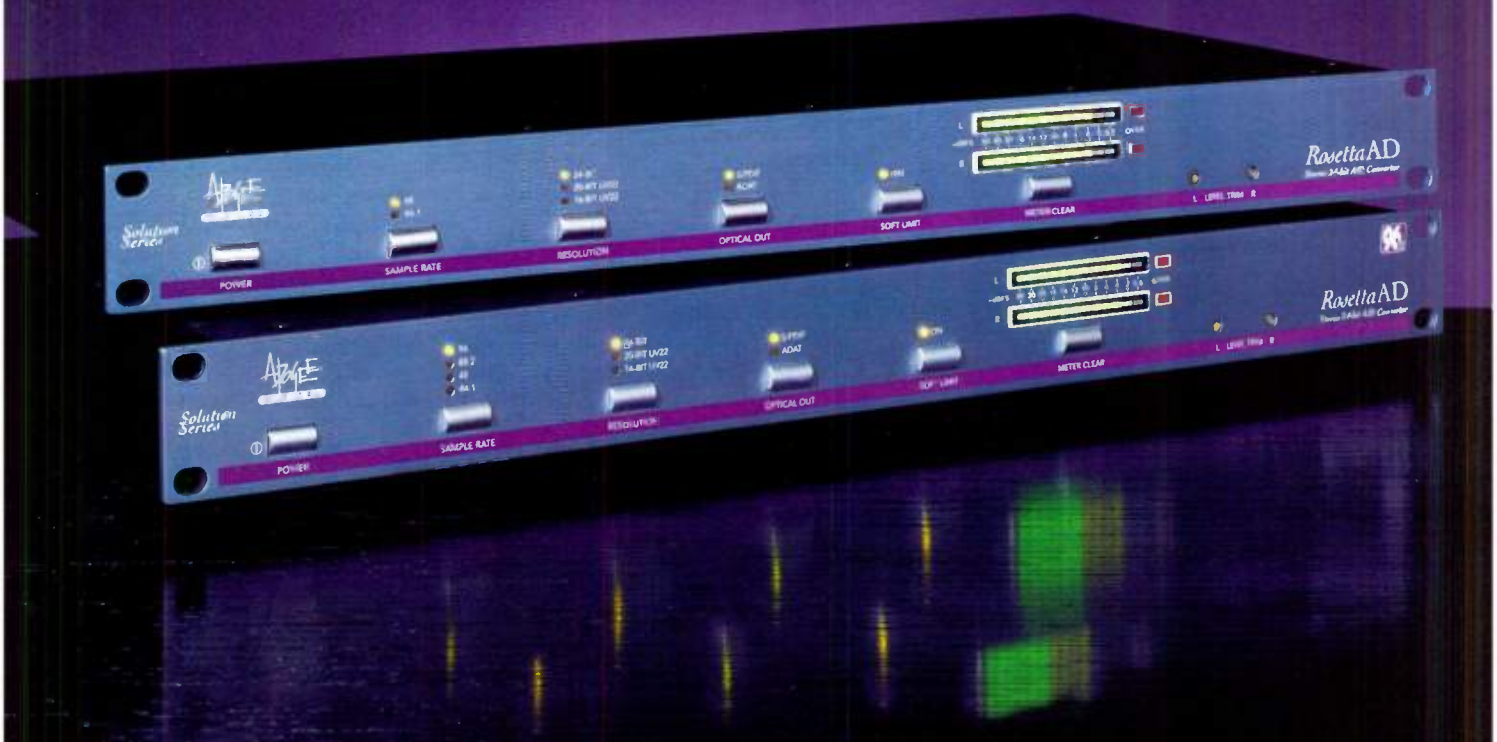


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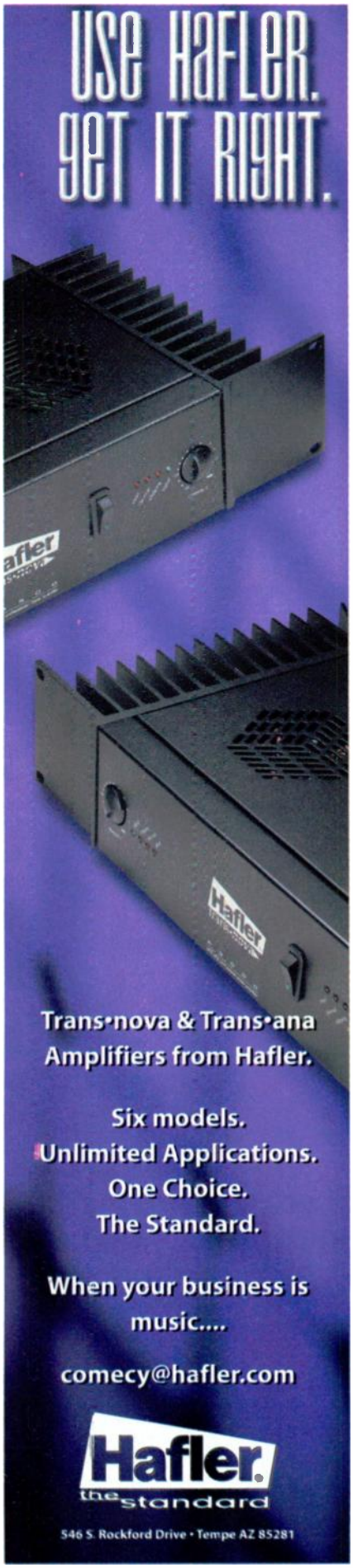

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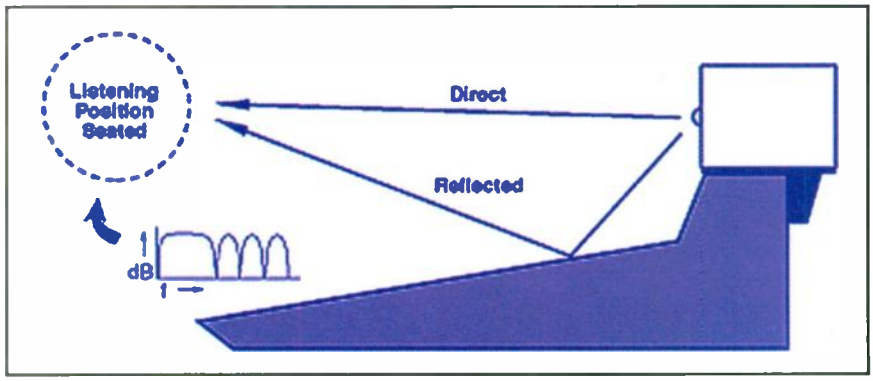


FIG. 5: Reflections interact with the direct signal (causing comb filtering) when speakers are placed on the console top.

response. That results in both imaging problems and phase problems. Bad boogie.

Identifying these reflections is easy, however. Above 400 Hz, sound acts a lot like light (time to use that plastic mirror again). Have a buddy sit at the mix position, and place the mirror flat against the left wall. Move the mirror around until your buddy sees first the left and then the right speaker reflected in the mirror. Cover the entire mix area this way, doing the same for the right wall, the ceiling, and the back wall, and mark each area where your buddy sees a speaker reflected so you can treat it. If you set your room up properly, the treatments for the left and right walls should be fairly symmetrical.

Now measure the distance of the direct path from the speaker to the sweet spot. Next, measure from the speaker to each marked area and back to the mix position (reflected path). Subtract the direct path from the reflected path. If it is less than 22 feet, you should apply treatments.

There are two choices for treating these reflections: absorption and diffusion. For the side walls and ceiling, I like to use absorption. Here's why: an absorber removes the energy, but a diffusor spreads out the energy in space and time. This means that the diffusor creates many smaller reflections of lesser energy. If I do an impulse response of a side-wall reflection, diffusors and absorbers both appear to eliminate the reflection. But if I take a reading of coherence, the absorber gives a better reading because the offending reflection has been removed. The diffusor's coherence reading, on the other hand, is not so good, because the reflection energy still reaches the mix position (though it has been reduced and spread out in time).

For the side walls and ceiling, an inexpensive solution is 6-pound-density, 2-inch-thick compressed Fiberglas, sometimes called spinglass. (It comes in 2 × 4–foot sheets and is available in many large building-supply stores.) Cut the panel to fit the marks you made

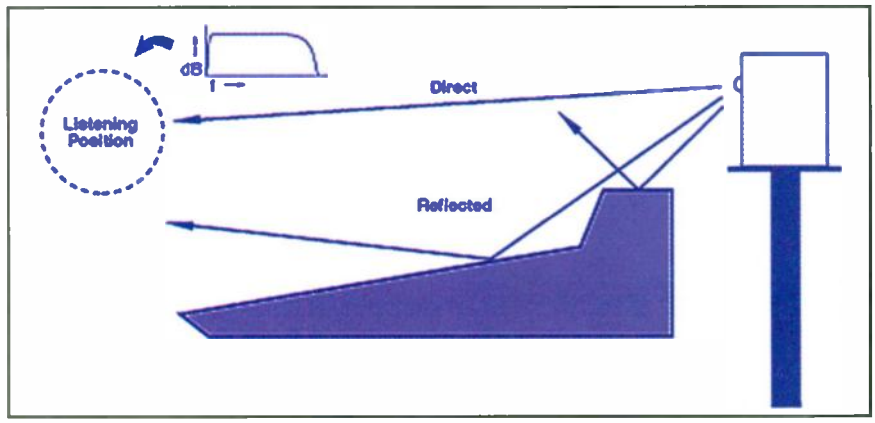


FIG. 6: You can redirect the reflections and smooth out the frequency response by moving the speakers back behind the console.

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earlier. I often make the treatments a little larger than the area of reflection. The Fiberglas should be covered with a fabric that is acoustically transparent. Go to your fabric store and pick out something with a very open weave. You should see some light pass through, and if you hold it over your mouth, you should easily be able to blow through it. For neat-looking panels, build a 1 × 2-inch wood frame around the panel and stretch the fabric over it. Don't cover entire walls with these types of panels, however; they will disproportionately damp the high-frequency reverb time. Just treat the areas that are problematic—take a surgical attitude. There is nothing worse than the chesty sound of an over-absorbed room.

I prefer diffusion over absorption for the back wall unless it is closer than five feet from your head. I find that diffusion at the back gives a small room more openness, and the back-wall energy does not mess up the coherence much. The cheapest diffusor I know of is to take a piece of ⅛-inch peg board and bend it to form a curve. The greater the curve, the more diffusion you get. Hold the curve shape in place with some 1 × 2–inch strips of wood. Another cheap method is to use PVC or ABS pipes of varying diameters, cut in half lengthwise. Mount these vertically so that the different diameters will give you some variance.

If your speakers are very close to the front wall, try mounting some pipe diffusors on the wall in between your speakers. This can sometimes give you more front-to-back imaging (depth) as it breaks up that solid reflection. Remember that most small monitors are meant to be used in free space.

Once you have treated the walls and ceilings, put on some music that you know well. Listen while standing in the corners to hear how much the bass increases. If you get a large buildup, you'll want to install bass traps in the corners. Make the same kind of absorptive panel as explained above, using full 2 × 4–foot sheets of fiberglass. Place it vertically across the corner with the top near the ceiling. Seal the bottom off with some window screen and fill the corner cavity with loose R-19 insulation. (Don't pack it tight.) This is a general-purpose, broadband type of trap and hopefully it will help smooth out bass response, although properly controlling the bass is difficult without measurements.

If, after these treatments are applied, you feel that your room is still too live, some additional treatment may be needed. Try a 1-inch layer of bonded polyester. This will help to deaden the walls a bit, without the heavy-handedness of Fiberglas.

These tips should help you improve your listening environment. Most of all, the critical listening you do during this process will improve your engineering skills and give you a good understanding of your room's personality. Now go and make good music! ■

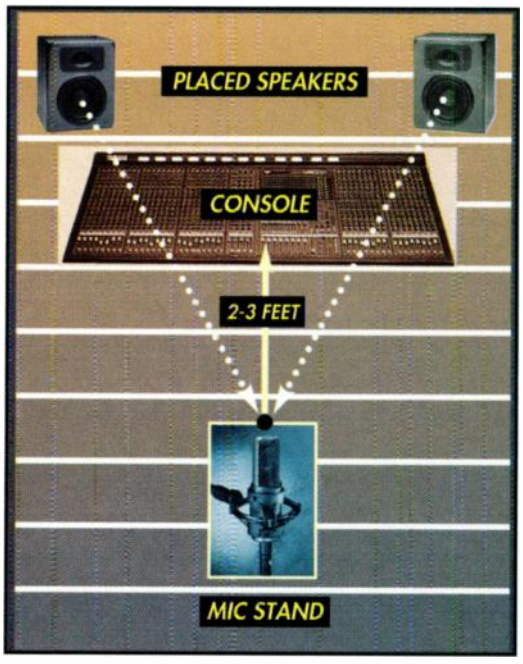


FIG. 7: To optimize your listening position, measure the width of your room and place a microphone stand in the center, two to three feet back from the console arm rest, so that the positions of the mic and speakers form an equilateral triangle.

**Bob Hodas**'s *new video,* Room Tuning with Bob Hodas, *is distributed by Hal Leonard publications. Further audio enlightenment can be found on his Web site at www.bobhodas.com.*


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# Designing the Personal Studio

By JJ Jenkins and George Petersen

This story began a decade ago when we started assembling a private-use facility to handle a variety of production needs, ranging from acoustic recording to radio production, jingle work, and a steady stream of film/video scoring dates. Over the years, a seemingly endless parade of equipment has gone into—and come out of—this quirky little L-shaped room. Five years ago, we decided to do something about the control-room layout, which was appropriate for rock recording but ergonomically unsuitable for the needs of the modern project studio.

*(This article was originally published in the August 1992 issue of* Mix *magazine and is reprinted here with the permission of the publisher.)*

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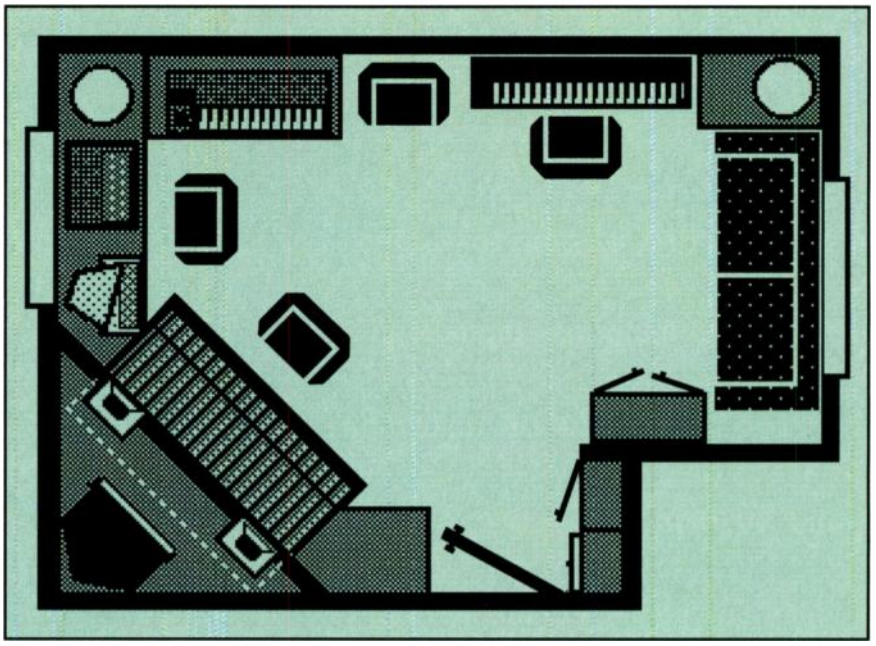

FIGURE 1: Studio floor plan; corner-facing console extends below triangular shelf with video and audio monitors.

The design outlined in this article includes no acoustical changes to the room itself. It is well known that when you listen to monitors that are placed in the near field (within five feet of the listener), the acoustic effects of the room are substantially reduced, although not entirely eliminated. If acoustical treatment is required, a number of products, such as Acoustic Science Corporation's Tube Traps (www.tubetrap.com), may prove sufficient to touch up any minor anomalies. Also, because the monitors are placed over the console at 45-degree angles (relative to the rest of the room), there is less chance that any hard echoes will be caused by slap from the back wall.

After some soul-searching and several hundred sketches on rum-stained cocktail napkins, we came up with the floor plan shown in **Figure 1.** But before any gloom and doom-sayers in our audience out there start hurling stones about this room design, keep the following facts in mind:

First, this control-room layout works very well for the types of projects we produce. It may or may not be suited to your situation, although we know of at least five rooms that have adopted our approach, all with excellent results. And in addition to project studios, this design could be used for mastering suites, digital-editing/premastering rooms, and video-editing bays.

Second, like most project studios, the room was constructed within the confines of an existing space. In our case, the control room is an 11 × 16–foot, L-shaped space above the recording room, so we needed to make the most of the space we had. Cost was a deciding factor for us, and so we assembled all the counters and cabinets from commonly available, low-cost materials such as ¾-inch CDX plywood;

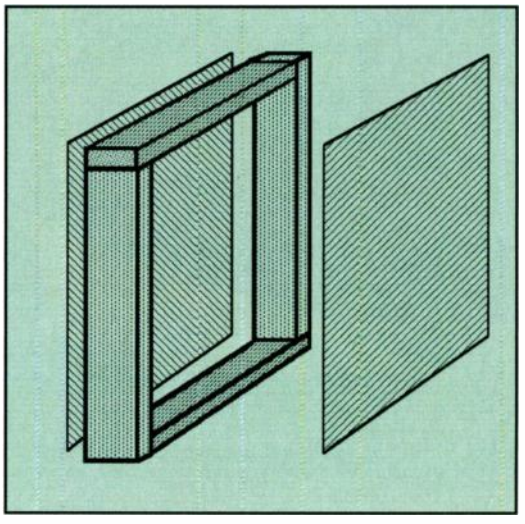

FIGURE 2: Column construction.

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2 × 4s and 2 × 6s; and a roll of charcoal gray indoor/outdoor carpet that was high-tech in appearance. The total bill for materials, including new floor carpeting to complement the carpet-covered countertops, was about $450.

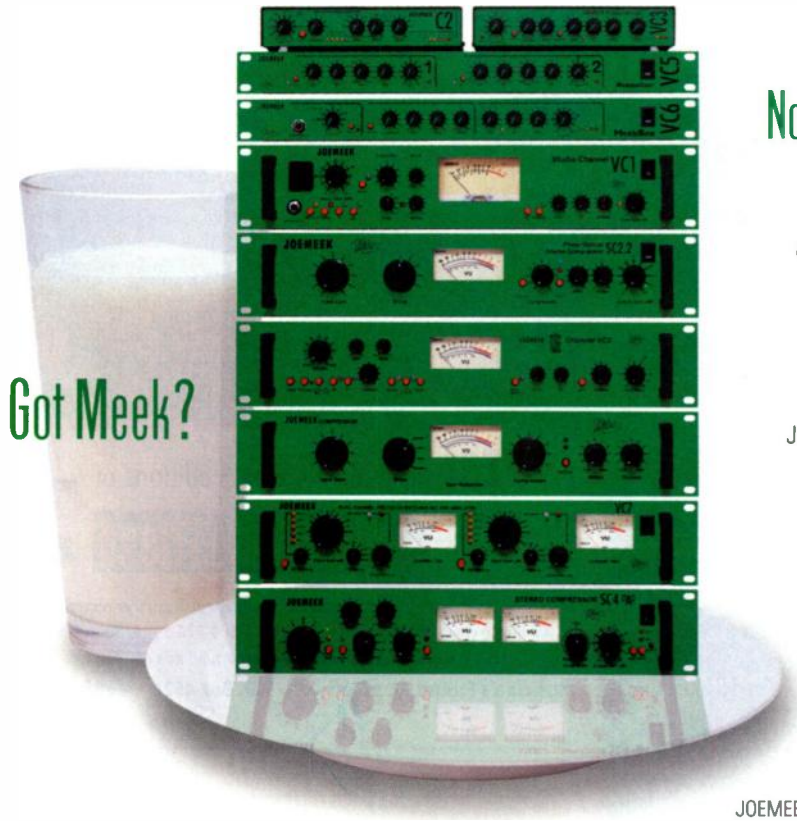
The key to this design is the unique positioning of the console, which faces directly into a corner. From this point, counters extend to the right and left of the engineer, providing immediate access to computers and monitors, outboard gear, autolocators, synchronization devices, and MIDI toys.

Rather than build equipment racks for signal processing and MIDI modules, however, we opted for some manufactured units: slant-faced, 9-space racks from Omnirax (www.omnirax.com) that fit neatly under the 29-inch-high counter tops. Mounted on casters, these can be pulled out easily for reconfiguring, and their height makes them just right for playing MIDI keyboards or entering computer data. The counter tops behind and to the right of the console are supported by columns placed 46 inches apart, so two racks can sit comfortably side by side under each counter.

A large triangular shelf that is four feet deep and 90 inches wide supports a 20-inch broadcast video monitor and accommodates most near-field studio speakers. The lip of the shelf extends just over the console's meter bridge creating a built-in look, while its 38-inch height offers ear-level placement of the monitors. The dotted lines on the shelf in **Figure 1** indicate how far the console protrudes—its corners nearly touching the walls on both sides. The width of the monitor shelf can accommodate several pieces of outboard gear between the speakers, which is handy for those sessions when extra gear is brought in, or as a convenient location for tweaking presets or programming without having to move outside the sweet spot of the listening area.

> Like most project studios, the room was constructed within the confines of an existing space.

This design requires placing studio monitors into a corner space, so be aware that the intersecting walls can play havoc with bass response, particularly with rear-ported monitors. The acoustical effect of such speakers in this application varies widely, depending on the size and placement of the ports, the free-air resonance of the woofers, and the speaker-to-corner distance. This can result in acoustical coupling or phase cancellation, yielding summation or attenuation of low-frequency energy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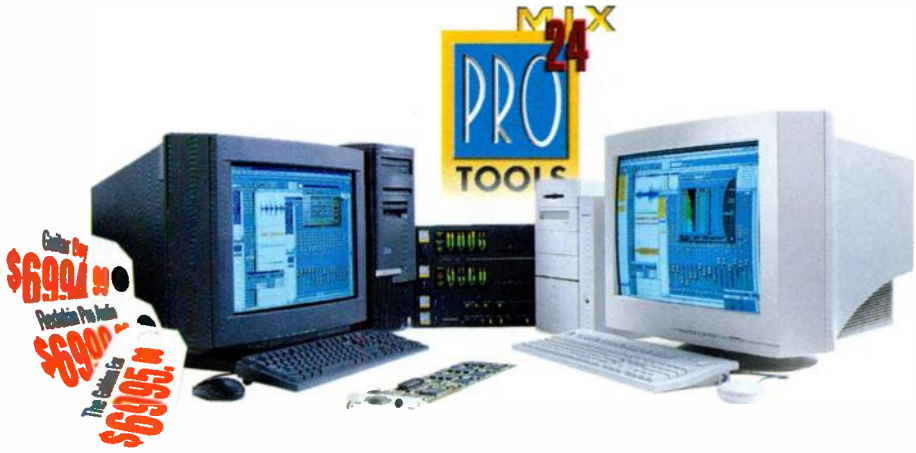

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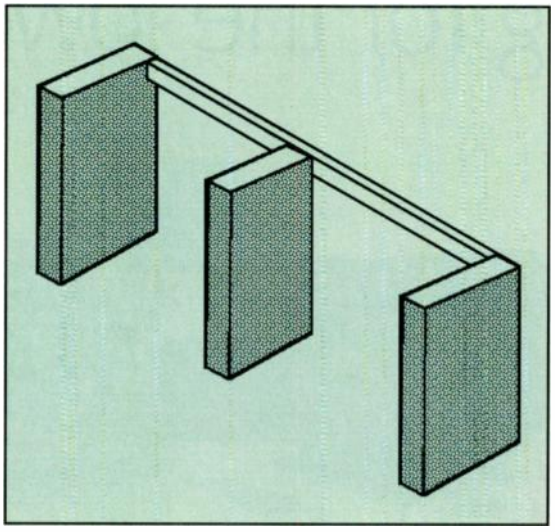

FIGURE 3: Column placement.

in the studio, with an outcome that is difficult to predict. Rear-ported monitors *can* be used on the corner shelf; however, front-ported or sealed-cabinet monitors are more predictable when used near corner walls.

The counter area to the right of the console is intentionally kept vacant, to be used as another location for storing temporary gear, placing in a second computer, and so on. Just below the monitor shelf, to the left of the console, we installed a "guest" patch bay. It is a one-foot sheet of Masonite that has a variety of ¼-inch and XLR jacks connected to the console's large TT patch bay, with access to sends, returns, tielines, mic inputs, and even a couple of MIDI and SMPTE time-code jacks. The guest patch bay really speeds things up when we need to bring in additional gear or rental items for a session.

Speaking of patch bays, we built an extensive MIDI patch bay, comprising some 1 × 8 MIDI Thru box circuits (adapted from the simple, 2-chip PC-900 optoisolator project that was published in the March 1986 issue of *Electronic Musician*), combined with a passive MIDI patch bay using ¼-inch TRS jacks and three-conductor patch cords. It isn't high-tech or programmable, but it works.

We designed a custom stand (26 inches tall) for a Yamaha KX88 88-key MIDI controller. Placed near the rear wall, it can readily be moved throughout the control room, because MIDI jacks tied to the MIDI patch bay are located at various points in the room.

Space is a major consideration in any control room, and ours is no exception. So rather than installing cumbersome synth stands in the control room, we used a wall-mount keyboard stand from Standtastic (www.astralite.com). Designed primarily for displaying electronic keyboards at music stores, the wall stand works equally well in control rooms and provides secure, adjustable mounting. We have two synthesizers mounted at 45 degrees for easy playing. Below this we added an extra pair of 90-degree arms with a plywood shelf that supports two drum machines and a nonrack synth module.

Behind the door, a built-in cabinet has three drawers (for cables, supplies, tools, stomp boxes, and so on) and a bookshelf. The top of the 4-foot-tall cabinet provides an out-of-the-way place for beverages—no liquids are allowed near the console or electronics. Another small cabinet to the left of the couch stores music software, sample libraries, and documentation. Nothing is worse than being unable to find a manual when some piece of equipment doesn't work during a session. We have also developed a "studio book"—a binder filled with information such as patch-bay maps, drum-machine note

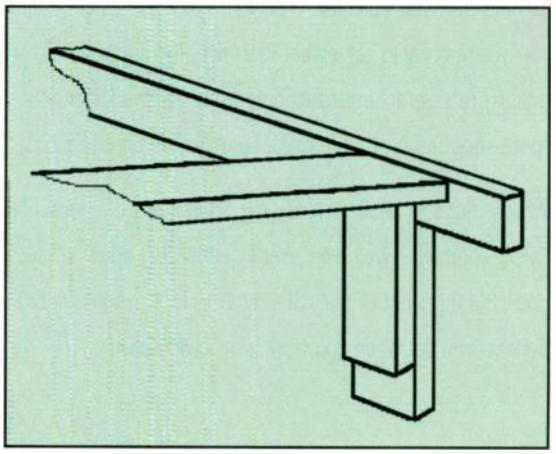

FIGURE 4: Right-side detail of corner shelf support.

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numbers, reverb presets, MIDI assignments, and listings of CD-production music and sound-effects libraries. The studio book is a great time-saver.

A couch in the back of the room affords a comfortable haven for catching some shut-eye during all-night editing or mixing sessions. A coffee table next to the couch provides another safe place

> The most important thing to remember is that this studio design is a far cry from the ultimate facility.

to put food or drinks, with a phone installed for cutting those all-important Andalusian record distribution deals—or at least for ordering a gourmet vegetarian pizza. Our budget forced us to eliminate plans for modern recessed cove lighting, so we instead settled on matching table lamps with three-way sockets in each corner.

## Nuts and Bolts

If you plan to repaint the room, do yourself a favor and complete this task *before* you install the countertops, monitor shelf, carpeting, and equipment. As mentioned earlier, the studio countertops are made of ¾-inch CDX plywood covered by gray indoor/outdoor carpeting and supported by columns (**Fig. 2**). These columns are built using a simple overlapping 2 × 4 box frame sheathed by ¼-inch plywood (any grade) to add strength. Once the frame and sheath are nailed together, the bare column can be wrapped in carpeting (tacked along the back side). We used a similar technique for the console stand, although we substituted 2 × 6 columns to support the ¾-ply counter under the console.

In all cases, contact adhesive keeps the carpet exactly where you want it. Just make sure to leave an extra edge on the countertop faces and corners so

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# I would have picked stamp collecting.

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you can give the edges that trendy tuck-and-roll look.

### Tips on Working with Carpet

1. Leave a little overlap when cutting pieces so that you can glue first and trim to exact size later.

2. Have someone available to help you place the pieces together once the glue has set.

3. Work outdoors, if possible. Glue fumes are hazardous.

Before you glue the carpeting, put some strategically placed holes 1 to 2 inches in diameter on the corner shelf and countertops. This is to allow for cable drops for AC power, speaker cable, computer and video lines, and so on. After the carpet is attached, the area over these holes can be slit (no need to cut all the carpet away) to provide "invisible" cable drops.

To add stability to the counters, attach a 2 × 4 strip to the wall between the columns at the same height as the columns (a stud finder comes in handy here), as shown in **Figure 3.** The 2 × 4s provide a third point of stability, as well as a handy place to pound those finishing nails that keep the countertops in place. If you are installing a line of columns along one wall, use one uninterrupted 2 × 4 for the entire length. This means that the columns between the first and last will have to be 1.5 inches (the depth of the 2 × 4) shallower than the outside columns, which leaves 1.5 inches behind the columns for running cables. The front face of the 2 × 4 is also handy for attaching AC power strips. In our studio, we route the AC cables up high, while keeping line-level wiring at floor level.

> The key to this design is the unique positioning of the console, which faces directly into a corner.

You can use the same 2 × 4-on-the-wall technique for securing the corner shelf, although additional bracing is necessary. Two diagonal 2 × 4s buttressed over wall studs should suffice (see **Fig. 4**). Once the wall and diagonal 2 × 4s are in place, you can secure the carpeted corner shelf with finishing nails around the edging. Make sure that any holes for cable drops don't interfere with the placement of the diagonal braces.

The most important thing to remember is that this studio design is a far cry from the ultimate facility. Think of it as a starting point for designing your room. Add a bit of creativity, and you can create a customized work space in nearly any room—at an affordable price. The only limit is your imagination. ■

**JJ Jenkins** *and* **George Petersen** *are San Francisco Bay Area-based composers/producers/artists with the group Ariel. Visit their Web site at: www.jenpet.com.*

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PROFESSIONAL RECORDING EQUIPMENT

# MANLEY Langevin

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# 1 Recorders, Sequencers & Mixers

In this wide-ranging section, we've included an assortment of digital and analog recording and mixing devices, as well as one essential category of software: sequencers.

Because the feature sets of analog and digital mixers differ significantly from each other, we've provided separate tables for the two categories. (Unlike their analog counterparts, for example, digital mixers generally offer some form of automation and often come with onboard dynamics processors, in addition to digital audio converters and digital inputs and outputs. Similarly, effects processors can be found on most digital mixers but only on a few analog boards.)

We list a wide variety of products in the Computer-Based Digital Audio Workstations table. Just exactly what constitutes a DAW is a matter of opinion; it can be hard to differentiate between an audio card bundled with digital audio editing software and a high-end dedicated system—especially dedicated systems that can be used with third-party programs as well as with the bundled software. Some audio cards have onboard synths, while others don't; given the proper software, however, they all can serve as DAWs. We took the cautious approach and cast a wide net, attempting to include every combination of audio card and audio-editing software.

Multitrack MiniDisc and cassette recorders have similar feature sets and intended applications, so we classified them together. Due to their digital nature, multitrack MiniDisc decks boast obvious features that cassette decks lack; some of these are not shown in the table because the salient point is the way they are implemented. For instance, the Yamaha MD4 and Tascam 564 MiniDisc recorders have playlists that let you play back sections of songs in a variable order. The Sony MDM-X4 doesn't provide a playlist, but its Section Editing feature lets you destructively move 4-track chunks of music. A few features weren't given their own columns in the table because they are typical of only one unit; for instance, only the Tascam MiniDisc deck has stereo S/PDIF outputs.

Modular hard-disk recorders are comparatively straightforward. Basically DAWs that do not require a computer; these units offer digital recording and usually have onboard mixers, but some mixers don't include hardware-control surfaces. These products also don't provide the in-depth waveform editing possible with a computer-based DAW, although you generally can perform cut, copy, paste, insert, and move operations.

The Digital Mixdown Machines chart includes DAT, 2-track MiniDisc, and stand-alone CD-Recordable decks. We did not include CD-R drives that require a computer and software.

We list MIDI sequencing and digital audio sequencing software in this section because these programs are essentially recorders and are thus integral parts of many music production studios.


50 Computer-Based Digital Audio Workstations

56 MiniDisc and Cassette Multitracks

56 Modular Digital Multitracks

58 Modular Hard-Disk Recorders

60 Digital Mixdown Machines

64 Sequencers (MIDI & Digital Audio)

70 Analog Mixing Consoles

72 Digital Mixing Consoles

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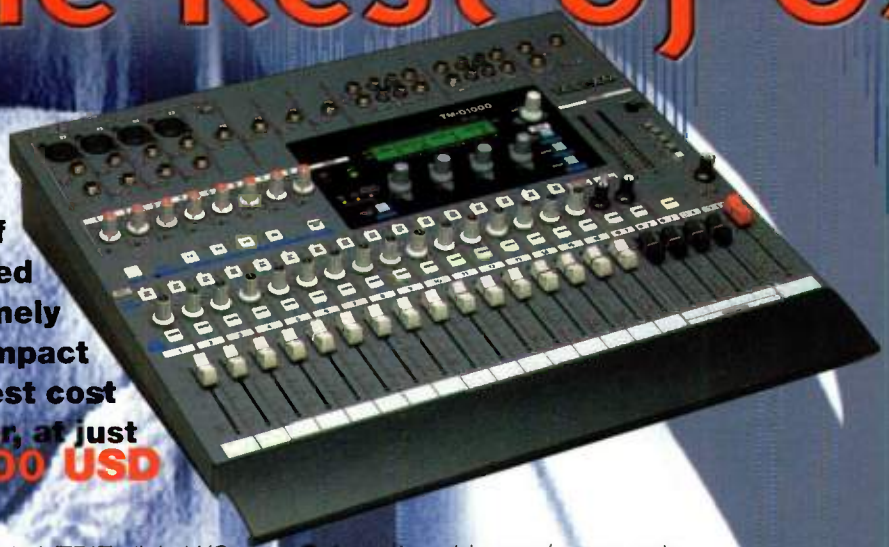

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# COMPUTER-BASED DAWS

| Manufacturer | Product | Analog I/O | Digital I/O | Platform Version | Bus Type | Plug-In Format(s) Supported | Sample Rate | A/D/A Converter/ Bit Rate | Digital Recorder Resolutions (max) | Sync Types | MIDI Control |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aardvark | Aark 20/20+ | 8 1/4" TRS | S/PDIF (RCA, optical, Toslink) | Win 95, 98 | PCI | DirectX | 32, 44.1, 48 kHz | 20-bit | 24-bit | Word clock I/O, S/PDIF, optional ADAT | Yes |
| Aardvark | Aark Direct | 2 1/4"/4 RCA | S/PDIF (RCA) | Win 95, 98 | PCI | DirectX | 32, 44.1, 48 kHz | 20-bit | 24-bit | N/A | Yes |
| Aardvark | Aark Direct Pro | 4 TRS–XLR combo/ 4 1/4", 2 RCA | S/PDIF (RCA) | Win 95, 98 | PCI | DirectX | 32, 44.1, 48 kHz | 20-bit | 24-bit | N/A | Yes |
| Akai | DPS12V2 Digital Personal Studio | 6 1/4" TRS/ 2 RCA, 2 1/4" | 1/1 S/PDIF | N/A | N/A | N/A | 32, 44.1, 48 kHz | 20-bit/24-bit | 16-bit | MIDI clock w/SPP, MTC | Yes |
| Alesis | ADAT/EDIT | N/A | 1/1 ADAT (8-channel) | Win 95, 98, Mac | PCI | ASIO, VST | 44.1, 48 kHz | N/A | 24-bit | ADAT sync (sample-accurate) | Yes |
| Antex | SC-22 | 2/2 | N/A | Win 95, 98, NT | PCI | N/A | 6.25–50 kHz | 20-bit | N/A | LTC, VITC | No |
| Antex | SC2000 | 4/4 XLR | 1/1 AES/EBU (S/PDIF and XLR) | Win NT | PCI | N/A | 6.25–50 kHz | 20-bit | N/A | SMPTE read/write, video | Yes |
| CreamWare | The Pulsar | 2/2 RCA | 8 (x2) ADAT; S/PDIF (optional AES/EBU) | Win 95, 98 | PCI | SCOPE, Pulsar | 32, 44.1, 48, 96 kHz | 20-bit AD/ 24-bit DA | 24-bit (96 kHz supported) | MTC, word clock | Yes |
| CreamWare | TripleDAT | 2 RCA | 2 channels S/PDIF | Win; Mac | ISA | TripleDat | 32, 44.1, 48 kHz | 18-bit | 16-bit | MTC, MIDI clock, word clock | No |
| Creative Labs | SBLive Value Edition | 1/8" mic/line | N/A | Win 95, 98, NT | PCI | EAX | 8–48 kHz | 16-bit | 16-bit | MIDI | No |
| Creative Labs | Sound Blaster Live | 1/8" mic/line | S/PDIF | Win 95, 98, NT | PCI | EAX | 8–48 kHz | 16-bit | 16-bit | MIDI | No |
| Digidesign | Project II Studio | Up to 16 channels | Up to 16 channels | Mac | PCI | N/A | 44.1, 48 kHz | 24-bit | N/A | AVI, MIDI clock, SPP | Yes |
| Digidesign | ProTools/24 | 8–72 channels | 8–72 channels | Mac, Win NT | PCI | Audio Suite, TDM | 44.1, 48 kHz | 24-bit (with 8) 88/24 I/O | N/A | Requires USD or other sync device | Yes |
| Digidesign | ProTools/24 MIX & MIX Plus | 8–72 channels | 8–72 channels | Mac, Win NT | PCI | Audio Suite, TDM | 44.1, 48 kHz | 24-bit (with 888/24 I/O) | N/A | Requires USD or other sync device | Yes |
| Digidesign | Tool Box Mac | 2/2 | 2/2 | Mac | PCI | Audio Suite | 44.1, 48 kHz | 16-bit | N/A | N/A | Yes |
| Digidesign | Tool Box Windows | 2/2 | 2/2 | Win 3.1, 95, 98, NT | PCI | N/A | 44.1, 48 kHz | 16-bit | N/A | AVI, MIDI clock, SPP | Yes |
| Digigram | VX Pocket Sound Card for Laptops | Stereo, balanced full duplex | S/PDIF | Win; Mac | PCMCIA | DirectX (Win) | 8–48 kHz | 24-bit | N/A | N/A | No |
| Digigram | VX222 Professional Sound Card | 2/2 XLR | 2/2 S/PDIF or AES/EBU | Win; Mac | PCI | N/A | 11.025, 8, 16, 22.05, 24, 32, 44.1, 48 kHz | 24-bit | 24-bit | N/A | No |
| Digital Audio Labs | CardDeluxe | 2/2 1/4" TRS | S/PDIF (gold-tipped RCA) | Win (Mac support tba) | PCI | Active Movie, DirectX | 8, 11.025, 22.05, 32, 44.1, 48, 88.2, 96 kHz | 24-bit/128x, 24-bit/64x | 24-bit | Internal, external digital | No |
| Digital Audio Labs | V8 System | Up to 16/16 1/4" TRS | S/PDIF (coaxial/ optical); ADAT (optical) | Win | ISA; PCI | V8 native plug-ins only (Waves, Antares) | 44.1, 48 kHz (variable with external clock) | 16-bit/64x; 20-bit/8x | 16-bit | External sync to LTC/ VITC, WC (w/Timing Gear option); ADAT, TDIF | No |
| E-mu Systems | APS | 4/2 | 2 S/PDIF | Win 95, 98, NT | PCI | DirectX; VST via ASIO drivers | 8–48 kHz | 20-bit | 20-bit (48 kHz)/ 32-bit (internal) | MTC | Yes |

| Tracks/Virtual Tracks | # of Locate Points | Main Synth Chip Set | # of Programs ROM/RAM | Sample ROM/RAM | Polyphony/ Multitimbral | Effects/ Dynamic Processing | Additional Features | Options | Price |
|---|---|---|---|---|---|---|---|---|---|
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | Shielded break out box w/outboard A/DC; Steinberg ASIO drivers; virtual monitor mixer | ADAT; TDIF; AES/EBU; 19" rack mount | $899 |
| N/A | N/A | N/A | N/A | N/A | N/A | Yes/Yes | Virtual monitor mixer | AES/EBU; 19" rack mount | $425 |
| N/A | N/A | N/A | N/A | N/A | N/A | Yes/Yes | Virtual monitor mixer | AES/EBU, 19" rack mount | $645 |
| 12/250 | 112 | N/A | N/A | N/A | N/A | Yes/Yes (optional) | Burn audio CDs; MIDI automated mixing | Internal 2 GB hard disk; EBZM internal stereo FX processor | $1,499 |
| 8/12 | 4 | N/A | N/A | N/A | N/A | N/A | Transfers and editing from ADAT AI3 20-bit analog/optical interface | | $399 |
| 4/0 | N/A | N/A | N/A | N/A | N/A | N/A | Multi-card capability; Wintel & Alpha compatible | | $595 |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | Video burning | | $895 |
| Software dependent | Software dependent | Analog Devices SHARC | Software dependent | Uses host RAM and AKAI CD-ROMs | Up to 64 (more optional) | Yes/Yes | 32-channel digital mixer; internal/external routing of hardware/software | Library of programmable synths and other virtual devices | $1298 |
| 0/256 | 99 | N/A | N/A | N/A | N/A | Yes/Yes | CD writing; warp mode (patch FX to/from external devices; record/play on analog and digital chans simultaneously | FireWalkers Effects plug-ins; Osiris Audio Restoration Software plug-ins | $998 |
| N/A | N/A | E-mu | 1,000+ | N/A | 256 voices (software)/ 32 channe s | Yes/Yes | Game software | | $99 |
| N/A | N/A | E-mu 10K1 | 1,000+ | N/A | 256 voices (software)/ 32-channel | Yes/Yes | Software bundle: Cakewalk, Sound Forge Mixman; digital I/O card | | $199 |
| 16/128 | Infinite | N/A | N/A | 0/32 MB | 32 voices/Yes (SampleCell II Plus) | N/A | Project II PCI card; choice of 882/20 or ADAT Bridge I/O; SampleCell II Plus; Logic Audio AV; MasterList CD | Sample libraries | $2,495 |
| 32–64/128 | Infinite | N/A | N/A | N/A | N/A | Yes/Yes | Pro Control support; Digi Rack plug-ins (EQ, dyn, etc.) | DSP Farm PCI; 688/24 and 882/20 ADAT bridge I/O | $5,995 |
| 64/128 | Infinite | N/A | N/A | N/A | N/A | Yes/Yes | Pro Control support; Digi Rack plug-ins incl (EQ, dyn, etc.) | MIX Farm card (DSP); MIXI/O card; 888/24, 882/20, or ADAT bridge I/O | $7,995 (MIX plus) $9,995 |
| 16/128 | Infinite | N/A | N/A | N/A | N/A | N/A | D-fx; D-F1; Peak LE; SFX Machine Lite; Audio Media III card; ProTools | Audio Suite plug-ins; Master List CD; Sound Designer II; Sample Cell II Plus | $895 |
| 16/128 | Infinite | N/A | N/A | N/A | N/A | N/A | Audiomedia III card; Session; Logic Audio AV; Sound Forge XP; Avid Rock | | $549 |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | $729 |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | Two general-purpose interface inputs/outputs | | $549 |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | Multiple-card support | | $595 |
| 16/0 | N/A | N/A | N/A | N/A | N/A | N/A | A V8 system consists of the main board and one V8 I/O device | Big Block I/O, 8 in/8 out ($1995); MDM custom for ADAT ($695); MDM custom for DA88 ($795); Deuce Coupe ($695) | Starts at $2,500 |
| N/A | N/A | E-mu 10K1 | 0/unlimited | 0/32 MB | 64/32 | Yes/Yes | Drive bay I/O; guitar/mic inputs | Separate headphone out w/volume control | $699 |

# COMPUTER-BASED DAWS

| Manufacturer | Product | Analog I/O | Digital I/O | Platform Version | Bus Type | Plug-In Format(s) Supported | Sample Rate | A/D/A Converter/ Bit Rate | Digital Recorder Resolutions (max) | Sync Types | MIDI Control |
|---|---|---|---|---|---|---|---|---|---|---|---|
| E-mu Systems | PCMCIA Card 8712 | 1/8" (mono mic input) | 8 S/PDIF optical output (Toslink) | Win 95, 98 | PCMCIA Type II | N/A | 11,025, 22,050, 44.1 kHz (play/record) | 16-bit | 16-bit | MTC | Yes |
| EGO-Systems | WaMi Box | 2/4 RCA | 2/2 S/PDIF (optical and coaxial) | Win 95, 98, 2000, NT | PCMCIA | DirectX | 4–44.1 kHz | 20-bit | 16-bit (internal)/ 20-bit output | MTC | Yes |
| EGO-Systems | WaMi Rack | 2/8 1/4" TRS | 2/2 S/PDIF (optical and coaxial) | Win 95, 98, 2000 | PCI | DirectX | 32–50 kHz | 20-bit | 24-bit | SMPTE; MTC; word clock; Superclock | Yes |
| EGO-Systems | Waveterminal | 2/2 1/4" TRS | 2/2 S/PDIF (coaxial) | Win 95, 98, 2000, NT | PCI | DirectX | 32–50 kHz | 20-bit | 24-bit | Internal; S/PDIF digital; multicard sync | No |
| Emagic | Audiowerk8 | 2/8 RCA | 1/1 S/PDIF | N/A | PCI | N/A | 32–50 kHz | 18-bit | N/A | Digital in | No |
| Ensoniq | Paris 2 (442) | 4/4 | 2 S/PDIF | Mac; Win 95, 98 | PCI | DirectX; VST | 44.1, 48 kHz | 20-bit | 24-bit | MTC; word clock | Yes |
| Ensoniq | Paris 3 | 8/8 1/4"TRS per module | S/PDIF; ADAT module | Mac; Win 95, 98 | PCI | DirectX; VST | 44.1, 48 kHz | 24-bit | 24-bit | MTC; SMPTE; ADAT (master only); word clock | Yes |
| Ensoniq | Paris Concept | 2/2 | N/A | Mac; Win 95, 98 | PCI | DirectX; VST | 44.1, 48 kHz | 20-bit | 24-bit | MTC | Yes |
| Event Electronics | Darla | 2/8 RCA | N/A | Mac; Win | PCI | N/A | 32, 44.1, 48 kHz | 20-bit | N/A | N/A | No |
| Event Electronics | Gina | 2/8 1/4" | 1/1 stereo RCA | Mac; Win | PCI | N/A | 32, 44.1, 48 kHz | 20-bit | 24-bit | S/PDIF clock | No |
| Event Electronics | Layla | 8/10 1/4" TRS balanced | 1/1 stereo RCA | Mac; Win | PCI | N/A | 8–50 kHz | 20-bit | 24-bit | S/PDIF clock; word clock; Superclock; MTC | Yes |
| Frontier Design | Dakota | Available with Tango 24 (8/8) or Zulu (4/8) external converters | 16/16 ADAT optical (exp to 32/32); 2/2 S/PDIF (Toslink or RCA ) | Win 95, 98 | PCI | N/A | 44.1 or 48 kHz internal; locks to digital inputs from 39–51 kHz | 24-bit on Tango 24; 20-bit on Zulu | 24-bit | ADAT 9-pin sync in; MTC; SODA 9 (SMPTE on digital audio); other sync optional | No |
| Frontier Design | Wave Center | Available with Tango 24 (8/8) or Zulu (4/8) external converters | 8/8 ADAT optical (exp to 16/16); 2/2 S/PDIF (Toslink or RCA) | Win 95, 98 | ISA | N/A | 44.1 or 48 kHz internal; locks to digital inputs from 39–51 kHz | 24-bit on Tango; 20-bit on Zulu | 24-bit | MTC | No |
| Gadget Labs | Wave/824 Digital Recording Interface | 8/8 | 2/2 | Win 95, 98, NT, Mac | PCI | N/A | 22, 32, 44.1, 48 kHz | 24-bit | 24-bit | MTC; word clock | No |
| Guillemot | Maxi Studio Isis | 8/4 1/4" | 2/2 S/PDIF optical and coaxial | Win | PCI | DirectX | 32, 44.1, 48 kHz (master or slave) | 20-bit | 16-bit | MTC, MC | Yes |
| Korg | 12/12 IO | 1/4" TRS in/out | ADAT optical; S/PDIF | Mac; Win | PCI | N/A | 44.1, 48 kHz | 20-bit, 18-bit | 20-bit via S/PDIF; 16-bit via ADAT | ADAT 9 pin sync; word clock I/O (BNC) | No |
| Mark of the Unicorn | MOTU Audio 2408 | 8/2 | 3x8-ch TDIF; 3x8-ch ADAT; 1/2 S/PDIF | Mac; Win | PCI | N/A | 44.1, 48 kHz | 20-bit | 24-bit | Internal; word clock; Lightpipe; ADAT sync; control track (DTP sync) | No |
| Micro Technology | MicroSound/ Krystal | 2/2 | AES/EBU; S/PDIF | Win | PCI | DirectX | 8, 9.45, 10, 11.025, 12, 16, 128.9, 20, 22.05, 24, 32, 37.8, 40, 44.1, 48 kHz | N/A | 24-bit | Video blackburst, SMPTE (all) | No |
| Midiman | DMan 2044 | 4/4 1/4" | N/A | Win 95, 98 | PCI | ASIO; DirectX | 44.1, 48 kHz | 20-bit | 16-bit | N/A | No |
| Midiman | DMan PCI | 2/2 RCA gold | N/A | Win 95, 98, NT | PCI | MME; DirectX | 44.1, 48 kHz | 18-bit | 16-bit | MIDI | Yes |

| Tracks/Virtual Tracks | # of Locate Points | Main Synth Chip Set | # of Programs ROM/RAM | Sample ROM/RAM | Polyphony/ Multitimbral | Effects/ Dynamic Processing | Additional Features | Options | Price |
|---|---|---|---|---|---|---|---|---|---|
| N/A | N/A | E-mu | 0/unlimited | N/A | 32/16 | Yes/Yes | Software package | | $395 |
| N/A | N/A | Atmel RISC DSP | 0/16 | N/A | 64/32 | Yes/Yes | Mic Pre w/effects; 4-ch surround; headphone amp; DirectX; Pro3D; sample-rate converter | AES/EBU converter; 24-bit A/D–D/A box | $599 |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | SMPTE read/write; 8 audio-signal LEDs | AES/EBU converter; 24-bit A/D–D/A box | $699 |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | 32-bit PCI bus-mastering; WDM driver with DirectX; Win 2000 ready | AES/EBU Converter; 24-bit A/D–D/A box | $349 |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | Logic Audio Discovery; VMR; Cool Edit Pro LE (Windows only) and Zap (Mac only) | | $799 |
| 16/128 | 99 | N/A | N/A | N/A | N/A | Yes/Yes | Hardware control surface w/full complement of faders, knobs, and switches | Upgrade path to Modular Expansion Chassis (MEC) | $3,395 |
| 128 | 99 | N/A | N/A | N/A | N/A | Yes/Yes | Control surface w/full complement of controls | Additional inputs/outputs; ADAT sync/IO; SMPTE | $3,895 |
| 16/128 | 99 | N/A | N/A | N/A | N/A | Yes/Yes (optional) | Can be fully upgraded w/Paris MEC | FX (EDS-FX) | $1,299 (Concept FX) $1,799 |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | Detachable RCA breakout box; multitrack recording/editing software included | | $449 |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | Multitrack recording/editing software included | | $599 |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | Multitrack recording/editing software included | | $1,099 |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | MIDI 2/2 (expandable to 8/8 w/optional Sierra box); includes Cool Edit Pro SE | Bundle prices avail w/Tango or Zulu | $649 |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | MIDI 1/3 (1 input, 3 independent outputs); input monitoring (ADAT, S/PDIF) | Bundle prices avail w/Tango or Zulu | $399 |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | MIDI port included; optional S/PDIF card | S/PDIF card w/optical I/O and word clock | (Win) $499.95; (Mac) $599.95 |
| 8/infinite | N/A | RISC-based Dream-9707 | 368/0 | 0/4–36 MB | 64 | Yes/No | MIDI I/O/T (external rack) | | $399 |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | $900 |
| N/A | 11 | N/A | N/A | N/A | N/A | Yes/Yes | Stand-alone format converter; supports audio transfer via ADAD or digital timepiece sync | Additional I/O boxes available for a total of 72 inputs/outputs ($695) | $995 |
| Unlimited | 32 | N/A | N/A | 284 KB | N/A | Yes/Yes | | Noise remove; time change; pitch change; sample rate converter Karaoke mastering | Starts at $2,395 |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | $349.95 |
| N/A | N/A | Crystal | 128 | N/A | 64/16 | Yes (synth only)/No | MIDI; internal CD-ROM connection | | $179.95 |

# COMPUTER-BASED DAWS

| Manufacturer | Product | Analog I/O | Digital I/O | Platform Version | Bus Type | Plug-In Format(s) Supported | Sample Rate | A/D/A Converter/ Bit Rate | Digital Recorder Resolutions (max) | Sync Types | MIDI Control |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mytek Digital | DAW 9624 | 8/8 XLR (expandable) | 4 AES/EBU and ADAT (optional TDIF) | Mac; Win 95, NT; BEOS; Linux | PCI | VST; DirectX | 44.1, 48, 88.2, 96 kHz | 24-bit | 32-bit (depends on software) | Word clock; video; (SMPTE w/extra hardware) | Yes |
| Peavey | StudioMix | 8 RCA | N/A | Win 95, 98, NT | N/A | DirectX | Up to 48 kHz | N/A | 32-bit | SMPTE; MTC | Yes |
| Precision Analog Systems | SRD-1 Sample Rate Converter | N/A | N/A | N/A | N/A | N/A | All | N/A | N/A | Word clock; Superclock | No |
| SADiE | Artemis | 8, 16, 24 channels (balanced) | 8, 16, or 24 AES/EBU | Win | N/A | Cedar; Syncroarts; DirectX; Waves | Up to 192 kHz | 20-bit | 32-bit (floating point) | SMPTE; VITC; AES sync | No |
| SEK'D | ARC44 | 4/4 | N/A | Win 95,98 | ISA | N/A | 44.1, 48 kHz | 16-bit | N/A | Multicard | No |
| SEK'D | ARC88 | 8/8 | Toslink; S/PDIF | Win 95, 98, NT; Mac | PCI | N/A | 32, 44.1, 48 kHz | 16-bit | 24-bit | S/PDIF (dual card) | No |
| SEK'D | PRODIF 24 | 1 TRS out | Toslink; 1/4" TRS; AES/EBU | Win 95, 98 | ISA | N/A | 32, 44.1, 48 kHz | 18-bit | 24-bit | AES/EBU; S/PDIF (dual card) | No |
| SEK'D | PRODIF Gold | N/A | Optical Toslink and coaxial S/PDIF; AES/EBU | Win 95, 98, NT; Mac; ASIO | PCI | N/A | 32, 44.1, 48 kHz | N/A | 24-bit | ADAT PLL lock (up to 3 cards) | No |
| SEK'D | PRODIF Plus | 1/1 | S/PDIF; AES/EBU; ADAT | Win 95, 98, NT; Mac; ASIO | PCI | N/A | 11–96 kHz | 20-bit | 24-bit (96K) | ADAT PLL lock; AES; S/PDIF | No |
| SEK'D | Prodif 32 | N/A | Optical Toslink & Coaxial S/PDIF; AES/EBU | Win 95, 98, NT; Mac; ASIO | PCI | N/A | 32, 44.1, 48 kHz | N/A | 24-bit | AES/EBU; S/PDIF | No |
| SEK'D | Prodif 96 | 1 stereo in, 96K | S/PDIF; AES/EBU; Toslink | Win 95, 98, NT; Mac | PCI | N/A | 32–96 kHz | 20-bit | 24-bit (96 kHz) | AES; S/PDIF | No |
| SEK'D | Prodif 96 Pro | 1/1 stereo 96K | S/PDIF; AES/EBU; ADAT | Win 95, 98, NT; Mac | PCI | N/A | 11–96 kHz | 20-bit | 24-bit (96 kHz) | Word clock in; ADAT PLL lock; AES; S/PDIF | No |
| SEK'D | Samplitude 2496 | Unlimited | Unlimited | Win 95, 98, NT | N/A | DirectX | 32, 44.1, 48, 88.2, 96 kHz | N/A | 32-bit (floating point) | MIDI clock; MTC; SMPTE (all rates) | Yes |
| Sonorus | STUDI/O | Stereo monitor output | 16 via 2x8 optical interfaces | Win 95, Win NT; Mac; BEOS | PCI | N/A | 44.1, 48, 88.2, 96 kHz | N/A | 24-bit | MTC in, or sample-accurate via optional backplate | No |
| Voyetra | Montego II Home Studio | 1/2 | S/PDIF (RCA or optical) | Win 95, 98, NT 4.0 | PCI | N/A | Up to 48 kHz | 18-bit | 18-bit | SMPTE; MTC | Yes |
| Voyetra | Multisound FIJI | 2/2 | Optional S/PDIF I/O | Win 95, 98, NT 4.0 | ISA | N/A | Up to 48 kHz | 20-bit | 20-bit | N/A | No |
| Voyetra | Multisound Pinnacle | 2/2 | Optional S/PDIF I/O | Win 3.1, 95, 98, NT 4.0 | ISA | N/A | Up to 48 kHz | 20-bit | 20-bit | SMPTE; MTC | Yes |
| Voyetra | Pinnacle Project Studio | 3/1 | Coaxial S/PDIF | Win 3.1, 95, 98, NT 4.0 | ISA | N/A | Up to 48 kHz | 20-bit | 20-bit | SMPTE; MTC | Yes |
| Xytar | Audio Digital Mastering System (ADMS) | 2/2, 4/4, 8/8 or 16/16 | 1, 2, 4 or 8 S/PDIF | Stand alone | N/A | Proprietary | 11, 22.050, 32, 44.100, 48 kHz | 20-bit | 16-bit | MTC; SMPTE; 30d; 30nd; 29.97d; 29.97nd | Optional |
| Xytar | Audio Digital Mastering System 32 (ADMS32) | 2/2, 4/4, 8/8, 16/16, 24/24 or 32/32 | 1, 2, 4, 8, 12 or 16 S/PDIF | Stand alone | N/A | Proprietary | 11, 22.050, 32, 44.100, 48 kHz | 20-bit | 16-bit | MTC; SMPTE; 30d; 30nd; 29.97d; 29.97nd | Optional |
| Yamaha | DSP Factory | 2/2 RCA | 2/2 S/PDIF or AES/EBU (coaxial) | Win 95, 98, NT; Mac PPC | PCI | Software Dependent | 44.1, 48 kHz | 20-bit | 32-bit (16 and 20-bit available) | Software/hardware dependent | Software dependent |
| Zefiro Acoustics | ZA2 | 0/1 RCA | Optical and coaxial S/PDIF ; AES/EBU | Win 95, 98, NT; DOS 3.1 | ISA | N/A | 8–60 kHz | 16-bit (D/A) | 24-bit | Superclock; word clock | No |

| Tracks/Virtual Tracks | # of Locate Points | Main Synth Chip Set | # of Programs ROM/RAM | Sample ROM/RAM | Polyphony/ Multitimbral | Effects/ Dynamic Processing | Additional Features | Options | Price |
|---|---|---|---|---|---|---|---|---|---|
| 8 (expandable to 64) | N/A | N/A | N/A | N/A | N/A | Optional | Runs most third party software packages | | $6,495 |
| 8/256 | 20 | N/A | N/A | N/A | N/A | Yes/Yes | MIDI | | $899 |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | $149.95 |
| Variable/ unlimited | Unlimited | N/A | N/A | N/A | N/A | Yes/Yes | Surround panning; full automation; PQ editing; MMC | Portia nonlinear video playback | $15,495 (turnkey, includes PC) |
| 4/0 | N/A | N/A | N/A | N/A | N/A | N/A | Input gain amp | | $319 |
| 8/0 | N/A | N/A | N/A | N/A | N/A | N/A | Input gain amp | | $639 |
| 2/0 | N/A | N/A | N/A | N/A | N/A | N/A | | | $319 |
| 8/0 | N/A | N/A | N/A | N/A | N/A | N/A | Digital CD-ROM input | | $559 |
| 10/0 | N/A | N/A | N/A | N/A | N/A | N/A | Digital CD-ROM input | | $450 |
| 2/0 | N/A | N/A | N/A | N/A | N/A | N/A | Digital input from CD-ROM | | $479 |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | Digital input from CD-ROM | | $639 |
| 10/0 | N/A | N/A | N/A | N/A | N/A | N/A | Digital input from CD-ROM | | $699 |
| 999 | 99 | N/A | N/A | N/A | N/A | Yes/Yes | | | $799 |
| 16/0 | N/A | N/A | N/A | N/A | N/A | N/A | | I/O backplate ($149) | $849 |
| System dependent | N/A | Aureal 8830 | N/A | N/A | 128/256 | Yes/Yes | Digital Orchestrator Pro; Roland GS compliant wavetable daughter card | | $299 |
| System dependent | N/A | N/A | N/A | N/A | N/A | Yes/No | Digital Orchestrator SE | S/PDIF digital I/O; MIDI synth module | $299.95 |
| System dependent | N/A | N/A | N/A | Up to 48 MB | 64 | N/A | Digital Orchestrator SE | S/PDIF digital I/O; MIDI synth module | $349.95 |
| System dependent | N/A | N/A | N/A | Up to 48 MB | 64 | Yes/No | Digital Orchestrator Pro; Kurzweil wavetable sampler; Pinnacle patch editor, librarian | | $459.95 |
| 16/unlimited | Unlimited | N/A | N/A | N/A | N/A | Y/Y | 17" 1600X1200 monitor; CD master burner; 3 hours of 2, 4, 8 or 16-channel recording; JAZ drive; CD reader for direct CD copy | Voice command/readback for sight impaired users; 24 or 32-track analog mic input mixer | $3,499 to $9,999 |
| 16 or 32/unlimited | unlimited | N/A | N/A | N/A | N/A | Y/Y | 17" 1600X1200 monitor; CD master burner; 3 hours of 2, 5, 8, 16, 24 or 32-channel recording; JAZ drive; CD reader for direct CD copy | Voice command/readback for sight impaired users; 24 or 32-track analog mic input mixer | $5,499 to $18,999 |
| 16/software dependent | Software dependent | N/A | N/A | N/A | N/A | Yes/Yes | Real-time mixing; 2 card cascade for 32-track playback; all parameters can be automated | AX44 Analog audio expansion ($299); AX88 24-bit audio expansion ($999); AX16-AT ADAT expansion ($299) | $999 |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | Automatic digital sample rate conversion | | $495 |

# MINIDISC AND CASSETTE MULTITRACKS

| Manufacturer | Product | Format | # of Tracks/ Simultaneously | Mixer Configuration | Channel Inputs | # of Mic Trims | EQ (type) | # of Aux Sends/ Aux Returns | # of Direct Outs/Inserts |
|---|---|---|---|---|---|---|---|---|---|
| Fostex | X-24 | Cassette | 4/4 | 4x2 | (2) 1/4"; (2) XLR | 2 | N/A | N/A | N/A |
| Fostex | X-34 | Cassette | 4/4 | 4x2 | (4) 1/4"; (2) XLR | 2 | High and low shelving | 2/2 (stereo) | 4/2 |
| Sony | MDM-X4 MKII | MiniDisc | 4/4 | 10x4 | (10) 1/4"; (2) XLR | 4 | 3-band | 2/2 (stereo) | 4/0 |
| TASCAM | 414 Portastudio | Cassette | 4/4 | 4x2 | (8) 1/4" | 4 | High and low shelving | 2/2 | N/A |
| TASCAM | 424 MKII Portastudio | Cassette | 4/4 | 8x2 | (4) 1/4"; (4) XLR | 4 | 3-band w/mid sweep | 2/2 | N/A |
| TASCAM | 488 MKII Portastudio | Cassette | 8/4 | 12x4x2 | (8) 1/4"; (2) XLR; (2) 1/4" TRS | 4 | 3-band w/mid sweep | 2/2 | N/A |
| TASCAM | 564 Digital Portastudio | MiniDisc | 4/4 | 12x2 | (12) 1/4"; (4) XLR | 4 | 3-band w/mid sweep | 2/2 | 4/2 |
| TASCAM | Porta 02 | Cassette | 4/2 | 4x2 | (2) 1/4" | 2 | N/A | N/A | N/A |
| Yamaha | MD4 | MiniDisc | 4/4 | 8x4 | (4) 1/4" | 4 | 3-band parametric | 1/2 | 4/0 |
| Yamaha | MT4X | Cassette | 4/4 | 4x2 | (5) 1/4" | 4 | 3-band parametric | 2/4 | 4/0 |
| Yamaha | MT50 | Cassette | 4/4 | 4x2 | (5) 1/4" | 4 | High and low shelving | 1/2 | 4/0 |

# MODULAR DIGITAL MULTITRACKS

| Manufacturer | Model | Tape Format | ADC | DAC | Sampling Rate | Frequency Response | Dynamic Range | Signal-to-Noise Ratio | Crossfade Times |
|---|---|---|---|---|---|---|---|---|---|
| Alesis | LX20 20-Bit Digital Audio Recorder | S-VHS | 20-bit/64x | 20-bit/64x | 44.1, 48 kHz | 20 Hz–20 kHz (±0.5 dB) | 97 dB | N/A | 11, 21, 32, 43 ms |
| Alesis | M20 20-Bit Digital Audio Recorder | S-VHS | 20-bit/64x | 24-bit/128x | 44.1, 48 kHz | 20 Hz–20 kHz (±0.5 dB) | D/A: 102 dB A/D: -115dB | N/A | 5.4 ms–1.37 sec |
| Alesis | XT20 20-Bit Digital Audio Recorder | S-VHS | 20-bit/128x | 24-bit/128x | 44.1, 48 kHz | 20 Hz–20 kHz (±0.5 dB) | 102 dB | N/A | 11, 21, 32, 43 ms |
| HHB | HHB Genex 8000 (digital only) | Magneto optical disk | 20-bit | 20-bit | 32.0, 44.056, 44.1, 47.952, 48 kHz | N/A | N/A | N/A | N/A |
| HHB | HHB Genex GX8500 | Magneto optical disk or HD | 24-bit | 24-bit | 32.0, 44.1, 48, 88.2, 96, 126.4, 192 kHz | 1 Hz–20 kHz | N/A | N/A | N/A |
| Studer | Studer V-Eight | S-VHS ADAT type II | 24-bit | 24-bit | 44.1, 48 kHz | 20 Hz–20 kHz (±0.3 dB) | A/D: 105 dB, D/A: 100 dB | N/A | 5.4 ms–1.4 sec |
| TASCAM | DA-38 | Hi 8 | 18-bit/64x | 20-bit/8x | 44.1, 48 kHz | 20 Hz–20 kHz (±0.5 dB) | >92 dB | >92 dB | 10–90 ms (in 10 ms steps) |
| TASCAM | DA-88 | Hi 8 | 16-bit/64x | 18-bit/8x | 44.1, 48 kHz | 20 Hz–20 kHz (±0.5 dB) | >92 dB | >92 dB | 10–90 ms (in 10 ms steps) |

| # of Locate Points | Tape Speed (ips) | Pitch Control Range | Noise Reduction (type) | Frequency Response | Signal-to-Noise Ratio | Total Harmonic Distortion | Price |
|---|---|---|---|---|---|---|---|
| N/A | 3-3/4 | ±15% | Dolby B | Mixer: 20 Hz–20 kHz; recorder: 40 Hz–14 kHz | 58 dB | 2% | $389 |
| N/A | 3-3/4 | ±50% ±12% | Dolby B | Mixer: 20 Hz–20 kHz; recorder: 40 Hz–14 kHz | 58 dB | 2% | $499 |
| 11 | N/A | ±8% | N/A | 5 Hz–20 kHz | >94 dB | N/A | $895 |
| 1 | 3-3/4 | ±12% | dbx Type II | 40 Hz–16 kHz | 85 dB | 1% (@1 kHz) | $449 |
| 2 plus RTZ | 3-3/4 | ±12% | dbx Type II | 40 Hz–16 kHz | 95 dB w/dbx | 1% (@1 kHz) | $599 |
| 2 plus RTZ | 3-3/4 | ±12% | dbx Type II | 20 Hz–22 kHz | 95 dB w/dbx | 1.3% (@400 Hz) | $1 499 |
| 20 | N/A | ±9.9% | N/A | 20 Hz–20 kHz | >88 dB | <0.008% | $1,499 |
| N/A | 1-7/8 | N/A | N/A | 40 Hz–12.5 kHz | 60 dB | 1.5% (@1 kHz) | $199 |
| 10 | N/A | ±6% | N/A | 20 Hz–20 kHz | 85 dB | 0.01% (@1 kHz) | $1,999 |
| 3 | 1-7/8; 3-3/4 | ±10% | dbx | Mixer: 20 Hz–20 kHz; recorder: 40 Hz–18 kHz | 85 dB w/dbx | 2% (@400 Hz) | $599 |
| 1 | 3-3/4 | ±10% | dbx | Mixer: 20 Hz–20 kHz; recorder: 40 Hz–16 kHz | 85 dB w/dbx | 1.5% (@400 Hz) | $479 |

| # of Locate Points | Total Harmonic Distortion | Channel Crosstalk | Analog I/O | Digital I/O | Onboard Sync | Jog/Shuttle Control | Special Features | Options | Price |
|---|---|---|---|---|---|---|---|---|---|
| 5 | >.009% | OK | RCA-10 | Alesis 8-channel optical digital interface | ADAT | No | Auto-punch; rehearse mode: loop | BRC master remote control; ADAT PCR Persona Computer Recording System | $1,899 |
| 99 | >.003% | <90 dB | +4 dBu on Elco (8/8); +4 dBu on XLR | Alesis 8-channel optical digital interface | ADAT; SMPTE/EBU | Yes | Auto-punch; rehearse mode; loop; track copy; TC track; aux track | CADI Controller Autolocator; Desktop Interface; Digital Remote Meter | $4,999 |
| 10 | <.005% | <-90 dB | +4 dBu on Elco (8/8); RCA-10 | Alesis 8-channel optical digital interface | ADAT | No | Auto-punch; rehearse mode; loop; track copy | BRC master remote/ synchronizer; Personal Computer Recording System | $2 599 |
| 0 | N/A | N/A | N/A | AES/EBU; XLR; IEC; 958 Type II; RCA | LTC, Video, word clock, AES/EBU, ITC958II | Yes | SCSI 50 pin; up to 96 kHz w/external converters | | $6 860 |
| 100 | N/A | N/A | Bal +4 on 25-pin D-sub (8/8); AD 8-in, DA 8-out | S/PDIF 2; AES; DSD | LTC, Biphase, Video, word clock | Yes | Varispeed; Ethernet; Scg 50-pin | | $8,035 w/o drive |
| 100 | A/D: 105 dBfs, D/A: 100 dBfs (@ 1 kHz "A" weighted) | <90 dB | XLR and Elco | ADAT optical; AES optical | Word clock; video; digital in; SMPTE in; SMPTE reader/generator; Sony 9-pin RS-422 | Yes | Linear aux track; SMPTE track; monitor mixer | Cockpit remote control; remote meters | $8,495 |
| 2 plus RTZ | < 0.008% | <-90 dB | Bal +4 dBm on 25-pin D-sub (8/8); RCA -10 dBu (8/8) | TDIF on D-sub | N/A | Yes | Electronic patch bay; digital track copy | MMC-38 MIDI interface; AES/EBU or S/PDIF w/optional interface | $3,499 |
| 2 plus RTZ | 0.007% | <-90 dB | Bal +4 dBm on 25-pin D-sub (8/8); RCA -10 dBu (8/8) | TDIF | See options | Yes | 108 minutes of record/playback time with standard 120 tape | RC-848 controllers; 54-84 sync card; IF series dgtl interfaces; AES/EBU or S/PDIF w/optional interface | $4,799 |


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# DIGITAL MIXDOWN MACHINES

| Manufacturer | Model | Type | Sampling Frequency | Playback Frequency | ADC | DAC | Analog I/O | Digital I/O | Time Code | SCMS | Separate Mic Input | Write/Read Speed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Denon | DMD-1300P | MiniDisc | 32, 44.1, 48 kHz | 44.1 kHz | 20-bit | 20-bit | RCA | S/PDIF; Toslink | No | Yes | No | 1x |
| Denon | DN-M1050R | MiniDisc | 32, 44.1, 48 kHz | 44.1 kHz | 16-bit | 18-bit | XLR; RCA | AES/EBU; S/PDIF (RCA) | Optional SMPTE kit (ACD-27MS) | Yes, defeatable | No | 1x |
| Denon | DN-M2000R | MiniDisc | 44.1 kHz | 44.1 kHz | 16-bit | 18-bit | RCA | S/PDIF (RCA) | No | Yes, defeatable | No | 1x |
| Denon | DN-M2300R | MiniDisc | 44.1 kHz | 44.1 kHz | 16-bit | 18-bit | XLR, RCA | AES/EBU; S/PDIF (RCA) | Optional SMPTE kit (ACD-27MS) | Yes, defeatable | No | 1x |
| Fostex | CR-300 | CD-R; CD-RW | 32, 44.1, 48 kHz | 44.1 kHz | N/A | N/A | RCA; XLR | AES/EBU; S/PDIF (optical) | No | N/A | N/A | N/A |
| Fostex | D5 | DAT | 32, 44.1, 48 kHz | 44.1, 48 kHz | 1-bit | 1-bit | XLR | AES/EBU; S/PDIF (optical) | No | No | No | N/A |
| Fostex | D15 | DAT | 44.1, 48 kHz | 44.1, 48 kHz | 18-bit | 18-bit | XLR | AES/EBU | Optional | No | No | N/A |
| Fostex | D25 | DAT | 44.1, 48 kHz | 44.1, 48 kHz | 18-bit | 18-bit | XLR | AES/EBU | Yes (Sub Code) | No | No | N/A |
| Fostex | D30 | DAT | 44.1, 48 kHz | 44.1, 48 kHz | 18-bit | 18-bit | XLR | AES/EBU | Yes (Sub Code Data) | No | No | N/A |
| HHB | CDR800 | CD-R | 32–48 kHz | 44.1 kHz | 16-bit | 16-bit | XLR; RCA | AES/EBU; S/PDIF (optical/RCA) | No | Selectable 0, 1X, or unrestricted | No | Real-time |
| HHB | GENEX MO GX8000(A) | Magneto-optical recorder | 44.1, 48, 88.2, 96 kHz | 44.1, 48, 88.2, 96 kHz | 16–20-bit | 16–20-bit | XLR | 25-pin D Sub | Yes | No | No | Variable |
| HHB | CDR 850 | CD-R; CD-RW | 32–48 kHz | 44.1 kHz | 16-bit | 16-bit | RCA; XLR | AES/EBU; S/PDIF (optical) | Yes | Yes | Yes | Real-time |
| HHB | PDR1000 (TC; TC Plus) | Portable DAT recorder | 32, 44.1, 48 kHz | 32, 44.1, 48 kHz | 16-bit | 16-bit | XLR; RCA | AES/EBU; S/PDIF (RCA) | Optional | No | Yes (XLR) | Real-time or half-speed in LP mode |
| Marantz | PMD650 | Portable | 44.1 kHz | 44.1 kHz | N/A | N/A | Mic/line; RCA | S/PDIF (coax), XLR | No | No | Yes (mic/line swtchbl) | N/A |
| Marantz | Professional CDR620 | CD-R | 12–56 kHz | 44.1 kHz | N/A | N/A | XLR | AES/EBU; S/PDIF (RCA) | No | No | No | 1x (2x write, 4x read via SCSI) |
| Marantz | Professional CDR630 | CD-R; CD-RW | 12–56 kHz | 44.1 kHz | N/A | N/A | XLR, RCA in; RCA out | S/PDIF (optical/RCA) | No | No | No | 1x |
| Marantz | CDR640 | CD-R; CD-RW | 12–56 kHz | 44.1 kHz | 20-bit | N/A | XLR in/out; RCA out | AES/EBU; S/PDIF(coax) | No | Yes | No | N/A |
| Microboards | AudioWrite Pro | CD-R; CD-ROM | 44.1 kHz | 44.1 kHz | 18-bit | N/A | RCA | N/A | No | No | No | 1x (4x w/computer)/1 |
| Microboards | Copywriter A2D | CD-R; CD-ROM | 44.1 kHz | 44.1 kHz | 18-bit | 18-bit | RCA | N/A | No | No | Yes | 4x/8x |
| Panasonic | SV-3800 | DAT | 32, 44.1, 48 kHz | 32, 44.1; 48 kHz (auto) | 18-bit | 20-bit equivalent | XLR | AES/EBU; S/PDIF (optical/RCA) | No | Yes, defeatable | No | N/A |
| Panasonic | SV-4100 | DAT | 32, 44.1, 48 kHz | 32, 44.1, 48 kHz (auto) | 18-bit | 20-bit equivalent | XLR | AES/EBU; S/PDIF (optical/RCA) | Yes (word clock sync) | Yes, defeatable | No | N/A |
| Pioneer Electronic | Elite PDR-99 | CD-R | 32, 44.1, 48 kHz | 44.1 kHz | N/A | N/A | RCA | S/PDIF (optical/RCA) | No | Yes | No | 1x |
| Pioneer Electronic | PDR-04 | CD-R | 44.1 kHz | 44.1 kHz | N/A | N/A | RCA | S/PDIF (optical) | NoA | Yes | No | 1x |
| Pioneer Electronic | PDR-05 | CD-R | 32, 44.1, 48 kHz | 44.1 kHz | N/A | N/A | RCA | S/PDIF (RCA); Toslink (optical) | No | Yes | No | 1x |
| Sony | MDS-DRE1 | MiniDisc | 44.1 kHz | 44.1 kHz | 20-bit/1-bit (ATRAC) | 20-bit/1-bit (ATRAC) | RCA | Optical; coax | No | Yes | No | N/A |
| Sony | MDS-JE520 | MiniDisc | 44.1 kHz | Auto | 20-bit | 20-bit | RCA | S/PDIF (optical); 2-in, 1-out | No | Yes | No | N/A |
| Sony | MZR-55CG | Portable MiniDisc | 44.1 kHz | Auto | 16-bit (ATRAC) | 16-bit (ATRAC) | 1/8" mini | Optical/mini | No | Yes | 1/8" mini stereo | N/A |

| SCSI Connection | Transport Disc Loading | Bundled Software | Disc-at-Once | Frequency Response | Signal-to-Noise Ratio | Total Harmonic Distortion | Special Features | Price |
|---|---|---|---|---|---|---|---|---|
| No | Motor-driven | No | No | 4 Hz–20 kHz | >105 dB | 0.02% | Includes wireless remote | $799 |
| No | Motor-driven | No | No | 20 Hz–20 kHz | >92 dB | 0.012% | External sync; hot-start option; RS232/422 standard PC kybrd cnctr | $1999 |
| No | Manual | No | No | 20 Hz–20 kHz | >92 dB | 0.02% | Hot starts; A-B loop; pitch ±8%; jog/shuttle instruction start cue to music | $949 |
| No | Motor-driven | No | No | 20 Hz–20 kHz | ≥92 dB | ≤0.012% | External sync; hot-start optional; RS232/422; standard PC keyboard connector | $1999 |
| Yes | Stable platter mechanism | No | No | 2 Hz–20 kHz | 90 dB | 0.003% | Data backup for all Fostex HD recorders | $1,399 |
| No | Tray | No | No | 20 Hz–20 kHz | 92 dB | N/A | Supplied infrared remote | $1,029 |
| No | Drawer | No | No | 20 Hz–20 kHz | 92 dB | 0.05% | Parallel port; time code w/video reference; RS422 rack optional | (basic) $3,195 |
| No | Drawer | No | No | 20 Hz–20 kHz | 90 dB | 0.05% | Supports audio channels and varispeed over RS422 port | $7,995 |
| No | Tray | No | No | 20 Hz–20 khz | 92 dB | 0.05% | LED screen; support audio channels/user presets | $ 10,995 |
| No | Stable platter mechanism (manual) | No | Yes | 2 Hz–20 kHz | 105 dB | 0.003% | | $1,595 |
| Yes | MO disc - (manual) | Yes | Yes | 1 Hz–20 kHz | N/A | <-92 dB @ 0 dBfs; <-80dB @ -20 dBfs; <-44 dB @ -60 dBfs | GXR48 remote controller | $9,565 |
| No | Stable platter mechanism (manual) | No | Yes | 20 Hz–20 kHz | 109 dB | 0.0022% | Adjustable auto stop delay; adjustable fade I/O | $1,249 |
| No | 4-head/4-direct drive (manual) | No | Optional | 20 Hz–22 kHz | 90 dB | <0.015% | Time-code version; master sync module and headphone Matrix options | $2,995 TC $6,394 TC Plus $6,995 |
| No | Top-load (pocket type) | No | No | 20 Hz–20 kHz | 85 dB | 0.05% | Sampling frequency converter; phantom power; audio buffer; dual mono recorder | $1,399 |
| Yes (SCSI-2) | Tray | No | Yes | 20 Hz–20 kHz | 95 dB (recording); 120 dB (playback) | N/A | Sampling-rate converter; DAT ID reader; wired remote control; audio delay; digital fader/cascade | $3,600 |
| No | Tray | No | Yes | 20 Hz–20 kHz | 90 dB (recording); 105 dB (playback) | N/A | Sampling-rate converter; 44.1 kHz SRC bypass; remote control; DAT ID reader | $999 |
| No | Tray | No | Yes | 20 Hz–20 kHz | N/A | N/A | Frame accurate rec; pro and consumer formats; DSP control; auto stop; GPI port; CD sync | $1,800 (remote $200) |
| Yes | N/A | No | Yes | 10 Hz–20 kHz | 94 dB | N/A | 4x direct interface accurate computer; 1x drct audio write; MP3 software incl for download from MP3 sites | $649 |
| Yes | N/A | No | No | 20 Hz–20 kHz | N/A | N/A | Analog to digital; mic In | $1,849 |
| No | N/A | No | No | 10 Hz–22 kHz (@ 48 kHz) | >92 dB | <0.007% | Remote control; optional hard-wired control | $1,695 |
| No | N/A | No | No | 16 Hz–22 kHz | >92 dB | <0.007% | Remote control | $2,650 |
| No | Stable platter mechanism | No | No | 2 Hz–20 kHz | 92 dB (recording); 112 dB (playback) | 0.004% (recording); 0.0026% (playback) | Sampling frequency converter allows direct recording from digital sources (48/32 kHz); Legato Link Conversion | $2,000 |
| No | Stable platter mechanism | No | No | 2 Hz–20 kHz | 92 dB (recording); 108 dB (playback) | 0.005% (recording); 0.004% (playback) | Analog source auto level recording | $1,185 |
| No | Stable platter mechanism | No | No | 2 Hz–20 kHz | 92 dB (recording); 112 dB (playback) | 0.004% (recording); 0.0026% (playback) | Sampling frequency converter allows direct recording from digital sources sampled at 48 kHz or 32 kHz | $1,970 |
| No | N/A | No | No | 5 Hz–20 kHz (±0.5 dB) | 96 dB | N/A | DJ-style speed/cue wheel back track rec; loop/reloop; patch speed controls; MD editing | $1,200 |
| No | N/A | No | No | 5 Hz–20 kHz | >96 dB | N/A | Sampling frequency converter allows direct recording from digital sources (48/32 kHz) | $360 |
| No | N/A | No | No | 15 Hz–20 kHz | >96 dB | N/A | Editing/song search; digital sampling rate converter; headphone/rmt; auto-lmtr | $399 |

# DIGITAL MIXDOWN MACHINES

| Manufacturer | Model | Type | Sampling Frequency | Playback Frequency | ADC | DAC | Analog I/O | Digital I/O | Time Code | SCMS | Separate Mic Input | Write/Read Speed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sony | PCM-M1 | DAT | 32, 44.1, 48 kHz | Auto | 16-bit | 16-bit | 1/8" stereo mini (mic/line) | 7-pin (used w/optional cables) | No | No | Yes (1/8" stereo) | N/A |
| Sony | PCM-R300 | DAT | 32, 44.1, 48 kHz | Auto | 20-bit | 16-bit | RCA | S/PDIF (optical and RCA) | No | No | None | N/A |
| Sony | PCM-R500 | DAT | 32, 44.1, 48 kHz | Auto | 20-bit | 16-bit | XLR; RCA | AES/EBU, S/PDIF (RCA) | No | No | None | N/A |
| Sony | TCD-D8 | DAT | 32, 44.1, 48 kHz | Auto | 16-bit | 16-bit | 1/8" stereo | 7-pin connector (required optional cable) | No | Yes | Yes (1/8" stereo) | N/A |
| Studer | D424 | Magneto-optical recorder | 44.056, 44.1, 47.952, 48 kHz | 48 kHz | 20-bit/64x | 20-bit/128x | XLR | AES/EBU | Yes (SMPTE) | No | Yes | N/A |
| Tascam | DA-20 MKII | DAT | 32, 44.1, 48 kHz | 32, 44.1, 48 kHz | 18-bit | 18-bit | RCA | S/PDIF (RCA) | No | Yes, defeatable | No | N/A |
| Tascam | DA-40 | DAT | 44.1, 48, 32 kHz | 44.1, 48, 32 kHz | 18-bit | 18-bit | XLR; RCA | AES/EBU, S/PDIF (RCA) | No | Yes, defeatable | No | N/A |
| Yamaha | MD4 | MiniDisc | 44.1 kHz | 44.1 kHz | N/A | N/A | N/A | N/A | Yes (MTC) | No | Yes | N/A |
| Yamaha | MD8 | MiniDisc | 44.1 kHz | 44.1 kHz | N/A | N/A | N/A | N/A | Yes (MTC) | No | Yes | N/A |


# Plug In!

## The Shortest Path to 100% Digital.

Digital Workstation or Direct to DAT/MD, you know that the sooner your signal is 100% digital, the better your results.

