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**AVIOM**

## Award-Winning Analog, Digital at AES

Like last year, the coexistence of analog with digital showed no sign of waning at the recent 2007 AES show in New York. AES has been the setting for the *PAR Excellence Awards* since 1996, and *Pro Audio Review's* judges again used their expertise as working engineers and editors to seek out the significant new products and product trends on the convention floor.

### ALL ANALOG — YOU BET

Judging from the 2007 *PAR Excellence Award* winner list, analog continues to be a source of new products for manufacturers who make gear for the pro audio market. Pure analog mixer products that were picked this year included John Oram's low-cost, highly-featured Trident 8T eight-channel eight-buss, and API's 1608, a small-format \$50,000 board designed with API's sonic signature for premium production work.

On the rack-mount analog gear front, the selections included the A-Designs HM2EQ tube EQ and Millennia Media's remote-controlled version of its acclaimed HV-3 microphone preamp. For live use, APB-Dynasonics took its transparent analog audio signal path from its Spectra-T and put it into the rack-mount "ProRack" mixer line.

On the digital front, there were numerous DAW software upgrades, resulting in *PAR Excellence Awards* for Steinberg's Nuendo 4 and Apple's new Logic Studio 8. Venerable processing company Waves netted an award for its GTR3 guitar processor software, a digital emulation bundle of classic analog guitar amp/stomp tones.

Despite the prevailing trend to digitally process effects via software, Lexicon won an award for its new reverb hardware processor, the PCM96.

### DIGITAL MIXER CHOICES

Digital mixers and control surfaces, of course, are always in abundance at AES, and this year's winners included the AMS Neve Genesys digitally controlled production console and Fairlight's all-digital Xynergi (using the powerful Crystal Core CC-1 processing engine). Studer received an award for smartly adapting its Vista digital console for live use with the new Vista 5-SR.

Digital converters was the biggest winning category this year with awards going to Benchmark Media for its USB 1-interfaced ADC1 and DAC1, Lavry Engineering for the AD10 A/D with tube and transformer emulation modes, the portable Apogee Duet mic-pre and converter interface, Prism Sound's premium-featured Orpheus FireWire interface, Antelope Audio's Isochrone OCX Master Clock and the PCIe card version of the popular Lynx AES 16.



### SONY'S LOW-COST PORTABLE

One of my favorite categories, portable field recorders, was not as crowded with new products as last year, but the sole winner was a very hot product. The \$599 Sony PCM-D50 is a 24-bit/96-kHz portable with built-in microphones, hard drive and memory stick capability. It's the little, low-cost brother to the PCM-D1, which was an award winner in 2005, and is \$1,500 less money while maintaining good performance from the down-priced mics and preamp.

Last but not least, I will mention the TC Electronic Studio Konnect 48, an all-in-one, analog-to-digital/digital-to-analog multi-channel computer interface that has numerous digital input and output options and includes software for total computer audio integration. The product was mysteriously low-key in its display on the AES show floor, but we found the rack-mount marvel at a TC press dinner and were so impressed it had to be nominated for the *PAR Excellence* — definitely one for my rack.

*John Gatski is publisher/executive editor of Pro Audio Review. He can be reached at jgatski@aol.com.*

Evaluating audio products for professionals in commercial recording, broadcast production, audio for video/film, project studios, live sound, contracting and multimedia.

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## Letters

### DV-IANT BEHAVIOR

Reacting to your review of the Tascam DV-RA1000HD [Digital Two-Track Recorder] in the August 2007 issue (p. 12), I have some additional thoughts. When the original unit was first announced, my excitement resulted in an order for one and I took delivery in August, 2005. However, the recorder was so frustrating that I gave up in disgust and it still sits idle in my rack to this day.

Russ Long's statement that "it can be a bit confusing at times," and the summary of Product Points listing as a negative ("A lot of menus and buttons"), are understatement. Error messages are not defined, clocking issues need to be fully explained for users who have never dealt with them, a Quick Start guide that is meaningful is a necessity, recording projects vs. files, etc., etc. are all issues that leave the user thoroughly confused.

### Feedback

We want to hear from you. Send your comments to [letters@proaudioreview.com](mailto:letters@proaudioreview.com). Please include name, city, state and job title and firm in the email. For product submissions, contact Tony Ware at [tware@lmaspub.com](mailto:tware@lmaspub.com).

I do most of my work as remote recordings and the thought of using the DV-RA1000 in production for a live concert is terrifying. As for now, my trusty DAT machines provide me with simplicity that I had hoped would be duplicated by the DV-RA1000HD. Sadly, this was not the case.

Wally Knapp

Custom Recordings, Ellicott City, MD

### APPRECIATING ANGELIC SOUND

I thoroughly enjoyed the cover photo and accompanying article on the new Conference Center in Salt Lake (Sept. 2007, p. 14). Our local congregation enjoyed [Temple Square's] General Conference satellite broadcast. I am the Kingsport Stake Choir Director, and as such was eager to hear the Tabernacle Choir and Orchestra on tour this spring when they came to Nashville's Sommet Center. I have recorded concerts for public radio for some 30 years and am very critical of PA systems, but the sound on this occasion was pristine, as good as their CDs, and seemingly mixed in stereo over their line arrays. Truly first class all the way. Thanks for the coverage.

Ron Wickman

WETS-FM, Johnson City, TN



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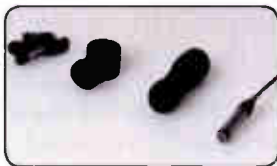




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## DPA 4080

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by Dr. Frederick J. Bashour

# Rupert Neve Designs Portico 5033 EQ

This legend-built, super-smooth five-band EQ is beyond reproach...and recommended.

You always remember your first one; mine was the ITI MEP-230 parametric equalizer, the first commercial product featuring now-classic circuitry designed by George Massenburg as

in my studio throughout the '70s. Not only did it equalize with surgical precision, it had that *sound*, especially within its inductor-based high- and low-shelving sections.

suit *your* music. At the outset, let me just say that they're mighty fine units; any engineer I know would be happy to have a pair of them in his/her rack.

## FEATURES

The RND5033's front panel is divided into five sections, delineated by color changes between black and blue. Although they follow the input transformer and +/-12 dB input trim amplifier as a single circuit in the unit's block diagram, the low- and high-frequency shelving controls are logically placed at opposite ends of the front panel and feature +/-12 dB gain controls and variable frequency adjustments — from 30 to 300 Hz on the low end and from 2.5 to 25 kHz on the high end. All 5033 EQ gain knobs are



marketed by Burgess MacNeal, who later founded Sontec. I bought my first in (I think) 1972, and kept at least one of them

Think about it: an equalizer is designed to change the sound of one's audio for the better. Thus, it's not unreasonable for a designer to build an equalizer circuit with a certain personality — a certain character separate from the actual equalizing it's doing.

Over the ensuing years, I've owned other solid-state parametric equalizers, inductor-based "sloppy" equalizers (such as Pultecs), modern "clean" equalizers, digital equalizers, numerous plug-ins, and everything in between. For *Pro Audio Review*, I've reviewed several extremely high-end, extremely different EQs (Manley Pultec, Manley Massive Passive and Crane Song Ibis), and I've owned a Massive Passive box for several years. Why? Not because it was "better" than the Crane Song Ibis (it wasn't), but because its "personality" seemed to suit the music I record and the equipment I use to record it.

I've lived with a pair of Rupert Neve Designs Portico 5033 five-band equalizers (\$1,795) for about three months now and, in this article, I'll talk about my take on their personality in an attempt to help readers get a bead on whether they might

gray with gray insets and are laid out symmetrically. I mention colors and the arrangement of the adjustment knobs since the purpose of an equalizer is to be *used*, and the more ergonomic and intuitive its industrial design, the easier it is for a busy engineer to use it effectively in the heat of a session.

The three mid-frequency bands are fully parametric, with Q variable from 0.7 to 5, gain adjustment of +/-12 dB, and slightly overlapping frequency ranges of 50 – 400 Hz, 330 – 2500 Hz, and 1.8 – 16 kHz. The Q and the parametric frequency knobs are smaller gray ones with red insets. All adjustments are by variable potentiometers with only seven little "lines" silk-screened onto the panel. What this tells me is that it would be virtually impossible to set a pair of 5033s to *exactly* the same settings (as might be needed in high end mastering applications, for example), especially given the fact that "stereo" with two half-rack size 5033s entails mounting them next to each other, horizontally.

Completing the front panel are five  
**RUPERT NEVE** continues on page 12 ►

## FAST FACTS

### APPLICATIONS

Studio, project studio, mastering, high-end live and touring

### KEY FEATURES

Single-channel, five-band EQ in half-rack form factor; designed for standalone use, dually as a stereo single-rack pair or, via the buss in/out connectors, interfaced with other Neve Portico modules

### PRICE

\$1,795

### CONTACT

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pushbutton switches. They're kind of black when not depressed, but when activated, the three that put the parametric mid-frequency bands into the signal path glow bright yellow, while the one that inserts the shelving EQs glows green. Pressing the "all bypass" button on the upper left (which removes all EQ circuitry from the signal path, leaving only the input and

viously reviewed in *PAR* 12/05), with the Weiss' output running directly into the 5033 on its way to McIntosh MI-200 power amps and custom transmission line monitor speakers.

Since my control room is currently off-line (pending a "make-over" to be detailed in an early 2008 issue of *PAR*) I'm now using one corner of my studio as a temporary control room. In this test, I simply split the Weiss stereo output and fed one side of the split directly into a Coleman MS8 passive monitor switcher (which drove the power amps directly). The other side of the split went to the 5033, which in turn went to input two of the Coleman switcher — an instant A-B test "around" the 5033! I used various versions this setup through the test period, so I was always able to make a "hard-wire bypass" of the 5033 EQ with the press of a button.

