

OCTOBER 2009 | VOLUME 15 | ISSUE 10

ProAudio Review

The Review Resource for Sound Professionals

INSIDE:

- **IN USE:**
Roland M-48 live personal mixer
- **CONTRIBUTOR OF THE MONTH:**
Ty Ford



World-Class Reverberation

Bricasti Model 7

A New Standard In Hardware

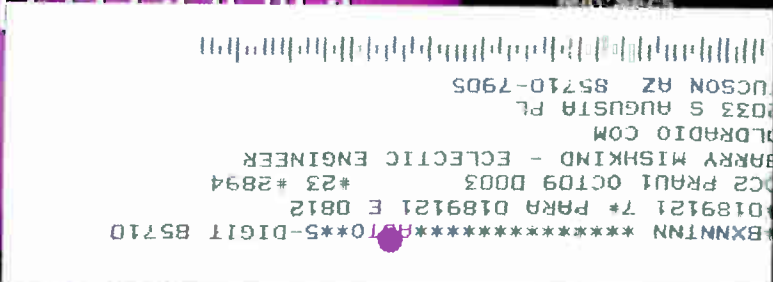
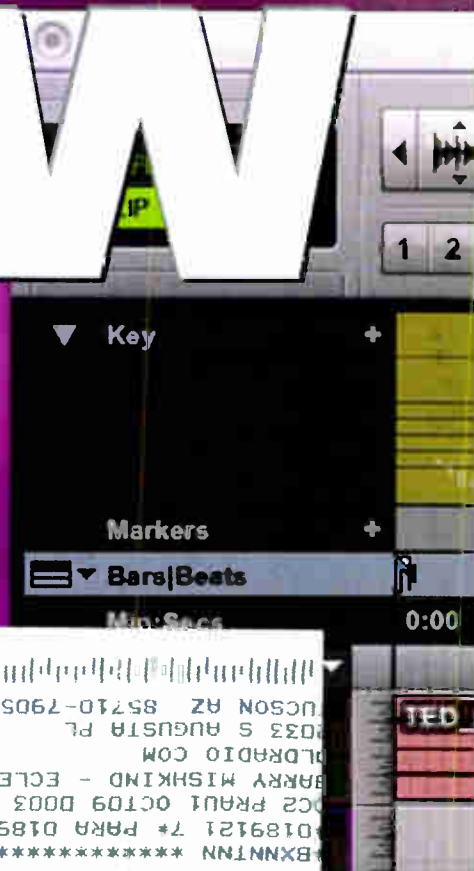
House-Of-Worship Audio Personal Monitoring

Reduced SPL, Gained Intelligibility

DAW

DECISIONS

LIFE AFTER CHOICE



reviews

JZ Microphones BT-201 • M-Audio Axiom Pro 49
Radial Engineering SGI • Schoeps VSR 5

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Active Ribbon
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AT4080
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- Phantom-powered active electronics provide stable impedance and higher output for maximum compatibility with microphone preamplifiers



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BURSTING AT THE SEAMS.

We like to pack things in tight. Offering so much for so little, Yamaha's LS9 digital mixing console features a USB recording and playback device, virtual effects rack, a variety of EQ and dynamics, and recallable head amps. In addition, 16 or 32 channel models can be easily doubled to 32 or 64 channels via Mini-YGDAI expansion slots in a wide range of formats. Throw in an intuitive interface and an attractive price tag, and it's easy to see that the LS9 is stuffed with potential.



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The legend continues



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When DAWs Were Young

Yes, there was once a time when audio production did not involve personal computers at all.



When I started working in the studio in the late '80s, Masterfonics had been involved in digital audio editing for around eight years. I've described the JVC DAS system before—audio stored on 3/4-inch videotape as black and white dots within a video waveform. Editing was all assembly—using what was essentially a modified video editor, a master was built by serially recording a compilation or an edited track piece by piece, in real time (well, in real time plus the time it took to load the source machine with the tape holding the next bit to be added to the master, to use the dedicated controller to electronically mark the edit points on both so the system knew where to punch in, to rehearse and tweak the edit point from mono snippets in RAM, then to execute the edit which sent the source and destination videocassette players flying off into pre-roll and synchronization before the system automatically punched in at the desired spot. Punch out was manual).

While this all sounds very primitive, and by today's standards it is, the JVC system was sample-accurate from its inception, and capable of some very sophisticated work in the hands of a skilled operator. And while it sounds very slow, it was faster than razor-blade editing, its predecessor. One particular producer drove Masterfonics to use the system to his maximum advantage. When his mixers laid down their final mixes, they would also lay down multiple versions with the lead vocal pushed up or down and BGVs also boosted or attenuated. When you had multiple lead singers, like the Oak Ridge Boys quartet, the version permutations were staggering, producing cases of alternate mix tapes. The producer would come into mastering, chose his reference version, then play the tune back while marking a lyric sheet with notes to take a phrase, a word, or on occasion, a single syllable from one of the alternate versions.

When a manufacturer whose U.S. headquarters was then locally based developed a pro-level DAW in 1990, they were anxious to see it adopted by facilities like Masterfonics. They sent in a demo system with an experienced user. The studio engineers provided them a lyric sheet and all the source material required to do one of the assembled mixes as described above, even letting them load all the bits and pieces on to their hard drive before the chief engineer took the masters into his editing suite to perform the identical test. According to the legend, when he returned with a finished master, the guest editor was still rehearsing his first edit.

DAWs have come a long way in 20 short years. We've made undeniable progress in terms of capability, performance and cost, though take the time read Alex Dana's Studio Sense column (page 20) for another perspective on whether there's also been a cost.

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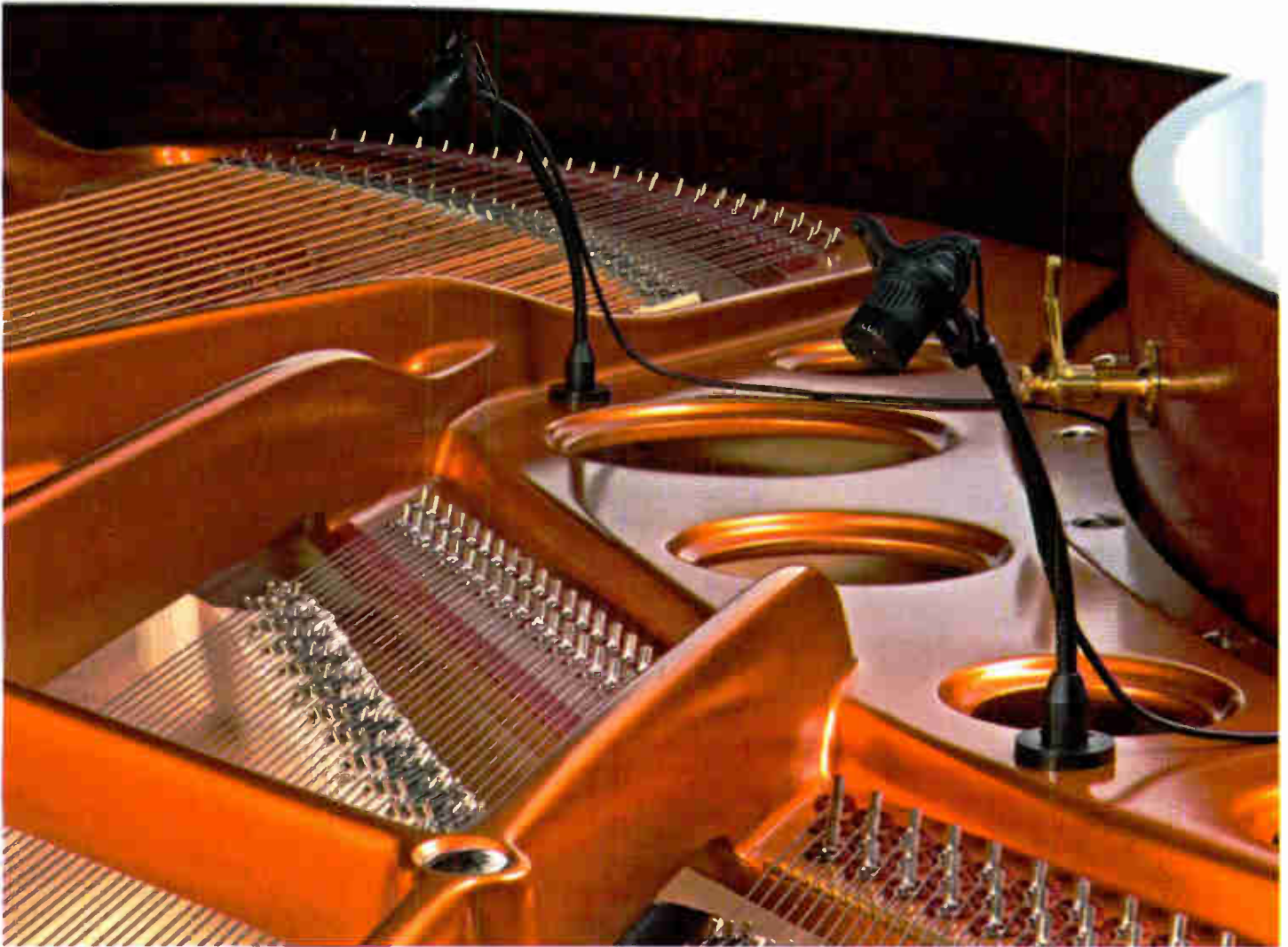
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new studio products



Sony PCM-M10 Portable Recorder

Sony has expanded its line of portable professional audio recorders with the PCM-M10, a palm-sized compact unit that streets for \$299. It joins the company's PCM-D1 and PCM-D50 models to form a family of portable field recorders targeted for every professional sound application, including live sound, house of worship, theatrical and broadcast journalism.

Key features of the PCM-M10 recorder include a built-in speaker, cross-memory recording, digital pitch control, digital limiter, low-cut filter, track mark functions, a 5-second pre-recording buffer and A-B repeat capability. The PCM-M10 comes supplied with Sound Forge Audio Studio Recorder Edition software.

Price: \$399 list

Contact: pro.sony.com/bbsc/ssr/cat-audio



Audio-Technica 40 Series Ribbon Microphones

Audio-Technica has expanded its 40 Series with two intriguing new offerings: the AT4080 and AT4081 bidirectional active ribbon microphones. The AT4080 and AT4081 are the company's first-ever ribbon microphones. A-T's R&D team in Japan engineered and manufactured the AT4080 and AT4081 from the ground up. With 18 patents pending, the AT4080's footprint is that of a side-address condenser, and the AT4081 resembles a pencil condenser.

Prices: \$1,245 and \$895 list (AT4080 and AT4081, respectively)

Contact: www.audio-technica.com



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Lynx Aurora 16-VT AD/DA Converter

Expanding its line of Aurora 192 kHz AD/DA converters, Lynx Studio Technology has introduced its 16-VT model. It reportedly allows users to manually set the analog input and output levels within a range of +8.5 dBu to +24 dBu.

Price: \$1,495 list
Contact: www.lynxstudio.com

A total of 32 miniature trim pots are mounted on the primary circuit board to allow the adjustments.

