



EIGHT GREAT AUDIO VALUES

Extremely reliable, multifunctional, or nearly indestructible, these products have been selected by AV pros as the "best value" audio products in the industry.

by Roger Maycock

In certain AV applications, you expect to pay a lot for a product, such as when you're in the market for a large mixing console or outdoor LED signage. In fact, the more you pay, the more you convince yourself you've bought the very best, right? On the opposite end of the spectrum, however, there are those times when "you get what you pay for" holds true – and you realize that some products only last about as long as the RT60 in a large church. Because expensive isn't always more, and cheap doesn't always mean less, it's often hard for end-users to identify true AV "values." But somewhere in between the two extremes lie those rare products that achieve a competitive price point while differentiating themselves from other makes and models with superior quality. Once you find them, they quickly become staples in your AV arsenal. The trick is: How do you identify these treasures?

For answers in the audio space, we sought the advice of some large systems integrators and AV consultants – industry professionals with a proven track record who work in the trenches. The products highlighted here have passed the acid test of real-world installations. Some products are new; others are not. Some are expensive; others are affordable. Despite their differences, all of these products have at least one thing in common – they all harness cutting-edge technology to deliver a price/performance balance that translates into real audio value.

BSS Soundweb

The BSS Soundweb is a programmable DSP network audio system consisting of several components, including the sw9088iis Networked Signal Processor, the sw9008iis Output Expander, the sw9000iis Network Hub, the sw9016 and sw9026 Audio Matrix Switchers, plus remote and wall panel controllers. Systems are defined and configured using Soundweb Designer, a software package running under Windows 95 or Windows NT. Soundweb units can be fitted with microphone pre-amplifiers, facilitating comprehensive systems from microphone through to the power amplifier input with full DSP. Soundweb networks are expandable and carry both control data and eight channels of bi-directional 24-bit/48 kHz digital audio.

Albert Leccese, vice president of engineering for Colorado Springs, CO-based Audio Analysts, believes the



Soundweb represents outstanding value because of its comprehensive set of features and scalable architecture – enabling the system to accommodate a wide range of installations. Audio Analysts is a design/build firm with installation projects that include houses of worship, performing arts facilities, plus sports and recreation centers. "With the Soundweb you can set up a centralized processing system with two or three units in a single location, or the system can be used to create distributed processing where you have a DSP unit in several machine rooms throughout the facility," Leccese says. "We've configured systems where the Soundweb has handled paging, background music, telephone interfacing, and sound reinforcement to accompany large-screen video systems. Our company has handled a dozen or so installs with it – creating systems ranging from a single box in a church to an 18-piece system for a sports center."

To Leccese, the Soundweb's most attractive feature is its cost effectiveness. "Dollar for dollar, it provides a wealth of processing power for just about any system configuration you'll likely encounter," he says. "We've also

found the Soundweb to be very reliable. There's a lot of bang for the buck. For me, that's great value."

MSRP:

- sw9088iis: \$3,799-\$4,449 (dependent upon I/O configuration)
- sw9008iis: \$2,999
- sw9000iis: \$2,499
- sw9016: \$1,699
- sw9026: \$1,199

dbx DriveRack 260

The dbx DriveRack 260 is an equalization and loudspeaker control system offering two independent channels of processing power with a linkable 28-band graphic equalizer, industry-standard dbx stereo compressor module, feedback suppression, and sub-harmonic synthesizer on the input. This six-channel output system includes parametric EQs, limiters (to protect against speaker blowouts), and driver alignment delay.