Cutting to the chase, I was certainly able to hear a difference when the 5033 was in the circuit, but I'm not sure I would describe it as making "a significant contribution to the purity and sonic quality of the music signal." However, please realize that the line amplifiers in the Weiss DAC1 are about as high end as one can get in pro audio; they claim to have "a virtually-zero Ohm output impedance, but still can drive large loads without stability problems ... output levels can be set between -infinity and +27 dBu." So perhaps inserting the 5033's line amplifiers and transformers in series after them wouldn't have quite the same effect as putting them after, say, a \$500 Chinese preamp.

At any rate, when the 5033 was in line, but in its own "bypass mode," I heard less definition in the extreme lows, a certain lack of air in the highs, and — in the mids, although they sounded a bit *more* present — they also sounded slightly cloudy (another way of saying "silky"). However, once I engaged the EQ sections, I was able to ameliorate most of these effects except that of the low end; I could always make it sound "bigger," but never as deep as it sounded straight from the Weiss DAC1 (whose direct-coupled output goes all the way down to DC, at +27 dBu).

These are all small criticisms, however, because I would never consider using an expensive stereo EQ box in bypass mode in the first place! When it came to doing its EQ thing, the 5033 did a pretty awesome job, especially when compared with any-

thing else in its price category.

I had just finished recording an audio demo (with video) for an aspiring pop singer here at Studio Dufay and, since I've been mixing "outside the box" for several years, I figured this would be a good time to add the 5033 to the equation. I had recorded eight tracks plus a stationary video camera to a Rosendahl BonsaiDrive and, to do the mix, I sent the audio through Pro Tools|HD and back into analog through a Genex GXD8 DAC. Once in analog, I could use an arsenal of outboard gear, including a Manley VoxBox, Massive Passive, and VariMu, an Amek RNCL 9098 compressor/limiter and, now, the RND Portico 5033. The analog elements would then be re-digitized at 88.2 kHz within a Crane Song Spider mixer, and I could monitor the results, again, through the trusty Weiss DAC1.

I decided to use the 5033 on the vocal and fiddle, as they were the main elements in this country-pop tune. The female vocal was originally miked with a M-Audio

...this was my first indication that the 5033 was a really special equalizer. There was no solid state "zippiness" whatsoever, nor was there any mushy tube character. Instead, there was just a silky smoothness to the sound.

Sputnik driving a Martech MSS-10 preamp. The fiddle was miked with a combination of two Neumann M49s and an AEA R84, all mounted together on an AEA Decca Tree stand; preamps used were a D.W. Fearn VT-2 for the 49s and one side of an AEA T.R.P. for the R84.

For the mix, I sent a Pro Tools submix of the fiddle through one of the 5033s and applied small amounts of boost around 1 kHz and 10 kHz (it's hard to tell exactly where since, as I've mentioned previously, the 5033's tiny knobs aren't marked very well). I also cut low end mud substantially with the low shelf and boosted a little air around 12 kHz with the high shelf. Doing this was my first indication that the 5033 was a really special equalizer. There was no solid state "zippiness" whatsoever, nor was there any mushy tube character. Instead, there was just a silky smoothness to the sound. The fiddle player's expensive

## PRODUCTPOINTS

- A modern and very smooth take on the classic Rupert Neve sound
- Made in Texas with impressive build quality and an all-steel case
- For some applications, its smooth, euphonic sound quality (i.e., not neutral) might not be desirable

## SCORE

If you're looking for a modern EQ channel (or two) with a smooth personality, the RND Portico 5033 should be on your short list.

output transformers and their associated buffer amplifiers active) changes it to bright red ... and a bit too bright, in my opinion, when at eye level. Though it is a warning, I suppose.

The rear panel of each 5033 is simplicity itself. There's a coaxial power jack (center positive) that accepts any DC voltage from 9 to 18 volts, and an internal DC-DC converter will take that and regenerate the +/-18VDC needed by the unit's circuitry. A pushbutton power switch turns the unit on, and a pair of TRS buss connectors can interface the 5033 with other Portico modules. Finally, a set of male and female balanced XLR jacks provide the unit's input and output facilities.

## IN USE

The 5033's user guide makes the statement that simply inserting the unit into a signal path will make "a significant contribution to the purity and sonic quality of the music signal." I liked the way those words were chosen; it didn't say it would "warm up the sound" or "make it better." So, as part of my test setup, I spent several weeks listening to stereo mixes and compared their sound running through a Weiss DAC1 MK II (a \$6,700 converter pre-

violin just sounded *better* (and keep in consideration that it was miked with pretty awesome mics to start out with)!

In mixdown, I was able to make the vocal sound bigger and airier by using the 5033. First, I sent the track to the Manley VoxBox for some compression, but left its EQ switched out. I set the 5033 to boost a little around 275 Hz, cut a little around 1.5 kHz (again, these numbers are approximate), added air up top and cut -12 dB below 110 Hz, and the good sound I already had on the track improved even more. For a test, I bypassed the EQ on the 5033 and tried doing the same thing back on the VoxBox. I could get different good results, but with its two peaking and one cut controls, could hardly duplicate what I arrived at on the 5033.

The final mix to DVD (eventually recorded to DVD Studio Pro) came out pretty okay, with the 5033 on the two key elements in the mix, one side of the Amek dynamics processor on the bass, a little Vari-mu and Massive Passive on the stereo bus, and a Kurzweil KSP8 for reverb. When it was all over, I went back into Pro

Tools and tried the 5033 on the bass track and my own stereo piano tracks; sure, it would've been nice to have more 5033s

...RND Portico 5033 EQs have a really "smoooooth" sound, which is all the more remarkable when one realizes that the active devices in each EQ section are lowly, venerable NE5534 op-amps!

but, hey, this is the real world, right?

What I learned from all the time I spent with these units is that the RND Portico 5033 EQs have a really "smoooooth" sound, which is all the more remarkable when one realizes that the active devices in each EQ section are lowly, venerable NE5534 op-amps! Apparently, Mr. Rupert Neve designed his circuits to run these chips single ended and biased them in the Class A direction for low level signals ...

and this must account for at least some of the smoothness I hear. After all, the old Sontec 250 parametric equalizers (which I refused to purchase back in the late '70s) used the same chips, and they didn't sound nearly this nice!

#### | SUMMARY

The Rupert Neve Designs Portico 5033 EQ is an extremely smooth-sounding, ergonomically laid-out piece of equipment. Although its small size precludes extensive labeling, the front panel is so logically planned that a good engineer should be able to easily use it. Its sound in equalization is beyond reproach; the way it seems to smooth out the jagged edges of source material is bound to appeal to many engineers and producers.

*Dr. Fred Bashour holds a Yale Ph.D. in Music Theory, and currently performs as a jazz pianist and church organist. During the past 25 years, he has received credits on hundreds of recordings released on over a dozen labels. He has also been a regular contributor to Pro Audio Review since its second issue.*

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by Ty Ford

# Digidesign 003 Factory

This Pro Tools|LE control surface/software bundle boxes even more for in-the-box recordists.

In our industry's evolution to in-the-box audio production, Digidesign has been there pretty much every step of the way. The company has taken some hits for not selling its hardware and software separately, but, from where I sit, that has prevented many technical support nightmares. And even *that* is changing, as the Digidesign Core Audio driver supports Apple's Soundtrack Pro, Boom Recorder and other software; Digi's Wave and ASIO drivers support Windows software.

Digidesign's latest hardware gem for Pro Tools|LE users is the 003 Factory, a \$2,495 FireWire-based control surface with an accompanying software bundle (it includes Pro Tools LE 7.3, will soon include 7.4, and requires Mac OS X 10.4.9 or Windows XP; 7.4 will support Windows Vista).

## FEATURES

With eight motorized faders, transport controls and many (but not all) software controls existing as hardware, the 003's slender 28-inch-deep surface is comprehensive, yet sleek. The 003 offers everything made available on its

predecessor — the well-received 002 — and much more. According to Digidesign, the 003's redesigned pre-amplifiers and A/D converters are most notable, while other new highlights include automation selection controls and the ability to open plug-ins on its control surface.

The 003 features four mic preamps, phantom powered in pairs, and each input has a balanced 1/4-inch DI. Analog inputs five through eight are balanced 1/4-inch TRS with -10/+4 input level switches per channel, while

Factory plug-ins), or opt for the best of both worlds, the \$1,695 003 Rack *with* Factory plug-ins. This plug-in bundle includes the Digidesign Bomb Factory BF-3A, Cosmonaut Voice, D-Fi bundle, JOEMEEK SC2T Photo Optical Compressor, JOEMEEK VC5T Meequalizer, Maxim, Moogerfooger Analog Delay, Moogerfooger Ring Modulator, SansAmp PSA-1, Tel-Ray, Variable Delay, Voce Spin, Voce Chorus/Vibrato and an accompanying iLok USB Smart Key. Loop-friendly producers take note: while running Pro Tools|LE 7.3 on my laptop, I was able to access Acid loops and REX2 files from a CD, and I auditioned them from Digidesign's Digibase Workspace window. A 003 hardware/software combo makes for thoughtful and extremely powerful junk in the trunk.

Digidesign has heard the cry for better MIDI; press the MIDI Mode button and you're in a new standalone MIDI Mode. The 003 control surface sends out MIDI data and will con-



## FAST FACTS

### APPLICATIONS

Project studio, studio, audio-for-broadcast/video

### KEY FEATURES

More dedicated controls than its Digi 002 predecessor; improved MIDI, looping, and overall integration with the latest Mac OS; the Factory bundle; Sibelius support

### PRICE

\$2,495 (003 Factory); \$1,295 (003 Rack); \$1,695 (003 Rack Factory)

### CONTACT

Digidesign | ☎ 800-333-2137  
 ☞ www.digidesign.com

eight analog busses are provided via balanced 1/4-inch TRS outputs (stereo aux in). Other I/O includes MIDI In/Out 1/Out 2; RCA S/PDIF; optical jacks for S/PDIF or ADAT; and two 400 FireWire ports.

Hardware updates for the 003 include a larger 55 x 2 LCD display, BNC Word Clock I/O and Jog/Shuttle wheel. Further, there are also dedicated automation controls with user-assignable automation modes; five-segment LEDs for volume/gain meters or automation mode status indicators; dual headphone outputs; discrete outputs with separate source; and level controls and alternate control room monitor outputs for another pair of monitors.