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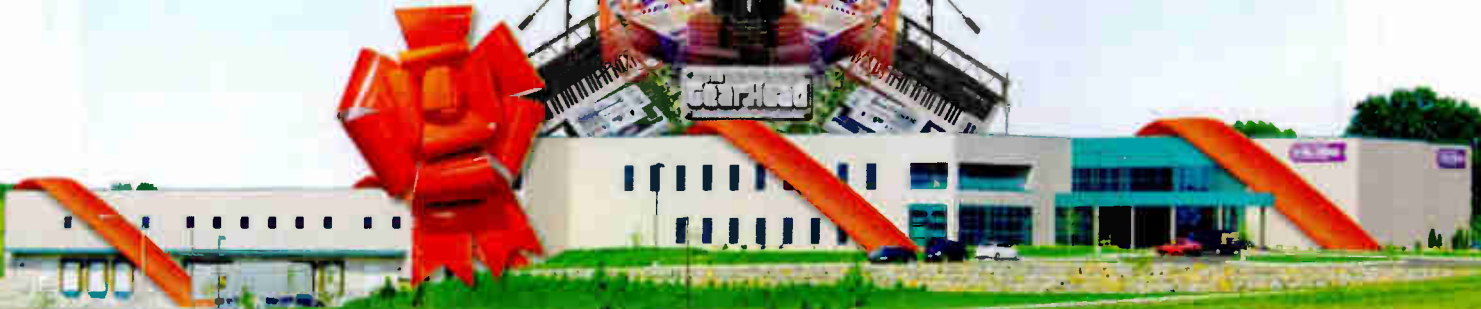
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new studio products

Neumann DMI-8 Digital Mic

Neumann has debuted the DMI-8, an 8-channel version of the company's DMI-2 digital microphone interface, which is said to provide remote digital microphone control and conversion from AES 42 to AES/EBU. The DMI-8 reportedly offers more channels at less cost per channel in a space-saving, rackmountable chassis.

The unit also adds new features to the digital microphone interface concept, including computer-free gain adjustment, multi-unit cascading up to 128 channels, and a variety of multichannel output formats. External commands, such as an "On Air" red light indicator, can be controlled via a 9-pin user port. Output formats are ADAT optical and D-sub 25 with Tascam and Yamaha pin assignments. In addition, open architecture will allow later connection to other multichannel interfaces and audio networks, such as EtherSound and MADI.

Price: TBA

Contact: www.neumann.com



Steinberg Nuendo SyncStation

Steinberg has unveiled its Nuendo SyncStation, designed by Colin Broad. The 19-inch rackmount synchronizer reportedly allows Nuendo to lock to tri-level sync, distribute word clock signals up to 192 kHz and communicate with external machines via Sony 9-pin, MMC or time code.

The unit is fully controllable from inside the Nuendo software and provides additional features such as pull up/down, clock multiplication, GPIO interfacing and varispeed. Engineered to offer fast locking times, sample-accurate synchronization and rock-solid operation, SyncStation latches Nuendo into any existing studio environment.

Price: \$1,999 list
Contact: www.steinberg.net

A revolutionary new suite of restoration plug-ins from Sonnox.
See them first at The AES Show, New York, October 9 - 12. (Booth #126)



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www.sonnoxplugins.com/restore

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Joe Chiccarelli
MultiGrammy winning Producer/Engineer
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My Morning Jacket, Tori Amos, The Raconteurs.

The 1608 Console from API
Blackbird Studio, Studio E,
Nashville, TN



www.apiaudio.com

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Joe Chiccarelli receives no compensation for his appearance or comments

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Retro 176 Tube Limiting Amplifier

"Phil Moore did a great job! Bill Putnam would smile!! The Retro 176 has become my first choice for lead vocals. It now stands alone at the finish line." - Chris Lord-Alge

RETRO

AES BOOTH 544



Mercury EQ-P1 & EQ-H1 Program Equalizers

"Mercury EQ's are one of the best sounding tube equalizers on the planet. The EQH1 & EQP1 are quite original. All the tone of a classic tube equalizer but without the noise and much more power." - Joe Chiccarelli



AES BOOTH 547



D.W. Fearn VT-7 Tube Compression Amplifier

The VT-7 has an amazing depth and texture that adds a halo of harmonic richness to any signal it processes.

D.W. FEARN

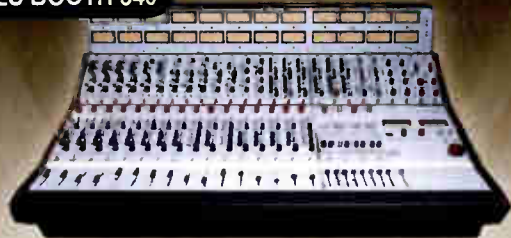


Sterling Modular Studio Furniture

Elegant furniture solutions custom-fitted to your mixer or control surface. Featuring low impact on room acoustics, superior ergonomics, generous ventilation and the most rack space of any desk in its class (48ru).



AES BOOTH 540



Rupert Neve Designs 5088

The 5088 is a fully discrete analogue mixer designed by the master himself. Demo console available in New York City and Los Angeles for personal demonstrations.

AES BOOTH 319



Apogee Symphony System

"Most simply put, the Symphony System rocks and is rock solid! I now have the sonic quality Apogee is known for mixed with seamless integration on my Mac Pro/Logic rig. Life in the studio is good!" - Vincent di Pasquale



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AES BOOTH 541



NEW! Wunder CM7 FET

The U47 FET is legendary for obtaining larger-than-life kick and bass tracks as well as thick and full vocals. For the first time, Wunder has re-issued this classic design in a three-pattern version!



AES BOOTH 541



Barefoot Sound MicroMain27

"They have very impressive bottom end, sound-staging & imaging and can be brutally honest. I had a very short adjustment period with them and was pleasantly surprised to find that mixing actually went faster and translated excellently." - Rich Costey



AES BOOTH 541



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The EQP 22-band parametric equalizer, VCS500 VCA compressor and MPD500 mic pre have all the sonic quality you've come to expect from Inward Connections.



AES BOOTH 541



Helios Type 69 Mic Pre/EQ Module

"WON'T GET FOOLED AGAIN was recorded using 69s. These modules re-create the sound I remember. Straight out of the box. It's spooky." - Pete Townshend



AES BOOTH 154



Purple Audio MC77 Limiting Amplifier

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new studio products

▼ Sonnox Restoration Plug-In Suite



Sonnox has introduced a suite of audio restoration plug-ins. Sonnox Restore is a suite of three plug-ins: Oxford DeBuzzer, Oxford DeClicker and Oxford DeNoiser, designed to repair the sound of damaged audio recordings.

The plug-ins provide applications for removing pops, clicks, crackles, scratches, hum, buzzes and extraneous background noise from virtually any recording. The suite is compatible with Pro Tools, RTAS, Core Audio, AU, VST.

Price: \$1,995 list

Contact: www.sonnoxplugins.com

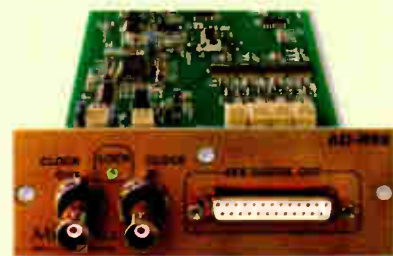
Millennia Media AD Output Options

Millennia Media's AD-D96 and AD-R96 8-channel analog-to-digital converter options for the HV-3D and HV-3R are 24-bit, 96 kHz in AES format with Internal/External Clocking with AES or Wordclock in/ out on BNC

Price: \$1,500 list (each)

Contact: www.mil-media.com

The AES output is on a DB25 connector that conforms to the Tascam wiring standard. All HV-3D and HV-3R units can have the option installed.



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Vienna Teng performing
on stage with M12



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new studio products

Korg MR Series Software



Korg has upgraded the software for its MR Series recorders—the MR-1, MR-1000 and MR-2000S. AudioGate Version 2.0 includes many new features.

Version 2.0's new file editing tools include "Normalize," allowing files to be exported at their highest level without clipping. The output level range has also been improved from ± 24 dB to ± 60 dB, and the peak level metering has been improved for better visual monitoring. When converting from one digital format to another, AudioGate 2.0 includes standard TPDF dithering, plus Korg's own enhanced "Aqua" dithering that closely follows human hearing characteristics for much more musical and natural-sounding results.

AudioGate 2.0 can be used to create DSD audio discs that preserve the audio fidelity of 1-bit recording made on the MR-Series recorders. These enhanced discs can be played in a variety of devices—Sony PlayStations, VAIO computers and certain standalone DSD players. Traditional audio CDs can also be made directly within AudioGate, with support for album artwork and CD-Text data.

Price: Free upgrades

Contact: www.korg.com

SSL Duality SE Console

Solid State Logic has upgraded its Duality SE console. At the center of improvements to the way Duality controls and communicates with DAW applications is the introduction of Ethernet connection between the console and DAW host computer. The existing MIDI ports on the console are retained and can be utilized for connection of other MIDI equipment, effectively making Duality a MIDI interface.

The Duality Logicivity Browser has also been refreshed with new features, a streamlined user interface and new visual appearance. The Solo/Cut tiles across all of the console's channel strips have been replaced with a new set of LCD screens providing more space for a greater level of information and improved viewing angles, according to the company. In addition, the analog side of Duality has received 25 individual feature additions.

Price: POA

Contact: www.solid-state-logic.com

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new studio products



JBL MSC1 Monitor System

JBL Professional has introduced its MSC1 monitor system controller, which integrates monitor system control and tune-ability. It includes the company's RMC (Room Mode Correction) technology that reportedly tunes the monitor system to overcome low-frequency problems in any room. The MSC1 works with any speaker system, and as an add-on to JBL's LSR2300 Series studio monitors.

The MSC1 monitors up to three 2-channel input sources, such as a mixing console, computer workstation and personal music player while controlling the volume of the monitor system and connected headphones. It allows connection of two sets of speakers and a subwoofer.

Price: \$375 list

Contact: www.jblpro.com

Grace Design m501 Rack Preamp

Grace Design has released its latest 500 series rack preamp module: the m501. Designed for audio professionals in the music recording, film scoring, broadcast and fixed installation markets, the m501 reportedly provides the sonic performance and feature set of the company's m101 preamp for customers using 500 series racks.

The fully balanced, transformerless m501 signal path incorporates 0.5 percent precision metal resistors, output line driver and HPF amplifiers, and RFI suppression. The 12-position rotary gain switch is gold-plated, and a sealed gold-contact relay is used for Hi-Z input switching. There's also a rotary trim/gain pot for fine-tuning of gain settings. The m501 includes Grace's ribbon mic mode as standard, which helps to provide a 10-75 dB gain range.

Price: \$625 list

Contact: www.gracedesign.com

Foote Control Systems Compressors



Foote Control Systems has launched two new compressors, the P3 Stereo, and an API 500-series version, the P3500 (pictured). Many modes of operation are available, including feed-forward or feedback topology, plus the choice of

Price: \$750 (P3500)

Contact: www.mercenary.com

fixed RMS or Peak timing modes or rotary-controlled Attack and Release for either mode, and a nonlinear capacitor circuit.

Other features include a phantom-protected output structure, metering switchable between 10 dB and 20 dB full-scale, a 100 Hz high-pass filter before the detector circuit, and an output that automatically configures itself for balanced or unbalanced loads.

Anyone who has
heard it knows . . .

NEW



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S3X-H



S1X



S2X



S3X-H



S3X-V



S4X-H



S4X-V

On 'Essential' Software

Sure, I wouldn't be able to do what I do without Pro Tools for recording and mixing; Peak to batch convert WAV files into mp3s; Dreamweaver to post them to a custom website I create for the artist; and Mac Mail to let them know the mixes are posted. And iChat quickly connects me to a missing session file, sends out a mix, or circumvents FTP altogether. I use Toast to compile the mastered mixes and create a Red Book CD, and the iTunes to check the burn. The iTunes Store provides unlimited sonic references in 30-second chunks.

But get ready for a cliché: The most important piece of software operates between your ears. Think about this elementary example: We were born with the same ears we have now, yet those ears learn over time to make totally different decisions than they would have years before. I'm not just talking about mix decisions.

During a recent tracking session at Odds On Recording in Las Vegas [for *PAR's* inaugural "Facility Review" in our upcoming November issue — Ed.] I walked in on what I thought was a familiar "analog vs. digital" debate. But Sean O'Dwyer, a house engineer with a deep discography, altered the slant.