The DriveRack is a favorite with Mike Evans, vice president and systems consultant for Alpha Sound & Lighting Co.'s Alabama facility. With offices in Saraland, AL, and Santa Clarita, CA, Alpha Sound & Lighting is a national AV contracting firm that focuses



on the house of worship market. "What makes this piece particularly appealing is the amount of processing power for the cost," Evans says. "The unit employs an easy setup wizard that preloads speaker-tuning values, optimizes the gain structure for the speakers and amps, and includes an Auto-EQ function with an excellent collection of preset response curves – or we can create our own. I use the feedback suppressor extensively. I've worked with several competing products and believe the DriveRack is the best I've encountered. It's not uncommon for us to install two or three systems a month. We use the product for a full range of DSP functions, and it's great for tuning the loudspeakers to the room."

Especially on religion installations, budgets are often highly scrutinized, Evans explains. "It's my job to find products that are not only bullet-proof, but

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that also represent solid value and deliver reliability," he says. "With its feedback suppressor and all its additional DSP capability, the DriveRack 260 represents great value. You can also control the unit from the front panel or via a laptop computer, so it's very flexible."

MSRP: \$1,299.95

Inter-M PX-0288

The PX-0288 audio matrix mixer enables users to route up to eight local audio sources in any combination to eight zones using either local or remote control. Built for multi-zone systems like those found in hotels, airports, casinos, hospitals, conference centers, and restaurants, the device receives ancillary support from a pair of dedicated remote controls and a remote microphone station.



The PX-0288 supports RS422 protocol for remote operation, provides remote mic station and paging mic level control, has auto fire alarm broadcasting capability, and includes a front panel monitor speaker for monitoring any of its eight inputs.

Roly Jan, sales manager and engineer for Silver Springs, MD-based Total Audio Visual Systems, has deployed the PX-0288 regularly during the past year. A systems integration company that services the government, Fortune 1,000 companies, and

educational institutions, Total Audio Visual Systems provides AV systems for boardrooms, conference facilities, plus command & control centers.

According to Jan, the PX-0288 is a great choice for projects where audio needs to be routed to different destinations because it's so easy to configure. "With balanced I/O, local and remote paging capabilities with priority override, and built-in phantom power for the paging mic, this mixer is a compelling product for the AV professional," he says. "We've used it in government command & control centers as well as public information centers, auditoriums, restaurants, and hotels."

For all the features and functionality this unit offers, Jan cites price as one of its most attractive qualities. "We're using this product quite regularly because our installers are very comfortable with the piece," he says. "This mixer is easy to set up and install. It's rugged and well built, and it has proven itself to be very reliable. In my book, that represents real value."

MSRP: \$1,460

JBL JRX115i

Part of JBL Professional's JRX 100 Series, the JRX115i is an economical, suspendable, 15-inch, two-way loudspeaker designed for installation where ground stacking or pole mounting is impractical or undesirable. The enclosure is manufactured from 3/4-inch MDF material, which is extremely dense and rigid, allowing it to achieve better low end than particle board. Three threaded M10 suspension points are featured on the "i" version. An 18-gauge steel grille protects the entire baffle on both models. The JRX115i is well suited for a variety of sound reinforcement applications, including live music, music playback, and speech.

Jerry Lamb, sales manager for Olympia, WA-based CCI Solutions considers the JRX115i an excellent value for budget-conscious customers. CCI Solutions offers AV consulting, system design, and installation services — with the bulk of its business focused on houses of worship.

"We've found the majority of churches operate on fairly tight budgets," Lamb says. "I believe the JRX115i is positioned very affordably and represents real value. The loudspeaker works very well in sanctuaries that are 40 to 60 feet deep by 40 feet wide with ceilings in the range of 18 to 25 feet high. They are easily flown, and a single speaker provides a surprising amount of coverage. A pair, particularly with the matching sub (JRX118S), will cover the vast majority of spaces for both spoken word intelligibility and the worship music played through them."

Lamb regularly supplies churches with the JRX product because it's equally functional as a portable live sound product. "It makes a great speaker for flying or pole mounting," he says. "I consider the JRX115i's fidelity its most appealing characteristic. This loudspeaker sounds good, its frequency response is excellent, and it's quite attractive and sturdily built. Combine these attributes with the fact that the speaker can be flown, and you have tremendous value."