The new Zefiro Acoustics InBox™ is the shortest path to working in 100% digital. Just plug in two mics and get high-quality S/PDIF digital out!

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| SCSI Connection | Transport Disc Loading | Bundled Software | Disc-at-Once | Frequency Response | Signal-to-Noise Ratio | Total Harmonic Distortion | Special Features | Price |
|---|---|---|---|---|---|---|---|---|
| No | N/A | No | No | 20 Hz–20 kHz | N/A | <0.008% | Adjustable level-sync; AGC/limiter circuit | $995 |
| No | N/A | No | No | 20 Hz–20 kHz | >90 dB | <0.06% | 20-bit A/D with super bit-mapping | $995 |
| No | N/A | No | No | 20 Hz–20 kHz | >90 dB | <0.06% | 20-bit A/D with super bit-mapping; 4 D.D. motor transport | $1,695 |
| No | N/A | No | No | 20 Hz–20 kHz | >90 dB | <0.008% | High-speed search/cue; auto-limiter; backlit LCD | $899 |
| Yes (SCSI-2) | MO (Pioneer) | Yes (proprietary) | No (SADIE compat) | 20 Hz–20 kHz | 96 dB (16-bit); 108 dB (20-bit); 120 dB (24-bit) | N/A | | $8,950 |
| No | Front | No | No | 20 Hz–20 kHz | >92 dB | <0.05% | | $1,099 |
| No | Front | No | No | 20 Hz–20 kHz | >94 dB | <0.05% | User-selectable copy ID | $1,599 |
| No | N/A | No | No | 20 Hz–20 kHz | 85 dB | 0.01% | Multitrack reader/cue list | $849 |
| No | N/A | No | No | 20 Hz–20 kHz | 96 dB | 0.012% | Cut-and-paste editing | $1,399 |


SRM-80 SIGNAL ROUTER/MONITOR

MONITORING, MIXDOWN, AND DUBBING HAVE NEVER BEEN THIS EASY...

Mix down to, or dub between any of four stereo devices, A through D

Monitor the console mix or any of four stereo devices

Listening Level

MONO Sum

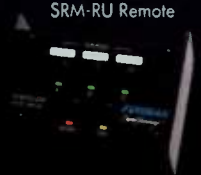
DIM 15 dB

High resolution 80-LED meter with VU/PMM and Peak Hold

Select from three speaker pairs (one self-powered) and trim to equal loudness

Built-In High Power Headphone Amp

SRM-RU Remote



The new SRM-80 Signal Router/Monitor makes mixdown and dubbing simple, professional and affordable.

It provides signal routing and monitoring for four stereo devices (such as DAT, cassette, Mini Disc, CD-R, etc.) — plus the main console output. Multiple copies can all be made simultaneously. And that's only the beginning.

Monitor using three different speaker pairs, *at the same loudness*, using our exclusive "set-once" level trims. Speaker button "A" switches line-level for driving self-powered monitors; B and C use a high power relay to redirect your power amp output to either of the two pairs.

There's even a built-in high-power headphone amp.

A high resolution 80-LED meter for precise level calibration of all stereo devices, MONO Sum to check for mix problems, a DIM button to reduce listening levels during interruptions, and more. All five pushbutton functions are also available remotely on the optional SRM-RU, which includes a 10-foot cable.

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# SEQUENCERS (MIDI and Digital Audio)

| Manufacturer | Product | Platform | Simultaneous MIDI Tracks | Maximum Clock Resolution (ppqn) | Quantization Types | Sequencing Method | Editing Views | Graphic Faders | SysEx Editing | Looping | # of Audio Tracks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cakewalk | Guitar Studio | Win 95, 98 | 256 | 480 | Swing (offline); percentage (offline); groove (offline) | Linear | Track/clip; console; audio; piano roll/controller; staff; event list; temp; studio ware; SYSX; lyrics; markers; meter/key; video; Big Time | Yes | Yes | Yes | 8 |
| Cakewalk | Home Studio 8 | Win 95, 98, NT | 256 | 120 | Swing (real-time, offline, input); percentage (real-time, offline, input) | Linear | Track/clip; console; audio; piano roll/controller; staff; event list; studio ware; SYSX; temp; lyrics; markers; meter/key; video; Big Time | Yes | No | Yes | 4 |
| Cakewalk | Pro Audio 8 | Win 95, 98, NT | 256 | 480 | Swing; percentage (real-time, offline, input); groove (offline) | Linear | Track/clip; console; audio; piano roll/controller; staff; event list; temp; SYSX;lyrics; markers; meter/key; video; Big Time | Yes | Yes | Yes | 128 |
| Cakewalk | Professional 8 | Win 95, 98, NT | 256 | 480 | Swing; percentage (real-time, offline, input); groove (offline) | Linear | Track/clip; console; audio; piano roll/controller; staff; event list; temp; SYSX; lyrics; markers; video; Big Time | Yes | Yes | Yes | 8 |
| Cakewalk | Home Studio 5.0 | Win 3.1, 95 | 256 | 480 | Swing; percentage | Linear | Track/clip; audio; piano roll; controller; staff; event list; tempo; faders | Yes | No (playback only) | No | 4 |
| Cakewalk | Metro 4 with Notation | Mac | Unlimited | 960 | Swing; percentage; groove | Pattern based on linear | Track view, graphic editor: integrated audio/MIDI/velocity/ controller/pitch; instrument (mixer); notation; QuickTime | Yes | Yes | Yes | 64 |
| Cakewalk | Pro Audio 6.0; Pro Audio 6.0 Deluxe | Win 95 | 256 | 480 | Groove; swing; percentage; randomize; humanize | Linear; pattern | Track/clip; audio; effects; piano roll/controller; staff; StudioWare; event list; tempo; SysEx; CAL | Yes | Yes | Yes | Unlimited (hardware-dependent) |
| Cakewalk | Professional 5.0 | Win 3.1, 95 | 256 | 480 | Groove; swing; percentage; randomize; humanize | Linear | Track/clip; audio; piano roll/controller; staff; event list; tempo; SysEx; CAL; faders | Yes | Yes | Yes | 4 |
| Emagic | Logic Audio Discovery 3.0 | Mac; Win 95, 98 | Unlimited | 960 | Input; output; swing; groove | Linear; pattern | Piano roll; event list; notation; hyper edit/drum and controller edit | Yes | No | Yes | 4–16 (hardware-dependent) |
| Emagic | Logic Audio Gold 3.1 | Win 95, 98 | Unlimited | 960 | Groove; swing; percentage; range; length; flam; velocity | Linear; folder | List; score; matrix (piano roll); hyper edit | Yes | Yes | Yes | Up to 64 (hardware-dependent) |
| Emagic | Logic Audio Gold 4.0 | Mac | Unlimited | 960 | Groove; swing; percentage; range; length; flam; velocity | Linear; folder | List; score; matrix (piano roll); hyper edit | Yes | Yes | Yes | Up to 64 (hardware-dependent) |
| Emagic | Logic Audio Platinum 3.1 | Mac | Unlimited | 960 | Groove; swing; percentage; range; length; flam; velocity | Linear; folder | List; score; matrix (piano roll); hyper edit | Yes | Yes | Yes | Up to 128 (hardware-dependent) |
| Emagic | Logic Audio Platinum 3.1 | Win 95 | Unlimited | 960 | Groove; swing; percentage; range; length; flam; velocity | Linear; folder | List; score; matrix (piano roll); hyper edit | Yes | Yes | Yes | 96 (hardware-dependent) |
| Emagic | Logic Audio Silver 3.1 | Mac | Unlimited | 960 | Groove; swing; percentage; range; length; flam; velocity | Linear; folder | List; score; matrix (piano roll); hyper edit | Yes | Yes | Yes | 24 (hardware-dependent) |
| Emagic | Logic Audio Silver 3.1 | Win 95, 98 | Unlimited | 960 | Groove; swing; percentage; range; length; flam; velocity | Linear; folder | List; score; matrix (piano roll); hyper edit | Yes | Yes | Yes | 24 (hardware-dependent) |
| Emagic | MicroLogic AV | Mac | Unlimited | 960 | Normal; swing | Linear | List; score; matrix (piano roll) | Yes | No | Yes | 16 (hardware-dependent) |

| Integrated MIDI/Audio Edit Screen | Audio Effects | Dynamics Processing | Time Compression and Expansion | Pitch-Shift Type | Sample-Rate Conversion | DSP Plug-In Formats | Audio-to-MIDI Conversion | Extract Timing from Audio | Special Features | Price |
|---|---|---|---|---|---|---|---|---|---|---|
| Yes | 32-bit; real-time stereo effects (reverb, chorus, delay/echo, flanger, parametric EQ) | No | Yes | N/A | No | DirectX | No | No | Supports RealMedia; Vector fretboard; MIDI guitar glitch filter, MIDI effects; Roland GR-30 control panel; StudioWare; SMPTE/MTC | $249 |
| Yes | 32-bit; real-time stereo reverb, chorus | No | No | Basic | No | DirectX | No | No | Supports AVI, MPEG, QuickTime, RealMedia; Vector automation; MIDI effects; StudioWare; key bindings | $129 |
| Yes | 32-bit; real-time stereo effects (reverb, chorus, delay/echo, flanger, parametric EQ) | No | Yes | Formant-preserving | Yes | DirectX | Yes | Yes | Supports 24-bit/96 kHz, AVI, MPEG, QuickTime, RealMedia, Digi Session 8, Yamaha DS2416, Soundscape SSHDR1, DAL Session 8; StudioWare; SMPTE/MTC sync | $429; (Deluxe) $529 |
| Yes | 32-bit; real-time stereo effects (reverb, chorus, delay/echo, flanger, parametric EQ) | No | Yes | Basic | Yes | DirectX | No | No | Supports AVI, MPEG, QuickTime, RealMedia; SMPTE/MTC sync; Vector automation; MIDI effects; notation; StudioWare; CAL; key bindings | $279 |
| Yes | Graphic EQ; reverse; normalize; 3 dB boost/cut | No | No | MIDI | Yes | N/A | No | No | Notation printing, plays back MCI commands; on-screen tutorials | $129 |
| Yes | Real-time, stereo (parametric EQ, chorus, flanger, delay, reverb, tremolo) | No | No | Bias SFX | No | VST; Premiere | No | No | Rhythm Explorer; Note Spray; supports QuickTime, OMS, SMPTE/MTC, Korg 1212 I/O, AudioMedia III, Sonorus StudI/O; BIS SFX Lite | $249 |
| Yes | Reverb; delay/eh; chorus; flanger; parametric EQ; graphic EQ; reverse; normalize; 3 dB boost/cut | No | Yes | Formant-preserving; traditional | Yes | DirectX Media | Yes | Yes | | $429 (Deluxe) $529 |
| Yes | Graphic EQ; reverse; normalize; 3 dB boost/cut | No | No | MIDI | Yes | N/A | No | No | Notation printing; audio/MIDI sync to SMPTE/MTC, CAL; key macros; SysEx librarian; plays back MCI commands; onscreen tutorials | $249 |
| Yes | N/A | No | Yes | Traditional | No | N/A | No | No | Load Logic/Logic Audio files; import Logic/Logic Audio Environ templates (SysEx mixers, etc.); virtual studio; screen sets | $299 |
| Yes | 23 native plug-ins | Yes | Yes | Formant-preserving; traditional | Yes | DirectX; EASI | Yes | Yes | Supports Audiowerk8, DAE, Korg 1212, CBX, AV, Akai DR8/16; crossfades; 90 screen sets; real-time non-destructive MIDI editing | $499 |
| Yes | 23 native plug-ins | Yes | Yes | Formant-preserving; traditional | Yes | VST; Premiere; AudioSuite; EASI | Yes | Yes | Supports full TDM, Audiowerk8, DAE, Korg 1212, CBX, AV, Akai DR8/16; crossfades; 90 screen sets; real-time non-destructive MIDI editing | $499 |
| Yes | 31 native plug-ins | Yes | Yes | Formant-preserving; traditional | Yes | VST; Premiere; AudioSuite; EASI | Yes | Yes | Supports full TDM, Audiowerk8, DAE, Korg 1212, CBX, AV, Akai DR8/16, 24-bit/96kHz; crossfades; 90 screen sets; 500 key/MIDI commands; real-time non-destructive MIDI editing | $799 |
| Yes | 31 native plug-ins | Yes | Yes | Formant-preserving; traditional | Yes | DirectX; EASI | Yes | Yes | Supports SSHDR-1, Audiowerk8, DAE (AudioMedia III), MME, 24-bit/96 kHz; crossfades; 90 MIDI commands; real-time MIDI editing | $799 |
| Yes | 14 native plug-ins | Yes | Yes | Formant-preserving; traditional | Yes | N/A | No | No | Supports Audiowerk8, AV, DAE; 90 screen sets; 500 key/MIDI commands; real-time MIDI editing | $299 |
| Yes | 14 native plug-ins | Yes | Yes | Formant-preserving; traditional | Yes | N/A | No | No | Supports Audiowerk8, MME, DAE (AudioMedia III); 90 screen sets; 500 key/MIDI commands; real-time MIDI editing | $299 |
| Yes | Reverb; delay; shelf EQ; fixed frequency shelving EQ | Yes | No | N/A | Yes | N/A | No | No | Real-time sequence edit; Mac AV support | $99 |

# SEQUENCERS [MIDI and Digital Audio]

| Manufacturer | Product | Platform | Simultaneous MIDI Tracks | Maximum Clock Resolution (ppqn) | Quantization Types | Sequencing Method | Editing Views | Graphic Faders | SysEx Editing | Looping | # of Audio Tracks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Emagic | MicroLogic AV | Win 95, 98 | Unlimited | 960 | Normal; swing | Linear | List; score; matrix (piano roll) | Yes | No | Yes | 16 (hardware-dependent) |
| Mark of the Unicorn | Digital Performer 2.6 | Mac | Unlimited | 480 | Input; output; swing; groove; humanize; Groove Editor | Linear; pattern | Track overview; graphic; event list; notation; multitrack audio waveform | Yes | Yes | Yes | Max allowed by ProTools Project, ProTools III/ TDM, ProTools 24/Mix Plus; native MAS track count hardware dependent (up to 72 on 400 MHz G3) |
| Mark of the Unicorn | FreeStyle 2.0 | Mac; Win 3.1, 95 | Trackless (players/takes, dynamic MIDI channel allocation) | 960 | Straight; offset | Linear; loop; arrange window | Piano roll; notation | No | No | Yes | 0 |
| Mark of the Unicorn | Performer 6 | Mac | Unlimited | 480 | Input; output; swing; groove; humanize; Groove Editor | Linear; pattern; chunk | Graphic; event list; notation | Yes | Yes | Yes | Up to 8 on PowerPC Mac |
| Midisoft | Studio Recording Session 1.0 | Win 95 | Unlimited | 1,000 | Percentage | Linear | Notation; MIDI list | Yes | Yes | No | 8 |
| Musicator | Musicator Win 3.0 | Win 3.1, 95 | 255 | 480 | Swing; percentage | Linear | Track; passage; bar; roll view; notation; audio; effects; event list; GS/XG | Yes | Yes | Yes | 32 |
| Opcode | Musicshop 2.0 | Mac; Win 3.1, 95 | 32 | 480 | Playback or destructive; grid | Linear; pattern | Piano roll; notation | Yes | Yes | Yes | 0 |
| Opcode | Studio Vision Pro 4.2.1 | Mac | Unlimited | 480 | Playback only or destructive; grid; groove; swing | Linear; pattern | Piano roll; list edit; notation; overview; pulse edit | Yes | Yes | Yes | Up to 128 (hardware-dependent) |
| Opcode | Vision 2.5 | Win 3.1, 95 | Unlimited | 480 | Playback only or destructive; grid; groove; swing | Linear; pattern | Piano roll; list edit; notation; overview | Yes | Yes | Yes | 0 |
| Opcode | Vision DSP 4.2.1 | Mac | Unlimited | 480 | Playback only or destructive; grid; groove; swing | Linear; pattern | Piano roll; list edit; notation; overview | Yes | Yes | Yes | Up to 128 (hardware-dependent) |
| Passport Designs | Master Tracks Pro | Win 3.1, 95; Mac | 64 | 960 (Win), 240 (Mac) | Swing; percentage | Linear | Track/clip; piano roll/ controller; staff; song play list | No | Yes | Yes | 0 |
| Personal Composer | Personal Composer 1.5 | Win 3.1, 95, 98, NT | 16 | 1024 | Input | Linear | Notation | Yes | No | No | 0 |
| PG Music | Band-In-A-Box | Win 3.1, 95, 98, NT; Mac 6.07 and higher | 12 | 120 | Swing; percentage; randomize | User-entered chord prog and style sel | Chord; staff/staff roll notation; style edit; Style Maker; MIDI channels; soloist editor/maker, harmonies; leadsheet | No | Yes | Yes | 0 |
| PG Music | PowerTracks Pro Audio 5.0 | Win 3.1, 95, 98, NT | 48 | 960 | Swing; percentage; randomize | Linear; step | Track, audio; mixer; events; bars; staff roll notation; SysEx editor; tempo/meter maps; Sound Canvas editor; leadsheet (full screen) notation window | Yes | Yes | Yes | Up to 48 (hardware-dependent) |
| Roland | MC-303 Groovebox | Hardware | 8 (16 in Sound Module mode) | 96 | Grid; groove; shuffle | Pattern | N/A | No | Yes | Yes | 0 |
| Roland | MC-505 Groovebox | Hardware | 8 + mute control track | 96 | Grid; groove; shuffle | Pattern | N/A | No | Yes | Yes | 0 |

| Integrated MIDI/Audio Edit Screen | Audio Effects | Dynamics Processing | Time Compression and Expansion | Pitch-Shift Type | Sample-Rate Conversion | DSP Plug-In Formats | Audio-to-MIDI Conversion | Extract Timing from Audio | Special Features | Price |
|---|---|---|---|---|---|---|---|---|---|---|
| Yes | Reverb; delay; fixed frequency shelving EQ | Yes | No | N/A | Yes | N/A | No | No | Real-time sequenceedit; MME sound card support | $99 |
| Yes | e-Verb; PreAmp-1; Sonic Modulator; auto-pan; chorus; echo; flanger; phase shifter; reverb parametric EQ; limiter; multiband compressor | Yes | Yes | Pure DSP for mono; conventional for polyphonic in mono and stereo | Yes | TDM; MAS; Premiere | No | No | Automation for MAS/TDM plug-ins; MIDI control; sidechain control of MAS plug-ins; 24-bit Waveform Editor; Supports QuickTime, ProTools 24/Mix Plus, MOTU Audio 2408; Unisyn | $795 |
| No | N/A | No | No | N/A | No | N/A | No | No | Sense Tempo; note-spelling algorithms; edit notes during sequence playback; groove metronomes | $199 |
| Yes | EQ; dynamics; chorus; flanger; delay; phase shifter; auto-pan; echo; tremolo | Yes | No | N/A | No | MAS | No | No | QuickTime support; Unisyn; custom consoles for Roland VS-880; window sets; WYSIWYG notation editing | $495 |
| No | Delay; echo; chorus; flanger; EQ | Yes | No | Traditional | Yes | N/A | No | No | Multisequence playback; articulation marks on score on playback; publisher-quality notation | $149.95 |
| Yes | N/A | No | No | N/A | Yes | N/A | No | No | Pro-quality notation; front-panel controls for GS, XG, SC-88 PRO effects; long file names w/Win 95 | $299 |
| No | N/A | No | No | N/A | No | N/A | No | No | Includes 100 MIDI clips | $49.95 |
| Yes | EQ; normalize; phase invert | Yes | Yes | Formant-preserving; traditional | Yes | Premiere; TDM; VST | Yes | No | Quickpunch for TDM; real-time VST effects; MIDI arpeggiator; generated sequences | $995 |
| No | N/A | No | No | N/A | No | N/A | No | No | Generated sequences; sequence trigger from MIDI in real-time (players/queue mode) | $249.95 |
| No | EQ; normalize; phase invert; reverse | Yes | No | N/A | Yes | Premiere; VST | No | No | Real-time audio effects; MIDI arpeggiation; generated sequences | $495 |
| No | N/A | No | No | N/A | No | N/A | No | No | SMPTE; SysEx librarian; master fader; MCI- (WIN) event; song play list; graphical editing; tempo map | $99.99 |
| No | N/A | No | No | Traditional | No | N/A | No | No | Transposing | $69–$199 |
| No | N/A | No | No | N/A | No | N/A | No | No | Automatic soloing and songwriting; international language | (Pro: $88 (MegaPak) $249 |
| Yes | Compressor; gate; dist; reverb; echo; chorus; flanger; ring modulator; tremolo; tone; graphic/parametric EQ; De-Esser; auto-wah; pitch shift; exciter; enhancer | Yes | No | N/A | Yes | Proprietary (developer kit provided) | No | No | Supports .MID, .KAR, .WAV, .MP3, any Win format; international language; large window for "big lyrics" display; guitar tuner; PowerPak including Vol I of MultiTracks display CDs | $29 (PowerPak) $49 |
| No | Reverb; delay; chorus; flanger | No | No | N/A | No | N/A | No | No | Arpeggiator; RPS; low boost | $895 |
| No | Reverb; delay; EFX (24 types) | No | No | Traditional | No | N/A | No | No | Interactive; D-Beam; infrared-light sensing controller; Megamix; arpeggiator; RPS; low boost | $1,495 |

# SEQUENCERS [MIDI and Digital Audio]

| Manufacturer | Product | Platform | Simultaneous MIDI Tracks | Maximum Clock Resolution (ppqn) | Quantization Types | Sequencing Method | Editing Views | Graphic Faders | SysEx Editing | Looping | # of Audio Tracks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Roland | MC-50mkII | Roland S-MRC | 8 (32 channel) | 96 | Grid | Step/real; pattern/linear | Track; event | No | Yes | Yes (playback only) | 0 |
| Roland | MC-80 | Roland MRC-Pro | 16 (32 channel) | 480 | Grid; groove; shuffle | Step/real; pattern/linear | Track; event | No | Yes | Yes | 0 |
| Sion | QuickScore Elite Level II 8.0 | Win 3.1, 95, 98, NT | 48 | 960 | 8th-64th note; humanize | Linear | Notation editor; piano roll editor; event list; mixer; track sheet; song editor | Yes | No | Yes | 48 (hardware-dependent) |
| Steinberg | Cubase Score VST 3.6 | Win 95 | Unlimited | 384 | Over; note on; interactive; analytic; freeze editable; groove | Linear | Key; list; score; drum; logical | Yes | Yes | Yes | 64 |
| Steinberg | Cubase Score VST 4.0 | Mac | Unlimited | 1,920 | Over; note on; interactive; analytic; freeze editable; groove | Linear | Key; list; score; drum; logical; controller | Yes | Yes | Yes | 64 |
| Steinberg | Cubase VST 3.6 | Win 95, 98 | Unlimited | 384 | Over; note on; interactive; analytic; freeze editable; groove | Linear | Key; list; score; drum; logical | Yes | Yes | Yes | 64 |
| Steinberg | Cubase VST 4.0 | Mac | Unlimited | 1,920 | Over; note on; interactive; analytic; freeze editable; groove | Linear | Key; list; score; drum; logical; controller | Yes | Yes | Yes | 64 |
| Steinberg | Cubase VST/24 3.6 | Win 95, 98 | Unlimited | 384 | Over; note on; interactive; analytic; freeze editable; groove | Linear | Key; list; score; drum; logical | Yes | Yes | Yes | Up to 96 |
| Steinberg | Cubase VST/24 4.0 | Mac | Unlimited | 1,920 | Over; note on; interactive; analytic; freeze editable; groove | Linear | Key; list; score; drum; logical; controller | Yes | Yes | Yes | Up to 96 |
| Steinberg | Cubase AV | Mac | 64 (x16) | 384 | Program auto | Linear | Key; list; score | Yes | No | Yes | 8 |
| Steinberg | Cubase AV | Win 3.1, 95, 98 | 64 (x16) | 384 | Program auto | Linear | Key; list; score | Yes | No | Yes | 8 |
| Voyetra | Computer Music Starter Kit | Win 3.1, 95, 98, NT | 1000+ (system dep) | N/A | Supported | Real time; step | Piano roll; notation; track view | Yes | No | Yes | 0 |
| Voyetra | Digital Orchestrator Pro | Win 3.1, 95, NT 4.0 | Unlimited | 1,920 | Adjust intensity; sensitivity; offset; inside/outside range | Linear | Graphic controller editor; MIDI mixer; multitrack; notation; conductor | Yes | Yes | Yes | Unlimited (hardware-dependent) |
| Wildcat Canyon | Autoscore 2.0 Mac Deluxe | Mac | 16 | 480 | Notation display; command; curser; duration | Linear; pattern | Track; faders; piano roll; score | Yes | Yes | Yes | 0 |
| Wildcat Canyon | Autoscore 2.0 Mac Pro | Mac | 16 | 480 | Notation display; command; curser; duration | Linear; pattern | Track; faders; piano roll; score | Yes | Yes | Yes | 0 |
| Wildcat Canyon | Autoscore 2.0 Win Deluxe | Win 3.1, 95 | Unlimited | 384 | Percentage; notation | Linear; pattern | MIDI list; mixer, piano roll; score; studio panel | Yes | No | Yes | 1 |
| Wildcat Canyon | Autoscore 2.0 Win Pro | Win 3.1, 95 | 256 | 480 | Percentage; starting time; duration | Linear; pattern | Track/measure; staff, piano roll, event list; controller; faders | Yes | No | Yes | 0 |
| WinJammer | Professional Version 5.0 | Win 3.1, 95, NT | 256 | 960 | Swing; groove; input; variable strength | Linear | Piano roll; event list; score; drum view | Yes | Yes | Yes | 0 |

| Integrated MIDI/Audio Edit Screen | Audio Effects | Dynamics Processing | Time Compression and Expansion | Pitch-Shift Type | Sample-Rate Conversion | DSP Plug-In Formats | Audio-to-MIDI Conversion | Extract Timing from Audio | Special Features | Price |
|---|---|---|---|---|---|---|---|---|---|---|
| N | N | No | No | N/A | No | /A | No | No | 2 MIDI outs | $795 |
| N | /A | No | No | N/A | No | /A | No | No | Direct from disk playback, exp arpeggiator, RPS, music-1, real-time mark/jumpbuttons, programmable fade, 2 FSs, options include: VE-GSProvoice exp, internal Zip 100 drv, 2.5" GB hard drive, SCSI | $1,295 |
| No | N/A | No | Yes | Shift-in key transpose | No | N/A | No | No | Supports Windows digital video formats, playback of repeats, exports to TIFF, BMP, EPS, dynamic marking/ornaments | $179.95 |
| Yes | Reverse, pitch shif, EQ, varispeed, chorus, delay, reverb, pan, fuzz | Yes | Yes | Traditional | Yes | VST, Direct X | No | Yes | Studio Module, Cue Trax, Wavelab Lite, arpeggiator, CD player, AVI monitor, real-time MIDI, Style Trax, interactive phrase synth, open arch plug-in interface, import recycle REX files, pro scoring | $549 |
| Yes | 4-band EQ, reverb, chorus, delay, pan, fuzz, spatial | Yes | Yes | Traditional | Yes | VST | No | Yes | Open-architecture plug-in interface, var mixdown filters for rate, bit, and file format, Style Trax, Cue Trax, QuickTime, pro scoring, import recycle REX files | $549 |
| Yes | Reverse, pitch shif, EQ, varispeed, chorus, delay, reverb, pan, fuzz | Yes | Yes | Traditional | Yes | VST, Direct X | No | Yes | Studio Module, Cue Trax, Wavelab Lite, arpeggiator, CD player, AVI monitor, real-time MIDI, Style Trax, interactive phrase synth, import recycle REX files | $399 |
| Yes | 4-band EQ, reverb, chorus, delay, pan, fuzz, spatial | Yes | Yes | Traditional | Yes | N/A | No | Yes | Open-arch plug-in interface w/real-time effects, Style Trax, Cue Trax, QuickTime, import recycle REX files | $399 |
| Yes | Reverse, pitch shif, EQ, varispeed, chorus, delay, reverb, pan, fuzz | Yes | Yes | Traditional | Yes | VST, DirectX | No | Yes | Studio Module, Cue Trax , arpeggiator, CD player, AVI monitor, real-time MIDI prcssr, Style Trax, interactive phrase synth, up to 24-bit/96K rec, supports Yamaha DSP Factory, Lexicon Studio | $799 |
| Yes | 4-band EQ, reverb, chorus, delay, pan, fuzz, spatial | Yes | Yes | Formant preserving, traditional | Yes | VST | No | Yes | Open-architecture plug-in interface, mixdown features for rate, bit, and file format, Up to 24-bit/95K audio rec, Import relynk REX files | $799 |
| No | 2-band EQ, reverb, delay | No | No | N/A | No | N/A | No | No | QuickTime, MIDI clock send/receive, 30 staves of notation, recs SysEx | $99 |
| No | N/A | No | No | N/A | No | N/A | No | No | MIDI clock send/receive, records SysEx | $99 |
| No | N/A | Yes | No | N/A | No | N/A | No | No | MIDI Orchestrator Plus (MIDI ver of Digital Orchestrator), multimedia course on MIDO, music synthesis ($29.95 dwnld vers, MIDI Orchestrator only) | $79.95 |
| Yes | EQ, delay | Yes | Yes | Traditional | Yes | N/A | No | No | Mixdown, expert to any ACM-compat format, expert to any avail codes | $199 |
| No | N/A | No | No | N/A | No | N/A | Yes | Yes | Real-time pitch-to-MIDI for non-keyboard players, pitch, volume, staff meters, key-constrain mode, mic | $119 |
| No | N/A | No | No | N/A | No | N/A | Yes | Yes | Real-time pitch-to-MIDI for non-keyboard players, pitch, volume, staff meters, key-constrain mode, mic | $249 |
| No | N/A | No | No | N/A | No | N/A | Yes | Yes | Real-time pitch-to-MIDI for non-keyboard players, pitch, volume, staff meters, key-constrain mode, mic | $119 |
| No | N/A | No | No | N/A | No | N/A | Yes | Yes | Real-time pitch-to-MIDI for non-keyboard players, pitch, vol, staff meters, key-constrain, mic, instrument filters | $249 |
| No | N/A | No | No | N/A | No | N/A | No | No | | $199.95 |

# ANALOG MIXING CONSOLES

| Manufacturer | Product | Mixer Configuration | Mic Inputs (XLR)/Line Inputs | # of Inserts/ Direct Outs | # of Aux Sends/ Returns/Type | # of Bus Outputs/Type | EQ | Mute | Solo-in-Place | Frequency Response |
|---|---|---|---|---|---|---|---|---|---|---|
| Alesis | Studio 12R | 14x2 | 8/14 | 8/0 | 2/1/4" TRS | N/A | High/low shelving | No | No | 20 Hz–50 kHz, ±0.5 dB |
| Alesis | Studio 24 | 16x4x2; 12x2 | 8/28 | 8/8 | 4/2/4" TRS | 2/4" | High/low shelving, mid band parametric | Yes | Yes | 20 Hz–50 kHz, ±0.5 dB |
| Alesis | Studio 32 | 16x4x2; 40x2 | 16/40 | 16/16 | 6/4/4" TRS | 4/4" TRS | High/low shelving, mid band parametric | Yes | Yes | 20 Hz–50 kHz, ±0.5 dB |
| Allen & Heath | GS 3000 | 24 or 32x8x2 | 24 or 32 | N/A | 6+/2/dual stereo channels | 8 | 4-band | Yes | Yes | 20 Hz–20 kHz, ±0.5 dB |
| Carvin | C800 | 8x2x1 | 8/8 | 8/8 | 5/4/4" | (3) XLR; (3) 4"; (2) RCA | 3-band w/mid & lo-cut buttons | Yes | No | 20 Hz–20 kHz |
| Carvin | Studiomate | 16x2 | 8/16 | 8/8 | 2/2/4" | (2) 4"; (2) RCA | 3 -band (per channel) | No | No | 20 Hz–20 kHz |
| D&R | Orion X | 30x16x2 | 16 | 2/1 (per channel) | 8/8 | 16 (balanced) | Bands in the mon path | Yes | Yes | 20 Hz–120 kHz, -0.5 dB |
| D&R | Vision 32 | 32x8x2 | 32 | 1/1 (per channel) | 8/8 (balanced) | 8 bus/+4 to -10 dBv | 4-band | Yes | Yes | 20 Hz–120 kHz, -0.5 dB |
| D&R | Vision 8 | 8x4x2 | 8 | 1/1 (per channel) | 4/4 (balanced) | 8 bus/+4 to -10 dBv | 3-band | Yes | N/A | 20 Hz–120 kHz, -0.5 dB |
| Empirical Labs | MA200 | 14x2 | 6/8 | 6/4 | 3/2 | 4/4" | 3-band | Yes | Yes | 20 Hz–20 kHz |
| Empirical Labs | MA400 | 14x2 | 6/8 | 6/4 | 3/2 | 4/4" | 3-band | Yes | Yes | 20 Hz–20 kHz |
| Mackie Designs | 16.8; 24.8; 32.8 | 16/24/32x8x2 | 16/24/32 | 16/24/32 | 6 mono/6 stereo | 24/4" | 4-band, low-cut filter | Yes | Yes | 20 Hz–60 kHz, +0 dB/-1 dB |
| Miles Technology | MTX-62 MultiMixer | 6x2 | 6/6 | 2/2 | 0 | 2/XLR | 2-band | No | No | 20 Hz–20 kHz, +0/-1 dB |
| Millennia Media | Mixing Suite | 4x2 to 80x4x4 (modular) | Variable | Variable | 4/4 | 4 | HPF (20 Hz–20 kHz) | Yes | Yes | 1 Hz–500 kHz, -4 dB |
| Oram Pro | Octamix | 8x2x1 | 0/8 | N/A | N/A | 2 (stereo or quad)/XLR | N/A | No | No | 18 Hz–3 kHz |
| Peavey | RQ 3014 | 10x2 | 6/4 | 6/6 | 3/2 | 2 | 2-band, mid sweep | Yes | Yes | 20 Hz–20 kHz, +0/-3 dB |
| Peavey | Unity 1002-8 RQ | 8x2 | 8 | 0/0 | 2/0 | 2 | 3-band | No | No | 20 Hz–20 kHz, +0/-3 dB |
| Peavey | Unity 2002-12 RQ | 12x2 | 12 | 0/0 | 4/0 | 2 | 3-band | No | No | 20 Hz–20 kHz, +0/-3 dB |
| Speck | XTRAMIX-204 | 20x4x2 | 0/32 | Inserts on 4 bus/ stereo outs | 4/4 (stereo) | 4/TRS | N/A | No | Yes | 4 Hz–154 kHz |
| Speck | XTRAMIXcxi | 40x8x2 | 0/76 | Inserts on 8 bus/ stereo outs | 4/4 (stereo) | 4/TRS | N/A | No | Yes | 4 Hz–154 kHz |
| Spirit | Folio FX16 | 16x2x2 | 16/16 | 16/16 | 3/4" | 4/4" | 3-band, mid sweep | Yes | Yes (PFL) | 20 Hz–30 kHz |
| Spirit | Folio FX8 | 16x2x2 | 8/16 | 8/8 | 3/4" | 4/4" | 3-band, mid sweep | Yes | Yes (PFL) | 20 Hz–20 kHz |
| Spirit | Folio Notepad | 8x2 | 4/8 | 0/0 | 1/4" | N/A | 2-band, fixed | No | No | 20 Hz–20 kHz |
| Spirit | Folio Powerpad | 8x2 | 4/8 | 0/0 | 1/4" | N/A | 2-band, fixed | No | No | 20 Hz–20 kHz |
| Spirit | Folio SX | 12x2x2 | 16/20 | 12/8 | 3/4" | 4/4" | 3-band, mid sweep | Yes | Yes (SIP/PFL) | 20 Hz–30 kHz |
| Spirit | LX 7/16 | 16x4x2x1 | 16/16 | 16/16 | 6/4" | 7/4" | 4-band, 2 mid sweep | Yes | Yes (SIP/PFL) | 20 Hz–20 kHz |
| Spirit | LX 7/24 | 24x4x2x1 | 24/24 | 24/24 | 6/4" | 7/4" | 4-band, 2 mid sweep | Yes | Yes (SIP/PFL) | 20 Hz–20 kHz |
| Summit Audio | TMX-420 | 4x2 | 4/4 | 16 | 4/4 4" | 4/4" | No | Yes | Yes | 5 Hz–55 kHz |
| Yamaha | MX 12/4 | 12x4x2 | 8/2 | 4/0 | (2) 4" | (4) 4"; (2) XLR stereo | 3-band | No | No | 20 Hz–20 kHz, +1 dB -2 dB @ +4 dB |

| Signal-to-Noise Ratio | Total Harmonic Distortion | Dynamic Range | Channel Crosstalk (@ 1 kHz) | Phantom Power | Talkback/ Onboard Oscillator | Dedicated 2-Track Returns | Special Features | Dimensions | Price |
|---|---|---|---|---|---|---|---|---|---|
| 90 dB | <0.005% | 108 dB | >85 dB | Global | No/No | Yes | Rackmount; 60 mm faders; headphone/control room outputs | 19x6x5.25 | $449 |
| 90 dB | <0.0025% | 108 dB | >80 dB | Global | No/No | Yes | Inline monitor section w/FX; full-featured control room section; hybrid/discrete mic preamps | 15x17x4.25 | $799 |
| 90 dB | <0.0025% to out | 108 dB | >80 dB | Global | No/No | Yes | Inline monitor section w/FX; full-featured control room section; hybrid/discrete mic preamps | 17.5x16.5x6 | $1,149 |
| N/A | 0.006% | N/A | ≤100 dB per channel | Yes per channel | Yes/Yes | Yes (3) | 2 patchable value presets in master section (mic/line or instrument) | N/A | (24) $5,995<br>(32) $6,995 |
| 90 dB | <0.009% | 104 dB | N/A | Yes | No/No | Yes | 24-bit digital FX; 16 presets; (2) 9-band graphic EQs | 14x14.5x3.5 | $499.95 |
| 90 dB | <0.01% | 104 dB | N/A | Yes | No/No | Yes | Low-noise toroid transformer | 16x12x3 | $295.95 |
| N/A | 0.015% | +26 dBu | 105 dB | Yes | Yes/Yes | Yes | Power dynamics (limiter/gate/compressor available); power VCA automation; optional on-board patch bay | 61x37 | $16,967 |
| N/A | 0.015% | Headroom >22 dB; max +26 dBu | >90 dB | Yes | Yes/Yes | Yes | Includes additional 4 stereo modules and matrix master | 62x30x9 | $16,571 |
| N/A | 0.015% | Headroom >22 dB; max output +26 dBu | >90 dB | Per channel | Yes/Yes | Yes | Fully modular; optional meter bridge | 19" frame (can be rack-mounted) | $3,748 |
| >92 dB | <0.03% | >90 dB | >60 dBc | 6 channels | No/No | Yes | Reverb, delay; notebook-style chassis | N/A | $999 |
| >92 dB | <0.03% | >90 dB | >60 dBc | 6 channels | No/No | Yes | Reverb, delay; notebook-style chassis | N/A | $349 |
| 90 dBu | 0.0014% | 114 dBu | -91 dBu | Yes | Yes/No | Yes | Inline monitoring | (16) 28.74x29.17x6.54<br>(24) 28.74x37.02x6.54<br>(32) 28.74x45.82x6.54 | (16) $2,719<br>(24) $3,399<br>(32) $4,249 |
| 90 dB | 0.03% | 110 dB | 60 dB | Per channel | No/No | No | XLR/1/4" combination ins; channel level indicators; output insert/sounds; crossovers; sub out | 19x10x1.75 | $499 |
| ≥100 dB | 0.002% | 120 dB | ≥100 dB | Yes | Yes/Yes | Yes (2) | N/A | 4 rackspaces | $15,000 |
| N/A | >0.005% | N/A | N/A | No | N/A | No | Pan; 2 stereo XLR mix outputs; headphone cue | 1 rackspace | $1,295 |
| N/A | <0.01% | 110 dB | 90 dB | Yes | No/No | Yes | "Super Channel" | 15x16x4.3 | $549.99 |
| N/A | <0.01% | 110 dB | 90 dB | Yes | No/No | Yes | N/A | 17x16x3.2 | $399.99 |
| N/A | <0.01% | 110 dB | 90 dB | Yes | No/No | Yes | N/A | 23x16x3.2 | $499.99 |
| -92 dB | <0.0032% | N/A | -82 dB | No | Yes/No | Yes | Ultra compact 4-bus receiver mixer | 2 rackspaces | $1,490 |
| -92 dB | <0.0032% | N/A | -82 dB | No | Yes/No | Yes (2) | Ultra compact 8-bus receiver mixer; expander to 148 inputs | 4 rackspaces | $2,990 |
| N/A | <0.009% | N/A | >96 dB | Global | No/No | Yes | Lexicon FX; rotatable patch bay | 17.5x18x6.3 | $1,199.95 |
| N/A | <0.009% | N/A | >96 dB | Global | No/No | Yes | Lexicon FX | 17.5x16.5x4.1 | $699.95 |
| N/A | <0.005% | N/A | >90 dB | Global | No/No | Yes | Optional mic stand adapter | 8.7x9.6x2 | $299.95 |
| N/A | <0.005% | N/A | >90 dB | Global | No/No | Yes | 30Wx2 built-in power amp | 9.8x9.3x4 | $399.95 |
| N/A | <0.006% | N/A | >95 dB | Global | No/No | Yes | 100 mm faders | 19x20x2.8 | $849.95 |
| N/A | <0.006% | N/A | >95 dB | Global | Yes/No | Yes | Left, right, and mono outputs | 19.5x26x7 | $1,599.95 |
| N/A | <0.006% | N/A | >95 dB | Global | Yes/No | Yes | Left, right, and mono outputs | 19.5x34x7 | $1,999.95 |
| >90 dB | -0.2% | >90 dB | N/A | No | No/No | No | Tube | 19x14x3.5 | $3,695 |
| -128 dB in, -noise; 95 dB out noise | <0.1% @ +14 dB | N/A | 70 dB | Yes | No/No | Yes | Onboard digital FX | 3.25x15.75x17.125 | $599.95 |

# DIGITAL MIXING CONSOLES

| Manufacturer | Product | Mixer Configuration | Mic Inputs (XLR)/Line Inputs | # of Digital Inputs/Type | # of Digital Outputs/Type | # of Option Card Slots | Analog Inserts/Direct Outs | # of Analog Aux Sends/ Returns | AD Converters | DA Converters | EQ Type | # of Dynamic Processors |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Generalmusic | IFM Falcon | 12x4x2 | 6/4 | 1 AES/EBU or S/PDIF/(XLR); others optional | 1 AES/EBU or S/PDIF/(coaxial); others optional | | 0/0 | 2/2 | 20-bit/64x | 20-bit/64x | 3-band parametric | 12 |
| Mackie Designs | Digital 8-Bus | 56x8x2 | 12/44 | Up to 32 w/optional cards | Up to 34 w/optional cards/ADAT, TDIF or AES/EBU | 4 I/O, effects | 12/up to 24 | 12/0 | Crystal semiconductor | Crystal semiconductor | 4-band parametric | 48 |
| Panasonic | WR-DA7 | 38x8x2 | 8/8- | 1 AES/EBU or S/PDIF; others optional | 1-AES/EBU or S/PDIF; others optional | 3 audio; 1 SMPTE/ v-Sync | 16/0 | 2/6 | 24-bit | 24-bit | 4-band parametric/2-band parametric on aux returns | 42 |
| Roland | VM-3100 V Mixing Station | 12x8x2 | 2/10 | 1 S/PDIF (optical/coax) | 2 S/PDIF (optical/coax) | N/A | 4 1/4", 2 RCA | 4 1/4", 2 RCA/0 | 24-bit | 24-bit | 3-band | 2 |
| Roland | VM-3100PRO V Mixing Station | 20x8x2 | 2/10 | 1 S/PDIF (optical/coax) | 2 S/PDIF (optical/coax) | 1 ADAT or TDIF I/O | 4 1/4"", 2 RCA | 4 1/4", 2 RCA/0 | 24-bit | 24-bit | 3-band | 2 |
| Roland | VM-7100/VM-C7100 V Mixing System | 38x14x2 | 11/1 | 1 S/PDIF or AES/EBU (w/sample rate conv) | 2 S/PDIF and AES/EBU | 3 FX; 3 ADAT/TDIF; 1 cascade | Up to 8 TRS (user configured) | Up to 10 (user configured) | 24-bit | 24-bit | 5-band | 48 DSP blocks |
| Roland | VM-7200 (x2) +/ VM-C7200 V-Mixing System | 94x14/28 flex busx2 | 4/1 | 2 S/PDIF or AES/EBU (w/sample rate conv) | 4 S/PDIF and AES/EBU; 1 cascade | 6 effects; 6 ADAT/TDIF | 24/16 | Up to 34/0 | 24-bit | 24-bit | 5-band | 94 DSP blocks |
| Roland | VM-7200/ VM-C7200 V Mixing System | 48x14x2 | 21//1 | 1 S/PDIF or AES/EBU (w/sample rate conv) | 2 S/PDIF and AES/EBU | 3 effects; 3 ADAT/TDIF; 1 cascade | 12/18 | Up to 18/0 | 24-bit | 24-bit | 5-band | 48 DSP blocks |
| Spirit | Digital 328 | 32x8x2 | 16/16 | 18/16 optical TDIF; AES/EBU, S/PDIF | 26/24 optical 16 TDIF, AES/EBU, S/PDIF | 2 | 16/16 | 4/5 | 24-bit/128x | 24-bit/128x | 3-band parametric | 2 floating |
| TASCAM | TM-D4000 | 32x8x2 | 8/12 | 1 AES/EBU; 1 S/PDIF; others optional | 1 AES/EBU; 1 S/PDIF; others optional | 3 | 8/8 | 6/4 | 24-bit | 24-bit | 4-band parametric | 32 |
| TASCAM | TM-D8000 | 40x8x2 (52 mixdown) | 16/28 | 40 TDIF; 4 AES/EBU; 2 S/PDIF | 40 TDIF; 8 AES/EBU; 1 S/PDIF | N/A | 16/16 | 6/12 | 20-bit | 20-bit | 4-band parametric | 8 |
| TASCAM | TM-D1000 | 16x4x2 | 4/10 | 8 TDIF; 1 AES/EBU 1 S/PDIF | 8 TDIF; 2 AES/EBU; 2 S/PDIF | 2 | 4/4 | 4/2 | 20-bit | 20-bit | 3-band parametric mid | 4 |
| Yamaha | 02R | 40x8x2 | 8/8+4 stereo | 1 AES/EBU/ 2 S/PDIF; others optional | 1 AES/EBU/ 2 S/PDIF; others optional | 4 | 8/16 | 6/2/ 1/4" TRS | 20-bit | 20-bit | Parametric | 40 |
| Yamaha | 01V | 24x4 | 12 /2 | 1 S/PDIF; others optional | 1 S/PDIF; others optional | 1 | 0/0 (4 using 1/4" OMNI outs) | 0/0 (4 using 1/4" OMNI outs) | 20-bit | 20-bit | 4-band parametric | 22 |
| Yamaha | 03D | 26x10x2 | 8/18 1/4" | AES/EBU (XLR); S/PDIF (coaxial); others optional | AES/EBU (XLR); S/PDIF (coaxial); others optional | 1 | 2 1/4" TRS/0 | 4/2 (stereo in)/ 1/4" TRS | 20-bit | 20-bit and 18-bit | 4-band parametric | 36 |

| # of Effects Processors | Automation: Scene/MIDI/ Dynamic | Frequency Response | Signal-to-Noise Ratio | Total Harmonic Distortion | Channel Crosstalk (@ 1 kHz) | Phantom Power | Special Features | Options | Dimensions (inches) | Price |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | Yes/Yes/No | 20 Hz–20 kHz | 96 dB | 0.003% | N/A | Yes | Motorized fader on virutal strip; physical controls on all channel strips | ADAT card;link card | 17.5x4.5x19.75 | $1,495 |
| Up to 8 internal | Yes/Yes/Yes | 20 Hz–20 kHz | 115 dB | 0.005% | -90 dB | Yes | Built-in meter bridge; total dynamic automation of virtually every parameter | Clock card; I/O cards; effects card | 27.1x37.6x3.7 | $9,399 |
| Channel delay | Yes/Yes/Yes | 20 Hz–20 kHz | RN -96 dB typical | <0.1% | -90 dB | Yes | Moving fader automation; 1 step functionality; 5.1 surround sound panning | 8 ch I/O cards for ADAT, TDIF, AES/EBU and S/PDIF; analog meterbridge; SMPTE V Sync; automation software for Mac or PC | 27.5x13.56x23.7 | $4,995 |
| 1 stereo or 2 mono | Yes/Yes/No | N/A | N/A | N/A | N/A | Yes | Dedicated Hi-Z guitar input | | 3.75 x11.8x13.5 | $395 |
| 2 stereo or 4 mono | Yes/Yes/No | N/A | N/A | N/A | N/A | Yes | Dedicated Hi-Z guitar input; microphone modeling; speaker modeling | DIF-AT ADAT/ TDIF interface | 3.75x11.8 x13.5 | $1,295 |
| 2 (up to 8 optional) | Yes/Yes/Yes | N/A | N/A | N/A | N/A | Yes | Modular, moving faders; 5.1 mixing; RTA; speaker modeling | VS8F-2 FX exp brd; VM-24E I/O exp port; DIF-AT ADAT/TASCAM intrfc; MB-24 mtr brdg; VM 24C cascade kit | VM-7100: 117x16.4x5.25; VM-C7100: 17.12 x17x2.7 | (VM-7100) $1,395 (VM-C7100) $2,395 |
| 4 (up to1 6 optional) | Yes/Yes/Yes | N/A | N/A | N/A | N/A | Yes | Modular, moving faders; 5.1 mixing; RTA; speaker modeling | VS8F-2 FX exp brd (up to 6); VM-24E I/O exp port; DIF-AT ADAT/ TASCAM intrfc; MB-24 mtr brdg; RO-7000 rack-mount kit | VM-7200: 117x1.4x5.25; VM-C7200: 26.6x17x2.7 | (VM-7200 x2) $6,590 (VM-C7100) $3,695 |
| 2 (up to 8 optional) | Yes/Yes/Yes | N/A | N/A | N/A | N/A | Yes | Modular, moving faders; 5.1 mixing; RTA; speaker modeling | VS8F-2 FX exp brd; VM (up to 6); VM-24E I/O exp port; DIF-AT ADAT/TASCA M intrfc; MB-24 mtr brdg; RO-7000 rack-mount kit | VM-7200: 117x16.2x.25; 5VM-C7200: 26.6x17x2.7 | (VM-7200) $2,795 (VM-C7100) $3,595 |
| 2 Lexicon | Yes/Yes/No | 20 Hz–20 kHz | N/A | <0.005% | >95 dB | Yes | ADAT optical (x3) anc TDIF (x2); meter bridge; AES/EBU, S/PDIF, SMPTE direct; software upgrade via internet | TDIF to MIC preamp; TDIF to analog interface; TDIF to AES/EBU interface | N/A | $4,999.95 |
| 1 | Yes/Yes/No | 20 Hz–20 kHz | 80 dB | <0.1% | 90 dB | Yes | 100 mm motorizec faders; TDIF MMC; ADAT; RS-422; surround/cascade I/O; word clock I/O | IF-TD4000; IF-LA4000; IF-AE4000; IF-AD4000; MU-4000; PW-4000 | 26x9.5x28 | $4,299 |
| 0 | Yes/Yes/No | 20 Hz–20 kHz | 80 dB | >0.1% | <90 dB | Yes | Full machine control; TDIF sync; Sony 9-pin; MMC; meter bridge; word clock I/O | IF-TAD; MA-AD8; IF-AE8 | 40x12.5x28.5 | $10,799 |
| 2 | Yes/Yes/No | 20 Hz–20 kHz | 80 dB | 0.1% | >90 dB | Yes | MMC; backlit LCD; word clock I/O | IF-TAO; IF-TD1000; FX-D1000; MA-AD8; IF-AE8; RM-D1000 | 17.3x4x15 | $1,299 |
| 2 | Yes/Yes/Yes | 20 Hz–20 kHz | 105 dB | < 0.2% 20 Hz 20 kHz @ +14 dB into 600 ohm | 70 dB | Yes | | Meter bridge; digital I/O up to 32 TDIF, AES/EBU, ADAT or Yamaha w/option cards | 26x8.5x2.75 | $8,899 |
| 2 | Yes/Yes/No | 20 Hz–20 kHz | 98 dB | <0.1% 20 Hz 20 kHz @ +14 dB into 600 ohm | -70 dB ch 1-12, -60 dB ch 13-16, -70 dB in to out | Yes | | Digital I/O cards: TDIF, ADAT, AES, analog input | 16.9x5.8x20.4 | $1,999 |
| 2 | Yes/Yes/Yes | 20 Hz–20 kHz | 105 dB | >0.01% AD/DA @ 1 kHz | -70 dB | Yes | Surround sound | I/O interface cards: (TDIF, ADAT, AES/EBU, Yamaha; cascade kit; rack ears | 18.1x20.3x8 | $3,699 |

# I/O Devices, Monitoring & Power Amps

This section contains information about a variety of products used for audio monitoring, amplification, and signal routing.

Specifications for audio patch bays and direct-injection (DI) boxes are not overly complicated, but significant feature differences do exist among the various models. Be sure to check out the connector type and normaling scheme of an audio patch bay. A big difference among DI boxes is that some are active and others are passive; also, some models come with special features such as pads, phase-invert switches, and speaker simulators.

Our Digital Audio Converter chart lists only analog-to-digital and digital-to-analog units; we don't include digital format converters. Be sure to check which digital connections a converter supports: some of these products support ADAT Optical input and output, while others support TDIF, AES/EBU, and/or S/PDIF.

Although mic and instrument preamps are relatively simple gadgets, some come with extra bells and whistles such as parametric EQ and lowpass or highpass filters. If you're using condenser mics, you may need phantom power—some mic preamps have it and some don't. Obviously, a tube preamp will sound quite different from a solid-state unit, but because the tubes can be integrated in different ways, the inclusion of a tube does not guarantee that it can produce the classic "warm" sound.

We've grouped channel strips and voice processors into one table because they are often nearly identical in function and can be used for similar purposes. Basically the equivalent of a mixer input channel, they consist of a microphone preamp and an equalizer and are often combined with one or more dynamics processors. Channel strips and voice processors are usually used to route signals directly to a recording device, bypassing the mixer and making outboard processors unnecessary. These "combo" processors save space and can be quite cost effective. Make sure to compare their specifications with those of the mixers, the preamps, and the dynamics processors.

With power amps our focus is on those used for studio applications, but many of the amps listed here can easily be used in club P.A. systems as well. These products' specs can vary widely—for instance, check out the range in the Total Harmonic Distortion column.

With reference monitors it is very important to note the type of porting; among other things, it affects how the sound changes when you move the speakers toward or away from walls, corners, and furniture. Magnetic shielding is also important if you plan to locate the speakers near a computer monitor or other source of electromagnetic interference. Note that some reference monitors are powered by built-in amplifiers, making setup easy. In theory, the onboard amp has been designed to match its speaker and enclosure, but in practice this does not guarantee superior sound.

The biggest concern with headphones is the ear-cup design. Closed headphones offer more isolation, which is great when you're working with open mics (for example, tracking vocals and drum overheads). Open-air designs give an airier sound and tend to be lighter in weight.


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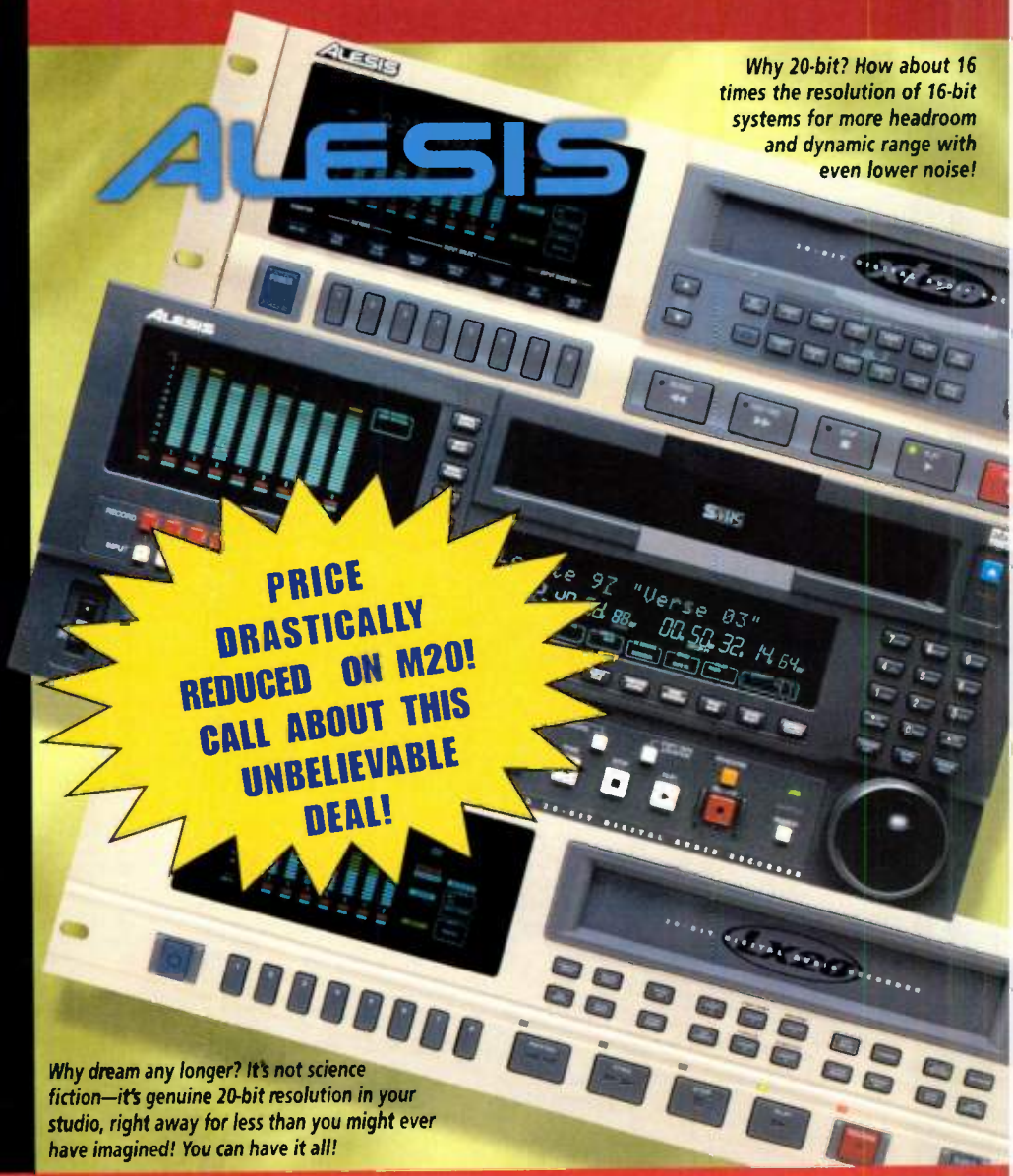


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# AUDIO PATCH BAYS

| Manufacturer | Product | Connector Type | # of Patch-Bay Points | Prewired | Modular | Programmable | Normaling | Special Features | Price |
|---|---|---|---|---|---|---|---|---|---|
| Connectronics | JB24 | 1/4", 1/4" TRS | 48 | Yes | Yes | No | Full; half; through | Plug in rear | $775 |
| Connectronics | XB16KV/XB32KV | Any combination | 16 or 32 | Yes | Yes | No | N/A | Wide range of connectors | (16) $94<br>(32) $174<br>w/o connectors |
| dbx | PB48 | 1/4" TRS | 48 | No | Yes | No | Full; half | | $179.95 |
| Fostex | 3013 | 1/4" | 16 | Yes | No | No | Half | | $139 |
| Furman | PB-40 | 1/4" TRS, RCA | 40 | Yes | Yes | No | Half | | $155–$180 |
| Neutrik | Easy Patch | TB | 48 | Yes | No | Yes | Full; half; no; parallel; double | Solderless | $725 |
| Neutrik | Easy Patch | TT | 96 | Yes | No | Yes | Full; half; no; parallel; double | Solderless; digital-capable | $775 |
| Neutrik | Patchlink SP | 1/4" | 48 | No | Yes | Yes | Full; half; isolated; parallel | Normalled jack colored gray for easy ID | $125 |
| Neutrik | Rean MA 96 | TT | 96 | No | No | No | All options | Color coded front panels | N/A |
| Neutrik | Rean MA-48E Series | TT | 48 | Yes (to EDAC) | Yes | Yes | All options | | N/A |
| Pro-Co | PJ Series | 1/4" TRS; PJ; WECO; Longframe | 24/row, 1 or 2 row/rack space (52 pt. max) | Optional | No | No | All options | Many custom options | $250-$1,600 |
| Pro-Co | PM-148 | 1/4" | 48 | Yes (PC cards) | Yes | Yes | Full; half; parallel; open | Optional multi-track harnesses | $333.22 |
| Pro-Co | TT Series | TT | 96 per rack space | Optional | No | No | Determined by jack loading/ wiring | Many custom options | $600-$2,800 |
| Radial Engineering | Radial | TT; 1/4", 1/4" TRS | 24–96 | Optional | Optional | No | All options | Custom punch blocks | $130–$1,200 |
| Rapco | Rapco Patch bay | TT; 1/4", 1/4" TRS | 48, 52 or 96 | Yes | Yes | No | All options | Custom wiring | Starting at $199 |
| Switchcraft | 1/4" Kit Series | 1/4" TRS | 48 or 52 | No | No | No | Full; half; no | Cable tray; nickel-plated jacks; gold contacts | $220 |
| Switchcraft | Front Access Series | TT, MT | 96 or 48 | Yes | No | No | Normals strapped; normals out | Front access; nickel-plated jacks; gold contacts | $1,100 |
| Switchcraft | MT48/52 Series | 1/4" TRS | 48 or 52 | No | No | No | Full; half; no | Tie bar; nickel-plated jacks; gold contacts | $230 |
| Switchcraft | MTP Series | 1/4" TRS | 48 | Yes | No | No | All options | | $700 |
| Switchcraft | TT Kit Series | TT | 96 | No | No | No | Full; half; no | Cable tray; nickel-plated jacks; gold contacts | $300 |
| Switchcraft | TT96 EDAC Series | TT | 96 | Yes | No | No | Full; normals | EDAC-type connectors on back | $1,300 |
| Switchcraft | TTP96 Series | TT | 96 | No | No | No | Full; half; no | Tie bar; nickel-plated jacks; gold contacts | $300 |
| TASCAM | PB-Series | TT; 1/4", 1/4" TRS | 32 or 64 | Yes | Yes | No | Full | | Starting at $185 |
| Taytrix | Audio Patch Bays | TT | 96 | Optional | Yes | No | Full; half | Customized to any specs | Starting at $1,500 |
| Whirlwind | WLF482 | Long frame balanced | 48 | Optional | Yes | No | Full; half; wired | | $399.95 |
| Whirlwind | WPB-48S | 1/4" TRS | 48 | Yes | Yes | No | Half; no (each jack pair) | | $159.95 |
| Whirlwind | WPB-48S/R | 1/4" TRS, RCA | 24 1/4" or 24 RCA | Yes | Yes | No | Half; no (each jack pair) | | $189.95 |
| Whirlwind | WTT961 | TT | 96 | Optional | Yes | No | Full; half; user | 1 rackspace | $529.95 |
| Z-Systems | Digital Detanglers | AES/EBU and/or S/PDIF | 8-64 stereo pairs | Yes | No | Yes | N/A | Hardware remote; computer control | $980-$12,000 |
| Zoom | Ultrapatch Pro | 1/4" | 48 | No | No | No | N/A | Switches for parallel, norm, semi-norm, and open | $89.99 |

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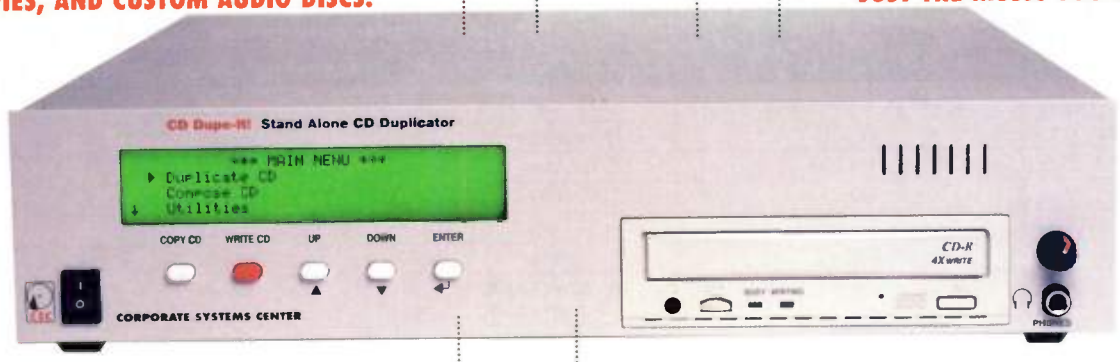


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# DIRECT BOXES

| Manufacturer | Product | Type | Power | # of Channels |
|---|---|---|---|---|
| AMB | Tube-buffered direct-injection box | Floor | Internal AC | 1 |
| Anthony DeMaria Labs | 300 G | Floor or rack-mount | External AC | 2 |
| ARX | DI-1 | Active | Battery; Phantom; wall wart | 1 |
| ARX | DI-2 | Active | Battery; Phantom; wall wart | 2 |
| ARX | DI-4 | Active | AC 110V | 4 |
| ARX | DI-6s | Active | AC 110V | 6 |
| Avalon Design | U5 | 100% discrete, pure Class A, 2-space rack-mount | Active; AC | 1 |
| Barcus-Berry | Matchmaker | Floor | 9V battery; 9 VDC external Phantom | 1 |
| BBE | DI-10 Active DI | Active DI single channel w/speaker cab emu | Phantom; external adapter; 9V battery | 1 |
| BBE | DI-10 | Floor | Phantom; external adapter; 9V battery | 1 |
| BBE | DI-100 | Floor | Phantom; external adapter; 9V battery | 1 |
| Boss | DI-1 | Floor | Phantom; battery | 1 |
| BSS Audio | AR133 | Floor | Phantom; battery | 1 |
| BSS Audio | AR416 | Rack-mount | Internal AC | 4 |
| Countryman | Type 85 | Floor | Phantom; battery | 1 |
| Demeter | H DI-1 H series Tube Direct Box/Line Driver | Rack | AC | 2 |
| Demeter | STDB-2 Stereo Direct Box | Rack-mount (1 space) | AC | 2 |
| Demeter | VTDB Tube Direct Box (mono) | Floor | AC | 1 |
| Digital Music | Cab-Tone | Stand-alone | 9V DC | 1 |
| DOD | AC260 | Floor | Passive | 1 |
| DOD | AC265 | Floor | Passive | 1 |
| DOD | AC275 | Floor | AC; battery; phantom | 1 |
| Dynaudio Acoustics | Reamp | Freestanding | Passive | 1 |
| E.M.O. | E520 | Floor | Passive | 1 |
| E.M.O. | E525 | Floor | Passive | 2 |
| E.M.O. | E535 | Rack-mount | Passive | 1 |
| E.M.O. | E540 | Floor | Passive | 1 |
| E.M.O. | E545 | Rack-mount | Passive | 6 |
| E.M.O. | E580 | Rack-mount (1 space) | Passive | 8 |
| Ebtech | HE-2 PKG | Table or rack-mount | Passive | 2 |
| Ebtech | HE-8 | Rack-mount | Passive | 8 |
| Ebtech | LLS-2 PKG | Table or rack-mount | Passive | 2 |
| Ebtech | LLS-8 | Rack-mount | Passive | 8 |
| Fishman | Dual Parametric D.I. | Floor | AC; 9V battery | 1 |
| Folded Space | Micro Room | Floor | Passive | 1 |
| Gepco | GDB-1 | Floor | Passive | 1 |
| Jensen Transformers | ISO-MAX DB-2PX | Stand-alone or rack-mount | Passive | 2 |
| Klark-Teknik | LBB100 | Floor | Phantom | 1 |
| Peavey | 1:1 Interface | Floor | Passive | 1 |
| Peavey | EDB-1 | Floor | Phantom; battery; 16V AC/DC external | 1 |
| Peavey | EDI | Floor | Passive | 1 |

| Inputs | Outputs | Ground Lift | Special Features | Price |
|---|---|---|---|---|
| 1/4" (1) | 1/4" (1), XLR (1) | Yes | ECC83 tube, Jensen JT-DB-E transformer | $595 |
| 1/4" (1) | 1/4" (2), XLR (2) | Yes | Gain | $899 |
| 1/4" | XLR | Yes | Easy battery change | $115 |
| 1/4" | XLR | Yes | Easy battery change | $165 |
| 1/4" | XLR | Yes | Mixes 4 channels to stereo; auxilliary sound/return | $4[illegible]0 |
| 1/4" | XLR | Yes | Mixes 6 channels to 1 output; also a 1-to-6 splitter | $442 |
| 1/4" instrument, 1/4" speaker | XLR (mic/line), 1/4" TRS | Yes | 3 Mohm input; variable gain to +30 dB; high-cut filter; 6-position tone switch; rack kits available | $595 |
| 1/4", 1/4" speaker | 1K Ω 1/4", 1/4" spkr, 600 Ω XLR | No | Speaker-simulated filter | $129 |
| 1/4" line, or via speaker throughputs | 600 Ω (XLR), 1K Ω (1/4") | No | Speaker in/thru jacks, filter switch, tri-mode powering | $129 |
| 1/4", 1/4" speaker | 1/4", 1/4" speaker, XLR | No | Speaker-simulated filter | $129 |
| 1/4" | 1/4", XLR | Yes | BBE process; input pad | $159 |
| 1/4" | 1/4", XLR | Yes | Auto power-off, phase-inverse | $149.50 |
| 1/4", XLR | 1/4", XLR | Yes | Pad (0, -20, -40 dB) | $185 |
| 1/4" (4) | 1/4" (4), XLR (4) | Yes | Pad (0, -20, -40 dB) LP filter, phase reverse, reverse rack ears (XLR front or rear) | $899 |
| 1/4" | 1/4", XLR | Yes | Isolates ground even w/phantom power; RF filtering and static-discharge prot | $231.70 |
| 1/4" (2) | XLR (2), 1/4" (2) | Yes | 27 Mohm input impedance/balance in level out; tube buffered 1/4" outs | $899 |
| 1/4" (2) | XLR, 1-1/4" (2) unity gain, variable gain line (2) | Yes | All tube, Jensen DBE out transformer, 27 Mohm input, variable gain best, tube buffered outs | $1,100 |
| 1/4" | 1/4", XLR | Yes | Jensen output transformers, gain best, tube buffered 1/4" out | $600 |
| 1/4" | 1/4", XLR | Yes | Gtr speaker cabinet sim, line & speker level signals, ground lift and phase invert, bal/unbal in level outs | $149 |
| 1/4" (2), XLR | 1/4" (2), XLR | No | Can be mic/instrument splitter | $65 |
| 1/4" (2), XLR | 1/4" (2), XLR | Yes | 3-position pads | $[illegible]9.95 |
| 1/4" (2), XLR | 1/4" (2), XLR | Yes | Speaker/instrument level switch | $[illegible]9.95 |
| +4 dBm XLR | -10 dBm 1/4" | Yes | Reverse direct box, allows output from recorder to be reinserted into amplifier input, adjustable out level | $299 |
| 1/4" In, 1/4" instrument (2), 1/4" speaker (2) | XLR | Yes | 20 Hz–40 kHz frequency response | $124 |
| 1/4" In (2), 1/4" instrument (4), 1/4" speaker (4) | XLR (2) | Yes | 20 Hz–40 kHz frequency response | $359.50 |
| 1/4" (2), 1/4" instrument (4), 1/4" speaker (4) | XLR | Yes | 20 Hz–40 kHz frequency response | $129.50 |
| 1/4" In, 1/4" instrument (2), 1/4" speaker (2) | XLR | Yes | High isolation | $189.95 |
| 1/4" (6), 1/4" instrument (12), 1/4" speaker (12) | XLR (6) | Yes | 20 Hz–40 kHz frequency response, uses E535 mods | $744.50 |
| 1/4" (8) | 1/4", XLR | Yes | Parallel unbalanced outs for ICI monitoring | $1,225 |
| 1/4" (2) | 1/4" (2) | No | 4 RCA adapters, brks grnd lps, converts automatically between balanced and unbalanced ins | $74.95 |
| 1/4" (8) | 1/4" (8) | No | Breaks ground loops, converts automatically between balanced and unbalanced ins | $284.95 |
| 1/4" (2) | 1/4" (2) | No | Converts -10 dBV to +4 dBu, 4 RCA adapters, hum eliminated, converts automatically between balanced and unbalanced ins | $89.95 |
| 1/4" (8) | 1/4" (8) | No | Converts -10 dBV to +4 dBu equipment, hum eliminated, auto converts between balanced and unbalanced ins | $344.95 |
| 1/4" | 1/4", XLR | Yes | 2-band parametric EQ; phase reverse | $239.95 |
| 1/4" (2) | XLR | No | Real speaker-to-mic receive silently, I/O electronically isolated | $395 |
| 1/4" (2) | XLR | Yes | 20 dB pad | $34 |
| 1/4" (2) | XLR (2) | Yes | Jensen JT-DB-EPC transformer | $199.95 |
| 1/4" (2), XLR | XLR | Yes | Switchable I/O attenuation, isolated transformer | $175 |
| 1/4", XLR | 1/4", XLR | Yes | | $59.99 |
| 1/4" | 1/4", XLR | No | | $69.99 |
| 1/4" | 1/4", XLR | No | | $59.99 |