To paraphrase Sean, the problem with digital has nothing to do with inherent sound quality, but that it is easier; everybody's gotten lazy. All the records I like, the ones that stand the test of time, were made decades ago when there were no quick fixes — no grid, no elastic time, no Auto-Tune — all techniques which create musical blandness. A producer/engineer

was forced to engage the artist and their music on some personal, intimate level and learn what he or she needed to perform and make it a memorable piece of work that someone somewhere will love and hopefully buy. In short, pre-DAW technical and musical problem-solving created superior outcomes.

Is the software that makes making music easier a "monkey's paw?" Like anything, software is a neutral tool. When the ready availability of all tools virtual make even swiveling in one's chair super-



fluous, we are in danger of laziness. My mixes turn out better when I take the time to reference other people's great mixes, when I listen on various systems, and when I mix the first day as if it's the only day. Software, like anything else, can be used for the purposes of good or evil.

Software is limited only by what we can dream up. More software is doing more things. Are we feature-saturated? What more can software do for us? I'm sure the product-developers, with help from end-users, will dream up something else, but I believe it's essential that software get us closer. Less recording latency will allow performers to respond to the instant of their own performance.

Integrated social networking features within a DAW will keep music collaborative even at a distance. DAW manufacturers should make it easier to share sessions across any platform; why can't I plug in my iLok and instantly use all my software on any capable machine? The mouse is 29 years old, yet still the number-one computer interface; it's time to

incorporate touch screens and other more intuitive interfaces — think *Minority Report*.

The iPhone is my favorite new interface, and I anticipate its everyday integration in audio production. Standardized audio track metadata could allow for a host of features designed to ease setup and maximize workflow. Though the term, "workflow," hits below the jargon belt, it implies clearing

the way for creativity — amen. And, last but not least, it's essential that software serving as the very platform for our businesses should never crash.

Software is infinitely flexible compared to hardware — I have dreamt up recording chains that make digital all but the transducer — yet so far, is nothing without hardware to run on. Just when I think I can't live without my CLA76 or Vintage Warmer, I make a great mix on somebody else's rig using only the factory plug-ins, or I cut a record live through a Neve 5088 using the DAW as no more than a tape machine while using my head to capture only what's essential: the moment of creativity.



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- Randy Poole, Pro Audio Review – July 2009

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live

DAW DECISIONS

Here, working audio pros and PAR Contributors share their experiences in choosing and living with their digital audio workstation.

Living With AVID Pro Tools 8

By Russ Long

First of all, let me say that I'm glad Pro Tools isn't the only DAW out there. The competition between the platforms ultimately benefits all of us — DAW users — more than anything else, both in both price and in available features. Regardless of your platform of choice, it's nice to see when a great feature is added to one DAW; as a result, it is typically added to the others within a year or so.

But why am I a Pro Tools guy? Primarily because I was in the right place at the right time (or, arguably, the wrong place at the wrong time). Sound Tools was introduced in 1989 and Nashville's 16th Avenue Sound (a now-defunct but top Music City studio at the time) put a Sound Tools system in one of their small rooms. At that time, there were very few Sound Tools operators so the studio opened their doors for engineers to come in and learn the system during off hours. I spent many an early Saturday morning referencing the manual and teaching myself to record and edit two tracks of audio on a hard drive — something that felt awkwardly foreign at the time. I was able to get work here and there doing editing and assembling and I soon became confident that there was something to this whole hard disk recording thing.

When Sound Tools became Pro Tools a couple of years later, it became possible to

multitrack to the system and I began to find more and more ways to incorporate Pro Tools into my workflow. I bought my own ProTools III Nubus rig (for nearly \$30k, but hey — it did have a pair of 1.5GB hard drives!) and was able to chase my Studer A-80, which gave me another eight tracks or so (depending on how well it was performing that day). This said, I started using Pro Tools before there were any other options so I was already comfortable with it and building a strong repertoire of memorized quick key commands. God knows I don't want to have to start memorizing a bunch of new key commands at my age. What's more, Pro Tools logic (no pun intended) is engineer logic, and I'm an engineer first. The routing, layout and thought process in regards to the way Pro Tools works is right in line with working on an analog console with outboard gear: that's how I'm used to thinking.

In comparison to other DAWs, I like the Pro Tools two-window layout; toggling

Russ Long, a Nashville-based producer/engineer, owns the Carport recording studio. He is a regular contributor to *Pro Audio Review*. www.russlong.ws

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Pro Tools HD



between the two windows perfectly fits my workflow. Whenever I work in Logic or Nuendo, I feel like I'm slowed down by the multiple window approach. Pro Tools has the MIDI edit window, too, but it's not part of the whole toggling process.

No matter how much other DAW users hate to admit it, Pro Tools is the industry standard. It's in nearly every studio and it's the only DAW in the majority of the studios out there. Owning Pro Tools makes it easier to collaborate with other musicians or work with other producers and engineers. Yeah, it's possible to transfer files between platforms but it's never as simple as going from one Pro Tools rig to another.

Pro Tools kicks butt when it comes to editing, too. The PT editing process is extremely smart; functions that take several keystrokes on other systems take only one or two on Pro Tools. I've yet to see someone even approach the speed possible with Pro Tools when editing on another DAW — maybe it's possible, but I have yet to see it.

Further, Pro Tools clientele speaks for itself. With the exception of a handful of people that I know who have left Pro Tools for Logic (the only other platform that I'd personally give consideration), I don't know anyone who has abandoned Pro Tools, and I have friends leave other DAWs for Pro Tools weekly.

When it's all said and done, the most important thing is that you master the platform you use. But hey, I think you'll do best if that platform happens to be Pro Tools.

Living With Cakewalk SONAR 8

By Dan Wothke

How I eventually landed on SONAR as my primary DAW requires a bit of history. I started out on Pro Tools, although I did have a short intro to BIAS Peak and a brief encounter with [Sydek's] Soundscape on the Windows platform. The core choice was determined by which OS I eventually landed on, which is Windows over Mac. I don't want to turn this into "I'm a Mac, I'm a PC" rant, but Windows was the optimal platform for me.

Although I did use Cakewalk 9 for a short bit, I really jumped into the software with SONAR 3, Producer Edition. Since then, Sonar's features and capabilities have grown extensively. SONAR was on the cutting edge of 64-bit optimization and I'm still playing the waiting game for some VST manufacturers to get up to speed.

SONAR continues to introduce new VST instruments and plug-ins with their Producer line. Version 8 shipped with 14 VST instruments as well as 40-plus effects and time-based processors. Some of these have quickly become mainstays in my utility belt and will stand on their own next to high dollar plug-ins. To highlight a few, the Vintage Channel is my instant insert on a myriad of instruments and the Transient Shaper is becoming my favorite on drums and percussive instruments. The



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Dan Wothke is the media director at Belmont Church in Nashville. He invites you to contact him at dwothke@yahoo.com.

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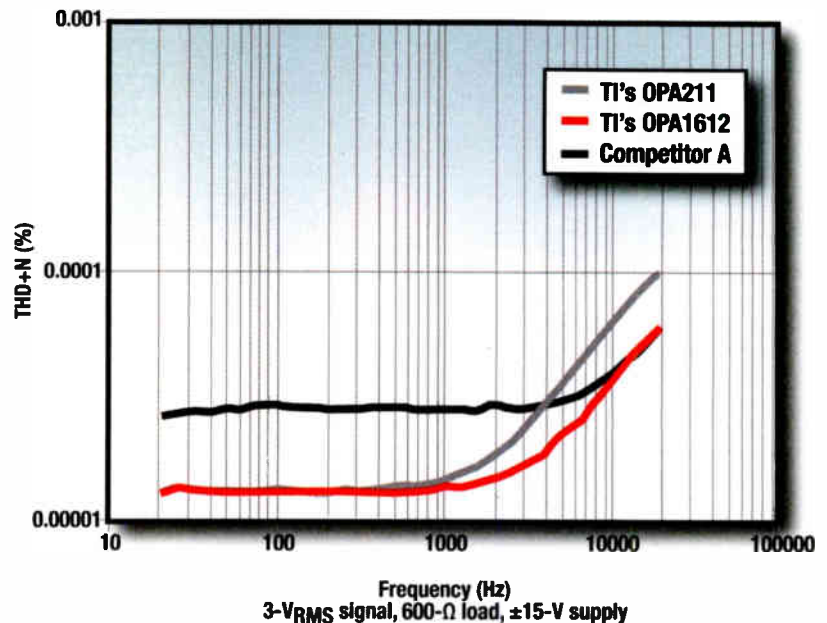
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included V-Vocal tool has convinced me to not throw out the perfect performance take just because a note or two are a bit shaky. This simple tuner is efficient and does the trick — every time — for moderate tuning. (Anything more than moderate, for me, requires a retake.)

The trusty CPU and Disk Meter located within SONAR has never steered me wrong. Once I see the CPU meter flirting with red [at 70 percent usage], I know it is time to bounce or freeze some tracks; this can now be done in real time, as can arming a track during playback mode. The CPU meter is also a good gauge on the performance enhancements after an upgrade has been installed. Each time, I open a session created in a previous version of SONAR and there is generally a marked improvement. Navigation, solo/mute behavior and screen draws are just a few of the additional speed improvements I have witnessed in Version 8.

Since SONAR 3, upgrades have been stable for the most part (as with most DAW software). However, I do find that I am not quick to upgrade to the newest version on release day. In all fairness, I don't do that with most software — word processors, iTunes, or you name it. To Cakewalk's credit, they usually work out the major bugs fairly quickly. And, from an aesthetic perspective, SONAR's customization of the look, feel and navigation

of the software screen continues to make great strides.

To date, I still use Sony Acid 7 for loop building rather than SONAR's Loop Explorer; Acid's MIDI loop audition — combined with preview for Acid-ized loops — has quickly worked its way into my normal loop repertoire for previewing and inserting loops into a project. SONAR AIM Assist and Free Edit are improved editing tools to help with the building of loops.

MIDI — which used to be the greatest weakness for SONAR users — has a new world of possibilities in recent SONAR versions. Detailed zooming and editing capability are just two areas of vast improvement in the last few versions of SONAR, resulting in smoother possible workflow.

One feature that I have been waiting for is the ability to link layers in SONAR that are on different tracks. This would really speed up my editing and comping of multitrack sessions. Maybe I'm a bit of an over-organizer, but the ability to nestle track folders within track folders would be a welcomed feature.

Overall, each new version of SONAR results in some great new gadgets with improved workflow and performance. Each time, it means that I can wait a little longer before having to upgrade my PC.

Living With MOTU Digital Performer 6

By Rob Tavaglione

The year was 2001. I was already way behind the bandwagon when it came to owning a DAW, and I didn't want to waste valuable time and money on a trouble-prone system (as many of my friends and "beta testing" colleagues had). I was leaning towards a Mac-based system, but I couldn't afford Sonic Solutions and I didn't like the proprietary hardware approach of Pro Tools (or the distinct limits of Pro Tools LE). With ease of use, stability and consistency in mind (and with the guidance of Jim Swain at Sweetwater Sound), I went native, chose a Mac G4 and MOTU's Digital Performer (DP). Today — nearly nine years, another G4, a Mac Pro with Intel processors, and over 225 paid productions later — I'm still with DP!

I'm currently up to date with DP 6.02 and still stable, efficient and delivering audio by deadline without fail. DP 6.0 offered a number of improvements, such as extremely helpful custom window arranging (with the use of sidebars, cells and scalable windows in a session), faster and better-looking graphics (with colorful waveform backgrounds and faster overview drawing) and 32-bit file creation. The latter, a boring but essential feature, is my personal favorite; now when I "bounce to disc" (DP's terminology for creating a new audio file, including edits, processing and automation, etc.) I can create a 32-bit file, resulting in more headroom, less distortion and greater clarity. These bounces play side by side with 24-bit tracks in the same session.