MSRP: \$409 each



Polycom Vortex EF2280

The Vortex EF2280 is a multichannel acoustic echo and noise canceller with an integral automatic microphone/matrix mixer. Typically installed at each location in a multi-site network, the product is used in applications such as boardrooms, courtrooms, distance learning, sound reinforcement, and room combining. It connects easily to other equipment such as codecs, VCRs, and other AV products, and can be programmed from the front panel or through the included Conference Composer software.

Vito Randazzo, president and CEO of JVN Systems, Deer Park, NY, considers the Vortex EF2280

DSP, VALUE, MULTITASKING, AND MOORE'S LAW

Intel co-founder Gordon Moore's famous observation in 1965 continues to ring true — the number of transistors per square inch on integrated circuits continues to double at least every 18 months. Advances in manufacturing processes and nanotech R&D indicate that digital signal processing (DSP) will continue to get smaller, more powerful, and cheaper — all at the same time. This undoubtedly has a lot to do with the types of audio products that came to the minds of the AV integrators and consultants interviewed for this article. Of the eight products named as "best values," six of them include DSP. Coincidence? Probably not. Except for audio components whose function depends on the collision of air molecules (e.g. loudspeakers, microphones, etc.), smaller-cheaper-more powerful (you might call this corollary of Moore's Law "SCMP") audio signal processing products are appearing all the time. While there is still demand for inexpensive analog-based products, multitasking is in high demand from audio electronics, just as it is from the people who use them. As AV systems become more complex and whole system control becomes a requirement, multifunctional products become necessary to make them work. SCMP DSP devices are the obvious way to meet this demand.

a unique value because of its comprehensive set of features, high-quality A/D converters, and its noise and echo cancellation capabilities. JVN Systems is a design/build firm with installations across North America, including corporate boardrooms, training facilities, lecture halls, display walls, and high-end residential projects. "This is a well-designed piece of equipment that is extremely useful to us in audio- and videoconferencing applications, and it's an excellent tool for shaping the sound of a room in audio matrixing tasks," Randazzo says. "The unit's software design is comprehensive."

Randazzo says he uses the Vortex line of products extensively because the audio mixing capabilities combined with the ability to scale the product allow his team's system designs to be flexible while mixing the levels between remote and local sources. "In rooms with HVAC and other ambient noise, the Vortex is essential in providing a clean sounding room," he says. "For system integration, it's controllable via Crestron and AMX. I would say the unit's most attractive feature is its DSP capabilities. In particular, I consider its noise cancellation to be exceptional. The Polycom Vortex offers first-rate audio processing, easy interfacing, and reliability at a reasonable price. For all that it does, I believe it represents excellent value."

MSRP: \$5,845



Shure DFR22 Audio Processor

The DFR22 is a full-featured 2x2 audio processor featuring Shure's patented automatic feedback reduction, along with equalization, dynamics processing, delay, matrix mixing, and a two-way crossover. It's configurable using Shure's drag-and-drop software interface for Windows and its processing blocks can be applied to any input or output in any order. The DFR22 provides control input



pins facilitating connection of potentiometers, contact closures, and Shure's DR510 for remote control operation.

Jim Mueller, president of Detroit-based Sound Planning Communications, says the

DFR22's performance capabilities and reliability are the key aspects behind its exceptional value. His company has been in business for more than 25 years, and its primary customer base includes churches, performing arts centers, and auditoriums. "We've been using Shure DFR Series products for six or seven years, and in that timeframe — during which we've sold and installed hundreds of units — we've experienced only one failure," he says. "The unit's automatic feedback reduction is literally the benchmark by which we evaluate competing products. The DFR22 is the most discriminating and the least destructive to sound quality in its mode of operation. Further, its time alignment, compression/limiting, and crossover functions all add up to make the DFR22 a phenomenal buy for its price point."