# DIRECT BOXES

| Manufacturer | Product | Type | Power | # of Channels |
|---|---|---|---|---|
| Peavey | IA 10/4 | Floor | External 16.5 VAC wall wart | 2 |
| Peavey | ID-1G | Floor | Passive | 1 |
| Peavey | Patching Adapter | Floor | Passive | 1 |
| Peavey | PD-4 | Floor | Passive | 1 |
| Peavey | PS-2C | Floor | Battery | 2 |
| Peavey | PS-4AC | Floor | External 16.5 VAC wall wart | 4 |
| Pro-Co | AV 1 | Floor or 1/4 rack | Passive | 4 |
| Pro-Co | AVP 1 | Wall plate | Passive | 1 |
| Pro-Co | CB-1 | Floor or 1/4 rack | Passive | 1 |
| Pro-Co | DB-1 | Floor or 1/4 rack | Passive | 1 |
| Pro-Co | DB-4A | 1 rack space | Passive | 4 |
| Pro-Co | IT 1 | Floor or 1/4 rack | Passive | 4 |
| Pro-Co | MC 2 | Floor or 1/4 rack | Passive | 1 |
| Pro-Co | MS 1 | Floor or 1/4 rack | Passive | 1 |
| Pro-Co | MS 3 | Floor or 1/4 rack | Passive | 1 |
| Pro-Co | MS 42A | 1 rackspace | Passive | 4 |
| Pro-Co | MS 43A | 1 rackspace | Passive | 4 |
| Pro-Co | MS 82 | 1 rackspace | Passive | 8 |
| Pro-Co | MS 83 | 1 rackspace | Passive | 8 |
| Radial Engineering | Radial JD4 | Rackmount | Passive | 4 |
| Radial Engineering | Radial JDI | Floor | Passive | 1 |
| Radial Engineering | Radial JDV | Floor | Active | 1 |
| Rapco | ADB+8 | Floor | Battery, phantom | 1 |
| Rapco | DB-100 | Floor | Passive | 1 |
| Rapco | DB-101SL | Floor | Passive | 1 |
| Rapco | DBR40C | Rack-mount | Passive | 4 |
| Roland | DI-1 | Floor | Battery, phantom | 1 |
| Rolls | ADB2 | Floor | Phantom | 1 |
| Rolls | ADB3 | Floor | External AC | 2 |
| Rolls | DB14 | Floor | Passive | 1 |
| Rolls | DB25 | Floor | Passive | 1 |
| Rolls | RDB104 | Rack-mount | Internal AC | 4 |
| Stedman | BA-18 | Floor | Self-powered | 1 |
| Stedman | GA-12 | Floor | Self-powered | 1 |
| Stewart Audio | ADB-1 | Rack-mount or floor | 9V battery, 48V phantom | 1 |
| Stewart Audio | ADB-4 | Rack-mount or floor | External supply; 48V phantom | 4 |
| Tech 21 | SansAmp Acoustic DI | Floor | Phantom: 9V battery; optional DC power supply | 1 |
| Tech 21 | SansAmp Bass Driver DI | Floor | Phantom: 9V battery; optional DC power supply | 1 |
| Tube Works | 4001 | Floor | External 30 VAC | 1 |
| Tube Works | 4002 | Rack-mount | External 30 VAC | 2 |
| Westcam | DB-1E | Floor and music stand | Passive Jensen Transformer (JT-DB-E) | 1 |
| Westcam | DB-4E | Rack-mount, 1 space | Passive Jensen Transformer/JT-DB-E | 4 |
| Whirlwind | Director | Floor | Passive | 1 |
| Whirlwind | HotBox | Floor | Battery, phantom | 1 |
| Whirlwind | HotBox Quad | Rack-mount | Internal AC | 4 |
| Whirlwind | IMP 2 | Floor | Passive | 1 |
| Whirlwind | Mic Eliminator (guitar) | Floor | Battery, phantom | 1 |
| Whirlwind | Multi Director | Rack-mount | Passive | 4 |

| Inputs | Outputs | Ground Lift | Special Features | Price |
|---|---|---|---|---|
| 1/4" (2); XLR (2) | 1/4" (2); XLR (2) | No | | $99.99 |
| 1/4" | XLR (2) | Yes | | $49.99 |
| 1/4" | 1/4" (5) | No | | $27.99 |
| 1/4" | 1/4" (4) | No | Mono/stereo switch; headphone distributor | $39.99 |
| XLR (2) | XLR (2) | No | | $57.99 |
| XLR (4) | XLR (4) | Yes | Provides phantom power to 4 electet condenser mics | $129.99 |
| 1/4" TRS; 1/8"; RCA | 1/4" TRS; XLR | Yes | Line/speaker level in; high cut | $122.20 |
| 1/4"; RCA; XLR | Barrier strip | Yes | Line/speaker level in | $122.20 |
| 1/4" | 1/4"; XLR | Yes | High headroom transformer | $55.47 |
| 1/4" | 1/4"; XLR | Yes | Line/speaker level in; high cut; high headroom transformer | $122.20 |
| 1/4" | 1/4"; XLR | Yes | Line/speaker level in; high cut; high headroom transformer | $333.22 |
| 1/4" TRS; XLR | 1/4"; XLR male and female | Yes | High dynamic headroom; external low frequency response | $122.20 |
| XLR (2) | XLR | N/A | Low noise; high headroom | $122.20 |
| XLR | XLR (2 direct/isolated) | Yes | Low noise; high headroom | $122.20 |
| XLR | XLR (3 direct/isolated) | Yes | Low noise; high headroom | $122.20 |
| XLR | XLR (2 direct/isolated) | Yes | Low noise; high headroom | $333.22 |
| XLR | XLR (2 direct/isolated) | Yes | Low noise; high headroom | $444.33 |
| Phoenix barrier strip | Phoenix barrier strip (2 direct/isolated) | Yes | Low noise; high headroom; phantom available on P | $655.56 (phant) $722.22 |
| Phoenix barrier strip | Phoenix barrier strip (3 direct/isolated) | Yes | Low noise; high headroom; phantom available on P | $877.78 (phant) $544.44 |
| 1/4" front (8); 1/4" rear (8) | XLR (4) | Yes | Merged input pairs; phase reverse; pad (15 dB); ultrasonic noise filter | $899.95 |
| 1/4" (2) | XLR | Yes | Merged inputs; pad (15 dB); ultrasonic noise filter | $239.95 |
| 1/4" (2) | XLR | Yes | NiCad rechargable batteries; Class A design | $199.99 |
| 1/4" | 1/4"; XLR | Yes | 3-position switch for mic level, unity gain, or +8 dB forward gain | $208 |
| 1/4" | 1/4" (4); XLR (4) | Yes | Special ground-lift jack (instead of switch) | $49.95 |
| 1/4" | 1/4" (4); XLR (4) | Yes | Accepts instrument and speaker-level signals for "overdrive" | $59.95 |
| 1/4" (4) | 1/4" (4); XLR (4) | Yes | 4 units in single rackspace | $249 |
| 1/4" | 1/4"; XLR | Yes | Auto power-off; phase-inverse | 149.50 |
| 1/4" (2) | XLR | Yes | 3-position attenuation | $50 |
| 1/4" (4) | XLR (2) | Yes | Tube-based; 20 dB gain | $200 |
| RCA (2) | RCA (2); XLR | No | 2 volume controls | $70 |
| 1/4" (2) | XLR | Yes | 3-position attenuation | $35 |
| 1/4" (8) | XLR (4) | Yes | | $200 |
| 1/4" | 1/4"; XLR | Yes | Speaker reactor circuit simulates 18" bass guitar speaker w/o battery | $119 |
| 1/4" | 1/4"; XLR | Yes | Speaker reactor circuit simulates 12" guitar speaker w/o battery | $119 |
| 1/4" | 1/4"; XLR | Yes | Transformerless | $109 |
| XLR (4) | 1/4"; XLR (4) | Yes | Transformerless; input-sensitivity selectable; ground lift on each channel | $379 |
| 1/4" (2) | 1/4"; XLR | Yes | Semi-parametric EQ; tube/mic emulation; FX loop; level/blind/mid shift; active bass/mid/treble | $225 |
| 1/4" | 1/4" (2); XLR | Yes | Tube amplifier emulation for bass; presnc/drive/level/blind controls; active bass/treble | $225 |
| 1/4" (1) | 1/4"; XLR; 1/4" speaker/loop out | Yes | Speaker/normal switch; boost (XLR only) | $195 |
| 1/4" (2) | 1/4"(2); XLR (2); 1/4" speaker/loop out (2) | Yes | Speaker/normal switch; boost (XLR only); transformerless DC out | $395 |
| 1/4" | XLR | Yes | Gold-plated switches/jacks; pad; filter | $179.95 |
| 1/4" (2) front and rear | XLR (2) front and rear | Yes | Locking gold-plated switches/jacks; pad/filter; RFI filter | $675 |
| 1/4" | 1/4" (2); XLR | Yes | Instrument/amplifier switch; LP switch | $99.95 |
| 1/4" | 1/4"; XLR | Yes | Instrument/amplifier switch; extremely high input impedance | $179.95 |
| 1/4" (4) | 1/4" (4); XLR (4) | Yes | Instrument/amplifier | $799.95 |
| 1/4" | 1/4"; XLR | Yes | | $59.95 |
| 1/4" | 1/4"; XLR | Yes | Emulates SM57 on- or off-axis in front of 12" guitar speaker; instrument/speaker input switch | $99.95 |
| 1/4" (4) | 1/4" (4); XLR (4) | Yes | Instrument/speaker switch; LP switch | $379.95 |

# DIGITAL AUDIO CONVERTERS

| Manufacturer | Product | Converter Type/# | ADC Resolution, Over Sampling | DAC Resolution | Sample Rate(s) | Sample Rate Conversion | Dither | Analog I/O #/Type |
|---|---|---|---|---|---|---|---|---|
| Alesis | AI3 | A/D (8), D/A (8) | 20-bit/128x | 20-bit/128x | 48 kHz (extrnally variable from 40.4–50.8 kHz) | No | No | 8/1/4" TRS |
| Apogee Electronics | AD-8000 | 8-channel conversion system w/optional D/As and interface card | 24-bit | N/A | 44.1. 48 kHz | No | ) instead | (8) XLR |
| Apogee Electronics | PSX-100 | A/D (2); D/A (2) | 24-bit | N/A | 44.1, 48, 88.2, 96 kHz | No | UV22(R) instead | (8) XLR |
| Apogee Electronics | Rosetta AD | A/D (2) conversion | 24-bit | N/A | 44.1, 48 (optional 88.2, 96) kHz | No | UV22(R) instead | (2) XLR |
| Benchmark | AD2404-96 | A/D (4) | 24-bit/128x @ 44.1, 48 kHz; 64x @ 88.2 and 96 kHz | N/A | 44.1, 48, 88.2, 96 kHz; varispeed | No | Yes (to 16- or 20-bit) | (4) XLR |
| Benchmark | AD2408-96 | A/D | 24-bit/128x @ 44.1 and, 48 kHz; 64x @ 88.2 kHz | N/A | 44.1, 48, 88.2, 96 kHz; varispeed | No | Yes (to 16- or 20-bit) | (8) XLR |
| Benchmark | ADA 2008 | A/D; D/A | 20-bit/64x | 20-bit | 44.1, 48 kHz; varispeed (28–54 kHz) | No | No | (8) XLR |
| Crane Song | HEDD | A/D; D/A | 24-bit | 24-bit (stereo) | 44.1, 48 kHz | No | No | N/A |
| Empirical Labs | MusicNet AD24 | A/D | 24-bit | 24-bit | 44.1, 48 kHz | Yes | Yes | (8) XLR |
| Empirical Labs | MusicNet DA24 | D/A | 24-bit/16-bit | 24-bit/20-bit | 44.1, 48 kHz | Yes | Yes | (8) XLR |
| Frontier Design | Tango 24 | A/D (8); D/A (8) | 24-bit/128x | 24-bit/128x | 44.1, 48 kHz; 39–51 kHz from extrnal clock | No | No | (8x8) 1/4" TRS |
| Frontier Design | Zulu | A/D (4); D/A (8) | 20-bit/128x | 20-bit/128x | 39–51 kHz from optical input | No | No | (4x8) 1/4" |
| Independent Audio | dCS Ltd DAC 904 | A/D | 24-bit | No | 44.1, 48, 88.2, 96, 176.4, 192 kHz; Sony DSD | No | No | (2) XLR |
| Independent Audio | dCS Ltd DAC 954 | D/A | No | 24-bit | 44.1, 48, 88.2, 96, 176.4, 192 kHz; Sony DSD | No | No | (2) XLR |
| Independent Audio | dCS Ltd DAC 972 | DDC 972 | No | No | 44.1, 48, 88.2, 96, 176.4, 192 kHz; Sony DSD | Yes | No | N/A |
| Lucid | AD9624 | A/D (2) | 24-bit/128x | | 32, 44.1, 48, 88.2, 96 kHz | Yes | Yes | (2) XLR |
| Lucid | ADA8824 (ADAT) | A/D (8); D/A (8) | 24-bit/128x | 24-bit/128x | 44.1, 48 kHz | Yes | No | (8) XLR |
| Lucid | ADA8824 (Sonic) | A/D (8); D/A (8) | 24-bit/128x | 24-bit/128x | 44.1, 48 kHz | Yes | No | (8) XLR |
| Lucid | DA9624 | D/A (2) | N/A | 24-bit/128x | 32, 44.1, 48, 88.2, 96 kHz | Yes | No | (2) 1/4"TRS, XRL |
| Midiman | Flying Calf AD | A/D | 24/128x | N/A | 44.1, 48 kHz | No | No | (2) 1/4" |
| Midiman | Flying Calf DA | D/A (2) | N/A | 24-bit/128x | All incoming | No | No | (2) 1/4" |
| Midiman | Flying Cow 24-bit | A/D (2); D/A (2) | 24-bit/128x | 24-bit/128x | 32, 44.1, 48 kHz, external | No | No | (2) 1/4" |
| Midiman | Pipeline 8x8 | A/D (8); D/A (8) | 24-bit/128x | 24-bit/128x | 44.1, 48 kHz | No | Yes | (8) 1/4" |
| Mytek Digital | 8x96 Series ADC and DAC | 8-channel | 24-bit/64x; 128x | 24-bit | 44.1, 48, 88.2, 96 kHz | No | Yes | (8) XLR |
| Mytek Digital | D-Master 9624 | A/D (8); D/A (8) | 24-bit/64x, 128x | 24-bit | 32, 44.1, 48, 88.2, 96 kHz | No | Yes | (4) XLR |

| Digital I/O #/Type | Word Clock I/O | Video Input Sync | RF Filtering | THD | Dynamic Range | Special Features | Price |
|---|---|---|---|---|---|---|---|
| ADAT (optical) | No | No | Yes | 0.0030% | 96 dB | Signal/clip metering; optical out source switch | $499 |
| (8) AES/EBU, (2) S/PDIF, other interfaces on plug-in cards | Yes | Yes (Optional video sync card) | Yes | -110 dB (A-weighted) | ≥114 dB (-60 dB A-Weighted) | Optional 2-channel/8-channel D/A, AMBus digital I/O (includes ProTools, ADAT, TDIF, AES/EBU, SDIF-II, SSL HiWay, ST optical) cards; ABS, low jitter clock | basic unit $5,995 ("SE" version) add $2,500 (cards) $495-$1,595 |
| AES/EBU, S/PDIF (coax/opt), ADAT, TDIF | Yes | Yes (Optional video sync card) | Yes | -112 dB (-0.1 dBFS A-weighted) | ≥119 dB (-60 dB A-weighted) | 3 modes enable cross-connection of A/D and D/A, ABS bit-splitting, low jitter clock | $2,995 |
| AES/EBU, S/PDIF (coax/opt), ADAT, TDIF | Yes (out only) | No | Yes | -112 dB (-0.1 dBFS A-weighted) | ≥119 dB (-60 dB A-weighted) | Upgradable from 44.1/48 kHz to 88.2/96 kHz, pro/consumer analog in | (44.1/48 kHz version) $1,295 (44.1/48/88.2/96 kHz vers) $1,995 |
| (2) AES3 (110Ω) XLR or AES2id (75Ω) BNC, S/PDIF | No | No | Yes | 0.00003% @ 1dB FSD (20 Hz–20 kHz) | 117 dB | Jitter-reducing PLL circuitry; (4) 9-segment digital meters | $2,800 |
| 4/AES3 (110Ω) XLR or AES2id (75Ω) BNC, S/PDIF | No | No | Yes | 0.00003% @ 1 dB FSD (20 Hz–20 kHz) | 117 dB | Jitter-reducing PLL circuitry; (4) 9-segment digital meters | $4,995 |
| AES, ALR (110Ω), BNC (75Ω) | No | No | Yes | 0.0004% @ -1 cB FSD (20 Hz–20 kHz) | 110 dB | CCIF IM = -128 dBFS (0.00004%) @ -1 dB FSD | N/A |
| AES, S/PDIF | Yes | No | Yes | Depends on process | >117 cB | DSP generates tricode, pentode tube sound in the digital domain | $2,975 |
| ADAT Lightpipe | Yes (in only) | N/A | No | 0.007% | >113 dB | Rack unit | $749 |
| ADAT Lightpipe | Yes (out only) | N/A | No | 0.007% | >106 dB | Rack unit | $549 |
| (8) ADAT optical in/thru/out | Yes | N/A | Yes | 0.002% (A-weighted) | 105 dB (A-weighted) | +4 dBu or -10 dBV, selectable per channel | $699 (bundle prices available w/Dakota or Wave Center) |
| (3) ADAT optical | No | N/A | Yes | 0.002% (A-weighted) | >98 dB | | $399 (bundle prices available w/Dakota or Wave Center) |
| (4) AES/EBU, SPDIF | Yes, (referencing input) | No | Yes | N/A | 125 dB | Ultra-high sample rates | $7,335 |
| (4) AES/EBU, SPDIF | Yes (referencing input) | No | Yes | N/A | 125 dB | Ultra-high sample rates | $7,335 |
| (4) AES/EBU, (2) S/PDIF, SDIF-2 | Yes | No | No | N/A | N/A | Ultra-high sample rates | $6,320 |
| (2) AES/EBU, S/PDIF (coax), Toslink | Yes | No | Yes | <0.002% | >115 dB | User-selectable 16-bit noise shaping; 20-segment input level LED ladders w/peak/hold/clip indicator | $899 |
| (4) AES/EBU, S/PDIF, RCA (coax), (2) ADAT (optional) | Yes | No | Yes | <0.005% | >113 dB A/D, >105 dB D/A | ADAT optical (Lightpipe) I/O; ADAT sync I/O connectors | $3,295 |
| (4) AES/EBU, S/PDIF, RCA (coax), (2) Sonic USP | Yes | No | Yes | <0.005% | >113 dB A/D, >105 dB D/A | Works with Sonic Solutions DAW using SonicStudio 16.24 card | $3,295 |
| (2) AES/EBU, S/PDIF (coax), Toslink | No | No | Yes | <0.002% | >114 dB | Separate headphone volume control; front panel out; 20-segment output level LED ladders | $749 |
| S/PDIF | No | No | No | 0.005% | dB (A-weighted) | 100 dB | $249.95 |
| S/PDIF in | No | No | No | 0.002% | dB (A-weighted) | | $199.95 |
| (2) AES/EBU, (2) S/PDIF | No | No | No | 0.003% | 103 dB | | $499.95 |
| Lightpipe | Yes | No | Yes | N/A | 106 dB | | $899 |
| (4) AES/EBU, (2) ADAT (Lightpipe), optional ProTools, Sonic, TDIF | Yes | No | Yes | -106 dB | 120 dB | Bit splitting, format conversion, 96 kHz | $2,995 |
| AES/EBU, S/PDIF, SCSI, others optional | Optional | Optional | Yes | -106 dB | 120 dB | Full-featured HD mastering recorder with high-performance converters and processing | $4,995 |

# DIGITAL AUDIO CONVERTERS

| Manufacturer | Product | Converter Type/# | ADC Resolution, Over Sampling | DAC Resolution | Sample Rate(s) | Sample Rate Conversion | Dither | Analog I/O #/Type |
|---|---|---|---|---|---|---|---|---|
| Sonorus | AudI/O AD/24 | A/D (8) | 24-bit,128x | N/A | 44.1, 48 kHz; 32–50 kHz | No | No | (8) XLR |
| Sonorus | AudI/O AD/9624 | A/D (8) | 24-bit | N/A | 44.1, 48, 88.2, 96 kHz | No | Yes | (8) XLR |
| Sonorus | AudI/O DA/24 | DA/8 | N/A | 24-bit/128x | 44.1, 48 kHz; 32–50 kHz | No | No | (8) XLR |
| Sonorus | AudI/O DA/9624 | D/A | 24-bit | N/A | 44.1, 48, 88.2, 96 kHz | No | Yes | (8) XLR |
| Studer | MicAD | A/D | 20-bit | N/A | 44.1, 48 kHz | No | Yes | (8 mic/8 line) XRL |
| Studer | MultiDac | D/A (8) | N/A | 23-bit | 44.1, 48 kHz | Yes (switchable) | No | (8) XLR |
| Studer | MicValue | D/A (2) | 20-bit | N/A | 44.1, 48 kHz | No | Yes | (6) XLR (mic/line in, insert sound/ return, line out) |
| Zefiro Acoustics | Zefiro In Box | A/D | 20-bit/128x | N/A | 44.1 kHz | Yes | Yes | (2) XLR in; RCA line in (optional) |

# MICROPHONE & INSTRUMENT PREAMPS

| Manufacturer | Product | Type | Channels | EQ | Output Level Control | Instrument/ Line Input |
|---|---|---|---|---|---|---|
| Amek | 9098 EQ | TLA (Transformer-Like Amplifier) | 1 | 4-band parametric; variable HP/LP | No | Yes |
| Amek | DMA | TLA (Transformer-Like Amplifier) | 2 | HP filter | No | Yes |
| Aphex Systems | 107 | Tube | 2 | Low-cut filter (80 Hz) | Yes | No |
| Aphex Systems | 1788 | Solid state | 8 | Low-cut filter | Yes | Yes |
| API | 512C | Solid state | 1 | N/A | Yes | Yes |
| A.R.T. | Dual MP | Tube | 2 | N/A | Yes | Yes |
| A.R.T. | Pro MPA | Tube | 2 | Variable HP filter (15–150 Hz) | Yes | Yes |
| A.R.T. | Tube MP | Tube | 1 | N/A | Yes | Yes |
| ARX | MIXX | Transistor | 4 | Low 100 Hz shelving; mid 800 Hz bell; broad Q; high 10 kHz shelving | Yes | Yes |
| ARX | MIXXmaster | Transistor | 4 | Low 100 Hz shelving; mid 800 Hz bell; broad Q; high 10 kHz shelving | Yes | Yes |
| Audio Engineering Associates | MS 380 TX | Solid state | 2 | 40 Hz, 18 dB/oct HP filter | Yes | Yes |
| ATI | 8MX2 | Solid state | 8 mic/8 line | N/A | Yes | Yes |
| Audio Upgrades | High Speed Mic Preamp | Solid state | 2 | N/A | Yes | No |

| Digital I/O #/Type | Word Clock I/O | Video Input Sync | RF Filtering | THD | Dynamic Range | Special Features | Price |
|---|---|---|---|---|---|---|---|
| ADAT, Toslink | Yes | No | Yes | >103 dB THD +N | 117 dB SNR | | $799 |
| (4) AES/EBU, S/MUX dual ADAT | Yes (TTL or AES 11 on BNC) | No | Yes | 106 dB | 120 dB | Prism Sound MR-X format; optional TDIF, Sonic, ProTools plug-in cards | $2,995 |
| ADAT, Toslink | Yes | No | Yes | 97 dB THD +N | 106 dB (A-weighted) | | $599 |
| (4) AES/EBU, S/MUX dual ADAT | Yes (TTL or AES 11 on BNC) | No | Yes | 101 dB | 109 dB | Prism Sound MR-X format; optional TDIF, Sonic, ProTools plug-in cards | $2,995 |
| AES/EBU out (optional ADAT, TDIF) | Yes (BNC, AES/EBU input sync) | No | Yes | ≥85 dBFS | <106 dB | Remote controllable | $4,950 |
| AES/EBU out (optional ADAT, TDIF) | No | No | Yes | ≤116 dBFS @ -30 dBFS | >116 dBFS | Front-panel mix monitor | $3,175 |
| AES/EBU out (optional ADAT, TDIF) | Yes (BNC) | Yes (AES/EBU sync in) | Yes | >104 dB | 106 dB | Tube gain stage (switchable) with drive control/EQ | $2,025 |
| S/PDIF (optical/coax) out | No | No | Yes | 0.0018% | >99 dB | Built-in mic preamp | $295 |

| Fry Warning | Frequency Response | Noise | Total Harmonic Distortion | Special Features | Price |
|---|---|---|---|---|---|
| N/A | 10 Hz–110 kHz (@ -1.5 dB) | -100 dBu | <0.01% | Phantom; notch filters; NEVE glow and sheen | $2,269 |
| (2) 8-segment LED | 10 Hz–110 kHz (@ -3 dB) | -104 dBu S/N | <0.01% | Phantom; MS surround | $1,710 |
| Clip LED | 20 Hz–30 kHz | -128 dBu EIN | 0.1% | Remote mute; Tubessence; phantom; gain cntrl; pad | $449 |
| Clip LED | 10 Hz–20 kHz (@ +0.2 dB) | -124 dBu EIN | 0.3% | 2 outs pr ch; individual headphone monitoring of selected channels; clickless remote gain change; indiv lmtrs; dgtl out module ($995) | $4,495 |
| Yes | 30 Hz–20 kHz (@ +0/-3 dB) | -129 dB @ +60 dB of gain | <0.05% | Reissue '70s API mic pre; 7-seg input LED; phase; phant; 20 dB pad; 1/4"/XLR frnt pnl ins; fits 500 Series frames/consoles | $825 |
| 3-segment LED, clip LED | 10 Hz–20 kHz | -129 dBu EIN | <0.1% | Phase; phantom; +20 dB gain switch | $349 |
| 10-segment LED | 20 Hz–40 kHz | -132 dBu EIN | <0.1% | Output-level VU meters; phase; phantom; 5-year warranty | $649 |
| Clip LED | 10 Hz–20 kHz | -129 dBu EIN | <0.1% | Phase; phantom | $139 |
| N/A | 20 Hz–20 kHz | -90 dB | <0.005% | Phantom; can also mix to a stereo pair for monitoring | $454 |
| N/A | 20 Hz–20 kHz | -90 dB | <0.005% | Phantom; can also mix to a stereo pair for monitoring | $418 |
| 10 dB headroom warning | 10 Hz–30 kHz | 111 dB S/N | <0.04% | Phant/AB pwr; dbl matrix for MS and X-Y stereo-width adj; 120/240 VAC ext pwr supp; 84 dB gain | $2,295 |
| (2) 10-segment LED | 20 Hz–20 kHz | 94 dB S/N; -129 dBm EIN | 0.006% | Variable threshold limiter on each input (8); phase; phant/grnd lift on ech ch; 8x2 mixer w/8 outs | $1,899 |
| Clip LED | 0.5 Hz–4 MHz | -132.06 dB EIN | 0.0005% | Military RF-input transistors; audiophile MIT/Infinicap input caps; transformerless; drives 150 Ω loads | $1,500 |

# MICROPHONE & INSTRUMENT PREAMPS

| Manufacturer | Product | Type | Channels | EQ | Output Level Control | Instrument/ Line Input |
|---|---|---|---|---|---|---|
| Avalon Design | AD2022 | 100% discrete, pure Class A | 2 | Variable HP filter | Yes | Yes |
| Avalon Design | M5 | 100% discrete, pure Class A | 1 | Variable HP filter | Yes | Yes |
| Barcus-Berry | 3500A | Solid state | 1 | Treble (±2 dB @ 10 kHz), bass (±12 dB @ 100 Hz) | No | Yes |
| BBE | 386 | Solid state | 1 | Parametric | Yes | Yes |
| Bellari | MP110 Direct Drive | Tube | 1 | N/A | Yes | Yes |
| Bellari | RP220 | Tube | 2 | N/A | Yes | Yes |
| Bellari | RP520 | Tube | 2 | N/A | Yes | Yes |
| Benchmark | Mic-Man Jr. | Solid state | 2 | N/A | No | No |
| Benchmark | MPS-400 | Solid state | 4 | N/A | No | No |
| beyerdynamic | Mike Man | Solid state | 2 | N/A | No | No |
| beyerdynamic | MV100 | Solid state | 2 | HP filter (120 Hz) | No | No |
| beyerdynamic | ProMike | Solid state | 2 | N/A | No | No |
| Bryston | BMP-2 | Solid state | 2 | N/A | Yes | Yes |
| CLM | DB400S | Solid state | 4 | Low-cut filter | No | Yes |
| Crane Song | Flamingo | Discrete Class A | 2 | 6–66 dB steps | Yes | No |
| Crookwood | Headless Paintpot | Solid state | 2 | HP filter, LF/HF | Yes | No |
| Crookwood | Hi Voltage Paintpot | Solid state | 2 | HP filter, LF/HF | Yes | No |
| Crookwood | Mic Bricks | Solid state | 2–32 (modular) | HP filter, LF/HF | Yes | Yes |
| Crookwood | Paintpot | Solid state | 2 | HP filter, LF/HF | Yes | No |
| Crookwood | Rackpot | Solid state | 4 | HP filter | Yes | Yes |
| D.W. Fearn | VT-1/VT-2 Vacuum Tube Microphone Preamplifier | Tube | 1/2 | N/A | Yes | No |
| Demeter | H MP-1 Stereo Tube Microphone Preamp | Tube | 2 | Low-cut filter | Yes | Yes (2) |
| Demeter | VTBP-201 DBL Tube Bass Preamp | All tube | 1 | Treble, mid, bass (w/selectable frequency), presence | No | Yes (2) |
| Demeter | VTMP-2b Stereo Tube Microphone Preamp | Solid state | 2 | Low-cut filter | Yes | Yes (2) |
| Demeter | VTMP-2bx Stereo Tube Microphone Preamp | Tube | 2 | Low-cut filter | Yes | Yes (2) |
| Desert Island | Tubular | Tube | 1 | 3-band, 20 Hz–20 kHz I.C. w/bypass | Yes | Yes |
| Drawmer | 1962 | Solid state/tube with 24-bit digital output | 2 | 3-band per channel | Yes | Yes |
| Earthworks | LAB102/LAB101 | Solid state | 2/1 | N/A | Yes | No |
| Event Electronics | EMP-1 | Solid state | 1 | HP filters (switchable) | No | No |
| Fishman | Acoustic Blender/Acoustic Bass Blender | Solid state | 2 | Active shelving style: bass, treble, low-cut filter | Yes | Yes |
| Fishman | Model G/Model B | Solid state | 1 | Active shelving style: bass, treble | Yes | Yes |
| Fishman | Pocket Blender | Solid state | 2 | Active shelving style: bass, treble, high/low-cut filters | Yes | Yes |
| Fishman | Pro EQ | Solid state | 1 | 4-band graphic (bass, mid, treble, brilliance) | Yes | Yes |
| Focusrite | Red 6 | Solid state | 1 | 4-band, fully parametric mids | Yes | No |

| Overload Warning | Frequency Response | Noise | Total Harmonic Distortion | Special Features | Price |
|---|---|---|---|---|---|
| N/A | (1 Hz–120 kHz transformer limit) | -126 dB EIN | 0.05% | Ext B2T power supply (100/240V); polarity; 20 dB pad; DI in; optional balanced JT-1 output transformer; optional B&K 130V phantom power | $3,000 |
| Analog VU; (2) signal peak LEDs | (5 Hz–120 kHz transformer limit) | -126 dB EIN | 0.05% | Ext B2T power supply (100/240V); polarity; 20 dB pad; DI in; optional B&K 130V phantom power | $1,600 |
| N/A | N/A | 100 dB | 0.005% | Internal gain up to 12 dB; 1,000 hrs batt life; compat w/all types of piezo P/Us | $129 |
| N/A | 5 Hz–30 kHz | -95 dBu | 0.04% | BBE process | $299 |
| Clip LED | 40 Hz–40 kHz | 90 dB S/N | 0.1% | Transformer-balanced inputs; phase; pad | $230 |
| 5-segment LED; clip LED | 20 Hz–40 kHz | 107 dB S/N | 0.1% | Transformer-balanced inputs; phase; pad | $500 |
| Clip LED | 20 Hz–40 kHz | 107 dB S/N | 0.1% | Analog VU meters; transformer-balanced inputs; phase; pad | $600 |
| N/A | 1 Hz–300 kHz | 1 dB noise figure | 0.001% | Portable AC/DC operation; gain range: 26 to 76 dB | $425 |
| N/A | 1 Hz–500 kHz | 1 dB noise figure; EIN -130 dBu | 0.0009% | Active bal I/O; phantom; max output level +27 dBu; gain range -2 to +73 dB (w/pad) | $1,095 |
| 10-segment LED | 20 Hz–90 kHz | 83.18 dB S/N | 0.0005% | Dual-channel microphone preamp for recording | $699 |
| Clip LED | 18 Hz–22 kHz | -128 dB EIN | 0.03% | Headphone monitoring | $799 |
| Peak LED | 20 Hz–90 kHz | -129 dB EIN | 0.0005% | Phantom; optical input transformers; bar-graph indicators | $1,399 |
| Peak LED | 20 Hz–20 kHz | -125 dB EIN | 0.05% | Fully balanced pure Class A; fully discrete circuitry | $2,500 |
| 10-segment LED per channel | 20 Hz–20 kHz | 128 dB | 0.006% | Phant; limiter; mid and side with stereo width management | $2,199 |
| (2) 23-segment LED w/clip indicator | 5 Hz–200 kHz | -129 dBm EIN S/N | 0.0006% | Phantom; sel "Fat" and "Iron" amps; emulates vintage sounds and creates new ones | $2,025 |
| LED with adjustable threshold | 0 Hz–500 kHz | -130 dB EIN | 0.001% | Portable; remote control only; MS decoders; input imped adj; high-current line drivers | $2,495 |
| LED with adjustable threshold | 0 Hz–500 kHz | -130 dB EIN | 0.001% | Portable; stand-alone and remote control; sep in for 130V B&K mics; MS decoders; input imp adj; high-current line drivers | $3,395 |
| LED with adjustable threshold | 0 Hz–500 kHz | -130 dB EIN | 0.001% | Modular; 3 rackspaces; remote control only; input imp adj; high-current line drivers; distribution feeds; 24-bit AES/EBU out | (per chan) $550 |
| LED with adjustable threshold | 0 Hz–500 kHz | -130 dB EIN | 0.001% | Portable; stand-alone or remote control; MS decoders; input imp adj; high-current line drivers | $2,995 |
| LED with adjustable threshold | 0 Hz–500 kHz | -130 dB EIN | 0.001% | 1 rackspace; remote control only; input imp adj; high-current line drivers; opt 24-bit AES/EBU outs | $3,295 |
| VU meter | 5 Hz–28 KHz | -122 dBu EIN | 0.2% | Phantom; phase; 20 dB pad; low imp in for transformerless mics | (V7-1) $2,000 (V7-2) $3,500 |
| 10-segment LED | 10 Hz–80 kHz | -124 EIN | 0.012% | Jensen input transformer; phase; LC; pad; vari tube gain | $1,295 |
| N/A | N/A | N/A | N/A | Jensen DBE mic level output transformers; effects loop; balanced out | $799 |
| LED | 10 Hz–40 kHz | -124 dB EIN | 0.016% | Jensen input transformers; phase; LC; pad; vari tube gain | $2,299 |
| LED | 10 Hz–40 kHz | -124 dB EIN | 0.016% | Phantom; Jensen in/out transformers; phase; LC; pad; vari tube gain | $2,549 |
| Clip LED | N/A | N/A | N/A | 1 rackspace; mic pre-tube midstage; mic/line and instr input (use all-in-line via master) | $699 |
| Yes (with limiter) | 0 Hz–35 kHz | -128.5 dB @ 60 dB of gain | <0.01% | TDIF, Lightpipe, XLR I/O; AES/EBU, S/PDIF outs; spectral enhancement; Tube Drive; 2-ch mixer; 3 str inserts; adjustable word length; dither; bit splitting | (analog) $2,699 (TDIF, ADAT) $4,999 |
| N/A | 2 Hz–100 kHz (@ ±0.1dB) | -125 dBv EIN @ 20 dB of gain; -133 dBv @ 40 dB gain | N/A | Multiple outs per channel; phase; phantom; standby | (LAB102 dual) $1,500 (LAB101 mono) $750 |
| Clip LED | 20 Hz–20 kHz (@ ±0.1 dB) | 122 dB S/N | 0.02% | Internal power supply; extruded aluminum case; phase; phantom; signal-present LED | $299 |
| N/A | 20 Hz–20 kHz | 81 dB (A-weighted, ref to nom -20 dBV input) | 0.2% | Sep mic/piezo transducer channels w/dedicated effects loops/phase; phantom | $459.95 |
| N/A | 20 Hz–20 kHz | N/A | N/A | Optimized for piezo-electric transducers | $139.95 |
| N/A | 20 Hz–20 kHz | 87 dB (A-weighted, ref to nom -20 dBV input) | 0.7% | Sep mic/piezo transducer channels w/dedicated effects loops/phase rev; phantom | $379.95 |
| N/A | 20 Hz–20 kHz | N/A | N/A | Optimized for piezo-electric transducers; phase; sub-bass rolloff | $179.95 |
| VU meter | 10 Hz–140 kHz | -128 dB EIN | 0.003% | Separate in/out switching for filters/EQ; phantom; phase; output fader | $2,995 |

# MICROPHONE & INSTRUMENT PREAMPS

| Manufacturer | Product | Type | Channels | EQ | Output Level Control | Instrument/ Line Input |
|---|---|---|---|---|---|---|
| Focusrite | Red 7 | Solid state | 1 | Low-cut | Yes | No |
| Focusrite | Red 8 | Solid state | 2 | N/A | Yes | No |
| GML | 8300 | Solid state | 2 | N/A | No | No |
| Giltronics | 2TMP | Tube/transformer in and out | 2 | N/A | Yes | No |
| Giltronics | 356AT Mic/Line Preamp | All tube | 4 (2 mic/2 line) | N/A | Yes | Yes |
| Giltronics | 4 TMP Tube Mic Preamp | All tube | 4 | N/A | Yes | No |
| Grace Design | Lunatec V2 | Solid state | 2 | HP filter (75–150 Hz, 6–12 dB/oct) | Yes | No |
| Grace Design | Model 201 | Solid state | 2 | N/A | Yes | Yes |
| Grace Design | Model 801 | Solid state | 8 | N/A | Yes | No |
| Grace Design | Model 801R | Solid state | 8 | N/A | No | No |
| HHB | Classic 80 | Pentode tube | 2 | High-cut (5, 10, 15 kHz); low-cut (60, 100, 150 Hz) | Yes | Yes |
| HHB | Radius 10 | Tube | 4 | (4x) HP filter, low-cut (90 Hz) | Yes | No |
| HHB | Radius 50 | Tube | 1 | HP filter, low-cut (90 Hz) | Yes | No |
| Independent Audio | Calrec RQP 4400 | Solid state | 4 (stereo) | LF filter (18 dB/oct) 47, 82, 150 Hz switch for each channel; HF filter (12 dB/oct) | No | No |
| Independent Audio | DACS Ltd. MicAmp | Discrete | 2 | Bass rolloff | No | No |
| Langevin | Dual Mono Mic Pre | Solid state | 2 | High and low shelving | No | Yes |
| Lexicon | Signature 284 All-Tube Class "A" Stereo Recording Amplifier & Direct Source | Tube (Class A) | 2 | Bass, mid, treble, presence | Yes | Yes |
| Manley Labs | Dual Mono 40 dB | Tube | 2 | N/A | No | Yes |
| Manley Labs | Mic EQ 500 | Tube | 1 | Stepped LF and HF, passive vintage EQ | Yes | Yes |
| Manley Labs | Mono 40 dB | Tube | 1 | N/A | No | Yes |
| Martech | MSS-10 Microphone Preamplifier | Solid state | 1 | N/A | Yes | Yes |
| Midiman | Audio Buddy | Solid state | 2 | N/A | No | Yes |
| Millennia Media | HV-3B | Solid state | 2 | N/A | Yes | No |
| Millennia Media | HV-3D | Solid state | 8 | N/A | Yes | No |
| Millennia Media | Quad | Solid state | 4 | N/A | Yes | No |
| Nightpro | PreQ3 | Solid state | 2 or 4 | 1-band (selectable frequency), broad-band shelving, LF rolloff | No | Yes |
| Oram Pro | Octasonic | Solid state | 8 | N/A | No | Yes |
| Peavey | VMP-2 | Tube | 2 | 2-band, 40/80 Hz low-cut | Yes | Yes |
| Pendulum | MDP-1 | Tube, Class A | 2 | 10-position low-cut filter (20–180 Hz) | Yes | Yes |
| Joemeek | VC1 Studio Channel | Solid state | 1 | Enhancer, HP filter | Yes | Yes |
| Precision Analog Systems | MPA 100 | Solid state | 2 | N/A | Yes | No |
| PreSonus | M80 and MP20 | Class A, discrete | 2 (MP20) or 8 (M80) | Low-cut filter | Yes | Yes |

| Overload Warning | Frequency Response | Noise | Total Harmonic Distortion | Special Features | Price |
|---|---|---|---|---|---|
| VU meter | 10 Hz–140 kHz | -128 dB EIN | 0.006% | Full dynamics processor with in/out switching; phantom; phase; output fader | $[illegible],995 |
| VU meter | 10 Hz–140 kHz | 128 dB EIN | 0.003% | Phantom/phase on each channel | $[illegible]2,495 |
| Clip LED | 1 Hz–20 kHz | -127 dBu EIN | 0.0008% | Phantom; 1 rackspace; can be upgraded to 4 channels for $1,200 | $[illegible],195 |
| N/A | 20 Hz–20 kHz | -73 dB S/N; -123 dB EIN | 0.05% | 20 dB pad; phase; -10 dB input sensitivity switch; 120/240 AC; phantom | $2,100 |
| N/A | 20 Hz–20 kHz | -73 dB S/N; -123 dB EIN | 0.05% | Can link mic pre to line; can use mic pre's and line amps separately; Riechenbach transformers in/out all 4 chs; 120/230 VAC | $3,495 |
| N/A | 20 Hz–20 kHz | -73 dB S/N, -123 dB EIN | 0.05% | Phantom; 120/230 VAC; -20 dB pad; -10 dB sensitivity switch; Reichenbach in/out transformers | $3,600 |
| 2 level, full wave signal peak indicators | 6 Hz–250 kHz (@ ±3 dB @ 60 dB gain) | <-130 dB @ 60 dB gain 50 Ω source | 0.0011% | For field recording; operates on 6–12 VDC | $1,495 |
| 2 level, full wave signal peak indicators | 4.5 Hz–1.0 MHz (@ ±3 dB @ 40 dB gain) | <-130 dB @ 60 dB gain 50 Ω source | 0.0015% | Transpedance architecture | $1,895 |
| 2 level, full wave signal peak indicators | 4.5 Hz–1.0 MHz (@ ±3 dB @ 40 dB gain) | <-130 dB @ 60 dB gain 50 Ω source | 0.001% | Transpedance architecture | $4,495 |
| Full metering | 4.5 Hz–1.0 MHz (@ ±3 dB @ 40 dB gain) | <-130 dB@ 60 dB gain 50 Ω source | 0.0015% | Fully remote control; up to 64 chans control from 1 desktop controller; scene mem/recall; full MIDI control | $5,495 (controller) $995 |
| Drive/peak indicators | 30 Hz–40 kHz | -122 dBw EIN | 0.05% | | $1,850 |
| Drive/peak LEDs | 10 Hz–40 kHz | -127 dBw EIN | N/A | Phantom; phase per channel | $749 |
| 8-segment LEDs | 10 Hz–40 kHz | -127 dBw EIN | N/A | Phantom | $469 |
| Overload LED indicator (4 dB before clipping) | 20 Hz–20 kHz | -90 dBu RMS | 0.01% | M/S conversion switchable each stereo input | $3,360 |
| N/A | 20 Hz–55 kHz | -133 dB | 0.002% | Phantom | $2,150 |
| N/A | 10 Hz–20 kHz | 80 dB S/N | 0.05% | All discrete | $1,475 |
| N/A | N/A | N/A | N/A | Preamp uses 3 12AX7 tubes; amp uses 2 EL84 tubes; stereo effects loop; speaker outs for 8/4 Ω gtr cabs; built-in speaker loads | $1,099 |
| N/A | 10 Hz–60 kHz | 80 dB S/N | 0.05% | High headroom; high accuracy | $2,400 |
| VU meter | 5 Hz–60 kHz | 100 dB S/N | 0.025% | Fully differential circuitry | $2,900 |
| N/A | 10 Hz–60 kHz | 80 dB S/N | 0.05% | High headroom; high accuracy | $1,600 |
| VU | 10 Hz–20 kHz (@ 20 dB gain @ -0.0/+0.5); 10 Hz–20 kHz (@ 65 dB gain @ -0.0/+0.5) | -129.5 dBu (typical) | <-0.0015% | | $2,250 |
| Yes | 5 Hz–50 kHz | -122 dBu | 0.1% | | $[illegible]19.95 |
| Clip LED | 1 Hz–300 kHz | -129 dB EIN | 0.001% | Fully balanced; B&K mic option | $1,895 |
| Clip LED | 1 Hz–300 kHz | -129 dB EIN | 0.001% | Fully balanced; B&K mic option | $3,995 |
| Clip LED | 1 Hz–300 kHz | -129 dB EIN | 0.001% | Fully balanced | $2,895 |
| Peak LED | 15 Hz–40 kHz | -126 dBu EIN | 0.003% | Vari Air air-band EQ | (2 channels) $1,595 (4 channels) $2,595 |
| Preclip LED | 20 Hz–40 kHz | -127.5 dB EIN | 0.005% | Phase; phantom per ch; alum knobs; 2 high-level inputs | $1,795 |
| N/A | 10 Hz–40 kHz | -126 dBu EIN | 0.04% | 20 dB pad; phantom; EQ bypass; input transformer with triple magnetic shielding | $949.99 |
| VU | 5 Hz–300 kHz | -125 dBu EIN | 0.03% | All tube signal path; transformerless out; fully regulated power supply w/soft-start warmup; phase; -20 dB pad | $2,495 |
| VU | 20 Hz–20 kHz | -125.5 dB | 0.02% | Phant; photo-optical compressor | $999 |
| Clip LED | 5 Hz–180 kHz | -127 dB EIN | 0.009% | Pure Class A operation; 100% discrete | $2,195 |
| Clip LED | 10 Hz–30 kHz | <-127.5 dB | 0.001–0.5% | Jensen input transformers; twin servo gain stage; mix bus assign for multiple mic/instr stereo imaging; IDSS control; headphone amp | (M80) $1,999.95; (MP20) $649.95 |

# MICROPHONE & INSTRUMENT PREAMPS

| Manufacturer | Product | Type | Channels | EQ | Output Level Control | Instrument/ Line Input |
|---|---|---|---|---|---|---|
| Radio Design Labs | RU-MP2 | Solid state | 2 | N/A | Yes | No |
| Radio Design Labs | RU-MX5 | Solid state | 5 | N/A | Yes | No |
| Radio Design Labs | ST-MLX3 | Solid state | 3 | N/A | Yes | No |
| Radio Design Labs | ST-MMX3 | Solid state | 3 | N/A | Yes | No |
| Radio Design Labs | ST-VCA1 | Solid state | 1 | N/A | Yes | Yes |
| Radio Design Labs | STM-1 | Solid state | 1 | N/A | No | No |
| Radio Design Labs | STM-2 | Solid state | 1 | N/A | Yes | No |
| Radio Design Labs | STM-2X | Solid state | 1 | N/A | Yes | No |
| Radio Design Labs | STM-3 | Solid state | 1 | N/A | Yes | No |
| Rane | DMS22 | Solid state | 2 | 3-band w/sweepable parametric mid | Yes | No |
| Rane | MS1 | Solid state | 1 | N/A | Yes | No |
| Sennheiser | True Audio Precision 8 | Solid state | 8 | N/A | No | Yes (2) |
| Studio Technologies | Mic-PreEminence | Solid state | 2 | N/A | Yes | No |
| Summit Audio | MP4X | Class A, transformer-coupled balanced output | 4 | HP/LP filters (12 or 24 dB/oct) | Yes | Yes |
| Summit Audio | MPC-100A | Tube/solid-state hybrid | 1 (stereo linkable with another MPC) | N/A | Yes | Yes |
| Summit Audio | TPA-200B | Tube | 2 | N/A | Yes | Yes |
| Symetrix | 302 | Solid state | 2 | N/A | Yes | No |
| Sytek | EQ4X-1M | Solid state | 1 | 4-band parametric | Yes | Yes |
| Sytek | MPX-4A | Solid state | 4 | N/A | Yes | No |
| Sytek | MPX-4A 2 | Solid state | 4 | N/A | Yes | No |
| Sytek | MPX-4D | Solid state | 4 | N/A | Yes | No |
| TC Electronic | 1140 Parametric Equalizer (Mic Preamp) | Solid state | 1 | 2-band parametric | Yes | Yes |
| TC Electronic | MP-1A | Solid state | N/A | +20 dB to +70 dB in 5 dB steps | No | Yes |
| Tech 21 | SansAmp Classic | F.E.T. solid state | 1 | Active high-cut filter | Yes | Yes |
| Tech 21 | SansAmp GT2 | F.E.T. solid state | 1 | Active low/high | Yes | Yes |
| Tech 21 | SansAmp PSA-1 | F.E.T. solid state | 1 | Active low/high | Yes | Yes |
| Tech 21 | TRI-O D | F.E.T. solid state | 3 | Active low/high | Yes | Yes |
| The John Hardy Co. | Jensen Twin Servo 990 | Solid state | 1–4 (expandable) | N/A | No | No |
| The John Hardy Co. | M-1 | Solid state | 1–4 (expandable) | N/A | No | No |
| The John Hardy Co. | M-2 | Solid state | 1–4 (expandable) | N/A | No | No |
| TL Audio | PA5001 | Tube | 4 | Low-cut filter (90 Hz) | Yes | No |
| Whirlwind | MD-1 | Solid state | 1 | N/A | Yes | Yes |
| Yamaha | HA8 | Solid state | 8 | N/A | No | Yes |
| Yamaha | MLA7 | Solid state | 8 | N/A | No | Yes |
| Zefiro Acoustics | Zefiro In Box (Preamp) | Solid state | 2 | N/A | No | Optional (RCA) |

| Overload Warning | Frequency Response | Noise | Total Harmonic Distortion | Special Features | Price |
|---|---|---|---|---|---|
| N/A | 25 Hz–20 kHz | 75 dB S/N | 0.050% | Compatible with RDL rack-mounting accessories; phantom | $308 |
| 3-segment LED | 70 Hz–30 kHz | 70 dB S/N | 0.030% | 5-channel active line mixer/mic pre with phantom | $255 |
| N/A | 10 Hz–18 kHz | 70 dB S/N | 0.2% | Small size (about 0.5x1.5x3"); individual gain adjustment; mic/line mix | $124 |
| N/A | 10 Hz–18 kHz | 70 dB S/N | 0.2% | Small size (about 0.5x1.5x3"); indiv gain adjustment | $130 |
| N/A | 20 Hz–22 kHz | 80 dB S/N | 0.05% | Small size (about 0.5x1.5x3"); cntrl via extrnl potentiometer or 0–10 VDC | $116 |
| N/A | 50 Hz–30 kHz | 70 dB S/N | 0.05% | Small size (about 0.5x1.5x3"); phantom; fixed gain of 50 dB | $99 |
| N/A | 50 Hz–25 kHz | 75 dB S/N | 0.05% | Small size (about 0.5x1.5x3"); phantom; adjustable gain | $136 |
| N/A | 50 Hz–25 kHz | 75 dB S/N | 0.05% | Small size (about 0.5x1.5x3"); gating preamp via external control; phantom | $153 |
| N/A | 50 Hz–25 kHz | 70 dB S/N | 0.05% | Small size (about 0.5x1.5x3"); phantom; adjustable gain | $156 |
| Clip LED | 20 Hz–200 kHz | 97 dB S/N | 0.009% | Stereo with pan; phantom | $549 |
| Clip LED | 20 Hz–20 kHz | 102 dB S/N | 0.007% | Phantom | $199 |
| (8) 5-segment LED and peak | 1 Hz–500 kHz (@ +0/–3 dB) | –132 dB EIN (20 Hz–30 kHz) | 0.008% | MS decoding on Chs 1 and 2 | $7,695 |
| 5-segment LED | 20 Hz–60 kHz | 69.5 dB S/N; –129.5 dB EIN | 0.002% | Transformerless; balanced in; bal/unbal outputs; phantom; phase; single rackspace | $799 |
| (4) 12-segment LED meters and clip indicator | 10 Hz–100 Hz (@ 0.5 dB) | –128 dBm EIN | 0.0025% | 25 presets; MIDI; multiunit linking; 1 kΩ input imp for min mic loading | $4,495 |
| Clip LED; VU meter | 5 Hz–65 kHz | –84 dBu; 108 dB S/N | 0.05% | "Clean" to "saturated" valve sounds; Jensen mic transformer; +4 dBu/–10 dBV outs | $1,400 |
| Clip LEDs (input and output) | 10 Hz–20 kHz | –84 dBu; 108 dB S/N | 0.02% | Continuously variable from "clean" to "overdrive"; bal output; Hi-Z in; pad; phase | $1,695 |
| Clip LED | 20 Hz–20 kHz | 95 dB S/N; –128 dBm EIN | 0.007% | L/R mix output | $299 |
| Peak LED | 10 Hz–85 kHz | 96 dBm S/N; –129 dBu EIN | 0.0015% | Class A hybrid | $1,460 |
| Peak LED | 10 Hz–85 kHz | 96 dBm S/N; –129 dBu EIN | 0.0015% | Class A hybrid | $1,280 |
| Peak LED | 10 Hz–85 kHz | 96 dBm S/N; –134 dBu EIN | 0.0015% | Class A hybrid | $1,480 |
| Peak LED | 10 Hz–85 kHz | 96 dBm S/N; –129 dBu EIN | 0.0015% | Class A hybrid | $1,870 |
| Overload LED | N/A | N/A | N/A | | $760 |
| N/A | N/A | N/A | N/A | Phantom; 1/4" XLR mic inputs | $2,395 |
| N/A | Setting dependent | Setting dependent | Setting dependent | Tube amp emulations for rec; multiple preamp styles; 8 character switchs/knbs; contour, vol, final tone cntrls | $345 |
| N/A | Setting dependent | Setting dependent | Setting dependent | Streamlined version of SansAmp Classic; selectable amp type, mod, spkr cab/mic placement configurations | $195 |
| N/A | Setting dependent | Setting dependent | Setting dependent | Prog tube amp emulations; buzz, punch, crunch, drive, level cntrls; 49 fctry presets, 49 user locations | $795 |
| N/A | Setting dependent | Setting dependent | Setting dependent | 3 preset SansAmp voicings (Tweed, California, British) for direct recording; drive/level cntrls ech ch; spkr simulator | $245 |
| 20-segment LED; clip LED | N/A | N/A | N/A | 2 discrete op amps per ch (990C); Jensen in/out transformers (JT-16-B, JT-11-BMQ); no caps in sgnl path | $1,550–$4,250 |
| 20-segment LED; clip LED | N/A | N/A | N/A | 990 discrete op amp; Jensen JT-16-B input transformer; no capacitors in signal path | $875–$2,905 |
| 20-segment LED; clip LED | N/A | N/A | N/A | 990 discrete op amp; Jensen JT-16-B input transformer; no capacitors in signal path | $920–$3,085 |
| Peak LED | 20 Hz–40 kHz | –127 dBu EIN | 0.05% | 4 12AX7 tubes; 2 tube stages per ch | $699 |
| N/A | 6 Hz–25 kHz | –123 dB EIN | 0.05% | Headphone amp with vol cntrl/minimixer; batt oper w/belt clip; phantom | $399 |
| Peak LED | 20 Hz–40 kHz | –128 dB EIN | 0.05% | Phantom; signal present LED; remote-control capable | $1,779 |
| Peak LED | 20 Hz–20 kHz | –128 dB EIN | 0.1% | Phantom | $599 |
| N/A | 10 Hz–21 kHz | 99 dB S/N (A/D) | 0.008% | 20-bit A/D; S/PDIF optical/coax out | $295 |

# CHANNEL STRIPS & VOICE PROCESSORS

| Manufacturer | Model | # of Channels/ Stereo Link | Mic Pre Types | Analog I/O | Digital I/O | EQ Type | Filters | Compressor Type | Expander | Gate | De-Esser | Sidechain |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A.R.T. | Pro Channel | 1/No | Tube | XLR; 1/4" | N/A | 4-band parametric w/sweepable mids | HP variable | Optical tube/ variable mu (switchable) | No | No | No | No |
| A.R.T. | Tube Channel | 1/No | Tube | XLR; 1/4" | N/A | 4-band parametric w/sweep mids | N/A | Optical tube | No | No | No | No |
| ATI | Pro6 Audio Processor | 1/Yes | High-voltage solid-state | XLR | N/A | 4-band parametric | Tunable HP/LP (24 dB/octave) | RMS | No | Yes (parametric noise gate) | No | Yes |
| Avalon Design | VT-737SP | 1/Yes | Discrete Class A tube | XLR and 1/4" in; XLR out | N/A | 4-band active/passive parametric (15 Hz–32 kHz) | HP; low-cut | Optical, Class A tube | No | No | No | Yes |
| Barbetta | Channel One | 1/No | Solid-state | XLR and 1/4" TRS in; XLR out | N/A | 3-band parametric | Subsonic | Full function | No | Yes | No | No |
| BSS Audio | FCS 916 | 1/No | Solid-state | XLR and 1/4" TRS in; XLR out | N/A | 4-band fully parametric | HP; LP | N/A | No | No | No | No |
| dbx | 1086 | 1/No | Solid-state | XLR; 1/4" TRS | Optional | 2-band detail | Low-cut | OverEasy; hard knee | Yes | Yes | Yes | No |
| dbx | 286A | 1/No | Solid-state | XLR; 1/4" TRS | N/A | 2-band enhancer | HP | OverEasy | Yes | Yes | Yes | Yes |
| dbx | 586 | 2/No | Tube | XLR; 1/4" TRS | Optional | 3-band sweep mid; adjustable Q | Low-cut | PeakPlus limiter | No | No | No | Yes |
| Drawmer | MX60 Front End One | 1/No | Solid-state | XLR; 1/4" TRS | N/A | 3-band high/ low shelving; center parametric | HP 100 Hz low-cut | VCA; soft knee | No | Yes | Yes | No |
| HHB | Radius 40 | 1/Yes | Solid-state/ tube hybrid | XLR; 1/4" | N/A | 4-band parametric | HP @ 90 Hz | Analog | Yes | Yes | No | Yes |
| LA Audio | MPX1 Mono Multi-Processor | 1/No | Solid-state | XLR; 1/4" TRS | N/A | 4-band w/sweep high/low; 2 parametric mids | HP @ 75 Hz; LP @12 kHz | Solid-state | Yes | No | Yes | No |
| LA Audio | PS1 Professional Microphone Channel Strip | 1/No | Solid-state | XLR; 1/4" TRS | Optional | 4-band w/ sweep high/low; 2 parametric mids | HP @ 75 Hz; LP @ 12 kHz | Hard or soft knee (auto-sensing) | Yes | No | Yes | No |
| LA Audio | PS1D Professional Microphone Channel Strip with Digital Input | 1/No | Solid-state | XLR; 1/4" TRS | 24-bit A/D | 4-band w/ sweep high/low; 2 parametric mids | HP @ 75 Hz; LP @ 12 kHz | Hard or soft knee w/variable rate; auto-sensing | Yes (variable threshold) | No | Yes (tunable) | No |
| Manley Labs | Manley VOXBOX | 1/Yes | Tube | XLR; 1/4" TRS | N/A | Pultec | Low-cut | Optical | No | No | Yes | Yes |
| Oram Pro | MWS (Microphone Work Station) | 2/No | Solid-state | XLR | N/A | 4-band parametric (2 semi, and 2 quasi) | HP; LP | N/A | No | No | No | No |
| Joemeek | VC2 Tube Channel | 1/Yes | Solid-state with tube-buffered output stage | XLR; 1/4" TRS | N/A | Enhancer | HP @ 80 Hz | Photoelectric | No | No | No | No |
| Joemeek | VC3 Pro Channel | 1/No | Solid-state | XLR; 1/4" TRS | N/A | Enhancer | N/A | Photoelectric | No | No | No | No |
| PreSonus | VXP Dynamic Voice Processor | 1/No | Class A | XLR; 1/4" TRS | N/A | 4-band semi-parametric | HP | VCA; variable soft knee to hard limit | Yes | No | Yes | No |
| Rane | VP12 | 2/No | Solid-state | XLR; 1/4" TRS; screw terminals | N/A | 2-band parametric | HP; LP | Solid-state | Yes | Yes | Yes | No |
| Steinberg | Mindprint EnVoice | 1/No | Solid-state | 1/4" instrument; XLR mic | Optional | 3-band w/sweep mids | Low-cut on compressor | Tube w/soft knee | No | No | No | Yes |
| TC Electronic | Gold Channel | 2/Yes | Digital | XLR | AES/EBU (XLR); S/PDIF (RCA, Toslink); ADAT (Toslink) | 5-band parametric (96 kHz) w/analog emulations | N/A | Digital | Yes | Yes | Yes | Yes |

| Bypass | Meter Type | Frequency Response | Dynamic Range | THD | Dimensions (Inches) | Weight | Special Features | Price |
|---|---|---|---|---|---|---|---|---|
| Yes | 10-segment LED; VU | 20 Hz–20 kHz | >100 dB | <0.1% | 19x6.5x3.5 | 12 lbs | 1/4" inserts between preamp and comp/comp and EQ; internal power supply;front panel power w/switch | $799 |
| Yes | LED; VU | 20 Hz–20 kHz | >90 dB | <0.1% | 19x5.25x1.75 | 8 lbs | 1/4" inserts between preamp and comp/comp and EQ, VU metering; internal power supply; front panel power w/switch | $499 |
| Yes | (3) 10-segment LEDs | 10 Hz–100 kHz | N/A | 0.008% | 1 rackspace | 7 lbs | 94 dB S/N; -129 dBm EIN, aux output pre/post -EQ or VCA; EQ pre/post-VCA | $1,995 |
| Yes | Large VU; 2 signal peak LEDs | 1 Hz–200 kHz | -116 dB (22 Hz-22 kHz unweighted) | 0.05% | 19x12x3.5 | 22 lbs | 4 vacuum tubes plus 100% discrete, pure Class A; EQ switch | $2,295 |
| Yes | VU meter; clip LED | 3 Hz–20 kHz | >94 dB | 0.0005% | 19x9x1.7 | 6.5 lbs | Includes: mic pre and instrument pre; phantom | $629 |
| Yes | Peak LED | 5 Hz–80 kHz | >90 dB | 0.003% | 19x8.6x1.75 | 7.7 lbs | Phantom; deep/narrow notch per filter; individual band bypass; LCD | $999 |
| Yes | LED; VU | 5 Hz–180 kHz (@ ±3 dB) | 119 dB | 0.005% | 1 rackspace | N/A | Phantom | $749.95 |
| Yes | LED | 20 Hz–20 kHz (@ ±0.5 dB) | 105 dB | 0.005% | 19x5.75x1.75 | 4.68 lbs | Phantom | $349.95 |
| Yes | VU; LED | 10 Hz–200 kHz (@ ±0.5 dB) | N/A | 0.004% | 19x8x3.5 | 12 lbs | Phantom; pad; phase | $999.95 |
| No | 4-segment LED | 10 Hz–36 kHz (@ ±1 dB) | 134 dB | <0.05% | 1 rackspace | N/A | 20 dB pad; phantom; phase | $629 |
| Yes | VU | 10 Hz–40 kHz | 106 dB | N/A | 19x7.9x3.5 | 5.5 lbs | I/O gain control; stereo link for connecting 2 Radius 40s | $749 |
| Yes | 6-segment gain and output LEDs | 20 Hz–20 kHz (@ ±1 dB) | N/A | <0.05% | 19x6x1.75 | 4.8 lbs | Phantom; phase | $399.95 |
| Yes | 12-segment LED | 20 Hz–20 kHz (@ ±1 dB) | N/A | <0.05% | 19x6x1.75 | N/A | Phantom; phase | $849.95 |
| Yes | 12-segment comp/output LED | 20 Hz–20 kHz (@ ±1 dB) | N/A | <0.05% | 19x6x1.75 | N/A | Phantom; phase | $1,149.95 |
| Yes | VU | 20 Hz–30 kHz | N/A | N/A | 1 rackspace | N/A | Phantom; phase | $4,000 |
| Yes | 10-segment LED; bar | 20 Hz–20 kHz | N/A | 0.005% | N/A | N/A | Phase; phantom; onboard power supply; unity gain; padless front end | $2,195 |
| Yes | VU | 20 Hz–20 kHz | N/A | 0.05% | 14x7.5x3.5 | 8 lbs | Transformer at mic pre in; tube gain amplifier | $1,999.99 |
| No | 5-segment LED | 50 Hz–50 kHz | | 0.04% | 14x7.5x3.5 | 4 lbs | Phantom | $399.99 |
| Yes | (3) 8-segment, (2) 4-segment LEDs | 20 Hz–40 kHz | 116 dB | 0.005% | 19x8x1.75 | 8 lbs | Jensen input transformer; phantom; 20 dB pad; peak limiter on output | $699.95 |
| Yes | 6-segment LED; clip LED | 20 Hz–20 kHz | N/A | 0.01% | 1 rackspace | N/A | Phantom; mic/line mix | $599 |
| Yes | (2) 12-segment LEDs | 10 Hz–22 kHz (@ ±0.2 dB) | 112 dB | 0.04% | 19x1.75x9.4 | 7.6 lbs | Optional digital I/O module; individual EQ bands have in/out switches; phantom | $699 |
| Yes | 2x4-segment and 15-segment LEDs | 10 Hz–20 kHz | 103 dB | 0.003% | 1 rackspace | 5.5 lbs | Digital radiance generator; time align; MS encode/decode; RIAA phono EQ | $2,495 |

# POWER AMPS

| Manufacturer | Model | Continuous Avg. Power Into 8Ω (20 Hz–20 kHz ± 1 dB) | Continuous Avg. Power Into 4Ω (20 Hz–20 kHz ± 1 dB) | Frequency Response | Signal-to-Noise | Total Harmonic Distortion | Damping Factor | Slew Rate |
|---|---|---|---|---|---|---|---|---|
| Alesis | RA-100 | 75W per channel | 100W per channel | 20 Hz–20 kHz | >100 dB | <0.05% @ 1 kHz | 200 (ref 8Ω) | 20 V/ms |
| A.R.T. | SLA-150 | 100W per channel | 150W per channel | 20 Hz–50 kHz | >105 dB | <.0.03% | >[illegible]00 | >25 V/µs |
| Ashly Audio | FTX-1001 | 120W per channel | 175W per channel | 20 Hz–100 kHz | >100 dB | 0.007% | >250 @ <1 kHz (ref 8Ω) | 50 V/µs |
| Ashly Audio | FTX-1501 | 200W per channel | 300W per channel | 20 Hz–100 kHz | >100 dB | 0.007% | >250 @ <1 kHz (ref 8Ω) | 50 V/µs |
| Ashly Audio | FTX-2001 | 300W per channel | 500W per channel | 20 Hz–100 kHz | >105 dB | 0.007% | >250 @ <1 kHz (ref 8Ω) | 50 V/µs |
| Ashly Audio | GFT-1800 | 200W per channel | 300W per channel | 20 Hz–100 kHz | >100 dB | <0.05% | >250 @ <1 kHz (ref 8Ω) | 50 V/µs |
| Ashly Audio | MFA-6000 | 525W per channel | 800W per channel | 8 Hz–100 kHz | >105 dB | 0.025% | >200 @ <1 kHz (ref 8Ω) | 25 V/ms |
| Ashly Audio | MFA-8000 | 750W per channel | 1,200W per channel | 8 Hz–100 kHz | >105 dB | 0.025% | >200 @ <1 kHz (ref 8Ω) | 25 V/ms |
| Ashly Audio | SRA-120 | 45W per channel | 60W per channel | 20 Hz–20 kHz | 100 dB | <0.01% | >200 @ <1 kHz (ref 8Ω) | <10 V/µs stereo; >20 V/µs mono |
| Audio Centron | RMA1601 | 250W per channel | 425W per channel | 20 Hz–20 kHz | >100 dB | <0.15% | 250 | 40 V/µs |
| Audio Centron | RMA1650 | 250W per channel | 425W per channel | 20 Hz–20 kHz | >100 dB | <0.15% | N/A | 40 V/µs |
| BGW Systems | Millennium Series 1 | 110W per channel | 165W per channel | 8 Hz–150 kHz; 20 or 40 Hz–150 kHz (selectable) | >100 dB | <0.1% | >200 (ref 8Ω) | >40 V/µs |
| BGW Systems | Millennium Series 2 | 220W per channel | 330W per channel | 8 Hz–150 kHz; 20 or 40 Hz–150 kHz (selectable) | >100 dB | <0.1% | >200 (ref 8Ω) | >40 V/µs |
| BGW Systems | Millennium Series 3 | 330W per channel | 500W per channel | 8 Hz–150 kHz; 20 or 40 Hz–150 kHz (selectable) | >100 dB | <0.1% | >200 (ref 8Ω) | >40 V/µs |
| BGW Systems | Performance Series 1 | 110W per channel | 165W per channel | 8 Hz–175 kHz | >100 dB | <0.1% | >200 (ref 8Ω) | >40 V/µs |
| BGW Systems | Performance Series 2 | 220W per channel | 330W per channel | 8 Hz–175 kHz | >100 dB | <0.1% | >200 (ref 8Ω) | >40 V/µs |
| BGW Systems | Performance Series 3 | 330W per channel | 500W per channel | 8 Hz–175 kHz | >100 dB | <0.1% | >200 (ref 8Ω) | >40 V/µs |
| BGW Systems | Performance Series 4 | 440W per channel | 660W per channel | 8 Hz–175 kHz | >100 dB | <0.1% | >200 (ref. 8Ω) | >40 V/µs |
| Bryston | 2-B-LP-Pro | 70W per channel | 120W per channel | 0.5 Hz–100 kHz | >100 dB | <0.01% | >500 @ 20 Hz (ref 8Ω) | >60 V/µs |
| Bryston | 3B-ST Pro | 150W per channel | 250W per channel | <1 Hz–100 kHz | >106 dB | <0.007% | >500 @ 20 Hz (ref 8Ω) | >60 V/µs |
| Bryston | 4B-ST Pro | 300W per channel | 500W per channel | <1 Hz–100 kHz | >106 dB | <0.007% | >500 @ 20 Hz (ref 8Ω) | >60 V/µs |
| Bryston | 5B-ST Pro 3-channel | 150W per channel | 250W per channel | <1 Hz–1 kHz | >106 dB | <0.007% | >500 @ 20 Hz (ref 8Ω) | >60 V/µs |
| Bryston | 7B-ST Pro Mono Block | 600W per channel | 900W per channel | <1 Hz–100 kHz | >106 dB | <0.007% | >300 @ 20 Hz (ref 8Ω) | >60 V/µs |
| Bryston | 8B-ST Pro 4-channel | 150W per channel | 250W per channel | <1 Hz–100 kHz | >106 dB | <0.007% | >500 @ 20 Hz (ref 8Ω) | >60 V/µs |
| Bryston | 9B-ST Pro 5-channel | 150W per channel | 250W per channel | <1 Hz–1 kHz | >106 dB | <0.007% | >500 @ 20 Hz (ref 8Ω) | >60 V/µs |
| Bryston | Power Pac 120 Mono Amp | 150W per channel | 250W per channel | <1 Hz–>1 kHz | >106 dB | <0.007% | >500 @ 20 Hz (ref 8Ω) | >60 V/µs |
| Bryston | Power Pac 60 Mono Amp | 60W per channel | 120W per channel | <1 Hz–>1 kHz | >106 dB | <0.007% | >500 @ 20 Hz (ref 8Ω) | >60 V/µs |
| Carver Professional | ca400 | 130W per channel | 200W per channel | 20 Hz–20 kHz | >100 dB | <0.1% | >200 | 10 V/µs |
| Carver Professional | ca900 | 325W per channel | 450W per channel | 20 Hz–20 kHz | >100 dB | <0.1% | >200 | 40 V/µs (bandwidth limited) |
| Carver Professional | pm125 | 50W per channel | 62W per channel | 20 Hz–20 kHz | >100 dB | <0.1% | <400 | 10 V/µs |
| Carver Professional | pm1400 | 475W per channel | 700W per channel | 20 Hz–20 kHz | >100 dB | <0.1% | <400 | 40 V/µs |
| Carver Professional | pm420 | 135W per channel | 210W per channel | 20 Hz–20 kHz | >100 dB | <0.1% | <400 | 10 V/µs |
| Carver Professional | pm700 | 225W per channel | 350W per channel | 20 Hz–20 kHz | >100 dB | <0.1% | <400 | 40 V/µs (bandwidth limited) |

| Power Consumption | Protection Features | AC Circuit Breaker | Ground Lift | Indicator Lights | Dimensions (Inches) | Weight (lbs.) | Price |
|---|---|---|---|---|---|---|---|
| 500W (max) | Short circuit; thermal overload; DC offset; RF; open circuit; sft clppng; on/off transient | No | No | Clip | 19x3.5x8 | 14.25 | $379 |
| 600W | Short circuit; overload; delayed turn on | No | No | Yes | 19x3.5x11 | 18 | $529 |
| 425W (max), 6A | Short circuit; thermal overload; DC offset; RF | No | Yes | 11-seg LED meters; protect LEDs | 19x3.5x16.5 | 37 | $739 |
| 760W, 8A | Short circuit; thermal overload; DC offset; RF | No | Yes | 11-seg LED meters; protect LEDs | 19x3.5x16.5 | 41 | $839 |
| 1,350W, 12A | Short circuit; thermal overload; DC offset; RF | No | Yes | 11-seg LED meters; protect LEDs | 19x5.25x16.5 | 53 | $1,049 |
| 760W, 8A | Short circuit; thermal overload; DC offset; RF | No | Yes | 11-seg LED meters; protect LEDs | 19x3.5x15.75 | 37 | $849 |
| 1,800W (max), 18A | Short circuit; thermal overload; DC offset; RF | No | Yes | 11-seg LED mtrs; limit/thermal/protect LEDs | 19x5.25x16.5 | 54 | $1,799 |
| 3,000W (max), 20A | Short circuit; thermal overload; DC offset; RF | No | Yes | 11-seg LED mtrs; limit/thermal/protect LEDs | 19x5.25x16.5 | 61 | $2,299 |
| 350W (max) | Short circuit; thermal overload; DC offset; RF | No | Yes | Signal present/clip/protect LEDs | 19x1.75x10 | 18 | $469 |
| N/A | Short circuit; RF; spkr out relays; trn on/off transient; thermal DC | No | No | No | 19x 3.5x16.75 | 36 | $599.99 |
| N/A | Short circuit; RF; spkr out relays; trn on/off transient; thermal DC | Yes | No | No | 19x3.5x16.75 | 36 | $699.99 |
| 350W | Short circuit; RF; spkr out relays; trn on/off; thermal DC; instant shut-off | No | Yes | Clip; power; signal present | 19x5.25x12.8 | 28 | $749 (w/trnsfrmrs) $899 |
| 480W | Short circuit; RF; spkr out relays; trn on/off; thermal DC; instant shut-off | No | Yes | Clip; power; signal present | 19x5.25x12.8 | 34 | $899 (w/autofrmrs) $1,057 |
| 675W | Short circuit; RF; spkr out relays; trn on/off; thermal DC; spkr prtct; instant shut-off | No | Yes | Clip; power; signal present | 19x5.25x15.4 | 40 | $1,259 (w/autofrmrs) $1,417 |
| 350W | Short circuit; RF; spkr out relays; trn on/off; thermal DC; spkr prtct; instant shut-off | No | Yes | Clip; power; signal present | 19x3.5x12.6 | 26 | $849 |
| 480W | Short circuit; RF; spkr out relays; trn on/off; thermal DC; spkr prtct; instant shut-off | No | Yes | Clip; power; signal present | 19x3.5x12.6 | 32 | $999 |
| 675W | Short circuit; RF; spkr out relays; trn on/off; thermal DC; spkr prtct; instant shut-off | No | Yes | Clip; power; signal present | 19x3.5x13.6 | 37 | $1,399 |
| 1,100W | Short circuit; RF; spkr out relays; trn on/off; thermal DC; spkr prtct; instant shut-off | No | Yes | Clip; power; signal present | 19x3.5x17.1 | 54 | $1,999 |
| 15–250W | Short circuit; RF; thermal; DC offset | No | Yes | Tricolor LED | 19x1.75x10 | 18 | $995 |
| 30–500W | Short circuit; RF; thermal; DC offset | No | Yes | Tricolor LED | 19x5.25x9 | 22 | $1,650 |
| 50–1,000W | Short circuit; RF; thermal; DC offset | No | Yes | Tricolor LED | 19x5.25x15.5 | 42 | $2,350 |
| 15–250W | Short circuit; RF; thermal; DC offset | No | Yes | Tricolor LED | 19x5.25x15.5 | 33 | $2,550 |
| 50–1,000W | Short circuit; RF; thermal; DC offset | No | Yes | Tricolor LED | 19x5.25x15.5 | 42 | $2,500 |
| 50–1,000W | Short circuit; RF; thermal; DC offset | No | Yes | Tricolor LED | 19x5.25x15.5 | 44 | $3,100 |
| 50–250W | Short circuit; RF; thermal; DC offset | No | Yes | Tricolor LED | 19x5.25x16 | 75 | $3,695 |
| 15–250W | Short circuit; RF; thermal; DC offset | No | Yes | Tricolor LED | 12x3.6x7.25 | 10 | $795 |
| 15–250W | Short circuit; RF; thermal; DC offset | No | Yes | Tricolor LED | 12x2x5.5 | 6 | $450 |
| 1,000W | DC offset; ovr temp; short circuit; clipping; 10A circuit brkr | Yes | No | Power ready; signal; clip/protect | 19x3.5x13.25 | 22.8 | $769 |
| 725W | DC offset; ovr temp; short circuit; clipping; 12A AC line fuse | No | No | Power ready; signal; clip/protect | 19x3.5x13.25 | 34 | $1,199 |
| 250W | DC offset; ovr temp; short circuit; clipping 2A circuit breaker | Yes | No | Power ready; signal; clip/protect | 19x1.75x13.25 | 13.8 | $679 |
| 800W | DC offset; ovr temp; short circuit; clppng 15A fuse | No | No | Power connected/stndby; 7-LED display per chan (inc pwr rdy/clip/prtct) | 19x3.5x13.25 | 34.2 | $1,539 |
| 1,000W | DC offset; ovr temp; short circuit; clipping; 10A circuit brkr | Yes | No | Power ready; sgnl; clip/prtct | 19x3.5x13.25 | 23.8 | $739 |
| 500W | DC offset; ovr temp; short circuit; clppng 10A fuse | No | No | Power connected/stndby; 7-LED display per chan (inc power ready/clip/prtct) | 19x3.5x13.25 | 30 | $1,069 |