There are other more obvious DP improvements as well, such as "CD creation direct from timeline;" support of WAV files as a

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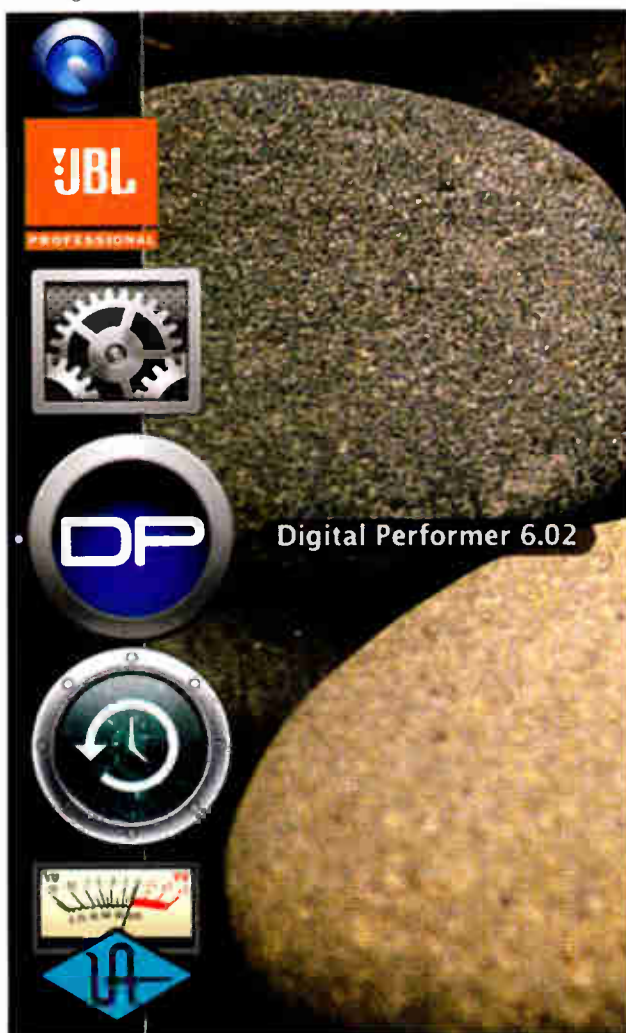
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native format (thus goodbye to cumbersome, non-interleaved Sound Designer II files); its new LA-2A compressor plug-in (I've heard slightly more authentic ones, but this is more flexible with useful "modern" and "vintage" tonal options); and MOTU's new convolution reverb, called ProVerb. All the rage these days, my convolution 'verb keeps up with the pack with excellent sound quality, reasonable CPU usage, and the ability to capture your own impulse responses — just like an expensive third party app. Speaking of third party apps, Audio Unit plug-ins now accept continuous automation data, quite helpful for precise processor changes while mastering, in particular.

Other DP benefits include the ability to use multiple file types or interleave formats in one session, which nicely saves conversion time. The new "snap information" window puts control of all your nudging parameters in an easy to configure and place window. DP's improved track comping feature streamlines the process of creating, auditioning and editing multiple takes into perfect lead vocals, for example.

But I have some quibbles with DP, too. With some shrunken text, lots of whitespace and no control of window background colors, DP's new look is more eye straining than some compet-

The Practicality of (Apple) Logic

By Strother Bullins

Full disclosure, I must start by saying that it obviously takes a company of non-studio engineers to miss the potential irony in the name "Logic," Apple's moniker for their increasingly professional grade DAW. For many seasoned audio pros, Apple Logic is most certainly less "logical" than its chief competitor, Digidesign's Pro Tools.

However, Logic finally did start to look logical enough, at least for me, to begin using it. This changeover happened while I was using Pro Tools|LE in my home studio. At this point, I had used PT|LE deeply, even more deeply than I had used traditional late '90s pro-grade recording configurations when I was still living and working in Nashville. With the curiosity to delve deep in comparing Digidesign and Apple's competing formats, I still must agree that Pro Tools is more like "real" recording than Apple Logic, even while ultimately going the Apple way to find my personal DAW. Interestingly enough, though, this "choice" essentially wasn't one: Apple

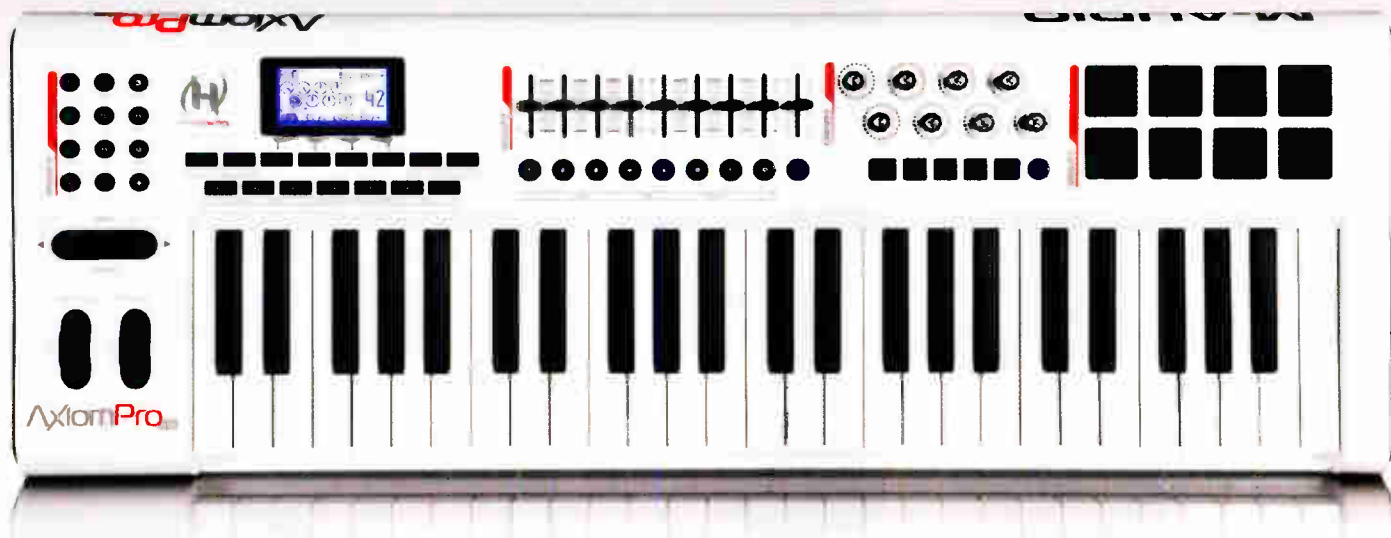
— the computer people whose philosophy towards managing one's virtual world makes the most sense to me — gave me Garageband for free, a simple recording program that looked basically like everything else that Apple gave me when I bought their computers. And with that, Logic was the next logical step, indeed; it looked, felt, and performed much like the other Apple software that I had become so comfortable with.

A big reason why I could easily jump off the Pro Tools train just as it was just getting started (for me) was because I wasn't in it for what many, if not most, PT users were. I was a musician first, recording engineer second, yet with professional-grade goals — essentially what I regularly call a "self recordist." With every new version, Logic does a better job of embracing this growing segment of users, many of which will ultimately learn to use Logic to professional ends in their own independent productions alongside those pros who themselves made increasingly logical DAW choices.



Strother Bullins is the reviews and features editor for *Pro Audio Review*.

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ing DAWs and related software-based competitors. When selecting multiple files/regions, some commands now require "shift + click" (i.e. in the Sequence Editor) instead of "apple + click" (i.e. inside the Soundbites window); personally, this seems a bit inconsistent in use. Sometimes simple importing of files can get buggy and create error messages, even if there are workarounds such as dragging files into your sessions "audio files folder" first before dragging directly into the timeline.

Now, on this very day, I will be installing my new Mac OS — OS X 10.6 Snow Leopard — with my usual mix of expectations. I expect the install to go quickly and smoothly (they always do) and I expect a handful of improvements to my workflow (there always are). Unfortunately, I also expect my Mac Pro to still have problems coming out of sleep mode (Macs always have) and I fully expect to do more force quitting of DP and Roxio's Toast to quit sessions (both often freeze when quitting, although third party plug-ins are the suspected culprit). But that's life with DAWs, isn't it — lots of pros and always a few annoying cons? And now I hear that DP 7.0 was just released with 64-bit processing.

Michael Wagener in his Nuendo 4, SSL AWS 900 and Euphonix MC Pro equipped studio.



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Living With Steinberg Nuendo 4

By Michael Wagener

Choosing a workstation is a very personal choice. It's much the same as choosing speakers: you'll like one pair, someone else will like another, both choices are good, and for the third person, neither will work.

Yet, especially now in 2009, most of the workstations aren't really that different. Obviously Pro Tools established itself as the "the standard," which I think is pretty much based on their being first out there, and it's a fantastic system. From a financial perspective, Nuendo is a lot cheaper than Pro Tools, and Logic is even cheaper than that. But you still need good converters. Once you're in the box with good converters, there's only a difference in workflow... and it's not that great of a difference.

For me, the DAW transition was made from TAS-

Michael Wagener is a producer/mixer/engineer.
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CAM DA-88 [Hi8-based eight-track digital recorder] machines to the Euphonix R-1 [multitrack hard-disk recorder] when I had my old studio in Nashville. It was first of what I'd call a "workstation" situation, even though the R-1 was just a straight recorder and all you could do is simple editing, cutting and pasting, and so on. Euphonix had amazing converters at the time, which is why I decided on it.

Around 2006, Euphonix offered a storage solution that gave you Nuendo. At that time, I fell in love with Nuendo and felt that it was pretty easy to handle. When it was time to switch over to a complete in-the-box solution, I went with Nuendo; I liked the interface, and it just seemed to "talk" to me. I started on a PC

it's a bit of a financial thing: with Nuendo, I don't have to buy their hardware. I can use anything I want. There's a bit more freedom to use what I want to use, I'm not set to a certain hardware, like, for example, with Pro Tools. Actually, I'm still using the Euphonix converters that came with the R-1 and am very happy with that setup.

With today's requirements, sometimes I get 200 tracks to mix. After the mix, there's a recall. And because a recalled mix usually needs to happen fast, most of my mixing happens in the box.

I plug analog gear into Nuendo channels, and Nuendo makes that really easy. So far, I'm using both plug-ins and analog gear. Plug-ins are fun, great, and work well... and as long as no one

“Choosing a workstation is a very personal choice. It's much the same as choosing speakers: you'll like one pair, someone else will like another, both choices are good, and for the third person, neither will work.” — *Michael Wagener*

specially built for a DAW. At the time with Nuendo, performance on Mac was a bit behind that of performance of a PC. Now everything is up to par on the Mac, but I'm up and running with PC, so there's no reason to change.

The main selection point for me is the Nuendo [GUI]. That, and

tells me "this one sounds like an 1176" — because it doesn't — I'm fine with it. It sounds like a compressor and is absolutely useful, but the real hardware is still quite a bit different from what they would call an equivalent software version. I'm not saying I don't like them — I think plug-ins are brilliant, especial-

continued on page 50

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Features

The exterior design and controls on this 2U box are very clean. It's "Schoeps gray" and brushed-metal, front-panel controls consist of two separate control surfaces, one per preamp. Each channel has backlit phantom power, polarity and mute buttons to the left of a detented gain pot calibrated in 3 dB increments from 0 to 60 dB. To the right of each pot are three low-cut buttons at 40, 80, and 120 Hz.