You can buy the 003 Factory (which includes all of the Factory plug-ins), the \$1,295 003 Rack (a rack-mounted version with no

control Ableton Live, as well as any other application that supports MIDI controller messages (such as Reason, for example).

Further, users can assign I/Os; in the software, MIDI regions are now created on bar boundaries. You can click on the keyboard in MIDI and Instrument tracks to quickly select all of the same-pitched notes of your performance. The new RTAS Engine error suppression keeps things moving. Sibelius users can export Pro Tools MIDI and instrument tracks, complete with key changes. Also, the new Key Signature ruler allows you to add, edit, move, and delete key signatures in your sessions. Add a key signature to define the key of a composition; edit it to change sessions or passages to another key. You can specify the mode

**DIGIDESIGN** continues on page 16 ►

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(major or minor), transpose MIDI pitches diatonically or chromatically, and even constrain pitches to a key.

There is a passel of other little niceties, too. Pro Tools | LE used to require you to stop playback before adding and reordering tracks; creating, moving or copying inserts and sends; and adjusting the I/O. Now you can do it on the fly, even while recording. You can drag and

## PRODUCTPOINTS

• 003 is a notable improvement on the well-received Digi 002

• The available Factory bundle is a bargain

• Other mic amps and A/D converters may sometimes be needed for desired aural results

## SCORE

The 003 offers everything that the Digi 002 did, and much more.

drop plug-in settings from the DigiBase browser onto empty insert slots or active plug-ins for instant plug-in opening and setting recall. There are a lot of right-click contextual menus that provide quick access to commonly accessed parameters, so visit [www.digidesign.com](http://www.digidesign.com) to see what other user requests have been built into Pro Tools | LE 7.3.

## IN USE

Even though this is a major upgrade, Digidesign didn't change or move many features. I did lose my old Digi EQ, compressor and limiter plug-ins as a result of the upgrade, but I copied them from an older system to the new folder, restarted, and they were back. [According to Digidesign, the 003 features "much better EQ 3 and Dynamics 3 plugs, which are much better quality than old ones." — Ed.]

Incorporating some of the new 7.3 features took a little time, because I had to remind myself that they are there. Even little OS system hooks like "Open Recent Sessions" that seem inconsequential are valuable time savers.

An aside: I used to be a knob and fader guy. I know it's stylish again to strut your stuff with hardware, but I'm very comfortable without a hunk of metal and plastic bristling with knobs in front of me. So, for me, learning the 003 hardware interface — while not that difficult — presented a moderate learning curve. Even though you can assign inserts and sends from

the 003 control surface, I found myself resorting to more familiar mouse, cursor and keyboard commands when convenient.

My first session was tracking acoustic guitar using an 800 MHz Mac Titanium G4 laptop. [According to Digidesign, its older Mac is not supported for use with the 7.3 software ... so you have been warned. — Ed.] All connections are on the back of the 003 except the twin headphone jacks on the front edge of the chassis (each with its own volume control). I tracked acoustic guitar (using K&K Pure Western mini pickups) and went straight to the DI on the 003. The 003 recordings were a little brighter and slightly edgier than a Millennium Media STT-1 instrument input or Groove Tubes Brick (I usually feed those to an RME A/D converter and go into my Digi 002 via Lightpipe, bypassing the analog front-end of my Digi 002). A new session automatically instantiated click track selected in the MIDI Preferences assisted.

My next session was tracking two songs for Karyn Oliver and associates, again with an 800 MHz G4 TiBook lashed to the 003 and my main monitoring system. I used a pair of Schoeps CMC641 into the 003 mic preamps as close stereo overheads for Laura Cerulli's congas. Karyn's Simon and Patrick acoustic guitar, meanwhile, has a good-sounding internal pickup, so I used a TRUE P-SOLO preamp for that, coming out line level to one of the 003 TRS line level inputs.

For Karyn's scratch vocal track, I used a Crowley & Tripp Naked Eye ribbon mic with TRUE P-SOLO Ribbon preamp. Bill Patrick's acoustic bass got an AKG C414 BULS in a figure-eight pattern through a GML preamp and line-in to the 003. I had to put Bill and the bass in my foam and diffusion-treated bathroom ("ISO Booth Number One") to get it away from the congas. I created a headphone mix and we tracked (I will say, it's nice having two separate headphone jacks, each with its own volume control). We were done in two takes, and as we listened back everyone was pleased. I was initially concerned about the sound of the preamps and A/D conversion, but, although we had only used the 003 preamps on the drum overheads, I liked what I heard.

The next tune called for Cerulli's complete drum kit: a minimal kick, snare, and three cymbals. She uses unusual positioning (drummer's perspective): kick far right, snare to the left (slightly right of center) and cymbals from the center to the left. We put an Audix D6 on kick and Audix D1 on snare, which, with the Schoeps overheads, filled the 003 four mic pres.

Then it was time for a vocal keeper. I usual-

ly record vocals with a Neumann U89 oriented horizontally and in figure-eight down at one end of the room so the backside hears the diffusion from the rest of the room. I also usually track vocals with a GML or Millennium Media STT-1. This time, I used the Digi 003 preamp; admittedly, it makes for a far more affordable chain than one using GML or Millennium amplification. The new 003 preamps use discrete, bipolar, low-noise transistors with increased dynamic range relative to the Digi 002 preamps. Karyn's voice hardens when she leans on it past a certain point; any harshness in the sound chain will only make things worse.

During tracking, her voice sounded a little edgy. I normally pull out some 6 kHz, wide but fairly shallow to begin with, and use Pro Tools | LE's automation to pull down an extra dB or two during the harder moments. I had to reduce a bit more of each than I usually do and found later that the U89/Digi 003 preamp combo was harder and brighter than my usual U89/GML/RME ADI-8 DS chain ... and enough for me to want to retrack the vocals with my preferred preamps and A/D conversion.

Adding my usual plug-ins was easier because I didn't have to stop the transport. A Voce plug-in (part of Factory) was just right to add a little interest to Karyn's acoustic guitar. I also added not one, but two convincing tracks (B3 and piano) from Xpand! (Digidesign's free RTAS soft synth plug-in). Xpand! should not be overlooked. I've started a CD of trance music made entirely using Xpand! And remember, I did this on my 800 G4 laptop while running the word processor for writing this article. There were one or two burps during renders and the poor thing was running a little slow, but I did it just to see if the G4 could handle it without melting down. It did.

## SUMMARY

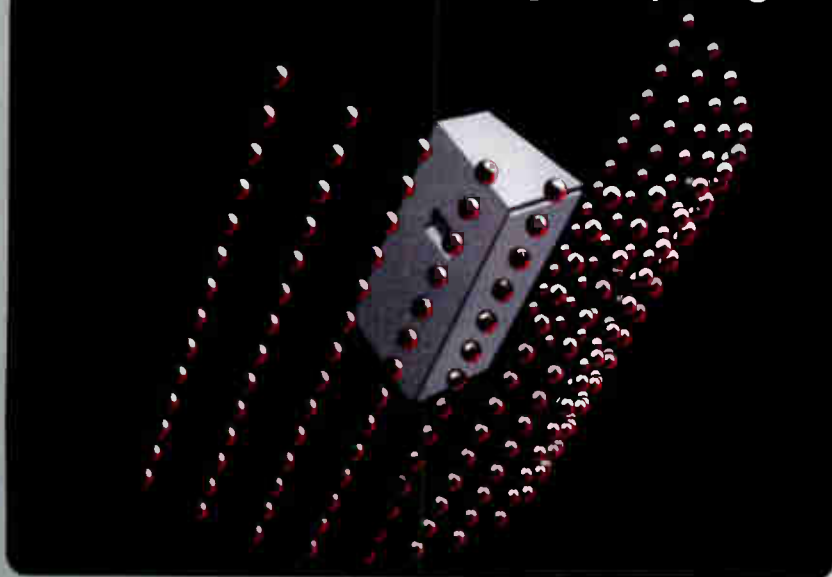
The 003 Factory is more than an excellent "starter kit," especially with the plug-in deal. The more I talk to Pro Tools | LE users, the more amazed I am by the number of different ways in which people are using the software. That says a lot about the openness of the company to listen to all of their users. And, after all, Digidesign may wind up with many LE users becoming TDM-based users later. You may also find, as I did, that while computers get faster and storage gets cheaper, a custom front end of preamps and A/D converters puts Pro Tools | LE almost right up there with the bigger boys in terms of quality and functionality.

Ty Ford has been writing for Pro Audio Review since the first issue. He may be reached at [www.tyford.com](http://www.tyford.com).



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World Radio History



by Rob Tavaglione

# Aphex HeadPod 454 Headphone Amplifier

This four-channel, no-frills can-amp is loud, clear and rugged.

BENCH TEST | Page 20

While audio pros are moving towards multi-channel monitoring systems that offer user "mixing" at each station, a whole generation of desktop recordists often deal with having only one headphone output ... and still a whole band's worth of performers needing headphones. Filling that need is the new Aphex HeadPod 454.

## FEATURES

With a list price of \$249, the HeadPod is designed for tabletop use, measuring a mere five-and-a-half inches across, four-and-a-half inches deep, and two-inches high. Please note that this compact design is not "budget": the unit has an all-steel chassis with metal jacks and firm pots.

Inputs are provided twice: first on a pair of balanced 1/4-inch TRS jacks that accept up to +4 dB with a 20 kHz ohm nominal impedance, and also on a TRS unbalanced stereo

input (at 10 kHz ohms). This input provides easy connection to a headphone output with only a TRS cable, and is selected by a back-panel switch.

Four headphone outputs are provided (from four independent stereo amplifiers), each 1/4-inch TRS with their own unstepped volume control. A master input level control is provided alongside the unit's only indicator — a single white LED. Power is provided by a 12 VAC wall-wart. Frequency response is within one dB from 10 Hz to 120 kHz (!) with -80 dB crosstalk, 35 dB max gain, and <.001-percent THD at 100 Mw at 25 ohms.