# POWER AMPS

| Manufacturer | Model | Continuous Avg. Power Into 8Ω (20 Hz–20 kHz ± 1 dB) | Continuous Avg. Power Into 4Ω (20 Hz–20 kHz ± 1 dB) | Frequency Response | Signal-to-Noise | Total Harmonic Distortion | Damping Factor | Slew Rate |
|---|---|---|---|---|---|---|---|---|
| Carver Professional | pm950 | 325W per channel | 475W per channel | 20 Hz–20 kHz | >100 dB | <0.1% | <400 | 40 V/µs (bandwidth limited) |
| Carver Professional | pt1800 | 600W per channel | 900W per channel | 20 Hz–20 kHz | >100 dB | <0.5% | <400 @ 1 kHz | 25 V/µs |
| Carver Professional | pt2400 | 750W per channel | 1,200W per channel | 20 Hz–20 kHz | >100 dB | <0.5% | <400 @ 1 kHz | 25 V/µs |
| Carver Professional | pt250 | 465W per channel | 625W per channel | 20 Hz–20 kHz | >105 dB | <0.5% | <400 | 25 V/µs |
| Carver Professional | PX1450 | 375W per channel | 725W per channel | 20 Hz–20 kHz | >106 dB | <0.1% | <600 @ 10–400 Hz (ref 8Ω) | 70 V/µs |
| Carver Professional | PX850 | 260W per channel | 425W per channel | 20 Hz–20 kHz | >106 dB | <0.1% | >600 @ 10–400 Hz (ref 8Ω) | 70 V/µs |
| Carvin | DCM600 | 150W per channel | 225W per channel | 20 Hz–20 kHz | 100 dB | 0.03% | >350 | >45 V/µs |
| Carvin | DCM1000 | 225W per channel | 350W per channel | 20 Hz–20 kHz | 106 dB | 0.03% | >400 | >45 V/µs |
| Carvin | DCM1500 | 300W per channel | 500W per channel | 20 Hz–20 kHz | 107 dB | 0.03% | >450 | >50 V/µs |
| Carvin | DCM2000 | 450W per channel | 700W per channel | 20 Hz–20 kHz | 109 dB | 0.03% | >500 | >5 V/µs |
| Carvin | HT150 | 50W per channel | 75W per channel | 20 Hz–20 kHz | 100 dB | 0.1% | >300 | >30 V/µs |
| Carvin | HT760M | 175W per channel | 250W per channel | 20 Hz–20 kHz | 103 dB | 0.03% | >350 | >45 V/µs |
| Chord | SPA 1032 Stereo | 280W per channel | 400W per channel | -1 dB, 0.2 Hz–44 kHz, -3 dB, 0.1 Hz–77 kHz | >105 dB | <-75 dB | N/A | 70 V/µs |
| Chord | SPA 1424 Mono Block | 350W per channel | 500W per channel | -1 dB, 0.2 Hz–44 kHz, 0.1 Hz–77 kHz | >103 dB | <-75 dB | N/A | 70 V/µs |
| Crate | SPA200 | 70W per channel | 100W per channel | 20 Hz–20 kHz | N/A | N/A | N/A | 10 V/ns |
| Crate | SPA1400 | 450W per channel | 260W per channel | 20 Hz–20 kHz | -100 dB | .02% @ 1 kHz | N/A | 40 V/ns |
| Crate | SPA1400C | 450W per channel | 260W per channel | 20 Hz–20 kHz | -100 dB | .02% @ 1 kHz | N/A | 40V/ns |
| Crate | SPA400 | 200W per channel | 125W per channel | 20 Hz–20 kHz | -100 dB | .02% @ 1 kHz | 250 (1 kHz @ 8Ω) | 30V/ns |
| Crest Audio | V 1100; Vs 1100 | 300W per channel | 550W per channel | 10 Hz–165 kHz | 105 dB | 0.1% | >1,000 | 12 V/µs |
| Crest Audio | V 1500; Vs 1500 | 400W per channel | 750W per channel | 10 Hz–165 kHz | 105 dB | 0.1% | >1,000 | 12 V/µs |
| Crest Audio | V 450; Vs 450 | 150W per channel | 225W per channel | 10 Hz–165 kHz | 105 dB | 0.1% | >700 | 12 V/µs |
| Crest Audio | V 650; Vs 650 | 200W per channel | 325W per channel | 10 Hz–165 kHz | 105 dB | 0.1% | >800 | 12 V/µs |
| Crest Audio | V 900; Vs 900 | 250W per channel | 450W per channel | 10 Hz–165 kHz | 105 dB | 0.1% | >1,000 | 12 V/µs |
| Crown | CE 1000 | 275W per channel | 450W per channel | 20 Hz–20 kHz | >105 dB | <0.5% | >400 | N/A |
| Crown | CE 2000 | 400W per channel | 660W per channel | 20 Hz–20 kHz | >105 dB | <0.5% | >400 | N/A |
| Crown | CP 600 | 60W all channels driven | 75W per channel | 20 Hz–20 kHz | >100 dB | <0.3% | >250 | N/A |
| Crown | CT-1610 | 540W per channel | 870W per channel | 20 Hz–20 kHz | >105 dB | <0.05% | >1000 | N/A |
| Crown | CT-210 | 110W per channel | 150W per channel | 20 Hz–20 kHz | >105 dB | <0.05% | >1000 | N/A |
| Crown | CT-410 | 220W per channel | 240W per channel | 20 Hz–20 kHz | >105 dB | <0.05% | >1000 | N/A |
| Crown | CT-810 | 305W per channel | 490W per channel | 20 Hz–20 kHz | >105 dB | <0.05% | >1000 | N/A |
| Crown | D-45 | 25W per channel | 35W per channel | 20 Hz–20 kHz | >110 dB | <0.05% | >400 | N/A |
| Crown | D-75A | 40W per channel | 55W per channel | 20 Hz–20 kHz | >110 dB | <0.05% | >400 | N/A |
| Crown | K1 | 350W per channel | 550W per channel | 20 Hz–20 kHz | >100 dB | <0.1% | >3000 | N/A |
| Crown | K2 | 500W per channel | 800W per channel | 20 Hz–20 kHz | >100 dB | <0.1% | >3000 | N/A |
| Crown | MA-1200 | 310W per channel | 480W per channel | 20 Hz–20 kHz | >105 dB | <0.05% | >1000 | N/A |
| Crown | MA-2400 | 520W per channel | 800W per channel | 20 Hz–20 kHz | >105 dB | <0.05% | >1000 | N/A |
| Crown | MA-3600VZ | 1,120W per channel | 1565W per channel | 20 Hz–20 kHz | >105 dB | <0.05% | >1000 | N/A |
| Crown | MA-5000VZ | 1,300W per channel | 2000W per channel | 20 Hz–20 kHz | >105 dB | <0.05% | >1000 | N/A |

| Power Consumption | Protection Features | AC Circuit Breaker | Ground Lift | Indicator Lights | Dimensions (Inches) | Weight (lbs.) | Price |
|---|---|---|---|---|---|---|---|
| 725W | DC offset; ovr temp; short circuit; clppng 12A fuse | No | No | Power connected/stndby; 7-LED dsply per chan (inc pwr rdy/clip/prtct) | 19x3.5x13.25 | 34 | $1,269 |
| 8A | Short circuit; exc high frqncy; thermal; clppng; DC; soft start/input mute | No | Yes | Power ready; signal; clip; protect | 19x5.25x12.75 | 46 | $2,379 |
| 11A | Short circuit; exc high frqncy; thermal; clppng; DC; soft start/input mute | No | Yes | Power ready; signal; clip; protect | 19x5.25x12.75 | 48 | $2,779 |
| 1,200W (max) | Short circuit; exc high frqncy; thermal; clppng; DC; soft start/input mute | No | Yes | Power ready; signal; clip; protect | 19x3.5x10.75 | 11 | $1,879 |
| 750W | Thermal; short circuit 15A circuit breaker | Yes | No | Power ready; sgnl prsnt; clip; prtct; thermal and stndby | 19x5.75x15.38 | 58.2 | $1,245 |
| 840W | Thermal; short circuit 15A fuse | No | No | Power ready; sgnl prsnt; clip; prtct; thermal and stndby | 19x5.75x15.38 | 46 | $695 |
| 750W (max) | Short circuit; RF; thermal; DC offset | Yes | Yes | Power; clip; signal protect | 19x3.5x10 | 23 | $359.95 |
| 1,200W (max) | Short circuit; RF; thermal; DC offset | Yes | Yes | Power; clip; signal protect | 19x3.5x10 | 26 | $439.95 |
| 1,800W (max) | Short circuit; RF; thermal; DC offset | Yes | Yes | Power; clip; signal protect | 19x5.25x10 | 31 | $539.95 |
| 2,400W (max) | Short circuit; RF; thermal; DC offset | Yes | Yes | Power; clip; signal protect | 19x5.25x10 | 36 | $639.95 |
| 180W (max) | Short circuit; RF; thermal; DC offset | No | No | Power; clip; signal protect | 19x1.75x10 | 11 | $229.95 |
| 900W (max) | Short circuit; RF; thermal; DC offset | Yes | Yes | Power/clip/signal protect | 19x3.5x10 | 23 | $469.95 |
| N/A | Short circuit; thermal overload; clip | Yes | No | Power; fault; onset of clip | 19x5.5x14 | 49 | $4,497 |
| N/A | Short circuit; thermal overload; clip | Yes | No | Power; fault; onset of clip | 19x5.5x14 | 40 | $5,497 |
| N/A | N/A | No | No | N/A | 19x3.5x7 | 19 | $395.99 |
| N/A | Short circuit; RF; spkr out relays; trn on/off transient; thermal | Yes | No | Signal; limit; protect | 19x3.5x15 | 27 | $599.99 |
| N/A | Short circuit; RF; spkr out relays; trn on/off transient; thermal | Yes | No | Signal; limit; protect | 19x3.5x15 | 27 | $699.99 |
| 10A (120 VAC) | Short circuit; RF; spkr out relays; trn on/off transient; thermal | No | No | Signal; limit; fault | 19x3.5x15 | 27 | $499.99 |
| 1,490W | Active clip limit; auto ramp; thermal; DC; short circuit | Yes | Yes | Yes | 19x5.25x12 | 47 | (V) $1,160 (VS) $1,050 |
| 1,020W | Active clip limit; auto ramp; thermal; DC; short circuit | Yes | Yes | Yes | 19x5.25x13.33 | 49 | (V) $1,390 (VS) $1,250 |
| 625W | Active clip limit; auto ramp; thermal; DC; short circuit | Yes | Yes | Clip | 19x5.25x12 | 38 | (V) $660 (VS) $590 |
| 935W | Active clip limit; auto ramp; thermal; DC; short circuit | Yes | Yes | Clip | 19x5.25x12 | 39 | (V) $780 (VS) $690 |
| 1,250W | Active clip limit; auto ramp; thermal; DC; short circuit | Yes | Yes | Yes | 19x5.25x12 | 46 | (V) $900 (VS) $790 |
| N/A | Short; DC; clip; other | Yes | No | Power; signal; fault; clip | 19x5.25x13 | 32.4 | $718 |
| N/A | Short; DC; clip; other | Yes | No | Power; signal; fault; clip | 19x5.25x13 | 40.2 | $1,025 |
| N/A | Short; DC; other | No | No | Power; signal; fault; clip | 19x3.5x12.75 | 25 | $849 |
| N/A | Short; DC; ODEP; quad mute; other | Yes | No | IOC; SPI; ODEP; power | 19x7x16 | 57.9 | $2,229 |
| N/A | Short; DC; ODEP; quad mute; other | Yes | No | IOC; SPI; ODEP; power | 19x3.5x16 | 29.4 | $974 |
| N/A | Short; DC; ODEP; quad mute; other | Yes | No | IOC; SPI; ODEP; power | 19x3.5x16 | 31.9 | $1,230 |
| N/A | Short; DC; ODEP; quad mute; other | Yes | No | IOC; SPI; ODEP; power | 19x5.25x16 | 47.25 | $1,717 |
| N/A | Short; DC; other | No | No | IOC; signal; power | 19x1.75x9 | 10 | $487 |
| N/A | Short; DC; other | No | No | IOC; signal; power | 19x1.75x9 | 10 | $641 |
| N/A | Short; DC; clip; other | No | Yes | Signal; TLC; IOC; clip; enable | 19x3.5x16 | 32 | $1,532 |
| N/A | Short; DC; clip; other | No | Yes | Signal; TLC; IOC; clip; enable | 19x3.5x16 | 38 | $1,840 |
| N/A | Short; DC; ODEP; other | No | Yes | IOC; SPI; ODEP; enable | 19x3.5x16 | 44.1 | $1,789 |
| N/A | Short; DC; ODEP; other | Yes | Yes | IOC; SPI; ODEP; enable | 19x3.5x16 | 51.75 | $2,299 |
| N/A | Short; DC; ODEP; quad mute; other | Yes | Yes | IOC; SPI; ODEP; enable | 19x3.5x16 | 55.25 | $3,172 |
| N/A | Short; DC; ODEP; quad mute; other | Yes | Yes | IOC; SPI; ODEP; enable; load/limit | 19x5.25x16 | 77.8 | $4,146 |

# POWER AMPS

| Manufacturer | Model | Continuous Avg. Power Into 8Ω (20 Hz–20 kHz ± 1 dB) | Continuous Avg. Power Into 4Ω (20 Hz–20 kHz ± 1 dB) | Frequency Response | Signal-to-Noise | Total Harmonic Distortion | Damping Factor | Slew Rate |
|---|---|---|---|---|---|---|---|---|
| Crown | MA-600 | 225W per channel | 325W per channel | 20 Hz–20 kHz | >105 dB | <0.05% | >1,000 | N/A |
| Crown | MT-1200 | 310W per channel | 480W per channel | 20 Hz–20 kHz | >105 dB | <0.05% | >1,000 | N/A |
| Crown | MT-2400 | 520W per channel | 800W per channel | 20 Hz–20 kHz | >105 dB | <0.05% | >1,000 | N/A |
| Crown | MT-600 | 225W per channel | 325W per channel | 20 Hz–20 kHz | >105 dB | <0.05% | >1,000 | N/A |
| Crown | PT-1 | 220W per channel | 305W per channel | 20 Hz–20 kHz | >105 dB | <0.05% | >1,000 | N/A |
| Crown | PT-2 | 325W per channel | 460W per channel | 20 Hz–20 kHz | >105 dB | <0.05% | >1,000 | N/A |
| Crown | PT-3 | 540W per channel | 760W per channel | 20 Hz–20 kHz | >105 dB | <0.05% | >1,000 | N/A |
| Crown | Reference I | 800W per channel | 1190W per channel | 20 Hz–20 kHz | >120 dB | <0.02% | >20,000/2500 | N/A |
| Crown | Reference II | 800W per channel | 565W per channel | 20 Hz–20 kHz | >117 dB | <0.02% | >20,000/2500 | N/A |
| Demeter | VT275HF 150 Watt Stereo Power Amplifier | 60W 20 Hz–20 kHz | 60W per channel | 20 Hz–20 kHz | <90 dB | 0.06% | 10:1 | N/A |
| Demeter | VTHF-300m Tube Mono Block Professional Amplifier | 300W 20 Hz-20 kHz | 300W 20 Hz-20 kHz | N/A | <97 dB | 0.06% | 10:1 | N/A |
| Furman | SP-20A Half Rack Stereo Power Amp | 20W per channel | 20W per channel | 20 Hz–20 kHz | 99 dB | 0.05% | N/A | N/A |
| Hafler | 9505 | 250W per channel | 375W per channel | 0.15 Hz–300 kHz | 100 dB | <0.07% | 1,000 (to 1 kHz); 100 (to 10 kHz); 20 (to 100 kHz) | 150 V/µs |
| Hafler | P1000 | 50W per channel | 55W per channel | 0.1 Hz–100 kHz | 100 dB | <0.2% | 900 (up to 1 kHz); 400 (to 10 kHz); 40 (to 100 kHz) | 20 V/µs |
| Hafler | P1500 | 75W per channel | 85W per channel | 0.15 Hz–300 kHz | 100 dB | <0.1% | 350 (to 1 kHz); 150 (to 10 kHz); 18 (to 100 kHz) | 100 V/µs |
| Hafler | P3000 | 150W per channel | 200W per channel | 0.15 Hz–300 kHz | 100 dB | <0.1% | 400 (to 1 kHz); 200 (to 10 kHz); 18 (to 100 kHz) | 100 V/µs |
| Hafler | P4000 | 200W per channel | 275W per channel | 0.2 Hz–200 kHz | 100 dB | <0.1% | 500 (to 1 kHz); 150 (to 10 kHz); 18 (to 100 kHz) | 100 V/µs |
| Hafler | P7000 | 350W per channel | 500W per channel | 0.2 Hz–200 kHz | 100 dB | <0.1% | 600 (to 1 kHz); 200 (to 10 kHz); 25 (to 100 kHz) | 100 V/µs |
| Hot House | Model Four Hundred | 125W per channel | 200W per channel | 3 Hz–100 kHz | >100 dB | 0.01% | >200 | >60 V/µs |
| Hot House | Model M500 Mono Block | 150W mono | 275W mono | 2Ω (20 Hz–20 kHz) 475W mono | >100 dB | 0.01% | >200 | >60 V/µs |
| Hot House | Model M500HV H19 Voltage Mono Block | 375W mono | 600W mono | 3 Hz–100 kHz | >100 dB | 0.01% | >200 | >60 V/µs |
| Hot House | Model One Thousand | 350W per channel | 500W per channel | 3 Hz–100 kHz | >100 dB | <0.05% | >200 | >60 V/µs |
| Hot House | Model Six Hundred | 195W per channel | 325W per channel | 3 Hz–100 kHz | >100 dB | <0.05% | >200 | >60 V/µs |
| Hot House | Model Two Thousand | 450W per channel | 700W per channel | 3 Hz–100 kHz | >100 dB | <0.05% | >200 | >60 V/µs |
| JBL | MPX1200 | 800W per channel | 1,200W per channel | 20 Hz–20 kHz | 100 dB | 0.15% | >200 (@ 8Ω) | N/A |
| JBL | MPX300 | 200W per channel | 300W per channel | 20 Hz–20 kHz | 100 dB | 0.15% | >200 (@ 8Ω) | N/A |
| JBL | MPX600 | 400W per channel | 600W per channel | 20 Hz–20 kHz | 100 dB | 0.15% | >200 (@ 8Ω) | N/A |
| Lexicon | NT Series–Model 212 | 120W per channel | 200W per channel | 1 Hz–100 kHz | >110 dB | 0.01% | >500 | 60 V/µs |
| Lexicon | NT Series–Model 225 | 250W per channel | 400W per channel | 1 Hz–100 kHz | >110 dB | 0.01% | >500 | 60 V/µs |
| Lexicon | NT Series–Model 312 | 120W per channel | 200W per channel | 1 Hz–100 kHz | >110 dB | 0.01% | >500 | 60 V/µs |
| Lexicon | NT Series–Model 501 | 500W per channel | 800W per channel | 1 Hz–100 kHz | >110 dB | 0.01% | >300 | 60 V/µs |
| Lexicon | NT Series–Model 512 | 120W per channel | 200W per channel | 1 Hz–100 kHz | >110 dB | 0.01% | >500 | 60 V/µs |

| Power Consumption | Protection Features | AC Circuit Breaker | Ground Lift | Indicator Lights | Dimensions (Inches) | Weight (lbs.) | Price |
|---|---|---|---|---|---|---|---|
| N/A | Short; DC; ODEP; other | No | Yes | IOC/SPI; ODEP; enable | 19x3.5x16 | 39.6 | $1,532 |
| N/A | Short; DC; ODEP; other | No | Yes | Enable; ODEP | 19x3.5x16 | 41 | $1,383 |
| N/A | Short; DC; ODEP; other | Yes | Yes | Enable; ODEP | 19x3.5x16 | 46.9 | $1,793 |
| N/A | Short; DC; ODEP; other | No | Yes | Enable; ODEP | 19x3.5x16 | 36.25 | $1,075 |
| N/A | Short; DC; ODEP; other | Yes | Yes | Enable; IOC/SPI | 19x3.5x16 | 30 | $1,281 |
| N/A | Short; DC; ODEP; other | Yes | Yes | Enable; IOC/SPI | 19x5.25x16 | 33 | $1,512 |
| N/A | Short; DC; ODEP; other | Yes | Yes | Enable; IOC/SPI | 19x7x16 | 36.5 | $1,768 |
| N/A | Short; DC; ODEP; quad mute; other | Yes | Yes | Enable; IOC; ODEP; dynamic range | 19x7x16 | 60.7 | $4,454 |
| N/A | Short; DC; ODEP; quad mute; other | Yes | Yes | Enable; IOC; ODEP; dynamic range | 19x7x16 | 56.1 | $3,070 |
| 300W | 5A fuse | No | No | LED | 19x7x12 | 45 | $2,299 |
| 600W | 8A fuse | No | No | LED | 19x7x15 | 49 | $2,649 |
| 130W | Short circuit; thermal overload; fuse | No | Yes | Clip; signal present | 8.45x1.75x8.25 | 9 | (w/XLRS) $323 |
| 840W; 8.8A @120 VAC | ± Rail 15A fuse | No | Yes | Power | 19x5.25x12.5 | 50 | $2,200 |
| 260W (max) | NOMAD: 2A fuse | No | Yes | Power; signal; clip; thermal | 19x1.75x8.8 | 12 | $559 |
| 325W (max) | Short circuit; 4A fuse | No | Yes | Power; signal; clip; thermal | 19x3.5x8.5 | 22 | $599 |
| 600W (max) | Short circuit; 5A fuse | No | Yes | Power; signal; clip; thermal | 19x3.5x9.875 | 23 | $779 |
| 720W (max) | Short circuit; 10A fuse | No | Yes | Power; signal; clip; thermal | 19x5.25x11 | 34 | $999 |
| 1,100W; 12A @ 120 VAC | Short circuit; 5A fuse | No | Yes | Power; signal; clip; thermal | 19x3.5x12.88 | 40 | $1,399 |
| 600W | RC network for RF; 5A fuse | No | No | N/A | 19x3.5x10.5 | 28 | $1,699 |
| 600W | RC network for RF; 5A fuse | No | No | N/A | 19x3.5x10.5 | 32 | $2,099 |
| 800W | RC network for RF; 8A fuse | No | No | N/A | 19x3.5x10.5 | 34 | $2,499 |
| 1,500W | RC network for RF; 10A fuse | No | No | N/A | 19x5.25x10.5 | 38 | $2,999 |
| 1,000W | RC network for RF; 8A fuse | No | No | N/A | 19x5.25x10.5 | 32 | $2,499 |
| 1,500W per channel (dual mono amp w/2 AC cords) | RC network for RF; 12A fuse per channel | No | Yes | True RMS clip/channel | 19x8.75x17 | 95 | $4,999 |
| 22.9A (111 VAC) | Full short/open circuit; ultrasonic/RF; currnt/thermal limitng | No | Yes | Power; signal present; clip; protect | 19x5.25x16.1 | 65 | $2,418 |
| 6.9A (111 VAC) | Full short/open circuit; ultrasonic/RF; currnt/thermal limitng | No | Yes | Power; signal present; clip; protect | 19x5.25x16.1 | 41 | $988 |
| 13.6A (111 VAC) | Full short/open circuit; ultrasonic/RF; currnt/thermal limitng | No | Yes | Power; signal present; clip; protect | 19x5.25x16.1 | 47 | $1,428 |
| 675W | Internally and externally fused | No | Yes | Power on; near clipping; clipping | 17x5.25x9 | 22 | $1,695 |
| 1,350W | Internally and externally fused | No | Yes | Power on; near clipping; clipping | 17x5.25x15.5 | 40 | $2,395 |
| 1,020W | Internally and externally fused | No | Yes | Power on; near clipping; clipping | 17x5.25x15.5 | 33 | $2,495 |
| 1,350W | Internally and externally fused | No | Yes | Power on; near clipping; clipping | 17x5.25x15.5 | 44 | $2,395 |
| 1,600W | Internally and externally fused | No | No | Power on; near clipping; clipping | 17x5.25x15.5 | 75 | $3,995 |

# POWER AMPS

| Manufacturer | Model | Continuous Avg. Power Into 8Ω (20 Hz–20 kHz ±1 dB) | Continuous Avg. Power Into 4Ω (20 Hz–20 kHz ±1 dB) | Frequency Response | Signal-to-Noise | Total Harmonic Distortion | Damping Factor | Slew Rate |
|---|---|---|---|---|---|---|---|---|
| Mackie Designs | M1400i | 250W per channel | 425W per channel | 20 Hz–40 kHz (±1 dB) | >107 dB | <0.025% @ 8Ω<br><0.05% @ 4Ω<br><0.15% @ 2Ω | >350 (0–400 Hz) | Volt: >50 V/µs to >100 V/µs bridged; current: >32 A/µs |
| Manley Labs | Manley Studio 240 | 220 per channel | 350 per channel | 10 Hz–30 kHz | N/A | N/A | N/A | N/A |
| Manley Labs | Manley Studio 440 | 400 per channel | 500 per channel | 10 Hz–30 kHz | N/A | N/A | N/A | N/A |
| Miles Technology | MPR-450 | 60W per channel x (6) | 75W per channel x (6) | 20 Hz–20 kHz | >100 dB | 0.15% | >400 | Not slew limited |
| Panasonic | WP-1200 | 120W per channel | 240W per channel | 20 Hz–20 kHz | >100 dB | <0.1% | >100 (@ 1 kHz 8Ω) | N/A |
| Panasonic | WP-1400 | 240W per channel | 400W per channel | 20 Hz–20 kHz | >100 dB | <0.1% | >100 (@ 1 kHz 8Ω) | N/A |
| Peavey | CS1000X | 325W per channel | 525W per channel | 5 Hz–50 kHz | 100 dB | <0.03% | >200 (@ 4Ω) | 40 V/µs |
| Peavey | CS1800G | 350W per channel | 600W per channel | 5 Hz–50 kHz | 100 dB | 0.03% | >300 (@ 4Ω) | 40 V/µs |
| Peavey | CS200X | 85W per channel | 85W per channel | 10 Hz–40 kHz | 100 dB | <0.1% | >200 (@ 4Ω) | 15 V/µs |
| Peavey | CS3000G | 600W per channel | 1,000W per channel | 5 Hz–50 kHz | 100 dB | <0.03% | >300 (@ 8Ω) | 40 V/µs |
| Peavey | CS500A | 130W per channel | 210W per channel | 5 Hz–50 kHz | 100 dB | 0.03% | >200 (@ 4Ω) | 40 V/µs |
| Peavey | CS800S | 240W per channel | 420W per channel | 3 Hz–60 kHz | 100 dB | 0.03% | >1000 (@ 4Ω) | 40 V/µs |
| Peavey | PV1200 | 270W per channel | 425W per channel | 10 Hz–40 kHz | 100 dB | <0.1% | >300 (@ 8Ω) | 20 V/µs |
| Peavey | PV2000 | 400W per channel | 650W per channel | 10 Hz–40 kHz | 100 dB | <0.1% | >300 (@ 8Ω) | 20 V/µs |
| Peavey | PV260 | 100W per channel | 130W per channel | 10 Hz–40 kHz | 100 dB | <0.1% | >200 (@ 8Ω) | 20 V/µs |
| Peavey | PV500 | 130W per channel | 210W per channel | 10 Hz–40 kHz | 100 dB | <0.1% | >300 (@ 8Ω) | 20 V/µs |
| QSC Audio Products | MX1500a | 350W per channel | 500W per channel | 20 Hz–20 kHz | 100 dB | 0.05% | >200 | N/A |
| QSC Audio Products | MX2000a | 450W per channel | 650W per channel | 20 Hz–20 kHz | 100 dB | 0.05% | >200 | N/A |
| QSC Audio Products | MX3000a | 800W per channel | 1,200W per channel | 20 Hz–20 kHz | 100 dB | 0.1 | >200 | N/A |
| QSC Audio Products | MX700 | 150W per channel | 225W per channel | 20 Hz–20 kHz | 100 dB | 0.1% | >200 | N/A |
| QSC Audio Products | PLX 1202 | 200W per channel | 325W per channel | 8 Hz–50 kHz, +0/-3 dB | 106 dB, 20 Hz–20 kHz | <0.05% | >500 | N/A |
| QSC Audio Products | PLX 1602 | 300W per channel | 500W per channel | 8 Hz–50 kHz, +0/-3 dB | 106 dB, 20 Hz–20 kHz | <0.05% | >500 | N/A |
| QSC Audio Products | PLX 2402 | 425W per channel | 700W per channel | 8 Hz–50 kHz, +0/-3 dB | 106 dB, 20 Hz–20 kHz | <0.05% | >500 | N/A |
| QSC Audio Products | PLX 3002 | 500W per channel | 900W per channel | 8 Hz–50 kHz, +0/-3 dB | 106 dB, 20 Hz–20 kHz | <0.05% | >500 | N/A |
| QSC Audio Products | PLX 3402 | 700W per channel | 1,100W per channel | 8 Hz–50 kHz, +0/-3 dB | 106 dB, 20 Hz–20 kHz | <0.05% | >500 | N/A |
| QSC Audio Products | PowerLight 1.0 | 200W per channel | 325W per channel | 20 Hz–20 kHz | 108 dB | 0.1% | >350 | N/A |
| QSC Audio Products | PowerLight 1.0HV | 300W per channel | 500W per channel | 20 Hz–20 kHz | 108 dB | 0.1% | >350 | N/A |
| QSC Audio Products | PowerLight 1.4 | 300W per channel | 500W per channel | 20 Hz–20 kHz | 108 dB | 0.1% | >350 | N/A |
| QSC Audio Products | PowerLight 1.5X Bi-amp | 200W channel 1; 450W channel 2 | 325 W Ch. 1/ 700W Ch. 2 | 20 Hz–20 kHz | 108 dB | 0.1% | >350 | N/A |
| QSC Audio Products | PowerLight 1.6HVX Bi-amp | 300W channel 1; 700W channel 2 | 500 W Ch. 1/1,100W Ch. 2 | 20 Hz–20 kHz | 108 dB | 0.1% | >350 | N/A |
| QSC Audio Products | PowerLight 1.8 | 400W per channel | 650W per channel | 20 Hz–20 kHz | 108 dB | 0.1% | >350 | N/A |
| QSC Audio Products | PowerLight 2.0HV | 650W per channel | 1,000W per channel | 20 Hz–20 kHz | 108 dB | 0.1% | >350 | N/A |
| QSC Audio Products | PowerLight 2.4MB Mono-block | 1000W | 1,600W per channel | 20 Hz–20 kHz | 108 dB | 0.1% | >350 | N/A |
| QSC Audio Products | PowerLight 3.4 | 725W per channel | 1,200W per channel | 20 Hz–20 kHz | 108 dB | 0.1% | >500 | N/A |

| Power Consumption | Protection Features | AC Circuit Breaker | Ground Lift | Indicator Lights | Dimensions (Inches) | Weight (lbs.) | Price |
|---|---|---|---|---|---|---|---|
| 65W at idle | Short circuit; thermal | No | No | Signal present; -20, -9, -6, -3; OL each channel | 17.25x15.25x3.5 | 36 | $699 |
| 1,400W | Tubes; fuse | No | No | Yes | 19x8.75x11 | 75 | $7,000 |
| 1,400W | Tubes; fuse | No | No | Yes | 19x8.75x11 | 75 | (pair) $9,500 |
| 780W | Short circuit; high temp; DC offset | No | No | Power on; high temp; all 6 channels: signal present; clip | 19x3.5x12.7 | 25 | $1,099 |
| 270W | Thermal overload; DC offset | Yes | No | Power, peak, protection | 19x5.25x15.5 | 26.45 | $680 |
| 520W | Thermal overload; DC offset | Yes | No | Power, peak, protection | 19x5.25x15.5 | 38.3 | $840 |
| N/A | Short circuit; thermal overload; DC; RF | Yes | No | On; DDT | 19x5.25x14 | 51 | $1,099.99 |
| N/A | Short circuit; thermal overload; DC; RF | Yes | No | On; DDT | 19x3.5x17 | 35 | $1,299.99 |
| N/A | Short circuit; thermal overload; DC; RF | Yes | No | On; DDT | 19x1.75x17 | 18.5 | $459.99 |
| N/A | Short circuit; thermal overload; DC; RF | Yes | No | On; DDT | 19x5.25x17 | 77 | $2,199.99 |
| N/A | Short circuit; thermal overload; DC; RF | No | No | On; DDT | 19x3.5x19 | 39 | $699.99 |
| N/A | Short circuit; thermal overload; DC; RF | Yes | No | On; DDT | 19x3.5x22 | 23.5 | $899.99 |
| N/A | Short circuit; thermal overload; DC; RF | Yes | No | On; DDT | 19x5.25x13 | 43.5 | $549.99 |
| N/A | Short circuit; thermal overload; DC; RF | Yes | No | On; DDT | 19x7x14 | 64 | $749.99 |
| N/A | Short circuit; thermal overload; DC; RF | Yes | No | On; DDT | 19x3.5x9.6 | 18.5 | $299.99 |
| N/A | Short circuit; thermal overload; DC; RF | Yes | No | On; DDT | 19x5.25x9 | 29 | $399.99 |
| N/A | Full short circuit; thermal monitoring; ultrasonic/RF | No | No | On; clip; protect; signal | 19x17.9x3.5 | 42 | $1,195 |
| N/A | Full short circuit; thermal monitoring; ultrasonic/RF | No | No | On; clip; protect; signal | 19x17.9x5.25 | 54 | $1,595 |
| N/A | Full short circuit; thermal monitoring; ultrasonic/RF | No | No | On; clip; protect; signal | 19x17.9x5.25 | 69 | $2,355 |
| N/A | Full short circuit; thermal monitoring; ultrasonic/RF | No | No | On; clip; protect; signal | 19x12x3.5 | 25 | $675 |
| N/A | Full short circuit; thermal monitoring; ultrasonic/RF | No | No | On; signal ladder; clip; protect; parallel/bridge mode | 19x3.5x13.25 | 21 | $858 |
| N/A | Full short circuit; thermal monitoring; ultrasonic/RF | No | No | On; signal ladder; clip; protect; parallel/bridge mode | 19x3.5x13.25 | 21 | $1,198 |
| N/A | Full short circuit; thermal monitoring; ultrasonic/RF | No | No | On; signal ladder; clip; protect; parallel/bridge mode | 19x3.5x13.25 | 21 | $1,498 |
| N/A | Full short circuit; thermal monitoring; ultrasonic/RF | No | No | On; signal ladder; clip; protect; parallel/bridge mode | 19x3.5x13.25 | 21 | $1,798 |
| N/A | Full short circuit; thermal monitoring; ultrasonic/RF | No | No | On; signal ladder; clip; protect; parallel/bridge mode | 19x3.5x13.25 | 21 | $2,098 |
| N/A | Full short circuit; thermal monitoring; ultrasonic/RF | No | No | On; signal ladder; clip; protect; parallel/bridge mode | 19x17.9x3.5 | 18 | $1,488 |
| N/A | Full short circuit; thermal monitoring; ultrasonic/RF | No | No | On; clip; signal; standby | 19x17.9x3.5 | 18 | $1,578 |
| N/A | Full short circuit; thermal monitoring; ultrasonic/RF | No | No | On; clip; signal; standby; protect | 19x17.9x3.5 | 18 | $1,698 |
| N/A | Full short circuit; thermal monitoring; ultrasonic/RF | No | No | On; clip; signal; standby | 19x17.9x3.5 | 18 | $1,728 |
| N/A | Full short circuit; thermal monitoring; ultrasonic/RF | No | No | On; clip; signal; standby | 19x17.9x3.5 | 18 | $1,858 |
| N/A | Full short circuit; thermal monitoring; ultrasonic/RF | No | No | On; clip; signal; standby; protect | 19x17.9x3.5 | 18 | $2,028 |
| N/A | Full short circuit; thermal monitoring; ultrasonic/RF | No | No | On; clip; signal; standby; protect | 19x17.9x3.5 | 18 | $2,198 |
| N/A | Full short circuit; thermal monitoring; ultrasonic/RF | No | No | On; clip; signal; standby | 19x17.9x3.5 | 18 | $2,068 |
| N/A | Full short circuit; thermal monitoring; ultrasonic/RF | No | No | On; clip; signal; standby | 19x17.9x5.25 | 30 | $2,998 |

# POWER AMPS

| Manufacturer | Model | Continuous Avg. Power Into 8Ω (20 Hz–20 kHz ±1 dB) | Continuous Avg. Power Into 4Ω (20 Hz–20 kHz ±1 dB) | Frequency Response | Signal-to-Noise | Total Harmonic Distortion | Damping Factor | Slew Rate |
|---|---|---|---|---|---|---|---|---|
| QSC Audio Products | PowerLight 4.0 | 900W per channel | 1,400W per channe | 20 Hz–20 kHz | 108 dB | 0.1% | >500 | N/A |
| QSC Audio Products | USA 400 | 125W per channel | 200W per channel | 20 Hz–20 kHz | 105 dB | 0.1% | >200 | N/A |
| QSC Audio Products | USA 900 | 270W per channel | 450W per channel | 20 Hz–20 kHz | 104 dB | 0.1% | >200 | N/A |
| QSC Audio Products | USA 1310 | 400W per channel | 655W per channel | 20 Hz–20 kHz | 106 dB | 0.1% | >200 | N/A |
| Quested | AP800 | 450W per channel | 770W per channel | 20 Hz–20 kHz | 105 dB | 0.02% | >400 | 50V µs |
| Rane | MA6S | 100W per channel | 150W per channel | 20 Hz–20 kHz | 103 dB | 0.07% | 300 (@ 1 kHz) | N/A |
| Roland | SRA-200E | 100W per channel | 150W per channel | 20 Hz–50 kHz | 100 dB | 0.05% | N/A | N/A |
| Samson | Servo 120 | 52W per channel | 60W per channel | 10 Hz–100 kHz | 105 dB | <0.05% | >150 | N/A |
| Samson | Servo 170 | 60W per channel | 85W per channel | 20 Hz–50 kHz | 103 dB | <0.01% | N/A | N/A |
| Samson | Servo 260 | 90W per channel | 130W per channel | 20 Hz–50 kHz | 103 dB | <0.03% | >100 | N/A |
| Samson | Servo 550 | 220W per channel | 275W per channel | 20 Hz–50 kHz | 103 dB | <0.03% | >100 | N/A |
| Soundtech | PL1204 | 190W per channel | 280W per channel | 20 Hz–20 kHz | 100 dB | <0.05% | 300:1 | 40 V/µs |
| Soundtech | PL1402 | 390W per channel | 620W per channel | 20 Hz–20 kHz | 100 dB | <0.05% | 300:1 | 40 V/µs |
| Soundtech | PL1602 | 525W per channel | 800W per channel | 20 Hz–20 kHz | 100 dB | <0.05% | 200:1 | 56 V/µs |
| Soundtech | PL200 | 65W per channel | 100W per channel | 20 Hz–20 kHz | 90 dB | <0.1% | >300:1 | 48 V/µs |
| Soundtech | PL350M | 150W mono | 230W mono | 20 Hz–20 kHz | 90 dB | <0.1% | >300:1 | 40 V/µs |
| Soundtech | PL602 | 200W per channel | 300W per channel | 20 Hz–20 kHz | 120 dB | <0.1% | >300:1 | 40 V/µs |
| Soundtech | PL802 | 230W per channel | 400W per channel | 20 Hz–20 kHz | 90 dB | <0.1% | 300:1 | 40 V/µs |
| Soundtech | PS802 | 230W per channel | 400W per channel | 20 Hz–20 kHz | 120 dB | <0.05% | 200:1 | 42 V/µs |
| Stewart Audio | Pro Reference 1000 | 200W per channel | 350W per channel | 15 Hz–20 kHz | >108 dB | <0.05% | >500 | >35 V/µs |
| Stewart Audio | Pro Reference 500 | 110W per channel | 190W per channel | 15 Hz–20 kHz | >108 dB | <0.05% | >500 | >35 V/µs |
| Stewart Audio | World 1.2 | 240W per channel | 420W per channel | 20 Hz–20 kHz | >100 dB | <0.1% | >500 | >30 V/µs |
| Stewart Audio | World 1.6 | 390W per channel | 650W per channel | 20 Hz–20 kHz | >100 dB | <0.1% | >500 | >30 V/µs |
| Stewart Audio | World 2.1 | 475W per channel | 675W per channel | 20 Hz–20 kHz | >100 dB | <0.1% | >500 | >30 V/µs |
| Stewart Audio | World 250 | 70W per channel | 120W per channel | 20 Hz–20 kHz | >100 dB | 0.05% | >500 | >30 V/µs |
| Stewart Audio | World 600 | 130W per channel | 230W per channel | 20 Hz–20 kHz | >100 dB | <0.1% | >500 | >30 V/µs |
| Studiomaster | 1200 D | 375x375 (8) | 600x600 (4) | 20 Hz–20 kHz | 100 dB | 0.015% | 200 | 20V |
| Studiomaster | 700 D | 210x210 (8) | 350x350 (4) | 20 Hz–20 kHz | 100 dB | 0.008% | 200 | 20V/µs |
| TASCAM | PA-150 | 115W per channel | 150W per channel | 20 Hz–20 kHz | 90 dB | 0.06% | 45 (@ 8Ω) | N/A |
| TASCAM | PA-20MKII | N/A | 25W per channel | 20 Hz–20 kHz | 85 dB | 0.05% | 80 (@ 8Ω) | N/A |
| Tube Works | 1160 MosValve | 60W per channel | 80W per channel | N/A | >95 dB @ 8Ω | N/A | N/A | N/A |
| Tube Works | 1500 MosValve | 185W per channel | 250W per channel | N/A | >97 dB @ 8Ω | N/A | N/A | N/A |
| Whirlwind | P-12 | 11W per channel | 12W per channel | 20 Hz–30 kHz | 101 dB | 0.2% | N/A | 9.6 V/µs |
| Yamaha | A100A | 50W per channel | N/A | 20 Hz–20 kHz | 107 dB | 0.2% | >70 | 10 V/µs |
| Yorkville Sound | SR-300 | 200W per channel | 300W per channel | 20 Hz–20 kHz | 95 dB | 0.01% | >400 | 10 V/µs |

| Power Consumption | Protection Features | AC Circuit Breaker | Ground Lift | Indicator Lights | Dimensions (Inches) | Weight (lbs.) | Price |
|---|---|---|---|---|---|---|---|
| N/A | Full short circuit; thermal monitoring; ultrasonic/RF | No | No | On; clip; signal; standby | 19x17.9x5.25 | 30 | $3,398 |
| N/A | Full short circuit; thermal monitoring; ultrasonic/RF | Yes | No | On; clip; protect | 19x9.5x5.25 | 24 | $675 |
| N/A | Full short circuit; thermal monitoring; ultrasonic/RF | Yes | No | On; clip; protect | 19x9.5x5.25 | 34 | $805 |
| N/A | Full short circuit; thermal monitoring; ultrasonic/RF | Yes | No | On; clip; protect | 19x10.8x7 | 54 | $1,165 |
| 230 VAC @ 10A | DC/short protection | Yes | No | Mute; fault/DC; limit; power; temp warning | 19x1.75x15 | 51 | N/A |
| 2,200W (max) | Main fuse; channel fuses; forced cooling | No | No | Channel-ready; clip limit; SOA limit | 19x5.25x11 | 44 | $1,599 |
| Ecos | Yes | No | Yes | Yes | 19x14.38 x 1.93 | 11.1 | $795 |
| 240W | Short circuit; thermal; DC offset | No | No | Prot; 5-segment/3-color level meters; power; spkr disable (for headphone) | 17.5 (19 w/rack ears included)x1.75x11.5 | 15.6 | $259.99 |
| 838W (115 VAC) | Thermal; DC offset; fuse | No | No | Clip; idle; protect; power | 19x5.2x9.2 | 13.7 | $299.99 |
| 420W | Short circuit; thermal overload; DC offset | No | No | Clip; peak; protect; power | 19x1.72x10.4 | 14.3 | $379.90 |
| 430W (155 VAC); 480W (240 VAC) | Thermal; DC offset; fuse | No | No | Clip; idle; protect; power | 19x3.5x9.5 | 17.6 | $449.99 |
| 1,800W | Thermal overload; DC offset; fuse | No | No | Clip; protect; power; mono bridge | 3.5x19x16 | 52 | $1,229.90 |
| 1,900W | Thermal overload; DC offset; fuse | No | No | Clip; protect; power; mono bridge | 5.23x19x16 | 40 | $1,199.90 |
| 1,900W | Thermal overload; DC offset; fuse | No | No | Clip; protect; power; mono bridge | 5.23x19x14 | 21 | $1,429.90 |
| 310W (115 VAC); 335W (240 VAC) | Thermal protection; DC offset; fuse | No | No | Clip; protect; power; mono bridge | 1.72x10.4x19 | 14.3 | $479.90 |
| N/A | Thermal; DC offset; fuse | No | No | Clip; protect; power | 3.5x19x14 | 26.4 | 549.90 |
| 1,080W | Short circuit; thermal overload; DC offset; fuse; current limit; power-up/down | No | No | Clip; protect; power; mono bridge | 19x3.47x14 | 34.1 | $649.90 |
| 1,080W | Thermal overload; DC offset; fuse | No | No | Clip; protect; power; mono bridge | 5.23x19x16 | 38 | $849.90 |
| 1,000W | Short circuit; thermal overload; DC offset; fuse; current limit; power-up/down | No | Yes | Clip; protect; power; mono bridge | 19x1.72x14 | 15.8 | $749.90 |
| 5.25A (120 VAC) | 7-stage circuit guard; short circuit; thermal overload; DC offset; RF | Yes | No | Clip; signal; power | 19x1.72x15 | 11 | $1,099 |
| 3.5A (120 VAC) | 7-stage circuit guard; short circuit; thermal overload; DC offset; RF | Yes | No | Clip; signal; power | 19x1.72x15 | 10 | $799 |
| 6A (120 VAC) | 7-stage circuit guard; short circuit; thermal overload; DC offset; RF | Yes | No | Clip; signal; power | 19x1.72x15 | 11 | $999 |
| 5A (120 VAC) | 7-stage circuit guard; short circuit; thermal overload; DC offset; RF | Yes | No | Clip; signal; power | 19x1.72x15 | 16 | $1,199 |
| 5A (120 VAC) | 7-stage circuit guard; short circuit; thermal overload; DC offset; RF | Yes | No | Clip; signal; power | 19x1.72x15 | 17 | $1,399 |
| 5.25A (120 VAC) | 7-stage circuit guard; short circuit; thermal overload; DC offset; RF | Yes | No | Clip; signal; power | 19x1.72x5.5 | 5.5 | $469 |
| 5.8A (120 VAC) | 7-stage circuit guard; short circuit; thermal overload; DC offset; RF | Yes | No | Clip; signal; power | 19x1.72x15 | 10 | $699 |
| 2,400W | Gated power stage; crowbar spkr protect | No | Yes | Peak; temp; fault; mono; bridge; power | 17x16x3.56 | 45 | $995 |
| 1,600W | Gated power stage; crowbar spkr protect | No | Yes | Peak; temp; fault; mono; bridge; power | 17x16x3.56 | 38 | $649 |
| 620W | DC offset; power overload; temp | Yes | Yes | Clip; power; protect | 19x5.25 | 19.4 | $400 |
| 90W | DC balance; overload | Yes | Yes | Clip; power; protect | 19x1.72 | 9.9 | $250 |
| 400W (Max 120 VAC) | Short circuit; thermal | No | No | Power (1); clip (2) | 3.5x19x7 | 13 | $395 |
| 1,400W (120/240 VAC) | Short circuit; thermal; time delay turn-on relay | No | No | Power (1); clip (2) | 3.5x19x11.5 | 30 | $650 |
| 75W | SOAR | No | No | Clip | 19x1.72 | N/A | $259.95 |
| 120W | Short circuit; thermal; DC detector | No | No | Meters; clip | 11.63x3.75x8.69 | 10 | $329 |
| 500W (max) | Current limit; thermal; fuse | No | No | Activity; clip; limit | 19x3.5x3.5 | 22.5 | $499 |

# REFERENCE MONITORS

| Manufacturer | Product | Enclosure Type | Powered/ Unpowered | Frequency Response | Sensitivity | Crossover Frequency | Woofer Size and Type |
|---|---|---|---|---|---|---|---|
| Alesis | Monitor One | Superport vented | Unpowered | 45 Hz–18 kHz | 88 dB | 2.5 kHz | 6.5" polypropylene cone |
| Alesis | Monitor Two | Superport vented | Unpowered | 40 Hz–18 kHz | 90 dB | 1.5 and 6 kHz, asymmetrical | 10" |
| Alesis | Point Seven | Superport vented | Unpowered | 85 Hz–22 kHz | 88 dB | 2 kHz, 2nd order | 5" nonwoven carbon fiber |
| Ambiance Acoustics | California Cube Loudspeaker System w/EQC-1 Equalizer | Vented | Unpowered | 38 Hz–16.5 kHz (5 dB) | 90 dB | N/A | N/A |
| ATC | Pro 20A | Sealed | Powered | 60 Hz–20 kHz | N/A | 2.8 kHz | 6.5", superlinear |
| ATC | SCM10 Pro | Sealed | Unpowered | 65 Hz–20 kHz (-6 dB) | 80 dB | 2.8 kHz | 5" |
| ATC | SCM100A Pro | Ported reflex | Powered | 32 Hz–20 kHz (-6 dB) | -115 dB | 380 Hz and 3.5 kHz | 12" superlinear |
| ATC | SCM20 Pro | Sealed | Unowered | 60 Hz–0 kHz (-6 dB) | 86 dB | 2.8 kHz | 6.5" superlinear |
| ATC | SCM20A Pro | 20-liter cast aluminum | Powered | N/A | N/A | 2.8 kHz | 6.5" superlinear |
| ATC | SCM20SL | 20-liter | Unpowered | N/A | 83 dB @ 1W/1m | 2.8 kHz | 6" superlinear |
| ATC | SCM50A Pro | Ported reflex | Powered | 38 Hz–20 kHz (-6 dB) | N/A | 380 Hz and 3.5 kHz | 9" superlinear |
| Audix | N-10 | Bass reflex | Unpowered | 40 Hz–20 kHz | 89 dB | 2.2 kHz | 7" Kevlar |
| Audix | N-5 | Bass reflex | Unpowered | 40 Hz–20 kHz | 87 dB | 2.2 kHz | 7" Kevlar |
| Audix | PH15-VS | Bass reflex | Powered | 50 Hz–20 kHz | 86 dB | 2.5 kHz | 5.25" poly |
| Audix | Studio 1A | Bass reflex | Unpowered | 55 Hz–18 kHz | 87 dB | 3 kHz | 6.5" poly |
| Bag End | D10E-I Subwoofer | Sealed | Unpowered | 8–95 Hz (w/ELF processor) | N/A | N/A | 10" EL-10 woofer |
| Bag End | Infrasub 18 Subwoofer | Sealed | Powered | 8–95 Hz | N/A | N/A | 18" EL-18P LF woofer |
| Bag End | MM-8 Near Field Monitor | Ported | Unpowered | 100 Hz–20 kHz | 84 dB | Time Align EQ filter @ 2.9 kHz | 8" LF |
| Bag End | MM-8H | Ported | Unpowered | 100 Hz–20 kHz | 84 dB | Time Align EQ filter @ 2.9 kHz | 8" LF |
| Barbetta | DIVA D-9 | Ported reflex | Powered | 48 Hz–20 kHz (±1 dB) | N/A | 3,245 Hz | 8" polymer-treated |
| Barbetta | G-10 | Ported reflex | Powered | 39 Hz–22 kHz (±1 dB) | N/A | 3,240 Hz | 10" mineral-filled polypropylene |
| Benson Audio Labs | Studiostat 8.2 | Vented | Unpowered | 39 Hz–21 kHz (-6 dB) | 92 dB | 1.6 kHz | 8" cast frame, 2" voice coil |
| Bryston | PMC IB-1S | Transmission line | Powered or unpowered | 25 Hz–25 kHz | 89 dB @ 1W/1m | 380 and 3.8 kHz | 10" carbon fiber/Nomex |
| Bryston | PMC LB-1 | Transmission line | Powered or unpowered | 35 Hz–25 kHz | 87 dB @ 1W/1m | 2.5 kHz | 4.5" 1 KW pulse with 4" voice coil |
| Bryston | PMC TB-1S | Transmission line | Powered or unpowered | 40 Hz–25 kHz | 90 dB @ 1W/1m | 3 kHz | Doped 6" cast magnesium alloy |
| Diamond Audio | S2 Pro-Media 1060 Powered Subwoofer | Dual-port | Powered unpowered | 50–140 Hz | N/A | 12 dB/octave continuously variable from 70–140 Hz | 6.5" long-throw neodymium DVC subwoofer |
| Diamond Audio | S2 Pro-Media 1100 Powered Subwoofer | Dual-port vented | Powered | 30–140 Hz | N/A | 12 dB/octave continuously variable from 70–140 Hz | 8" long-throw neodymium DVC subwoofer |
| Diamond Audio | S2 Pro-Media 4060 System | Dual-port vented | Powered | 60 Hz–20 kHz (±3 dB) | N/A | 120 Hz: 12 dB/octave active (HP and LP); 3.5 kHz: 12 and 6 dB/octave passive (HP and LP) | 6.5" long-throw neodymium DVC subwoofer |
| Diamond Audio | S2 Pro-Media 4100 System | Dual-port vented | Powered | 50 Hz–20 kHz (±3 dB) | N/A | 120 Hz: 12 dB/octave active (HP and LP); 3.5 kHz: 12 and 6 dB/octave passive (HP and LP) | 8" long-throw neodymium DVC subwoofer |
| Digital Designs | DD161d | Ported and sealed with use of port plugs | Unpowered | 45 Hz–20 kHz | 90 dB | 1.8 kHz | 6.5" composite-filled poly |
| Digital Designs | DD162 | Ported and sealed with use of port plugs | Unpowered | 42 Hz–20 kHz | 90 dB | 3.5 kHz | (2) 6.5" composite-filled poly woofers |
| Digital Designs | DD261d | Vented | Unpowered | 45 Hz–20 kHz | 91 dB | 1.8 kHz | 6.5" composite-filled poly |
| Digital Designs | DD262d | Ported and sealed with use of port plugs | Unpowered | 42 Hz–20 kHz | 92 dB | 1.5 kHz | 6.5" composite-filled poly woofers |
| Digital Designs | DD462 | Ported and sealed with use of port plugs | Unpowered | 38 Hz–20 kHz | 93 dB | 1.8 kHz | 4 each 6.5" composite-filled poly woofers |
| Digital Designs | M6 | Vented | Unpowered | 45 Hz–20 kHz | 90 dB | 3.5 kHz | 6.5" composite-filled poly |
| Digital Designs | M6b | Ported and sealed with use of port plugs | Unpowered | 45 Hz–20 kHz | 90 dB | 3.5 kHz | 6.5" composite-filled poly |

| Midrange Size and Type | Tweeter Size and Type | Magnetic Shielding | Cabinet Dimensions (HxWxD) | Weight (lbs.) | Notes | Price (per pair) |
|---|---|---|---|---|---|---|
| N/A | 1" silk dome | No | 15x9.25x8.5 | 5 | 5-way binding posts | $399 |
| 5" | 1" silk dome | No | 4x20x14 | 34 | Midfield reference monitor | $699 |
| N/A | 1" silk dome | Yes | 7.1x11.2x7.25 | 11 | Adjustable ports if used w/subwoofer | $299 |
| 4 full-range 4.5" treated paper cones/ rubber surround | N/A | No | 13.6x13.6x13.6 | Cabinet: 30; equalizer: 3 | Price includes equalizer | Starting at $1,295 |
| N/A | 1" | No | 17.6x10.6x12.2 | 66 | | $4,595 |
| N/A | 1" soft dome | Optional | 15x7.1x10 | 22 | | $1,650 |
| 3" soft dome | 1" soft dome | Optional | 32.8x15.7x22.29 | 143 | | $9,995 |
| N/A | 1" soft dome | Optional | 17.3x9.8x12.4 | 50.6 | | $2,500 |
| N/A | 1" soft dome | Optional | 17.6x10.6x12.2 | 66 | | $4,899 |
| N/A | 1" soft dome | Optional | 15x7.1x10 | 50.6 | | $2,399.95 |
| 3" soft dome | 1" soft dome | Optional | 28.2x13.8x18.8 | 107.8 | | $8,995 |
| N/A | 1" cloth dome | No | 22x10x13.5 | 45 | | $1,995 |
| N/A | 1" cloth dome | No | 15x9.5x11 | 24 | | $1,495 |
| N/A | 1" dome | Yes | 9x6x9 | 18 | | $479 |
| N/A | 1" cloth dome | Optional | 13x9x10 | 18 | | $599 |
| N/A | N/A | No | 13x22.5x13 | 50 | Studio subwoofer for use w/ELF processor | (each) $710 |
| N/A | N/A | No | 23.5x21.25x18.25 | 92 | Time Align subwoofer w/8 Hz response; 400W power amp | (each) $1,495 |
| N/A | 1.75" aluminum compression HF | No | 17.5x12.25x8 | 31 | For use w/ELF subwoofer; EQ; polarity switch | $2,480 |
| N/A | 1.75" aluminum compression HF | No | 17.5x12.25x8 | 31 | Includes cloth grille (no switches) | $2,264 |
| N/A | 1" titanium dome | Yes | 14.5x10.75x11 | 36 | Biamplified | N/A |
| N/A | 1" titanium dome | Yes | 14.5x12x17 | 47 | Biamplified | N/A |
| N/A | 5"x5" electrostatic element | Yes | 17.75x11x12 | 34 | Optimum listening-plane indicator | $1,399 |
| 5.5" doped fabric | 3.5" silk dome w/double chamber | Optional | 29x18x13 | 76 | Optional Bryston power modules | $4,500 |
| N/A | Silk soft dome w/double chamber | Yes | 21x10x7 | 21 | Optional Bryston power modules | $2,160 |
| N/A | Aluminum alloy phase shield–ferro fluid | Yes | 16x12x8 | 18 | Optional Bryston power modules | $900 |
| N/A | N/A | Yes | 11.5x8.5x14.5 | 20 | RCA (line level) or push-type speaker connectors (amplified levels); bass output level control; polarity switch | $289 |
| N/A | N/A | Yes | 16.5x8.5x17 | 30 | RCA (line level) or push-type speaker connectors (amplified levels); bass output level control; polarity switch | $399 |
| 4.5" neodymium (midbass) | 0.5" poly-aluminum composite dome tweeter | Yes | Sub: 11.5x8.5x14.5; satellite: 7.25x5x4.5 | 36 | 4-pc satellite/subwoofer system; S2 DS1 speaker stands; mic input w/level control; S2 TP-1 for use w/existing preamps | $499 |
| 4.5" neodymium (midbass) | 0.5" poly-aluminum composite dome tweeter | Yes | Sub: 16.5x8.5x17; satellite: 7.25x5x4.5 | 48 | 4-pc satellite/subwoofer system; S2 DS1 speaker stands; mic input w/level control; S2 TP-1 for use w/existing preamps | $649 |
| N/A | 25 mm aluminum dome | Optional | 9x13.5x12 | 19.5 | Biwired; 2-tiered baffle | $614 |
| N/A | 25 mm dome; 28 mm textile dome | Optional | 15x9.5x12 | 25 | Bipolar | $908 |
| N/A | 1" aluminum dome | Yes | 10x18.5x16 | 34 | Biwired; 2-tiered baffle | $250 |
| | 25 mm dome; 28 mm textile dome | Optional | 20.5x10x16 | 25 | Bipolar | $1,037 |
| N/A | 25 mm dome; 28 mm textile dome | Optional | 29x13.5x12 | 60 | Bipolar | $1,345 |
| N/A | 0.75" | Optional | 9x13.5x12 | 18.5 | | $219 |
| N/A | 20 mm dome | Optional | 9x13.5x12 | 19.5 | | $279 |

# REFERENCE MONITORS

| Manufacturer | Product | Enclosure Type | Powered/ Unpowered | Frequency Response | Sensitivity | Crossover Frequency | Woofer Size and Type |
|---|---|---|---|---|---|---|---|
| Dynaudio Acoustics | BM15 | Reflex | Unpowered | 43 Hz–20 kHz | 88 dB | 2.7 kHz | 9.5" polypropylene cone with 4" voice coil |
| Dynaudio Acoustics | BM15A | Reflex | Powered | 40 Hz–21 kHz | N/A | 1.7 kHz | 9.5" polypropylene cone with 4" voice coil |
| Dynaudio Acoustics | BM5 | Reflex | Unpowered | 55 Hz–29 kHz | 87 dB | 5.2 kHz | 6.5" polypropylene cone with 3" voice coil |
| Dynaudio Acoustics | BM6 | Reflex | Unpowered | 43 Hz–20 kHz | 86 dB | 3.1 kHz | 6.5" polypropylene cone with 3" voice coil |
| Dynaudio Acoustics | BM6A | Reflex | Powered | 42 Hz–21 kHz | N/A | 2.2 kHz | 6.5" polypropylene cone with 3" voice coil |
| Dynaudio Acoustics | BX30 | Reflex subwoofer | Powered | 22 Hz–80/95/120 Hz | N/A | 80/95/120 Hz | 12" polypropylene cone with 4" voice coil |
| Dynaudio Acoustics | M1 | Reflex | Unpowered | 50 Hz–20 kHz | 88 dB | N/A | 2x6" polypropylene cone with 3" voice coil |
| Dynaudio Acoustics | M1.5 | Reflex | Unpowered | 40 Hz–20 kHz | 88 dB | N/A | 2x6.5" polypropylene cone with 3" voice coil, fluid cooled |
| Dynaudio Acoustics | M2 | Reflex | Unpowered | 45 Hz–20 kHz | 87 dB | N/A | 2x8" polypropylene cone with 2" voice coil |
| Dynaudio Acoustics | M3 | Reflex | Unpowered | 40 Hz–20 kHz | 88 dB | N/A | 2x12" polypropylene cone with 4" voice coil, fluid cooled |
| Eastern Acoustic Works | MM12Se w/2-channel subwoofer | 2x full-range satellites | Unpowered | 45 Hz–20 kHz (±3 dB) | 89 dB | N/A | 5.25" cone per channel |
| Eastern Acoustic Works | MS103 | Vented | Unpowered | 40 Hz–19 kHz (±3 dB) | 95 dB | N/A | 15" cone |
| Eastern Acoustic Works | MS20 | Vented | Unpowered | 50 Hz–19 kHz (±3 dB) | 88 dB | N/A | 7" polypropylene cone |
| Eastern Acoustic Works | MS30C | Vented | Unpowered | 45 Hz–19 kHz (±3 dB) | 90 dB | N/A | 8" cone |
| Eastern Acoustic Works | MS63 | Vented | Unpowered | 50 Hz–19 kHz (±3 dB) | 95 dB | N/A | 12" cone |
| Electro-Voice | MS802 | Vented | Unpowered | 45 Hz–18 kHz (±3 dB) | 91 dB | 2 kHz | 8" |
| Electro-Voice | S-60 | Sealed | Unpowered | 60 Hz–18 kHz | 88 dB | 2.5 kHz | 6.5" |
| Electro-Voice | S-80A | Vented | Unpowered | 80 Hz–15 kHz | 91 dB | 2 kHz | 8" |
| Electro-Voice | Sentry 100A | Vented | Unpowered | 45 Hz–18 kHz | 91 dB | 2 kHz | 8" |
| Electro-Voice | Sentry 500 | Vented | Unpowered | 40 Hz–18 kHz (±3 dB) | 96 dB | 1.5 kHz | 12" extended voice coil |
| Event Electronics | 20/20 Direct Field Monitor | Ported | Unpowered | 50 Hz–20 kHz (±2 dB) | 88 dB | 2.2 kHz, 2nd order | 8" mineral-filled polypropylene cone |
| Event Electronics | 20/20bas Biamplified System | Ported | Powered | 38 Hz–20 kHz, ± 2 dB (-3 dB @ 35 Hz) | N/A | 2.6 kHz, active, 4th order | 8" mineral-filled polypropylene cone |
| Event Electronics | 20/20p Powered Direct Field Monitor System | Ported | Powered | 38 Hz–20 kHz, ±3 dB (-2 dB @ 500 Hz) | N/A | 2.2 kHz, active, 2nd order | 8" mineral-filled polypropylene cone |
| Event Electronics | Tria Triamplified Monitor System | Ported | Powered | 35 Hz–20 kHz, ±3 dB (-2 dB @ 38 Hz) | N/A | VLF: 60 Hz; satellite: 2.9 kHz active | VLF: 8" mineral-filled polypropylene cone; satellite: 5.25" mineral-filled polypropylene cone |
| Fostex | 6301BEA | Sealed | Powered | 80 Hz–13 kHz | 84 dB | N/A | N/A |
| Fostex | PS-3 | Sealed | Powered | 70 Hz-20 kHz ±3 dB | 60 mV | N/A | 5.25" cone |
| Genelec | 1029A | Ported | Powered | 68 Hz–18 kHz (±2.5 dB) | 110 dB | Electronic (3.3 kHz) | 5" coated cone |
| Genelec | 1030AP | Ported | Powered | 52 Hz–18 kHz (±2.5 dB) | 115 dB | Electronic (3.5 kHz) | 6.5" polymer composite |
| Genelec | 1031AP | Ported | Powered | 48 Hz–20 kHz (±2.5 dB) | 120 dB | Electronic (2.5 kHz) | 8" polymer composite |
| Genelec | 1032A | Ported | Powered | 42 Hz–20 kHz (±2.5 dB) | 124 dB | Electronic (1.8 kHz) | 10" polymer composite |
| Genelec | 1037B | Ported | Powered | 37 Hz–20 kHz (±2.5 dB) | 127 dB | Electronic (420 Hz, 3.2 kHz) | 12" cone |
| Genelec | 1091A Active Subwoofer | Ported | Powered | 38–85 Hz (±2.5 dB) | 103 dB | Electronic (85 Hz) | 8" cone |
| Genelec | 1092A | Ported | Powered | 33–85 Hz (±2.5 dB) | 115 dB | Electronic (85 Hz) | Dual 8" cones |

| Midrange Size and Type | Tweeter Size and Type | Magnetic Shielding | Cabinet Dimensions (HxWxD) | Weight (lbs.) | Notes | Price (per pair) |
|---|---|---|---|---|---|---|
| N/A | 1" soft dome, fluid cooled | Yes | 17x11x13 | 27 | | $1,529 |
| N/A | 1" soft dome, fluid cooled voice coil | Yes | 13x11x15 | 42 | | $3,599 |
| N/A | 1" soft dome using neodymium magnet | Yes | 12x8x10 | 13 | | $799 |
| N/A | 1" soft dome, fluid cooled | Yes | 13x8x10 | 15 | | $1,169 |
| N/A | 1" soft dome, fluid cooled | Yes | 13x8x13 | 24 | | $2,599 |
| N/A | N/A | Yes | 25x17x22 | 95 | Active subwoofer system | $2,999 |
| N/A | 1" soft dome, fluid cooled | Yes | 8x18x12 | 31 | Designed specifically for console-top use | $3,199 |
| N/A | 1" soft dome, fluid cooled | Yes | 17x12x16 | 48 | Designed for mid-field or console-top use | $4,199 |
| 3" soft dome; fluid cooled | 1" soft dome, fluid cooled | Yes | 13x27x20 | 77 | Mid-field main monitor | $6,579 |
| 2x6" polypropylene cone with 3" voice coil, fluid cooled | 1" soft dome, fluid cooled | Yes | 31x22x20 | 143 | Main monitor | $12,129 |
| N/A | 1" soft dome per channel | Yes (satellites) | Full-range satellites | 91 | 2-channel passive crossover; total system can be powered by 2-channel amp | (2-channel system) $1,792 |
| 7" carbon fiber cone | 3" dome and wave guide | No | 20x24x16.75 | 105 | Mirror-imaged pairs available; full or biamplified | $3,178 |
| N/A | 1" soft dome | No | 14.88x9.75x9.75 | 16 | Mirror-imaged pairs available | $704 |
| N/A | 1" soft dome | No | 14.06x17x12.5 | 30 | Mirror-imaged pairs available | $824 |
| 7" carbon fiber cone | 3" dome and wave guide | No | 16x24x12.5 | 80 | Mirror-imaged pairs available; full or biamplified | $2,560 |
| N/A | 1" superdome | No | 17.25x12x11.125 | 27 | | $684 |
| N/A | 1" tweeter w/Direktor | Yes | 13.8x8.7x8.4 | 15.4 | | $474 |
| N/A | 1" tweeter w/Direktor | Yes | 15.8x10.7x8.5 | 16.7 | | $568 |
| N/A | Superdome (high-power) | No | 7.25x12x11.13 | 28 | | $918 |
| N/A | 1" superdome coupled to dispersion-control device | No | 23.75x27x13 | 70 | Step-down mode allows operation down to 25 Hz | $1,610 |
| N/A | 1" ferrofluid-cooled silk dome | Yes | 14.75x10.25x11.75 | 22 | Front-mounted large-diameter; 5-way binding posts | $399 |
| N/A | 1" ferrofluid-cooled silk dome | Yes | 14.75x10.25x11.75 | 30 | Low, high, trim controls; subsonic filter; RF prot; gold 1/4"/XLR combo connectors | $999 |
| N/A | 1" ferrofluid-cooled silk dome | Yes | 14.75x10.25x11.75 | 33 (pwrd cab); 22 (pass cab) | Low, high, trim controls; subsonic filter; RF prot; gold 1/4"/XLR combo connectors; both amps in "P" unit; other amp drives 20/20 | $699 |
| N/A | 1" neodymium ferrofluid-cooled silk dome | Yes | VLF: 18.5x12x11; Satellite: 10.5x 7.5x9 | VLF: 34; satellite: 11 | 3-way system w/2 satellites/1 very low-frequency station; low/high frequency; subsonic filter; RF prot; output-current limiting; gold combo 1/4"/XLR connectors | (3-piece system) $999 |
| 4" full-range | N/A | Yes | 6.5x4x5 | 7 | Amplifier may be used independently | $458 |
| 3" cone | 1" dome | Yes | 10x11.25x8.25 | 14 | Woofer contains 15W amp, crossover, 5W amps x 2 for satellites | $349 |
| N/A | 0.75" metal dome | Yes | 10x6x7.25 | 12.5 | XLR ins; pwr indctr; input-sens cntrls; amp/driver-prot; x-overs; EQ | $1,080 |
| N/A | 0.75" metal dome | Yes | 12.5x8x9.5 | 15 | XLR ins; pwr indctr; input-sens cntrls; amp/driver-prot; x-overs; EQ | $2,098 |
| N/A | 1" metal dome | Yes | 15.5x10x11.5 | 26 | XLR ins; power indicator; input-sensitive controls; amp/driver-prot; crossovers; EQ; avail in black (1031AP) | $3,998 |
| N/A | 1" metal dome | Yes | 19.5x12.63x11.5 | 44 | XLR ins; pwr indctr; input-sens cntrls; amp/driver-prot; x-overs; EQ | $4,998 |
| 5" cone | 1" metal dome | Optional | 26.75x15.75x15 | 82 | XLR ins; pwr indctr; input-sens cntrls; amp/driver-prot; x-overs; EQ | $9,498 |
| N/A | N/A | No | 20x10x9 | 22.5 | XLR ins; power indicator; input-sensitive controls; amp/driver-prot; crossovers; bass roll-off EQ; for use w/1029As | each $699 |
| N/A | N/A | Optional | 24.25x12.5x20 | 66 | XLR ins; power indicator; input-sensitive controls; amp/driver-prot; crossovers; L-C-R in/outs; LFE in | each $2,150 |