The VSR 5's two electronically floating, balanced inputs are rated at 8k Ohms; input CMRR (common-mode rejection ratio) at 60 dB gain is >90 dB at 1 kHz and >80 dB at 15 kHz. Maximum input level at 0 dB gain is 25.4 dBu (23.2 dBV). THD+N at 1k is an infinitesimal 0.0006 percent (-102 dB) at 30 dB gain and 27.5 dBu output level. Frequency response at 30 dB gain is 12 Hz to 90 kHz at 0/-0.1 dB and it is only down 3 dB at 2.5 Hz and 400 kHz. Internal bandwidth is 555 kHz



photo by Ty Ford

at 60 dB of gain. Maximum output level is 28.5 dBu (26.3 dBV). Each channel has a pair of isolated, electronically floating XLR balanced, 50 Ohm outputs. Output CMRR is >60 dB (20 Hz - 20 kHz).

In Use

I tried a half-dozen different mics with the VSR 5 preamp, beginning with the least sensitive of the bunch, my RCA 77DX ribbon mic. Cranked at full gain, the VSR 5 and 77DX sounded quite good, and while there was a slight amount of circuit noise, I found it acceptable for all but extremely quiet sources where a ribbon mic would not be my choice anyway. For louder sources, like guitar cabs, I backed off the gain and noise was not an issue. Next, I auditioned an AEA R84 ribbon mic alternating between the AEA TRP preamp and the Schoeps VSR 5. The TRP was slightly "bigger" on the low end, but the overall HF noise levels were virtually the same and the R84 sounded extremely good though the VSR 5.

The Neumann U89 and AKG C414 BULS also matched well

with the VSR 5, as did the Sennheiser MD 421. Even in the "music" position, the 421 has a frequency "peak" that some preamps don't handle very well. As with my GML mic preamp, the VSR 5 reveals the peak without overemphasizing it.

In the studio, I tracked finger- and flat-picked acoustic guitar parts with my D28S Martin using medium strings, a Schoeps CMC641 supercardioid mic, and the VSR 5 with no EQ. Upon playback, what I heard was a recording of my guitar as it really

Fast Facts

Applications

Studio; project studio

Key Features

Discrete front end; solid-state 2-channel preamp; high-pass filters; phantom power; dual, balanced outputs per channel, RF Protected.

Price

\$3,499 List [an introductory price, according to the U.S. distributor — Ed.]

Contact

Redding Audio (U.S. distributor)
203-270-1808 | www.reddingaudio.com

►►Contributor of the Month:

Ty Ford Engineer/Mixer, Studio and Location Audio

Ty Ford was born with gifted hearing; including an extended frequency response that allowed him to hear ultrasonic motion sensing devices in commercial buildings and at traffic lights. He credits his mother, Julia, for putting him on his audio path. Observing his capabilities, she bought him his first tape recorder when he was nine.

After acquiring a First Class Radio Telephone Operator's license from the FCC, he began his career as a production director and announcer for major market radio stations. During that time, he also started producing local bands. He first reviewed pro audio gear for *Radio World* in 1987 after being recognized for his expertise at an NAB audio production workshop in Los Angeles. He continues to write for *Radio World*, *Pro Audio Review*, *TV Technology* and is currently an audio forum leader on creativecow.net.

In addition to his studio work, he works as a location audio recorder and mixer for film and video and consults with equipment companies, studio owners and production companies. His first book, *Advanced Audio*

sounds, maybe with just a bit more top end: Understandable, since that is probably what it sounds like if my ear was five inches in front of the guitar. The combination of CMC641 and VSR 5 offered transparent and smooth performances with no nasty artifacts. Next, I tracked vocals using both the U89 and R84 and was similarly pleased with both.

The VSR 5's 40 Hz, 80 Hz, and 120 Hz high-pass filters are very gentle. Although the mute can be manually engaged, Schoeps thoughtfully included an automatic mute on the Phantom Power switch that momentarily mutes the audio during engagement and disengagement of the phantom power circuit.

Summary

The Schoeps VSR 5 deserves a spot on the top shelf. It's quiet, smooth, and has a well-implemented feature set.

Production Techniques, is in rewrite. His second book, *Ty Ford's Audio Bootcamp Field Guide*, targeting location audio recordists, is in its third edition and has sold to every continent with the exception of Antarctica. He has been asked to update the microphone chapter for the last two editions of the weighty *NAB Engineering Handbook*. He may be reached at tyford.com.



Ty Ford on the set of 'Hot Flash'

(photo credit: Tom O'Connor)

STUDIO **E** BAG

Zaxcom's Fusion is the perfect location sound solution for multi-track high resolution recording, mixing and effects processing of sound for picture.



FEATURES

- Intuitive touch screen interface
- 10-track dual Compact Flash recording capability
- Lightweight design
- 8 mic/line inputs with 48V power
- 4 AES input pairs with sample rate conversion
- 16 x 16 digital mixer with pre-fader/post fader assign
- Effects include: EQ, notch filters, compressor and delay

TESTIMONIALS

- The specific demands of our show require in bag solutions. 8 iso tracks with in-line (signal) processing provides more flexibility. All Compact Flash recording means no moving parts. The Fusion is perfect for us.
Steve Jones, Sound Supervisor
"Extreme Makeover: Home Edition"
- Easy, logical, powerful, solid state - no more hard drives! 8 discreet channels of beautiful digital audio in my mixing bag!
Tomm Dauenhauer, Audio Supervisor
"Snoop Dogg's Father Hood"
E! Entertainment TV Productions
- Fusion is the solid state way ahead - it offers me the vast inputs, and extensive outputs, of the existing Deva recorders, plus the incredible ability to record without moving parts. I can make primary and back up recordings in real time, whilst enjoying the known and trusted touch sensitive user interface that I am used to from being a Deva user. This is more than a recorder, and much more than a mixer. It is a mixer/recorder par excellence.
Simon Bishop, Production Sound Mixer

Bricasti Model 7 Digital Reverb Processor and Model 10 Remote Console

The M7 and M10 remote comprise the best-sounding reverb system on the market.



After hitting the streets a couple of years ago, the Bricasti Model 7 (M7) Digital Reverb Processor continues to earn its reputation as the top hardware reverberation unit in production today.

Designed by former Lexicon employees, the M7 uses an innovative new reverb algorithm — the “True Stereo Reverb Process” — that creates believable yet totally controllable sonic spaces and is rapidly becoming the go-to reverb box for top mixers around the world. Bricasti followed the release of the M7 a year later with the Model 10 (M10) remote control that allows up to 8-M7s to be driven from a single device.

Features

The single-space, 9 lb. M7 is beautifully crafted in a non-corrosive stainless steel chassis and top cover. The box features milled, anodized, aluminum knobs, button caps and front panel that make for a visually stunning piece of equipment. All of the M7's controls are located on the front panel as well as level meters and a two-line, bright-red LED display (that looks great in both dim and brightly lit situations) for program name and edit/system parameters. The rear panel includes all analog and AES/EBU digital connectors, RS422 serial ports and MIDI in and out connectors (MIDI I/O is currently not used but is included for future developments). Touting an impressive 116 dB dynamic

range and a frequency response of 10 Hz to 20 kHz \pm 0.05 dB, the M7 has a pair of converters that sound better than most standalone converters available today. Just like my Mac, the M7 has a quiet, low-speed fan that is heat-sensor-controlled and automatically speeds up if the box is overheating due to poor ventilation, insuring that the box keeps cool.

The Model 10 is the M7's dedicated hardware remote controller, and it has been designed with the same criteria as the M7 utilizing a case manufactured and milled from solid, anodized aluminum ensuring a long life and stunning look. The M10 interfaces with the M7 via a standard RS422 serial interface that provides power to the M10 and control of up to eight M7s. The M10 includes a 10-meter cable that is Lexicon 480L-compatible, making it easy to replace an outdated LARC with a new Bricasti box.

The M7 presets utilize three different independently adjustable reverb engines. The first covers the early reverberation (early reflections); the second, the late decay tail; and the third, the early reverberation below 80 Hz. All three engines integrate perfectly creating the authentic sound of a single sonic space.

The box includes 100 factory presets and 100 user registers. The handy Favorites function — available via the M7's front panel or on the M10 — allows instant access to four different memories. I store my go-to registers in these locations, keeping my favorite settings a button-push away. The selected program is stored as a favorite by holding one of the favorite buttons down for a couple of seconds. Each program features 12 parameter adjustments that provide extreme control without option overload. As with most reverberation boxes, Presets and Registers are organized according to application and desired effect, making it possible to find the best setting as quickly as possible.

In Use

I found the controls of the M7 to be intuitive. I dove right in and started using it right out of the box, only occasionally having to refer to the manual. After several days of use, the first thing I noticed about the M7 is that it doesn't have an obvious sound of its own, like other reverbs; rather, it puts sound sources in controllable and realistic-sounding spaces. If I build a mix ground up using the 480L, I hear the 480 in the mix, but if I build a mix around the M7, I don't hear the reverb at all, I just hear everything sounding great. If I mute the M7, the entire mix falls apart.

Russ Long, a Nashville-based producer/engineer, owns the Carport recording studio. He is a regular contributor to *Pro Audio Review*. www.russlong.ws

Fast Facts

Applications

Commercial studio, project studio, broadcast, post production, sound reinforcement

Key Features

"True Stereo Reverb Process" algorithm; 116 dB dynamic range and a frequency response of 10 Hz to 20 kHz \pm 0.05 dB; stainless-steel chassis and top cover; milled, anodized aluminum knobs, button caps and front panel; two-line, bright-red LED display; analog and AES/EBU digital connectors, RS422 serial ports and MIDI in and out connectors (MIDI I/O for future features)

Price

\$3,695 and \$2,099 list (M7 and M10, respectively)

Contact

Bricasti Design Ltd. | 781-306-0420
www.bricasti.com

One of the M7's strengths is that it sounds amazingly real. The parameters can be tweaked from one extreme to another, and the result is always a truthful-sounding space. Other reverbs have a margin of realism, but once a parameter is adjusted in either direction beyond that margin, the result is an artificial-sounding space. This doesn't mean you don't have extreme control of the M7 — you do — but the difference is that the Bricasti brains have developed algorithms that sound real even when adjusted to extremes.

I'm mostly mixing in the box these days, so my typical setup with the M7 has been to digitally loop it into my Pro Tools rig — it works perfectly in this situation. To accurately evaluate the box, I needed to use the analog ins and outs; after spending several hours mixing through my Amek/Langley BIG desk, I've become an even bigger fan of the M7.

I've found the M10 to be the perfect complement to the M7, allowing me to adjust the reverberation parameters quickly and easily while remaining in the sonic sweet spot. While \$2,100 is a hefty price tag for a remote, it's so useful that I don't think I'd contemplate buying the M7 without it.

I was initially surprised that the M7 has no support for surround but after discussing it with Bricasti's Brian Zolner, I agree that a surround unit would increase the price of the M7 to the extent that the already pricey box would be nearly out of reach for most potential buyers. Bricasti's approach is to allow users to configure systems for any application including surround by using multiple M7s with the M10 controller.

Product Points



- ▶ The best artificial reverb ever created
- ▶ Easy to use
- ▶ Stellar-sounding converters



- ▶ Pricey
- ▶ No software support

Score The Bricasti M7 and M10 bring amazing sounding reverb into the 21st century.

I would love to see a plug-in style software controller added to the Bricasti product line, one that shows up looking like a plug-in in your Pro Tools, Logic, Cubase, or other DAW. It would ideally store all of the M7's parameters, allowing me to e-mail a Pro Tools session that I've been working on in Nashville (using half a dozen M7s) around the globe where a collaborator automatically recalls my M7 presets by opening the session. This would eliminate the need for the M10 for in-the-box mixers.

Summary

After two months with the Bricasti Design Model 7, I'm convinced it's the best-sounding reverb I've heard to date. It sounds real regardless of the extremity of the parameters settings, and it is easy to use. While it's a bit pricey by project studio standards, the M7 is built to last for decades and is a worthwhile investment for any studio, engineer or post-production facility.