## IN USE

Upon powering up, the first thing I noticed was the striking white LED against the glossy white background; it's attractive, but the LED is actually so bright it made the input level hard to see! Using some popular Fostex T20RPs with my console's headphone output and the HeadPod's stereo input, I received ample gain with all controls in reasonable positions. I then connected a pair of console aux sends to the balanced inputs and, again, received a good gain structure with no discernible sound quality difference. Using that same pair of auxes, I substituted both a Fostex and a Behringer headphone amp; all offered about the same sonic accuracy, although the HeadPod seemed a little cleaner and less muddy in the bottom end. A test with all four

outputs cranked up really loud revealed the HeadPod's nice headroom, maintaining lots of punch and no loss of bottom.

A test with some high impedance (600 ohm) AKG K240 headphones required the unit to run nearly wide open, right on the verge of distortion: a fine test of a headphone amp's abilities. The HeadPod did get the job done, remaining full and clear. The bottom of the unit has input wiring graphics, as well as a handy chart showing output in milliwatts versus headphone impedance. Rated from 8 ohm to 1 kHz ohm input, the unit delivers a range of about 1200 Mw – 100 Mw, respectively. As the HeadPod is devoid of metering, settings of the master input and headphone outputs are approached "by ear," although I was able to achieve a balance between radically



divergent headphones and personal monitoring earpieces rather easily.

## SUMMARY

The HeadPod may not offer any fancy features (or many standard ones, for that matter), but it does deliver on its promise of four loud and clear headphone outputs. Rugged, attractive, and built to last, the HeadPod is the perfect solution for laptop recordists who are on the go and have access to AC power. Users of desktop computer interfaces will appreciate the additional headroom and lack of any "Y" splitters cluttering their setup. Users requiring multiple inputs, aux inputs ("mo' me" features) or metering will have to look to more complicated systems.

*Rob Tavaglione owns and operates Catalyst Recording in Charlotte, NC.*

## FAST FACTS

### APPLICATIONS

Project studio, studio, broadcast

### KEY FEATURES

Four headphone outputs from four independent stereo amplifiers; all-steel chassis with metal jacks and firm pots; balanced 1/4-inch TRS jacks accepting up to +4 dB with a 20 kHz ohm nominal impedance and a TRS unbalanced stereo input (at 10 kHz ohms); master input level control

### PRICE

\$249

### CONTACT

Aphex Systems | ☎ 818-767-2929  
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# BENCH TEST

## Aphex HeadPod 454 Headphone Box

### BENCH MEASUREMENT DATA

(Unless otherwise specified, all tests reflect signals applied to the balanced input and taken from output #1, with outputs 1 and 3 loaded on both channels, measurement bandwidth of 22 Hz to 30 kHz, or <10 Hz>500 kHz, and worst-case results.)

#### Input Impedance (1 kHz)

Bal: 21k $\Omega$ ; unbal: 10 k $\Omega$

#### Output Impedance

10 $\Omega$  approx.

#### Output Polarity

Non-inverting

#### Max. Input (1 kHz) into

8 $\Omega$	150 $\Omega$	600 $\Omega$
28 dBu	28 dBu	28 dBu

#### Max. Output (1 kHz) into

8 $\Omega$	150 $\Omega$	600 $\Omega$
750mW	540 mW	152 mW

#### Frequency Response

20 Hz-20 kHz +0.1, -0.2 dB;

10 Hz-100 kHz +0, -0.6 dB

#### THD+noise (20 Hz-20 kHz)

<0.03% at 1mW into 8 $\Omega$ , or 10 mW into 600 $\Omega$

#### S/N (A-wtd.)

92.8 dB re: 10 mW into 8 $\Omega$

90.3 dB re: 1 mW into 600 $\Omega$

#### Crosstalk

>71 dB, 10 Hz to 20 kHz

### BENCH MEASUREMENT COMMENTARY

I measured the Aphex HeadPod Model 454 with its stereo balanced inputs driving two headphone outputs (mostly because I only had fixtures readily available for four channels of load). I looked at loads of 8 $\Omega$ , 150 $\Omega$ , 600 $\Omega$ , and 1k $\Omega$ , but since there was not a great deal of meaningful difference among the latter three other than output before clipping, I stuck with the 8 $\Omega$  and 600 $\Omega$  as representative.

For the most part the graphs will speak for themselves; the HeadPod performs very well indeed, but 8 $\Omega$  seems pretty much to define the lower limit of its usable loads (probably due to power-supply and output-stage current limits). Since the overwhelming majority of headphones, especially in the pro environment, present loads of 100 $\Omega$  or more, this is not much of an issue, but does suggest that some cans may sound different than others—like we didn't already know that!

Figure 1 shows frequency response of a typical output and level configuration: very

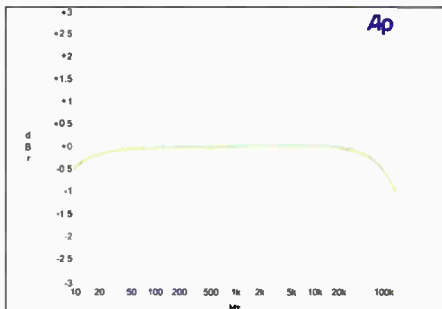


Fig. 1 Frequency response at 10 mW into 600 ohms

wide and flat with eminently useful response from 10 Hz to 40 kHz or so.

Figure 2 shows a “detail” frequency response view—please note the high-res, half-dB vertical scale—of response driving 8 $\Omega$  (purple/green), and 600 $\Omega$  (yellow/blue). Are these

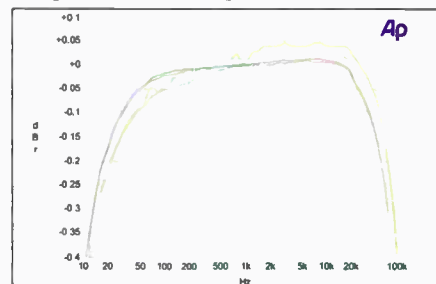


Fig. 2 Frequency response comparison into 8 ohms at 1 mW (upper traces), and 600 ohms at 10 mW (lower traces)

miniscule differences evoked by different loads audible? I very much doubt it, and anyway in the real world they're liable to be swamped by the far greater response changes imposed by reactive-load actual headphones.

An array of THD+noise results were returned, with measurement bandwidth limited to the audio band, for 8 $\Omega$  and 600 $\Omega$  loads. The 454 is near the boundary of clipping with 8 $\Omega$  loads at 100 mW and even 10 mW in the lower frequencies, but with 8 $\Omega$  phones I would imagine this to be so hellaciously loud that an extra 10 dB or so of harmonics would hardly seem to matter.

In regards to THD+noise versus amplitude, the input signal-amplitude swept the Aphex from about 1 mW to 1w into 600  $\Omega$ , and from about 0.1 mW to around 10 mW into 8 $\Omega$ , each at 100 Hz, 1kHz, and 20 kHz.

—D. Kumin

### | SECOND OPINION: APHEX HEADPOD MODEL 454

When Aphex President Marvin Caesar called me up to say he was sending me a HeadPod, I could detect enthusiasm in his voice ... that he believed his latest product was a winner. And, it is. Utilizing high quality op-amps and signal path parts inside, the stereo-in/four-output stereo Aphex HeadPod is a very good monitoring tool for not too much money.

Plugging in my multitudes of 'phones, I found that the HeadPod was a cut above most headphone amps that place quantity of outputs over quality. With my AKG K701s, Grado SR-325s and various Ultrasones, the headphone

relayed the output of 24-bit/96-kHz sources with close-to-audiophile quality, maintaining that sound even when four sets of phones were being driven.

The HeadPod's musical timbre reproduction was in a ballpark comparable to my Benchmark H1 single-output headphone amp and the tube/FET headphone output of my Audio-by-Van-Alstine preamp. The HP revealed good imaging, tight bass and lack of harshness in the high mids/lower treble. It was not quite as spacious as the Benchmark's stereo image, but it was close enough — considering it only costs \$200 bucks versus the Benchmark's almost \$450! The HeadPod is way better than most built-in head-

phone amps contained in various pieces of audio gear (mixers, players, recorders, etc.)

My only wish for the HeadPod would be the inclusion of supplied RCA-to-1/4-inch adapters for plugging in RCA-unbalanced sources (for example, excellent audiophile high-resolution players). But it's easy enough to go to RadioShack and buy a set.

For musicians who need accurate monitoring of their session or live work, computer-editing engineers who want a good, low-cost headphone amp to QC their mixes, or perhaps broadcast production, the HeadPod is a winner.

— John Gatski



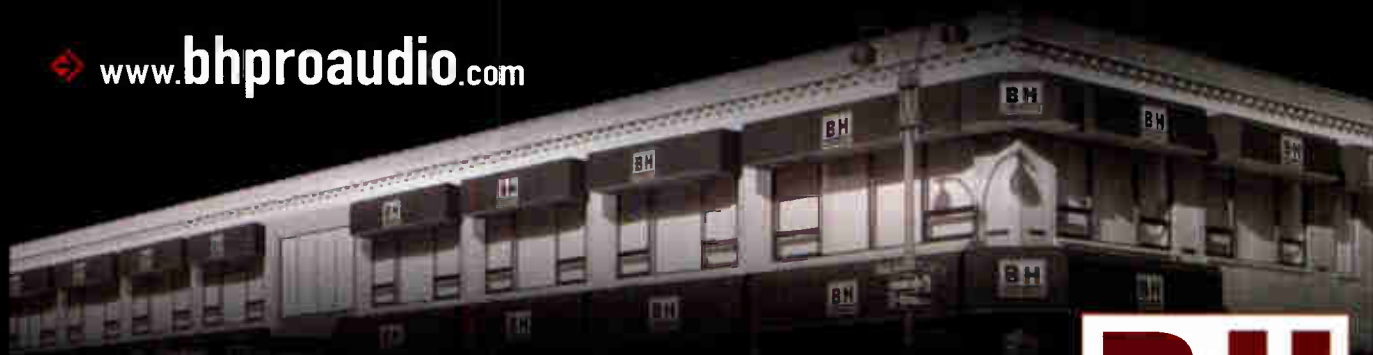
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by Rob Tavaglione

# Violet Amethyst Vintage Dual Large- Diaphragm Condenser

This well-designed, carefully crafted Latvian mic is “a first pick for solo vocals of all kinds.”