# REFERENCE MONITORS

| Manufacturer | Product | Enclosure Type | Powered/ Unpowered | Frequency Response | Sensitivity | Crossover Frequency | Woofer Size and Type |
|---|---|---|---|---|---|---|---|
| Genelec | 1094A Active Subwoofer | Ported | Powered | 29–85 Hz (±2.5 dB) | 120 dB | Electronic (85 Hz) | 15" |
| Genelec | 2029A Digital Monitor System | Ported | Powered | 68 Hz–18 kHz (±2.5 dB) | 110 dB | Electronic (3.3 kHz) | 5" coated cones |
| Genelec | S30C | Ported | Powered | 44 Hz–22 kHz (±2.5 dB) | 124 dB | Electronic (420 Hz, 4 kHz) | 8" cone |
| Hafler | TRM10s | Bass reflex | Powered | 30 Hz–110 Hz (±2 dB) | N/A | Variable (40-110 Hz) | Down-firing 10" cellulose fiber cone |
| Hafler | TRM12s | Bass reflex | Powered | 25–110 Hz (±2 dB) | N/A | Variable (40-110 Hz) | Down-firing 12" cellulose fiber cone |
| Hafler | TRM6 | Bass reflex | Powered | 55 Hz–21 kHz (±2 dB) | N/A | 3.2 kHz | 6" polypropylene cone |
| Hafler | TRM8 | Bass reflex | Powered | 45 Hz–21 kHz (±2 dB) | N/A | 2.5 kHz | 8" polypropylene cone |
| HHB | HHB Circle 3 | 2-way nonported | Powered or unpowered | 70 Hz–20 kHz | 83 dB | 3.5 kHz | 4.5" NRSC cone |
| HHB | HHB Circle 5 | Ported | Powered or unpowered | 48Hz-20kHz | 87 dB | 2.6 kHz | 8" polymer cone |
| HHB | HHB Circle Powered Sub | Twin-chamber reflex | Powered | 33 Hz–120 kHz | 1VRMS | 5 main channels use Sallen and Key filters @ 120 Hz | 12" double magnet |
| Hot House | ARM 265 Active Reference Monitor | 6th-order reflex; heavily braced; rear ported | Powered | 30 Hz–20 kHz ±1.75 dB | Adjustable input gain, +4 or -10 line level | 1.5 kHz | 2x6.5" long throw |
| Hot House | ASB 110 Active Sub-Bass System | 6th-order reflex | Powered | 20–110 Hz | N/A | 50–110 Hz | 10" Hot House HV10 |
| Hot House | ASB 112 Active Sub-Bass System | 6th-order reflex | Powered | 20–110 Hz | N/A | 50–110 Hz | 12" Hot House HV12 |
| Hot House | ASB 115 Active Sub-Bass System | 6th-order reflex | Powered | 16–110 Hz | N/A | 50–110 Hz | 15" Hot House HV15 Pro |
| Hot House | ASB 212 Active Sub-Bass System | 6th-order reflex | Powered | 20–110 Hz | N/A | 50–110 Hz | (2) 12" Hot House HV12 |
| Hot House | PRM 165 Passive Reference Monitor | 6th-order-reflex; heavily braced; rear ported | Unpowered | 49 Hz–20 kHz ±1.75 dB | 91 dB | 2,400 Hz | 6.5" long throw |
| JBL | 4206 | Bass reflex | Unpowered | 65 Hz–20 kHz (±2 dB) | 87 dB | 2.8 kHz | 6" woofer |
| JBL | 4208 | Bass reflex | Unpowered | 60 Hz–20 kHz (±2 dB) | 89 dB | 2.8 kHz | 8" |
| JBL | 4408A | Bass reflex | Unpowered | 50 Hz–20 kHz (±2 dB) | 89 dB | 2.5 kHz | 8" cast frame |
| JBL | 4410A | Bass reflex | Unpowered | 45 Hz–20 kHz (±2 dB) | 90 dB | 900 Hz, 4 kHz | 10" cast frame |
| JBL | 4412A | Bass reflex | Unpowered | 45 Hz–20 kHz (±2 dB) | 89 dB | 850 Hz, 4 kHz | 12" cast frame |
| JBL | 4425 | Bass reflex | Unpowered | 40 Hz–16 kHz (±3 dB) | 91 dB | 1.2 kHz | 12" high-power |
| JBL | 6208 | Vented bass reflex | Powered | 60 Hz–20 kHz (±2 dB) | 89 dB | 2.8 kHz | 8" |
| JBL | Control | Bass reflex | Unpowered | 70 Hz–20 kHz (-10 dB) | 87 dB | 6 kHz | 5 1/4" |
| JBL | LSR12P | Subwoofer | Powered | 28–80 Hz (-6 dB) | 96 dB | 85 Hz | 12" neodymium differential drive |
| JBL | LSR28P | Bass reflex | Powered | 50 Hz–20 kHz (+1, -1.5 dB) | 89 dB | 1.7 kHz | 8" differential drive |
| JBL | LSR32 | Bass reflex | Unpowered | 60 Hz–20 kHz (+1, -1.5 dB) | 90 dB | 250 Hz, 2.2 kHz | 12" neodymium differential drive |
| Klein + Hummel | O198 | Sealed | Powered | 50-20K (±2 dB) | N/A | 650 Hz, 3.3 kHz | 8" cone |
| Korg | RM8 | Ported | Unpowered | 48 Hz–20 kHz (±3 dB) | 88 dB | 2.8 kHz | 7" copolymer with butyl surround |
| KRK | Exposé E7 | Tuned port | Powered | 100 ±2 dB–4 kHz<br>54 ±3 dB–20 kHz | +6 to -30 dB | 2 kHz | 7" Kevlar |
| KRK | Exposé E8 | Tuned port | Powered | 100 ±1 dB–4kHz<br>46 ±2.5 dB–22 kHz | +6 to -30 dB | 1.7 kHz | 8" Kevlar |
| KRK | K-Rok/S | Tuned port | Unpowered | 57 Hz–19 kHz (±3 dB) | 92 dB | 2.5 kHz | 7" latex-coated long stroke |

| Midrange Size and Type | Tweeter Size and Type | Magnetic Shielding | Cabinet Dimensions (HxWxD) | Weight (lbs.) | Notes | Price (per pair) |
|---|---|---|---|---|---|---|
| N/A | N/A | No | 29x18.5x24.5 | 110 | XLR ins; power indicator; input-sensitive controls; amp/driver-prot; crossovers; L-C-R in/outs; LFE in | each $3,699 |
| N/A | 0.75" metal dome | Yes | 10x6x7.25 | 12.5 | S/PDIF and XLR ins; all features of 1029A | |
| 4" cone | 9x65 mm ribbon tweeter (Genelec design) | Optional | 19.5x12.63x11.5 | 44 | XLR ins; power indicator; input-sensitive controls; amp/driver-protection; crossovers; EQ | $5,598 |
| N/A | N/A | No | 14.75x16x16 | 60 | 200W Class G trans*ana amp; XLR and RCA ins; 90/180/270 degree phrasing | $695 |
| N/A | N/A | No | 18x19.5x19.25 | 96 | 200W Class G trans*ana amp; XLR and RCA ins; 90/180/270 degree phrasing | $795 |
| N/A | 1" soft dome | Yes | 13.25x8.88x11.5 | 25 | 150W and 33W trans*ana amps | $1,390 |
| N/A | 1" soft dome | Yes | 15.69x10.25x13 | 35 | 150W and 75W trans* nova amps | $1,990 |
| N/A | 1" soft dome neodymium magnet | Yes | 10.6x6.9x7.8 | 8.1 (upowered); 11 (powered) | Powered amp w/antithump circ | Powered $895; Unpowered $449 |
| N/A | 1" soft dome with damping chamber | Yes | 16.5x10x11.8 | 10 (upowered); 12.6 (powered) | Powered version: 2 channel amp; Class AB | Powered $1,399 Unpowered $749 |
| N/A | N/A | No | 18.3x16.3x16.3 | 47.3 | Built-in 5 channel active filtering | $1,399 |
| N/A | 1" recessed soft dome | N/A | 25x14x12 | 52 | Vertically aligned; adjustable LF/HF; peak SPL per pair 126 dB; available in black, red, golden oak | $6,499 |
| N/A | N/A | No | 20x19x20 | 98 | Stereo crossover with XLR and RCA I/O; HP/LP outs; sens/lvl mtchng; low-freq cont; 180-degree phase controls; peak SPL 118 dB | $2,999 |
| N/A | N/A | No | 24x19x20 | 110 | Stereo crossover w/ XLR & RCA I/O; HP/LP outs; sens/lvl mtchng; low-freq cont; 180-degree phase controls; peak SPL 120 dB | $3,498 each |
| N/A | N/A | No | 24x19x20 | 125 | Stereo crossover with XLR and RCA I/O; HP/LP outs; sens/lvl mtchng; low-freq cont; 180-degree phase controls | $3,999 each |
| N/A | N/A | No | 37x17x31 | 185 | Stereo crossover with XLR and RCA I/O; HP/LP outs; sens/lvl mtchng; low-freq cont; 180-degree phase controls; peak SPL 126 dB | $4,999 each |
| N/A | 1" recessed soft dome | Yes | 2*2.5x8.5x13 | 25 | Req 100–300W of high quality amplification for ruler-flat mastering performance | $1,299 |
| N/A | 1" titanium | Yes | 15.38x9x9.5 | 15 | Multiradial baffle | $388 |
| N/A | 1" titanium | Yes | 17.75x11.25x9.5 | 20.5 | Multiradial baffle | $510 |
| N/A | 1" pure titanium dome | No | 17.25x11.63x12 | 26 | Mirror-image pairs | $674 |
| 5" cast frame | 1" pure titanium dome | No | 23.5x14.25x11.25 | 43 | Mirror-image pairs | $934 |
| 5" cast frame | 1" pure titanium dome | No | 14.25x23.5x11.25 | 47 | Mirror-image pairs in horizontal configuration | $1,402 |
| N/A | 2" compression driver on 100°x100° horn | No | 25x16x14.75 | 57 | | $2,388 |
| N/A | 1" gold/titanium hybrid dome | Yes | 17.75x11.25x9.5 | 30 | Biamplified with multiradial baffle | $948 |
| N/A | 0.75" polycarbonate | Yes | 9.25x6.25x5.63 | 4 | Multimedia brackets and adapters available | $308 |
| N/A | N/A | No | 15.5x25x11.5 | 50 | Integrated bass-management system | $1,099 |
| N/A | 1" titanium composite on wave guide | No | 13x16x12.75 | 50 | Carbon fiber composite baffle | $1,998 |
| 5" neodymium w/2" voice coil | 1" titanium composite on wave guide | No | 15.5x25x11.5 | 47 | Carbon fiber composite baffle | $1,998 |
| 3" cone | 1" dome | Yes | 10x15x11.5 | 30.8 | Active 3-way with HF wave guide; hard limiters; max SPL 110 dB @ 1 meter | $4,000 |
| N/A | 1" Kortel soft dome | Yes | 8.5x15x10.5 | 16 | | $420 |
| N/A | 1" Kevlar | Optional | 15x13.25x12 | 50 | | $2,995 |
| N/A | 1" Kevlar | Optional | 17x15.25x14.5 | 61 | | $3,695 |
| N/A | 1" silk dome | Optional | 14x12x9.75 | 46 (pair) | | $495 ($645 shielded) |

# REFERENCE MONITORS

| Manufacturer | Product | Enclosure Type | Powered/ Unpowered | Frequency Response | Sensitivity | Crossover Frequency | Woofer Size and Type |
|---|---|---|---|---|---|---|---|
| KRK | M6000/S | Tuned port | Unpowered | 62 Hz–20 kHz | 89 dB | 2.4 kHz | 6" polyglass |
| KRK | M7000B/BS | Tuned port | Unpowered | 50 Hz–20 kHz | 91 dB | 3 kHz | 7" Kevlar |
| KRK | M9000B/S | Tuned port | Unpowered | 45 Hz–20 kHz (±3 dB) | 92 dB | 2.9 kHz | 9" composite |
| KRK | Rokit Personal Shielded Monitor | Tuned port | Unpowered | 69 Hz–24 kHz (±2 dB) | 91 dB | 1.5 kHz | 6.5" long-stroke polyvinyl |
| KRK | S10 | Tuned port | Powered | 30 Hz–50 kHz; -130 kHz variable (±2 dB) | +6 to–30 dB | 80 kHz fixed | 10" woven Kevlar |
| KRK | V6 | Tuned port | Powered | 30 Hz–50 kHz; -130 Hz variable (±2 dB) | +6 to–30 dB | 80 Hz fixed | 10" woven Kevlar |
| KRK | V8 | Tuned port | Powered | 47 Hz–23 kHz (±2 dB) | +6 to–30 dB | 1.66 kHz | 8" woven Kevlar |
| KRK | V88 | Tuned port | Powered | 35 Hz–2 kHz (±2 dB) | +6 to–30 dB | 1.83 kHz | 8" woven Kevlar |
| Mackie Designs | HR824 | Sealed | Powered | 39 Hz–20 kHz (±1.5 dB) | >120 dB @ 1W/1m | 2 kHz | 8.75" mineral-filled polypropylene cone |
| Meyer Sound | HD-1 | Tuned bass reflex | Powered | 32 Hz–22 kHz | N/A | N/A | 8" cone driver (bass reflex) |
| Meyer Sound | HM-1S | Tuned bass reflex | Powered | 42 Hz–20 kHz | N/A | 3 kHz | 7" graphite cone driver |
| M&K Professional | MPS-1510 | Sealed cabinet | Unpowered | 80 Hz–20 kHz | 90 dB | 1,800 Hz | 5.25" |
| M&K Professional | MPS-1520 Center Channel | Sealed cabinet | Unpowered | 80 Hz–20 kHz | 90 dB | 1,800 Hz | (2) 5.25" |
| M&K Professional | MPS-1525 Tripole Surround | Sealed cabinet | Unpowered | 80 H–20 kHz | 90 dB | 1,800 Hz | (2) 5.25" |
| M&K Professional | MPS-1625 Tripole Surround | Sealed cabinet | Unpowered | 80 Hz–20 kHz | 90 dB | 1,800 Hz | 6.5" |
| M&K Professional | MPS-1650 | Sealed cabinet | Unpowered | 80 Hz–20 kHz | 90 dB | 1,800 Hz | 6.5" |
| M&K Professional | MPS-2510 | Sealed cabinet | Unpowered | 77 Hz–20 kHz ±2 dB | 90 dB | 1.5 kHz | (2) 5.25" |
| M&K Professional | MPS-2510 Powered | Sealed cabinet | Powered | 77 Hz–20 kHz ±2dB | 90 dB | 1.5 kHz | (2) 5.25" |
| M&K Professional | MPS-2525 Tripole Surround | Sealed cabinet | Unpowered | 80 Hz–20 kHz | 90 dB | 1,800 Hz | (2) 5.25" |
| M&K Professional | MPS-2550 | Sealed cabinet | Unpowered | 77 Hz–20 kHz ±2 dB | 90 dB | 200 Hz and 1500 Hz | (2) 6.5" |
| M&K Professional | MPS-2575 Tripole Surround | Sealed cabinet | Unpowered | 80 Hz–20 kHz | 90 dB | 1,800 Hz | (2) 6.5" |
| M&K Professional | MPS-2810 Subwoofer | Sealed cabinet | Powered | 20–125 Hz | N/A | N/A | (2) 8" |
| M&K Professional | MPS-5150 Subwoofer | Sealed cabinet | Powered | 20–125 Hz | N/A | N/A | (2) 12" |
| M&K Professional | MPS-5310 Subwoofer | Sealed cabinet | Powered | 20–125 Hz | N/A | N/A | (2) 12" |
| M&K Professional | MPS-5320 Subwoofer | Sealed cabinet | Powered | 20–125 Hz | N/A | N/A | (2) 12" |
| M&K Professional | MPS-5410 Subwoofer | Sealed cabinet | Powered | 18–125 Hz | N/A | N/A | (2) 12" |
| M&K Professional | MPS-5420 Subwoofer | Sealed cabinet | Powered | 18–125 Hz | N/A | N/A | (2) 12" |
| NHT Pro | NHTPro A-10 | 2-way; sealed | Dedicated outboard amplifier included | 50 Hz–20 kHz | 116 dB peak output (100 ms pink noise @ 1m) | 0.2 kHz | 6.5" paper cone |
| NHT Pro | NHTPro A-20 | 2-way; sealed | Dedicated outboard amplifier included | 40 Hz–20 kHz | 117 dB peak output (100 ms pink noise @ 1m) | 0.2 kHz | 6.5" paper cone |
| NHT Pro | NHTPro M-00 | 2-way; sealed; cast aluminum | Powered | 80 Hz–20 kHz | 111 dB peak output (100 ms pink noise @ 1m) | 2.2 kHz | 4.5" paper cone |
| Paradigm Reference | Active/40 | Bass reflex | Powered | 38 Hz–22 kHz (±1 dB) | N/A | 1.5 kHz | 6.5" polypropylene cone |
| Paradigm Reference | Active/20 | Bass reflex | Powered | 35 Hz–22 kHz (±1 dB) | N/A | 1.5 kHz | 6.5" mica-polymer cone |

| Midrange Size and Type | Tweeter Size and Type | Magnetic Shielding | Cabinet Dimensions (HxWxD) | Weight (lbs.) | Notes | Price (per pair) |
|---|---|---|---|---|---|---|
| N/A | 1" Kevlar | Optional | 13x9x10 | 36 | | $775 (shielded) $925 |
| N/A | 1" Kevlar | Optional | 14.25x11x11 | 50 | | $1,175 (shielded) $1,325 |
| N/A | 1" Kevlar | Optional | 17x14x14.25 | 88 | | $1,995 (shielded) $2,195 |
| N/A | 1" silk dome | Yes | 12.5x10.5x8 | 29 (pair) | | $329 |
| N/A | N/A | No | 13x18.75x17 | 53 (pair) | | $799 |
| N/A | N/A | No | 13.17x18.75x17 | 53 (pair) | | $799 |
| N/A | 1" silk dome | Yes | N/A | 38 (pair) | | $1,249 |
| N/A | 1.25" silk dome | Yes | N/A | 50 (pair) | | $1,599 |
| N/A | 1" aluminun-alloy, ferrofluid-cooled coil | Yes | 15.75x10x10.5 | 32 | Rear mass-loaded passive radiator | $1,498 |
| N/A | 1" silk dome | Optional (direct radiating) | 16x12x14 (+2" for amp chassis) | 51 | | $5,520 |
| N/A | 1" soft-dome tweeter | Yes | 11.5x8.9x9.7 | 11 | Optional PS-1 power supply ($400) and subwoofer ($650) | $2,600 |
| N/A | 1" soft dome | Yes | 10.5x6.25x7.4 | 9 | | (each) $450 |
| N/A | 1" soft dome | Yes | 5.6x6.18.5x8.25 | 17 | Horizontal center channel monitor | (each) $600 |
| (2) 3.5" | 1" soft dome | Yes | 10.5x8.5x6 | 11 | Switchable power response | $1,250 |
| (4) 3.5" | 1" soft dome | Yes | 12.6x10.5x8 | 14 | Switchable power response | $1,600 |
| N/A | 1" soft dome | Yes | 12.6x18.4x7.5 | 12 | | (each) $750 |
| N/A | (3) 1" soft dome | Yes | 12.5x10.5x12 | 24 | THX PM3 approved; user selectable wide/narrow vertical directivity | (each) $900 |
| N/A | (3) 1" soft dome | Yes | 12.5x10.5x12 | 24 | THX PM3 approved; user selectable wide/narrow vertical directivity | (each) $1,500 |
| (4) 3.5" | (3) 1" soft dome | Yes | 12.5x10.5x12 | 26 | Tripole surround monitor; switchable power response | $2,500 |
| (2) 5.25" | (3) 1" | Yes | 12.5x10.5x14 | 32 | User selectable vertical directivity; stacking capability | (each) $1,250 |
| (2) 5.25"; (2) 3.5" | (5) 1" soft dome | Yes | 12.38x10.5x14 | 36 | Tripole surround monitor; switchable power response | $2,900 |
| N/A | N/A | Yes | 14.5x17.5x12.125 | 41 | Dual driver push-pull; MPS-2810R for rack mounting; headroom maximizer; backfire design | $1,500 |
| N/A | N/A | Yes | 23.25x15.5x19.625 | 72 | Dual driver push-pull; MPS-2810R for rack mounting; headroom maximizer; XLR in; THX PM3 approved | $1,500 |
| N/A | N/A | Yes | 23.25x15.5x19.625 | 82 | Dua. driver push-pull design; headroom maximizer, XLR in; THX PM3 app | $2,000 |
| N/A | N/A | Yes | 23.25x15.5x19.625 | 82 | Dual driver push-pull design; headroom maximizer, XLR in; THX PM3 appr; backfire design | $2,100 |
| N/A | N/A | Yes | 23.25x15.5x26 | 115 | Dual driver push-pull design; headroom maximizer; XLR in; THX PM3 appr | $3,000 |
| N/A | N/A | Yes | 23.25x15.5x26 | 115 | Dual driver push-pull design; headroom maximizer; XLR in; THX PM3 approved; backfire design | $3,100 |
| N/A | 1" ferrofluid-cooled, soft dome | Yes | 12x7.5x10.75 Amp dimensions: 3.5x19x12.75 | 14 (amp 29) | XLR/TRS in; output (amp-monitors) include: XLR cables, controls; listening position: near field/mid field; wall proximity -0/1; input sensitive—10/-3/+4,+11 dBu, mute | $1,200 |
| N/A | 1" ferrofluid-cooled, metal dome | Partial | 3.5x19x12.75 | 17 | XLR/TRS in; output (amp-monitors)-XLR cables, cntrls: lstnng pstn-NF/MF, wall prox-0/1, inpt sensi—10/-3/+4,+11 dBu, mute; LED readout-SPL, VAC; heat sink temp | $2,000 |
| N/A | 1" ferrofluid-cooled, soft dome | Yes (including transformer) | 9x5.7x7.3 | 14 | Inputs-XLR, TRS, RCA; cntrls-NF/MF, +4/-10 dBu, auto power | $750 |
| N/A | 1" pure aluminum dome | Yes | 21x8x11.5 | 88 | Biamplified: 125 W/woofer pr, 50 W/tweeter | $2,000 |
| N/A | 1" pure aluminum dome | No | 14x8.25x11 | 70 | Biamplified: 110 W/woofer pr, 50 W/tweeter | $1,700 |

# REFERENCE MONITORS

| Manufacturer | Product | Enclosure Type | Powered/ Unpowered | Frequency Response | Sensitivity | Crossover Frequency | Woofer Size and Type |
|---|---|---|---|---|---|---|---|
| Paradigm Reference | Mini Monitor | Bass reflex | Unpowered | 43 Hz–20 kHz (±2 dB) | 89 dB | 1.8 kHz | 6.5" injection-molded copolymer polypropylene |
| Paradigm Reference | Monitor 3 | Bass reflex | Unpowered | 36 Hz–20 kHz (±2 dB) | 89 dB | 1.8 kHz | 6.5" copolymer polypropylene |
| Paradigm Reference | Studio/20 | Bass reflex | Unpowered | 40 Hz–22 kHz (±2 dB) | 89 dB | 1.5 kHz | 6.5" mica-polymer cone |
| Platinum Audio | Session-1 Monitors | Tuned port | Unpowered | 40 Hz–20 kHz (±2 dB) | 84 dB | 2.5 kHz | Platinum 5" aluminum diaphragm/butyl surround |
| PMC | IB-1 | Transmission line | Unpowered | 25 Hz–25 kHz | 91 dB | 380 Hz, 3.8 kHz | 10" flat carbon fiber Nomey piston driver |
| PMC | LB-1 | Transmission line | Powered or unpowered | 35 Hz–25 kHz | 87 dB | 2.5 kHz | 5" 1 kW pulse, 3" voice coil |
| PMC | MB-1 | Transmission line | Unpowered | 20 Hz–25 kHz | 91 dB | 380 Hz, 3.8 kHz | 12" radial driver |
| PMC | TB-1S | Transmission line | Powered or unpowered | 40 Hz–25 kHz | 90 dB | 3 kHz | 6.5" doped-cast magnesium |
| PMC | XB-1 Subwoofer | Transmission line | Powered or unpowered | 25–200 Hz | 90 dB | 100 Hz | Dual 10" die-cast voice coil |
| Quested | F11 | Bass reflex | Powered | 65 Hz–20 kHz (±2 dB) | N/A | N/A | 6.5" custom |
| Quested | H108 | Bass reflex | Unpowered | 55 Hz–18 kHz | 90.5 dB | N/A | 8" bass driver |
| Quested | UD-1 | Bass reflex | Unpowered | 45 Hz–20 kHz | 92 dB | N/A | (2) 8" |
| Quested | VH3208 | Bass reflex | Unpowered | 55 Hz–18 kHz (±2 dB) | 92 dB | N/A | 2x8" bass drivers |
| Quested | VS2108 | Bass reflex | Powered | 55 Hz–18 kHz (±2 dB) | N/A | N/A | 8" bass cone |
| Quested | VS2205 | Bass reflex | Powered | 75 Hz–19 kHz (±2 dB) | N/A | N/A | 2x5 bass cone |
| Roland | DS-90 24-bit Digital Reference Monitor | Bass reflex | Powered | Flat, w/user-adjustable settings | 0 dBm (0.775 Vrms) | 2.6 kHz, active 4th order | 6.5" polypropylene cone |
| Shedworks | Bath Camera | Sealed | Unpowered | 40 Hz–20 kHz, (±3 dB) | 84 dB | 280 Hz, 4 kHz | 6.5" poly cone, rubber surround |
| Shedworks | TLC-3 | Sealed | Unpowered | 60 Hz–20 kHz (±3 dB) | 84 dB | 280 Hz, 4 kHz | 6.5" paper-cone foam surround |
| Soundtech | ST5T | Ported | Unpowered | 80 Hz–20 kHz | 93 dB | 4.5 kHz | 5" polypropylene |
| Soundtech | ST8T | Ported | Unpowered | 55 Hz–20 kHz | 95 dB | 3 kHz | 8" impregnated paper |
| Spirit | Absolute Two | Front vented | Unpowered | 45 Hz–20 kHz | 90 dB | 2.5 kHz | 6.5" |
| Spirit | Absolute Zero | Rear vented | Unpowered | 55 Hz–18 kHz (+1 dB/-3 dB) | 89 dB | 2.5 kHz | 6.5" |
| Studer | A1 Active Closefield | Ported | Powered | 58 Hz–22 kHz | 0.775V for 100 dB SPL @ 1m | 3.5 kHz | 142 mm |
| Studer | A3 Active Nearfield | Ported | Powered | 43 Hz–23 kHz | 0.775V for 100 dB SPL @ 1m | 2.2 kHz | 215 mm |
| Studer | A5 Active Main | Ported | Powered | 38 Hz-23 kHz | 0.775V for 100 dB @ 1m | 450 Hz, 3 kHz | 250 mm |
| Sumiko | Sonus Faber Concertino | Bass reflex | Unpowered | 55 Hz–20 kHz (±3 dB) | 86 dB | N/A | 5.5" PP-treated cone |
| Sumiko | Sonus Faber Concerto | Bass reflex | Unpowered | 45 Hz–20 kHz (±3 dB) | 87 dB | N/A | 7" cellulose carbonium 7 cone |
| Sumiko | Sonus Faber Concerto Grand Piano | Sealed | Unpowered | 40 Hz–20 kHz (±3 dB) | 87 dB | N/A | 7" copper ring system, cell carbonium 7 cone; 7" acrilate carbonium 7 cone passive radiator |
| Sumiko | Sonus Faber Solo | Sealed | Unpowered | 45 Hz–20, kHz (±3 dB) | 86 dB | N/A | 2x7" cellulose carbonium 7 cone |
| Sumiko | Vienna Acoustics Bach | Bass reflex | Unpowered | 38 Hz–20 kHz (±3 dB) | 90 dB | N/A | 7" paper cone |
| Sumiko | Vienna Acoustics Beethoven | Bass reflex | Unpowered | 30 Hz–22 kHz (±3 dB) | 91 dB | N/A | 2x5.5 XPP cone; 2x7 XPP "spider" cone |

| Midrange Size and Type | Tweeter Size and Type | Magnetic Shielding | Cabinet Dimensions (HxWxD) | Weight (lbs.) | Notes | Price (per pair) |
|---|---|---|---|---|---|---|
| N/A | N/A | Yes | 13x8x10.875 | 31 | | $329 |
| N/A | 1" titanium dome | No | 20x9.25x11.375 | 48 | | $399 |
| N/A | 1" pure aluminum dome | Yes | 14x8.25x11 | 40 | | $750 |
| N/A | Platinum 1-pc 1" aluminum dome, coil bobbin | Optional | 13.5x8x13 | 26.5 | 2-way crossover; nominal impedance 6Ω | $1,295 |
| 3" fabric dome | Silk soft dome with double chamber | Optional | 30x13x21 | 65 | | $4,400 |
| N/A | Silk soft dome with double chamber | Optional | 21x7x10.5 | Powered: 27; unpowered: 17 | | $3,660 (unpowered) $2,160 |
| 3" fabric dome | Silk soft dome with double chamber | Optional | 34x15x21 | 105 | Available as fully active system (including all electronics and cables) | $8,950 |
| N/A | Aluminum alloy phase shield ferrofluid | Optional | 15.75x7.5x11.75 | Powered: 30; unpowered: 20 | | $2,420 (unpowered) $920 |
| N/A | N/A | No | 31x17x10.5 | Powered: 71; unpowered: 60 | | $2,000 ($1,250 unpowered) |
| N/A | 28 mm soft dome | Yes | 12.5x8.5x11.75 | 24 | Bass/treble; level control; integrated mounting points | $1,960 |
| N/A | 1.125" high-frequency soft dome | Optional | 15.75x9.5x9.38 | 26.5 | | $1,780 |
| 3" | 28 mm | Yes | 47.25x16.25x13.25 | 95 | TRI wireable; available in a variety of veneer finishes | $6,420 |
| 3" midrange soft dome | 1.125" high-frequency soft dome | Yes | 18.25x21.25x14 | 72.5 | | $4,730 |
| N/A | 1.125" high-frequency soft dome | Yes | 16x13.5x13.5 | 48.5 | | $4,680 |
| N/A | 1.125" high-frequency soft dome | Yes | 10.5x13.5x11.25 | 29 | | $3,490 |
| N/A | 1" soft dome | Yes | 14.63x 9x12.56 | 24.25 | 24-bit digital ins (S/PDIF) on each speaker | $1,190 |
| 5.25" poly cone, rubber surround | 0.75" phase correct soft dome | No | 11x8.5x9.5 | 34 | Rear-firing woofer; phase correct crossovers; Zolatone finish; gold 5-way binding posts | $699 |
| 5.25" paper cone, rubber surround | 0.75" phase correct soft dome | No | 8.5x9.5x9.5 | 17 | Downfiring woofer; phase correct crossovers; Zolatone finish; gold 5-way binding posts | $699 |
| N/A | 1" polycarbonate | No | 9.25x6.25x5.5 | 5.25 | Mounting brackets available | $199.90 |
| N/A | 1" linen | No | 15.63x10x15.8 | 13.2 | Mounting brackets available | $399.90 |
| N/A | 1" ferrofluid-coated soft dome | Yes | 15.5x9.25x11 | 15.5 | Allows biwired and standard connections; front-port design | $499.95 |
| N/A | 1" ferrofluid-coated soft dome | No | 12.8x9.2x11.6 | 24 | British red cones; rear port | $349.95 |
| N/A | 70 mm | Yes | 242x162x170 mm | 11 | | t.b.a. |
| N/A | 100 mm | Yes | 400x250305 mm | 28 | | t.b.a. |
| 142 mm | 100 mm | Yes | 590x320x380 mm | 66 | | $3,425 |
| N/A | 0.75" silk dome, ferrofluid | No | 12.5x8.5x11.5 | 16 | Walnut finish; Piano Black Lacquer finish available ($1,200) | $995 |
| N/A | 0.75" silk dome, ferrofluid | Yes | 13.5x8.75x14.25 | 24.25 | Walnut finish; Piano Black Lacquer finish available ($2,100) | $1,850 |
| N/A | 0.75" silk dome, ferrofluid | Yes | 11.5x9.5x39.5 | 59.5 | Piano Black Lacquer finish | $3,500 |
| N/A | 0.75" silk dome, ferrofluid | Yes | 9.25x21.75x8.75 | 11 | Center channel speaker | $995 |
| N/A | 1" silk dome, ferrofluid | Yes | 33.7x7.5x9.8 | 34 | | $1,500 |
| N/A | 1" silk dome, ferrofluid | No | 44x7.5x14.3 | 54 | | $3,990 |

# REFERENCE MONITORS

| Manufacturer | Product | Enclosure Type | Powered/ Unpowered | Frequency Response | Sensitivity | Crossover Frequency | Woofer Size and Type |
|---|---|---|---|---|---|---|---|
| Sumiko | Vienna Acoustics Center Speaker | Bass reflex | Unpowered | 42 Hz–20 kHz (±3 dB) | 89 dB | N/A | 5.5" XPP cone |
| Sumiko | Vienna Acoustics Haydn | Bass reflex | Unpowered | 42 Hz–20 kHz (±3 dB) | 89 dB | N/A | 5.5" XPP cone |
| Sumiko | Vienna Acoustics Mozart | Bass reflex | Unpowered | 35 Hz–22 kHz (±3 dB) | 90 dB | N/A | 2x5.5" XPP cone |
| Sundholm Acoustics | Sundholm SL 10.0 P/sub | Ported reflex-front panel | Powered | 32 Hz–100 kHz (±3 dB) | 88 dB | Variable: 50 Hz–100 Hz | 10" poly cone |
| Sundholm Acoustics | SL 10.0 sub | Ported reflex front panel | Powered | 36 Hz–100 kHz (±3 dB) | 88 dB | N/A | 10" poly cone |
| Sundholm Acoustics | SL 6.5W | Ported reflex front panel | Unpowered | 45 Hz–20 kHz (±2 dB) | 88 dB | 2.5 kHz | 6.5" polycone |
| Sundholm Acoustics | SL 6.5W/s | Ported reflex front panel | Unpowered | 45 Hz–20 kHz (±2 dB) | 88 dB | 2.5 kHz | 6.5" polycone |
| Sundholm Acoustics | SL 8.0 | Ported reflex front panel | Unpowered | 45 Hz–20 kHz (±3 dB) | 88 dB | 2.5 kHz | 8" polycone |
| Tannoy | PS110-B | Vented | Powered | 31 Hz–150 kHz | N/A | Continuously variable: 40–150 Hz | 10" direct radiating |
| Tannoy | PS115-B | Vented | Powered | 33–130 Hz | N/A | 130 Hz | 15" direct radiating |
| Tannoy | Reveal | Rear ported | Unpowered | 60 Hz–20 kHz | 90 dB SPL | 3,000 kHz | 6.5" bilaminate shielded bass driver |
| Tannoy | Reveal Active | Rear ported | Powered | 62 Hz–20 kHz | N/A | 3,000 kHz | 6.5" bilaminate shielded bass driver |
| Tannoy | System 600 | Front ported | Unpowered | 52 Hz–20 kHz (±3 dB) | 90 dB | 1.8 kHz | 6" dual concentric |
| Tannoy | System 600A | Front ported | Powered | 44 Hz–20 kHz (±3 dB) | N/A | 1,600 kHz | 6.5" Tannoy dual concentric |
| Tannoy | System 800 | Front ported | Unpowered | 47 Hz–20 kHz (±3 dB) | 92 dB | 1.8 kHz | N/A |
| Tannoy | System 800A | Front ported | Powered | 44 Hz–20 kHz | N/A | 1,600 kHz | 8" Tannoy dual concentric |
| Posthorn Recordings | Waveform Mach 17 | Sealed | Unpowered | 17 Hz–22 kHz | 89 dB | 120 Hz, 7.6 kHz | (2) 12" cone |
| Westlake Audio | BB10-SWWP | Bass reflex | Powered | 26 Hz–20 kHz | 96.5 dB @ 1m for 2.83V input | 68 Hz | 18" |
| Westlake Audio | BBSM-10 | Bass reflex | Powered | 50 Hz–18 kHz | 95 dB @ 1m for 2.83V input | 600 Hz, 4 kHz | 10" |
| Westlake Audio | BBSM-12 | Bass reflex | Powered | 50 Hz–18 kHz | 97 dB @ 1m for 2.83V input | 500 Hz, 4 kHz | (2) 12" |
| Westlake Audio | BBSM-4 | Bass reflex | Powered | 65 Hz–20 kHz | 89 dB @ 1m for 2.83V input | 1.5 kHz | 4" polypropylene |
| Westlake Audio | BBSM-5 | Bass reflex | Unpowered | 55 Hz–20 kHz (±3 dB) | 90 dB @ 1m for 2.83V input | 1.2 kHz | 5" polyglass |
| Westlake Audio | Lc265.1 | Bass reflex | Powered | 48 Hz–18 kHz | 91 dB @ 1m for 2.83V input | 180 Hz, 4 kHz | 6" polypropylene (2) 6.5" polypropylene |
| Westlake Audio | Lc3w10 | Bass reflex | Powered | 42 Hz–20 kHz | 88 dB @ 1m for 2.83V input | 160 Hz, 4.5 kHz | 10" polypropylene |
| Westlake Audio | Lc3w12 | Bass reflex | Powered | 40 Hz–18 kHz | 91 dB @ 1m for 2.83V input | 160 Hz, 4.5 kHz | 12" polypropylene |
| Westlake Audio | Lc6.75 | Bass reflex | Powered | 60 Hz–18 kHz | 87.5 dB @ 1m for 2.83V input | 4 kHz | 6.5" polypropylene |
| Westlake Audio | Lc8.1 | Bass reflex | Powered | 55 Hz–18 kHz | 90.5 dB @ 1m for 2.83V input | 3.6 kHz | 8" polypropylene |
| Yamaha | MS20S | Bass reflex | Powered | 70 Hz–15 kHz | 88 dB | 3.5 kHz | 4.67" cone |
| Yamaha | MS60S | Bass reflex | Powered | 20 Hz–20 kHz | 91 dB | 3 kHz | 8" cone |
| Yamaha | NS10M Studio | Sealed | Unpowered | 60 Hz–20 kHz | 90 dB | 2 kHz | 7" cone |
| Yorkville Sound | YSM-1 | Bass reflex | Unpowered | 40 Hz–20 kHz | 90 dB | 2.5 kHz | 6.5" stamped, proprietary, foam surround |
| Yorkville Sound | YSM-2 | Bass reflex | Unpowered | 80 Hz–20 kHz | 90 dB | 2.2 kHz | 5.25" stamped, proprietary, foam surround |
| Yorkville Sound | YSM-3 | Bass reflex | Unpowered | 35 Hz–20 kHz | 89 dB | 700 Hz, 3 kHz | 12" stamped, proprietary, foam surround |
| Yorkville Sound | YSM-4 | Bass reflex | Unpowered | 50 Hz–18 kHz | 88 dB | 3 kHz | 4" stamped, proprietary, foam surround, polymer |

| Midrange Size and Type | Tweeter Size and Type | Magnetic Shielding | Cabinet Dimensions (HxWxD) | Weight (lbs.) | Notes | Price (per pair) |
|---|---|---|---|---|---|---|
| N/A | 1" silk dome, ferrofluid | Yes | 13.6x6.7x10.2 | 19 | Center channel speaker | $500 |
| N/A | 1" silk dome, ferrofluid | No | 13.6x6.7x10.2 | 19 | | $895 |
| N/A | 1" silk dome, ferrofluid | No | 37x6.7x11.6 | 44 | | $2,500 |
| N/A | N/A | No | 29 x 12 x 15.25 | 55 | Stereo pair serve as speaker stand for full-range monitors | $1,795 |
| N/A | N/A | No | 29x12x15.25 | 45 | Stereo pair serve as speaker stand for full-range monitors | $1,295 |
| N/A | 1" silk dome tweeter | No | 15.5x10.6x11.6 | 25 | Biwire connector | $795 |
| N/A | 1" aluminum dome tweeter | Yes | 15.5 x10.6x11.6 | 28 | Biwire connector | $2,095 |
| N/A | 1" aluminum dome tweeter | No | 15.5 x12x14.25 | 35 | Biwire connector | $995 |
| N/A | N/A | Optional | 17.5x11.83x16.5 | 33 | | each $499 |
| N/A | N/A | Optional | 18x20x21 | 53 | | each $1,299 |
| N/A | 1" silk soft dome sweeter | Yes | 13.33x8.25x10.25 | 15.5 | | $399 |
| N/A | 1" silk soft dome sweeter | Yes | 13.38x825x10.25 | 18.5 | | $899 |
| N/A | N/A | Optional | 8.6x14.1x10.5 | 16.5 | | $695 |
| N/A | N/A | Yes | 8.63x14.13x11.38 | 21 | | $1,595 |
| 8" dual concentric | N/A | Optional | 10.8x17.7x10.5 | 23 | | $995 |
| N/A | N/A | Yes | 10.7/8x17.3/4x11.3/8 | 28.5 | | $1,995 |
| 5" cone | 3" cone | No | 24x24x43 | 110 | Triamplified | $6,000 |
| N/A | N/A | N/A | 30x28.5x23.5 | 275 | Electro-mechanical-acoustical dampening; integrated passive crossover for single/bi-amp operation | $9,850 |
| 6.5" | 1.25" dome | N/A | 15x30x21.75 | 150 | Electro-mechanical-acoustical dmpnng; intgrtd passive crossover for single/bi-amp operation | $4,896 |
| 6.5" | 1.25" | N/A | 19x34x23 | 220 | Electro-mechanical-acoustical dampening; integrated passive crossover for single/bi-amp operation | $6,896 |
| N/A | 0.75" dome | N/A | 8x15x10 | 31 | Electro-mechanical-acoustical dampening; integrated passive crossover for single/bi-amp operation | $2,250 |
| N/A | 0.75" dome | N/A | 10x18x11.75 | 42 | Electro-mechanical-acoustical dampening; integrated passive crossover for single/bi-amp operation | $2,699 |
| 5" | 1" coaxial | N/A | 8.5x22x11 | 42 | Electro-mechanical-acoustical dampening; integrated passive crossover for single/bi-amp operation | $1,347 |
| 5" | 0.75" dome | N/A | 12.25x21.5x13.38 | 69 | Electro-mechanical-acoustical dampening; integrated passive crossover for single/bi-amp operation | $2,759 |
| 6" | 1" dome | N/A | 15x25x15.5 | 107 | Electro-mechanical-acoustical dampening; integrated passive crossover for single/bi-amp operation | $3,399 |
| N/A | 0.75" dome | Optional | 16x8x10.37 | 21.5 | Electro-mechanical-acoustical dampening; align signal path | $1,199 |
| N/A | 1" dome | Optional | 18x10x11.63 | 31 | Electro-mechanical-acoustical dampening; align signal path | $1,499 |
| N/A | 1.2" dome speaker | Yes | 5.5x11.375x7.75 | 8.8 | Active Servo technology for extended bass response | $249 each |
| N/A | 0.75" dome tweeter with horn | Yes | 17.5x10.5x9.5 | 22 | Active Servo technology for extended bass response | $599 each |
| N/A | 1.2" soft dome | No | 15x8.5x7.88 | 13.9 | | $478 |
| N/A | 1" soft dome | Optional | 16x9.5x9 | 18 | 2" forward-firing port; binding posts | $260 |
| N/A | 0.75" soft dome | N/A | 13x7x8 | 9 | Binding posts | $210 |
| 5.5" stamped proprietary polymer | 1" hyperbolic dome | N/A | 25.75x16.8x11.5 | 45 | | $998 |
| N/A | 0.75" dome | N/A | 9x6x6 | 5.5 | | $158 |

# HEADPHONES

| Manufacturer | Model | Type | Frequency Response | Sensitivity (dB per mW) | Impedance (Ω) |
|---|---|---|---|---|---|
| AKG | K 1000 | Dynamic transducer w/VLD magnet | 30 Hz–25 kHz | 74 | 120 |
| AKG | K 100 | Dynamic | 20 Hz–28 kHz | 103 | 100 |
| AKG | K 141 M | Dynamic | 20 Hz–20 kHz | 98 | 600 |
| AKG | K 240 DF | Dynamic | 20 Hz–20 kHz | 88 | 600 |
| AKG | K 240 M | Dynamic | 15 Hz–20 kHz | 88 | 600 |
| AKG | K 270 S | Dynamic | 20 Hz–28 kHz | 92 | 75 |
| AKG | K 301 | Dynamic | 20 Hz–25 kHz | 94 | 100 |
| AKG | K 70 | Dynamic | 20 Hz–20 kHz | 105 | 100 |
| Audio-Technica | ATH-910 | Dynamic | 20 Hz–22 kHz | 92 | 40 |
| Audio-Technica | ATH-M40fs | Dynamic | 5 Hz–28 kHz | 100 | 60 |
| beyerdynamic | DT-131 | Dynamic | 30 Hz–18 kHz | N/A | 40 |
| beyerdynamic | DT-150 | Dynamic | 10 Hz–30 kHz | N/A | 250 |
| beyerdynamic | DT-250 | Dynamic | 10 Hz–30 kHz | 98 | 80 |
| beyerdynamic | DT-770 Pro | Dynamic | 5 Hz–35 kHz | N/A | 600 |
| beyerdynamic | DT-990 Pro | Dynamic | 5 Hz–35 kHz | N/A | 600 |
| Fostex | T-20RP | Printed ribbon | 50 Hz–30 kHz | 96 | 50 |
| Fostex | T-40RP | Printed ribbon | 30 Hz–20 kHz | 98 | 50 |
| Fostex | T-5 | Dynamic | 65 Hz–20 kHz | 96 | 50 |
| Fostex | T-7 | Dynamic | 50 Hz–20 kHz | 98 | 50 |
| Koss | A/130 | Dynamic | 16 Hz–23 kHz | 98 | 60 |
| Koss | A/200 | Dynamic | 18 Hz–25 kHz | 98 | 60 |
| Koss | A/250 | Dynamic | 16 Hz–25 kHz | 98 | 60 |
| Koss | R/10 | Dynamic | 22 Hz–20 kHz | 103 | 60 |
| Koss | R/100 | Dynamic | 16 Hz–22 kHz | 85 | 60 |
| Koss | R/20 | Dynamic | 20 Hz–22 kHz | 101 | 60 |
| Koss | R/200 | Dynamic | 18 Hz–23 kHz | 84 | 60 |
| Koss | R/30 | Dynamic | 18 Hz–20 kHz | 106 | 60 |
| Koss | R/35 | Dynamic | 20 Hz–22 kHz | 101 | 60 |
| Koss | R/40 | Dynamic | 18 Hz–20 kHz | 90 | 60 |
| Koss | R/45 | Dynamic | 20 Hz–22 kHz | 85 | 60 |
| Koss | R/80 | Dynamic | 16 Hz–22 kHz | 101 | 60 |
| Koss | R/90 | Dynamic | 18 Hz–23 kHz | 100 | 60 |
| Koss | TD/61 | Dynamic | 25 Hz–15 kHz | 93.5 | 38 |
| Koss | TD/65 | Dynamic | 20 Hz–17 kHz | 101 | 90 |
| Koss | TD/80 | Dynamic | 20 Hz–17 kHz | 98 | 60 |
| Radial Engineering | MB Quart QP160 | Dynamic | 30 Hz–26.4 kHz | 90 | 40 |
| Radial Engineering | MB Quart QP200 | Dynamic | 24 Hz–20 kHz | 97 | 100 |
| Radial Engineering | MB Quart QP220 | Dynamic | 20 Hz–20.1 kHz | 90 | 100 |
| Radial Engineering | MB Quart QP240 | Dynamic | 24 Hz–20.1 kHz | 98 | 100 |
| Radial Engineering | MB Quart QP250 | Dynamic | 13 Hz–20.4 kHz | 98 | 100 |
| Radial Engineering | MB Quart QP400 | Dynamic | 14 Hz–24.1 kHz | 93 | 300 |
| Radial Engineering | MB Quart QPH805 | Dynamic | 10 Hz–33.4 kHz | 96 | 300 |
| Radial Engineering | MB Quart QR 280 | Dynamic | 16 Hz–23.5 kHz | 96 | 300 |
| Roland | RH-120 | Dynamic | 20 Hz–20 kHz | 100 | 40 |
| Roland | RH-80 | Dynamic | 20 Hz–20 kHz | 94 | 40 |
| Sennheiser | HD 25 | Dynamic | 16 Hz–22 kHz | 120 | 70 |
| Sennheiser | HD 25 SP | Dynamic | 30 Hz–16 kHz | 100 | 85 |
| Sennheiser | HD 265 | Dynamic | 10 Hz–25 kHz | 94 | 150 |
| Sennheiser | HD 433 | Dynamic | 18 Hz–20 kHz | 100 | 32 |
| Sennheiser | RS 6 | Dynamic | 20 Hz–20 kHz | N/A | N/A |
| Sennheiser | RS 8 | Dynamic | 20 Hz–22 kHz | N/A | N/A |
| Sony | MDR-7506 | Dynamic | 10 Hz–20 kHz | 106 | 63 |
| Yamaha | RH1 | Dynamic | 20 Hz–20 kHz | 90 | 32 |
| Yamaha | RH3 | Dynamic | 20 Hz–20 kHz | 95 | 60 |
| Yorkville Sound | Apex HP 30 | Dynamic | 20 Hz–20 kHz | 100 | 40 |
| Yorkville Sound | Apex HP 60 | Dynamic | 20 Hz–20 kHz | 100 | 40 |

| Power-Handling Capacity | Ear-Cup Design | Ear-Cup Covering | Cord Length | Price |
|---|---|---|---|---|
| 200 mW | Off-head | Leatherette | 6', with 10' extension cable | $1,456 |
| 200 mW | Semiopen, supraural | Leatherette | 0' | $127.20 |
| 200 mW | Semiopen, supraural | Leatherette | 0' | $138 |
| 200 mW | Semiopen, circumaural | Leatherette | 10' | $192 |
| 200 mW | Semiopen, circumaural | Leatherette | 10' | $172.80 |
| 200 mW | Sealed, circumaural | Leatherette | 10' | $330 |
| 200 mW | Open, circumaural | Leatherette | 10' | $162.20 |
| 200 mW | Semiopen, circumaural | Foam | 6' | $52.60 |
| 120 mW | Circumaural | Leatherette | 9.8' | $115 |
| 1,600 mW | Circumaural | Leatherette | 11' | $150 |
| N/A | Open, supraural | Felt | 10' | $49 |
| 100 mW | Closed | Felt | 10' | $179 |
| 10 mW | Closed, circumaural | Felt | 10' | $199 |
| 100 mW | Closed | Felt | 10' | $159 |
| 100 mW | Open | Felt | 10' | $159 |
| 200 mW | Semiopen | Leather | 8' | $119 |
| 200 mW | Closed | Leather | 8' | $129 |
| 100 mW | Semiopen | Foam | 6' | $70 |
| 100 mW | Semiopen | Foam | 6' | $85 |
| 100 mW | Closed | Leatherette | 8' | $93.99 |
| 100 mW | Open | Cloth | 8' | $199.99 |
| 100 mW | Open | Leatherette | 8' | $149.99 |
| 100 mW | Closed | Leatherette | 8' | $29.99 |
| 100 mW | Closed | Leatherette | (2) 8' (incl phase II for 3D sound) | $89.99 |
| 100 mW | Open | Foam | 8' | $44.99 |
| 100 mW | Open | Cloth | (2) 8' (incl phase II for 3D sound) | $69.99 |
| 100 mW | Closed | Leatherette | 8', w/dual volume control | $39.99 |
| 100 mW | Open | Foam | 8' | $49.99 |
| 100 mW | Closed | Leatherette | 4.5' (incl phase II for 3D sound) | $54.99 |
| 100 mW | Open | Foam | 4.5' (incl phase II for 3D sound) | $59.99 |
| 100 mW | Closed | Leatherette | 8' | $49.99 |
| 100 mW | Open | Cloth | 8' | $69.99 |
| 100 mW | Closed | Leatherette | 8' | $19.99 |
| 100 mW | Closed | Leatherette | 8' | $29.99 |
| 100 mW | Closed | Leatherette | 10' | $49.99 |
| 100 mW | Semiopen | Leatherette | 10' | $89.99 |
| 100 mW | Semiopen | Leatherette | 10' | N/A |
| 100 mW | Open | Velour | 10' | N/A |
| 100 mW | Open | Velour | 10' | $189.99 |
| 100 mW | Closed | Leatherette | 10' | $199.99 |
| 100 mW | Circumaural | Velvet | 10' | $299.99 |
| 100 mW | Closed | Leatherette | 10' | $89.99 |
| 100 mW | Open | Velvet | 10' | N/A |
| 1,300 mW | Closed | Vinyl | 8' | $149 |
| 100 mW | Open | Vinyl | 11.5' | $99 |
| 100 mW | Closed, supraural | Padded vinyl | 4.9' | $259 |
| 200 mW | Closed, supraural | Padded vinyl | 10' | $149.95 |
| 200 mW | Closed, circumaural | Padded vinyl | 10' | $249.95 |
| 100 mW | Open, supraural | Foam | 10' | $29.95 |
| N/A | Supraural | Foam | Wireless | $269.95 |
| N/A | Supraural | Foam | Wireless | $369.95 |
| 1W | Closed | Vinyl-covered foam | 9.75' | $170 |
| N/A | Open | Foam | 6' | $19.95 |
| N/A | Closed | Vinyl-padded | 8' | $49.95 |
| 200 mW | Open back | Leatherette | 10' | $22.95 |
| 200 mW | Semiopen back | Leatherette | 10' | $29.95 |

# Outboard Processors & MIDI Devices

Outboard audio processors fall roughly into three categories: dynamics processors, effects processors, and equalizers. If a product does not exactly fit into one of these categories, we placed it on the closest-matching chart and supplied more detailed information in the Special Features column. Note that "stompbox" products are generally not listed. This section also includes charts for several types of MIDI and synchronization products.

The Dynamics Processors chart shows traditional parameters such as threshold, ratio, and attack/release times, but it also tells you whether a particular product has a bypass switch, can be stereo linked and/or sidechained, offers useful meters, and more. Some processors provide detailed control; others combine several functions in a single control, which can make the device easier to use but less flexible. As with mic preamps, some processors use tubes and some are solid-state.

The Effects Processors chart lists each unit's analog and digital effects and provides specs on I/O and A/D/A converters. It also tells you the maximum delay time, how many effects can be run simultaneously, whether the unit has a Compare/Bypass function, and other information. Sequencer jockeys and other MIDI fanatics will appreciate the category showing the number of MIDI control messages a processor supports.

The Equalizers chart includes specs on both analog and digital parametric and graphic EQs. Semiparametric equalizers generally offer control over amplitude and center frequency but have a fixed bandwidth (Q). Quasiparametric EQs may provide full frequency and gain controls while offering only two or three Q settings.

We've lumped MIDI interfaces, patch bays, and processors into one chart because some devices combine these functions. A few units provide a wide variety of processing features, including the ability to send a given MIDI data stream only to a specific keyboard zone (that is, a user-defined note range), to filter out unwanted messages, and to remap MIDI messages (convert an incoming MIDI control message to a different message). In addition, some MIDI interfaces can serve as basic SMPTE and MIDI Time Code generator/readers.

We list only a few specifications for synchronizers, but some are important to note. The SMPTE time code type is especially critical. Linear Time Code (LTC) is the most common for audio synchronization; you'll mostly need Vertical Interval Time Code (VITC) if you are locking your system to a video deck. Also, if you need to synchronize digital devices such as a digital mixer, you'll need word-clock sync; if a unit supports word clock (WC), this fact is noted in the Special Features column.


120 Dynamics Processors

128 Effects Processors

134 Equalizers

136 MIDI Interfaces, Patch Bays & Processors

140 Synchronizers

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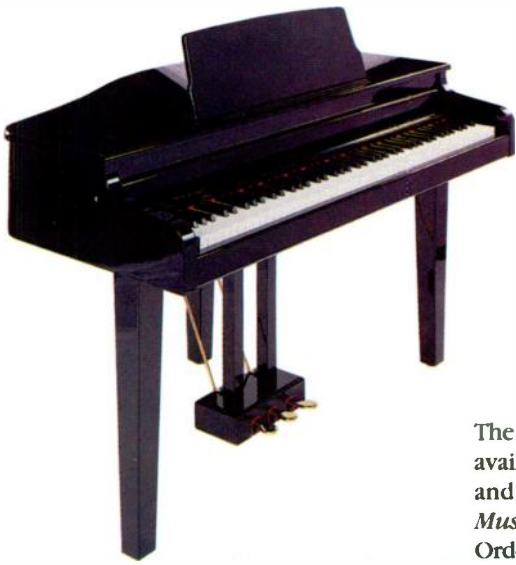

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# DYNAMICS PROCESSORS

| Manufacturer | Model | Type | Threshold | Ratio | Attack Times | Release Times | Gain Control |
|---|---|---|---|---|---|---|---|
| Alesis | 3630 Compressor | Compressor/limiter/gate | -40 to +20 dB | 1:1 to ∞:1 | Auto or man (0.1 to 200 ms) | Auto or man (50 ms–3 sec) | Output |
| Alesis | NanoCompressor | Compressor/limiter | -40 to +8 dB | 1:1 to ∞:1 | Auto or man (0.1 to 200 ms) | Auto or man (50 ms–3 sec) | Output |
| Amek | Dual Compressor/Limiter | Compressor/limiter | 30 to +12 dB | 1.2:1 to 16:1 | 0.3-300 m | 0.1-10 sec | Output |
| Anthony DeMaria Labs | 1000 | Compressor/limiter | Fixed | 3:1 to 12:1 | Auto (10 µs) | Auto (0.07 sec) | Input |
| Anthony DeMaria Labs | 1500 | Compressor/limiter | Fixed | 3:1 to 12:1 | Auto (10 µs) | Auto (0.07 sec) | Input |
| Aphex Systems | 105 | 4-channel logic-assisted noise gate | -50 to +20 dB | ∞:1 | Manual (200 µs–250 ms) | Manual (150 ms–4 sec) | N/A |
| Aphex Systems | 106 Easyrider | 4-channel compressor | Fixed | 1:1 to 5:1 (prog. dep.) | Auto | Auto w/2 selectable ranges | Input, output |
| Aphex Systems | 108 Easyrider | 2-channel compressor | Fixed | 1:1 to 5:1 (prog. dep.) | Auto | Auto w/2 selectable ranges | Input, output |
| Aphex Systems | 320A Compressor | Compressor/leveler/limiter | Fixed | Leveler: 20:1; compressor: 1:1 to 3:1; limiter: ∞:1 | Auto (1 µs–2.5 sec) | Auto w/2 ranges of leveling release times | Output |
| Aphex Systems | 622 Logic Assisted Expander/Gate | Expander/gate | -50 to +20 dB | Gate: ∞:1; expander: 1.2:1 to 10:1 | Manual (10 µs–100 µs) | Manual (40 ms–5 sec) | N/A |
| Aphex Systems | 651 Expressor | Compressor | -20 to +20 dB | 1.1:1 to 50:1 | Manual (0.05–100 ms) | Manual (40 ms–4 sec) | Input, output |
| Aphex Systems | 661 Expressor | Tube compressor | -30 to +20 dB | 1.1:1 to 30:1 (manual), no-knee (auto) | Auto or manual (0.05–100 ms) | Auto or manual (40 ms–4 sec) | Input, output |
| Aphex Systems | 720 Dominator II | Peak limiter | -9 to +25 dB | ∞:1 | Auto | Auto or manual (150 ms–7 sec) | Input |
| API | API 525 | Single channel compressor | Variable, ∞ to 0 VU | 2:1 or 20:1 | 15 m | 0.1–2.5 sec | Input, output |
| A.R.T. | Dual Levelar | Optical-electrical tube compressor | -40 to +10 dB | Compressor: 2.3:1; limiter: 6:1 | Auto; fast | Auto; fast | Output |
| A.R.T. | Pro VLA | Optical-electrical tube compressor | -20 to +15 dB | 2:1 to ∞:1 | Fast; slow | Fast; slow | Output |
| A.R.T. | Tube Compressor | Optical-electrical tube compressor | -40 to +10 dB | Compressor: 2.3:1; limiter: 6:1 | Auto; fast | Auto; fast | Output |
| A.R.T. | Tube PAC | Transformerless tube preamp/compressor | -20 to +20 dB | Compressor: 2.3:1; limiter: 6:1 | Auto; fast | Auto; fast | Input; output |
| ARX | Afterburner | Compressor/limiter | -40 to +20 dB | 1:1 to ∞:1 | Auto | Auto | Output |
| ARX | DDP-1 | Compressor/limiter/gate | -40 to +20 dB | 1:1 to ∞:1 | Auto | Auto | Output |
| ARX | Quadcomp 2 | Compressor/limiter | -40 to +20 dB | 1:1 to ∞:1 | Auto | Auto | Output |
| ARX | Sixgate | Gate | -50 to +10 dB | ∞:1 | Auto | 20 ms-2 sec | N/A |
| Ashly Audio | CLX 51 | Compressor/limiter | -40 to +22 dBu | 2:1 to ∞:1 | Manual (200 µs–20 ms) | Manual (100 ms–3 sec) | Input;output |
| Ashly Audio | CLX 52 | Dual-channe compressor/limiter | -40 to +22 dBu | 2:1 to ∞:1 | Manual (200 µs–20 ms) | Manual (100 ms–3 sec) | Input; output |
| Avalon Design | AD2044 | 100% discrete, pure Class A opto-compressor, 2U rack-mount | -24 to +20 dB | 1:1 to 20:1 | (0.5–150 ms) Manual | 8 ms–5 sec for 1 dB release | Output |
| Avalon Design | VT-747SP | 100% discrete, pure class A opto-compressor/EQ | -30 to +20 dB | 1:1 to 20:1 | 2–200 ms | 10 ms-5 sec for 12 dB release | Output |
| BBE | BBE 262 Sonic Maximizer | Audio enhancer | N/A | N/A | N/A | N/A | N/A |
| BBE | BBE 362 Sonic Maximizer | Audio enhancer | N/A | N/A | N/A | N/A | N/A |
| BBE | BBE 362NR Sonic Maximizer | Audio enhancer | N/A | N/A | N/A | N/A | N/A |
| BBE | BBE 362SW Sonic Maximizer | Audio enhancer | N/A | N/A | N/A | N/A | N/A |
| BBE | BBE 462 Sonic Maximizer | Audio enhancer | N/A | N/A | N/A | N/A | N/A |

| Bypass Switch | # of Channels/ Stereo Link | Meter Type | Main I/O | Sidechain I/O | Dimensions | Special Features | Price |
|---|---|---|---|---|---|---|---|
| Yes | 2/Yes | 12-segment LED | 1/4" | 1/4" TRS | 19x1.75x4.5 | Hard/soft knee; peak/RMS compression; gate w/threshold | $299 |
| Yes | Dedicated stereo | 6-segment LED | 1/4" | 1/4" TRS | 5.5x1.75x4.5 | Hard/soft knee; peak/RMS compression | $119 |
| Yes | 2/Yes | VU | XLR | Yes | 19x12x3.5 | Ambience; hard knee | $2,946 |
| No | Mono | VU | XLR | N/A | 19x3.5x8 | All tube | $1,695 |
| No | 2/Yes | VU | XLR | N/A | 19x3.5x9 | All tube | $2,995 |
| No | 4/No | LED | 1/4" TRS | External key input | 19x1.75x5.2 | Logic assist; uses VCA 1001 | $449 |
| Yes | 4/Yes x2 | LED | 1/4" TRS | N/A | 19x1.75x5.2 | Wave-dep comp; sounds like slow attack w/benefits of fast | $449 |
| Yes | 2/Yes | LED | 1/4" TRS | N/A | 19x1.75x5.2 | Wave-dep comp; sounds like slow attack w/benefits of fast | $299 |
| Yes | 2/Yes | LED | XLR | N/A | 19x1.75x10 | Dynamic verifiable gate; frequency-dependent leveler; dynamic release computer | $1,350 |
| Yes | 2/Yes | LED | XLR | 1/4" | 19x1.75x9 | Logic assist | $795 |
| Yes | Mono | LED | XLR | 1/4" | 19x1.75x9.5 | Hi-frequency expander | $495 |
| Yes | Mono | LED | XLR; 1/4" | 1/4" | 19x1.75x10.13 | Tubessence; Easyrider auto mode; hi-frqncy exp | $749 |
| Yes | 2/Yes | LED | XLR | N/A | 19x1.75x10 | Brickwall limiter; 3-band auto limit threshold | $1,350 |
| Yes | Mono | VU miniature GR meter | XLR (when in API frame) | N/A | Module | Reissue of early '70s API compression; fits API frames/consoles; ceiling control adj threshold/out gain simultaneous; de-esser | $549 |
| Yes | 2/Yes | LED | XLR; 1/4" | N/A | 19x1.75x6.5 | Vactrol electro-optical tube compressor | $349 |
| Yes | 2/Yes | LED, VU | XLR; 1/4" TRS | N/A | 19x3.5x6.5 | Vactrol electro-optical tube compressor | $649 |
| Yes | Mono | LED | XLR; 1/4" | N/A | 5.375x2.0x5.25 | Vactrol electro-optical tube compressor | $139 |
| Yes | Mono | LED | XLR; 1/4" | N/A | 8.5x1.65x 5.25 | Vactrol electro-optical tube compressor; phantom power; +20 dB gain; phase control | $279 |
| Yes | 2/Yes | 9-segment LED GR; 9-segment output level | XLR; 1/4" TRS | 1/4" TRS | 19x1.75x6.5 | Enhance; switch to dual band (lo/hi) mono | $490 |
| Yes | 2/Yes | 9-segment LED GR; 9-segment output level | XLR; 1/4" TRS | 1/4" TRS | 19x1.75x6.5 | Massive headroom | $555 |
| Yes | 4/Yes x2 | 7-segment LED GR | XLR | 1/4" TRS | 19x1.75x6.5 | | $550 |
| Yes | 6 | Gate open/closed LEDs | 1/4" TRS | 1/4" TRS | 19x1.75x6.5 | Six gates in 1 rackspace | $460 |
| Yes | Mono | 11-segment LED | XLR; 1/4" | 1/4" | 19x1.75x6 | Infinite soft knee and timing bsd on comp ratio; intrnl pwr supp | $349 |
| Yes | 2/Yes | 11-segment LED | XLR; 1/4" | 1/4" | 19x1.75x6 | Infinite soft knee and timing based on compressor ratio; internal power supply | $499 |
| Yes | 2/Yes | VU-output and GR, GR LED | XLR (+30 dB) | XLR | 19x12x3.5 | Opto compressor w/time control; external B2T power supply (100–240V) | $3,000 |
| Yes | Dedicated stereo | VU for GR; (2) 20-segment output LED (-27 to +30 dB) | (2) XLR (+30 dB) | 2 bands w/variable threshold -15-+15 dB, frequency 70 Hz-9 kH twin rings | 19x12x3.5 | 6-band graphic EQ (10 Hz–32 kHz); pre/post compressor sidechannel; tube bypass | $2,495 |
| Yes | 2/No | N/A | 1/4", RCA | N/A | 6.25x5.25x1.25 | BBE process | $229 |
| Yes | 2/Yes | 1 LED clip per channel | 1/4" | N/A | 1 rackspace | BBE process | $259 |
| Yes | 2/Yes | 1 LED clip per channel | 1/4", RCA | N/A | 1 rackspace | BBE process; noise reduction | $359 |
| Yes | 2/Yes | 5-segment LED/channel | 1/4"; RCA | N/A | 1 rackspace | BBE process; subwoofer filter | $349 |
| Yes | 2/No | 5-segment LED/channel | 1/4" TRS; XLR | N/A | 1 rackspace | BBE process | $349 |

# DYNAMICS PROCESSORS

| Manufacturer | Model | Type | Threshold | Ratio | Attack Times | Release Times | Gain Control |
|---|---|---|---|---|---|---|---|
| BBE | BBE 862 Sonic Maximizer | Audio enhancer | N/A | N/A | N/A | N/A | N/A |
| Behringer | MDX 1400 Autocom Pro | Compressor | -40 to +20 dB | 1:1 to limit | 0.1–200 ms | 0.05–4 sec | Output |
| Behringer | MDX 2200 Composer Pro | Compressor/limiter/ expander | Compressor: -40 to +20 dB; expander: -70 to +20 dB | Compressor: 1.2:1 (program dependent) | Compressor: manual, expander: preset | Manual | Output |
| Behringer | MDX 2400 Multicom | Compressor | -40 to +20 dB | 1:1 to ∞:1 | Auto | Auto | Output |
| Behringer | SNR 1000 Studio Denoiser | Noise reduction | -50 to +10 dBu | 1:1 to 6:1 | Auto | Manual (50 ms to 4 sec) | N/A |
| Behringer | SNR 2000 Multiband Denoiser | Noise reduction | -40 to +20 dBu | 1:1 to 1:6 | Auto | 0.05–6 sec | Output |
| Behringer | XR 4400 Multigate Pro Pro | Gate | -40 to +10 dB | 1:1 to 4:1 | Auto | Manual (50 ms–4 sec) | Output |
| Bellari | LA120 | Tube compressor/limiter | -40 to 0 dB | 2:1 to ∞:1 | Program dependent | Program dependent | Output |
| Bellari | LA120 | Tube compressor/limiter | -20 to +20 dB | Switchable 2:1; 10:1 | Program dependent | Program dependent | Output |
| Bellari | RP583 | Tube compressor/limiter | -20 to +20 dB | 2:1 to ∞:1 | Manual (0.5–100 ms) | Manual (1–2 sec) | Output |
| beyerdynamic | Dynamax | Compressor/de-esser/ limiter/noise gate | Automatic | Automatic | Automatic | Auto | Output |
| BSS Audio | DPR40 | Compressor/de-esser/limiter | -30 to +20 dBu | 1:1 to ∞:1 | Manual (50 µs–80 ms) | Auto or manual (5 ms–5 sec) | Output |
| BSS Audio | DPR40 | Quad compressor | -30 to +20 dBu | 1:1 to ∞:1 | Auto | Auto | N/A |
| BSS Audio | DPR422 | Dual compressor/de-esser | -30 to +20 dB | 1:1 to ∞:1 | Auto or manual (50 µs–400 ms) | Auto or manual (5 ms–5 sec) | Output |
| BSS Audio | DPR504 | Quad gate | -50 to +20 dBu | N/A | Auto (20 µs or 40 µs–5 ms) program dependent | Manual (1 ms–3 sec) | N/A |
| BSS Audio | DPR522 | Dual gate | -60 to +15 dB | N/A | Manual (20 µs–1.5 sec) | Manual (1 ms–3 sec) | N/A |
| BSS Audio | DPR901II | Dynamic equalizer | -30 to +20 dBu | N/A | Auto | Auto | N/A |
| BSS Audio | DPR944 | Gate/compressor | Gate: -50 to +20 dB; compressor: -30 to +20 dB | 1:1 to ∞:1 compressor only | Auto | Auto | Output |
| Crane Song | STC-8 Class A Compressor Limiter | Compressor/limiter | Automatic | 1:1 to 1:20 | 0.1–150 ms | Auto (40 ms–10 sec) | Output |
| Crane Song | Trakker | Discrete Class A, single-channel compressor/limiter | -40 to +24 dB | 1.1:1 to 20:1 | Manual 0.05–200 ms | Auto 40 ms–10 sec | Output |
| dbx | 1046 | Quad compressor/limiter | -40 to +20 dBu | 1:1 to ∞:1 | Auto | Auto | Output |
| dbx | 1066 | Compressor/limiter/ expander/gate | Expander/gate: 0 to +15 dBu; compressor: -40 to +20 dBu; limiter: 0 to +24 dBu | Expander/gate: 1:1 to 30:1; compressor: 1:1 to ∞:1 | Auto or manual (0.05–100 ms) | Auto or manual (0.05 ms–5 sec) | Output |
| dbx | 160A | Compressor | -40 to +20 dBu | 1:1 to -1:1 | Auto | Auto | Output |
| dbx | 160SL | Compressor/limiter | -40 to +10 dBu | 1:1 to ∞:1 | Auto or manual | Auto or manual | Output |
| dbx | 165A | Compressor | -40 to +10 dB | 1:1 to ∞:1 | Auto or manual | Auto or manual | Output |
| dbx | 166XL | Compressor/limiter | Expander: ∞ to +15 dBu; compressor: -40 to +20 dBu; limiter: 0 to +20 dBu | 1:1 to ∞:1 | Auto | Auto | Output |
| dbx | 262 | Compressor/limiter | -40 to +20 dBu | 1:1 to -1:1 | Auto | Auto | Output |
| dbx | 266XL | Compressor/expander/gate | -40 to +20 dB; expander: -60 to +10 dB | 1:1 to ∞: | Auto or manual | Auto or manual | Output |
| Demeter | H CL-1 Mono Tube Optical Compressor | Compressor/limiter | -30 to +20 | Optical/soft knee 2:1 to 30:1 | 1–200 ms | 100 ms to 5 sec | Input; output |
| Demeter | VTCL-2a Stereo Tube Optical Compressor Limiter | Compressor/limiter | -30 to +20 | Optical/soft knee 2:1 to 30:1 | 1–200 ms | 100 ms–5 sec | Input; output |

| Bypass Switch | # of Channels/ Stereo Link | Meter Type | Main I/O | Sidechain I/O | Dimensions | Special Features | Price |
|---|---|---|---|---|---|---|---|
| Yes | 2/No | 5-segment LED/channel | 1/4" TRS, XLR | N/A | 1 rackspace | +23 dBu headroom | $599 |
| Yes | 2/Yes | 8-segment GR LED | 1/4" TRS in/ 1/4" outs | 1/4" TRS | 1.75x19x8.5 | Auto compressor; real time program-dependent attack/release times; expander/gate; enhancer | $219.99 |
| Yes | 2/Yes | LED | 1/4" | 1/4" | 19x1.75x8.5 | | $309.99 |
| Yes | 4/No | 8-segment LED | XLR, 1/4 | N/A | 19x1.75x8.5 | | $369.99 |
| Yes | 2/Yes | LED | 1/4" | N/A | 19x1.75x8.5 | | $249.99 |
| Yes | 2/Yes | 8-segment GR LED | 1/4" TRS ins/ XLR, 1/4" TRS outs | N/A | 1.75x19x8.5 | Auto filter; IRC expander/gate | $249.99 |
| Yes | 4/No | LED | 1/4" TRS | 1/4" TRS | 19x1.75x8.5 | | $309.99 |
| Yes | Mono | VU | XLR, 1/4" | N/A | 7.6x1.6x5.4 | | $159.99 |
| Yes | Mono | VU | XLR, 1/4" | N/A | 7.6x1.6x5.4 | | $159.99 |
| Yes | 2/Yes | VU | XLR, 1/4" | 1/4" | 19x3.5x6 | | $650 |
| Yes | Yes | 20-digit LED | XLR, 1/4" TRS | 1/4" | N/A | Uses THAT 2181 VCA | $869 |
| Yes | 2/Yes | 5/9/12-segment LED | XLR | Barrier strip | 19x1.75x9 | Subtractive GR system; knee variable w/compressor ratio; broad-band/HF de-essing; monitor sidechain | $1,599 |
| Yes | 4/Yes | 15/8-segment LED | XLR | 1/4" | 19x1.75x11 | HF de-essing (variable); 2-spd attack/release; progressive knee | $1,449 |
| Yes | 2/Yes | 5/6-segment LED | XLR | 1/4" | 19x1.75x8 | Progressive knee; de-esser (broad-band/HF) | $899 |
| Yes | 4/Yes | 12-segment LED | XLR | 1/4" TRS | 19x1.75x11 | Key-listen; external key-source facility; sidechain filter | $1,449 |
| Yes | 2/Yes | 3/9-segment LED | XLR | 1/4" | 19x1.75x8 | Key-listen; check key; auto dynamic enhancement; key filter | $799 |
| Yes | 1 or 2/Yes | 10-segment LED | XLR | N/A | 19x1.75x9 | Above or below threshold control; shelving EQ, 1 and 2-channel split; sidechain key-listen; filter width control; fast/slow release | $1,549 |
| Yes | 4/Yes | 12-segment LED | XLR | 1/4" TRS (gate only) | 19x1.75x7.1 | | $899 |
| Yes | 2/Yes | 16-segment LED | XLR | DB15 | 19x3.5x12 | Soft knee; dual sidechain; program dependent release | $3,400 |
| Yes | 1/Yes | 23-segment LED | XLR | DB-9 | 1 rackspace | Choice of optical, air optical, soft knee and hard knee; choice of clean, vintage, clean VCA, or vintage VCA | $1,695 |
| Yes | 4/Yes | LED | XLR, 1/4" TRS | N/A | 1 rackspace | Hard knee/OverEasy switch | $649.95 |
| Yes | 2/Yes | LED | XLR, 1/4" TRS | 1/4" TRS | 1 rackspace | Sidechain monitor; OverEasy; auto switch | $549.95 |
| Yes | Mono | LED | XLR, 1/4" | 1/4" TRS | 1 rackspace | Switchable hard/soft/OverEasy; contour button; mode switch on limiter, slow/fast attack | $459.95 |
| Yes | 2/Yes | VU | XLR, 1/4" TRS | XLR, 1/4" TRS | 2 rackspace | Peak Stop/Peak Stop Plus, V8 VCA, optional 24-bit digital out (AES/EBU, S/PDIF simultaneous) | $2,799.95 |
| Yes | Mono | VU | Barrier strip | N/A | 2 rackspace | Peak Stop limiter (threshold -2 to +24 dB) | $1,799.95 |
| Yes | 2/Yes | 19-segment LED | XLR, 1/4" TRS | 1/4" TRS | 1 rackspace | Switchable hard knee/OverEasy | $329.95 |
| Yes | 2/Yes | LED | 1/4" TRS | N/A | 1 rackspace | Hard knee; soft knee; OverEasy | $159.95 |
| Yes | 2/Yes | LED | XLR, 1/4" TRS | 1/4" TRS | 1 rackspace | Hard knee; soft knee; OverEasy | $249.95 |
| No | 1/Yes | 10-segment LED VU/ overload LED | XLR, TRS 1/4" | XLR, 1/4" TRS | 19x1.75x13 | H series tube hybrid; various attack/release; adjustable input sensitivity | $1,149 |
| No | 2/Yes | Analog VU/overload 3-segment LED | XLR, TT, 1/4" (2) | N/A | 2 rackspace 19x3.5x12 | All tube; various attack/release; adjustable input sensitivity | $2,499 |