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World Radio History

M-Audio Axiom PRO 49 USB MIDI Controller

Today's keyboard MIDI controllers have moved far beyond their bare-bone counterparts of just several years ago. M-Audio's Axiom Pro 49 (\$599 MSRP/\$479 MAP) provides just such evidence, with a host of useful features and a new bi-directional communication system, HyperControl, which automatically configures the Axiom Pro to control many aspects of your host software.

Features

The Axiom Pro line of controllers — which includes 25-, 49-, and 61-note controllers — offers semi-weighted keys with Aftertouch, a numerical keypad, eight velocity/pressure sensitive drum pads, eight “endless” encoders, function keys, an LCD display and nine sliders (only on the 49- and 61-note models).

What makes this controller truly valuable to the working musician, composer, and/or creator is the incredible ease with which it automatically controls knobs, buttons and transport keys for programs such as Pro Tools, Reason, Cubase, Logic Pro and others. [“With HyperControl,” clarifies M-Audio's John Krogh, “the Axiom Pro's knobs, sliders, and transport buttons are automatically mapped to mixer channels, pan and send controls, and the transport. The knobs will also automatically map to plug-in parameters.” — Ed.]

Input, MIDI I/O, a USB port, 9V DC power socket, power switch and a cool Kensington Lock Connector.

In Use

My first test was with Pro Tools 8 LE on an Intel Mac Pro. Hooking it up via a USB cable, I selected Axiom Pro HyperControl in the Peripherals>MIDI Controllers >Type menu. That's it — Pro Tools bi-directionally followed the Pro 49 (please note that HyperControl requires Pro Tools 7.4 or later).

The amount of control offered right out of the box is substantial. Transport keys do what you expect, and the sliders automatically assigned to banks of eight faders in the Pro Tools Mix window. The current eight under control are then outlined in blue on the Pro Tools screen. Fader 9 is permanently assigned to the Master Fader (if you have one) — a nice touch I came to rely on quite a bit.

Using the dedicated F-keys, you can do things like Bank left or right through the tracks (F6 and F7), Mute selected channels (F4), Solo (F5), etc. You can also send QWERTY keyboard shortcuts from the Axiom Pro, allowing you to operate your DAW using your favorite key commands without having to use a QWERTY keyboard. (Assigning key commands to the Axiom Pro is separate from HyperControl.) You can create presets of your favorite key commands for recall (a total of 50 memory locations are provided), and it comes with 20 presets for compatible DAWs.

The big picture here is the Axiom Pro 49 is far more than just a keyboard, it becomes an extension of your software. Since each software program is controlled differently with the Pro 49, I decided to test it out with Reason (4.0 or later is required for HyperControl). I simply chose the Axiom Pro 49 in the Preferences>Keyboard and Control Surfaces submenu.

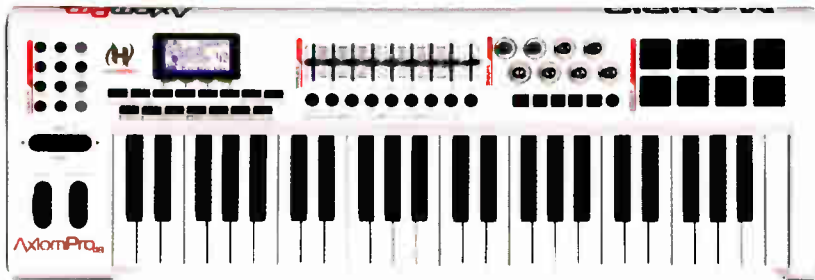
With Reason, the functionality of the sliders and buttons vary depending on which Device is selected and assigned in the Reason sequencer. For example, with a Subtractor, you can use the Pro 49's soft keys in the LCD window to

easily select Oscillators, Filters, LFOs, etc., and tweak them with the rotary encoders. It takes a few minutes to learn to navigate each device. Keypad numbers 5 and 6 zoom in and out, and the minus and plus [-/+] keys decrease/increase tempo and so on.

Summary

The Axiom Pro 49 is almost too useful not to have. It's not just a keyboard, but also a flexible, full-functioning control surface in one compact unit. While it at first seems bit pricey at just under \$500, you get more than you pay for.

Contact: M-Audio | 866-657-6434 | www.m-audio.com



To begin with, the unit has some beef to it. The semi-weighted keys are comfortable to the touch, and you can choose from multiple velocity response curves to suit your style. The 128 x 64 graphic LCD dynamically changes when navigating around your session and operating keyboard controls, letting you know what parameters and tracks you're working with. The LCD is flush with the surface of the controller, but I would prefer it to be angled to make it easier to read the items at the bottom of some pages.

The nine 40mm sliders have a tight feel to them, and the transport controls don't feel cheap; the same applies to the rotary encoders, Pitch/Mod wheels and various Zone/Group/Mode soft keys. The rear panel features Expression Pedal Input, Sustain Pedal

Rich Tozzoli is a producer, composer, sound designer, and the software editor for *Pro Audio Review*.

Just What Does "Portable" PA Mean?

STAGEPAS 300 Portable PA System

- 8-input stereo powered mixer (removable from speaker enclosure)
- 4 mono mic/line inputs and 2 stereo line inputs
- Dual 150W Class D amplifiers
- 8" two-way loudspeakers
- 2-band EQ on each input
- 1-bit Modulation reverb
- Monitor output
- Auto Limiter
- System weight under 40 lbs.
- Optional YBSP300 roller case

STAGEPAS 500 Portable PA System

- 10-input stereo powered mixer (removable from speaker enclosure)
- 4 mono mic/line inputs and 3 stereo line inputs
- Dual 250W Class D amplifiers
- 10" two-way loudspeakers
- 2-band EQ on each input
- Two input compressor/limiters
- Phantom power
- Digital reverb
- Monitor output
- Auto Limiter
- System weight under 50 lbs.
- Optional YBSP500 roller cases



STAGEPAS 300

It shouldn't mean sacrificing performance for the sake of convenience. Trading frequency response, features, and professional appearance for small size and ease of transport is no longer required. With Yamaha's market-leading STAGEPAS portable PA systems you get it all... ultra-compact, light weight, simple operation, quick setup and teardown, plus great audio. Get the biggest possible sound out of the smallest possible systems... STAGEPAS 300 and 500.



STAGEPAS 500

 **YAMAHA**

JZ Microphones BT-201/3S Small-Diaphragm Condenser Stereo Kit

JZ's first small-diaphragm condenser microphone features unique design elements and a "pleasantly different" sound.

Juris Zarins and his namesake company, JZ, consistently offer useful microphone designs featuring a touch of interesting funkiness. Their new small-diaphragm stereo condenser mic, the BT-201, is no exception. I find it to be a unique, yet versatile, winner.



Features

For this review, I received a BT-201 matched-pair package, officially called the BT-201/3S kit by JZ (\$1,349 list). Each BT-201 offers a relatively large shaft for a SDC "cigar mic," narrowing down to a 8mm "neck" diameter before expanding back out to the shaft's width at the mic capsule. This may or may not reduce diffraction at the capsule, but when used as a pair, the BT-201 design does allow for some easier X/Y placement and enables the execution of its top feature: magnetically secured, interchangeable capsules. Cardioid, soft cardioid and omni are provided in the matched pair kit (soft cardioid capsules with a -20 dB pad are also available separately), all of which are contained in a luxurious wood box featuring a magnetic clasp.

In Use

On drums using cardioid capsules (overheads in ORTF or as a spaced pair on ride/hi-hat), the BT-201s exhibited a slightly emphasized top end that didn't get harsh or strident and never required

any subtractive EQ (not even on a "pingy" ride). Their mids were respectably flat and the bottom was a little lean and tight, yet reasonably full for SDCs. High SPLs were handled with no problem (the BT-201 can take up to 140 dB).

I also tried the BT-201s as overheads with soft cardioid capsules; again, the capsules sounded great, but they revealed some unwanted qualities in my room. I personally preferred the omni caps for ride and hat; they were even smoother and natural sounding. On a 13 x 3.5-inch piccolo snare drum, I taped the BT201 (with cardioid cap) to a beyer M-201 snare mic (just like I might normally pair an AKG C451 and a Shure SM57) and got nice results: good proximity effect on the bottom end with less "splat" on the top end than a C451 would provide.

While I liked the BT-201 pair on acoustic guitar, they were a little "forward" and a bit too lean. They did provide a detailed sound for finger picking; self-noise almost became an issue on a very quiet performance. With omni caps, they did sound a bit thicker and would work



well with a darker-sounding acoustic guitar — like a Martin, for example. The BT-201 pair was markedly different from my C451 or Neumann KM 184 pairs; it was not quite as focused with a little more low/mid body. Although the BT-201s may not have the oomph for solo acoustic guitar, I wouldn't hesitate to use them for ensemble pieces where their voicing would help backing tracks sit just right.

On my Yamaha upright piano, the BT-201s delighted me. We tried it all — X/Y, ORTF and spaced pair, each with cardioid,

soft cardioid, and omni caps — before finally settling on a spaced pair of omnis. Here, the BT-201s provided a fine soundstage with plenty of width, depth, realism and openness. Coupled with a ribbon mic in the middle for some needed thickness, my little piano sounded quite balanced and, dare I say it, closer to a grand piano than you could imagine (I usually use only a pair of cardioid large-diaphragm condensers on this piano).

Regrettably, the BT-201/3S kit isn't "accessorized" as I would prefer — they

come without clips (luckily, Shure SM 58 clips fit them), windscreens or shock-mounts (although the JZ1-7 shockmount is available from JZ), or even a manual, a seemingly odd oversight. But since they do come with those three capsules — hot-swappable even with phantom power applied — they offer a neat and utilitarian feature that transforms the package from good to excellent. Maybe JZ could put together an accessory kit with all of these aforementioned "missing" accessories and a stereo bar? Doing so would make

the BT-201 package an excellent proposition for even more applications.

Summary

In a crowded field of small-diaphragm condensers, JZ Microphones offered something pleasantly different with the BT-201/3S kit. In the presence of BT-201s, my trusty C451s face some serious competition.

Contact: JZ Microphones | 888-974-1112
www.jzmic.com

mini review by Richard Alan Salz

Radial SGI Studio Guitar Interface System



I know I'm not the only person around who has tried the old 100-foot guitar cable trick: You know, the one where you run the really long cable from the guitar player in the control room to the live room (or iso booth) where the amp is. Like me, you've probably noticed that it doesn't work very well; you get lots of hum and other noise or the guitar player remarks on the "dead" feeling of his normally lively rig. Enter the Radial Studio Guitar Interface (SGI) system (\$300 list).

Features

The SGI is a two-part solution comprising the SGI-TX transmitter and the SGI-RX receiver. Built to Radial's extremely high quality standards, both are very heavy yellow boxes, like steel bricks. The SGI-TX requires power from the included wall wart adapter, and, like some of the other Radial guitar-oriented boxes, there's the somewhat-enigmatic Drag control. Don't worry, you won't be wearing a skirt if you turn it up; instead you'll notice some pleasing tonal variations that allow you to darken the tone and change the "feeling" of the guitar/amp interface through some impedance-matching mojo. The

passive SGI-RX has an essential ground lift button.

In Use

Operation couldn't be easier. Plug into the TX's input from your guitar (or bass) with a standard 1/4-inch instrument cable, connect an XLR microphone cable between the TX and the RX, find your signal in perfect condition at the output of the RX, and plug into your amp — done. For this review, I used a 50-foot Gotham GAC-3 mic cable and the excellent Vovox Link Protect A (5-meter length) for the instrument cable.

Radial claims that the SGI can drive up to 500 feet of balanced cable. Being the natural skeptic that I am, I decided to give it a try. In a happy coincidence, I had just constructed 10 50-foot mic cables using Gotham GAC3 cable and Neutrik XLR connectors. So, I set up the SGI-TX in my control room, plugged in my 1980 Les Paul and connected the output of the RX into a Polytone Mini-Brute close-miked with a Violet Design Amethyst Classic condenser mic.