Mueller says he's used the DFR22 on a variety of projects, mostly in houses of worship and performance audio systems, such as performing arts centers and auditoriums. "We've used it as a small crossover for a two-way system, to equalize wireless microphones, as well as a main and monitor EQ," he says. "The DFR22 integrates easily into a sound system. I would say the DFR22's most appealing quality is its ability to handle so many different audio tasks. The unit's software is easy to work with, its price is very reasonable, and its reliability is absolutely outstanding."

MSRP: \$999

TOA 900 Series

Consisting of three models — the A-903MK2, A-906MK2, and A-912MK2 — TOA Electronics' 900 Series of integrated eight-channel mixer/amplifiers is designed for installations requiring paging, background/foreground music distribution, and music/messaging-on-hold. The units provide eight module slots to accept any combination of TOA and third-party plug-in modules for custom system configurations. Additional features include external mute and remote master volume terminals for remote operation.

Ed Logsdon, vice president of engineering for D.L. Adams Associates, selected the TOA 900 Series because of



the flexibility provided by its modular design. With offices in Denver, and Kailua, Oahu, HI, D.L. Adams Associates is an acoustical consulting firm that provides AV design services. The company's projects include stadiums, arenas, theaters, conference centers, and educational facilities. "With the 900 Series you can insert a

variety of modules into the rear panel to create any configuration your project requires," Logsdon reports. "The unit's I/O capability is extremely versatile."

Because his firm does a lot of design work for K-12 school and university projects, this unit is a natural fit for areas such as student cafeterias, smaller gymnasiums, and other multipurpose areas. "We recently completed a concert hall at Colorado State University where we used the TOA mixer/amplifier for the backstage and program page system in the lobby areas," he says. "The 900 Series offers a chime module as well as a new digital playback messaging module."

After using the 900 Series for about 15 years, Logsdon says the product's reliability is outstanding, plus it's reasonably priced. "The fact that TOA

provides digital processing modules for loudspeaker equalization makes the 900 Series that much more versatile," he says. "The 900 Series has the ability to satisfy a good 80 percent of the smaller projects that exist. Its real strength is the sheer number of choices available for the product, and that represents real value."

MSRP:

- A-903MK2: \$572
- A-906MK2: \$820
- A-912MK2: \$988

Yamaha PM5D

Yamaha's PM5D digital console is available in two front-end configurations. The PM5D includes 48 XLR/balanced TRS analog mono inputs with manual



microphone preamps, plus an additional four stereo line level inputs. The PM5D-RH includes 48 XLR analog mono inputs with recallable microphone preamps, with four stereo inputs that accept mic level signals. The console offers 130 input connections and can simultaneously mix up to 64 inputs to stereo or LCR stereo. The PM5D provides 24 mix buses, onboard DSP, and 500-scene total recall capability.

R. Gwin Edwards, president of Ruston, LA-based American Audio, considers Yamaha's PM5D a very capable console that is highly competitive in price. American Audio is a sound and lighting contracting firm whose work includes a high percentage of church installations. "While features are certainly important, the mixer's price is one of the product's most attractive aspects and represents, in my mind, solid value," Edwards says. "While there are a number of competing products with similar features, we've found their prices to be, on average, 20 percent more than the Yamaha's. Based upon previous experience with the brand, I expect reliability to be very robust."

Because the PM5D is primarily a live sound console, Edwards says it's a great choice for churches with active music programs. "Our first installation with the console was a church that holds a variety of events on an ongoing basis," he says. "They needed direct recall so they could easily switch from one setup to another. While we've only used the console on one installation thus far, we already have commitments for another six projects over the next year that will include this mixer. We're quoting this console on a regular basis, and our clients are readily accepting it. With its features, price point, and excellent manufacturer support, the PM5D is tough to beat and one compelling value."

MSRP: \$48,900 (PM5D), \$65,900 (PM5D-RH) **AV**

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