Its design elements may look vaguely familiar: a detached capsule housing, insect-like segmentation and well-made, Art Deco-styled accoutrements. But the Amethyst Vintage is the pride of a relatively unknown manufacturer/designer: Violet Microphones, based in Riga, Latvia. Benefiting from the talents of Juris Zarins — an original designer for pro audio neighbors Blue Microphones — Violet now offers an extensive line of high-end, condenser microphones at reasonable prices. I recently had the opportunity to use the Amethyst Vintage (and Violet's Grand Pearl, see accompanying mini-review), and I found both to be worthy of attention.

## FEATURES

The \$1,295 Amethyst Vintage (AV) is a dual-diaphragm electrostatic condenser specifically designed to have a “warm, classic

## FAST FACTS

### APPLICATIONS

Studio, project studio, broadcast

### KEY FEATURES

Two Mylar, 26 mm by six micron, gold/aluminum-sputtered, electrostatic diaphragms; “warm, classic” condenser sound; low self-noise, 134 dB max SPL; pleasant 10 kHz “bump”

### PRICE

\$1,295

### CONTACT

FDW-Worldwide (US distributor) |  
☎ 800-828-0509  
➤ www.violetusa.com

sound, not unlike legendary vintage studio microphones.” (The Amethyst *Standard* uses one diaphragm for a “modern sound.”)

The AV's two 26 mm by six micron Mylar diaphragms are sputtered with a combination of gold and aluminum to achieve better transient response, wider frequency response and higher output. The AV's wide-cardioid-only pattern (typical for dual-diaphragm designs), absence of filters or switches, and sleek styling (a distinctive detached-square capsule housing) makes for a straightforward experience in looks *and* function. Its specs are as expected: 20 Hz - 20 kHz frequency response, a low seven dB-A of self-noise, a 134dB maximum SPL and a 50-ohm output impedance.

## IN USE

The AV allows direct mounting to a stand without a clip, but I tried the supplied shockmount. It's small but adequate, and this luxurious-looking elastic spider and the mic's visual appeal will help inspire timid singers and savvy clients. Despite the shockmount and wide rectangular body, the size of the AV and shockmount will allow some tight placements.

I first tried the AV on my own soft, husky back-up vocals, and I found just what I had expected. A

strong, full bottom was there, and as I leaned way in for proximity effect I found a very workable “zone” of musical, manageable bottom boost (again, typical for dual-diaphragm). The top was smooth, too, but with a noticeable bump around 10 kHz that helped definition without being too sibilant.

The next day I had a very thin-sounding, sibilant soprano vocalist coming in, and the AV was put up next to her usual ribbon mic. She was immediately excited by the AV's present top (certainly, as compared to the ribbon); I was concerned, however, that we might be missing some much-needed bottom. A quick repositioning of my pop filter to allow closer placement got the AV's proximity effect in the game, and it added a nicely balanced tone. A touch of bass boost and de-essing was still required in the mix, but the AV's “classiness” shone through, lending a vaguely vintagemood to her '70s-inspired music.

The following day I recorded a wildly unpredictable female rocker (an alto), and was skeptical of the AV's ability to handle her extreme dynamics; I have heard many a diaphragm bottom out from her sustained crescendos. With a Manley TNT preamp (the tube side) and an Empirical Labs Distressor patched in, we got a gorgeous vocal that captured all the power of her loud passages, and all the subtle detail of the quiet ones, as well. In fact, this mic was more linear and consistent under such divergent conditions than just about anything I've used previously.

Solo acoustic guitar did reveal some Amethyst limitations, as its placement seemed unexpectedly very sensitive. Its healthy, flat bottom resulted in muddiness if I miked the dreadnaught guitar's body anywhere near the sound hole. I found a nice placement between the bridge and hole (for mono “middle”), but I required two more mics to get upper mids, string sparkle and harmonics. Electric guitar was similar, with the AV yielding a thick, warm tone that wasn't quite “modern” enough for me, but may work well depending on your source and goals.

Later I had a three-



## PRODUCTPOINTS



- Smooth, "classic/vintage" sound
- Quality design and construction
- Reasonable price



- Wide-cardioid pattern only
- No pads or filters

## SCORE

*This versatile mic will shine where fullness and presence are required*

piece horn section come in for overdubs, and the AV's top boost at 10 kHz proved too much for trumpet, but it did nice things for both tenor sax and trombone. I finally settled on trombone — with placement at about 18

### | VIOLET GRAND PEARL

The \$669 Grand Pearl is a unique bird: a mid-sized diaphragm condenser, originally designed for live use. Although I admit I'm skeptical of the Grand Pearl's ability to not "lose its head" during rigorous on-stage use — or not sustain damage to its narrowly attached capsule housing sphere while engaged in performance — I do like it for pleasant coloration in the studio. It has a nice, full sound that is far from flat, but quite useful paired with appropriate sources.

I tried the Grand Pearl at a loud rock band rehearsal where it received ample gain before feedback, with a sound more full than forward. In the studio, it was compatible on both male and female vocals, although it wasn't as exciting sounding as its Amethyst Vintage sibling or my other favorite vocal mics. I did use the Grand Pearl on a particularly throaty tenor sax; it gave me the right stuff by not distorting forgivingly subtle musician movement, and keeping the top end smooth and musical.

The Grand Pearl should be a winner for live sound engineers who work with primarily acoustic acts; its fullness, detail and feedback rejection will allow many applications. Louder stages will find success with the Grand Pearl when used on backup vocals, horns and percussion. But studios will surely provide even more potential uses than stages for the unique applications of the Grand Pearl.

— Rob Tavaglione



inches on axis — and received a strong, but un-hyped bottom end, as well as a clear pleasant top end (absent of unwanted hype). This mic can do many smooth things on horns that many condensers don't, in situations where you'd often reach for a ribbon.

### | SUMMARY

Although capable of wide applications, I think the versatile Amethyst Vintage is a first pick for solo vocals of all kinds. This mic will

shine where you may normally go with a U67: when fullness and presence are required. With quality construction, superior design, a "modern/vintage" sound and a reasonable \$1k street price, I recommend this mic to update old veterans' closets, as well as the "my first great vocal mic" for aspiring professionals.

*Rob Tavaglione owns and operates Catalyst Recording in Charlotte, NC.*

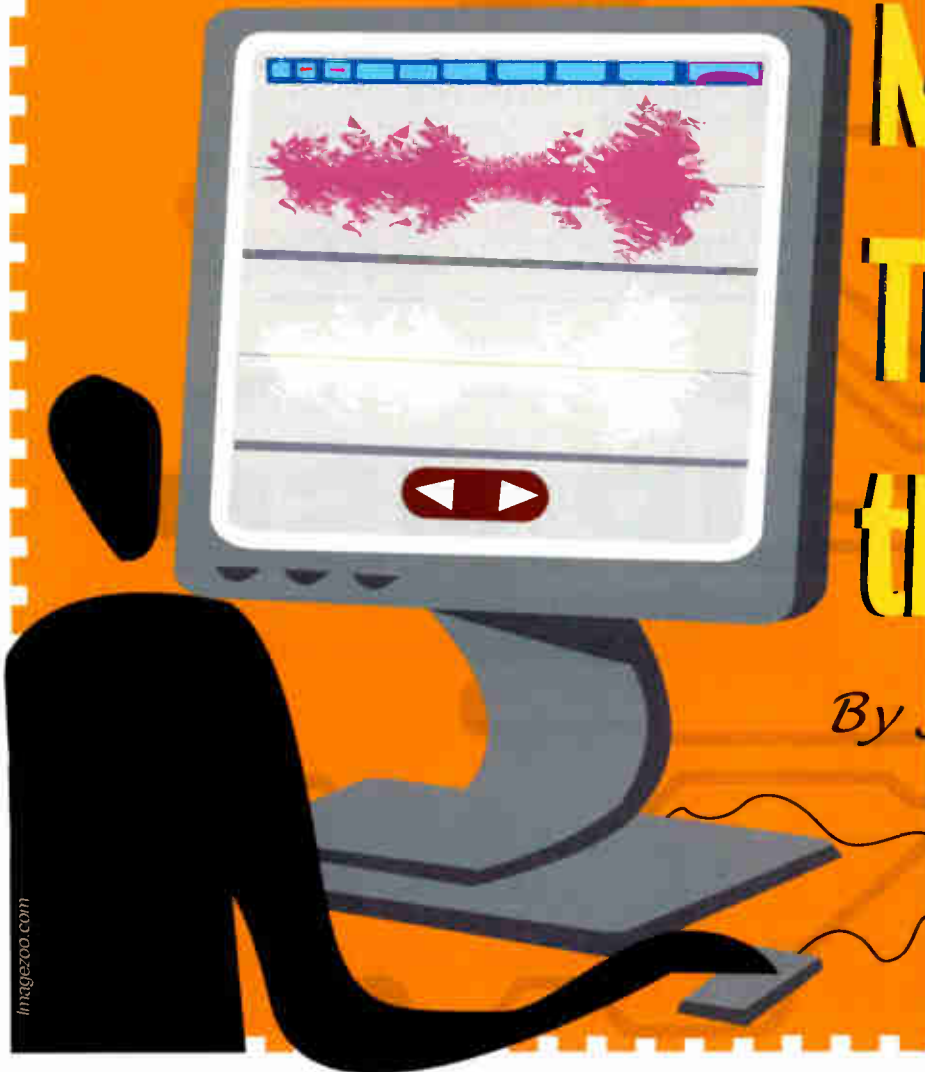


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# Mastering Tips from the Pros

By Strother Bullins

**M**astering, like all occupations in the arts, is generally a job that began as a hobby — fueled by a love for music, audio, electronics, or a combination thereof. Many professional mastering engineers began as musicians and worked their way into the mastering chair during their musical journeys. Others may have had less of an artistic beginning, first having interest in “electronics of leisure” — record players, televisions, audio tape machines, digital recording devices and the like — then, for instance, suddenly falling in love with some landmark album in their early lives.