There was virtually no difference between the sound of 50-foot and 500-foot lengths of cable (as well as the inter-

mediate lengths). That's not to say that there was no difference between a straight 15-foot cable right into the amp and the SGI chain; there was a slight attenuation in volume, and a minor tonal shift. All in all, the difference between the two setups was extremely minor, and only noticeable if you were listening for it. The Drag control further narrowed the gap.

Already impressed, I tried the same setup with a FBB Custom fretless bass loaded with a single Bartolini Humbucker and an active onboard preamp to see how the SGI coped with an active instrument. As expected, the SGI sounded great and proved to be a useful addition to the session.

Summary

As has been the case with other Radial Engineering products I have used (and purchased) in the past, the operation and build quality of the SGI system was literally without fault. Highly recommended!

Contact: Radial Engineering
604-942-1001 | www.radialeng.com

Richard Alan Salz is a professional engineer and founder of Vermont Audio Labs. www.vtaudio.com

new live products

Yamaha IPA8200 Power Amp

Yamaha Commercial Audio Systems has premiered its IPA8200 power amplifier. It is a Class D amp that delivers eight channels of 200W each (4 ohms) in a 2U package. The new amplifier, which coincides with the recent release of the company's IMX644 rackmount mixer, is targeted for smaller-scale installations.

The IPA8200 features Euroblock inputs and barrier strip outputs, with an internal high-pass filter, which may be activated and selected between 20-55 Hz. Pairs of channels may be driven in bridged or parallel modes and, to match different gain structures, the amplifier may be set at gain level of +26 dB or +32 dB, or may be used in constant sensitivity.

Price: \$2,199 list

Contact: www.yamahaca.com

Lectrosonics SMV Series

Lectrosonics has debuted its SMV Series transmitters. The latest addition to the company's Super Miniature product line, the SMV (pictured on left) and SMQV transmitters feature Lectrosonics' patented Digital Hybrid Wireless technology from its 400 Series product group.

The SMV transmitter features selectable 50 mW and 100 mW settings, while the SMQV offers selections for 50 mW, 100 mW and 250 mW. Both transmitters are also splash- and sweat-proof, thanks to the specially designed, machined-aluminum housings. The new SMV Series transmitters also incorporate a variable high-pass filter that enables custom tailoring of the units' audio response for speech or full-range program material. A circular isolator in the RF output circuit of the SMV Series units is said to reduce the likelihood of inter-modulation products occurring at the transmitters.

Price: POA

Contact: www.lectrosonics.com

Allen & Heath iDR8-ST

Allen & Heath has introduced its iDR8-ST with Euroblock connectors, iDR-D digital in/out expanders and the PL-11 IR (infrared) receiver controllable by the PL-5 handheld IR transmitter.

The iDR digital series and GR05 analog zone mixer are now manufactured in two versions: the original model with the existing XLR connectors, and a new "ST" model fitted with Euroblock connectors. The PL-11 IR receiver is useful where open or "hidden" system settings need to be changed by authorized personnel, as they do not have any unguarded controls. Fourteen soft keys on the PL-5 can be programmed to manage functions such as levels, mutes, preset recall and MIDI strings for external equipment interfacing. iDR systems also provide tally/RS232 out, and IR protocol is contained in the System Manager software download bundle.

The new iDR D-in and iDR D-out units provide expansion options of up to 250m on Cat-5 cable using the AES/EBU protocol.

Price: \$3,699

Contact: www.allen-heath.com



Your Mix—Your Way



M-48 Live Personal Mixer



S-4000D Splitter & Power Distributor

Live Personal Mixing System

Never before has a personal mixer given you this much control and flexibility over your monitor mix. Each musician can have their own unique arrangement of 16 stereo groups chosen from 40 common sources. Adjust your mix using level, pan, 3-band EQ and solo. Enhance the playing experience using built-in reverb and an ambient mic. Expand your options with multiple headphones jacks, separate balanced outputs and auxiliary input. The S-4000D Splitter and Power Distributor supplies all audio sources and required power to each M-48 Live Personal Mixer via a single Cat5e cable. The S-4000D can support up to eight M-48s and multiple S-4000Ds can be used together to accommodate applications of any size. Augment a V-Mixing System by adding the RSS Personal Mixing System to complement the M-400 V-Mixer Digital Console or use it in conjunction with other digital or analog consoles using RSS Digital Snakes.

The RSS Personal Mixing System. A breath of fresh air for studio and live performers. Truly professional... Truly personal.

www.personalmixing.com



Shown is the M-485YS-5 System which includes five M-48 Live Personal Mixers including mounting plates, and one S-4000D Splitter and Power Distributor. (Other items sold separately)

V-Mixing System

Roland
Systems Group



Digital Snakes

+



Digital Console

+



Personal Mixing

+



Recording

RSS
by Roland

800.380.2580

World Radio History



Upgrading to Personal Monitoring Systems

Last year in the pages of *Pro Audio Review*, I started a series on managing SPL levels for this, the “Worship Audio” column. I addressed the reasoning involved in the process and suggested methods for isolating guitar amplifiers, drums and other “loud” acoustic instruments. I also addressed acoustical considerations when the instrumentation of your house-of-worship (HOW) has surpassed the capabilities of its physical design. This all led up to this month’s installment of the biggest barrier to manageable SPL level: the presence of stage monitors.

At my church, we set out to address this problem 10 years ago when we did a full redesign of our AV systems. One of the keys to getting more manageable levels back then is the same as it is today: the incorporation of personal monitoring systems featuring in-ear or headphone-based monitoring. Granted, the technology has experienced some significant advancements (not to mention that we have made some real-world adjustments because what works on paper does not always translate to live worship), but overall the concept is the same: Eliminate anything on stage that lends to a muddier, louder sound.

Lessons Learned

Making the move to a personal monitoring system is not an inexpensive option, and sometimes it can be hard to explain the benefits to the non-technical or to convince your musicians and worship leader that this would be beneficial to all involved. One approach to encourage open-mindedness toward the personal monitoring concept is to communicate with other HOW that have made the plunge, then get and share their feedback with your HOW.

Speaking from experience (gained at my own HOW and others in the area where I have installed and helped implement in-ear systems), the biggest argument against personal monitoring systems generally comes from vocalists, especially the leaders who want to “hear” the room. We tried piping in room mics that were solely used for the headphone system, which

took up channels on our system while not giving them the freedom to move around. So, combating the freedom issue, we gave the leaders a wireless belt pack fed from their mixer, which allowed them the freedom to roam.

Some of our leaders prefer this method, and it is working well for them. To hear the room, they have one ear bud in; the other ear is open to the room. Yet even in this instance, some still felt isolated from the congregation. Ultimately, we landed on installing a small powered monitor at those locations, primarily for the vocalist and leader, fed from the in-ear mixer — the TC Helicon VSM-200XT active personal monitor, a simple box featuring a volume knob, which is where education — lots of education — comes into play.

Educating the musicians is as critical as the system itself when implementing in-ear monitoring. Studio cat types will feel right at home, not missing a beat. But since most of us don’t have the luxury of studio musicians at our HOW, we will spend a good amount of time on the front end with training.

Poor gain structure is likely the most common error made on the novice user’s part. Many times they will start with their mic wide open and the master down at 3. Most have been very receptive to learning, and, trust me, teaching them some simple mixing principles is time well spent as they are not accustomed to the art of mixing.

The common point of equipment failure will be the ear buds themselves. Skimping on quality here will negate all of the hard work and training you have

put into the implementation. What I have found works best is a nice array of ear buds, headphones that go around the back of the head — yes, some people do not want to mess up their hair and don’t like the buds — and closed-ear headphones for the rhythm section (so the latter can really get the “feel” of the music). If budget permits, a ButtKicker or similar low-frequency



Hear Technologies Hear Back personal monitor mixer

device (that rumbles the low end directly on their seats, stools, or under their feet) is a great option. The majority of the musicians I have dealt with end up having a pair of headphones as well as ear buds that are both physically comfortable and sonically familiar.

Notable Options

A number of personal monitoring systems have been introduced over the years; here, I will highlight a few. The most common one found in HOW environments is built by Aviom, the Pro 16 Monitor Mixing System, which uses a proprietary format transmitted over Cat-5 cabling. They have an entire network of add-ons, making the system very customizable for the task at

RSS by Roland is the newest player in this market, and a full review of M48-based system is featured in this issue of *PAR* (just turn the page). I have not gotten my hands on one of the RSS by Roland systems yet, so I am quite interested in seeing what Ben Williams, a Nashville area live audio pro, has to say about it. From what I have read and found in research, the RSS by Roland system appears to be the next evolution in in-ear monitoring.

Feeding your system is another important factor when considering the best personal monitoring option for your HOW. For instance, Aviom has external A-Net converters or interface cards for some consoles with built-in A-Net protocol. Hear Back supplies an A/D box as well. The Furman system, as mentioned earlier, is 100 percent analog; it does not have any converters



Furman HDS-16 headphone/audio distribution and mixing station

hand. Its digital controller allows for grouping faders and setting presets for musicians to do a quick recall. Search the *PAR* archives (at www.proaudioreview.com) for Aviom to find multiple reviews on its full line of products.

Furman Sound's systems are the ones that I am most familiar with, both the HDS-6 and its bigger brother, the HDS-16. The HDS-16 is the current system utilized in our church. Unlike the others, this is a fully analog system: no D/A or A/D conversion and 50-pin Centronix connectors (two if you are chaining through a box, and that can get pretty bulky). The analog interface controls up to 16 total inputs, four stereo pair and eight mono inputs. It's worth considering that the HDS-16 is limited to 16 boxes total, due to the analog nature. [An archived HDS-6 review, by *PAR* contributor Russ Long, is available here: www.proaudioreview.com/article/946 — Ed.]

Hear Technologies' Hear Back personal monitoring system is the most cost-effective solution that I have used that is also transmitted on Cat-5. From my experience, Hear Back performs as advertised, takes up a small footprint (Cat-5 cabling for interface), has great support from Hear Technologies, and works well. In my opinion, they are not built as sturdy as the other systems, but for a static install of a multichannel in-ear system, a Hear Back solution would be a great entry the world of in-ears.

but does have a main distribution box. So, regardless of the front end, getting the signal into the boxes is best accomplished by a combination of direct outs and aux sends. If your current board does not have direct outputs on each channel, you may have some creative signal routing to do via sends, insert points, or some combination thereof. Be sure to closely examine your FOH console's options as well as its signal flow chart to best determine how you will lay out the sends to the personal monitoring interface.

Perspective Is Key

Worship is not meant to be a sterile experience. It is meant to be lively and fluid in nature with many moving parts. Audio is not the focus, nor is the musician or even the leader. These are all tools to bring together a congregation that can span many generations to lift up one voice in worship. Thus in-ear monitoring is not a fix-all, but it goes a long way in corralling SPL levels, muddiness, feedback, and stress on a FOH engineer who must also manage monitor levels and mixes. It also helps the musician who needs their mix adjusted. Removing stumbling blocks for an optimal worship experience is our primary goal; I can't say enough for the value of implementing some form of personal monitoring control for your HOW.

Roland M-48 Live Personal Mixer

This “infinitely customizable” personal mixing system is robust, intuitive, and impressive.

The practice of providing musicians a control surface with which to adjust their headphone mixes first became commonplace in the recording studio context. The first generation of personal mixing systems typically provided for the artist to have control of 4-8 channels of audio, which commonly derived their signal from sub mixes on the studio console. Such systems generally used analog signal distribution and proprietary cabling and connector schemes. They served their purpose in the studio setting but would have been cumbersome and of limited usefulness outside of that context.