# DYNAMICS PROCESSORS

| Manufacturer | Model | Type | Threshold | Ratio | Attack Times | Release Times | Gain Control |
|---|---|---|---|---|---|---|---|
| Demeter | VTCL-2ax Stereo Tube Optical Compressor Limiter | Compressor/limiter | -30 to +20 | Optical/soft knee 2:1 to 30:1 | 1–200 ms | 100 ms–5 sec | Input; output |
| DOD | SR866 | Gated compressor/limiter | -40 to +20 dBu | 1:1 to ∞:1 | Manual (0.1–100 ms) | Manual (50 ms to 2.5 sec) | Input; output |
| Drawmer | 1960 | Dual-channel tube compressor/tube preamp | ∞ to -24 dB | 1.1:1 to 30:1 | Manual or auto (0.5 ms–20 ms) | Manual or auto (200 ms–20 sec) | Input; output |
| Drawmer | DL241/DL241XLR | Dual compressor/limiter | Compressor: -40 to +20 dB; expander/gate: -70 to +20 dB; limiter: 0 to +18 dB | 1.2:1 to ∞:1 | Auto or manual (0.5–100 ms) | Auto or manual (0.05–4 sec) | Input; output |
| Drawmer | DL251 | Dual-channel "spectral" compressor | Compressor: -40 to +20 dB; limiter: 0 to +18 dB | 1.2:1 to ∞:1 | Auto or manual (0.5–100 ms) | Auto or manual (0 05–5 sec) | Input; output |
| Drawmer | DL441 | Quad compressor/limiter | Compressor: -40 to +20 dB; limiter: 0 to +18 dB | 1.2:1 to ∞:1 | Auto (0.5–100 ms) | Auto (0.05–4 sec) | Input; output |
| Drawmer | DS201B | Dual noise gate | -54 to +∞ dB | N/A | Manual (10 µs–1 sec) | Manual (2 ms–4 sec) | N/A |
| Drawmer | DS404 | Quad noise gate | -70 to +20 dB | N/A | Auto | Combines hold and decay (10 ms–5 sec) | N/A |
| Drawmer | MX30 | Dual gate/auto compressor/limiter | Compressor: -40 to +20 dB; expander/gate: -70 to +20 dB; limiter: 0 to +18 dB | 1.2:1 to ∞:1 | Auto or manual (0.5–100 ms) | Auto or manual (0.05–4 sec) | Output |
| Drawmer | MX40 | Quad noise gate | -54 to +∞ dB | N/A | 10 µs | 2 ms–4 sec | N/A |
| Drawmer | MX50 | Dual channel de-esser | Self-setting | Auto | Auto | Auto | De-ess frequency |
| Empirical Labs | EL-8 Distressor | Compressor/limiter | Varies with input level | 1:1 to ∞:1 | Manual (<40 µs–50 ms) | Manual (0.05–3.5 sec) | Input; output |
| Focusrite | Blue 330 Stereo Mastering Compressor/Limiter | Compressor/limiter | Compressor: -6 to 16 dB; limitor: 0 to 22 dB | 1.2:1 to 20:1 | 300 µs–100 ms | 100 ms–4 sec or auto | Output |
| Focusrite | Focusrite Compounder | Compressor/expander/ noise gate/limiter | -30 to +10 | Variable soft/hard knee | Variable | Variable | Output |
| Focusrite | Focusrite VoiceMaster | Compressor/de-esser/ expander/EQ/mic-pre | -30 to +10 | Variable soft/hard knee | Auto | Variable | Output |
| Focusrite | Red 3 Dual Compressor/Limiter | Compressor/limiter | Compressor: -24–12 dB; limiter: 0–18 dB | Switchable 1:1.5, 2, 3, 5, 7, 10 | 300 µs–90 ms | Variable (100 ms–4 sec) | Output |
| Furman | C-132 Compressor/Limiter | Compressor | -22 to +22 dB | 2:1 to 50:1 | 50 µs–50 ms | 50 ms–1.1 sec | Output |
| Furman | LC-6 Stereo Compressor/Gate | Compressor/ noise gate | Compressor: -20 to +20 dB; gate: ∞ to +20 dB | 1.4:1 to >50:1 | Compressor (100 µs–1 sec); gate: preset (1 ms) | Compressor (0.05–5 sec); gate: preset (250 ms) | Input; output |
| Furman | QN-44 Quad Noise Gate | Noise gate | ∞ to +20 dB | 50:1 | Manual (50 µs–50 ms) | Manual (50 ms–5 sec) | N/A |
| HHB | HHB Radius 30 | Compressor/expander/ limiter | -20 to +20 dB | 11:5 to 1:30 | Auto (0.5 ms–20 ms) | 40 ms–2 sec | Output |
| Independent Audio | Calrec RQ 3200 | Preamplifier/EQ/ compressor/expander/gate | N/A | 2:1 | Normal: 4 ms; fast: 0.2 ms | 75 ms–4 sec | Input; output |
| Independent Audio | Calrec RQD 6400 | Twin compressor/limiter | N/A | 100:1 | Normal: 4 ms; fast: 0.2 ms | 0.1–4 sec variable; w/auto facility 0.1–1.5 sec | 24 dB |
| JBL | M644 | 4-channel noise gate | -60 to +20 dBu | N/A | Manual (50 µs–25 ms) | Manual (50 ms–5 sec) | Output |
| JBL | M712 Two Channel Gating Compressor/Limiter | Compressor/limiter | -60 to +20 dBu | 1:1 to 165:1 | Compressor: manual (1–100 ms); gate: auto (470 µs) | Compressor: manual (100 ms–1.5 sec); gate: auto (95 ms) | Output |
| Klark-Teknik | DN500 | Dual compressor/ limiter/expander | Compressor: -30 to +20 dB; expander: -40 to +20 dB; limiter: 0 to +20 dB | Compressor: 1:1 to 50:1; expander: 1:1 to 25:1 | Compressor: auto or manual (50 µs–20 ms); expander: auto or manual (2 ms) | Compressor: auto/manual (60 µs–2 sec);expander: auto/manual (40 ms–2 sec) | Output |
| Klark-Teknik | DN504 | Quad compressor/limiter | -30 to +20 dB | 1:1 to 50:1 | Auto or man (50 µs–20 ms) | Auto or manual (60 ms–2 sec) | Output |
| Klark-Teknik | DN514 | Quad auto gate | -40 to +20 dB | N/A | Program dep, semiautomatic (50–200 µs or 500 µs–2 ms) | Manual (40 ms–2 sec) including hold | N/A |

| Bypass Switch | # of Channels/ Stereo Link | Meter Type | Main I/O | Sidechain I/O | Dimensions | Special Features | Price |
|---|---|---|---|---|---|---|---|
| No | 2/Yes | Analog VU/ovrld 3-segment LED | Balanced XLR, TT and 1/4" (2) | N/A | 2 rackspace 19x3.5x12 | Jensen transformers; all tube; various attack/release; adjustable input sensitivity | $2,499 |
| Yes | 2/Yes | LED | 1/4" TRS, RCA | 1/4" | 19x1.75x9 | Soft knee | $239.95 |
| Yes | 2/Yes | VU meter each channel | XLR | 1/4" | 19x3.52x7 | 2-channel classic tube compressor w/tube-based VCA | $2,349 |
| Yes | 2/Yes | 8-segment LED on compressor out; 8-segment GR LED | 1/4" (DL241); XLR (DL241XLR) | N/A | 19x1.75x7 | Program Adaptive expander/gate; zero response time peak limiter; auto/manual attack/release | (DL241) $699 (DL241XLR) $735 |
| Yes | 2/Yes | 8-segment LED out; 9-segment GR LED | XLR | 1/4" TRS | 19x1.75x7 | Hi-frequency dynamic expander and compressor; zero response time peak limiter; hard/soft-knee | $1,050 |
| Yes | 4/Yes | 5-segment output LED; 8-segment GR LED | XLR | N/A | 19x1.75x7 | Zero response time peak limiter; hard/soft knee | $1,099 |
| Yes | 2/Yes | 3-segment "traffic light" LEDs | XLR | 1/4" key input | 19x1.75x7 | Frequency-sensitive gating w/HP & LP filters; hold and decay controls; key-listen; docker | $735 |
| Yes | 4/Yes | 3-segment "traffic light" LED per channel | XLR | 1/4" key input | 19x1.75x7 | Frequency-sensitivity gating w/HP and LP filters; hard/soft gate (downward expander); -20/-90 ring switch | $1,099 |
| Yes | 2/Yes | 8-segment LED comp out; 9-segment GR LED; 2-seg LED gate on/off | XLR, 1/4" | N/A | 19x1.75x7 | Program adaptive expander/gate; zero response time peak limiter | $479 |
| Yes | 4/Yes | 3-segment "traffic light" LEDs | XLR | 1/4" key input | 19x1.75x7 | Frequency sensitivity gating w/1 octave filter (50 Hz–8 kHz); key listen; trigger stabilization; peak punch | $629 |
| Yes | Yes | LED GR meter each channel | XLR | N/A | 19x1.75x8 | Variable frequency (800 Hz–8 kHz); up to -20 dB split/full band de-essing; "air" switch | $549 |
| Yes | Mono or 2/Yes | LED | XLR, 1/4" | 1/4" | 19x1.75x10.1 | Emulation of classic compressors (e.g., LA2, LN1176, Fairchild) | (mono) $1,499 (stereo) $2,899 |
| Yes | 2/Yes | Peak program | XLR | N/A | 19x5.25x12.6 | Look-ahead limiter | $7,750 |
| Yes | 2/linkable | LED | XLR, 1/4 | 1/4" | 19" rack unit | | $893 |
| Yes | Mono | LED | XLR, 1/4" | N/A | 19" rack unit | Expander/saturation; voice-optimized EQ | $749 |
| Yes | 2/Yes | VU | XLR | N/A | 19x3.5x11.25 | Stereo switch; auto-release mode | $3,995 |
| No | Mono | 10-segment LED | 1/4" (XLR optional) | 1/4" | 19x1.75x8 | Adaptive knee (soft-harder as ratio is increased) | $269 (w/XLRs) $303 |
| No | 2/Yes | 5-segment LED | 1/4" (XLR optional) | 1/4" | 19x1.75x8 | Adaptive knee (soft-harder as ratio is increased) | $439 (w/XLRs) $507 |
| No | 4/No | LED | 1/4" (XLR optional) | 1/4" | 19x1.75x8 | Depth controls adjust amount of muting | $429 (w/XLRs) $565 |
| Yes | 2/Yes | VU, LED | 1/4" TRS | 1/4" | 19x7.9x3.5 | VU Switchable between output and GR | $749 |
| Yes | 1/Yes | 20-segment LED | XLR | XLR | 19x1.75x12 | | $2,899 |
| Yes | 2/Yes | 20-segment LED | XLR | XLR | 19x1.75x13.5 | Stereo | $3,765 |
| No | 4/No | LED | 1/4" TRS | 1/4" | 19x1.75x5.625 | 30 Hz HP filter, external ground-link terminals | $515 |
| Yes | 2/Yes | 8-segment LED | XLR, 1/4" | 1/4" | 19x1.75x5.625 | Soft-knee compressor, 30 Hz HP filter, external ground-link terminals | $515 |
| Yes | 2/Yes | LED | XLR | 1/4" TRS | 19x1.75x11.5 | Variable knee, VCA design; variable-ratio expander | $1,425 |
| Yes | 4/Yes | LED | XLR | 1/4" TRS | 19x1.75x11.5 | Hard or soft knee (switchable) | $1,495 |
| Yes | 4/No | LED | XLR | 1/4" | 19x1.75x11.5 | Syncronizes harmony parts, brass sections, etc. by interlocking all 4 gate release times | $1,215 |

# DYNAMICS PROCESSORS

| Manufacturer | Model | Type | Threshold | Ratio | Attack Times | Release Times | Gain Control |
|---|---|---|---|---|---|---|---|
| LA Audio | BCL2 | Dual compressor/limiter | -40 to +20 dB | 1:1 to 20:1 | Peak: variable (1–70 ms); RMS: program dependent (typ 12 ms, 12 dB/4 ms 24 dB) | Peak: variable 100 ms–3 sec; RMS: prog dep (typ 120 ms @ 12 dB/240 ms @ 24 dB) | -20 to +20 dB |
| LA Audio | FGC2 | Dual split band compressor-frequency selective gate | -40 to +20 dB | 1:1 to 20:1 | Fast: 1 ms; slow: 20 ms | 40 ms–4 sec | -6 to +20 dB |
| LA Audio | GCX2 | Dual compressor/gate | -50 to +20 dB | 1:1 to 20:1 | Program dependent: 5–70 ms (fast),up to 3 sec (slow) | Program dependent: up to 1 sec (fast); up to 3 sec (slow) | -16 to +20 dB |
| LA Audio | TCX2 | Dual compressor/gGate | -30 to +20 dB | 1:1 to 20:1 | Auto or manual (0.1–100 ms) | Auto or manual (0.04–4 sec) | Gain makeup: +20 dB |
| Langevin | Langevin Electro-Optical | Leveling amp | -8 to +17 dB | 10:1 | Preset (1.5 ms) | Preset (250 ms) | Output |
| Manley Labs | Stereo Electro-Optical | Stereo electrical-optical | -8 to +17 dB | 10:1 | Preset (1.5 ms) | Preset (250 ms) | Output |
| Manley Labs | Stereo Variable MU | Tube compressor/limiter | -32 to +14 dB | 2:1 to 20:1 | Manual (25–70 ms) | Man (0.2, 0.4, 0.6, 4, 8 sec) | Input, output |
| Millennia Media | Twincom TCL-2 | Compressor/limiter | All | 2:1 to 30:1 | 2 ms | 0.1–30 sec | Output |
| Oram Pro | Sonicomp 1 | Solid-state compressor | Yes | Yes | Yes | Yes | Input; output |
| Oram Pro | Sonicomp 2 | Solid-state compressor | Yes | Yes | Yes | Yes | Input; output |
| Pendulum | 6386 Variable-Mu Tube Limiter | 6386 variable-mu tube compressor/limiter | Off to -20 dB | Program-dependent | 0.5–50 ms | 50 ms–20 sec (program dependent) | Input; output |
| Pendulum | OCL-2 | Electro-optical compressor/limiter | off to -20 dB | 1.5:1 to 15:1 | 1.0–50 ms | 50 ms–20 sec (program dependent) | Output |
| Phonic Hi-Tech | PCL3200 | Compressor/limiter/gate | -40 to +20 dB | 1:1 to ∞:1 | Manual (0.1–200 ms) | Manual (50 ms–3 sec) | Output |
| Joemeek | C2 | Stereo "photo-optical" Compressor | -40 to +20 dB | 1:1 to 10:1 | 1– 11 ms | 250 ms–5 sec | Output |
| Joemeek | SC-2 | Compressor | Varies | 4.5:1 to 7:1 | Manual (1.5–10 ms) | Manual | Input; output |
| Joemeek | SC-4 | Stereo photo-optical compressor | -40 to +20 dB | 2:1 to 10:1 | 0.5–11 ms | 250 ms–5 sec | Output |
| PreSonus | ACP-22 | Stereo compressor/limiter/ spectral gate | -70 to +20 dB | 1:1 to 20:1 | Auto or manual (comp: 0.1–100 ms; gate: 10 µs–100 ms) | Auto or manual (0.02 ms–2 sec) | Output |
| PreSonus | ACP-88 | 8-channel compressor/ limiter/gate | -0 to +20 dBu | 1:1 to 20:1 | Auto or manual (0.01–100 ms) | Auto or manual (.02 ms–2 sec) | Output |
| PreSonus | Blue Max | Smart compressor/ limiter | Fixed (-10 dB) manual mode | 1:1 to 20:1 | Manual (0.01– 100 ms) | Manual (10–500 ms) | Input; output |
| Rane | DC24 | Compressor/limiter/expander/ gate/2-way crossover | -50 to +20 dB | 1:1 to 20:1 | Auto | Auto | Output |
| Rolls | RP252 | Compressor/limiter/gate | -40 to +12 dB | 1:1 to ∞:1 | Manual (0.2–10 ms) | Manual (40 ms–2 sec) | Output |
| Summit Audio | DCL-200 Dual Compressor/Limiter | Tube compressor/limiter | -27 to +25 dBu | 1:1 to 7:1 | Manual (0.1–100 ms) | Manual (35 ms–10 sec) | Output |
| Summit Audio | TLA-100A Tube Levelling Amplifier | Tube compressor | -25 to +25 dBu | 1:1 to 4:1 | Selections (fast, medium, slow) | Selections (fast, medium, slow) | Output |
| Symetrix | 562E Windowing Expander/Gate | Gate/expander | -40 to +20 dB | Gate: ∞:1; expander: 1:1 to 3:1 | Adjustable (auto–300 ms) | Manual (30 ms–2 sec) | N/A |
| Symetrix | 565E Dual Compressor/ Limiter/Expander | Compressor/limiter/ expander | Compressor: -40 to +20 dBu; expander: +10 to -40 dBu; limiter: -10 to +20 dBu | Compressor: 1:1 to 10:1; expander: 1:1.5; limiter: 20:1 | Compressor: preset; limiter: preset (100 µs); expander: preset (4 ms) | Compressor: prog dependent 180 ms–2.55 sec; limiter: 100 ms; expander: 250 ms–5 sec | Output |
| TUBE-TECH | CL-1B | Opto-cell compressor | +20 to -40 dBm | 2:1 to 10:1 | Fast; slow | Fast; slow | Off to +30 dB |
| t.c. electronic | DB Max II | Compressor: 5-band digital mastering processor | -25 to 0 dBu | 1.12:1 to ∞:1 | Manual (0.3–100 ms per band) | Manual (20 ms–7 sec per band) | Input; output |
| t.c. electronic | Finalizer 96K | Compressor: multiband digital mastering processor | -25 to 0 dBu | 1.12:1 to ∞:1 | Manual (0.3–100 ms per band) | Manual (20 ms–7 sec per band) | Input; output |
| t.c. electronic | Finalizer Express | Compressor: multiband digital mastering processor | 1.12:1 to ∞:1 | N/A | 0.3–100 ms per band | 20 ms–7 sec per band | Input; output |
| TUBE-TECH | LCA-2B | Stereo compressor/limiter | Off to -10 dBu | 1.6:1 to 20:1 | 0.3–70 ms | 0.07–2 sec | -6 to +10 dB |
| TUBE-TECH | MEC-1A | Mic-preamp/EQ/compressor | -20 dB to off | 1.5:1 to 10:1 | 1–100 ms | 60 ms–2 sec | 10–50 dB |
| TL Audio | C5021 | Tube compressor | -20 to +20 dBu | 1.5:1 to 3:1 | Auto | Auto | Input |
| Voce | EVC-1 | Tube compressor | ∞ to +20 dBu | 1:1 to 10:1 | Manual (1–1000 ms) | Manual (1–1,000 ms) | Output |

| Bypass Switch | # of Channels/ Stereo Link | Meter Type | Main I/O | Sidechain I/O | Dimensions | Special Features | Price |
|---|---|---|---|---|---|---|---|
| Yes | 2/Yes | 12-segment LED | XLR | N/A | 19x7.5x1.75 | RMS/peak detection mix features; broadcast specials; transformer balance outs; distance x-cell | $1,199.95 |
| Yes | 2/Yes | 2x8-segment | XLR | N/A | 19x7.5x1.75 | Frequency windowing filters in gate sidechain or audio path | $999.95 |
| Yes | 2/Yes | 2x6-segment | XLR; TRS (+4/-10) | N/A | 19x6x1.75 | | $299.95 |
| Yes | 2/Yes | 2x6-segment | XLR; TRS (+4/-10) | N/A | 19x6x1.75 | | $499.95 |
| Yes | Mono | VU | XLR; 1/4" | N/A | 19x1.72 | All discrete | $1,775 |
| Yes | 2/Yes | VU | XLR; 1/4" | N/A | 19x3.5 | LA-2A style | $2,500 |
| Yes | 2/Yes | V | XLR | N/A | 19x3.5 | All tube; fully differential | $4,300 |
| Yes | 2/Yes | SIFAM true audio level meter | XLR | N/A | 12x19x3.5 | Solid state twin topology tube | $2,795 |
| Yes | 2/Yes | LED: GR/input | 1/4"; XLR | 1/4" | 1 rackspace | Solid-state or light-dependent resistor; aluminum knobs | $1,995 |
| Yes | 2/Yes | VU: GR/input | 1/4", XLR | 1/4" | 2 rackspaces | Solid-state or light-dependent resistor; aluminum knobs | $2,590 |
| Yes | 2/Yes | VU | XLR; 1/4" | 1/4" TRS | 19x12.5x3.5 (2 rackspaces) | Vari-mu feedback comp; small tube as Fairchild 660/670 lims; Class A transformerless out; 3 modes, hard bypass; soft-start | $4,500 |
| Yes | 2/Yes | VU | XLR, 1/4" | 1/4" TRS | 19x12.5x3.5 (2U enclosure) | Electro-optical input atten; all tube gain path; transformerless; 3 modes (fast, presets, manual); hard bypass; soft-start | $2,795 |
| Yes | 2/Yes | LED | 1/4" | 1/4" | 19x2x4.5 | Hard and soft knee, peak RMS switch | $249 |
| Ye | Dedicated stereo | 9 segment LED input/ 5-segment LED GR | 1/4" TRS | N/A | 8.25x5x1.75 | | $399.99 |
| Yes | 2/Yes | V | XLR; 1/4" TRS | N/A | 19x3.5 | Vintage photo-optical compressor sound | $1,999.99 |
| Yes | Dedicated stereo | VU | XLR; AES/EBU | N/A | 19x8x3.5 | Midsize stereo width; optional 24-bit digital interface | $1,999.99 |
| Yes | 2/Yes | 8-segment LED | XLR; 1/4" | 1/4" TRS | 19x1.75x5 | Hard and soft knee; frequency-dependent LP filter for gate | $399 |
| Yes | 8/Yes | LED | 1/4" TRS | 1/4" TRS | 19x3.5x6 | Hard and soft knee; input (+4 dBu/-10 dBu); linking bus; full-featured gate | $999.95 |
| Yes | 2/Yes | LED | 1/4" TRS | 1/4" TRS | 19x1.75x8 | Stereo; 15 preset compressor curves for various instruments | $199.95 |
| Yes | 2/Yes | LED | XLR; 1/4" TRS | 1/4" TRS | 19x1.75x5.3 | Combine crossover mode; input (-10 dBV/+4 dBu) | $599 |
| Yes | 2/Yes | 10-segment LED | XLR; 1/4" | 1/4" | 19x1.75x6 | | $275 |
| Yes | 2/Yes | VU | XLR | 1/4" | 19x3.5x10.5 | Soft knee; Jensen 990 out; balanced/unbalanced; frequency response (5 Hz–80 kHz) | $2,950 |
| Yes | Mono | VU meter: output/GR | XLR | 1/4" TRS | 19x3.5x10.5 | Soft knee; Jensen 990 out; transformerless | $1,700 |
| Yes | 2/No | LED | XLR; 1/4" | 1/4" | 19"x1.75"x8" | Window advance; auto-windowing | $579 |
| Yes | 2/Yes | LED | XLR; 1/4" | 1/4" | 19x1.75x7.25 | Dynamics Squared circuitry | $399 |
| Yes | 1/Yes | VU | Analog | N/A | 19 x 2 units x 170 mm | Balanced and fully floating I/O | $2,195 |
| Yes | 2/Yes | LED | XLR; AES/EBU; S/PDIF; ADAT; Toslink | N/A | 19x1.75x8.2 | 4 inserts; production/transmission presets; external dvc insert; sample rt conversion | $3,995 |
| Yes | 2/Yes | LED | XLR; AES/EBU; S/PDIF; ADAT; Toslink | N/A | 19x1.75x8.2 | Digital radiance tube emu; normalize; str dither; 24-bit/96 kHz A/D D/A ext dvc insert; sample rt conversion | $2,995 |
| Yes | 2/Yes | LED | S/PDIF; AES/EBU; Toslink | N/A | 1 rackspace | 24-bit AD/DA; soft clip; spectral balance | $1,599 |
| Ye | 2/Yes | LED | Analog | 1/4" | 19 x 2 units x 205 mm | Fairchild 670 attack/release presets | $3,495 |
| Yes | 2/Yes | VU | XLR; 1/4" | N/A | 19 x 2 units x 205 mm | Gold-plated switches | $3,995 |
| Yes | 2/Yes | VU | XLR; 1/4" | 1/4" TRS | 19x3.5x10 | Soft knee tube compression | $699 |
| Yes | Mono | LED | XLR; 1/4" TRS | 1/4" TRS | 8x8.5x1.63 | Soft knee; no solid-state devices in auditory path; transformer I/O; power supply powers 1 or 2 units | $799 (pwr sup) $299 |

# EFFECTS PROCESSORS

| Manufacturer | Product | Presets (Factory/User) | Analog Effects | Digital Effects | Simultaneous Effects | Programmable Wet/Dry Mix | Compare/ Bypass | Maximum Delay Time | Maximum Pitch Shift Range | MIDI Real-Time Control | Simultaneous MIDI Controllers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alesis | MicroVerb 4 | 100/100 | N/A | Rvrb; chrs; dly; fing; rtry; ptch | 3 | No | No/Yes | 1.3 sec | ±1 octave | Yes | Yes |
| Alesis | MidiVerb 4 | 128/128 | N/A | Rvrb; chrs; dly; fing; rtry; ptch | 3 | Yes | Yes/Yes | 1.3 sec | ±1 octave | Yes | Yes |
| Alesis | NanoVerb | 16/0 | N/A | Rvrb; chrs; dly; fing; rtry | 3 | No | No/Yes | 1.3 sec | N/A | No | No |
| Alesis | Q20 | 100/200 | N/A | Rvrb; chrs; dly; fing; rtry; ptch; shft; smplng; ovrdrv; pan | 8 | Yes | Yes/Yes | 5 sec | ±4 octaves | Yes | Yes |
| Antares | ATR-1 Auto-Tune Intonation Processor | 50/20 | N/A | Real-time pitch correction | 1 | No | Yes/Yes | N/A | ±1 octave | Yes | Yes |
| A.R.T. | DMV-Pro | 100/100 | N/A | Rvrb; chrs; fing; ptch; trml rtry; phsr; pan; dly | 4 | Yes | Yes/Yes | 5 sec | >2 octaves | Yes | Yes |
| A.R.T. | FX-1 | 60/0 | N/A | Rvrb; chrs; dly; fing; ptch; trml; pan; gate | 3 | Yes | No/Yes | 420 ms | 1 octave | No | N |
| Audio Centron | TFX1-SP | 32/0 | N/A | Rvrb; dly; fing; chrs; gtd rvrb; rtry | 2 | No | No/No | 455 ms | N/A | No | No |
| Behringer | EX 3200 Ultrafex II Pro | 0/0 | Enhancer | Spectral enhancer | 1 | No | No/Yes | N/A | N/A | No | No |
| beyerdynamic | Vitalizer MKII | 0/0 | Enhancer | N/A | 4 | No | Yes/Yes | N/A | N/A | No | No |
| Crate | SM1-SP | 32/0 | N/A | Rvrb; dly; fing; chrs; gtd rvrb; rtry | 2 | No | No/No | 455 ms | N/A | No | No |
| Crate | SM2-SRS | 2/0 | 3-dimensional stereo | N/A | 1 | No | Yes/Yes | N/A | N/A | No | No |
| DigiTech | Studio 400 | 191/100 | N/A | Rvrbs; chrs; dly; fing; anlg dly | 8 | Yes | Yes/Yes | 2.8 sec | ±2 octaves | Yes | Yes |
| DigiTech | Studio S-100 | 99/99 | N/A | Various | 2 | Yes | No/Yes | 2 sec | -1 octave/+2 octaves | Yes | Yes |
| DigiTech | Studio S-200 | 99/99 | N/A | Various | 2 | Yes | No/Yes | 2 sec | -1 octave/+2 octaves | Yes | Yes |
| DigiTech | StudioQuad 4 | 100/100 | N/A | Various | 4 | Yes | No/Yes | 5 sec | ±2 octaves | Yes | Yes |
| DOD | D-12 Stereo delay/ 24-second sampler | 0/0 | N/A | Smpl; dly; chrs; fing | 4 | Yes | No/No | 4 banks of 6-sec sampling or 2 banks of 12-sec sampling | N/A | N/A | No |
| DOD | Dimension 3-D multi-effects processor | 0/0 | N/A | Dly; rvrb; chrs; fing; phs; ptch; trml; rtry; pan | 2 | Yes | No/No | 370 ms | ±1 octave | N/A | No |
| DOD | SR 400D Room Delay | 30/0 | N/A | Delay | 1 | No | No/No | 4 sec | N/A | N/A | No |
| Eventide | DSP4000 Ultra-Harmonizer | 491/unlimited via PCMCI SRAM card | N/A | Dozens | Up to 40 internal modules | Yes | Yes/Yes | 10 sec | ±4 octaves | Yes | Yes |
| Eventide | DSP4500 Limited Edition Ultra-Harmonizer | 1,017/unlimited via PCMCIA SRAM card | N/A | Dozens | Up to 40 internal modules | Yes | Yes/Yes | 87 sec in mono; 43.5 sec in stereo | ±4 octaves | Yes | Yes |
| Eventide | H3000D/SE | 572/407 | N/A | Ptch; rvrb; dly; fing; phs; chrs; cmpr | Algorithm dependent (21 algorithms) | Yes | No/Yes | 1.5 sec | ±3 octaves | Yes | Yes |
| Eventide | H3000D/SX Dynamic Studio Ultra-dependent (15 ) Harmonizer | 295/690 | N/A | Dozens | Algorithm dependent (15 algorithms) | Yes | Yes/No | 1.5 sec | ±3 octaves | Yes | Yes |
| Eventide | H3500DFX/E Dynamic Ultra-Harmonizer | 679/298 | N/A | Dozens | Algorithm dependent (23 algorithms) | Yes | No/Yes | 95 sec in mono; 47.5 sec in stereo | ±3 octaves | Yes | Yes |
| Eventide | Orville Harmonizer EffectsBrand Processor | Unlim via PCMCIA SRAM cards | N/A | Dozens | 2 presets | Yes | Yes/Yes | 174 sec in mono; 87 sec in stereo | ±4 octaves | Yes | Yes |
| Independent Audio | Cedar CRX Decrackle | 0/0 | N/A | Digital decrackling | N/A | No | Yes/Yes | N/A | N/A | No | No |
| Independent Audio | Cedar DCX Declicker | 0/0 | N/A | Digital declicking | N/A | No | Yes/Yes | N/A | N/A | No | No |
| Independent Audio | Cedar DHX Dehiss | 0/0 | N/A | Digital dehissing | N/A | No | Yes/Yes | N/A | N/A | No | No |
| Independent Audio | DACS Ltd. Fws FREQue | 0/0 | Ring module, oscillator, frequency module | N/A | N/A | No | No/No | No | N/A | No | No |
| Independent Audio | Mutronics Mutator (MIDI) | 0/0 | Envelope follower | N/A | Envelope follower, LFO | No | Yes/Yes | N/A | N/A | Yes | No |
| Korg | AM8000R | 0/128 | N/A | 40 | 4 | Yes | Yes/Yes | 1.8 sec mono; 800 ms stereo | ±2 octaves | Yes | Yes |
| Korg | DL8000R | 0/128 | N/A | 8 delay taps | 8 | Yes | Yes/Yes | 10 sec mono; 5.2 sec stereo | N/A | Yes | Yes |

| Discrete Processing Channels | ADC/DAC | Overload Warning | Inputs | Outputs | Power Supply | Special Features | Price |
|---|---|---|---|---|---|---|---|
| 2 | 18-bit/18-bit | 4-segment LED | 1/4" (2) | 1/4" (2) | Alesis P3 adapter | Bypass/tap-tempo footswitch; 2 parameter knobs | $249 |
| 2 | 18-bit/18-bit | 18-segment LED, clip light | 1/4" (2) | 1/4" (2) | Alesis P3 adapter | Automatic level sensing; tap tempo footswitch | $329 |
| 1 | 18-bit/18-bit | Clip light | 1/4" (2) | 1/4" (2) | Alesis P3 adapter | Adjustable knob; bypass footswitch | $135 |
| 2 | 20-bit/256x | 4-segment LED w/clip indicator | XLR; 1/4" TRS (2) | XLR; 1/4" TRS (2) | Internal | S/PDIF and ADAT optical in; 48 kHz clock in | $999 |
| 1 | 20-bit/24-bit | 6-segment LED | XLR; 1/4" TRS | XLR; 1/4" TRS | External | | $1,195 |
| 4 | 20-bit | 5-segment LED | 1/4" (4) | 1/4" (4) | External | DEA technology; twin LCD editing interfaces | $499 |
| 2 | 16-bit/16-bit | Clip light | 1/4" (2) | 1/4" (2) | External | | $134 |
| 2 in/2 out | 1-bit/16-bit/64x | Signal/peak LED | 1/4" (2) | 1/4" (2) | External | 32 features; 1 adjustable parameter per prgrom | $179.99 |
| 2 | N/A | 8-segment LED | XLR; 1/4" | 1/4"; XLR | Internal | Surround processor, bass shift; treble control; noise reduction | $249.99 |
| 1 | N/A | Yes | XLR, 1/4" | 1/4"; XLR | Internal | Multi-frequency enhancement, stereo expansion | $699 |
| 2 in/out | 1-bit/16-bit/64x | Signal/peak LED | 1/4" (2) | 1/4" (2) | External | 32 programs; 1 adjustable parameter per program | $179.99 |
| 2 in/out | N/A | Signal/peak LED | 1/4" (2) | 1/4" (2) | External | Technowledgy-Sound Retrieval System | $129.99 |
| 4 | 18-bit/128x; 20-bit/64x | Digital level, clip meter | 1/4" TRS (2); XLR (2) | TRS (2); XLR (2) | Internal | Dynamic modifiers; optional digital I/O upgrade (AES/EBU, S/PDIF) | $869.95 |
| 2 | 20-bit | clip LED | 1/4" (2) | 1/4" (2) | 9 VAC | Selectable effects; signal routing configurations | $219.95 |
| 2 | 20-bit | clip LED | 1/4" (2) | 1/4" (2) | Internal | Selectable configurations; large display | $339.95 |
| 4 | 20-bit | Clip (each input) | 1/4" (4) | 1/4" (4) | Line 9 VAC 2A | Programmable signal routing; LFOs; dynamic filters | $479.95 |
| 4 | 16-bit/16-bit | Clip LEDs | 2 | 2 | External | Reverse playback and LED; jog/shuttle wheel | $299 |
| 2 | 18-bit/16-bit | Clip LED | 1/4" (2) | 1/4" (2) | External | Noise reduction w/gate threshold | $169.95 |
| 2 | 18-bit/16-bit | Clip LEDs | XLR, 6-pin barrier strip | XLR, 6-pin barrier strip | External | Data input in U.S. or metric formats of distance, humidity, temperature | $329.95 |
| 2 | 20-bit | 10-seg clip light | 1/4"; XLR; AES/EBU; S/PDIF | XLR; AES/EBU; S/PDIF | Internal | Optional 2 MB or 4 MB sampler | $3,995 |
| 2 | 24-bit | 10-seg clip light | 1/4", XLR; AES/EBU; S/PDIF | XLR; AES/EBU; S/PDIF | Internal | 87-sec mono internal sampler (43.5-sec in stereo) | $4,995 |
| 2 (algorithm dependent) | 16-bit | 10-segment clip light | XLR (pin 3 hot) | XLR (pin 3 hot) | Internal | | $2,695 |
| 2 (algorithm dependent) | 16-bit | 10-segment clip light | XLR (pin 3 hot) | XLR (pin 3 hot) | 100–130 or 200–240 volts AC, 50/60 Hz | | $1,995 |
| 2 (algorithm dependent) | 16-bit | 10-segment clip light | XLR (pin 3 hot) | XLR (pin 3 hot) | 100–130 or 200–240 volts AC, 50/60 Hz | 95-sec mono sampler (47.5-sec stereo) | $3,595 |
| 4 + 4 | 24-bit | 9-segment LED | 1/4", XLR; S/PDIF, AES/EBU | XLR; AES/EBU; S/PDIF | Internal | 24-bit/96 kHz, 4 MB sampler, UltraShifter software, routing matrix | $5,695 |
| 2 | N/A | N/A | AES/EBU; S/PDIF | AES/EBU; S/PDIF | Internal | Real-time decrackle | $6,495 |
| 2 | N/A | N/A | AES/EBU; S/PDIF | AES/EBU; S/PDIF | Internal | Real-time declick | $5,995 |
| 2 | N/A | N/A | AES/EBU; SPDIF | AES/EBU; SPDIF | Internal | Real-time dehiss | $6,895 |
| 2 | N/A | LED | 1/4" TRS | 1/4" TRS | 90–250 VAC | | $1,099 |
| 2 | N/A | N/A | 1/4" | 1/4" | Internal | Stereo panning | (unbal) $1,125 (balanced) $1,275 |
| 2 | 18-bit linear/128x | Digital clip | 1/4" (2) | 1/4" (2) | 9 VAC | | $600 |
| 2 | 18-bit/128x | Digital clip | 1/4" (2) | 1/4" (2) | 9 VAC | | $600 |

# EFFECTS PROCESSORS

| Manufacturer | Product | Presets (Factory/User) | Analog Effects | Digital Effects | Simultaneous Effects | Programmable Wet/Dry Mix | Compare/ Bypass | Maximum Delay Time | Maximum Pitch Shift Range | MIDI Real-Time Control | Simultaneous MIDI Controllers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Illorg | PX2 | 0/38 | N/A | Comp, ovrdrv; dstrtn; reverb; wah; chorus; pitch; flanger; vibration; tremolo; pan delays; cabinet | 6 | No | No/Yes | 730 ms | ±2 octaves | No | No |
| Lexicon | MPX 1 | 200/50 | N/A | Rvrbs; dly; echo; loop; trml; chorus; flngr; rtry; ptch; phsr; more | 5 | Yes | Yes/Yes | 1 sec | 5.5 octaves | Yes | Yes |
| Lexicon | MPX 100 Dual Channel Processor | 240/16 | N/A | True stereo reverbs, tremolo, rotary, chorus, flange, ptch, dtn, dly, echo | 2 | Yes | Yes/Yes | 5.7 sec | ±3 octaves | Yes | Yes |
| Lexicon | MPX G2 Guitar Effects Processor | 250/50 | Distortion; overdrive; noise gate | Reverbs; delays; pitch; flanger; phase; vibration; more | 5 | Yes | Yes/Yes | 20 sec (JamMan, mono FX); 10 sec (stereo FX) | >3 octaves | Yes | Yes |
| Lexicon | PCM 81 | 450/50 | N/A | Chorus; delay; feedback/cross-feedback; filters; glide; module; pan; pitch; RVB | Algorithm dependent | Yes | Yes/Yes | 20 sec | ±3 octaves | Yes | Yes |
| Lexicon | PCM 91 | 450/50 | N/A | Reverbs; delay; echo; expand; modulation; split EQ; ambience | 2 | Yes | Yes/Yes | 2.5 sec | N/A | Yes | Yes |
| Line 6 | POD | 36/0 | N/A | 8 | 3 | Yes | No/No | 3.2 sec | N/A | Yes | Yes |
| Miles Technology | MTI-3 TriSonic Imager | 1 | LCR sweet-spot enlarger, surround, spreadsound | N/A | 2 | No | No/No | N/A | N/A | No | No |
| Peltronics | RTSP-1600 MKII | 30/69 | Flanger, chorus, doubling | Delay | 2 | Yes | No/Yes | 700 ms (expandable) | N/A | Yes | Yes |
| Phonic Hi-Tech | Verbiflex | 256/0 | N/A | Yes | 1 | Yes | Yes/Yes | N/A | N/A | No | No |
| Rocktron | Intelliflex | 80/80 | N/A | Chorus, delay, reverb, dynamic docker, 4-voice ptech, hush noise reduction | 4 | Yes | Yes/Yes | 1.5 sec | +1 octave/ -2 octaves | Yes | Yes |
| Rocktron | Multivalve | 128/128 | N/A | 2 tap dly, reverb, chorus, phaser, tremolo, flanger, pitch, auto-pin, spkr sim, hush noise reduction | 10 | Yes | Yes/Yes | 1 sec | +1 octave/ -2 octaves | Yes | Yes |
| Roland | Roland GP-100 Guitar Preamp/Processor | 200/200 | Comp/lim, wah/auto wah, 4-band EQ, noise supp, phsr, flnger, foot vol, trem/pan, vibr, slow gear, 2 FX loops, feedbacker | 14 modeled preamps, 12 modeled speaker simulators; 5-part mono/stereo harmonist; 4-tap/tempo/ducking delays; mon/ster chorus, reverb | 15 | Yes | Yes/Yes | 4.8 sec | ±2 octaves | Yes | Yes |
| Roland | SDE-330 | 100/200 | N/A | 3 | 3 | No | YesYes | 2.9 sec | ±1 octave | Yes | Yes |
| Roland | SRV-3032; 3030D | N/A | N/A | Reverb | 2 | Yes | Yes/Yes | N/A | N/A | Yes | Yes |
| Roland | VT-1 | 32/4 | N/A | Voice transfer | 2 | Yes | No/Yes | N/A | ±1 octave | No | Yes |
| Sony | DPS-V55 | 200/200 | N/A | 45 algo; reverb, delay, flanger, chorus; pitch; EQ; comp; rotary | 4 | Yes | No/Yes | 2,720 ms | ±2 4 octaves | No | N/A |
| Sony | DPS-V77 | 198/198 | N/A | Reverb; flange; chorus; delay; pitch; amplifier simulator | 4 | Yes | Yes/Yes | 5,460 ms | ±2 4 octaves | Yes | Yes |
| Sony | HR-GP5 | 100/100 | N/A | Reverb; flange, chorus, delay, pitch, amplifier simulator | 7 | Yes | Yes/Yes | 1,364 ms mono; 682 ms stereo | ±2 4 octaves | Yes | Yes |
| Spatializer | Retro | 0/0 | 3-D audio | N/A | 1 | No | No/Yes | N/A | N/A | No | No |
| Symetrix | 606 Delay FX Machine | 10/99 | N/A | Delay, chorus, room simulator, flanger, auto pin, filter | 2 | Yes | No/Yes | 2.5 sec | N/A | Yes | No |
| TC Electronic | 1210 Spatial Expander + Stereo Chorus Flanger | N/A | Flanger, pitch module, expander | N/A | 3 | No | No/Yes | 66 to 22 ms | N/A | No | No |
| TC Electronic | 1280 Stereo Digital Audio Delay | 4/4 | N/A | 2 delay channels | 2 | No | Yes/Yes | 2.5 sec with chip expander | N/A | Yes | Yes |
| TC Electronic | 1380 Multitap Digital Audio Delay | 4/4 | N/A | 1 | 1 | No | Yes/Yes | 5 sec with chip expander | N/A | Yes | Yes |
| TC Electronic | 2290 | 100/100 | N/A | 1 | 2 | Yes | Yes/Yes | 8 sec | N/A | Yes | Yes |
| TC Electronic | FireworX | 200/100 | N/A | 35e | DSP (space dependent) | Yes | Yes/Yes | 3 sec | ±2 octaves | Yes | Yes |
| TC Electronic | G-Force | 200/100 | N/A | Reverb, delay, pitch, phaser, flanger, comp, pan/tremlo, modulation, more | 8 | Yes | Yes/Yes | 1,480 ms | 2 octaves | Yes | Yes |
| TC Electronic | M2000 | 256/256 | N/A | Rvrb, dly, chrs, flngr, comp, pan, trml; lmtng, de-es, exp, str enhnc | 2 | Yes | Yes/Yes | 1.2 sec | 2 octaves | Yes | Yes |

| Discrete Processing Channels | ADC/DAC | Overload Warning | Inputs | Outputs | Power Supply | Special Features | Price |
|---|---|---|---|---|---|---|---|
| 1 | 18-bit | N/A | 1/4", 1/8" | 1/4" | 2 AA batteries; optional 9V adapter | Metronome; tuner; 32 drum patterns | $250 |
| 2 | 18-bit/20-bit | 6-segment LED; clip light | 1/4" (2); XLR (2); S/PDIF | 1/4" (2); XLR (2); S/PDIF | Internal | Dual processors; tap tempo; morphing; help; flexible routing/switching; optional MPX R1 MIDI Remote Controller | $1,299.99 (pedalboard) $500 |
| 2 | 20-bit | Dual, 2-stage headroom | 1/4" (2) | 1/4" (2); S/PDIF | 9 VAC 1A wall trans | True stereo/dual-channel processing; adjustable parameter knob | $299 |
| 2 | 24-bit | Dual, 2-stage headroom | 1/4" (2) | 1/4" TRS (2); XLR (2) | Internal | Routes effects to amplifier's input and/or effects loop; analog tone controls; tuner; soft row; optional MPX R1 MIDI Remote Controller | $1,499 (pedalboard) $500 |
| 2 | 18-bit | 5-segment LED; clip light | 1/4"/XLR combo (2); S/PDIF; AES/EBU | 1/4" (2); XLR (2); S/PDIF; AES/EBU | Internal | PCMCIA card slot; front-panel adjustable knob; tap tempo; 3 D effects | $2,995 |
| 2 | 18-bit/18-bit | 5-segment LED; clip light | 1/4"/XLR combo (2); S/PDIF; AES/EBU | 1/4" (2); XLR (2); S/PDIF; AES/EBU | Internal | PCMCIA card slot; keyword search; split algorithms; digital compressor | $2,995 |
| 1 | 24-bit/20-bit | Clip light | 1/4" guitar input | 1/4" TRS | External AC | AIR direct out | $399 |
| 2 | N/A | N/A | XLR (4); 1/4" TRS (2) | XLR (5); 1/4 TRS (3) | 50/60 Hz (120 or 240 VAC available) | Expandable stereo/mono sources; creates L/C/R and surround outs from 2-channel stereo | $599 |
| 1 | 16-bit/16-bit (both upgradable) | N/A | 1/4" | 1/4" (3) | Internal 110/220 VAC | Random modulation waveform; upgradable hardware/software; hybrid analog/digital design; no DSPs | $549 |
| 2 | 16-bit | Dual-color peak LEDs | 1/4" | 1/4" | Internal | | $269 |
| 1 | 16-bit/128x | 5-segment LED | 1/4" (2) | 1/4" (2) | External | Analog signal path separate from DSP | $749 |
| 1 | 16-bit/128x | 5-segment LED | 1/4" (2) | 1/4" (2) | External | Tube front end | $999 |
| 2 | 22-bit/128x | 16-segment LED; clip light | 1/4" (1) | 1/4" (4) | Internal | COSM | $995 |
| 2 | 16-bit | 7-segment LED | 1/4" (2) | 1/4" (2) | Internal | 3-D RSS technology | $995 |
| 2 | 24-bit | Yes | XLR; 1/4" TRS (2) | XLR; 1/4" TRS (2) | Built-in | Dynamic separation; preview w/user samples; digital I/O | $695, $995 |
| 1 | 16-bit/16-bit | Clip light | 1/4" | 1/4"; RCA (2) | AC adapter | Real-time control over pitch and format | $395 |
| 4 | 20-bit | Clip light | 1/4" | 1/4" | Internal | 52-bit DSP engine; surround-sound; "Designer" presets | $550 |
| 2 | 20-bit | Clip light | XLR (2); AES/EBU; S/PDIF | XLR (2); AES/EBU; S/PDIF | Internal | Morphing; dual effects blocks; 52-bit DSP | $1,775 |
| 1 | 18-bit | Clip light | 1/4" | 1/4" (2) | Separate PSV | Amplications simulation w/mic placements | $595 |
| 2 | N/A | LED | 1/4" TRS | 1/4" TRS | Internal | 3-D audio; mono compatible | $699 |
| 2 | 20-bit | 4-segment LED; clip light | 1/4" TRS | 1/4" TRS | Internal | 6 modulation sources; room simulators; tap tempo | $649 |
| 2 | N/A | LED | 1/4"; XLR | 1/4"; XLR | Internal | Uses Haas principle to create expansion | $1,684 |
| 2 | 18-bit | Overload LED | XLR | XLR | Internal | 1 MHz sample rate | $2,446 |
| 1 | 18-bit | Overload LED | XLR | XLR | Internal | 1 MHz sample rate | $2,446 |
| 1 | 1-bit | LED | 1/4"; XLR | 1/4"; XLR | Internal | 1 MHz sample rate | $1,995 |
| 2 | 24-bit | Overload LED | XLR | XLR | Internal | Vocoder | $2,195 |
| 2 | 24-bit | Clip light | 1/4" (2); S/PDIF | 1/4" (2); S/PDIF | Internal | "Intelligent" pitch shifting by Wave Mechanics; 5x14-LED "Marquee" | $1,795 |
| 2 | 20-bit | LED | XLR (2); AES/EBU; S/PDIF | XLR (2); AES/EBU; S/PDIF | Internal | Dynamic morphing; preset glide | $1,495 |

# EFFECTS PROCESSORS

| Manufacturer | Product | Presets (Factory/User) | Analog Effects | Digital Effects | Simultaneous Effects | Programmable Wet/Dry Mix | Compare/ Bypass | Maximum Delay Time | Maximum Pitch Shift Range | MIDI Real-Time Control | Simultaneous MIDI Controllers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TC Electronic | M3000 | 250/200 | N/A | Reverb; delay; chorus; flange; EQ; compressor; pan; tremolo; limiter; de-es; exp; gate; stereo enhancer | 2 | Yes | No/Yes | 1.2 | 2 octaves | Yes | Yes |
| TC Electronic | M5000 Digital Audio MainFrame | 212/100 | N/A | Up to 4 | 4 | Yes | Yes/Yes | 1,340 ms (670 ms per side) | ±1 octave | Yes | N |
| TC Electronic | Unity | 100/200 | N/A | Rev; dly; chr; flng; comp; pan; trml; lim; de-es; exp; stereo enhnc; dyn | 3 | Yes | Yes/Yes | 1.2 sec | 2 octaves | Yes | Yes |
| Yamaha | D5000 | 100/0 | N/A | Single/dual delay; freeze record/playback; sample and hold | 2 | No | Yes/Yes | 5 sec (stereo); 10 sec (mono) | N/A | Yes | Yes |
| Yamaha | ProR3 | 90/0 | N/A | Reverb; room simulation; echo, chorus; symphonic; flanger; pitch | 3 | Yes | Yes/Yes | N/A | ±1 octave | Yes | Yes |
| Yamaha | REV100 | 99/0 | N/A | Stereo reverb; reverb; delay; flanger; chorus; symphonic | 0 | Yes | Yes/Yes | N/A | N/A | Yes | Yes |
| Yamaha | REV500 | 100/0 | N/A | Reverb; room simulation; echo | 0 | Yes | Yes/Yes | 200 ms | N/A | Yes | Yes |
| Yamaha | SPX1000 | 40/59 | N/A | Reverb; chrs; echo; frz; distortion; trig pan; delay; symphonic; tremlo | 0 | Yes | Yes/Yes | 5.2 sec | ±1 octave | Yes | Yes |
| Yamaha | SPX990 | 80/0 | N/A | Reverb; delay; echo; early ref; mod; pitch; pan; frz; chorus; symphonic | 3 | Yes | Yes/Yes | 1,480 ms | ±2 octaves | Yes | Yes |
| Zoom | Studio 1201 | 363/0 | N/A | 33 | 2 | No | No/No | 1.4 sec | ±1 octave | No | No |
| Zoom | Studio 1204 | 512/100 | N/A | 32 | 2 | No | No/Yes | 740 ms | ±1 octave | Yes | Yes |


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| Discrete Processing Channels | ADC/DAC | Overload Warning | Inputs | Outputs | Power Supply | Special Features | Price |
|---|---|---|---|---|---|---|---|
| 2 | 24-bit | LED | (2) XLR; AES/EBU; S/PDIF; ADAT; Toslink | (2) XLR; AES/EBU; S/PDIF; ADAT; Toslink | Internal | Dynamic morphing; preset glide | $2,495 |
| 1/up to 4 | 18-bit /20-bit | LED | XLR; AES/EBU | XLR; AES/EBU | Internal | Expandable; can be updated via Internet | starting at $4,000 |
| 3 | 24-bit | Meter | AES/EBU; S/PDIF; ADAT; Toslink | AES/EBU; S/PDIF; ADAT; Toslink | Internal | Software interface within the Yamaha 02R | $1,495 (sec sftwr lic $795) |
| 2 | 20-bit | Clip light | XLR (2) | XLR (2) | Internal | | $1,499 |
| 2 | 20-bit | Clip light | XLR (2) | XLR (2) | Internal | | $1,299 |
| 2 | 16-bit | Clip light | 1/4" (2) | 1/4" (2) | Internal | | $299 |
| 2 | 20-bit/64x/20-bit/8x | Clip light | 1/4" (2); XLR (2) | 1/4" (2); XLR (2) | Internal | | $499 |
| 2 | 16-bit | Clip light | 1/4" (2) | 1/4" (2) | Internal | | $1,829 |
| 2 | 20-bit/64x/20 bit/8x | Clip light | XLR (2) | XLR (2) | Internal | | $1,179 |
| 2 | 18-bit/64x/18-bit/8x | Clip light | 1/4" (2) | 1/4" (2) | External 9V | Vocoder, auto filter, Karaoke and vocal-distortion effects | $219.99 |
| 2 | 18-bit/128x | Clip light | 1/4" (2) | 1/4" (2) | External 9V | Mic in for vocoder effects; vocal distortion; rotary effect | $319.99 |


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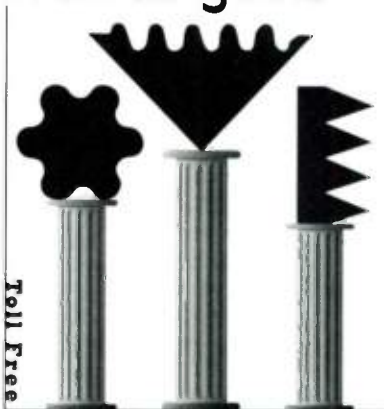

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# EQUALIZERS

| Manufacturer | Product | Analog/Digital | Programmable | Type/ Bandwidth | # of Channels/ # of Bands | Frequency Range (Parametric) | Constant Q | Filters | Analog I/O #/Type |
|---|---|---|---|---|---|---|---|---|---|
| Alesis | MEQ-230 | Analog | No | Graphic; 1/3 octave | 2/30 | 20 Hz–20 kHz | No | N/A | (2) 1/4"; (2) phono |
| Aphex Systems | 109 | Analog | No | Parametric; variable 0.66-7.2 | Dual 2-band (or single 4-band) | 20 Hz–2 kHz; 200 Hz–20 kHz | Yes (variable) | Switchable shelving | 1/4" TRS (-10/+4) |
| API | 550b EQ | Analog | No | Quasiparametric or shelving | 1/4 | 30 Hz–20 kHz | No | N/A | XLR in API frame |
| API | 560b EQ | Analog | No | Graphic; 1 octave | 1/10 | 31 Hz–16 kHz | No | N/A | XLR in API frame |
| Avalon Design | AD2055 | Analog | No | Parametric active/passive | 2/4 | HF: 15–25 kHz; HMF: 160 Hz–20 kHz; LMF: 35 Hz–4.5 kHz; LF: 18–450 Hz | Yes (mid bands variable Q 0.3–3.0) | N/A | XLR (+30 dB) |
| CLM | DB500S | Analog | No | Parametric with dynamic filter bands | 2/4 | LF: 40–300 Hz; LMF: 200 Hz–2 kHz; HMF: 1–8 kHz; HF: 1.5–20 kHz | No | Low cut: 15 Hz–16 kHz; high cut: 75 Hz–60 kHz | (2) XLR per channel |
| DOD | SR 231QX | Analog | No | 1/3 octave | 2/31 | N/A | Yes | ISO | 1/4" |
| DOD | SR 430QX | Analog | No | 2/3 octave | 2/15 | N/A | Yes | ISO | 1/4" |
| DOD | SR 830QX | Analog | No | 2/3 octave | 2/15 | N/A | Yes | ISO | 1/4" |
| DOD | SR 831QX | Analog | No | 1/3 octave | 1/31 | N/A | Yes | ISO | 1/4" |
| Drawmer | 1961 Tube Mastering EQ | Analog | No | Mastering; parametric | 2/4 | 3 octaves | No | LP; HP | (2) XLR |
| Focusrite | Tone Factory | Analog | No | Multiparametric | 1/2 (plus bass, mid, treble) | 40 Hz–1 kHz; 500 Hz–20 kHz | No | LP; HP | XLR; 1/4" |
| HHB | Radius 20 | Analog | No | Parametric; Q range 4.5 | 2/4 | 30 Hz–20 kHz | No | N/A | (2) XLR; |
| Independent Audio | Calrec RQ Series RQQ 2200 | Analog | No | Parametric | 2/4 | 22 Hz–22 kHz | No | HP; LP | (2) XLR (2) 1/4" |
| Manley Labs | Massive Passive Stereo Tube EQ | Analog | No | Quasiparametric | 2/4 | 22 Hz–1 kHz; 82 Hz–3 kHz; 220 Hz–10 kHz; 560 Hz–27 kHz | No | HP; LP | (2) XLR; (2) 1/4" |
| Millennia Media | NSEQ-2 Twin Analog Topology Parametric Equalizer | Analog | No | Parametric, 4 | 2/4 | 20 Hz–25 kHz | Yes | High/low shelving | XLR |
| Sabine | Graphi-Q | Digital | Yes | Multigraphic: 31 digital filters on 1/3 octave ISO; parametric: 12 filters per channel | 2/31 | 20 Hz–20 kHz | Yes | HP; LP | (2) XLR-3; (2) 1/4" TRS |
| Sabine | Graphi-Q | Digital | Yes | Multigraphic: 31 digital filters on 1/3 octave ISO; parametric: 12 filters | 1/31 | 20 Hz–20 kHz | Yes | HP; LP | XLR-3 in, (2) XLR-3 out; 1/4" TRS in, (2) 1/4" TRS out |
| Sabine | Power-Q ADF-4000 | Digital | Yes | Multigraphic: 31 digital filters on 1/3 octave ISO; parametric: 12 filters | 1/31 | 20 Hz–20 kHz | Yes | HP; LP | XLR-3 in, (2) XLR-3 out; 1/4" TRS in, (2) 1/4" TRS out |
| Sabine | Real-Q2 | Digital | Yes | Multigraphic: 31 digital filters on 1/3 octave ISO | 1/31 | 20 Hz–20 kHz | Yes | HP; LP | XLR-3 in, (2) XLR-3 out; 1/4" TRS in, (2) 1/4" TRS out |
| Speck | EQ16-32 | Analog | No | Semiparametric | 16 stereo channel/ 3 bands per channel | LF: 50–500 Hz; MF: 500 Hz–5 kHz; HF: 5–15 kHz | Yes | N/A | (32) 1/4" TRS |
| Summit Audio | EQF-100 | Analog | No | Quasiparametric | 1/4 | 5 Hz–100 kHz | Yes | HP | XLR |
| Summit Audio | EQF-200B | Analog | No | Program EQ | 2 channel | 5 Hz–100 kHz | No | HP | (4) XLR |
| Summit Audio | MPE-200 | Analog (digital control) | Yes | Parametric | 2/4 | 2 Hz–200 kHz | Yes | HP; LP | (4) XLR |
| White | 4400 | Analog | No | 1/3 octave | 1/28 | N/A | No | L-C active | Barrier strip |
| White | 4700 | Analog filters/ digitally controlled | Yes | 1/3 octave | 1/28 | N/A | No | R-C active | Barrier strip |
| White | 4828 | Analog | No | 1/3 octave | 1/28 | N/A | No | R-C active | XLR; 1/4" TRS |
| XTA | DP202 | Digital | Yes | Parametric; 1/32 to 2 octave | 2/8+ | 20 Hz–20 kHz | Yes | HP; LP | XLR |

| Digital I/O #/Type | Input/Output Gain Control | Max Boost/Cut | Operating Level | Hard Bypass | Dynamic Range | THD | Weight | Dimensions | Price |
|---|---|---|---|---|---|---|---|---|---|
| N/A | No/Yes | ±12 dB | -10 dB | Yes | 107 dB, A-weighted | <0.005% 0 dB; 20 Hz–20 kHz | 2.5 | 1.75x4x19 | $299 |
| N/A | Yes/Yes | ±15 dB | +4 dB | Yes | 108 dB | >0.15% @ +10 dBu | 3 | 19x1.75x5.75 | $449 |
| N/A | No/No | ±12 dB | +4 dB | Yes | 130 dB | <0.07% | 21 | 500 module | $1,295 |
| N/A | No/No | ±12 dB | +4 dB | Yes | 130 dB | <0.07% | 21 | 500 module | $1,295 |
| N/A | Yes/Yes | ±24 dB | +4 dB | Yes | 123 dB | 0.05% | 17 | 19x3.5x12 | $4,000 |
| N/A | Yes/Yes | ±20 dB | +4 to -10 dB | Yes | 118 dB | 0.001% | 11 | 19x8x5.25 | $3,299 |
| N/A | Yes | ±12 dB | -10 to +4 dB | Yes | N/A | 0.004% | N/A | 19x6x3.5 | $369.95 |
| N/A | Yes | ±12 dB | -10 to +4 dB | Yes | N/A | 0.004% | N/A | 19x6x1.75 | $249.95 |
| N/A | Yes | ±12 dB | -10 to +4 dB | Yes | N/A | 0.004% | N/A | 19x6x1.75 | $249.95 |
| N/A | Yes | ±12 dB | -10 to +4 dB | Yes | N/A | 0.004% | N/A | 19x6x3.75 | $249.95 |
| N/A | Yes/No | ±18 dB | -10 to +4 dB | Yes | 120 dB | <0.01% | 16 | 3.5x8x19 | $2,349 |
| N/A | Yes/Yes | ±18 dB | +4 dB | Yes | >96 dB | 0.002% | N/A | 19" rack unit | $749 |
|  | Yes/Yes | ±15 dB | +4 to -10 dB | Yes | 106 dB, 0 dB gain | N/A | 5.5 | 3.5x7.9x19 | $749 |
| N/A | No/No | ±16 dB | +4 dB | No | -95 dB | 0.005% | 12 | 19x1.75x12 | $2,360 |
| N/A | No/No | ±20 dB | +4 dB | Nc | 122 dB | 0.05% | 24 | 5.25x19x10 | $4,880 |
| N/A | No/No | ±20 dB | +4 dB | Yes | >100 dB | >.002% | 25 | 3.5x12x19 | $2,995 |
| RS232 serial I/O | Yes/Yes | Graphic: ±6 or ±12 dB parametric: +12 to -84 dB | +29 dBv | Yes | >110 dB | <0.01% @ 1 kHz | 9 | 19x3.5x9.5 | (GRQ-3110Z) $1,299 (GRQ-3102S) $1,099 |
| RS232 serial I/O | Yes/Yes | Graphic: ±6 or ±12 dB; parametric: +12 to -84 dB | +29 dBv | Yes | >110 dB | <0.01% @ 1 kHz | 9 | 19x3.5x9.5 | (GRQ-3101) $799.95 (GRQ-3101S) $699.95 |
| (1) RS 232 serial I/O | Yes/Yes | Graphic: ±6 or ±12 dB; parametric: +12 to -84 dB | +29 dBv | Yes | >110 dB | <0.01% @ 1 kHz | 9 | 19x3.5x9.5 | $1,799 |
| RS 232 serial I/O | Yes/Yes | Graphic: +15 to -15 dB | +29 dBv | Yes | >110 dB | <0.02% @ 1 kHz | 9 | 19x3.5x9.5 | $1,999.95 |
| N/A | No/No | ±15 dB | +4 dBu | Yes | >110 dB | 0.003% | 22 | 3 rackspaces | $1,895 |
| N/A | No/No | +18 to -20 dB | +4 dB | Yes | 105 dB | 0.05% @ +4 dBm | 16 | 3.5x10.5x19 | $3,950 |
| N/A | No/No | 20 dB | +4 dB | Yes | 105 dB | 0.05% (unweighted) | 19 | 3.5x10.5x19 | $2,500 |
| No | Yes/Yes | ±16 dB | +4 dB | Yes | >120 dBu | <0.0025% @ +20 dBu | 27 |  | $4,495 |
| N/A | Yes/Yes | 10 dB | 2 dBu (0.775V rms) | Yes | 108 dB | <0.02% | 8 | 3.5x19x8 | $1,435 |
| N/A | Yes/Yes | 12 dB | 0 dBu (0.775V rms) | Yes | 100 dB | <0.05% | 9 | 1.75x19x12 | $1,165 |
| N/A | Yes/Yes | 12 dB | 0 dBu (0.775V rms) | Yes | 109 dB | <0.02% | 7 | 3.5x19x9.2 | $1,000 |
| XLR, AES/EBU | Yes/Yes | -25 to +155 dB | +4 dBu | No | 105 dB | 0.02% | 8 | 1.7519x11.8 | $2,475 |

# MIDI INTERFACES, PATCH BAYS & PROCESSORS

| Manufacturer | Product | Computer Interface | # of MIDI Ins/Outs | Merging | Filtering | Rechannelizing | Controller Remapping | Keyboard Split/Zones | # of Patches | Synchronization Type | Special Features | Price |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Digital Music | MX-28M MIDI patch bay/merger | N/A | 2/8 | Yes | No | Yes | No | Yes | N/A | N/A | Mapping; transposition; LED data indicators; panic button | $399 |
| Digital Music | MX-28S MIDI Patch Bay | N/A | 2/8 | No | No | No | No | N/A | N/A | N/A | Output disable; LED data indicators | $89 |
| Digital Music | MX-8 MIDI Patchbay/Processor | N/A | 6/8 | Yes | Yes | Yes | No | Yes | 50 | N/A | Vel scaling/cmpndr; Velocity cross-switch/MIDI delays; pitch chaining; alphanumeric display | $399 |
| Digital Music | Funnel | N/A | 6/1 | No | No | No | No | N/A | N/A | N/A | Auto MIDI input selector for routing SysEx data | $79 |
| Emagic | AMT 8 | Mac; Win 95, 98, NT | 8/8 (expand to 64/64) | Yes | Yes | No | No | N/A | 32 | N/A | USB/serial (Mac and PC); connects w/other AMT 8 and Unitor 8 units (up to 8) | N/A |
| Emagic | Unitor 8 | Mac; Win 95, 98, NT | 8/8 (expand to 64/64) | Yes | Yes | No | No | N/A | 32 | SMPTE; VITC (generates and reads) | VTC burn-in; updatable firmware; click in; OMS; Free MIDI/MME comp | $799 |
| Independent Audio | DACS Ltd. MIDO Patch Bay | N/A | 10/10 | No | No | No | No | N/A | 40 | N/A | Uses ¼" patch cords | $295 |
| JLCooper | MLA-1/MLA-10 | N/A | 4/4 | No | No | No | No | N/A | N/A | N/A | Extends MIDI cable runs over 1000' | $369.95 $499.95 |
| Mark of the Unicorn | Fast Lane | Mac | 1/3 | No | No | No | No | N/A | N/A | N/A | Powers off computer; bypass allows use of MIDI controller when computer is off | $59 |
| Mark of the Unicorn | Micro Express | USB | 4/6 | Yes | Yes | Yes | No | N/A | 16 (8 presets/ 8 user) | SMPTE; MTC | Operates w/o computer; supplies MMC; freewheels over SMPTE drop-outs; converts click to MIDI; 2 pedal ins | $295 |
| Mark of the Unicorn | MIDI Express XT | USB | 8/9 | Yes | Yes | Yes | No | N/A | 16 (8 presets /8 user) | SMPTE; MTC | Operates w/o computer; supplies MMC; freewheels over SMPTE drop-outs; converts click to MIDI; 2 pedal inputs | $395 |
| Mark of the Unicorn | MIDI Timepiece AV | USB | 8x8 | Yes | Yes | Yes | No | N/A | 8 base setups; 128 patches | SMPTE; MTC; video and word clock; Digidesign Superclock | Operates w/o computer; supplies all SMPTE firm rates; 4x MIDI data rate on Mac; 2 pedal inputs | $595 |
| Mark of the Unicorn | PC-MIDI Flyer | Win | 2/2 | No | No | No | No | N/A | N/A | N/A | Powrs off computer; bypass allows use of MIDI controller when computer is off | $89 |
| Mark of the Unicorn | Pocket Express | Mac; Win | 2/4 | No | No | No | No | N/A | N/A | SMPTE; MTC | Bypass allows use of MIDI controller when computer is off; SMPTE free-wheeling over drop-outs | $165 |
| MIDI Solutions | Mapper | N/A | 1/1 | No | No | No | Yes | N/A | N/A | N/A | MIDI-powered; program via SysEx | $99 |
| MIDI Solutions | Merger; Quadra Merge; M8 | N/A | 2/1, 4/1, 8/1 | Yes | No | No | No | N/A | N/A | N/A | MIDI-powered | $79; $129; $279 |
| MIDI Solutions | Relay R8 | N/A | 1/1 | No | No | No | No | N/A | 128 | N/A | MIDI-powered | $99; $429 |
| MIDI Solutions | Router | N/A | 1/2 | No | Yes | Yes | No | Yes/10 | N/A | N/A | MIDI-powered; prog via SysEx | $99 |
| MIDI Solutions | Thru; Quadra Thru; T8 | N/A | 1/2; 1/4; 1/8 | No | No | No | No | N/A | N/A | N/A | All messages appearing at In is sent to all Outs; MIDI-powered | $49; $59; $199 |
| MIDI Solutions | Velocity Converter | N/A | 1/1 | No | No | No | No | N/A | 40 | N/A | Applies velocity curves to MIDI data; MIDI-powered; program via SysEx | $99 |
| Midiman | Bi Port 2x4 | Mac; Win | 32/64 | No | No | No | No | N/A | N/A | SMPTE; MTC | Serial port interface | $179.95 |
| Midiman | Digipatch 12x6 | Mac; Win | N/A | No | No | No | No | N/A | N/A | N/A | Coax/optical S/PDIF; ADAT light pipe; patch bay | $699.95 |
| Midiman | Macman | Mac | 1/3 | No | No | No | No | N/A | N/A | N/A | Passive Thru; serial Thru (ground port); serial cables included | $59.95 |
| Midiman | Merge 2x2 | N/A | 2/2 | Yes | No | No | No | N/A | N/A | N/A | | $99.95 |
| Midiman | Mini Macman | Mac | 1/1 | No | No | No | No | N/A | N/A | N/A | Serial cable included | $39.95 |
| Midiman | Portman 2x4 | Win | 2/4 | No | No | No | No | N/A | N/A | N/A | 32-ch in/64-ch out; includes cable | $179.95 |

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# MIDI INTERFACES, PATCH BAYS & PROCESSORS

| Manufacturer | Product | Computer Interface | # of MIDI Ins/Outs | Merging | Filtering | Rechannelizing | Controller Remapping | Keyboard Split/Zones | # of Patches | Synchronization Type | Special Features | Price |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Midiman | Portman 4x4S | Win | 4/4 | No | No | No | No | N/A | N/A | SMPTE; MTC | External 4x4 w/SMPTE; 4x4 patch bay/merger; native Win 95 drivers | $279.95 |
| Midiman | Portman PC/P | Win | 1/1 | No | No | No | No | N/A | N/A | N/A | Includes cable (parallel) | $79.95 |
| Midiman | Portman PC/S | Win | 1/1 | No | No | No | No | N/A | N/A | N/A | Includes serial cable | $79.95 |
| Midiman | Thru 1x4 | N/A | 1/4 | No | No | No | No | N/A | N/A | N/A | | $59.95 |
| Midiman | Thru 3x8 | N/A | 3/8 | No | No | No | No | N/A | N/A | N/A | | $99.95 |
| Midiman | USB Midiport 2x2 | Mac; PC; iMac | 2/2 | No | No | No | No | N/A | N/A | N/A | USB port intreface | $129.95 |
| Midiman | Winman 1x1 | Win | 1/1 | No | No | No | No | N/A | N/A | N/A | | $69.95 |
| Midiman | Winman 2x2 | Win | 2/2 | No | No | No | No | N/A | N/A | N/A | | $89.95 |
| Midiman | Winman 4x4/S | Win | 4/4 | Yes | No | No | No | N/A | N/A | SMPTE; MTC | 64-channel; ISA; native Win 95 drivers; 4x4 patch bay | $249.95 |
| Opcode | MIDI Engine 2 Port/SE | Win | 2/2 | No | Yes | Yes | Yes | N/A | N/A | Reads/writes SMPTE; converts to MTC; routes MTC and MMC | | $199.95 |
| Opcode | MIDI Translator PC | Win | 2/2 | No | Yes | No | Yes | N/A | N/A | Passes MTC and MMC | Up to 4 units dock for expansion up to 128 channels | $129.95 |
| Opcode | MQX-32M | Win (MIDI ISA/EISA card) | 2/2 | Yes | Yes (in some modes) | No | Yes (in some modes) | N/A | N/A | Reads/writes SMPTE (converts to MTC) | | $249.95 |
| Opcode | PC MIDI Card II | Win (ISA/ EISA card) | 1/1 | No | Yes | Yes | Yes | N/A | N/A | Passes MTC, MBC, MMC | | $99.95 |
| Opcode | Studio 128X | Mac; Win | 8/9 | Yes | Yes | Yes | Yes | Yes/up to 128 (Mac only) | 8 user, 4 preset | SMPTE; MTC; routes MMC | Route/merge any In(s) to any Out(s), thru port; footswitch/trigger in | $429 |
| Opcode | Studio 5 LX | Mac | 15/15 | Yes | Yes | Yes | Yes | Yes/up to 128 splits and zones | 128 | Reads/writes/ cnvrts SMPTE to MTC; routes/ passes MTC, MMC | Networks w/other Studio 5 units; Velocity scaling; studio patch editor (Mac); thru ports | $1,195 |
| Opcode | Studio 64X | Mac; Win | 4/5 | Yes | Yes | Yes | Yes | Yes/128 (Mac only) | 4 user, 4 preset | Reads/writes SMPTE to MTC; conversion routes MTC and MMC | Panic button; tune setting; Velocity scaling; studio patch editor (Mac); thru port | $319.95 |
| Opcode | Studio 64XTC | Mac; Win | 4/6 | Yes | Yes | Yes | Yes | Yes/up to 128 | 4 user, 4 preset | ADAT sync; word clock/Superclock out; video/block brst rel in; SMPTE; MTC; MMC | Panic button; networks w/Studio 4; OMS compatible; Velocity scaling; OMS studio patches (Mac) | $495 |
| Opcode | Translator II | Mac | 1/3 | No | No | No | No | N/A | N/A | Passes MTC | Thru port | $59.95 |
| Opcode | Translator Pro | Mac | 2/6 | No | No | No | No | N/A | N/A | Passes MTC, MMC | Dual thru ports | $109.95 |
| Rolls | RFX MP1288 MIDI Wizard | N/A | 1/1 | Yes | No | No | Yes | N/A | 128 | N/A | MIDI song select and start/stop; up to 8 program changes on 8 MIDI channels w/1 switch; 8 CCs | $199.99 |
| Steinberg | Micro MIDI Interface | Mac | 1/1 | No | No | No | No | N/A | N/A | N/A | Portable; no power supply required | $49 |

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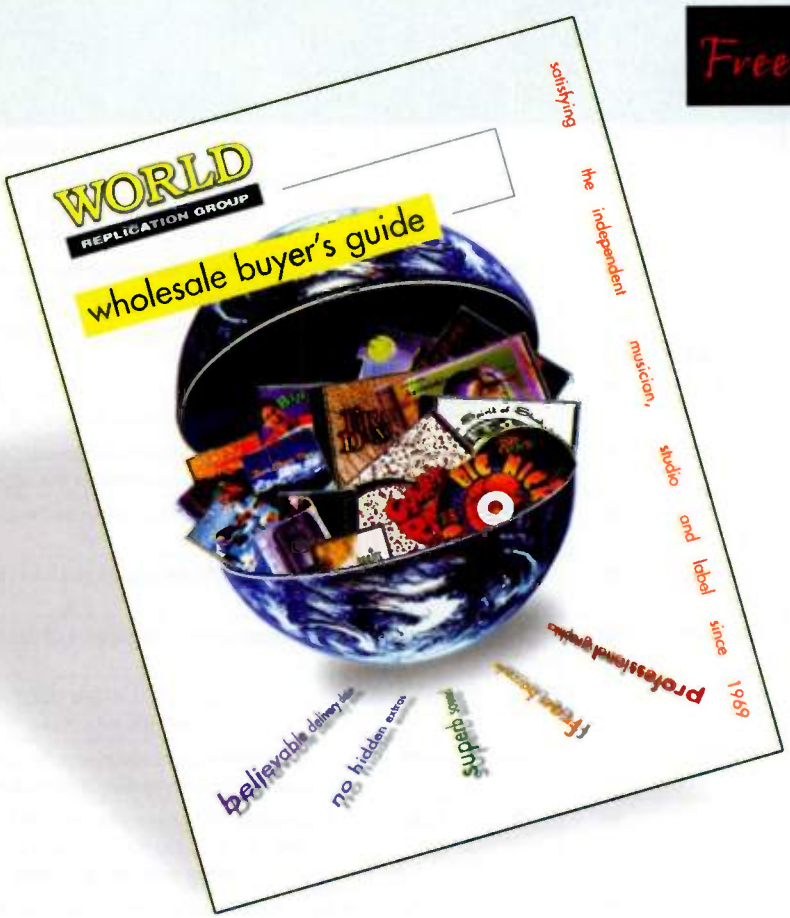


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# SYNCHRONIZERS

| Manufacturer | Product | SMPTE | Jam Sync | Freewheeling | MTC/MMC | Special Features | Price |
|---|---|---|---|---|---|---|---|
| Aardvark | AardSync II | N/A | No | No | N/A | Low jitter word clock/superclock sync gen; eliminates clicks/pops; locks to video sync; optional generation of PAL/NTSC block burst; all sample rates | $1,795 |
| Aardvark | Sync DA/Word Clock Distribution Amp | N/A | No | No | No/No | Generates word clock from AES/EBU; 5 word clock outputs; supports Digidesign 256 Superclock | $795 |
| Aardvark | TimeSync II | Input | Yes | Yes | Yes/Yes | Derives ultra-low jitter word clock/Superclock and MTC from LTC/VITC in; locks in 4 frames | $1,295 |
| Alesis | BRC Master | 24, 25, 29.97, 29.97d, 30, 30d | No | Yes | Yes/Yes | Connects direct to ADAT; video in; word-clock I/O | $1,499 |
| Audio Engineering Associates | CB Electronics MC-1 | All | Yes | Yes | No/No | Series 9-pin/parallel control for simultaneous control of 35 mm film dubbers (bi-phase) and time-card driver DAWs, etc | $7,945 |
| Digidesign | SMPTE Slave Driver (SSD) | LTC, all rates | No | No | Yes/No | Resolves sample clock to free-run LTC; generates SMPTE (LTC); 44.1–48 kHz; with pull-up/down; low-jitter Apogee clock | $1,295 |
| Digidesign | Universal Slave Driver (USD) | LTC, VITC, biphase, pilot tone | Yes | Yes | Yes/No | Near sample-accurate lock, pull-up/down; window burn | $2,095 |
| Digidesign | Video Slave Drive (VSD) | VITC | No | No | No/No | NTSC or PAL; resolves sample clock to video black | $995 |
| Independent Audio | Motionworks R2P2 | Remote control | Yes | Yes | Yes/Yes | Controls over 200 machines w/Sony 9-pin serial controls | $1,125 |
| JLCooper | dataSunc2 | All | No | No | Yes/Yes | Controls to ADAT, MTC/SMPTE/MIDI clock with song postion pointer | $299.95 |
| JLCooper | MMC/9 Pin | All | Yes | Yes | Yes/Yes | Controls 9-pin compressor video tap receives from MMC compatible computer-based sequencers/digital editing systms | $499.95 |
| JLCooper | PPS-2 | All | Yes | Yes | Yes/No | Reads/generates SMPTE timecode and converts SMPTE to MTC or DTL; PPS-2 plus option allows MTC to LTC conversionn ($49.95); software for Mac, Win, Atari available | $169.95 |
| Mark of the Unicorn | Digital Timepiece | LTC, VITC, MTC, 24, 25, 29.97, 29.97d, 30, 30d | Yes | Yes | Yes/Yes | Reads/generates all standard forms of word clock and timecode, Sony 9-pin MC, video, ADAT, DA-88, S/PDIF sync; supports Digidesign Superclock for ProTools; 0.1% pull-up/down sample rates (44.1/48 kHz) | $995 |
| Mark of the Unicorn | MIDI Timepiece AV | LTC and MTC, all rates | Yes | Yes | Yes/Yes | Compatible networkable MIDI interface; syncs ADAT to SMPTE, MTC, video w/o BRC; word-clock out, slaves Pro Tools to SMPTE, MTC, video; supports MMC | $595 |
| Midiman | Syncman | 24, 25, 30, 30d | Yes | No | Yes/No | Syncs sequencers, drum machines, MIDI lighting controllers to tape or video | $199.95 |
| Opcode | Studio 64XTC | All | Yes | Yes | Yes/Yes | ADAT sync; simultaneous word-clock and Superclock out; video/black burst ref; reads/writes SMPTE; converts SMPTE to MTC; rates MMC/MTC; optional Sony 9-pin sync expandable; full OMS supports | $495 |
| Steinberg | ACI ADAT | N/A | No | No | Yes/Yes | Sync computer to ADAT w/o audio track | $399 |
| TASCAM | ES-60 | All | Yes | Yes | No/No | | $1,499 |
| TimeLine | Lynx-2 | 24, 25, 29.97, 29.97d, 30, 30d | Yes | Yes | Yes/No | Cross-frame sync; film-card option | $2,995 |
| TimeLine | Microlynx | 24, 25, 29.97, 29.97d, 30, 30d | Yes | Yes | Yes/No | Audio clock-genertor optional card generates Superclock for sync to Pro Tools; VITC-reader card available; includes two-machine synchronizer and keyboard controller | $2,995 |

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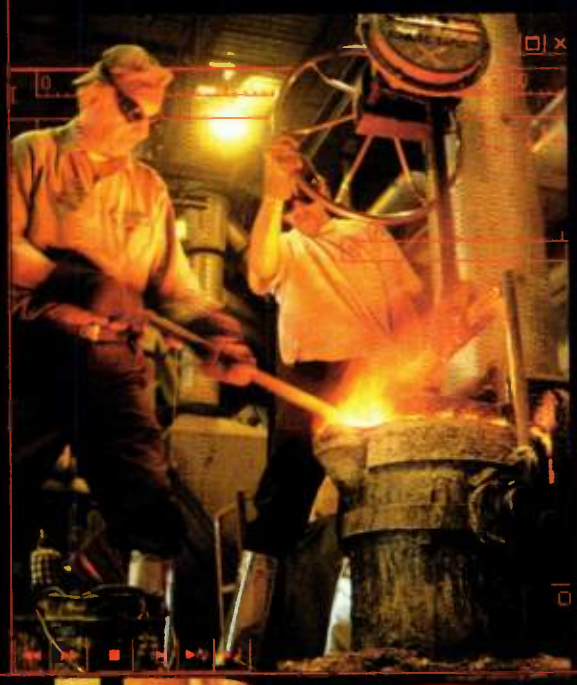

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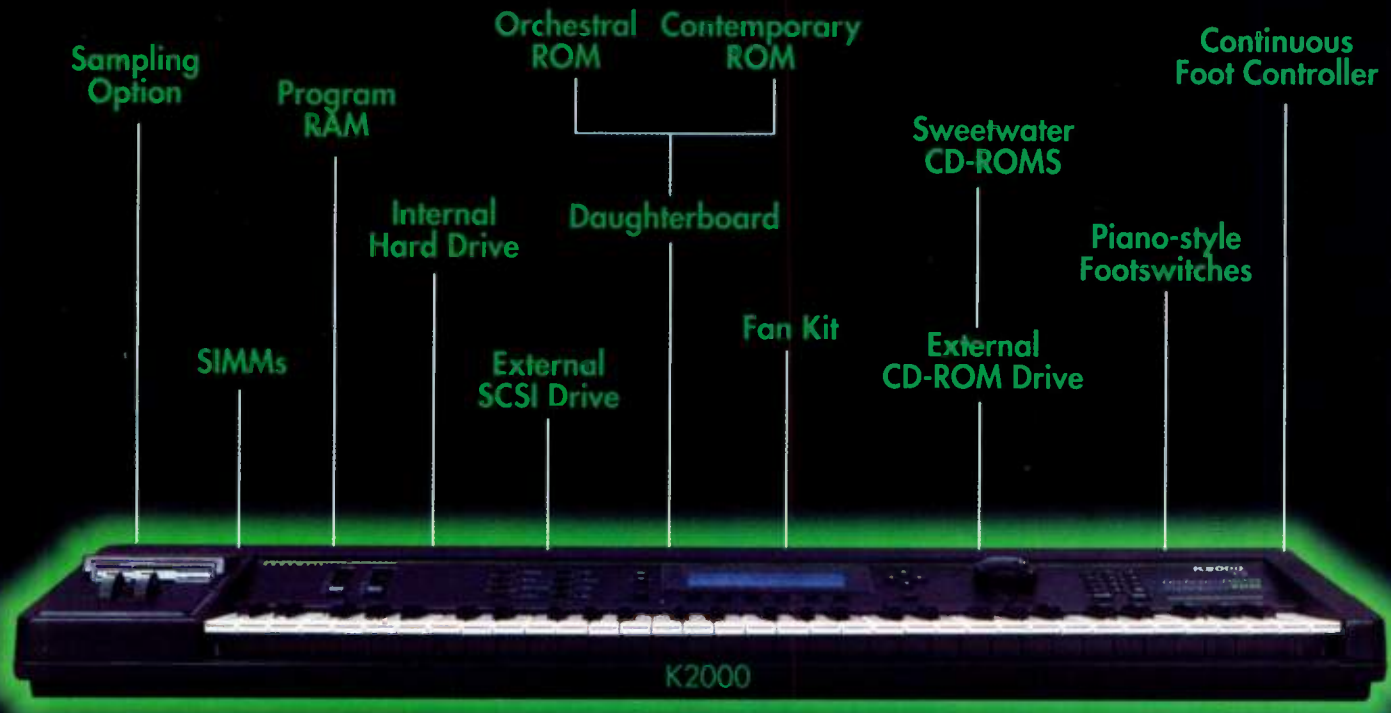
# OPTIONS

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These charts will give you an idea of the powerful options available to you. With the Kurzweil K2 Series instruments, you get tremendous value as you can select the features you want — without paying for the ones you don't.