Either way, mastering is less about creation and more about understanding and listening to the creation of others.

Mastering is all about the elements at hand and its final prep for an eventual audience. Mastering is not about putting together previously unrelated elements in the stereo or surround spectrum — that’s mixing. Mastering balances and adjusts the hues of audio within the full range of human hearing, with a focus on keeping all elements true to form. If audio were a painting, its mastering would be a complimentary frame, never overbearing or ostentatious.

In this feature, *Pro Audio Review’s* last How-To Series installment of 2007, three notable professional mastering engineers share their thoughts on the art of mastering. These guys are the real deal: Nashville’s Tommy Dorsey (LeAnn Rimes, Rhianna, Josh Rouse); Boulder Colorado-based Dominick Maita (Loudon Wainwright III, Fall Out Boy, Plain White T’s);

and NYC’s Alan Silverman (a Grammy-nom and regular *PAR* mastering columnist that has worked with Chaka Khan, Norah Jones, The Kinks). Rest assured, you will find their thoughts informative and honest.

Even in our increasingly streamlined industry — where new audio technology largely consists of tools to take shortcuts — a machine cannot synthesize the detailed evaluation and careful adjustments made by a good mastering engineer. A golden-eared professional — with his capable tools, acoustically truthful environment and transparent touch — guides an ideal mastering job. Without the work of these professionals, there is no doubt that the music industry would lose much of its fidelity. Now *PAR* offers the same amount of clarity in honor of these engineers.

**MASTERING** continues on page 26 ►





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## Tommy Dorsey: Pre-Mastering Advice — Utilizing the Value of Standard Listening Levels, Stereo DAW Sessions and Even Boom Boxes

I've had the benefit of working for engineers who became teachers or "mentors" to me. When thinking of tips that apply to mixing or mastering audio, there is one general practice that I've heard from most of my mentors. It's a simple tip to understand, but still, people find it difficult to apply. The idea is to mark a standard listening level with your console volume knob and consistently use that mark as a reference point. You might want to start by listening to several CDs with which you are familiar. Find a listening level that you think will be comfortable over a long day of working. Devise a way to get your volume knob set to exactly that position very quickly.

This can be achieved in a variety of simple ways. For instance, if your console volume knob has a mark on it, you can identify the area around the knob with a dot of grease pencil and match the volume knob mark to that mark. Some consoles have a digital readout to show volume position, or a knob with "clicks" to help provide volume reference points. You can even come up with two or three reference levels (the "quiet listen," the "comfortable medium" and the "cranked" setting). If you use these marks as a guide for working, you'll find that your consistency in many areas — tone (EQ), dynamics, balance, overall level, stereo width, etc. — will really improve.

This is extremely important when working on numerous songs within a project over a long period of time. I'm not trying to imply that the goal is to make your mixes all sound the same, but it is important to know if you're getting what you're actually shooting for. And, if your personal reference points become second nature, you'll have a better idea of where you are in the "musical big picture" when

mixing each song. Another important aspect of having a set reference level becomes relevant when you start to get tired at the end of the day.

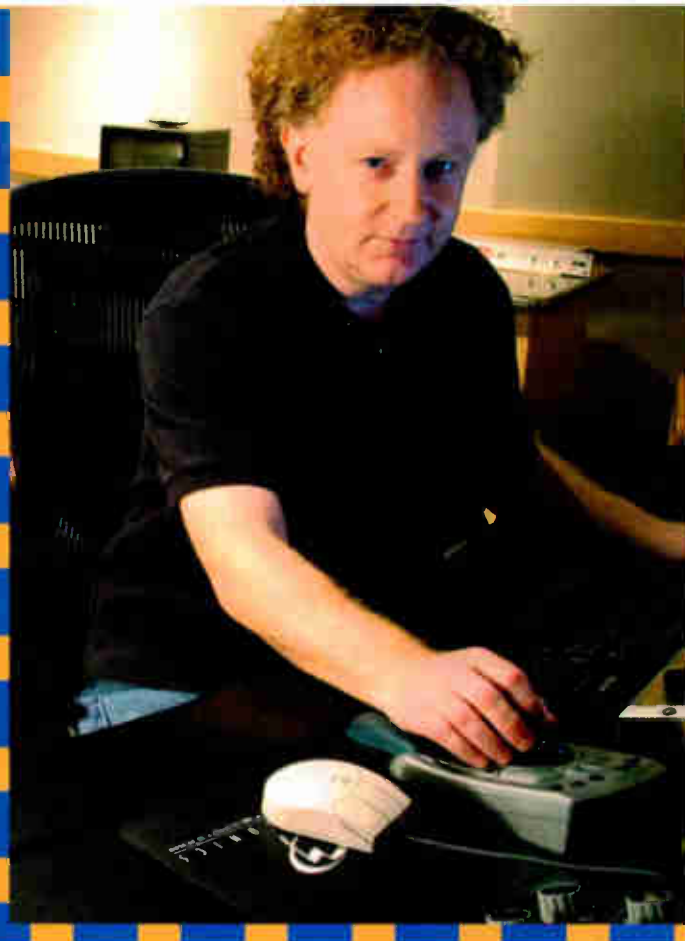
If you put in a CD that you know has a loud overall level and you look down and see that even though you've moved past the "cranked" mark it still doesn't seem loud enough, that's obviously the time to give your ears a rest.

### STEREO SESSION COMPARISONS VIA DAW

A technique that many mix engineers use when mixing multiple songs for an album project is to load the finished two-track mixes into a stereo session within a DAW to make continuity and mix comparisons for the unmastered project. It's amazingly noticeable when mastering multiple projects from the same engineer who chose to use this technique on some projects and not on others.

I am almost always more impressed with the overall result of a project where the engineer has employed this approach and then made corrective adjustments to make the mixes work better together on an album. I think it's especially effective when the mix engineer refrains from using brick-wall limiting, yet perfects the album continuity across the stereo mixes. The ability to jump from verse to verse and chorus to chorus across an entire album can quickly give the engineer or producer a valuable perspective when making the list of mix revisions.

Now that so many projects are done in-the-box (or "ITB"), this technique has become more popular, I think, largely because opening a mix and making a revision is not such a daunting or potentially expensive task. But just remember not to fall into the world's most common trap of using brick-wall mix limiting to blur the objectionable differences between mixes.



### BOOM BOX OR SMALL ALTERNATE REFERENCE SPEAKER SYSTEMS

If your mix sounds good on the boom box, that's a really good sign. If it's making the boom box distort when you turn it up as loud as your favorite CD, then you may need to make adjustments to your mix.

What adjustments do you need to make to your music? It depends on what your music sounds like and what seems to be causing the distortion. I use a small portable stereo system during every mix and/or mastering session. The small stereo reference listen always gives me a valuable perspective, and I always make some kind of adjustment that ends up benefiting the end product. The more you become familiar with a particular system, the more you'll be able to depend on it as a reference.

*Tommy Dorsey joined the mastering team at Nashville's Masterfonics in the early '90s. In addition to his role as Masterfonics' co-owner and co-principal engineer, he has over a decade of music production experience, earning early respect throughout Music City as an accomplished performer, session musician, engineer and producer.*

MASTERING continues on page 28 ▶

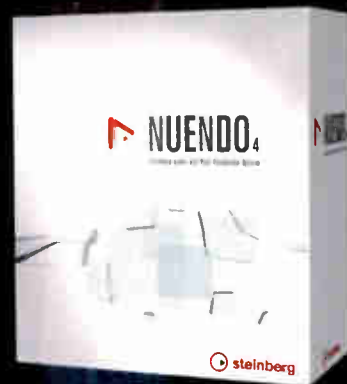
# It's About Time

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John Ross,  
Sound Supervisor and Re-Recording Mixer



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## Dominick Maita: The Real Value of the Mastering Engineer — Beyond the Technical Aspects

Different people see different value in what a mastering engineer brings to a project. Some consider the mastering engineer's main contribution to be that of a "clean-up crew" that eliminates technical flaws missed during recording and mixing. However, this approach overlooks the mastering engineer's skill, talent and true value.

By contrast, there are producers and recording/mixing engineers who recognize the integral role the mastering engineer plays in bringing to life their vision for an album, and who effectively make use of their time in the mastering studio. They value the mastering engineer's fresh, objective listening perspective and ability to optimize the sonic quality of each song within a project.

### ADDRESSING TECH DETAILS BEFORE MASTERING

What role do producers and recording/mixing engineers play in tapping into the mastering engineer's true value? First off, they should address the technical aspects before mastering. For example, recordings should be made at the highest resolution available, and a 24-bit format allows for better manipulation of digital files. Similarly, the mixes need headroom so that sonic quality can be optimized; digitally overloaded files leave little room to work with.

Although mastering engineers can generally correct such problems as clicks, pops and plives, it's more cost effective for mixing engineers to address those issues themselves, along with de-essing the vocal track. Conversely, digital distortion cannot be corrected. Finally, providing the mastering engineer clearly labeled, well-organized source material (including tones when using tape) saves everyone time, money and aggravation.

In addition to taking care of the technical details, producers and recording/mixing engineers who want to get the most out of mastering should focus on two other important areas: developing a strong vision for the album that they can clearly communicate to the mastering engineer (citing records to use as benchmarks can help), and spending plenty of time picking, listening to and approving their mixes.