Over the past few years, a small handful of manufacturers have brought purpose-built personal mixing products to the marketplace that use digital audio bus technology and twisted pair cabling to provide artists the capability to control their individual in-ear mixes. These systems, most of which appear in 8-16 channel configurations, have gained widespread acceptance, particularly in the house of worship market. I have, however, always considered the low channel counts to be a limiting factor as I mixed in-ears for a contemporary worship service for about three years, and it almost always seemed as though the drummer wanted to hear just a little more hi hat or the singer a little more reverb. This is understandable given the degree of ambient attenuation inherent with in-ear monitors. By the time one considers individual drum channels, ambient mics, and effects, even a 16 channel system can be very limiting indeed.

As a V-mix user and reseller, my interest was piqued when I heard that Roland would be adding a personal mixing system to their product line. I became con-



siderably more interested as I began to learn about the system's capabilities.

Features

RSS by Roland's new personal mixers operate on the same REAC (Roland Ethernet Audio Communication) platform as their digital snakes and consoles. The system components include the M-48 personal mixer and the S-4000D REAC splitter (basically a gigabit PoE Ethernet switch which provides for power, signal, and control distribution for up to 8 units). These components must be combined with some iteration of the digital snake for A/D conversion, and may be operated in a standalone configuration with PC software control via the serial port on the snake, or may be used in conjunction with RSS by Roland's M-400 or M380 digital consoles, both of which have a series of M-48 control pages in their software.

The most noteworthy feature of the M-

48 system is that each group knob on each mixer can be configured on an individual basis to derive signal from any combination of the 40 sources on the REAC bus. This allows for each musician's mixer to be laid out according to his or her preferences, making for an infinitely customizable solution.

The M-48 mixer has eight rotary encoders with LED level indicators which provide for control over various parameters for 16 stereo groups across two layers. Volume, pan, and reverb send level, as well as a three band EQ with a sweepable midrange frequency, can all be set on a per-group basis via the encoders. The M-48 additionally includes a built-in ambient microphone which can be added into the ear mix, a limiter, a local aux-in (for metronome, etc...), and stereo auxiliary outputs. Headphone outputs appear on both a 1/4" and 1/8" connector, and an attenuation adjustment is provided. The

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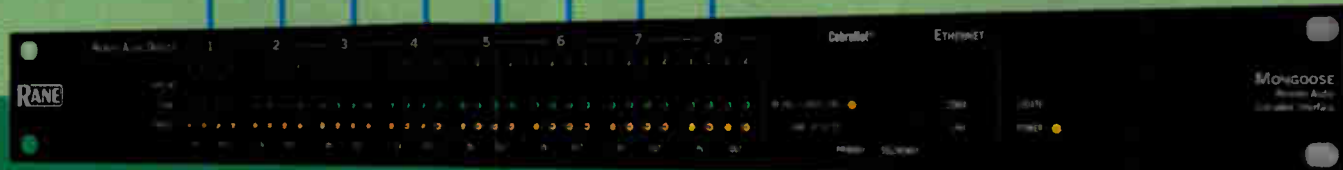
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auxiliary outputs can feed a wedge mix or a personal digital recorder, which would allow the more sophisticated user to record practice tracks. An optional 80 Hz or 100Hz low pass filter on the aux output bus can additionally be engaged in the control software, allowing for selected channels to be routed to a low frequency transducer (i.e. butt-kicker) without the need for additional processing. Finally, each M-48 includes the facilities for 16 locally-recallable presets.

In Use

I received six of the M-48 mixers and one S-4000D Splitter the day before I was to deploy the system for the evaluation. Upon unpacking the pieces, I observed that the build quality of the M-48 seems quite good compared to the other systems I have worked with. Consistent with the rest of the RSS product line, the M-48 and S-4000D are outfitted with Neutrik Ethercon connectors, making for robust and reliable interconnection. A microphone stand mount is included with each M-48.

I connected all six of the M-48's to the powered ports on the S-4000D splitter, (Ethernet cables with a straight or crossover pinout maybe used as the S-4000D is able to auto-switch), then patched the S-4000D to the REAC B port on my M-400 V-mixer.

After entering the M-48 setup screen, it took me a few minutes to wrap my head around the signal flow paradigm. I discovered that each M-48 is a 40 channel mixer (with inputs derived from the 40 sources assigned in the REAC B output patch bay). Consequently, each input on each M-48 mixer can derive signal from a single channel or from a mix of several channels with relative levels determined in the M-400's M-48 control screen on a per-unit basis. So, for instance, the drummer's mixer could be configured to provide individual control of eight drum microphones with one encoder controlling a mix down of all the BGV channels, while at the same time the background vocalists' mixers could be set up with one encoder controlling a sum of drums, while providing individual control over vocal channels. Because I did not have detailed input lists from the bands that would be performing at the next day's concert, I set up a generic patch on one of the M-48's, then copied all parameters to all of the other mixers.

The application was a back-to-school concert at my local university campus featuring two local bands. Monitoring was a combination of wedges and in-ears. For the wedge mixes, I patched the aux outputs from the M-48s back into input channels on my S-4000 snake unit, which was patched to the REAC A port on my M-400 V-mixer. (The M-400 was handling FOH and monitor duties.) I routed those inputs to the appropriate aux busses on the console, which were feeding the wedge mixes. This allowed me to have the benefit of the console's graphic EQ facilities for the wedge mixes and the ability to control stage levels if necessary.

The headliner was first to sound check, and because of the time crunch, we stuck with the patch I had established the day before. The musicians picked up on the interface relatively

quickly, and were highly impressed with their ability to customize their mixes. After the sound check, I saved a preset on the M-400. In the current software revision, this action saves all the parameters in the M-400 but additionally writes a file to the USB memory that includes a snapshot of all 16 presets from each of the connected M-48's. (This is an extremely powerful feature in most any context.)

The opening band had a similar experience with the M-48's, providing more positive feedback. After they played, I simply recalled the headliner's preset and we were off. The concert went very smoothly and the band kept the stage levels in check surprisingly well.

Summary

In summary, the RSS by Roland M-48 is the most powerful purpose-built personal mixing system I am aware of on the market today. The setup is infinitely customizable and the sound quality is excellent. I fully expect that it will grow rapidly in popularity, being deployed in conjunction with V-Mixing System and in stand-alone configurations. The system is a viable alternative to all of the other platforms, and I believe is robust enough for portable/touring use. With added sophistication, however, comes increased opportunity for setup error, so potential users are advised (as in all digital console applications), to take the time on the front end to build the patches. The M-400's M-48 control interface could stand to undergo a few minor tweaks but is fairly straightforward once the user has a grasp on the signal flow. All in all, in my opinion, anyone on the market for a personal mixing system should seriously consider the M-48 system by RSS.

Fast Facts

Applications

Houses of Worship/Theaters and Live Sound

Key Features

Audio channels via 16 stereo groups; connectivity via a single Cat-5e cable; Volume, pan, 3-band EQ and built-in reverb; mini jack and 1/4-inch phone jack headphone outputs; balanced TRS line outputs; independent stereo output mini jack; connect to an existing analog/digital console; requires Roland RSS digital snake; requires PC or Roland V-Mixer for configuration.

Prices

\$1,095 (M-48); \$1,695 (S4000D); \$6,895 (M-48 System package, five M-48s and one S4000D)

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ly those from people like Universal Audio, who run plug-ins on an external card that doesn't tax your computer power. But, in most cases, the hardware still sounds different, not better or worse. Being old school, I will be looking for a particular tone, and I grab that piece of hardware because I have it.

I still need faders for mixing. It's a matter of bringing this channel up, or these two channels up, and bringing another one down while hearing the balance. And you can't do that with a mouse; you must work with one channel at a time. I have two interfaces: the Euphonix MC Pro — basically an extension of the DAW — and the SSL AWS 900 console.

The MC Pro takes a lot of thinking away from the left side of the brain and lets me use more of the right side of the brain, the creative side. When I mix on a console, it's just muscle memory to go to an EQ in the channel. The MC Pro and the AWS 900 both allow me to do that. I also use the AWS 900 as a console, which allows me to sum and work in an analog setting, giving me faders for Nuendo. While the SSL naturally works a little better with Pro Tools — PT with the SSL gives you a bit more interfacing opportunities — all my editing, EQing, and effects sends are done on the MC Pro, so that doesn't really matter to me. With MC Pro, SSL AWS 900, and Nuendo, I have everything that I would need in the way of a DAW system.

Once you settle in on a workstation, there's a tendency to

want to stay there for good reason: you already have all those older files. To get back to those sessions, you have to keep that platform on hand. If you like it, why not stick with it, being compatible with yourself and your older work, at least? Personally, at this stage, I wouldn't have any reason to change workstations; not only would I have to change software, but I would have to change hardware.

You know, back in the 80s and 90s with SSLs in all the studios, people would say, "Oh, you're compatible between SSLs." That was never really the case; you could never take a mix from one studio to another and expect it to really sound the same. This SSL had stereo channels, that one had E EQ, another had G EQ... it never really worked. To me, it's the same with DAWs; you can have the "same" DAW from one studio to another, but for one thing, you would need the same plug-ins for them to be even remotely compatible. That, in most cases, happens even less than the "same SSL scenario." For that reason, choosing your workstation for compatibility reasons is not really that important.

Just shuffle around Broadcast Wave files, and you're fine. If I get files from someone to mix, I don't even want their plug-ins on those files. I want to start clean and from scratch. For instance, on [Finnish modern rock act] The Rasmus project, they began recording in Logic in Sweden, the vocals were done in Pro Tools, and I did the drums and mixed it in Nuendo: we never had a single hitch.

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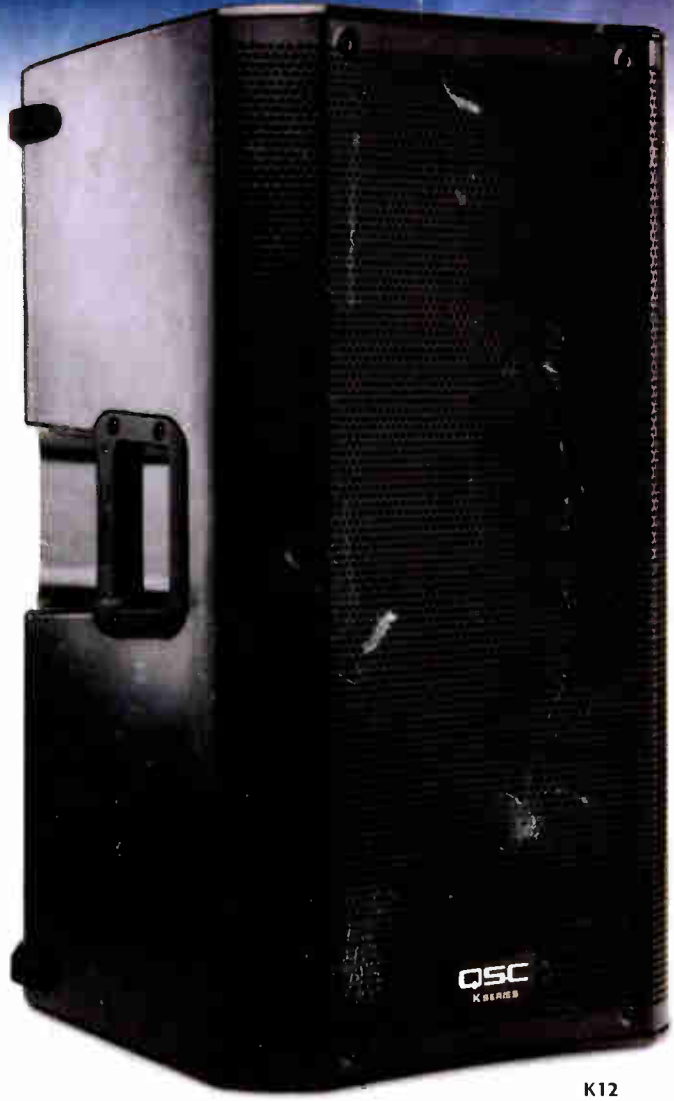


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