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- **Orchestral ROM:** 8 MB of superb quality solo and ensemble Symphonic Instruments.
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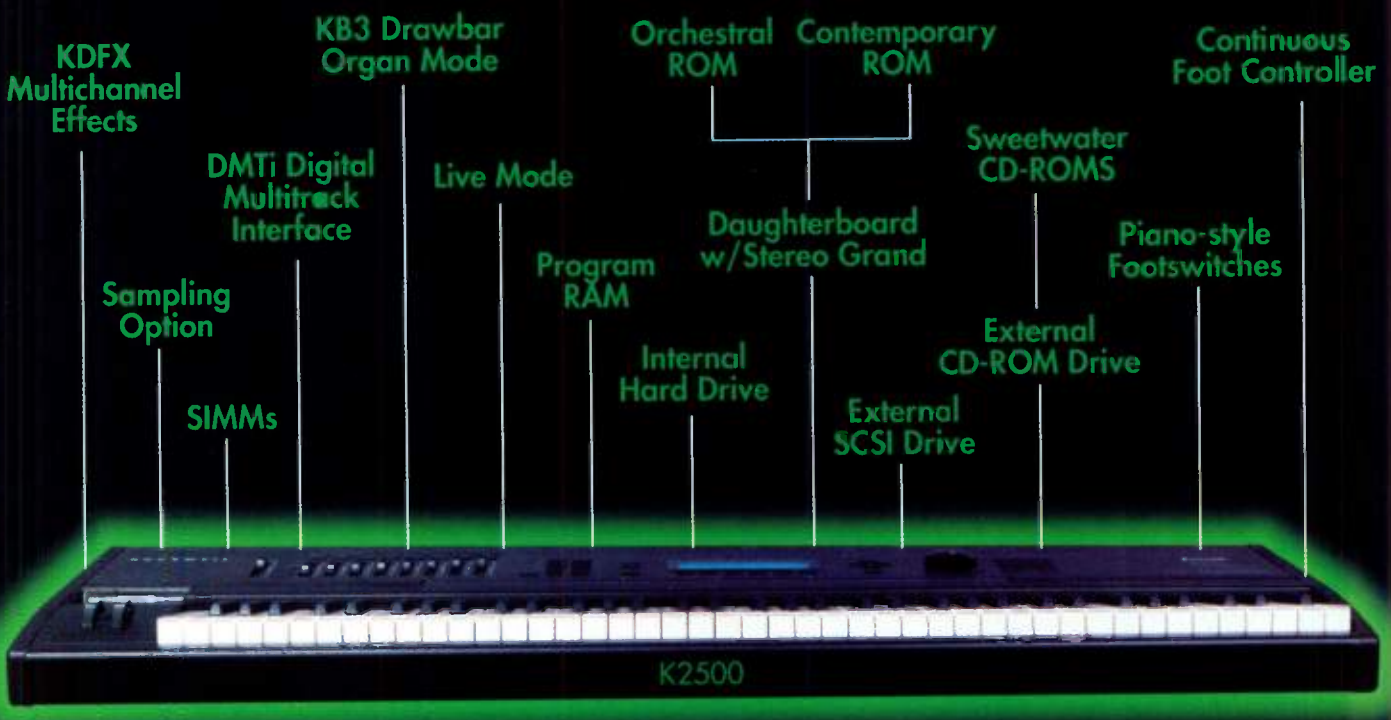


- **Program RAM:** Holds additional Programs and Songs (not Samples) even after power off.
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# 4 Electronic Musical Instruments & Microphones

For the purposes of this guide, the term *electronic musical instruments* refers to synthesizers, samplers, and drum machines.

We have provided separate charts for Keyboard Synths/Samplers and Synth/Sampler Modules. These devices offer so many features that we despaired of describing them all—fortunately, the tables cover a lot of territory and are easy to understand. The main difference between the two charts is, of course, the keyboard-specific features, such as the number of keys and physical controllers. We list synthesizers together, whether or not they come with onboard sequencers.

Microphones are essential at the beginning of your recording chain, so making good mic choices is critical. The most obvious differences are in basic type: condensers tend to be highly sensitive, dynamic models can usually take more punishment, and ribbon mics (which appear to be making a comeback) are in a class by themselves. Most of the specifications are important, but we think you should pay special attention to polar patterns and suggested applications. The polar-pattern specs indicate a mic's approximate pickup attributes, which determine what is captured and what is rejected. The suggested applications give you a good general idea of the manufacturer's intent.

Drum machines seem to be a fast-disappearing breed; we know of only five companies that still make them for the U.S. market. It's difficult to evaluate these products using a table because the most important question is whether you like the sounds a model produces. Nevertheless, we note such details as a unit's onboard effects, number of onboard sounds, and any special features. (Note that the Akai MPC2000 has no onboard sounds because it is a sampling drum machine. The number of sounds you can load into its memory depends on the amount of RAM installed and the size of the samples.) One other spec worth checking is the number of MIDI ports a model provides: the MPC2000 has two sets of MIDI I/O ports and can support up to 32 MIDI channels; in contrast, the Zoom machines come with only one MIDI In port and no MIDI Out.


146 Keyboard Synthesizers & Samplers

150 Synthesizer & Sampler Modules

154 Microphones

170 Drum Machines

# audix cx-series

# IT'S A QUESTION OF SOUND

**TRUE CONDENSERS**
Other microphones claim to be "large diaphragm condensers" when they are no more than 1/2" or 3/4" electrets. Their performance simply does not compare to the sound produced by the Audix CX Series which employs a full 1" gold vapor diaphragm requiring a minimum of 48 volts phantom power.

**HEAR THE DIFFERENCE**
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**WHY COMPROMISE?**
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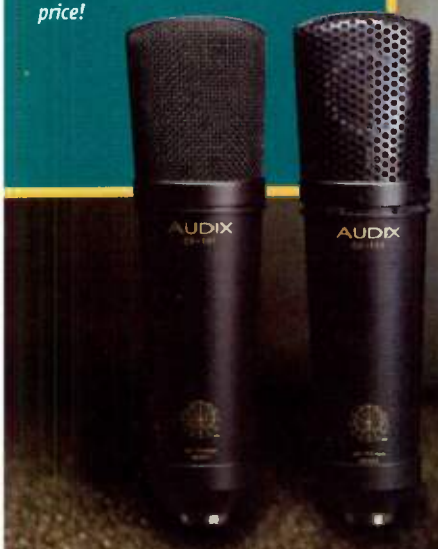
*The only compromise we made was the price!*



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# KEYBOARD SYNTHESIZERS & SAMPLERS

| Manufacturer | Product | Polyphony/ Multitimbral Parts | Waveform Memory ROM/RAM | Filter Types/ Resonance | Single Programs ROM/RAM | Multitimbral Performances ROM/RAM | Portamento | GM/GS/XG Compatible | Built-In Computer Interface/Type | Disk Drive Type | Number of Keys | # of Keyboard Zones (max) | Left-Hand Controllers |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alesis | QS6.1 | 64/16 | 16/16 MB (w/flash cards) | LP/Yes | 512/128 | 400/100 | Yes | GM | Yes/serial | N/A | 61 (semi-weighted) | 16 | Pitch; modular; 4 sliders |
| Alesis | QS7.1 | 64/16 | 16/16 MB (w/flash cards) | LP/Yes | 512/128 | 400/100 | Yes | GM | Yes/serial | N/A | 76 (semi-weighted) | 16 | Pitch; modular; 4 sliders |
| Alesis | QS8.1 | 64/16 | 16/16 MB (w/flash cards) | LP/Yes | 512/128 | 400/100 | Yes | GM | Yes/serial | N/A | 88 (weighted) | 16 | Pitch; modular; 4 sliders |
| E-mu Systems | E-Synth | 64 (exp to 128)/16 (exp to 32) | 16 MB (exp to 64)/16 MB (exp to 128) | 20 Types/ Yes | Yes | 0/1 | Yes | N/A | Yes/SCSI | Floppy | 76 (semi-weighted) | 0 | Pitch; modular, thumby button |
| E-mu Systems | ESI 4000 Turbo Keyboard | 128/16 | 128/128 MB | 20 Types/ Yes | 1,000/1,000 | 0/1 | Yes | N/A | Yes/SCSI | SCSI; internal floppy; SCSI port | 76 | 76 | Pitch; modular, thumby button |
| Ensoniq | Ensoniq Avista | 32/16 | 8 MB | N/A | 128/No | 16/0 | No | GM; GS; XG | No | 1.4 MB floppy | 76 | 1 | 0 |
| Ensoniq | Ensoniq Fizmo | 45/16 | 4 MB | N/A | 64/128 | 1 | Yes | N/A | No | N/A | 61 | 4 | Pitch; modular |
| Ensoniq | ZR-76 | 64/16 | 30/4 MB | LP/No | 468/256 | 32/0 | Yes | GM | No | 1.4 MB floppy | 76 | 3 | Pitch; modular |
| Generalmusic | Equinox 61, 76, and Pro88 | 64/16 | 16/40 MB | HP; LP; BP/Yes | 1,200/ 12,000 | 112+16 drawbar | Yes | GM; GS | Yes/serial and SCSI (strd. on Pro Version) | Internal HD floppy (standard on Powerstation) | 61; 76; 88 | 16 | Pitch; modular |
| Generalmusic | SK 760 and 880 World Keyboards | 64/32 | 16/40 MB | HP; LP; BP/Yes | 1,000/1,000 | 64/0 | Yes | GM; GS | Yes/serial, SCSI (optional) | Internal HD floppy (standard on Powerstation) | 76; 88 | 32 | Pitch; modular |
| Korg | N1 | 64/32 | 18/0 MB | Resonant filter effect algorithm | 1,196/100 | 302/100 | Yes | GM; GS; XG | Yes/serial PC or Mac | N/A | 88 (weighted) | 32 | Pitch; modular, 4 knobs |
| Korg | N264 | 64/16 | 8/0 MB | N/A | 336/200 | 200/200 | No | GM | No | 3.5" HD/DD floppy | 76 | 16 | X/Y joystick |
| Korg | N364 | 64/16 | 8/0 MB | N/A | 336/200 | 200/200 | No | GM | No | 3.5" HD/DD floppy | 61 | 16 | X/Y joystick |
| Korg | N5EX | 64/32 | 18/0 MB | Resonant filter effect algorithm | 1,196/100 | 302/100 | Yes | GM; GS; XG | Yes/serial PC or Mac | N/A | 61 | 32 | Pitch; modular; 4 knobs |
| Korg | SG Pro X | 64/1 | 24 MB | N/A | 0/64 | 0/64 | No | N/A | No | N/A | 88 (weighted) | 10 | Pitch; modular; 5-band EQ; 4 sliders; 6 switches |
| Korg | Trinity | 32/16 | 24/0 MB | HP; LP; BP; band reject/No | 0/256 | 0/256 | No | N/A | No | 3.5" HD/DD floppy | 61 | 16 | Ribbon; X/Y joystick; 2 switches; slider |
| Korg | Trinity V3 | 38/16 | 24/0 MB | HP; LP; BP; band reject/No | 0/320 | 0/256 | Yes | N/A | No | 3.5" HD/DD floppy | 61 | 16 | Ribbon; X/Y joystick; 2 switches; slider |
| Korg | Trinity V3 Pro | 38/16 | 24/0 MB | HP; LP; BP; band reject/No | 0/320 | 0/256 | Yes | N/A | No | 3.5" HD/DD floppy | 76 | 16 | Ribbon; X/Y joystick; 2 switches; slider |
| Korg | Trinity V3 Pro X | 38/16 | 24/0 MB | HP; LP; BP; band reject/No | 0/320 | 0/256 | Yes | N/A | No | 3.5" HD/DD floppy | 88 (weighted) | 16 | Ribbon; X/Y joystick; (2) switches; slider |
| Korg | Z1 | 12/6 | N/A | HP; LP; BP; dual BP; band reject/No | 0/256 | 0/32 | Yes | N/A | No | N/A | 61 | 6 | Pitch; modular; 4-pole ribbon 2 switches; knobs for each oscillator |

| Aftertouch (Poly/Channel) | # and Type of Controller Inputs | # of Sequencer Tracks/ppqn | Sequencer Memory (Notes) | Types of Quantization | Arpeggiator | # of Effects Processors/ Effects Programs | # and Type of Audio Outputs | Special Features | Options | Price |
|---|---|---|---|---|---|---|---|---|---|---|
| Yes/No | 1 sustain; 2 assign | 16 (from flash card) | N/A | N/A | No | 1/8 | (2) 1/4" | CD-ROM; usr smpls/sqncs w/flash cards | Qcards; PCMCIA flash cards | $1,099 |
| Yes/No | 1 sustain; 2 assign | 16 (from flash card) | N/A | N/A | No | 1/8 | (4) 1/4" | CD-ROM; usr smpls/sqncs w/flash cards; dgtl out | Qcards; PCMCIA flash cards | $1,399 |
| Yes/No | 1 sustain; 2 assign | 16 (from flash card) | N/A | N/A | No | 1/8 | (4) 1/4" | CD-ROM; usr smpls/sqncs w/flash cards; dgtl out | Qcards; PCMCIA flash cards | $1,999 |
| No/Yes | 2 pedal | 48 (+ rack)/480 | 100,000+ | Input; output; swing | Yes | 2 | (8) analog; (2) S/PDIF | DMS digital modular synthesis; E4 Sampler compat | ADAT interface; hard drive; polyphony upgrade; MIDI expander | $3,395 |
| Yes/Yes | 2 pedal | 48/480 | 100,000+ | Input; output; swing | Yes | 2 | (8) analog; (16) ADAT (optional) | E4 emulator sampler w/DMS | ADAT I/O card; MIDI expander card; sound ROMS | $5,195 |
| No/No | 1 sustain | 2 | 25,000 | N/A | No | 1/2 | 2 (+ 2 headphone) | Built-in speakers; bench; music rack | | $929.99 |
| No/No | 0 | 0/0 | N/A | N/A | Yes | 5/41 | 2 (+ headphone) | Fizmo knobs to control transwaves | 23 knobs | $1,495 |
| Yes/Yes | 5/volume pedal; footswitches | 16/384 | 231 KB | 64th triplet to whole note; 11 different styles | Yes | 6/40 | (6) main L&R; aux L&R; headphone | Idea pad; drum machine | Sound cards; flash memory | $2,795 |
| Yes/Yes | 4/volume pedal; footswitches | 16/192 | 250,000 | 96th + 5-1/8 groove and 5-1/16 groove | Yes | 2/85 | (4) 1/4" | Sample translater; groove machine; tonewheel organ w/drawbars; 8 prog MIDI fdrs/swtchs | Pro upgrade incl 8 MB BBU mem; 1.2 GB HD; SCSI; Pro2 piano smpls (strd on Equinox Pro88) | (61) $1,995 (76) $2,195 (Pro88) $3,695 |
| Yes/Yes | 4/volume pedal; footswitches | 32/192 | 250,000 | 96th + 5-1/8 groove and 5-1/16 groove | No | 4/56 | (4) 1/4" | 224 styles (192 ROM/32 user) x 4; smpl trnsltr; groove machine; tonewheel organ w/drawbars | Powerstation vers/upgd incl 1.2 GB HD, complete Generalmusic style/sound libs; 200+ strd/pop/ rock tunes; 1,000 MIDI files | (SK760) $2,495; (SK760RS) $2,995; (SK880) $2,995; (SK880PS) $3,495 |
| No/Yes | 2 pedal; switch | 0/0 | N/A | N/A | Yes | 2/48 | (4) 1/4"; headphone | 4 real-time knobs; layer/split buttons | | $2,099 |
| No/Yes | 2 pedal/switch; damper | 16/96 | 32,000 | Hi; 32nd; 16th; 8th; 4th; triplet | Yes | 2/47 | (4) 1/4"; headphone | RPPR-plays patterns back on keys | | $2,400 |
| No/Yes | 2 pedal/switch; damper | 16/96 | 32,000 | Hi; 32nd; 16th; 8th; 4th; triplet | Yes | 2/47 | (4) 1/4"; headphone | RPPR-plays patterns back on keys | | $1,900 |
| No/Yes | 2 pedal; switch | 0/0 | N/A | N/A | Yes | 2/48 | (4) 1/4"; headphone | 4 real-time knobs; layer/split buttons | | $1,099 |
| No/Yes | 3 pedal; switch; damper | 0/0 | N/A | N/A | No | 2/12 | (2) 1/4"; headphone | 15 MB of piano samples; controls up to 8 ext modules | | $2,600 |
| No/Yes | 3 pedal; switch; damper | 16/192 | 80,000 | Hi; 32nd; 16th; 8th; 4th; triplet | No | 10/14 | (4) 1/4"; headphone | Touch-sens screen; 4 outs | Digital aud intrfc w/SCSI; ADAT optcl out; 8 MB flash ROM for smpl plybck; DSP anlg upgrd brd | $2,800 |
| No/Yes | 3 pedal; switch; damper | 16/192 | 80,000 | Hi; 32nd; 16th; 8th; 4th; triplet | No | 10/14 | (4) 1/4"; headphone | Touch-sens screen; 4 outs | Digital aud intrfc w/SCSI; ADAT optcl out; 8 MB flash ROM for smpl plybck; DSP anlg upgrd brd | $3,550 |
| No/Yes | 3 pedal; switch; damper | 16/192 | 80,000 | Hi; 32nd; 16th; 8th; 4th; triplet | No | 10/14 | (4) 1/4"; headphone | Touch-sens screen; 4 outs | Digital aud intrfc w/SCSI; ADAT optcl out; 8 MB flash ROM for smpl plybck | $4,350 |
| No/Yes | 3 pedal; switch; damper | 16/192 | 80,000 | Hi; 32nd; 16th; 8th; 4th; triplet | No | 10/14 | (4) 1/4"; headphone | Touch-sens screen; 4 outs | Digital aud intrfc w/SCSI; ADAT optcl out; 8 MB flash ROM for smpl plybck; 540 MB intrnl hard disk | $5,200 |
| No/Yes | 4 pedal; switch; damper; volume | 0/0 | N/A | N/A | Yes | 3/3 | (2) 1/4"; headphone | PCM/CIA slot stores 4000+ programs | DITRI-ADAT optical output; DSPBZI 6-voice expansion board | $2,600 |

# KEYBOARD SYNTHESIZERS & SAMPLERS

| Manufacturer | Product | Polyphony/ Multitimbral Parts | Waveform Memory ROM/RAM | Filter Types/ Resonance | Single Programs ROM/RAM | Multitimbral Performances ROM/RAM | Portamento | GM/GS/XG Compatible | Built-In Computer Interface/Type | Disk Drive Type | Number of Keys | # of Keyboard Zones (max) | Left-Hand Controllers |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Korg | Z1EX | 18/6 | N/A | HP; LP; BP; dual BP band reject | 0/256 | 0/32 | Yes | N/A | No | N/A | 61 | 6 | Pitch; mod; 4-pole ribbon 2 switches; knobs for each oscillator |
| Kurzweil | K2000VP | 24 (smpl playback); 96 (oscillator)/16 | 24 MB (exp to 64) | Various/Yes | 200/0 | 100 preset setups | Yes | GM w/GM compatible file | No | Floppy (SCSI optional) | 16 | 3 | Pitch; modular; slider |
| Kurzweil | K2500 AES (Audio Elite System) | 48 (sample playback); 192 (oscillator)/16 | 28/128 MB sample RAM; 125 MB PRAM) | LP; HP; BP; notch; AP/Yes | 450/1,000 | 200/1,000 | Yes | GM w/GM conversion disk | Y/SCSI (2) | Floppy; internal 2 gig HD | 88 | 8 | Pitch; modular; small ribbon; large ribbon; 2 push buttons; 8 sliders |
| Kurzweil | K2500; K2500S; K2500X; K2500XS | 48 (sample playback); 192 (oscillator)/16 | 8 MB RAM (exp to 128) | LP; HP; BP; notch; AP/Yes | 200/1,000 | 100/1,000 | Yes | GM w/GM conversion disk | Y/SCSI (2) | Floppy | 76 (K2500/ K2500S); 88 (K2500X/ K2500XS) | 8 | Pitch; mod; small ribbon; large ribbon; 2 push buttons; 8 sliders |
| Kurzweil | K2VX/S | 24 (sample playback); 96 (oscillator)/16 | 24 MB SIMMS (exp to 64) | Various/ Yes | 600/0 | 300 preset setups | Yes | GM w/GM compatible file | No | Floppy (SCSI optional) | 61 | 3 | Pitch; mod; slider |
| Kurzweil | PC88 | 32/16 | 6/0 MB | N/A | 64/0 | 32/128 | No | N/A | No | N/A | 88 | 4 | Pitch; mod; 3 push buttons; 4 sliders |
| Kurzweil | PC88MX | 64/16 | 12/0 MB | N/A | 269/0 | 64/128 | No | GM; GS; XG | No | N/A | 88 | 4 | Pitch; mod; 3 push buttons; 4 sliders |
| Nord | Nord Lead 2 | 16/4 | N/A | LP; HP; notch; comb/Yes | 59/40 | 100 | Yes | N/A | No | N/A | 49 | 2 | Pitch; mod |
| Nord | Nord Modular | 16/4 | N/A | 11 types/ Yes | 0/100 | 0/0 | Yes | N/A | No | N/A | 24 | 2 | |
| Roland | JP-8000 | 8/2 | 7 modeled | LP; BP; HP/Yes | 128/128 | 64/64 | Yes | N/A | No | N/A | 49 | 0 | Pitch; mod (lever), ribbon |
| Roland | JX-305 | 64/24 | 12 MB | LP; BP; HP; peaking/ Yes | 640/128 | 768/256 | Yes | N/A | No | SmartMedia card song storage | 61 | 0 | Pitch; mod (lever) |
| Roland | VK-7 | Full/4 | 93 modeled tonewheels/4 MB orchstrl snds | N/A | 64/16 | 0/0 | No | N/A | No | N/A | 61 | 0 | 9 drawbars, rotary speed, brake, bypass, drawbar select |
| Roland | XP-10 | 28/16 | 8 MB | LP/Yes | 338/256 | 64/32 | Yes | GM; GS | No | N/A | 61 | 0 | Pitch; mod (lever) |
| Roland | XP-30 | 64/16 | 32 (exp to 48 MB) | LP; BP; HP; peaking/ Yes | 1,534/128 | 64/32 | Yes | GM | No | N/A | 61 | 0 | Pitch; mod (lever) |
| Roland | XP-60 | 64/16 | 8 (exp to 40 MB) | LP; BP; HP; peaking/Yes | 512/128 | 64/32 | Yes | GM | No | 3.5" floppy | 61 | 0 | Pitch; mod; 2 sliders |
| Roland | XP-80 | 64/16 | 8 (exp to 40 MB) | LP; BP; HP; peaking/Yes | 512 /128 | 64/32 | Yes | GM | No | 3.5" floppy | 61 | 0 | Pitch; mod (lever); 2 sliders |

| Aftertouch (Poly/Channel) | # and Type of Controller Inputs | # of Sequencer Tracks/ppqn | Sequencer Memory (Notes) | Types of Quantization | Arpeggiator | # of Effects Processors/ Effects Programs | # and Type of Audio Outputs | Special Features | Options | Price |
|---|---|---|---|---|---|---|---|---|---|---|
| No/Yes | 4 pedal; switch; damper; volume | 0/0 | N/A | N/A | Yes | 3/3 | (2) 1/4"; headphone | Arpeggiator; PCM/CIA slot stores 4000+ progs | ADAT optical output | $3,100 |
| No/No | 3/pedal; footswitches | 32 (16 signal +16 arrange) | 30,000 (exp to 190,000) | Groove; reference; swing; shift | No | 1/37 | (4) 1/4"; AES/EBU (w/sampling option) | Vast synthesis; rds smpl libs frm Akai, Roland, Ensoniq, SCSI port; triggr sng stps frm keys in real time; incl 30-disk anlg classic lbry | 64 MB RAM; 24 MB ROM; hrd drive; sampling | $1,995 |
| Transmits both/ receives poly | 7/pedals; footswitches; breath | 32/768 | 156,000 | Groove; reference; swing; shift | Yes | 6/431 (inc KDFX) | (4) 1/4"; AES/EBU; optical, KDS | Vast synthesis; rds smpl libs frm Akai, Roland, Ensoniq, AIFF, Wave; triggr sng stps frm keys in real time; real-time resampling; "KB3"-drwbr emulations | Ships with all options | $20,000 |
| Transmits both/ receives poly | 7/pedals; footswitches; breath | 32/768 | 30,000 (exp to 156,000) | Groove; reference; swing; shift | Yes | 1/37 | (8) 1/4"; AES/EBU; optical, KDS | Vast synthesis; rds smpl libs frm Akai, Roland, Ensoniq, AIFF, Wave; triggr sng stps frm keys in real time; real-time resampling; "KB3"-drwbr emulations; KDFX | 128 MB smpl RAM; 28 MB smpl ROM; KDFX; hard drive sampling | (K2500) $5,556; (K2500S) $6,440; (K2500X) $6,120; (K2500XS) $7,000 |
| Transmits chan/ receives both | 3/pedal; footswitches | 32 (16 signal, +16 arrange) | 190,000 | Groove; reference; swing; shift | No | 1/37 | (4) 1/4"; AES/EBU (w/sampling option) | Vast synthesis; rds smpl libs frm Akai, Roland, Ensoniq; SCSI port; triggr sng stps frm keys in real time | 64 MB RAM; 24 MB ROM; hard drive; sampling | $1,995 |
| No/Yes | 6/pedals; footswitches | 0/0 | N/A | N/A | Yes | 1/40 | (2) 1/4" | | VGM board; music rack | $2,650 |
| No/Yes | 6/pedals; footswitches | 0/0 | N/A | N/A | Yes | 2/80 | (2) 1/4" | | Music rack | $3,750 |
| No/No | 2 pedal | 0/0 | N/A | N/A | Yes | N/A | (4) 1/4" | Analog modeling synth; 26 knobs, 28 buttons | PMC CIA cards w/ or w/o sounds | $1,795 |
| No/No | 2 pedal | Optional/480 | Infinite | N/A | Yes | 4/15 | (4) 1/4" | Builds synths frm scratch using over 110 synth bldng blcks w/sftwr | Exp up to 32 voices | $2,795 |
| No/ribbon sends channel | 2 pedal (assign/hold) | 0/0 | 23,000 | Grid | Yes | 3/18 | Stereo L/R; headphone | 38 knobs and sliders; new waveforms; recordable motion cntrls | DP-2/6 damper ped; EV-5 expr ped | $1,695 |
| Sends channel/ receives both | 4/pedals (assign/ hold); footswitches | 8/96 | 50,000 | Grid; shuffle; groove | Yes | 3/24 | Stereo L/R, headphone | 8 real-time knobs; 60 RPS sets; dance FX slicer, lo-fi, phonograph | DP-2/6 damper ped; EV-5/7 expr ped | $1,495 |
| No/No | 3/pedals (assign/ hold) | 0/0 | N/A | N/A | No | 1/4 | Stereo L/R; headphone; 11-pin rotary cab | Bal outs; 2nd manual w/any MIDI kybrd; prog key click; prog pickup leakage; vint/cln tonewheel models | DP-2/6 damper ped; EV-5/7 expr ped; PK-5/7 MIDI peds | $2,495 |
| Receives both | 2 pedal (assign/hold) | 0/0 | N/A | Arpegg; groove; shuffle | Yes | 2/16 | Stereo L/R x2; headphones | Combination palette sliders | DP-2/6 damper ped; EV-5 expr ped | $495 |
| Sends channel/ receives both | 2 pedal (assign/hold) | 0/0 | N/A | N/A | Yes | 3/40 | Stereo L/R x2; headphones | 2 exp slots; patch finder; prog sound palette sliders; sync exp; beatloops to MIDI | SR-JV80-series exp brds; SM-4 SmartMedia card; EV-5 expr ped; DP-2/6 damper ped | $1,395 |
| Sends channel/ receives both | 5 pedal (assign/hold) | 16/96 | 60,000 | Grid; groove; shuffle | Yes | 3/40 | Stereo L/R x2; headphones; click out | 4 exp slots; sound palette; disk quickplay; sync exp; beatloops to MIDI | SR-JV80 exp brds; DP-2/6 damper ped; EV-5 expr ped | $1,995 |
| Sends channel/ rece ves both | 5 pedal (assign/hold) | 16/96 | 60,000 | Grid; groove; shuffle | Yes | 3/40 | Stereo L/R x2; headphones; click out | 4 exp slots; sound palette; disk quickplay; sync exp; beatloops to MIDI | SR-JV80 exp brds; DP-2/6 damper ped; EV-5 expr ped | $2,495 |

# SYNTHESIZER & SAMPLER MODULES

| Manufacturer | Product | Polyphony/ Multitimbral Parts | Waveform Memory ROM/RAM | Filter Types/ Resonance | Single Programs ROM/RAM | Multitimbral Performances ROM/RAM | Portamento | GM/GS/XG Compatible | Built-In Computer Interface/Type | Disk Drive Type | # and Type of Controller Inputs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Akai | MPC2000 MIDI Production Center | 32/1 | 0 (exp to 16 MB)/32 MB | LP/Yes | 0/24 | 0/0 | No | N/A | Yes/SCSI | 200/2 HD floppy | |
| Akai | S20 Stereo Phrase Sampler | 8/16 | 17 MB | N/A | 0/16 | 0/16 | No | N/A | No | 200/2 HD floppy | 0 |
| Akai | S2000 MIDI Stereo Digital Sampler | 32/16 | 0 (exp to 32 MB)/32 MB | LP (exp to BP; HP; LP)/Yes | 0/255 | 0/1 | Yes | N/A | Yes/SCSI | 200/2 HD floppy | 0 |
| Akai | S3000XL MIDI Stereo Digital Sampler | 32/16 | 0 (exp to 32 MB)/32 MB | LP (exp to LP; BP; HP)/Yes | 0/255 | 0/1 | Yes | N/A | Yes/SCSI | 200/2 HD floppy | 0 |
| Akai | S5000 MIDI Stereo Digital Sampler | 64 (exp to 128)/32 | 0/256 MB | 26 types/Yes | 0/0 | 0/0 | No | N/A | Yes/SCSI 2x2 | 200/2 HD floppy | 0 |
| Akai | S6000 MIDI Stereo Digital Sampler | 64 (exp to 128)/32 | 0/256 MB | 26 types/Yes | 0/0 | 0/128 | No | N/A | Yes/SCSI-2x2 | 200/2 HD floppy | 0 |
| Alesis | DM Pro | 64/16 | 16/8 MB (w/flash cards) | LP/No | 1,536/128 | 0/64 | Yes | GM | No | N/A | 1 pedal |
| Alesis | DM5 Drum Module | 16/1 | 4 MB | LP/No | 0/20 | 0/0 | No | GM; GS; XG | No | N/A | 0 |
| Alesis | NanoBass | 64/1 | 4 MB | LP/No | 256/0 | 0/0 | Yes | N/A | No | N/A | 0 |
| Alesis | NanoPiano | 64/1 | 8 MB | LP/No | 256/0 | 0/0 | Yes | N/A | No | N/A | 0 |
| Alesis | NanoSynth | 64/16 | 8 MB | LP/No | 512/128 | 0/1 | Yes | GM; GS; XG | Yes/serial | N/A | 0 |
| Alesis | QSR Synth Module | 64/16 | 16/16 MB (addt'l w/flash RAM) | LP/No | 512/128 | 400/100 | Yes | GM; GS; XG | Yes/serial | N/A | 0 |
| E-mu Systems | Audity 2000 | 64/16 | 16 MB (exp to 32 MB) | 50 types, 17 6-pole/Yes | 640/512 | 16 | Yes | N/A | No | Floppy | 0 |
| E-mu Systems | E4XT Ultra | 128/32 | 64/16 MB (exp to 128 MB) | 21 types, 6-pole/Yes | 1,000/1,000 | 1 | Yes | N/A | Yes/SCSI | Floppy | 0 |
| E-mu Systems | EG400 Ultra | 64 (exp to 128)/16 (exp to 32) | 64/16 MB (exp to 128 MB) | 21 types, 6-pole/Yes | 1,000/1,000 | 1 | Yes | N/A | Yes/SCSI | Floppy | 0 |
| E-mu Systems | ESI 4000 Turbo Zip | 64/16 | 128/0 (exp to 12 MB) | 21 types, 6-pole/Yes | 0/256 | 1 | Yes | GM; GS; XG | Yes/SCSI | Zip | 0 |
| E-mu Systems | ESI-4000 | 64/16 | 128/0 ( exp to 128 MB) | 21 types, 6-pole/Yes | 0/256 | 1 | Yes | N/A | Yes/SCSI | Floppy | 0 |
| E-mu Systems | Esynth Ultra | 64 (exp 128)/ 16 exp to 32 | 16 MB (exp to 64 MB)/16 MB (exp to 128 MB) | 21 types, 6-pole/Yes | 1,000/1,000 | 1 | Yes | N/A | Yes/SCSI | Floppy | 0 |
| E-mu Systems | Orbit V2 | 32/16 | 8/0 MB | 17 types/Yes | 384/256 | 0/0 | Yes | N/A | No | N/A | 0 |
| E-mu Systems | Planet Phatt | 32/16 | 8/0 MB | 17 types/Yes | 384/256 | 0/0 | Yes | N/A | No | N/A | 0 |
| E-mu Systems | Proteus 2000 | 128/32 | 23 MB (exp to 128 MB) | 17 types/Yes | 1,024/512 | 0/128 | Yes | N/A | No | N/A | 0 |
| Ensoniq | ASR-X Pro | 32/16 | 2/2 MB (exp to 66 MB) | LP; HP; BP/Yes | 0/0 | 1 | Yes | N/A | Yes/SCSI | Floppy | 2 |

| # of Sequencer Tracks/ppqn | Sequencer Memory | Types of Quantization | Arpeggiator | # of Effects Processors/ Effects | # of Audio Outputs/Type | Special Features | Options | Price |
|---|---|---|---|---|---|---|---|---|
| 64/96 | 100,000 notes | 8th; 8th triplet; 16+ w/swing; 16th triplet; 32nd; 32nd triplet | No | (exp to 4)/0 (exp to 50 presets) | 2 (exp to 10)/ 1/4" | Reads S1000; S3000; WAV files; velocity and pressure sensitive pads; automated mixing | 8 output exp; Sample Verb FX; SMPTE board; 8 MB flash ROM | $1,599 |
| 4 | N/A | N/A | No | 0/0 | 2/RCA | Loop function | Supports S1000; S3000; XL-Series sounds | $649 |
| N/A | N/A | N/A | No | 0 (exp to 4)/ 0 (exp to 50 presets) | 2 (exp)/ 1/4" | MESA editing software (Mac/PC); SMF player | Multi-8/D output expander; Profilter exp; SampleVerb FX; 8 MB flash ROM board | $899 |
| N/A | N/A | N/A | No | 0 (exp to 4)/0 (exp to 50 presets) | 10/ 1/4" (and RCA digital) | Dir-to-disk rec; MESA computer software (Mac/PC); SMF player | SampleVerb FX; 8 MB flash ROM board; Profilter | $1,499 |
| N/A | N/A | N/A | Yes | 0 (exp to 4)/0 (exp to 50) | 8 (exp to 16)/ 1/4" | FAT16/32 native discs; word clock; WAV native sample format; folder-based disk management | 8 output expander; 64 voice exp; SampleVerb II FX; 8in/16out ADAT optical I/O | $2,499 (S5000 Studio) $3,499 |
| N/A | N/A | N/A | Yes | 0 (exp to 4)/0 (exp to 50) | 2/XLR; 16/ 1/4" | Remote front control panel; FAT16/32 native discs; WAV native sample format | 64-voice expamder; SampleVerb II FX; 8in/16out ADAT optical I/O | $3,499 (S6000 Stud o) $4,499 |
| 16 (playback)/ 480 | Up to 8 MB (w/flash card) | N/A | No | 1/5 | 6/ 1/4" TRS | 16 trigger ins; 2 RCA ins | | $899 |
| N/A | N/A | N/A | No | N/A | 4/ 1/4" | | | $449 |
| N/A | N/A | N/A | No | 1/8 | 2/ 1/4" | | | $299 |
| N/A | N/A | N/A | No | 1/8 | 2/ 1/4" | | | $399 |
| N/A | N/A | N/A | No | 1/8 | 2/ RCA | CD-ROM | RCA Audio inputs | $449 |
| 16 (w/flash card)/480 | Up to 8 MB (w/flash card) | N/A | No | 1/8 | 4/ 1/4" | Add sequences/samples via flash RAM; digital outs; CD-ROM | | $899 |
| N/A | N/A | N/A | Yes | 2/60 | 6 (stereo); S/PDIF | Digital rythmic modular synthesis; over 100 bpm | Downloads OS via Internet; second ROM set (Audity Extreme) | $2,149 |
| 48/480 | 4 MB (hundreds of thousands) | 1/4 to 1/64, w/swing | No | 2/60 | 8 (+8 opt)/ 16 ADAT out | Digital modular synthesis; resampling | RFX-32 (32-bit FX); flash ROM board; ADAT I/O; analog out expander | $3,595 |
| 48/480 | 4 MB (hundreds of thousands) | 1/4 to 1/64, w/swing | No | 2/60 | 8 (+8 opt)/ 16 ADAT out | Digital modular synthesis; resampling | MIDI x2 expander; digital I/O; ASCII; R-FX32 (32-bit FX); ROM board; ADAT I/O; analog out expander | $2,295 |
| N/A | N/A | N/A | No | 2/60 | 8 -1/4"; S/PDIF | 100 MB Zip drive; effects; 10 outs | | $2,149 |
| N/A | N/A | N/A | No | Optional | 4 (exp to 8)/ 1/4" | Trigger mode; SCSI | Turbo option kit adds output and effects | $1,449 |
| 48/480 | 4 MB (hundreds of thousands) | 1/4 to 1/64, w/swing | No | 2/60 | 8 (+8 opt) in/ 16 out ADAT | Digital modular synthesis; resampling | RFX-32 (32-bit FX); flash ROM board; ADAT I/O; analog out expander | $2,895 |
| N/A | N/A | N/A | No | N/A | 6/ 1/4" | Beats mode | | $795 |
| N/A | N/A | N/A | No | N/A | 6/ 1/4" | Beats mode | | $795 |
| N/A | N/A | N/A | No | 2 /30+ | 8/ 1/4"; 2 S/PDIF | Creates custom ROM sets using E4 Ultra samplers | | $995 |
| 16/384 | 70,000 (exp to 140,000) | Adjustable | No | 2/40 | Headphone | | | $1,695 |

# SYNTHESIZER & SAMPLER MODULES

| Manufacturer | Product | Polyphony/ Multitimbral Parts | Waveform Memory ROM/RAM | Filter Types/ Resonance | Single Programs ROM/RAM | Multitimbral Performances ROM/RAM | Portamento | GM/GS/XG Compatible | Built-In Computer Interface/Type | Disk Drive Type | # and Type of Controller Inputs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Fatar | Blue Chip Baby B Virtual Tonewheel Drawbar Module | 24/3 | All modeled | N/A | 99/99 | N/A | No | N/A | No | N/A | 0 |
| Fatar | Blue Chip OX-7 Virtual Tonewheel Drawbar Module | 24/3 | All modeled | N/A | 99/99 | N/A | No | N/A | No | N/A | 0 |
| Korg | N1R | 64/32 | 18/0 MB | Reso Filter FX algorithm/Yes | 1,471/200 | 32 | Yes | GM; GS; XG | Yes/PCIF serial (PC and Mac) | N/A | 0 |
| Korg | NX5R | 64–96/48 | 8/0 MB | N/A | 1,645/200 | 0/4 | No | GM; GS; XG | Yes/PCIF serial (PC and Mac) | N/A | 0 |
| Korg | SG Rack | 64/1 | 24/0 MB | N/A | 0/64 | 0/64 | No | N/A | No | N/A | 0 |
| Korg | TR Rack | 64/32 | 32/0 MB | HP; LP; BP; BR/No | 512 | 0/513 | No | N/A | Yes/PCIF serial (PC and Mac) | N/A | 0 |
| Kurzweil | K2000RVP | 24 for sample playback, 96 total oscillators | 24/24 MB (exp to 64 MB) | Various/Yes | 200/0 | 100/0 | Yes | GM; GS; XG (w/disk) | Yes/SCSI (2) | N/A | 0 |
| Kurzweil | K2500R; K2500RS | 48 for sample playback, 192 total oscillators/ 16 parts | 8 MB/ (RAM exp to 128 MB) | LP; HP; BP; notch; /AP/Yes | 200/ 1,000 | 100/ 1,000 | Yes | GM (w/disk) | Yes/SCSI (2) | Floppy | 0 |
| Kurzweil | Micropiano | 32/0 | 6/0 MB | N/A | 32/0 | 0/0 | No | N/A | No | N/A | 0 |
| Nord | Nord Micro Modular | 4/1 | N/A | 11 types/Yes | 0/100 | 0/0 | Yes | N/A | Yes/MIDI SysEx ports | N/A | 0 |
| Nord | Nord Modular Rack | 16/4 | N/A | 11 types/Yes | 0/100 | 0/0 | Yes | N/A | Yes/MIDI SysEx ports | N/A | 2 pedal |
| Nord | Nord Rack 2 | 16/4 | N/A | LP; HP; notch; comb/Yes | 59/40 | 100 | Yes | N/A | No | N/A | 2 pedal |
| Roland | JV-1080 | 64/16 | 8/exp to 40 MB | LP; BP; HP; peaking/Yes | 512/128 | 64/32 | Yes | GM | No | N/A | 0 |
| Roland | JV-2080 | 64/16 | 8/exp to 40 MB | LP; BP; HP; peaking/Yes | 640/128 | 64/32 | Yes | GM | No | N/A | 0 |
| Roland | JV-8080 | 10/2 | 7 modeled | LP; BP; HP; peaking/Yes | 384/128 | 192/64 | Yes | N/A | No | N/A | 0 |
| Roland | PMA-5 | 28/8 (16-part in GM mode) | 8 MB | LP/Yes | 306 (w/ Style)/200 (w/Style) | 306/0 | Yes | GM; GS | No | N/A | 0 |
| Roland | Roland GR-30 Guitar Synthesizer | 28/1 | 384 tones (8 MB)/0 | LP/No | 128/128 | 0/0 | No | N/A | No | N/A | 2 bank select/ expression |
| Roland | SC-880 | 64/32 | 8/8 MB | LP/Yes | 1,117/256 | 8/8 | Yes | GM; GS | No | N/A | 0 |

| # of Sequencer Tracks/ppqn | Sequencer Memory | Types of Quantization | Arpeggiator | # of Effects Processors/ Effects | # of Audio Outputs/Type | Special Features | Options | Price |
|---|---|---|---|---|---|---|---|---|
| N/A | N/A | N/A | N/A | 1/6 reverb programs | 2/ 1/4" (L/R) | Drawbars; Rotorsound simulations | VP-26 pedal/ PS-10 footswitch | $895 |
| N/A | N/A | N/A | N/A | 1/6 reverb programs | 2/ 1/4" (L/R) | Drawbars; Rotorsound simulations | VP-26 pedal; PS-10 footswitch | $1,595 |
| N/A | N/A | N/A | Yes | 2/48 | 4/ 1/4" | 4 assignable real-time control knobs | AG011 (PC); AG002 (Mac) serial cable/driver package (for 32 parts) | $850 |
| N/A | N/A | N/A | No | 2/47 | 2/ 1/4" | XG daughterboard; 96-voice polyphony/48 parts | AG001 (PC); AG002 (Mac) serial interface cable and driver software | $725 |
| N/A | N/A | N/A | No | 2/12 | 2/ 1/4" | 15 MB of high quality piano sounds | | $899 |
| N/A | N/A | N/A | Yes | 10/114 | 4/ 1/4" | All Trinity sounds; + 8 MB; Sound Diver editor program | DITRI-ADAT digital interface | $1,399 |
| 32 /768 | 30,000 notes (exp to 190,000) | Groove; reference; swing; shift | No | 1/37 | 8/ 1/4"; AES/EBU; XLR (w/sampling options) | Reads samples from Akai, Roland, Ensoniq; SCSI port; 30 disk analog classic library | 64 MB RAM; 24 MB ROM; hard drive; sampling | $1,995 |
| 32/768 | 30,000 notes (exp to 156,000) | Groove; reference; swing; shift | Yes | 1/37 (KDFX optional) | 8/ 1/4"; AES/EBU; XLR; optical KDS | Reads samples from Akai, Roland, Ensoniq, AIFF, Wave; real-time resampling; KB3 drawbar emulation | 128 MB sample RAM; 28 MB sample ROM; KDFX; hard drive; sampling | (K2500R) $4,475 (K2500RS) $5,250 |
| N/A | N/A | N/A | No | 1/16 | 2/ 1/4" | Can link 2 mics for 64-voice polyphony | | $550 |
| 4/480 | Infinite | N/A | Yes | 1/15 | 2/ 1/4" | Builds synths using 110 synth building blocks in software | | $899 |
| Optional/480 | Infinite | N/A | Yes | 4/15 | 2/ 1/4" | Builds synths using 110 synth building blocks in software | Expansion up to 32 voices | $2,495 |
| N/A | N/A | N/A | Yes | N/A | 4/ 1/4" | Analog modeling synth; 26 knobs and 28 buttons | PCMCIA cards for extra sounds | $1,665 |
| N/A | N/A | N/A | N/A | 3/40 | 3 (stereo); headphone | 4 exp slots; LFO sync to MIDI | SR-JV80 expansion boards; M-512E data card | $1,195 |
| N/A | N/A | N/A | N/A | 5/120 | 3 (stereo); headphone | 4 exp slots; PatchFinder; LFO sync to MIDI; sync exp | SR-JV80 expansion boards; M-512E data card | $1,695 |
| N/A | 23,000 notes | Grid | Yes | 3/19 | 1 (stereo); headphone | 38 knobs/sliders; line/mic ins; 12-band formant filter/vocoder/robot/ vocal morph | DP-2/6 damper pedal; EV-5 expression pedal | $1,595 |
| 4 pattern/ 4 linear | 21,000 notes | Grid | N/A | 2/16 | 1/minijack (stereo) | 100 preset styles; chord track; 26 chord types; ad lib bar; battery operated | PMA-55 PC/Mac conversion software; DP-2M start/stop pedal | $495 |
| N/A | N/A | N/A | Yes | 2/5+ | 1/ 1/4" stereo pair; 1/4" guitar | Synth wah; chromatic tuner; converts guitar to MIDI; foot pedal | | $895 |
| N/A | N/A | N/A | N/A | 5/64 | 2 (stereo); headphone | PatchFinder; audio input L/R | | $795 |

# MICROPHONES

| Manufacturer | Product | Type | Polar Patterns | Internal Roll-Off | Internal Pad |
|---|---|---|---|---|---|
| AKG | C 1000S | Condenser | Cardioid; hypercardioid w/PPC 1000 | N/A | N/A |
| AKG | C 3000 | Condenser | Cardioid; hypercardioid | 100 Hz | -10 dB, switchable |
| AKG | C 400BL | Condenser | Hypercardioid boundary layer | N/A | N/A |
| AKG | C 414B/TLII | Condenser | Cardioid; hypercardioid; omnidirectional; figure-8 | 75/150 Hz | -10/-20 dB, switchable |
| AKG | C 414B/ULS | Condenser | Cardioid; hypercardioid; omnidirectional; figure-8 | 75/150 Hz | -10/-20 dB, switchable |
| AKG | C 416; C416 B | Condenser | Hypercardioid | N/A | N/A |
| AKG | C 418; C418 B | Condenser | Hypercardioid | N/A | N/A |
| AKG | C 419; C 419 B; C 419 L | Condenser | Hypercardioid | N/A | N/A |
| AKG | C 420; C 420 B; C 420 L | Condenser | Cardioid | N/A | N/A |
| AKG | C 480B; CK 61 | Condenser | Cardioid | 70/150 Hz | -6/-10 dB |
| AKG | C 480B; CK 62ULS | Condenser | Omnidirectional | 75/150 Hz | -10/+6 dB |
| AKG | C 480B; CK 63ULS | Condenser | Hypercardioid | 70/150 Hz | -10 dB |
| AKG | C 535EB | Condenser | Cardioid | 100/500 Hz | -14 dB |
| AKG | C 547BL | Condenser | Hypercardioid boundary layer | 200 Hz | N/A |
| AKG | C 562BL | Condenser | Hem spherical omnidirectional | N/A | N/A |
| AKG | C 5900 | Condenser | Hypercardioid | 150 Hz | N/A |
| AKG | C 680BL | Condenser | Cardioid boundary layer | N/A | N/A |
| AKG | C 747 | Condenser | Hypercardioid | 150 Hz | N/A |
| AKG | CK 91 (w/SE 300B) | Condenser | Cardioid | 75 Hz | -10 dB |
| AKG | CK 92 (w/SE 300B) | Condenser | Omnidirectional | 75 Hz | -10 dB |
| AKG | CK 93 (w/SE 300B) | Condenser | Hypercardioid | 75 Hz | -10 dB |
| AKG | CK 94 (w/SE 300B) | Condenser | Figure-8 | 75 Hz | -10 dB |
| AKG | D 112 | Dynamic | Cardioid | N/A | N/A |
| AKG | D 230 | Dynamic | Omnidirectional | N/A | N/A |
| AKG | D 3700; D 3700S | Dynamic | Hypercardioid | N/A | N/A |
| AKG | D 3800 | Dynamic | Hypercardioid | N/A | N/A |
| AKG | D 65S | Dynamic | Hypercardioid | N/A | N/A |
| AKG | D 770 | Dynamic | Cardioid | N/A | N/A |
| AKG | D 880; D 880S | Dynamic | Supercardioid | N/A | N/A |
| Alesis | AM51 | Condenser | Cardioid | 75 Hz | -10 dB, switchable |
| Alesis | AM52 | Condenser | Cardioid; figure-8; omnidirectional | 75 Hz | -10 dB, switchable |
| Alesis | AM61 | Condenser | Cardioid | 75 Hz | -10 dB, switchable |
| Alesis | AM62 | Condenser | Cardioid; figure-8; omnidirectional; supercardioid | 75 Hz | -10 dB, switchable |
| Audio-Technica | AT3525 | Condenser | Cardioid | 80 Hz | -10 dB |
| Audio-Technica | AT3527 | Condenser | Omnidirectional | 80 Hz | -10 dB |
| Audio-Technica | AT3528 | Condenser | Cardioid | 80 Hz | -10 dB |
| Audio-Technica | AT4033a/SM | Condenser | Cardioid | 80 Hz | -10 dB |
| Audio-Technica | AT4041 | Condenser | Cardioid | 80 Hz | N/A |
| Audio-Technica | AT4050/CM5 | Condenser | Cardioid; omnidirectional; figure-8 | 80 Hz | -10 dB |
| Audio-Technica | AT4051 | Condenser | Cardioid | 80 Hz | N/A |
| Audio-Technica | AT4060 | Tube | Cardioid | Yes | N/A |
| Audio-Technica | AT822 | Condenser | Cardioid stereo | 150 Hz | N/A |
| Audio-Technica | AT825 | Condenser | Cardioid stereo | Yes | N/A |
| Audio-Technica | ATM10a | Condenser | Omnidirectional | N/A | N/A |
| Audio-Technica | ATM23HE | Dynamic | Hypercardioid | N/A | N/A |
| Audio-Technica | ATM25 | Dynamic | Hypercardioid | N/A | N/A |
| Audio-Technica | ATM31a | Condenser | Cardioid | N/A | N/A |
| Audio-Technica | ATM33a | Condenser | Cardioid | N/A | N/A |

| Max. SPL | Frequency Response | Suggested Applications | Special Features | Price |
|---|---|---|---|---|
| 137 dB | 50 Hz–20 kHz | Personal studio; field recording | Battery-powered option | $288 |
| 137 dB | 20 Hz–20 kHz | General purpose | | $460 |
| 95 dB | 40 Hz–1[illegible] kHz | Table-top | | $153.60 |
| 160 dB | 10 Hz–20 kHz | Multipurpose (esp. vocal, strings) | | $1,398 |
| 160 dB | 20 Hz–20 kHz | Multipurpose studio | | $1,258 |
| 121 dB | 20 Hz–20 kHz | Instrument; amplifier | Permanent or temporary mount | $316; $242 |
| 131 dB | 50 Hz–20 kHz | Percussion | Clip-on mount | $316; $242 |
| 126 dB | 20 Hz–20 kHz | Horn; brass | Clip-on mount | $316; $242; $242 |
| 126 dB | 20 Hz–20 kHz | Vocals | Headset | $344; $304; $304 |
| 144 dB | 20 Hz–20 kHz | Premium recording | | $813 |
| 144 dB | 20 Hz–20 kHz | Premium ambient/analysis | | $842 |
| 144 dB | 20 Hz–20 kHz | Premium ambient/analysis | | $842 |
| 137 dB | 20 Hz–20 kHz | Premium handheld vocal | | $338 |
| 133 dB | 30 Hz–18 kHz | Edge-of-stage theatrical; conference | Shock-mounted | $596 |
| 130 dB | 20 Hz–20 kHz | Piano; conference | | $822 |
| 140 dB | 20 Hz–22 kHz | Handheld vocal | | $598 |
| 115 dB | 60 Hz–20 kHz | Conference; lecterns | Shock-mounted | $276 |
| 133 dB | 30 Hz–18 kHz | Snare; acoustic guitar; conference; lecterns | | $596 |
| 132 dB | 20 Hz–20 kHz | General purpose | | $554 |
| 132 dB | 20 Hz–20 kHz | General purpose | | $554 |
| 132 dB | 20 Hz–20 kHz | General purpose | | $554 |
| 132 dB | 20 Hz–20 kHz | Ambient; mid-side | | $934 |
| Not measurable | 20 Hz–17 kHz | Bass drums; bass instruments | | $382 |
| N/A | 40 Hz–20 kHz | Electronic news gathering | | $189.60 |
| 156 dB | 50 Hz–20 kHz; 20 Hz–18 kHz | Stage vocal; instruments | Available with on/off switch | $183.60; $198 |
| 156 dB | 40 Hz–21 kHz | Stage vocal; instruments | | $264 |
| 141 dB | 70 Hz–20 kHz | Handheld vocal | On/off switch | $97.60 |
| 147 dB | 60 Hz–20 kHz | Stage vocal; instruments | | $124.80 |
| 147 dB | 60 Hz–20 kHz | Handheld vocal | Available with on/off switch | $138; $150 |
| 142 dB | 20 Hz–20 kHz (±0.1dB) | Vocal; instrument | | $549 |
| 142 dB | 20 Hz–20 kHz (±0.1dB) | Vocal; instrument | | $699 |
| 139 dB | 20 Hz–20 kHz (±0.1dB) | Vocal; instrument | | $999 |
| 139 dB | 20 Hz–20 kHz (±0.1dB) | Vocal; instrument | | $1,299 |
| 146 dB | 30 Hz–20 kHz | Vocal; general purpose | Includes shock mount | $339 |
| 148 dB | 30 Hz–20 kHz | General purpose | | $259 |
| 147 dB | 30 Hz–20 kHz | General purpose | | $259 |
| 145 dB | 30 Hz–20 kHz | General purpose | Includes AT8441 shock-mount | $495 |
| 145 dB | 20 Hz–20 kHz | Instruments | | $395 |
| 149 dB | 20 Hz–20 kHz | General purpose | Includes AT8441 shock-mount | $995 |
| 143 dB | 20 Hz–20 kHz | Instruments | | $700 |
| 150 dB | 20 Hz–20 kHz | Vocal; general purpose | Includes AT8560 power supply; AT8447 shock-mount | $1,695 |
| 125 dB | 30 Hz–20 kHz | Stereo recording | | $399 |
| 126 dB | 30 Hz–20 kHz | Stereo recording | Battery or phantom power | $525 |
| 137 dB | 20 Hz–18 kHz | Group vocals; instruments | Battery or phantom power | $210 |
| N/A | 70 Hz–16 kHz | Snare drum | | $235 |
| N/A | 30 Hz–15 kHz | Kick drum | | $275 |
| 137 dB | 30 Hz–20 kHz | General purpose | Battery or phantom power | $250 |
| 137 dB | 30 Hz–20 kHz | General purpose | Battery or phantom power | $290 |

# MICROPHONES

| Manufacturer | Product | Type | Polar Patterns | Internal Roll-Off | Internal Pad |
|---|---|---|---|---|---|
| Audio-Technica | ATM35 | Condenser | Cardioid | Yes | N/A |
| Audio-Technica | ATM63HE | Dynamic | Hypercardioid | N/A | N/A |
| Audio-Technica | ATM87R | Condenser | Cardioid | 80 Hz | N/A |
| Audio-Technica | MB4000C | Condenser | Cardioid | N/A | N/A |
| Audio-Technica | PRO 37R | Condenser | Cardioid | N/A | N/A |
| Audix | ADX-50 | Condenser | Cardioid | N/A | N/A |
| Audix | CX101 | Condenser | Cardioid | N/A | N/A |
| Audix | CX111 | Condenser | Cardioid | Yes | 10 dB |
| Audix | D1 | Dynamic | Hypercardioid | N/A | N/A |
| Audix | D2 | Dynamic | Hypercardioid | N/A | N/A |
| Audix | D3 | Dynamic | Hypercardioid | N/A | N/A |
| Audix | D4 | Dynamic | Hypercardioid | N/A | N/A |
| Audix | OM3-xb | Dynamic | Hypercardioid | N/A | N/A |
| Audix | OM5 | Dynamic | Hypercardioid | N/A | N/A |
| Audix | OM6 | Dynamic | Hypercardioid | N/A | N/A |
| Audix | OM7 | Dynamic | Hypercardioid | N/A | N/A |
| Audix | SCX-1 | Condenser | Cardioid; hypercardioid; omnidirectional; omni presence | N/A | N/A |
| B.L.U.E. | Blueberry | Condenser | Cardioid | N/A | N/A |
| B.L.U.E. | Mouse | Condenser | Cardioid | N/A | N/A |
| B.L.U.E. | The Bottle | Condenser | Cardioid; omnidirectional; figure-8 | N/A | N/A |
| Benson Audio Labs | B2 | Condenser PZM | Cardioid | N/A | N/A |
| Benson Audio Labs | BA 30 | Dynamic | Cardioid | N/A | N/A |
| Benson Audio Labs | ND 90 | Dynamic | Hypercardioid | N/A | N/A |
| beyerdynamic | M-130 | Dynamic ribbon | Figure-8 | N/A | N/A |
| beyerdynamic | M-160 | Dynamic ribbon | Hypercardioid | N/A | N/A |
| beyerdynamic | M-201TG | Dynamic | Hypercardioid | N/A | N/A |
| beyerdynamic | M-88TG | Dynamic | Hypercardioid | N/A | N/A |
| beyerdynamic | MC-740 | Condenser | Wide cardioid; cardioid; hypercardioid; omnidirectional; figure-8 | N/A | -10 dB |
| beyerdynamic | MC-834 | Condenser | Cardioid | 80/160 Hz | -10 dB |
| beyerdynamic | MCE-82 | Electret condenser | Dual cardioid | 120 Hz | N/A |
| beyerdynamic | MCE-84 | Electret condenser | Cardioid | N/A | N/A |
| beyerdynamic | MCE-90 | Condenser | Cardioid | Switchable @ 100 Hz | Switchable to -15 dB |
| BPM Studio Technik | BPM CR-10 | Condenser | Cardioid | 75 Hz/150 Hz | N/A |
| BPM Studio Technik | CR-4N | Condenser | Cardioid | N/A | N/A |
| BPM Studio Technik | CR-73 II | Dual large diaphragm; condenser | Cardioid; omnidirectional | 80 Hz | -10 dB |
| BPM Studio Technik | CR-95 | Dual large diaphragm; condenser | Cardicid; omnidirectional; figure-8 | 80 Hz | -10 dB |
| BPM Studio Technik | TB-95 | Dual large diaphragm tube | Cardioid; omnidirectional; figure-8 | 80 Hz | -10 dB |
| Brauner | Valvet | Large diaphragm tube condenser | Switchable between omnidirectional and cardioid | N/A | N/A |

| Max. SPL | Frequency Response | Suggested Applications | Special Features | Price |
|---|---|---|---|---|
| 145 dB | 30 Hz–20 kHz | Horns; drums; instruments | Battery or phantom power; clip-on mount | $350 |
| N/A | 50 Hz–18 kHz | Instrument amp | | $210 |
| 151 dB | 30 Hz–20 kHz | Kick drum | | $299 |
| 124 dB | 50 Hz–18 kHz | General purpose | | $125 |
| 141 dB | 30 Hz–15 kHz | Instruments | | $175 |
| 132 dB | 40 Hz-18 kHz | Drum overheads; acoustic instruments; hi-hat | | $289 |
| 135 dB | 20 Hz-20 kHz | Vocal; drum overheads; acoustic instruments; room | Shock mount; flight case | $499 |
| 145 dB | 20 Hz-20 kHz | Vocal; drum overheads; acoustic instruments; guitar cabs; room | Shock mount; flight case | $599 |
| 144 dB | 46 Hz–18 kHz | Snare; percussion | | $219 |
| 144 dB | 44 Hz–18 kHz | Toms; congas; general percussion | | $219 |
| 144 dB | 50 Hz–19 kHz | Snare; timbale; trumpet; electric guitar | | $229 |
| 144 dB | 38 Hz–19 kHz | Kick drum; acoustic bass; piano; sax | | $329 |
| 144 dB | 50 Hz–18 kHz | General purpose | | $199 |
| 144 dB | 48 Hz–19 kHz | Vocal | | $299 |
| 144 dB | 40 Hz–19 kHz | Vocal | | $349 |
| 144 dB | 45 Hz–19 kHz | Vocal | | $359 |
| 128 dB | 20 Hz–20 kHz (omni); 40 Hz–20 kHz (cardioid/hypercardioid) | Acoustic instruments | Interchangeable capsules | (preamp) $299<br>(per capsule) $349 |
| 133 dB | 20–22 kHz | General studio | Solid state Class A discrete w/transformer out | $1,295 |
| 135 dB | 20–22 kHz | General studio | Solid state Class A discrete w/transformer out | $2,295 |
| 137 dB | 20–22 kHz | General studio | 8 interchangeable capsules w/various patterns | (w/one capsule) $4,500<br>(all capsules) $950<br>(w/o B4) $1,500 |
| 141 dB | 30 Hz–20 kHz | Piano; acoustic instruments; group vocals | Battery or phantom power adapter | $259.90 |
| 145 dB | 50 Hz–15 kHz | Drums; guitar amps; female vocals | Rugged, all-steel windscreen | $169.90 |
| 145 dB | 50 Hz–18 kHz | Vocals | | $349.90 |
| 116 dB | 40 Hz–18 kHz | Digital recording; ambient; piano; strings | | $659 |
| 116 dB | 40 Hz–18 kHz | Stringed instruments; strings | | $659 |
| 120 dB | 40 Hz–18 kHz | Percussion; snare; rack toms; hi-hat | | $289 |
| 120 dB | 30 Hz–20 kHz | General purpose | | $399 |
| 134/144 dB | 20 Hz–20 kHz | Vocal; piano; percussion; overhead; voice-overs | | $1,599 |
| 130/140 dB<br>150 dB | 20 Hz–20 kHz | Vocal; pianos; strings; brass; percussion; sampling; voice-overs | | $999 |
| 120 dB | 50 Hz–20 kHz | Drum overhead; piano; multiple vocals | | $799.00 |
| 138 dB | 50 Hz–18 kHz | Brass; percussion | Battery power | $399 |
| 154 dB | 30 Hz–20 kHz | General purpose | | $649 |
| 136 dB | 20 Hz–20 kHz | Instrument; amplifier; vocal; drum; acoustic instruments | Shock mount; road case; suspension; cable; windscreen; pop filter | $549.99 |
| 126 dB | 30 Hz–20 kHz | Strings; acoustic instrument; overheads; stereo | Mic clip; pop filter | $469.95<br>(omni version) $489.95 |
| 124 dB | 40 Hz–18 kHz | General purpose; vocals; amp close-miking | Case; shock-mount; pop filter; cable | $899.95 |
| 140 dB | 20 Hz–20 kHz | Vocal; overheads; amp; acoustic instrument; drums | Transformerless; custom road case; shock-mount; pop filter; XLR cable | $1,099.95 |
| 138 dB | 20 Hz–20 kHz | Vocal; acoustic instrument; drums; strings | Shock-mount; XLR cable; power supply; road case | $1,699.99 |
| 142 dB | 40 Hz–20 kHz (3 dB down points) | Reference recording | Class A amplifier; Lundahl transformer; power supply w/remote pattern switch; phase invert; shock mount; case | $2,700 |

# MICROPHONES

| Manufacturer | Product | Type | Polar Patterns | Internal Roll-Off | Internal Pad |
|---|---|---|---|---|---|
| Brauner | VM1 | Large diaphragm tube condenser | Variable from omnidirectional through cardioid to figure-8 | N/A | -10 dB |
| Brauner | VMS1 | Large diaphragm tube condenser | Variable from omnidirectional through cardioid to figure-8 | N/A | -10 dB |
| CAD | CAD90/95Ni | Dynamic | Cardioid | N/A | N/A |
| CAD | CAD95/95Ni | Condenser | Cardioid | N/A | N/A |
| CAD | Equitek E100 | Condenser | Supercardioid | 80 Hz | -20 dB |
| CAD | Equitek E200 | Condenser | Cardioid; figure-8; omnidirectional | 80 Hz | -20 dB |
| CAD | Equitek E350 | Servo-condenser | Cardioid; omnidirectional; figure-8 | 80 Hz | -20 dB |
| CAD | VSM1 | Single-valve condenser | Cardioid | 80 Hz | -8/-16 dB |
| CAD | VX2 | Dual-valve condenser | Cardioid; figure-8; omnidirectional | 80 Hz | -8/-16 dB |
| Carvin | CM50 | Dynamic | Cardioid | N/A | N/A |
| Carvin | CM67 | Dynamic | Cardioid | N/A | N/A |
| Carvin | CM68 | Dynamic | Cardioid | N/A | N/A |
| Carvin | CM90E | Condenser | Cardioid | N/A | N/A |
| Countryman | Isomax Headset Microphone | Condenser | Hypercardioid; cardioid | N/A | N/A |
| Countryman | Isomax II | Condenser | Hypercardioid; cardioid; omnidirectional; bidirectional | N/A | N/A |
| Crown | CM-150 | Condenser | Omnidirectional | N/A | N/A |
| Crown | CM-311A | Condenser | Differoid | N/A | N/A |
| Crown | CM-700 | Condenser | Cardioid | 80/150 Hz | N/A |
| Crown | PZM 6D | PZM | Hemisphere | N/A | N/A |
| Crown | SASS-PMKII | Condenser | Stereo PZM | 100 Hz | N/A |
| DPA | DPA 4006 | Prepolarized condenser | Omnidirectional | N/A | N/A |
| DPA | DPA 4007 | Prepolarized condenser | Omnidirectional | N/A | N/A |
| DPA | DPA 4011 | Prepolarized condenser | Cardioid | N/A | -20 dB |
| DPA | DPA 4060 | Prepolarized miniature condenser | Omnidirectional | N/A | N/A |
| DPA | DPA 4065 | Prepolarized condenser | Omnidirectional | N/A | N/A |
| Earthworks | QTC1 | Condenser | Omnidirectional | N/A | N/A |
| Earthworks | SR 71 | Condenser | Cardioid | N/A | N/A |
| Earthworks | SR 77 | Condenser | Enhanced cardioid | N/A | N/A |
| Earthworks | TC-30K | Condenser | Omnidirectional | N/A | N/A |
| Earthworks | Z30X | Condenser | Enhanced cardioid | N/A | N/A |
| Electro-Voice | N/D 168 | Dynamic | Cardioid | N/A | N/A |
| Electro-Voice | N/D 267 | Dynamic | Cardioid | N/A | N/A |
| Electro-Voice | N/D 367 | Dynamic | Cardioid | N/A | N/A |

| Max. SPL | Frequency Response | Suggested Applications | Special Features | Price |
|---|---|---|---|---|
| 142 dB | 40 Hz–20 kHz (3 dB down points) | Reference recording | Class A amplifier; Lundahl transformer; power supply w/remote pattern switch; phase invert; shock mount; case; windscreen | $5,000 |
| 142 dB | 40 Hz–20 kHz (3 dB down points) | Reference recording | Class A mic amplifier, outboard power supply; pad; phase invert; ground lift; shock mount; windscreen; case | $7,500 |
| N/A | 40 Hz–16 kHz | Vocal; instrument amps | | $199 |
| 130 dB | 40 Hz–20 kHz | Vocal; instruments | | $239 |
| 148 dB | 10 Hz–18 kHz | Vocal; instruments; overhead; drum kit | 6 hrs on 2 NiCad batteries | $469 |
| 148 dB | 10 Hz–18 kHz | Vocal; orchestra; acoustic guitar; kick drum | 6 hrs on 2 NiCad batteries | $749 |
| 148 dB | 10 Hz–20 kHz | Vocal; piano; overhead; acoustic guitar; amp | OS110, 1.1" Optema Series capsule | $899 |
| 149 dB | 10 Hz–20 kHz | Vocal; strings; guitar | VX2 valve topology and Equitek servo technology; OS110, 1.1" Optema Series capsule | $1,299 |
| 145 dB | 10 Hz–20 kHz | Vocal; strings; overhead | Dual humbucking tranformers; twin tubes; 1.25" capsule; optional capsules | $2,249 |
| N/A | 50 Hz–14 kHz | Vocals | On/off switch | $49.95 |
| N/A | 40 Hz–15 kHz | Vocals | | $89.95 |
| N/A | 45 Hz–15 kHz | Vocals | | $89.95 |
| 132 dB | 30 Hz–20 kHz | General purpose | Battery or phantom power | $114.95 |
| 150 dB | 20 Hz–20 kHz | Vocals | Phantom version has pop-free switch | $307.92 |
| 150 dB | Isomax II H, C, B: 50 Hz–20 kHz; Isomax II O: 20 Hz–20 kHz | General instrument; sound reinforcement and exotic (acoustical measurements) | Miniature size; optional 18V battery power module; special version powers from wireless transmitters | $278.05 |
| 130 dB | 20 Hz–20 kHz | General purpose | | $795 |
| 150 dB | 50 Hz–15 kHz | Vocals | | $299 |
| 151 dB | 30 Hz–20 kHz | Drums; brass; strings; guitar | | $289 |
| 150 dB | 20 Hz–20 kHz | Piano | | $369 |
| 150 dB | 20 Hz–20 kHz | Orchestra; church ensemble | | $950 |
| 143 dB | 20 Hz–20 kHz | Close-miking vocals; strings; woodwinds; digital recording | | $2,060 |
| 155 dB | 20 Hz–40 kHz | Close-miking drums; percussion; brass | | $2,060 |
| 158 dB | 40 Hz–20 kHz (on axis) | Orchestra; percussion; guitar; piano; sax; drums; brass; strings; voice | 5.4 mm size; handles heat, sweat, humidity | $2,190 |
| 134 dB | 20 Hz–20 kHz | General purpose | 5.4 mm size; handles heat, sweat, humidity | (pigtail version) $400 |
| 144 dB | 20 Hz–20 kHz ±2dB | Theater; stage; broadcast | 5.4 mm size; handles heat, sweat, humidity | $599 |
| 140 dB | 4 Hz–40 kHz | Classical location recording | Quiet, time-coherent sound | $950; $2,000 (matched pair in cherry box) |
| 145 dB | 50 Hz–30 kHz | General purpose | Uncolored sound on axis; excellent rejection off axis | $399 (in the Earthworks tube) |
| 145 dB | 30 Hz–30 kHz | Voice; guitar; drums; general purpose | Uncolored sound on axis; excellent rejection off axis | $950; $2,000 (matched pair in cherry box) |
| 150 dB | 9 Hz–30 kHz | Drums; guitar; bass | | $500; $1,100 (matched pair in cherry box) |
| 145 dB | 30 Hz–30 kHz | Voice; guitar; drums; general purpose | Uncolored sound on axis; excellent rejection off axis | $950; $2,000 (matched pair in cherry box) |
| 141 dB | 25 Hz–15 kHz | Snare drum | 3-way swivel-mount clamp; very small capsule; gig bag | $162 |
| 144 dB | 65 Hz–19 kHz | Vocals | Stand clamp; gig bag | $140 |
| 144 dB | 60 Hz– 17 kHz | Female vocals | Frequency contour for female voice; stand clamp; gig bag | $200 |

# MICROPHONES

| Manufacturer | Product | Type | Polar Patterns | Internal Roll-Off | Internal Pad |
|---|---|---|---|---|---|
| Electro-Voice | N/D 468 | Dynamic | Supercardioid | N/A | N/A |
| Electro-Voice | N/D 767 | Dynamic | Supercardioid | Yes | N/A |
| Electro-Voice | N/D 868 | Dynamic | Cardioid | N/A | N/A |
| Electro-Voice | N/D 967 | Dynamic | Supercardioid | Yes | N/A |
| Electro-Voice | RE1000 | Condenser | Supercardioid | 130 Hz | N/A |
| Electro-Voice | RE20 | Dynamic | Variable-D cardioid | 80 Hz | N/A |
| Electro-Voice | RE200 | Condenser | Cardioid | N/A | N/A |
| Electro-Voice | RE38N/D | Dynamic | Cardioid | N/A | N/A |
| Electro-Voice | RE500 | Condenser | Cardioid | N/A | N/A |
| Event Electronics | Classic | Large diaphragm tube condenser | Omnidirectional through cardioid; figure-8 (9 positions) | 125 Hz | -10/-20 dB |
| Event Electronics | NT1 | Large diaphragm condenser | Cardioid | N/A | N/A |
| Event Electronics | NT2 | Large diaphragm condenser | Omnidirectional; cardioid | 150 Hz | -10 dB |
| Fostex | 221 | Dynamic | Cardioid | N/A | N/A |
| Fostex | 321 | Dynamic | Cardioid | N/A | N/A |
| Fostex | 521 | Dynamic | Cardioid | N/A | N/A |
| Independent Audio | Coles 4038 | Ribbon | Figure-8 | N/A | N/A |
| Independent Audio | Coles 4104 | Ribbon | Figure-8 | 50 Hz | N/A |
| Independent Audio | Coles Electroacoustics 4038 | Ribbon | Figure-8 | Yes | N/A |
| Independent Audio | Coles Electroacoustics 4104 | Ribbon | Cardioid | Yes | N/A |
| Independent Audio | Pearl Lab (Sweden) CC22 Microphone | Condenser | Cardioid | N/A | N/A |
| Independent Audio | Pearl Lab (Sweden) MS 60 Stereo Condenser | Condenser | Multi-pattern | N/A | N/A |
| Independent Audio | Pearl Lab (Sweden) MS 8 Stereo Condenser | Condenser | Cardioid, Figure-8 | N/A | N/A |
| Independent Audio | Pearl Lab (Sweden) TL66 Mono Condenser | Condenser | Cardioid; omnidirectional | N/A | N/A |
| Independent Audio | Pearl Lab (Sweden) TLC Mono Condenser | Condenser | Cardioid | N/A | N/A |
| Langevin | CR-3A | FET, large diaphragm condenser | Cardioid | 100 Hz | -10 dB |
| Lawson | L47C | Large diaphragm tube condenser | Cardioid | N/A | -12 dB |
| Lawson | L47MP | Large diaphragm tube condenser | Omni, cardioid; figure-8 | N/A | -12 dB |
| Lawson | L47S | Phantom-powered large diaphragm condenser | Cardioid | 100 Hz | -10 dB |
| Lawson | L47SH | Phantom-powered large diaphragm condenser | Cardioid | 100 Hz | -10/-20 dB |
| Manley Labs | Manley Reference Cardioid Microphone | Large diaphragm condenser | Cardioid | N/A | 10 dB |
| Manley Labs | Manley Reference Gold Microphone | Large diaphragm condenser | Variable via potentiometers | N/A | 10 dB |
| Manley Labs | Manley Reference Stereo Gold Microphone | 2 x large-diaphragm condenser | Variable via potentiometers | N/A | 2 x 10 dB |
| MicroTech | Gefell M300 | Condenser | Cardioid | N/A | N/A |
| MicroTech | Gefell MT 711S | Condenser | Cardioid | 90 Hz | -10 dB |
| MicroTech | Gefell UMT 70S | Condenser | Cardioid; omnidirectional, figure-8 | 90 Hz | -10 dB |
| Neumann | KM 120 | Small diaphragm condenser | Figure-8 | N/A | -10 dB |

| Max. SPL | Frequency Response | Suggested Applications | Special Features | Price |
|---|---|---|---|---|
| 144 dB | 60 Hz–22 kHz | Musical instruments | Flexible pivoting yoke; gig bag | $232 |
| 144 dB | 25 Hz–22 kHz | Vocals | Large diaphragm N/DYM transducer; multistage shock mount; gig bag | $342 |
| 140 dB | 20 Hz–10 kHz | Kick drum | Tuned for bass drums | $282 |
| 142 dB | 50 Hz–13 kHz | Vocals | High gain before feedback; removable grille | $232 |
| 130 dB | 70 Hz–18 kHz | Vocals; room; wind instruments; acoustic guitar | | $774 |
| 148 dB | 45 Hz–18 kHz | Bass; drum; vocals; upright bass; toms; electric guitars | Variable-D design | $655 |
| 130 dB | 50 Hz–18 kHz | Drums; acoustic guitar; brass | | $310 |
| 144 dB | 25 Hz–20 kHz | Toms; snare; guitar cabs | 16-position EQ switch | $582 |
| 148 dB | 80 Hz–18 kHz | Vocals | Handheld | $375 |
| 130 dB | 20 Hz–20 kHz | Vocals; critical instrument | External power supply w/30' cable; tube/diaphragm; shock-mounted | $1,995 |
| 135 dB | 20 Hz–20 kHz | General purpose | Case | $349 |
| 135 dB | 20 Hz–20 kHz | Vocals; acoustic guitar; woodwinds; piano | Shock mount; case | $649 |
| N/A | 100 Hz–16 kHz | Vocals | | $35 |
| N/A | 90 Hz–16 kHz | Vocals | | $55 |
| N/A | 60 Hz–16 kHz | Vocals | | $75 |
| 125/150 dB | 30 Hz–15 kHz | Drum overheads; sax; string instruments; brass; voice; electric guitar; bass | | $1,195 |
| 120 dB | 60 Hz–12 kHz | Teleconferencing; multimedia; on-location | Lip bar for flat voice response | $650 |
| 125 dB | 30 Hz–15 kHz | Horns; piano; guitar | Rigid mic mount | $1,195 |
| 120 dB | 60 Hz–12 kHz | Noisy environment | Noise canceling | $660 |
| 126 dB | 20 Hz–25 kHz | Vocals; instruments | Dual membrane | $1,228 |
| 126 dB | 18 Hz–25 kHz | Stereo | 4 dual-membrane rectangular capsules | $4,948 |
| 130 dB | 29 Hz–25 kHz | TV; video; film | Rycote Win | $1,956 |
| 132 dB | 20 Hz–20 kHz | Percussion | | $549 |
| 144 dB | 20 Hz–20 kHz | Vocal | | $581 |
| 132 dB | 40 Hz–16 kHz | General purpose | Shock mount | $600 |
| 124 dB | 20 Hz–20 kHz | Vocals; acoustic guitar; strings; piano; choirs; orchestra; sax | 30' Mogami cable; Pelican carrying case; 5-year warranty | $1,695 |
| 128 dB | 20 Hz–20 kHz | Vocals; acoustic guitar; strings; piano; choir; orchestra; sax | 30' cable; Pelican case; 5-year warranty | $1,995 |
| 138 dB | 20 Hz–20 kHz | Vocals; acoustic guitar; strings; piano; choir; orchestra; horns | Pelican case; 5-year warranty | $1,295 |
| 145 dB | 20 Hz–20 kHz | High-intensity (especially bass drum) | Pelican case; 5-year warranty | $1,295 |
| 135 dB | 20 Hz–20 kHz | Vocal; general purpose | All tube; line-out option | $3,000 |
| 150 dB | 10 Hz–25 kHz | Ultra-high-quality recording | All tube; line-out option | $5,500 |
| 150 dB | 10 Hz–25 kHz | Ultra-high-quality stereo recording | All tube; 1 fixed/1 rotatable cap; line-out option | $8,000 |
| 135 dB | 40 Hz–18 kHz | Drums; guitar; chorus | | $599 |
| 144 dB | 40 Hz–18 kHz | Vocals | Cable; windscreen; stand mount | $895 |
| 149 dB | 40 Hz–18 kHz | General purpose | Cable; windscreen; stand mount | $1,295 |
| 148 dB (w/pad); 138 dB (w/o pad) | 20 Hz–20 kHz | One of stereo pair for midside/Blumlein recording | | $1,275 |