### MASTERS OF THEIR OWN DOMAINS

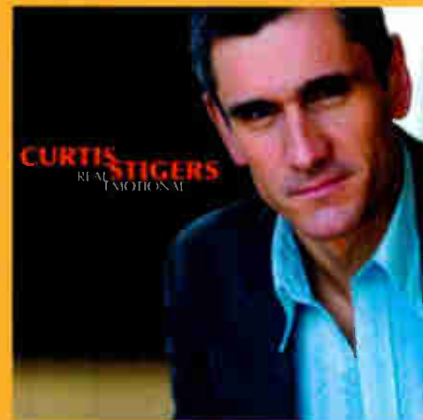
Two albums I recently mastered exemplify the outstanding results that can be achieved when the technical details are in order.

For Curtis Stigers' *Real Emotional*, Curtis and his producer, Larry Goldings, wanted to highlight Stigers' talent as an interpreter of modern standards, and the mixes were coherent from song to song. They told me to leave the bottom where it was; they loved the way that end sounded. But Stigers has an incredible sense of rhythm, and the listener's attention should never be diverted away from his singing. We felt his vocal sound needed to be front and center from song to song, so this is what I addressed.

The Plain White T's album *Hey There Delilah* featured outstanding songwriting, and the mixes were strong. However, they lacked consistency in presence from song to song and required a bit of work to thread them all together. On the other hand, "Delilah" was a beautiful mix and I only needed to tighten the lower-mid range to make the vocals sound exceptional.

These examples illustrate what is possible to master when the vision is clear and the mixes are clean.

*Dominick Maita is senior mastering engineer at Airshow Mastering in Boulder, Colorado, and has more than 25 years of recording, mixing and mastering experience. He can be reached at dominick@airshowmastering.com.*



MASTERING continues on page 30 ▶

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## Alan Silverman: Getting What You Need — Finding an Ideal Mastering House and Crafting the Best Pre-Master Mix

I'm going to harp on something that's a pet peeve of many mastering engineers: you're limiting your options when you bring in something that is already "pre-mastered." In other words, do what is musically right for the mix, but don't reach for gear just to make it louder or brighter for the sake of competing with current CDs when the band plays their mixes in the car. If you have to do that — and most will say that you do have to do that — give a copy to the band with whatever EQ, limiting and compression you need to make it seem competitive for their ears. Don't take that too far, though, or you may paint yourself into a very crowded corner. Save a version for the mastering engineer without that kind of processing on it. A little EQ and compression to "glue" the mix may make sense, but leave some room for the next stage, where there's better gear for the job and a more suitable mastering environment.

### THE SEARCH FOR YOUR MASTERING ENGINEER

Word-of-mouth referrals are a good place to start. Pigeonholing mastering engineers by gear and genre is counterproductive, because most good and experienced mastering engineers can do just about anything. Good sound is good sound.

There's a tendency to want to go for the most famous engineer, and that's great because those guys are wonderful. However, they may not be able to give your project the attention that you're looking for or need.

What you really want from a mastering engineer are good chops and an understanding of your music. That is something that you may only find through direct conversation, or by getting a really good report from someone you trust.

It's also important to check into the policy of revisions, especially if the mastering is unattended. Some engineers are more open to follow-up revisions at a reduced rate, sometimes even a courtesy, than others.

### THE IMPORTANCE OF A PRO MASTERING ENVIRONMENT

After the ability of the engineer, a professional monitoring environment is the most important thing to consider in finding a suitable mastering house. Yes, you can master in a phone booth if you needed to, but what produces consistent results is an objective listening space and knowledge of that space. That's how your project is going to translate to the widest range of consumer audio systems out there.

Nowadays, music plays on everything from car systems to great home systems, horrible computer speakers to earbuds. The thing to keep in mind is that, from an audio perspective, most equipment is designed to be flat, or linear, within its physical limitations. The more linear the mastering environment is, the more likely material mastered there will play well on all systems. Achieving that kind of environment costs money and takes experience. The typical project studio or even small recording facility is not going to provide that kind of listening environment. It's just not physical or economically feasible.

A professional mastering environment also needs a very high-end signal chain to be sure just going through the system doesn't degrade the audio. Mixes are fragile and complex; it's a lot easier to pass a single track than a complex mix. Any shortcoming in the signal path of a mastering system will affect the mix negatively. Where some recording studios may spend six figures on 48 tracks, the mastering studio will spend that on just two tracks.

### MASTERING CONSIDERATIONS

Experienced mix engineers are at the point where they understand both what happens in mastering and what happens at radio and broadcast. Over time, they have developed a self-correcting feedback loop and they know instinctively what to do.

Lesser-experienced engineers who are still learning a lot would be wise to develop a lasting relationship with a good mastering house — a long-term relationship, where they know that you will be doing repeat proj-

ects with them. The mastering engineer will want to develop that relationship with you, and would likely give you time to bring in some mixes in progress. They may even do a quick test mastering to show you how your project is going to turn out. Mastering engineers are generally very good at providing feedback of what's working and what's not.

While particularly difficult for less experienced mixers, a mix should be conceived with some kind of internal consistency, or logic, to it. In other words, a mix with blazingly bright cymbals and a vocal that's too dark will present significant problems. In this instance, you have overlapping frequencies that will fight each other. In mastering, if you attempt to brighten the vocal, then the cymbals will become harsh. Then you get into de-essing and all kinds of fixes. Don't even go there. Allow the mix to be transparent unto itself; the mix shouldn't necessarily be bright, but rather tonally and musically balanced in terms of its different parts.

Having textural contrast with an internal consistency makes good mixes stand out. A mastering engineer can always tweak the sound, but he can't add feel if it's not there, and feel comes from a balanced mix of good parts. If you have those components, you, as a mixer, can be far less concerned about compression, EQ and all the things that mastering guys are generally concerned with.

*Alan Silverman is the owner of Arf! Mastering in New York City, and a nominee for multiple Grammy Awards, including Album of the Year. He is a regular contributor to Pro Audio Review via frequent reviews and his own "Mastering Matters" column.*





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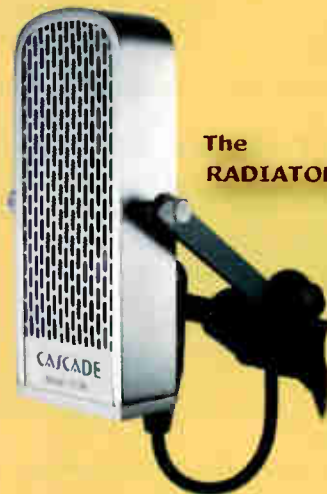
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**Solid State Logic** has recently installed its C300 HD digital audio consoles in two facilities. Recently remodeled Wildfire Post-Production Studios in Los Angeles took possession of a C300 HD with XLogic Delta-Link MADI HD system for transfer of data back and forth from Pro Tools HD. And Mexico City-based film dubbing mixer Jaime Baksht has commissioned the largest C300 HD to date: a two-operator, 48-fader, 512-channel console – for the being-completed Astro Studios.

When gunning to make the best sound possible for the recently released film crime caper *American Gangster*, the award-winning sound re-recording team of Michael Minkler and Bob Beemer turned to the **Euphonix** System 5 dual-operator console at Todd-AO West's Lantana Stage 1 in Santa Monica (as shown, also where the team did their Oscar-winning work for *Dreamgirls*).



Charlotte, North Carolina's Film Foundry and Van Steijn Composing and Recording Studio in the Netherlands have something in common: recently installed consoles powered by **Fairlight's** stellar CC-1 digital processing engine.



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World Radio History

by Carlos Garza

# Vienna Instruments Special Edition

This 24-bit sample bundle is one deadly weapon for audio designers.

The arms race in sampling is all about realism and audio quality. The new standard in sample libraries for computers is 24-bit and, for musical instruments, a variety of articulations must be within easy reach.

Vienna, Austria's Vienna Symphonic Library (VSL) is a leading provider of symphonic instrument samples, and has recently introduced a dedicated software player for their Vienna Instrument products that tackles these challenges. Vienna Instruments Special Edition (SE) is an all-in-one symphonic sample library and is one of the newer products using this software.

SE is comprised of two distinct Vienna products: the Standard Library (\$445) and the Extended Library (\$595), and is distributed in the US by ILIO. In this review, we'll see if VSL offers an affordable, all-in-one orchestral library with the features and sonic quality one would expect from a company that repeatedly sets the standard.

## FAST FACTS

### APPLICATIONS

TV/film music, symphonic realization, education and live

### KEY FEATURES

24-bit samples, plug-in for VST, RTAS and Audio Units, stand-alone player for live performance, resource management, PC and Mac

### PRICE

Standard Library, \$445; Extended Library, \$595; both require Vienna Key, \$39

### CONTACT

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## | FEATURES

The instruments in SE were selected from VSL's extensive line of Vienna Instruments (VI) products and require 81 GB of drive space. The Standard Library contains 28 instruments and ensembles from the post-romantic orchestra. It includes solo and ensemble strings and brass, solo woodwinds and percussion, which includes drums, gongs, cymbals, Taiko drums, thunder sheet, metal chimes and plate bells. Rounding out the set are Bösendorfer grand, celesta, glockenspiel, xylophone, marimba and vibes.

The Extended Library adds 35 instruments and ensembles, but does not augment the articulations in the Standard Library instruments. Highlights include saxes, contrabass trombone, chamber strings (small ensembles), Appassionata strings (larger ensembles), Epic Horns, harp, classical guitar, electric guitar, Vienna Konzerthaus organ and harpsichord. For all you Beatles fans, there's even a piccolo trumpet. A complete listing of tracks can be found at [vsl.co.at](http://vsl.co.at).

Whereas previous VSL products relied on third party sample players – such as Giga, HALion and Apple Logic's EXS-24 – the VI products use proprietary software for performance control and hard drive streaming. The cross-platform VI player serves up the 24-bit, 44.1-kHz samples as simple patches, containing a single articulation; for example, violins with short notes, in combinations called matrices, combine related articulations for use in a single MIDI track or to be switched instantly in live performance.

The multi-patch matrices reduce the number of sequencer tracks needed to create a realistic performance using multiple playing styles. For example, you can play quick, short notes, longer notes and tremolo in a single matrix set-up.