*—Continued on page 168*

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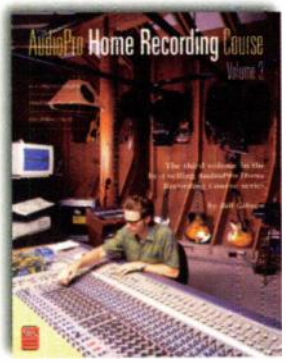


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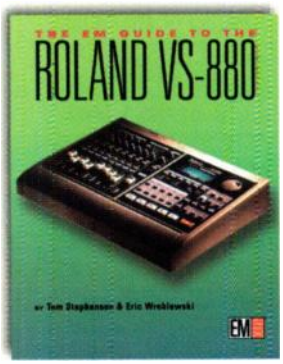


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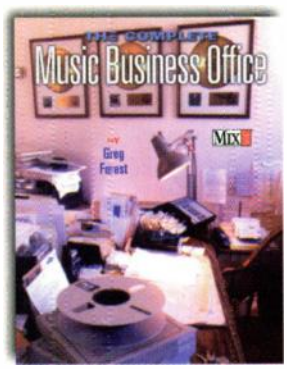


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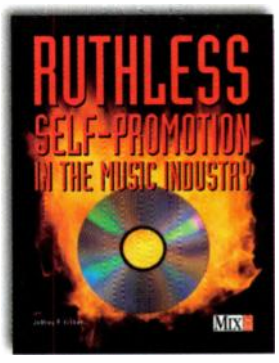


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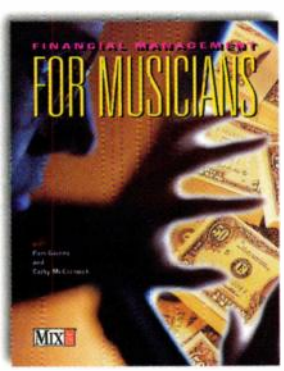


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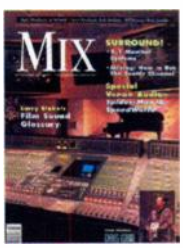

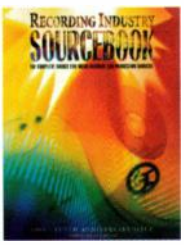


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| | Guitar Center | Villa Park |
| Indiana | MARS | Indianapolis |
| Maryland | Guitar Center | Towson |
| | MARS | Baltimore |
| | MARS | Catonsville |
| Massachusetts | Guitar Center | Boston |
| | Guitar Center | Danvers |
| | Guitar Center | Natlick |
| | Guitar Center | North Attleboro |

| State | Dealer | Location |
|---|---|---|
| Michigan | Guitar Center | Canton |
| | Guitar Center | Detroit |
| | Guitar Center | Southfield |
| Minnesota | MARS | Bloomington |
| | Guitar Center | Edina |
| | Guitar Center | Roseville |
| | Guitar Center | Twin Cities |
| Missouri | Guitar Center | St. Louis |
| New Jersey | Sam Ash Music | Cherry Hill |
| | Sam Ash Music | Edison |
| | Sam Ash Music | Paramus |
| | Guitar Center | East Brunswick |
| | Guitar Center | Springfield |
| New York | Sam Ash Music | Brooklyn |
| | Sam Ash Music | Carle Place |
| | Sam Ash Music | Forest Hills |
| | Sam Ash Music | Huntington Station |
| | Sam Ash Music | Manhattan |
| | Sam Ash Music | White Plains |
| | Guitar Center | Carle Place |
| | Guitar Center | Long Island City |
| North Carolina | MARS | Charlotte |
| | MARS | Raleigh |
| Ohio | Lentine Music | Akron |
| | MARS | Cincinnati |
| | Sam Ash Music | Columbus |
| | Sam Ash Music | Lyndhurst |
| | Guitar Center | Cincinnati |
| | Guitar Center | Cleveland |
| | Guitar Center | Mayfield Heights |
| Pennsylvania | Sam Ash Music | King of Prussia |
| Tennessee | MARS | Nashville |
| | Sam Ash Music | Nashville |
| Texas | MARS | Arlington |
| | MARS | Austin |
| | MARS | Dallas |
| | MARS | Houston (2 locations) |
| | Guitar Center | Arlington |
| | Guitar Center | Central Dallas |
| | Guitar Center | Clearlake |
| | Guitar Center | Houston |
| | Guitar Center | North Dallas |
| | Guitar Center | North Houston |
| Virginia | MARS | Springfield |
| | MARS | Virginia Beach |
| | Guitar Center | Fairfax |
| | Guitar Center | Falls Church |
| Washington | Guitar Center | Lynwood |
| | Guitar Center | Seattle |
| Wisconsin | Cascio/Dynamic Music | New Berlin |
| | MARS | Milwaukee |
| Canada | Steve's Music | Ottawa, Ontario |
| | Steve's Music | Montreal, Quebec |
| | Steve's Music | Toronto, Ontario |

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# MICROPHONES

—*continued from page 161*

| Manufacturer | Product | Type | Polar Patterns | Internal Roll-Off | Internal Pad |
|---|---|---|---|---|---|
| Neumann | KM 130 | Small diaphragm condenser | Omnidirectional | N/A | -10 dB |
| Neumann | KM 140 | Small diaphragm condenser | Cardioid | N/A | -10 dB |
| Neumann | KM 184 | Small diaphragm condenser | Cardioid | N/A | N/A |
| Neumann | TLM 103 | Large diaphragm condenser | Cardioid | N/A | N/A |
| Neumann | TLM 193 | Large diaphragm condenser | Cardioid | N/A | N/A |
| Peavey | PVM T-9000 | Tube mic w/self-polarized condenser capsule | Cardioid | N/A | -10 dB |
| Roland | DR-10 | Dynamic | Hypercardioid | N/A | N/A |
| Roland | DR-20 | Dynamic | Hypercardioid | N/A | N/A |
| Samson | Q Mic | Dynamic | Hypercardioid | N/A | N/A |
| Samson | Q2 | Dynamic | Cardioid | Switchable | Switchable |
| Samson | Q3 | Dynamic | Hypercardioid | Switchable | Switchable |
| Samson | S11 | Dynamic | Unidirectional cardioid | N/A | N/A |
| Samson | S12 | Dynamic | Hypercardioid | N/A | N/A |
| Sanken | CU-31 | Condenser | Cardioid | N/A | N/A |
| Posthorn Recordings | CCM 4 | Condenser | Cardioid | N/A | N/A |
| Posthorn Recordings | CMBI | Condenser | Cardicid, omnidirectional, figure-8 | N/A | -15 dB |
| Posthorn Recordings | CMC 641 | Condenser | Supercardioid | N/A | N/A |
| Sennheiser | E 604 | Dynamic | Cardioid | N/A | N/A |
| Sennheiser | MD 421 II | Dynamic | Cardioid | 30 Hz–17 kHz | N/A |
| Sennheiser | MD 425 | Dynamic | Supercardioid | N/A | N/A |
| Sennheiser | ME 64/K 6 | Electret condenser | Cardioid | 120 Hz | N/A |
| Shure | Beta 52 | Dynamic | Supercardioid | N/A | N/A |
| Shure | Beta 87A | Condenser | Supercardioid | N/A | N/A |
| Shure | BG4.1 | Condenser | Cardioid | N/A | N/A |
| Shure | BG5.1 | Condenser | Cardioid | N/A | N/A |
| Shure | SM57 | Dynamic | Cardioid | N/A | N/A |
| Shure | SM58 | Dynamic | Cardioid | N/A | N/A |
| Shure | SM7A | Dynamic | Cardioid | N/A | N/A |
| Shure | SM81 | Condenser | Cardioid | 80 Hz and 100 Hz | -10 dB |
| Shure | SM94 | Condenser | Cardioid | N/A | N/A |
| Shure | SM98A | Condenser | Cardioid, supercardioid | 80 Hz | -10 dB |
| Shure | VP88 | MS stereo condenser | Mid: cardioid; side: bidirectional | 80 Hz | N/A |
| Sony | C48 | Condenser | Uni-, omni-, bidirectional | Yes | -10 dB |
| Sony | ECM-MS957 | Stereo condenser | m-s, x-y | N/A | N/A |
| Sony | F740/9X | Dynamic | Unidirectional | N/A | N/A |
| Sony | F780 | Dynamic | Unidirectional | N/A | N/A |
| Soundelux | PTM | Condenser | Cardioid | N/A | N/A |
| Soundelux | U195 | Condenser | Cardioid | 80 Hz | Variable |
| Soundelux | U95 | Condenser | Variable | N/A | N/A |
| Soundelux | U95S | Condenser | Variable | N/A | N/A |
| Soundelux | U97 | Condenser | Omnidirectional, cardioid, hypercardioid, figure-8 | N/A | N/A |
| SoundField | SoundField Mark 5 | 4-element condenser | Variable omnidirectional, cardioid, figure-8 | 40 Hz | -10/-20/-30 dB |
| SoundField | SoundField SPS422 | 4-element condenser | Variable omnidirectional, cardioid, figure-8 | 80 Hz | -10/-20/-30 dB |

| Max. SPL | Frequency Response | Suggested Applications | Special Features | Price |
|---|---|---|---|---|
| 150 dB (w/pad); 140 dB (w/o pad) | 20 Hz–20 kHz | Room; strings; piano; choir | | $1,060 |
| 148 dB (w/pad); 138 (w/o pad) | 20 Hz–20 kHz | Acoustic guitar; drum overheads; instruments; class spot; overhead; piano | | $1,060 |
| 138 dB | 20 Hz–20 kHz | Acoustic guitar; drum overheads; hi-hat; strings; perc; piano | | $699 |
| 138 dB | 20 Hz–20 kHz | Vocals; acoustic guitar; strings; Foley; acoustic bass; piano | 7 dB (A) self noise | $995 |
| 140 dB | 20 Hz–20 kHz | Vocals; drum overheads; acoustic guitar; strings; sax; percussion; piano | | $1,495 |
| 137 dB | 20 Hz–20 kHz | Vocals, acoustic instrument | Integral shock suspension; 200 Hz LC; cable; shock mount; power module | $1,299.99 |
| 130 dB | 60 Hz–15 kHz | General purpose | On/off switch; windscreen; case | $95 |
| 130 dB | 60 Hz–15 kHz | General purpose | On/off switch; windscreen; case | $150 |
| 137 dB | 20 Hz–18.5 kHz | Vocals | Tight hypercardioid pattern | $199.99 |
| 137 dB | 50 Hz–15 kHz | Vocal; instruments | Gold-plated XLR; case; clip; Eurometric adapter | $149.99 |
| 137 dB | 50 Hz–15 kHz | Drums; instruments | Rotates 90 degrees; gold-plated XLR; case; clip; Eurometric adapter | $224.99 |
| 130 dB | 60 Hz–18 kHz | Vocals | Molded case; clip | $99.99 |
| 130 dB | 60 Hz–18 kHz | Vocals | Molded case; clip | $149.99 |
| 148 dB | 20 Hz–18 kHz | High-pressure sources; brass; drums | Right-angle version available (model CU-32) | $699 |
| 132 dB | 18 Hz–22 kHz | 15' cable | | $1,470 |
| 132 dB | 18 Hz–22 kHz | Portable recorder | Internal battery; 15' cable | $1,190 |
| 132 dB | 18 Hz–22 kHz | Film/video boom | Interchangeable capsules | $1,455 |
| 160 dB | 40 Hz–18 kHz | Drums (especially toms) | Glass-composite housing | $249 |
| 160 dB | 30 Hz–17 kHz | Drums; vocals; guitar; amps | | $485 |
| 145 dB | 40 Hz–18 kHz | Vocals | Sculpted steel body | $349 |
| 130 dB | 40 Hz–20 kHz | Acoustic guitar; drum overhead | Interchangeable capsules | $540 |
| 174 dB | 20 Hz–10 kHz | Kick drum; bass amp; acoustic bass | Tailored for bass instruments | $387.50 |
| 142 dB | 50 Hz–18 kHz | Vocals; live; studio | High gain before feedback | $542.50 |
| 131 dB | 40 Hz–18 kHz | Guitar; cymbals; strings; vocals; piano | Battery or phantom power | $275 |
| 132 dB | 70 Hz–16 kHz | Vocals | Battery or phantom power | $275 |
| N/A | 40 Hz–15 kHz | Guitar amp; drums; guitar; vocals | Classic instrument response curve | $146 |
| N/A | 50 Hz–15 kHz | General purpose | Classic vocal response curve | $188 |
| N/A | 50 Hz–20 kHz | Vocals; bass amp | | $584 |
| 146/136 dB | 20 Hz–20 kHz | Guitar; cymbals; strings; vocals; piano | | $529.80 |
| 141 dB | 40 Hz–16 kHz | Guitar; cymbals; strings; vocals; piano | Battery or phantom power | $280 |
| 144 dB | 40 Hz–20 kHz | Drums; brass; woodwinds | Minicondenser; mounting clamp | $349.80 |
| 129 dB | 40 Hz–20 kHz | Single-point stereo | Internal matrix or MS out | $1,194 |
| 128 dB | 30 Hz–16 kHz | Vocals; guitar | 48V or 9V internal battery | $1,150 |
| 115 dB | 50 Hz–18 kHz | Stereo DAT; overhead piano; guitar; drum | 1,000-hour battery; rotating caps; x-y/m-s switch; stand; windscreen; cable; bag | $299 |
| N/A | 50 Hz–15 kHz | Vocals; guitar | | $245 |
| N/A | 50 Hz–18 kHz | Vocals; guitar | | $350 |
| 135 dB | 30 Hz–20 kHz | Vocals; drums; guitars | 1" capsule | $1,200 |
| 125 dB | 20 Hz–20 kHz | Close mic situations | 1" capsule; "fat" bass switch | $995 |
| 130 dB | 20 Hz–20 kHz | Vocals; overhead, acoustic guitar | 1" capsule | $1,995 |
| 134 dB | 15 Hz–20 kHz | General studio | 1" capsule | $3,600 |
| 138 dB | 20 Hz–20 kHz | Close mic situations | 1" capsule | $599 |
| 145 dB | 20 Hz–20 kHz | Reference stereo or B format | Tetrahedral array w/preamp; variable stereo angle; shock mount; end fire/invert; test oscillator; low cut; headphone amp | $7,999 |
| 145 dB | 20 Hz–20 kHz | Stereo/mono; mid-side recording | Stereo output; 1U preamp; variable stereo angle; end fire/invert ; headphone amp | $3,999 |

# MICROPHONES

| Manufacturer | Product | Type | Polar Patterns | Internal Roll-Off | Internal Pad |
|---|---|---|---|---|---|
| SoundField | ST250 | 4-element condenser | Variable omnidirectional, cardioid, figure-8 | 120 Hz | -20 dB |
| Stedman | C15 | Condenser | Cardioid | N/A | N/A |
| Stedman | LD23 | Dynamic | Supercardioid | N/A | N/A |
| Stedman | LD50 | Dynamic | Supercardioid | N/A | N/A |
| Stedman | N90 | Dynamic | Cardioid | N/A | N/A |
| Stedman | SC3 | Condenser | Cardioid | 100 Hz | -9/-18 dB |
| Stedman | Transonic-TR1 | Dynamic | Cardioid | 80Hz | N/A |
| Studiomaster | KM-81 | Dynamic | Cardioid | N/A | N/A |
| Telex | Cobalt SE-60 | Permanently charged, backplate condenser | Cardioid | N/A | N/A |
| Telex | TD-16s | Dynamic | Unidirectional | N/A | N/A |
| Telex | TD-22 | Dynamic | Cardioid | N/A | N/A |
| Telex | TD-26 | Dynamic | Hypercardioid | N/A | N/A |
| Yorkville Sound | Apex 350 | Dynamic | Hypercardioid | N/A | N/A |
| Yorkville Sound | Apex 380 | Dynamic | Hypercardioid | N/A | N/A |
| Yorkville Sound | Apex 750 | Dynamic | Cardioid | N/A | N/A |
| Yorkville Sound | Apex 770 | Dynamic | Cardioid | N/A | N/A |
| Yorkville Sound | Apex 850 | Dynamic | Cardioid | N/A | N/A |
| Yorkville Sound | Apex 950 | Dynamic | Cardioid | N/A | N/A |

# DRUM MACHINES

| Manufacturer | Product | # of Pads/ Touch Sensitive | Non-Percussion Sounds | Onboard Effects | # of Sounds | # of Patterns Preset/User |
|---|---|---|---|---|---|---|
| Akai | MPC2000 MIDI Production Center | 16/velocity & pressure | Yes | Optional 4-bus effects processor | N/A | 0/99 |
| Alesis | SR-16 | 12/velocity | Yes | No | 100 | 200/200 |
| Jomox | XBase 09 | 5/velocity | Yes | No | 8+ | 64 |
| Roland | BOSS DR-770 Dr. Rhythm | 16/velocity | 4 bass | 5 rvrb, 2 flngr & chrs, 2-band EQ | 255 | 400/400 |
| Zoom | Rhythmtrak 123 | 13/4 | Yes/bass | Yes | 80 drum kits/ 25 bass programs | 297/99 |
| Zoom | Rhythmtrak 234 | 13/Y | Yes/bass | Yes | 124 drum kits/ 50 bass programs | 99/99 + 99 groove |

| Max. SPL | Frequency Response | Suggested Applications | Special Features | Price |
|---|---|---|---|---|
| 135 dB | 20 Hz–20 kHz | Location mono/stereo; mid/side; B format | Tetrahedral array w/port preamp; variable stereo angle; end fire/invert; B format out; cable; headphone amp | $4,999 |
| 132 dB | 25 Hz–19 kHz | General purpose | Super-buffered output | $599 |
| 157 dB | 38 Hz–18 kHz | Live vocals, instruments | | $139 |
| 152 dB | 37 Hz–19 kHz | Live instruments | Large diaphragm | $139 |
| 155 dB | 35 Hz–19 kHz | General purpose | | $399 |
| 150 dB | 25 Hz–20 kHz | General purpose | Vintage and enhanced modes | $998 |
| 152 dB | 33 Hz–19 kHz | Vocal, instrument | Stage/studio EQ settings | $159 |
| 119 dB | 50 Hz–15 kHz | Personal studio | 20' cable; adapter; case | $59.95 |
| 141 dB (phantom); 137 dB (battery) | 30 Hz–19 kHz | Instrument amplifier | Cobalt blue finish | $175 |
| 131 dB | 45 Hz–17 kHz | Drums; vocals; guitar | | $89 |
| 128 dB | 35 Hz–19 kHz | Drums; vocals; guitar | | $135 |
| 130 dB | 30 Hz–19 kHz | Vocals | | $149 |
| N/A | 50 Hz–15 kHz | Instruments; vocals | | $85 |
| N/A | 50 Hz–15 kHz | Vocals; instruments | | $115 |
| N/A | 50 Hz–15 kHz | Vocals | | $55 |
| N/A | 50 Hz–15 kHz | Instruments | | $45 |
| N/A | 15 Hz–12 kHz | Vocals | | $35 |
| N/A | 80 Hz–12 kHz | Vocals | | $25 |

| # Songs | Quantization Types/ppqn | # of Output/ Type | Ports MIDI In/Out/Thru | Special Features | Price |
|---|---|---|---|---|---|
| N/A | 8th, 8th triplet, 16 w/swing, 16th triplet, 32nd, 32nd triplet/96 | 2 exp to 10 / 1/4" | 2/2/0 | Reads S1000/S3000/XL-series/WAV files; automated mixing; 64 tracks; 100K note sequencer | $1,599 |
| 100 | 96 | 4 1/4" | 1/1/0 | Sync; Start/Stop fsw; Fill/A-B/Count fsw | $349 |
| 10 | Shuffle | 3 1/4" (+1 mono mix) | N/A | Analog/digital hybrid; DIN sync; step sequencer | $1,050 |
| 100 | Various/96 | 1 stereo, 1 mono, headphone (mini) | 1/1/0 | (9DPP); ambience cntrl w/16 global choices; quick search for fast pattern location by music category | $495 |
| 99 | Various/96 | 2 1/4" + phones | 1/0/0 | Line-in for jamming along | $299.99 |
| 99 | Various/96 | 2 1/4" + phones | 1/0/0 | Line-in for jamming along, 3 drum tracks & one bass track can play simultaneously | $429.99 |

# 5 Environment & Power Products

The three charts in this section contain information about products that will help you convert your room into a practical space for a personal studio. As you plan your studio, you'll want to consider how all the various components—including your mixer, rack gear, synths, and computers—will be housed. We also provide information on acoustically treating your workspace (see "The Personal Studio Makeover" on p. 14).

The Sonic Treatment chart covers raw and preformed absorbers, diffusers, bass traps, and other sound-control materials. In many cases we list a family of products (such as a line of absorbers) but not every size within that family. Often different sizes will have different absorptive qualities; you can generally get these specs directly from the manufacturer. (Contact information for all companies whose products are listed in the *Personal Studio Buyer's Guide* is provided in the Manufacturer Index on p. 163.)

"Studio Furniture" is just what it sounds like: a workstation that includes one or more tables and racks to hold your gear. We've stuck with the basic specs in this chart, but they should be enough to get you started. Keep in mind that most studio-furniture companies make customized configurable products that could not be listed in a table, so if you don't see exactly what you want, contact the manufacturer. Also, note that some of the furniture comes in unusual shapes; fortunately, many companies offer photos on their Web sites to give you a better idea of what a product looks like.

Finally, you'll need plenty of power outlets, ideally with line conditioning and some level of protection against damaging voltage changes. The Power Products chart provides information on power strips and power conditioners of various types and specifications, including rack-mountable models. In addition to basic surge and spike protection and the ability to filter electromagnetic interference (EMI) and radio-frequency interference (RFI), some of the devices can regulate the voltage at a fixed level so that even the slightest rise or drop is smoothed out. A few units also serve as uninterruptible power supplies (UPSs); these can be especially useful in situations involving RAM-based devices such as computers and samplers, where even a brief power failure can mean data loss.

174 Sonic Treatment
177 Studio Furniture
180 Power Products

# Sweetwater Soundware

## You just can't get enough!

"Each of our CD-ROMs are designed to offer the ultimate in musical expression whether they're in the form of natural acoustic instruments with realistic performance variations, or a screaming ZZ Top Gibson Guitar with three different harmonics per note. If you own a sampler and have taken a gamble on other third party CD-ROMs you may have already experienced the disappointment of owning a "supposedly" compatible CD-ROM that was quickly slapped together from some other format. You need soundware built specifically to take advantage of the sound-shaping abilities of your instrument, right? So why take a gamble on your sounds? Trust the Soundware experts for Kurzweil, Yamaha, EMU, Korg and more!"

— Daniel Fisher

*Director of Sweetwater Sound Soundware Engineering*

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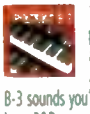
400+ megabytes of over 1,200 new samples in full stereo! Rock, funk, jazz, Latin, country, reggae, GM & more, plus raw samples! List $329.00

### Grand Piano

Our best-selling CD-ROM featuring over 100 megabytes of the greatest piano samples anywhere, including our ledendary Virtual Grand. List $329.00

### Pocket B-3



100% of the B-3 punch. From warm and mellow to big and beefy, it's all the B-3 sounds you'll ever need for rock, jazz, R&B or gospel. List $99.00

### Power Translators

Power Translators instantly convert any Roland CD-ROM to Kurzweil format. Roland CD-ROMs each sold separately. List $199.99 per disk

### Finger Juice

Classic beat boxes, 808, 909, juicy breaks, rare keys, live loops, fat basses, wah-wah guitars, synths, hits, & slurs. Raw, gritty & "in-yer-face." List $99.00

### Classical Instruments

Everything you need for classical music & film scores: brass, woodwinds, keyboards, harps, classical guitars & full orchestral percussion. List $329.00

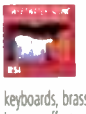
### American Standard

America's musical heritage: Hammond B-3s, Gibson & Fender guitars, electric basses, big band brass, tons of percussion & more. List $329.00

### Exotic Instruments

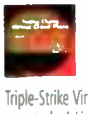
Explore new sonic territory with world instruments like bamboo flute, sitar, Paraguayan harp & synths/vintage keys as a bonus! List $329.00

### RSI CD-ROM



Designed to tap into the sonic potential available only from Kurzweil instruments: keyboards, brass & winds, plus guitars, basses, effects and more. List $329.00

### Virtual Grand



Features our best 16, 13 and 8 Meg Virtual Grand Pianos including our Stereo, Triple-Strike Virtual Grand. Get your copy today! List $99.00

### Performance Instruments

No Kurzweil? No problem! Our audio sampling CD features over 100 of our very best instruments from all our main CD-ROMs. List $149.00

### Electron Bomb

"The Bomb" includes Synthetica Volumes 1 & 2, 100 "DeepRaved" Programs, 100 Techno/Ambient programs & 100+ Industrial/Techno Programs and more! List $99.00

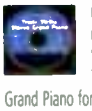
### Rhythm Section

Sounds for your EMU sampler: Our award-winning Young Chang triple-strike piano, 5 drum kits, our best 5 bass guitars & bounus keyboard sounds! List $99.00

### EX5/EX7

Yamaha EX owners rejoice! Here's our best Pianos, Basses and Stereo Drums from our Kurzweil library converted to Yamaha's EX format. List $129.00

### A3000 Triple Strike Piano



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# SONIC TREATMENT

| Manufacturer | Model | Type | Fire Rating | Dimensions | Special Features | Price |
|---|---|---|---|---|---|---|
| ASC | Acoustic enclosures | Acoustic enclosures | N/A | Varies | Modular steel isolation enclosures | $4,700–$10,500 |
| ASC | Attack Wall System | Acoustic subspace (gobos) | N/A | Varies | Studio traps/monitor stands; isolates listening position from troom | $4,000–$10,000 |
| ASC | Monitor Stand Bass Trap | Monitor stand and bass trap combined | N/A | 13", 16", 20" diameter, up to 4' tall | Eliminates midbass hump; 200 lb. load capacity | $698–$1,356 |
| ASC | Quick Sound Field (QSF) System | Acoustic subspace (gobos) | N/A | Varies | 8 or more studio traps; increase/ decrease ambience via placement; adjustable for bright or dead recording | Starts at $2,520 |
| ASC | Studio Trap | Bass trap and main building block of Attack Wall and QSF systems | N/A | 9" diameter x 4' tall; can be raised to 6.5' (includes stand) | Diffusive side and absorptive side; adjustable; absorbs 110 Hz and 400 Hz | $315 |
| ASC | Tube Trap | Bass trap | N/A | 9", 11", 16", 20" diameter, 4' tall | Bass absorption down to 35 Hz with built-in diffusion above 400 Hz | $248–$678 |
| Acoustical Solutions | AAP AlphaPyramid | Sound-absorbing foam | ASTM E-84 Class 2 | 2x2' sheets; 2", 3", and 4" thick | Matching pattern; variety of colors; NRC 0.70–1.05 | (box) $165–$178 |
| Acoustical Solutions | AB10-NR Audio-Seal Sound Barrier | Sound-transmission blocker, high temperature-fused vinyl | N/A | Roll: 54"x60'x0.13" | STC 27; stops noise from transmitting through walls, floors, and ceilings | (per square foot) $1.75–$2.25 |
| Acoustical Solutions | AS1, AS2 AlphaSorb Panels | Rigid, sound-absorbing; fabric-wrapped wall panels and hanging baffles | Class 1 | Any size up to 4x10', 1" or 2" thick | NRC 0.80–1.05; 48 colors; custom shapes and cut-outs | $39–$280 |
| Acoustical Solutions | Soundtex; SD2BT; SD2YD | Fabric wall covering | Class 1 | Bolt: 54"x 35 yards; linear yard: 54x36" | 12 colors; NRC 0.25; easy to install | (Bolt) $850 (Yard) $32 |
| Acoustics First | Acoustical Materials-General | Absorbers, diffusers, barriers, etc. | Class A; Class 1; Class 3 | Varies | Custom foam and fiberglass products of various types | Varies |
| Acoustics First | Bermuda Broadband Triangle Trap | Corner Absorber | Class 1 melamine or Class 3 polyurethane | 1x1x4 | Also available as Bermuda Shorts (24") and stand-alone Sound Cylinder | $42 |
| Acoustics First | Double Duty Diffuser | Polycylindrical diffuser/bass trap | Class A | 2x2 to 4x8 | Uniform high-frequency dispersion; increases acoustic size of a mixing room | ±$200 |
| Acoustics First | Geometrix | Broadband absorber | Class A | 8" diameter up to 10' tall | Formed fiberglass covered w/Guilford FR701 fabrics; 0.84 absorption at 125 Hz, 1.00 above | (4') $157 |
| Auralex Acoustics | Auralex Metro | Absorptive foam | Class B | 2x4' panels; 2" thick | 12 colors; "cityscape" profile; seamless installation; 12 panels per box; includes shipping; NRC 0.70 | (box) $226.99 |
| Auralex Acoustics | LENRD (Low End Noise Reduction Device) | Bass trap | Class B | 24" tall x 16" wide | 12 different colors; 8 pieces per box; triangular to fit corners; includes shipping; NRC 1.35 | (box) $256.99 |
| Auralex Acoustics | SheetBlok | Sound barrier | Class B | 0.13" thick; 4x10' and 4x30' roll sizes | STC 27; impervious to solvents; includes shipping | (4x10') $139.99 (4x30') $359.99 |
| Auralex Acoustics | Studiofoam | Absorptive foam | Class B | 2x4' panels; 1", 2", 3", and 4" thick | 12 colors; wedge cut ; 6–20 pieces per box; includes shipping; NRC 0.50–1.10 | (box) $199.99–$235.99 |
| Auralex Acoustics | Studiofoam Pyramids | Absorptive foam | Class B | 2x4' panels; 2" and 4" thick | 12 colors; pyramid cut; seamless installation; 6–12 pieces per box; includes shipping | (box) $279.99 |
| Auralex Acoustics | Sunburst 360 | Absorptive foam | Class B | 4' tall, adjustable to more than 7'4" | Stand-mounted near-field acoustical control; 12 colors; sunburst cut; sunburst females; 2 per box | (box) $278.99 |
| Auralex Acoustics | T-Fusor | Diffusor | N/A | 23.75x23.75 | Wall mountable; fits drop ceilings; easily painted; 4 pieces per box; includes shipping | (box) $299.96 |
| MATK | Floating Floor Kit #1 and #2 | Floating floor kit | N/A | Klt#1: 10x15'; Kit#2: 19x20' | Custom rubber floor decouplers; foam spacing guides; installation options/suggestions; software conversion guide; "Room Optimizer" software | (Kit#1) $575 (Kit#2) $875 |

# SONIC TREATMENT

| Manufacturer | Model | Type | Fire Rating | Dimensions | Special Features | Price |
|---|---|---|---|---|---|---|
| Folded Space | Acoustic Space | Modular system: diffusor, absorptive foam, acoustic panels, gobos | Class B foam and wood | Each panel 2x4' | 128 sq ft of surface area (64 reflective/ 64 absorbent); 8 acoustic panels; 4 sets of stilts and linking hardware | $549 |
| Foldec Space | Big Travel Kit | Modular system: diffusor, absorptive foam, acoustic panels, gobos | Class B foam and wood | Each panel 2x4' | 64 sq ft of surface area (32 reflective/ 32 absorptive); 4 panels, 2 sets of stilts, stacking and linking hardware; produces 2 bi-folds on stilts, 4 freestands, or 1 stacked bifold | $279 |
| Folded Space | Folded Wall | Modular system: bass trap, diffusor, absorptive foam, acoustic panels, gobos | Class B foam and wood | Each panel 2x4' | Over 128 sq ft of surface area; 8 panels, 4 sets of linking hardware, 2 stacking kits; may be set up in subspace arrays | $549 |
| Folded Space | Medium Room Kit | Modular system: diffusor, absorptive foam, acoustic panels, gobos | Class B foam and wood | Each panel 2x4' | Over 128 sq ft of surface area; 8 panels, 2 swivel stands, 2 sets of stilts, 6 standoffs, linking hardware, and 2 extra 2x4' slices of Studiofoam | $649 |
| Folded Space | Small Room Kit | Modular system: diffusor, absorptive foam, acoustic panels, gobos | Class B foam and wood | Each panel 2x4' | 64 sq ft surface area (32 reflective/32 absorptive); 4 panels, 2 swivel stands, linking hardware, wall standoffs, and 2 extra 2x4' slices of 2" Studiofoam | $329 |
| Folded Space | Small Travel Kit | Modular system: diffusor, absorptive foam, acoustic panels, gobos | Class B foam and wood | Each panel 2x4' | Two panels (32 sq ft of surface area), 1 set of stilts and linking hardware; makes a bifold on stilts or 2 freestanding floor panels | $144 |
| Folded Space | Space Doc | Modular system: diffusor, absorptive foam, acoustic panels, gobos | Class B foam and wood | Each panel 2x4' | 96 sq ft of surface area (48 reflective/ 48 absorptive); 6 panels, 2 swivel stands, 2 sets of stilts, and linking hardware | $439 |
| Folded Space | Space Doc Plus | Modular system: bass trap, diffusor, absorptive foam, acoustic panels, gobos | Class B foam and wood | Each panel 2x4' | 164 sq ft of surface area; 6 cloaking-device panels plus LENRD bass traps, and 6 2x4' slices of 2" Studiofoam | $599 |
| Folded Space | VOX BOX | Modular system: diffusor, absorptive foam, acoustic panels, gobos | Class B foam and wood | Each panel 2x4' | 128 sq ft of surface area (64 reflective/ 64 absorptive); designed for vocals; 8 panels mounted on 4 double-height swivel stands | $699 |
| Illbruck | SONEX | Absorptive foam | Class 1 or 2 | 2x4' or 4x4', 2", 3" and 4" thick | Many colors and patterns available | (per square foot) $2.50–$6 |
| Industrial Acoustics | Quad Series Rooms | Noise reduction, bass trap, diffusion, absorption | Available upon request | Custom | Complete studio treatment | Starts at $7,000 |
| Markertek Video | Blade Tiles: BT-2, BT-3, BT-4 | Acoustic foam | UL94-HF-01 | BT-2: 2x16x16", BT-3: 3x16x16", BT-4: 4x16x16" | Available in charcoal gray or medium blue (BT-2, BT-3 only), for studios and control rooms | (BT-2) $3.49 (BT-3) $4.49 (BT-4) $5.49 |
| Markertek Video | Markerfoam MF-3 and MF-4 | Acoustic foam sheets | UL94-HF-01 | MF-3: 54x54x2", MF-4: 54x54x3 | Available in charcoal gray or medium blue, for studios and control rooms | (MF-3) $19.99 (MF-4) $29.99 |
| Netwell Noise Control | Pyramids | Acoustic foam | Class 1 or 2 | 24x24x3" thick | Absorbs 90% of reflected sound | (per square foot) $2–$4 |
| RPG Diffusor | BASS Trap | Bass trap | Class A | 23.63"x23.63"x12.25" | Designed to handle modal problems in rooms with 8' to 9' ceilings; maximum efficiency between 70–80 Hz | $538 (for two) |
| RPG Diffusor | ProFoam | Absorbing foam panel | Class A melaflex or Class B/C polyflex | 24x24x2", 48x24x2" | Employs VDAC technology | Polyflex $2.31 (per square foot) MelaFlex $5.07 (per square foot) |
| RPG Diffusor | RFZ Abflector | Absorbing panel | Class A | 19x47.25x6" | Broadband reflection control; improves imaging | (4) $541.80 |
| RPG Diffusor | Skyline | Diffusor | Class A | 23.63x23.63x7" | Omnidirectional; primitive root diffusor; ideal for small rooms | (2) $270.90 |

# SONIC TREATMENT

| Manufacturer | Model | Type | Fire Rating | Dimensions | Special Features | Price |
|---|---|---|---|---|---|---|
| RPG Diffusor | SoundCorner | Bass Trap | Class A | 48x24x2" | Absorbs lower frequencies from 150–300 Hz | (4) $248.64 |
| Silent Source | SoundSucker | Corner bass traps | Class A, Class C | 12x48" | Available in charcoal, beige, brown, blue, red, purple, and yellow. 8 units per box; deliv incl | $200 |
| Silent Source | Whisper Wedge | Absorptive foam | Class A, Class C | 24x48", 2", 3", 4", and 6" thick | Many colors to choose from; 2–12 sheets per box (16–96 sq ft). Class 1 available | (box) $160–$250 |
| Systems Development Group | Cutting Wedge 2000 | Absorptive foam | Available upon request | Varies | Sawtooth pattern across face and back for easy stacking | Starts at $2.63 (per square foot) |
| Systems Development Group | Cutting Wedge Classic | Absorptive foam | Available upon request | Varies | Sawtooth pattern for greatest absorption per sq ft; tear-resistant w/shape memory | Starts at $2.63 (per square foot) |
| Systems Development Group | Model C | Diffusor | Full Class A | 23x23x4.5" | Install on wall or drop into 24"x24" opening of a T-bar grid; available with center cutout for recessed lighting fixtures | $130 |
| Systems Development Group | Model C-styrene | Sonic treatment | Full Class A | 23x23x4.5" | Easy install on wall or drop into 24"x24" opening of a T-bar grid; available with center cutout for recessed lighting fixtures | $87 |
| Systems Development Group | Model E | Diffusor | Available upon request | 15x15x9" | Small footprint, lightweight; simple install | $55 |
| Systems Development Group | Model F | Acoustic diffusor | Full Class A | 2x24x1.75" | Specialized high-frequency diffusion | $87 |
| Systems Development Group | Model F-styrene | Acoustic diffusor | Non–fire rated | 2x24x1.75" | Specialized high-frequency diffusion | $87 |
| Systems Development Group | Sonora Panel | Absorptive fiberglass | Class A | Up to 48x120x2" | Molded fiberglass board with nonresin chemically hardened edges wrapped in Guillford fabrics; panel edges | Varies |
| Taytrix | Absorptive Panels | Absorptive panels | Class 1 | 24x24"; 24x48", 24x72" | Fiberglass absorption panels trimmed with decorator fabrics | Starts at $129 |
| Taytrix | Stack It Gobo System | Gobo | Class 1 | 16x8x48", 32x8x48" | Stackable, lightweight, modular, interlocking control panels can be used independently, joined at any angle, or assembled into booths | $300–$445 |
| Wenger | Ceiling Diffusor | Acoustical panels | Class A | 24x24", 48x24", 48x48" | Convex shape; impact-resistant PVC/acrylic plastic | (24x24") $84 (48x48") $181 (48x24") $119 |
| Wenger | Pyramidal Diffusor | Acoustical panels | Class A | 24x24", 48x48" | Offset pyramid shape; impact- resistant PVC/acrylic plastic | (24x24") $52 (48x48") $147 |
| Wenger | Quadratic Diffusor | Acoustical panels | Class A | 48x48", 7 wells per sequence (largest sequence: 4, sequences per panel: 3 | Based on quadratic theory; effective over frequency range of 750 Hz–3.3 kHz; impact-resistant PVC/acrylic plastic | $424 |
| Wenger | Trapezoidal Diffusor | Acoustical panels | Class A | 24x24", 48x48" | Offset trapezoid shape; fiberglass resin with white gel-coat finish | (24x24") $92 (48x48") $147 |
| Wenger | V-Room | Sound-isolating, modular studio with active acoustics (LARES-based) | Class A | From 5'8"x5'8" to 10'8"x13'2" | Provides acoustical simulations of 10 different environments | Starts at $14,697 |
| Wenger | Wall Diffusor | Acoustical panels | Class A | 48x48", 48x96", other sizes available | Convex shape, PVC/acrylic plastic with reinforced corners and fabric covering | (48x48") $249 (48x96) $514 |
| Whisper Room | SE Series | Sound-isolation enclosures | N/A | Various standard sizes available | Portable, modular, easy assembly; cable passage, ventilation system, door window, optional wall windows and caster plates | Starts at $2,195 |

# STUDIO FURNITURE

| Manufacturer | Product | Type | Dimensions (inches) | Special Features | Price |
|---|---|---|---|---|---|
| Anthro | Console | Workstation for non-linear video editing, mixing, and post production | 72x23.5x37 | Holds three 21" monitors; kybrd area adj for sitting or standing; shelves adj in 1" incr; lifetime warr | $899 |
| Anthro | Rack Workstation | RackCart workstation with 9 units of rack | 60x28x24 | Combines workstation and 9 units of rack area; lifetime warr | $889 |
| Anthro | RackCarts | RackCart | 13U, 17U, 21U, 29U sizes | Rack-mounting on tapped mounting rails front/back; rack accessories avail | $719-$929 |
| Anthro | SlantRacks | RackCart for mounting 19" rack equipment | 9U, 13U, 21U sizes | Rack-mounting on tapped mounting rails front/back, tilted for easier vis of rack equip | $319-$429 |
| Argosy Console | 90 Series Console Housing | For Mackie 8-Bus, Yamaha O2R, Soundcraft Ghost, Digidesign ProControl mixers | 89.5–178x45x39 | Exp encl w/full padded armrest, multiaccess bridge lids | Starts at $1,529 |
| Argosy Console | Dual 15 | Workstation for digital-based rec/mix/post systems | 94x50x43 | Holds two 21" computer monitors; 38 rackspaces | $1,199 |
| Argosy Console | Dual 15K | Workstation for keyboard-based systems | 94x50x43 | Holds two 21" computer monitors; 38 rackspaces | Standard $1,199 |
| Argosy Console | Nevis Console Housing | For Mackie 8-Bus, Yamaha O2R, Soundcraft Ghost, Panasonic DA-7, Mackie Digital 8-Bus | 68.2x44x30 | True enclosure with full padded armrest, multi-access bridge lids | $695.95–$819.95 |
| Argosy Console | Spire Rack Enclosures | Single, double, and quad 14-rack bay | 22.7–82.25x33x24 | Frame panel construction w/removable access doors | Starts at $299.95 |
| Argosy Console | Spire Speaker Stands | 42" speaker stand | Base: 16x16; Top: 12x12 | For close-field monitoring | (single) $54.95 (pair) $99.95 (three) $139.95 |
| Bryce Products | CD60, CDB60 | Solid oak CD rack | 21.5x11x4.75 (natural and black) | Wall or table mount; holds 60 CDs | $59.95 |
| Bryce Products | CDP-63 | Thick plastic CD rack | 15.75x13.88x4.25 | Wall or table mount; holds 63 CDs | $21.95 |
| Bryce Products | CP-48 | Cassette tape storage rack | 18.5x11.5x2 | Wall or table mount; holds 48 cassettes | $21.95 |
| Bryce Products | DR-60 Datrax, DRB-60 Datrax | DAT holder; solid oak (natural and black) | 21.25x9.5x2 | Wall or table mount; holds 60 DATs | $59.95 |
| Bryce Products | DRP-40 | DAT holder | 17.4x7.4x2 | Wall or table mount; holds 40 DATs | $21.95 |
| Bryce Products | DSD-320 | DAT storage cabinet | 19.5x21.75x15.5 | Stores 320 DAT | $349 |
| Bryce Products | MD-80 | MiniDisc holder | 17.38x7.38x2 | Wall or table mount; holds 80 MiniDiscs | $21.95 |
| Bryce Products | V8-36, V8-36 Pro | 8 mm tape storage rack | V8-36: 17.5x10.25x2.38 V8-36 Pro: 18.25x9.63x2.19 | Wall or table mount; holds 36 tapes | $21.95 |
| Littlite | Task Lamp | Task lamp | 6", 12", or 18" goosenecks | Flexible task lamp avail in 5W or 2.5W | $25–$160 |
| Littlite | Gooseneck Lamps | Workstation for digital-based recording/mixing/post systems | 94x50x43 | Holds two 21" computer monitors; 38 rackspaces | $1,199 |
| Omnirax | C2 | Keyboard composing/audio-video workstation | 45.8x43.4x107.25 | Holds keyboard, two comp monitors, close-field monitors, comp kybrd; 58 rackspaces | $1,599.95 |
| Omnirax | Coda | Digital editing/mixing workstation | 38.8x38.5x67.9 | For cmptr and prphrls; inspired by Mackie's HUI, also fits Yamaha 03D and other compact mixers/controllers; 8 rackspaces | $749.95 |
| Omnirax | Coda D8 | Mixing workstation | 38.5x36.6x71.38 | Workstation for Mackie Designs' Digital 8-bus mixer and peripherals | $799.95 |
| Omnirax | Coda EX | Mixing workstation | 36.8x40.38x71.38 | Expanded Coda: platform for digital mix/edit environments | $849.95 |
| Omnirax | Commander | Keyboard; composing/ mixing workstation | 48x44.5x87.3 | Holds up to 88-note keyboards w/room for computer and near-field monitors; 60 rackspaces | $1,299.95 |
| Omnirax | CW-22 | Rolling studio rack | 50.5x23.75x20.6 | 22 rackspaces: 8 vertical below, 14 slanted above | $274.95 |
| Omnirax | CW-30 | Rolling studio rack | 36.5x36.5x20.6 | 14 rackspaces on sloping top, 10 rackspaces below, 6 lower rear | $299.95 |
| Omnirax | E-146 | Rolling studio rack | 30x26x20.6 | Slant rolling rack; 14 spcs front, 6 spcs lower rear | $209.95 |
| Omnirax | Fusion | Keyboard composing workstation | 39x54x93.75 | Holds 88-note keyboard w/3 rack bays; Riser Bridge positions near-field monitors to sweet spot; sliding shelf holds 2 video monitors; 69 rackspaces | $1,550 |
| Omnirax | M8 | Mixing workstation | 45.5x36x40.5 | Fits Mackie 24-8 mixer; 8 total rackspaces | $399.95 |
| Omnirax | MiniStation | Compact keyboard/computer workstation | 39.75x30x48 | Holds keyboards up to 46.5" wide; space for computer; kybrd/writing shelf; 6 rackspaces | $669.95 |
| Omnirax | MixStation MAK24•8 | Console workstation for Mackie 24-8 bus mixer | 43x38x81.5 | Multilevel wrkng environment for Mackie 24-8 mixer, computer, and prphrls; 42 rackspaces | $1,199.95 |
| Omnirax | MixStation MAK32•8 | Console workstation for Mackie 32-8 bus mixer | 43x38x90.5 | Multilevel working envrnmnt for Mackie 32-8 mixer, computer, and prphrls; 42 rackspaces | $1,249.95 |

# STUDIO FURNITURE

| Manufacturer | Product | Type | Dimensions (inches) | Special Features | Price |
|---|---|---|---|---|---|
| Omnirax | MixStation O2R | Console workstation for Yamaha O2R | 43x38x70.5 | Multilevel working environment for Yamaha O2R mixer, computer, and prphrls; 42 rackspaces | $1,199.95 |
| Omnirax | Mobi | Mobile computer workstation | 55.5x28.75x20.6 | Room for 14" monitor, CPU, and computer keyboard; 10 rackspaces | $399.95 |
| Omnirax | Pro-20 | Rolling studio rack | 45x18x20.6 | Versatile slant front, 20-spc rolling rack | $239.95 |
| Omnirax | Pro-316 | 3-bay producer's studio rack | 34.25x27.75x62 | Rolling rack, 48 rackspaces in 3 slanted bays of 16 spcs; large top surf ace area | $599.95 |
| Omnirax | Producer's Corner | 5-piece audio/video suite | 36.2x37x120.6 | Workstation suite for audio/video editing; holds multiple video monitors & close fields; 28 rackspaces; enclosed CPU spc | $1,299.95 |
| Omnirax | ProStation | Digital audio workstation | 44x36x2.25 | For computer and close-field monitors; 30 rackspaces | $899.95 |
| Omnirax | ProStation Junior | Digital audio workstation | 42.5x29.5x60.5 | For computer and close-field monitors; 14 rackspaces | $699.95 |
| Omnirax | ProStation Junior M/C | Keyboard composing workstation | 43x29.5x60.5 | Compact workstation for keyboard composing; holds computer and close-field monitors; 12 rackspaces | $659.95 |
| Omnirax | ProStation M/C | Keyboard composing/ mixing workstation | 45.5x36x72.25 | For mixing boards or keyboard composing; Holds computer and close-field monitors; 26 rackspaces | $849.95 |
| Omnirax | Sidecars D8/EX | Sidecar | 38.5x39.38x36 | Sidecars attach directly to the Coda D8 or EX; avail in left or right-handed | $399.95 |
| Omnirax | Sidekick | Rolling workstation | 44x24.9x20.6 | 13 rackspaces and space for controllers and peripherals | $324.95 |
| Omnirax | Synergy Series Consoles | Synergy 600, Synergy 800, Synergy 1000 console workstation for multiple mixers | 41.63x42x101.6" (124 wide) | Fits Mackie, Yamaha, Soundcraft, Ramsa, and other mixers in single/multiple configs; padded wrist rest; minimum 12 rackspaces | $900–$1,800 |
| Omnirax | Synthrax 88 | Multiple keyboard housing and 30 rackspaces | 49x24x60.5 | Holds three 88-note synths on sliding, locking shelves; 30 rackspaces | $824.95 |
| Omnirax | Tyro | Ultracompact keyboard/computer workstation | 34x23.75x45.25 | For keyboards up to 43" wide; piano shelf and computer keyboard slide out and lock in place; 12 rackspaces | $624.95 |
| Per Madsen Design | Rackit System 19; Cassette 19; and Cassette 19-10 units | Media storage drawers | 15 or 10x20.75x16 | Modular, stackable oak drawer units hold standard, DAT, 8mm cassette, MiniDisc and floppy disk | $225–$295 |
| Per Madsen Design | Rackit System 19 CD/DVD/VHS 19 unit | Media storage drawers | 15x20.75x16 | Modular, stackable oak drawer units hold CD, DVD, MiniDisc, Zip, and VHS | $245–$265 |
| Per Madsen Design | Rackit System 19; Component Rack 19; Rail-10 (5U), 19 Rail-15 (8U), 19 Rail-30 (16U) | Equipment racks with mounting rails | 10", 15", or 30x20.75x16 (in EIA standard 5-, 8-, and 16-unit sizes) | Modular, stackable oak equip racks | $100<br>$115<br>$165 |
| Per Madsen Design | Rackit System 19; Component Rack 19-5, 19-7.5, 19-10, 19-15 | Equipment rack with shelves | 5", 7.5" or 10", 15x20.75x16 | Modular, stackable oak equip racks | $80<br>$85<br>$95<br>$100 |
| Per Madsen Design | Rackit System 19; Dolly 19 | Dolly for all Rackit System 19 units | 4x20.75x16 | 4 twin-wheel casters; 300-lb rolling load | $55 |
| Quik-Lok | A-50 | Height-adjustable tripod studio boom stand w/locking casters | Height adjustment 53.5–91.5; boom length 46.5–87"; folded height 53.8" | Tripod leg design w/solid steel legs; holds all kinds of mics, locking casters; 7' boom; mic cable clips | $179.95 |
| Quik-Lok | BS-336 | 36" fixed-height near-field studio monitor stand | Shelf 11" square, height 36", base 17.7" each side, weight capacity 125 lbs | All-steel, arc-welded construction, cable management, triangle base w/adj leveling floor spikes; rubber-padded top plate | pair $149.95 |
| Quik-Lok | BS-342 | 42" fixed-height near-field studio monitor stand | Shelf 11" square, height 42", base 17.7" each side, weight capacity 125 lbs | All-steel, arc-welded construction, cable management, triangle base w/adj leveling floor spikes; rubber-padded top plate | $159.95 |
| Quik-Lok | Z-250 | Triple-shelf computer workstation | Approximately 33.6x29.8x22.3 | 3 surface workstations with large rectangular main shelf, holds all kinds of computer equipment/access | $319.95 |
| Quik-Lok | Z-544 | Z500 Series Expandable Music Project Station (44" wide) | Approximately 64.6x40.1x27.5 | Many options; holds computer peripherals, speakers, rack equipment, keyboards, mixers, etc., shelves and crossbars height-adjustment; 3/4" laminate work surfaces | $279.95 |
| Quik-Lok | Z-555 | Expandable music project station (55" wide) | Approximately 55-75.6x28.75x35.4 | Many options; all shelves and crossbars are height adjust, computer-welded steel frame; 3/4" laminate surfaces | $299.95 |
| Quik-Lok | Z-750L | Triple-shelf computer workstation with 45-degree | Approximately 52.828.9x22.3 | 3 surface, large left-angled main shelf, scratch-resistant 3/4" laminate shelves, steel frame | $349.95 |
| Quik-Lok | Z-750R | Triple-shelf computer workstation with 45-degree right-angled main shelf | Approximately 28.9x52.8x22.2 | 3 surface workstation w/large right-angled main shelf, scratch-resistant 3/4" laminate shelves, steel frame | $349.95 |
| Rackcraft | Desktop Studio Rack | Black laminated melamine board; T-mold edging | 25.5x29x48.16 | Desktop; 20 rackspaces; ideal for Mackie ADAT studio w/FX and monitors | $299 |

# STUDIO FURNITURE

| Manufacturer | Product | Type | Dimensions (inches) | Special Features | Price |
|---|---|---|---|---|---|
| Shedworks | Modular Workstations | Modular workstations | 22x28x24 rolling racks; 60" or 72" tabletops | All systems custom configured | $500–$2,500 |
| Taytrix | Counter Top | Countertop | Varies | Straight, angle wing, corner units | Starts at $35 (sq. ft |
| Taytrix | Oval Workstation | Workstation | 6.5 and 5 Mini ovals 60" and 78" | Adjustable meter bridge shelf; 180-degree swivel speaker wings; rack packages also available | Starts at $2,875 |
| Taytrix | Rack Units | 12-, 14- and 16-rackspace units | 29.5–32x16.5–23; fits 19" standard gear | Available in square-front or unique front-angle design; maple or cherry furniture-grade plywood | Starts at $300; countertop racks start at $117 |
| Ultimate Support | HS26BP | Studio-organizer stand | Floor space: 19x38; surface: 16x35.5 | Large work surface; center tier and side; arms support gear; many accessories available | $268 |
| Ultimate Support | HS36BP | Studio-organizer stand | Floor space: 17x45; surface: 16x18 | Versatile design; acrylic work surface; side optional (HE48B, $135.50); accessories avail | $322 |
| Ultimate Support | MS36 | Studio-monitor stand | Height: 36", top plate 9"x9", triangle base diameter: 14" | Cable management, triangle cast-zinc base; available in silver, black, and pewter | (pair) $210 |
| Ultimate Support | MS45 | Studio-monitor stand | Height: 45", top plate 9"x9", triangle base diameter: 14" | Cable management, triangle cast-zinc base; avail in silver, black, and pewter | (pair) $230 |
| Wenger | Workstation | Computer/synthesizer workstation | 48x37x32 | Cockpit like design; steel and wood frame; cord-management system conceals cables and power cords; 15-outlet AC strip | $1,056 |


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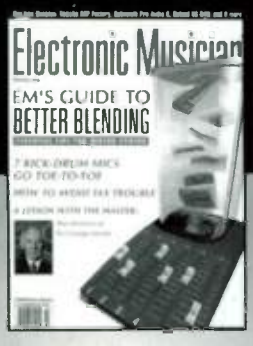


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# POWER PRODUCTS

| Manufacturer | Model | # of Receptacles | Output Current/Load Rating | Maximum Surge Current Rating | Spike Protection Modes/# of MOVs | Spike Response Time | Line Regulation | Balanced Power | Rack Mount/ # of Spaces | UPS Y/N |
|---|---|---|---|---|---|---|---|---|---|---|
| APC | APC Back-UPS Pro 350 | 7 | 350 VA/220W | 320 Joules, 6500A | N/A | Instant | Automatic | No | No | Yes |
| APC | APC Back-UPS Pro 500 | 7 | 500 VA/315W | 320 Joules, 6500A | N/A | Instant | Automatic | No | No | Yes |
| APC | Back-UPS Office | 6 | 280 VA/170W | 320 Joules | N/A | Instant | N/A | No | No | No |
| APC | Back-UPS Pro 420 | 6 | 420 VA/260W | 320 Joules | N/A | Instant | Auto volt reg | No | No | Yes |
| APC | Back-UPS Pro 650 | 6 | 650 VA/410W | 320 Joules | N/A | Instant | Automatic | No | No | Yes |
| APC | SurgeArrest (personal) | 3 or 7 | <300V | 240 Joules | N/A | Instant | No | No | No | No |
| Equi-Tech | ET1R Balanced Power Rack System | 12 | 10A/120V | 240 Joules | Line-neutral, line-ground, neutral-ground/4 | N/A | No | Yes | Yes/2 | No |
| Furman | PL-8 | 9 (1 front, 8 rear) | 15A/120V | 6,500A | Line-neut, neut-ground, line-ground/3 | 1 ns | No | No | Yes/1 | No |
| Furman | PL-Plus PRO Series | 9 (1 front, 8 rear) | 15A (20A PRO)/120V | 6,500A | Line-neut, neut-ground, line-ground/3 | 1 ns | No | No | Yes/1 | No |
| Furman | PL-Tuner Power Conditioner and Instrument Tuner | 9 (1 front, 8 rear) | 15A/120V | 6,500A | Line-neutral, neutral-ground, line-ground/3 | 1 ns | No | No | Yes/1 | No |
| Juice Goose | JG 8.0 | 8 | 15A/120V 1,800W | N/A | 1/1 | N/A | No | No | Yes/1 | No |
| Juice Goose | JG 8.0LM | 8 | 15A/120V 1,800W | N/A | 1/1 | N/A | No | No | Yes/1 | No |
| Juice Goose | JG Junior | 6 | 15A/120V | N/A | Line-neutral/1 | 1 ns | No | No | Yes/1 | No |
| New Frontier | Surge-X SX115R | 8 | 15A/120V | Unlimited | U.S. government mode 1/0 | Instant | No | No | Yes/1 | No |
| New Frontier | Surge-X SX115RL | 8 | 15A/120V | Unlimited (8x20 ns) | U.S. government mode 1/0 | Instant | No | No | Yes/1 | No |
| New Frontier | Surge-X SX115RT | 8 | 15A/120V | Unlimited (8x20 ns) | U.S. government mode 1/0 | Instant | No | No | Yes/1 | No |
| New Frontier | Surge-X SX15-iR2 | 2 | 15A/120V | Unlimited (8x20 ns) | Mode 1/0 | Instant | No | No | No | No |
| New Frontier | Surge-X SX1808 | 8 | 15A/120V | Unlimited (8x20 ns) | Mode 1/0 | Instant | No | No | No | No |
| New Frontier | Surge-X SX20-iR2 | 2 | 15A/120V | Unlimited (8x20 ns) | Mode 1/0 | Instant | No | No | No | No |
| New Frontier | Surge-X SX202R | 12 | 40A/120V | Unlimited (8x20 ns) | Mode 1/0 | Instant | No | No | Yes/2 | No |
| New Frontier | Surge-X SX2120 | 15 | 15A/120V | Unlimited (8x20 ns) | Mode 1/0 | Instant | No | No | Yes/2 | No |
| New Frontier | Surge-X SX908 | 8 | 7.5A/120V | Unlimited (8x20 ns) | Mode 1/0 | Instant | No | No | No | No |
| Panamax | Max 1000+ Surge Protector/Line Conditioner | 8 | 15A/120V | 40,000A | Line-neutral, line-ground, neutral-ground/7 | Instant | No | No | Yes/1 | No |
| Panamax | Max 1500 Surge Protector/Line Conditioner | 10 | 15A/120V | 40,000A | Line-neut, line-ground, neutral-ground/7 | Instant | No | No | Yes/2 | No |
| Panamax | Max 2000 Programmable Power Control System | 10 | 15A/120V | 40,000A | Line-neut, line-ground, neutral-ground/7 | Instant | No | No | Yes/2 | No |
| Tripp Lite | Isobar 12 Rackmount Surge Suppressor | 12 | 15A/12V | 750 Joules | Line-neut, neut-ground, line-ground | Instant | No | Yes | Yes/1 | No |
| Tripp Lite | Isobar 4 Ultra Surge Suppressor | 4 | 12A/120V | 220 Joules | Line-neut, neut-ground, line-ground | Instant | No | Yes | No | No |
| Tripp Lite | Isobar 6 DBS Surge Suppressor | 6 | 12A/120V | 2850 Joules | Line-neut, neut-ground, line-ground | Instant | No | Yes | No | No |
| Tripp Lite | Isotel 4 Ultra Surge Suppressor | 4 | 12A/120V | 2700 Joules | Line-neut, neut-ground, line-ground | Instant | No | Yes | No | No |
| Tripp Lite | LC 1800 Line Conditioner | 6 NEMA 5 - 15 R | 15A/120V | 600 Joules | Line-neut, neut-ground, line-ground | Instant | 87–140V | Yes | No | No |
| Tripp Lite | LC 2400 Line Conditioner | 6 | 20A/120V | 600 Joules | Line-neut, neut-ground, line-ground | Instant | 87–140V | Yes | No | No |
| Tripp Lite | LS 600 Line Conditioner | 2 | 5A/120V | 100 Joules | Line-neut, neut-ground, line-ground | Instant | 87–120V | Yes | No | No |

| EMI & RFI Filtering: Filter/Capacitor | Voltage Meter: Analog or Digital | Lights #/Type | Battery Backup | Warranty (Years) | Dimensions (Inches) | Weight (Pounds) | Special Features | Price |
|---|---|---|---|---|---|---|---|---|
| EMI/RFI | Digital | 4/LED | Yes | 2 | 9.4x5x7.9 | 14.2 | USB port; file svng sftwr; 2-line phone/fax/modem surge support | $299.99 |
| EMI/RFI | Digital | 4/LED | Yes | 2 | 9.4x5x7.9 | 15.35 | USB port; file svng sftwr; 2-line phone/fax/modem surge support | $299.99 |
| Filtering | N/A | 2/LED | Yes | 2 | 2.7x17x7 | 8 | $25,000 lifetime warranty | $199.99 |
| Filtering | Digital | 4/LED | Yes | 2 | 6.6x4.7x14.5 | 21.6 | N/A | $339 |
| EMI/RDI | Digital | 4/LED | Yes | 2 | 6.6x4.7x14.5 | 26 | $25,000 lifetime warranty | $419 |
| EMI/RFI | N/A | 2 | No | Lifetime | 3-outlet: 2x4.25x6.25; 7-outlet: 2x4.25x10.5 | 0.7 1.7 | Optional telephone/cable line surge support | (3-outlet) $24.95 (7-outlet) $29.95 |
| Filter optional | N/A | N/A | No | 3 | 16x12.5x3.5 | 36 | More than 5 custom models available | $879 |
| Capacitor | N/A | 2/slide-out with dimmer | No | 3 | 1.75x19x8 | 6 | Triple-mode varistor spike/ surge protector; circuit breaker | $159 |
| Filter | Analog | 2/slide-out with dimmer | No | 3 | 1.75x19x8 | 6 | Triple-mode varistor spike/surge protector; extreme voltage shutdown; "smart" microprocessor | (PL-Plus) $229 (PRO) $399 |
| Filter | N/A | 2/slide-out with dimmer | No | 3 | 1.75x19x8 | 6 | Guitar/bass tuner; auto triple-mode "Lock On"; sharp/flat lights emulate "beats" | $279 |
| Filter/Capacitor | N/A | N/A | No | 3 | 1.75x19x7 | 5 | | $79 |
| Filter/Capacitor | Analog | 2/pull-out | No | 3 | 1.75x19x7 | 6 | | $182 |
| Capacitor | N/A | N/A | No | 1 | 1.75x19x4.5 | 4 | On/off switch | $59 |
| Adv impdnc tol filter | N/A | N/A | No | 10 | 1.75x19x8 | 9 | 6 switched/2 unswitched; magnetic shield; grade A/class 1; self-test | $459 |
| Adv impedance tolerant filtering | N/A | 2/Littlite "R" receptacle with dimmer | No | 10 | 1.75x19x3 | 9 | 6 switched/2 unswitched; magnetic shield; grade A/class 1; self-test | $499 |
| Adv impedance tolerant filtering | N/A | N/A | No | 10 | 1.75x19x8 | 9 | 6 switched/2 unswitched; magnetic shield; grade A/class 1; self-test | $459 |
| Yes | N/A | N/A | No | 10 | 3.2x7.8x3.75 | 5 | 2 receptacles on front; magnetic shield; grade A/class 1 | $279 |
| Yes | N/A | N/A | No | 10 | 3.8x8.5x4 | 6 | 6 switched/2 unswitched receptacles; magnetic shield; self-test | $299 |
| Yes | N/A | N/A | No | 10 | 3.2x7.8x3.75 | 5 | 2 receptacles on front panel; magnetic shield; grade A/class 1; self-test | $339 |
| EMI/RFI filter | N/A | N/A | No | 10 | 3.5x19x8 | 16 | Magnetic shield; grade A/class 1; self-test | $699 |
| Adv impedance tolerant filtering | N/A | N/A | No | 10 | 3.5x19x8 | 16 | Front panel receptacles; magnetic shield; grade A, class 1; self-test | $599 |
| Yes | N/A | N/A | No | 10 | 3.8x8.5x4 | 6 | Magnetic shield; self-test | $239 |
| Enhanced 2-stage filter | Analog; digital | 5 | No | Lifetime | 7.31x17.14x1.94 | 6.43 | Under/over volt protection; thermal fuse; remote sensing; delayed on/off | $299 |
| Enhanced 2-stage filter | Analog; digital | 5 | No | Lifetime | 3.5x17.14x7.31 | 11.44 | AllPath compatible; remote sensing for power on/off; delayed on/off; over/under volt protection | $449 |
| Enhanced 2-stage filter | Digital | N/A | No | Lifetime | 17.25x3.5x8.5 | 11.44 | Programmable on/off sequence; 6 gold coaxial; optional AllPath protect models; under/over volt protection | $849 |
| Yes | N/A | N/A | No | Lifetime | 1.75x17.5x4 | 4.5 | Metal housing; isolated filter banks | $149 |
| Yes | N/A | N/A | No | Lifetime | 2.5x6x3.5 | 2.38 | Metal housing; isolated filter banks | $42.75 |
| Yes | N/A | N/A | No | Lifetime | 2.5x7x3.5 | 3.6 | 2 sets type F coaxial jacks; RJ11 telephone jacks; metal housing; isolated filter banks | $57.50 |
| Yes | N/A | N/A | No | Lifetime | 2.5x6x3.5 | 3.03 | Metal housing; isolated filter banks; RJ11 telephone jacks | $52.50 |
| Yes | N/A | N/A | No | 2 | 6.75x6x6.75 | 11.5 | Isolated filter banks | $299 |
| Yes | N/A | N/A | No | 2 | 6.75x6x6.75 | 14 | Isolated filter banks | $399 |
| Yes | N/A | N/A | No | 2 | 6x5.75x5 | 7.5 | N/A | $129 |

# POWER PRODUCTS

| Manufacturer | Model | # of Receptacles | Output Current/Load Rating | Maximum Surge Current Rating | Spike Protection Modes/# of MOVs | Spike Response Time | Line Regulation | Balanced Power | Rack Mount/ # of Spaces | UPS |
|---|---|---|---|---|---|---|---|---|---|---|
| Tripp Lite | LS 604 Line Conditioner | 4 NEMA 5 - 15 R | 5A/120V | 300 Joules | Line-neut; neut-ground; line-ground | Instant | 87–140V | Yes | No | No |
| Tripp Lite | Smart 450 Net UPS | 6 | 3.75A/120V | 360 Joules | Line-neut; neut-ground; line-ground | Instant | 86–145V | Yes | No | Yes |
| Tripp Lite | Super 7 Coax Surge Suppressor | 6 | 15A/120V | 120 Joules | Line-neut; neut-ground; line-ground | Instant | N/A | Yes | No | No |
| VanEvers | Balanced Clean Line Basic | 4 | 600W | N/A | N/A | N/A | No | Yes | 3 (optional) | No |
| VansEvers | Balanced Clean Line Artist | 4 | 600W | 28,000A | Line-neutral; neutral-ground/3 | <15 ns | No | Yes | 3 (optional) | No |
| VansEvers | Clean Line Junior Model 11 Analog | 1 | 1,800W | N/A | N/A | N/A | No | No | No | No |
| VansEvers | Clean Line Model 141 | 14 (8 analog, 6 digital) | 1,800W | 28,000A | Line-neut; neut-ground/5 (2 gas surge arrest) | <15 ns | No | No | Yes/2 | No |
| VansEvers | Clean Line Model 141-Special | 8 | 4 x 1,800W | 28,000A | Line-neut; neut-ground/8 (8 gas surge arrest) | <15 ns | No | No | Yes/2 | No |
| VansEvers | Clean Line Model 83 | 8 (6 analog, 2 digital) | 1,800W (240W digital) | 28,000A | Line-neut; neut-ground/3 (2 gas surge arrest) | <15 ns | No | No | Yes/2 (optional) | No |


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| EMI & RFI Filtering: Filter/Capacitor | Voltage Meter: Analog or Digital | Lights #/Type | Battery Backup | Warranty (Years) | Dimensions (Inches) | Weight (Pounds) | Special Features | Price |
|---|---|---|---|---|---|---|---|---|
| Yes | N/A | N/A | No | 2 | 6x5.75x5 | 1.5 | N/A | $159 |
| Yes | N/A | N/A | Yes | 2 | 10x6.5x14 | 19 | Free software and cabling | $369 |
| Yes | N/A | N/A | No | Lifetime | 1.5x2.75x11.25 | 1.80 | Type F coaxial jacks | $20.45 |
| Yes/ capacitors | N/A | N/A | No | 5 | 8x5x12 | 23 | Optional polarity reverse switch; optional 120/240 VAC dual primary | $350 |
| Capacitors | N/A | N/A | No | 5 | 5x8x12 | 27 | Polarity reverse 120/240 VAC dual primaries; transient-impedance switches | $1,000 |
| Yes | N/A | N/A | No | 10 | 2.75x3x10.5 | 3 | For multitrack recorders; digital version available | $250 |
| Yes/Yes | N/A | N/A | No | 10 | 3.5x19x8.75 | 15 | Isolates digital from analog; additional digital filters optional; transient-impedance switch | $1,000 |
| Filters | N/A | N/A | No | 10 | 3.5x19x8.75 | 20 | Supports 4 consoles/power amps | $2,000 |
| Filters/ capacitors | N/A | N/A | No | 10 | 3.47x10.6x7 | 8 | Isolates digital from analog; additional digital filters optional; transient-impedance switch | $575 |

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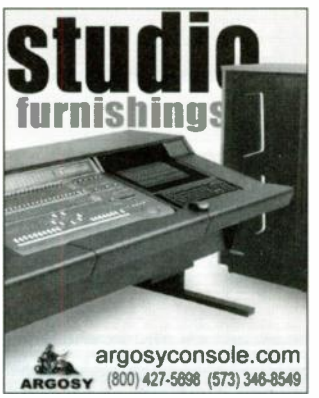

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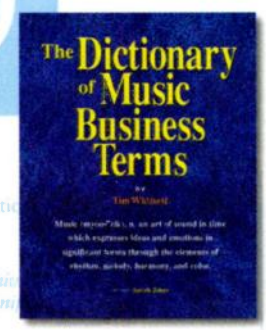


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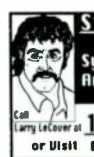

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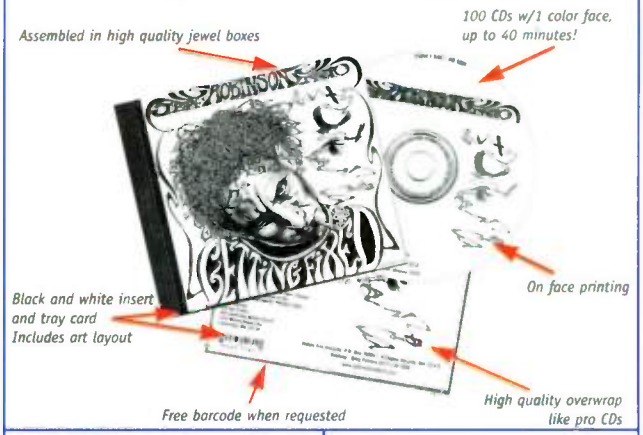


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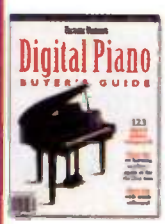


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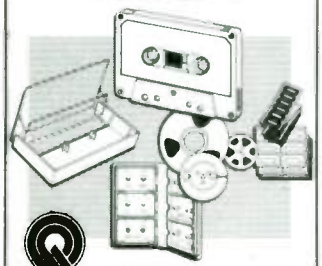

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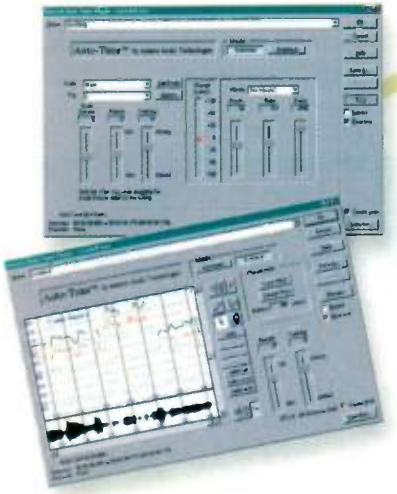

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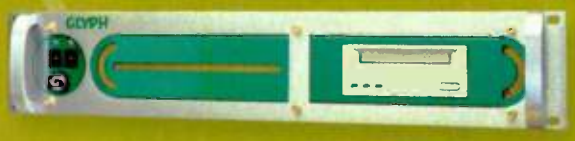


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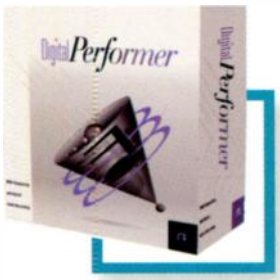


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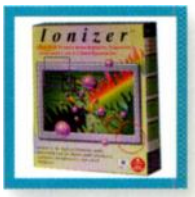


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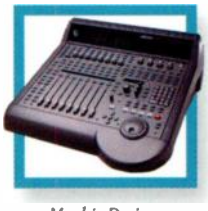

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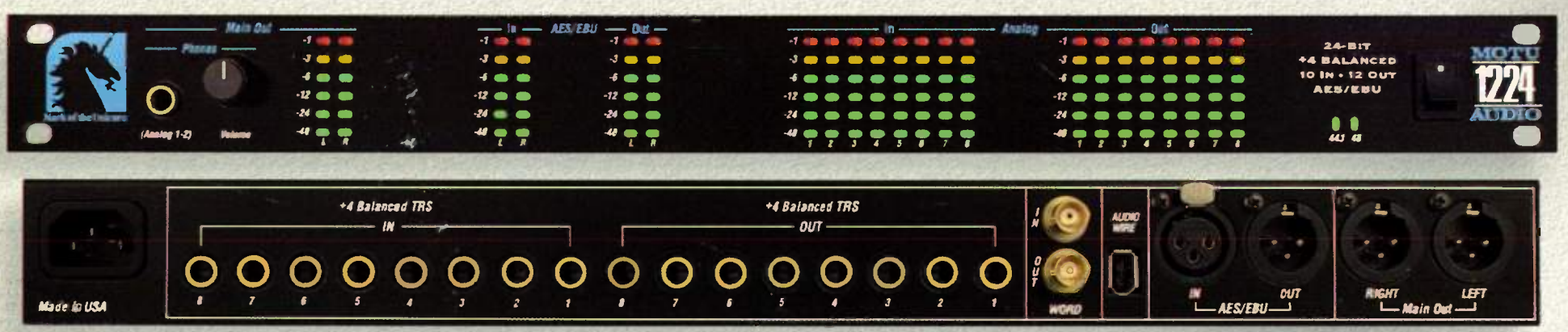


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