The VI player runs stand-alone (for live) or as a DAW plug-in with Audio Units, RTAS

and VST compatibility. RTAS support for OS X was introduced in October. The minimum configuration is 1 GB RAM on a G4 1 GHz under OS 10.4 or a 2 GHz PC with Windows XP. Most of the work is done by a background process, which shifts the memory and CPU burden outside of the host DAW, like Logic.

## | IN USE

I installed SE on a G5 Quad with 4 GB RAM, OS 10.4 and Logic Pro 7. SE requires a Syncrosoft USB security key, which must be registered online. It is sold by VSL as the Vienna Key (\$39). Authorizing the standard and extended libraries was nearly trouble-free. The only snag I ran into was caused by having both the Vienna Key and another Syncrosoft key for HALion connected during authorization. I temporarily removed the HALion key and completed the authorization with no problems. It would have been nice if



the documentation recommended removing Syncrosoft keys used for other products. However, the installation tutorial video was otherwise excellent. It's great to have a visual guide for a process that some find daunting.

By the way, VSL has created some excellent learning tools, including instructional videos and tutorial demo sequences for popular DAW applications. From my experience, nobody is doing a better job than Vienna of helping their users get the most out of music sampling software.

The matrix approach is where the user interface gets powerful. Matrices are built from patches, each of which contain a single articulation of an instrument. There are several ways to call up the different articulations, including key switches and MIDI controllers, which can be used in many combinations in a single matrix.

Key switches are notes outside the range

## PRODUCTPOINTS



- Astounding sound quality
- Innovative controls for efficient operation
- Automatic realism
- Computing friendly



- Limited articulations for non-mainstream compositions

## SCORE

*This high-quality, realistic, all-in-one symphonic library is an outstanding value.*

of the instrument (usually at the low end). For example, hit the lowest C with your left hand and the right hand plays for staccato notes, hit the C# and you are playing détaché, D for sustained and D# for legato notes, and so on.

You can also switch articulations using a continuous controller, such as the mod wheel. For example, you could play long notes and use the mod wheel to layer short notes or switch to tremolo. The VI player can accommodate up to 12 rows and 12 columns in each matrix; if that's not enough, you can combine matrices into keyboard-switched "presets." Many possibilities.

While you can't create your own patches, which include velocity and sample mapping, you can create your own matrices and make personalized versions of the ones provided. I wanted to create a performance matrix with crescendo control, such as that provided in HALion Symphonic Orchestra (HSO), which uses the mod wheel to cross fade (or switch) between samples played with different dynamics. The first step was to assign a continuous MIDI controller, such as the pitch wheel or breath controller for "velocity" X-FADE. I simply control-click the fader in the PERFORM tab of the VI window and used the breath controller to assign it.

Next, I needed to assign a controller as a switch because I don't want velocity X-FADE always on. For example, I still like to

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use key velocity for short notes. I used the ribbon controller on my Yamaha Motif ES-8 keyboard as the switch. After fine-tuning the response curve in the VI window, I had a zone at the top of the ribbon that I use with my left thumb to activate velocity cross fade with the breath controller when I need it.

From my experience, nobody is doing a better job than Vienna of helping their users get the most out of music sampling software.

SE is a very flexible product and it's easy to create your own customized performance setups. Since VI is also a standalone player, you can create key-switched presets with completely different instruments for live performance. For example, a song might need cello for the intro, trumpet for a solo and tubular bells for the ending – each with its

own key-switched and controller-modified articulations.

Vienna Instruments has some impressive software features. The flexibility to arrange patches within a matrix is very logical. Using custom keyboard notes outside the range of the instrument is also useful, but the ability to design your own articulation performance sets is a real innovation.

VSL decided that the Extended Library should widen the instrument variety rather than add articulations for the Standard Library instruments. I think some might prefer a deeper set of articulations rather than some of the slightly redundant instruments.

On the other hand, the variety of instruments between the two sets allows for more distinctive and expressive realizations where custom ensembles of solo instruments are needed. Three cheers for including the amazing solo strings in the Standard Library.

Also on my wish list for VSL products are the hardingfele (or Hardanger fiddle for you *Lord of the Rings* fans), and jazz inflections of the string bass, trumpet and trombone. There are several products providing the heart pounding drums that have become common

VIENNA continues on page 39 ►

by Dr. Frederick J. Bashour

# Rosendahl bonsaiDRIVE

This mini video/multi-track audio hard disk recorder finds itself at home everywhere.

For most of the time I have been an audio engineer I have brought a camcorder to recording sessions. Even back in 1970, I used a GBC monochrome surveillance video cam-

with audio from the mixer itself.

As the quality of these videos improved and DVDs became more commonplace, the classical musicians I was recording started



era so I could see what was going on during sessions, since the control room was often very remote from the musicians I was recording. This monitoring setup eventually evolved to color and, from the mid-'90s onward, was upgraded to a mini-DV camcorder that ran throughout the sessions, fed

requesting session DVDs instead of CDs; apparently they enjoyed watching themselves while they made their editing decisions. I always had to explain that the camcorder audio — although fed from the same mix as the master recorders — suffered from going through the audio inputs and ADCs in the camcorder and, consequently, didn't sound nearly as good as the "real" audio. Even a "professional" unit — a \$2,500 Panasonic AG-AVDC30 with its XLR mic/line inputs — still manages to mangle the audio pretty severely.

When I first saw the bonsaiDRIVE at the NYC AES show two years ago — as it played back a looped infomercial featuring Fritz Rosendahl himself — I was intrigued. So by the following summer I had succeeded in borrowing one from its distributor just in time for a yearly trip to Atlantic Canada's Prince Edward Island for the Rollo Bay Fiddle Festival. I subsequently purchased this review unit and have found it invaluable since.

## FEATURES

The \$1,990 bonsaiDRIVE is a high-quality portable video and multitrack audio hard disk recorder aimed at the film and video postproduction, video assist and multimedia markets, as well as the video monitoring and

security industries. Its concept involves having a standalone, synchronizable hard disk recorder as the portable media storage device, instead of merely a removable hard disk of comparable size and weight.

The unit reviewed here runs on 12 volts DC (the company's other model works on mains AC only) and records uncompressed 4:2:2 PAL or NTSC video together with 10 audio channels to standard IDE hard disk drives. No drive is supplied with the unit, but installing (or removing) one takes only a minute or two. I first put in a 120 GB IBM/Hitachi drive, but quickly replaced it with a 400 GB Fujitsu unit when I became confident and needed longer recording time.

Rosendahl uses a Huffman codec providing a lossless video compression ratio of 2:1, which is said to result in a superior video picture and a data transfer rate of 10 Mbyte/s, well within the capabilities of standard IDE drives. The audio channels are arranged as an analog stereo pair and a digital eight-channel ADAT stream,

and are 48 kHz at 24 bits. Professional synchronization I/Os include timecode, Sony nine-pin remote control, MTC, MMC, video sync input, Word Clock output and GPIOs, allowing flexible integration in postproduction or multimedia installations.

The front panel can be removed from the machine and used as a separate remote control with a standard 9-pin cable connection. A second nine-pin connector allows an additional external machine controller to be connected.

All configuration menus and settings are implemented as an interactive on-screen video display, together with insertion of timecode and audio levels in the program video, if required. On sessions, I just bring along a little LCD monitor screen, which I perch on top of the unit. As long as the bonsaiDRIVE is in Stop mode, I can mess with its on-screen menus. The possibility of inserting vertical, multi-colored level meters (either stereo or multi-channel—if I'm sending multi-channel digital via the ADAT connector) is extremely helpful, and I always leave it turned on while recording. Back at the studio, I simply go to the appropriate menu item and turn that function off.

Since each frame is recorded individually, jog, shuttle and playback from 0 to +/- 200 percent can be easily accomplished with

## FAST FACTS

### APPLICATIONS

ENG, postproduction, studio

### KEY FEATURES

Very small; records and plays back 10 channel audio (stereo analog plus ADAT-ODI digital) and video (composite, Y/C, component or, optionally, SDI) simultaneously

### PRICE

\$1,990; \$2,290 for 12 VDC version; optional \$595 SDI interface

### CONTACT

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results similar to that from a professional, analog VTR. Sync audio is output in all modes, including reverse, jog and shuttle, further giving the impression of playback from tape. All recordings are organized as unique clips. The timecode start value and frame rate can be selected independently of the recording format.

The bonsaiDRIVE's firmware can be updated through a computer serial port (MIDI or COM). Loader programs for PC or Mac, as well as the firmware files, are available in the support section of Rosendahl's website. (In fact, I suggest the reader visit [www.bonsaidrive.com](http://www.bonsaidrive.com) in order to download

## PRODUCTPOINTS

- Very high quality stereo audio ADC and DAC (at 48 kHz/24 bits)
- ADAT ODI permits eight more channels at 48 kHz, or four S/MUX channels at 96 kHz, flexible video I/O
- Elaborate menu structure permits many system tweaks and adjustments, including on-screen multi-channel meters
- Video and audio must be output (via analog, SDI or ADAT ODI digital) in real time due to proprietary hard disk format

## SCORE

*I know of no other such simple, elegant and easily portable way to capture high-quality video and multi-track audio simultaneously.*

the bonsaiDRIVE's manual and pertinent information.) As of the writing of this article, firmware 0.34 was released, which supports audio insert, new track arming and assemble record modes, a new bonsaiDRIVE codec, edit capabilities with copy and paste commands and audio crossfade processing, and programmable video to picture offsets.

The unit's front panel has 10 square push-buttons. They perform all the functions of a standard tape or video machine transport remote — including two dedicated (and storable) locate buttons — and also include a menu button (switching the on-screen display on and off), and one button that puts the machine under remote (Sony P2) control. A shift function (press Stop while pressing any second button) makes the leftmost eight buttons perform the functions indicated in white-on-black above the black-on-white buttons.

The rear panel offers an array of goes-ins and goes-outs. Over on the left, we have the four-pin XLR that provides a typical video

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guy's kind of 12 VDC input. Since this unit has this functionality (Rosendahl also makes a less expensive straight 120/240 VAC version), I've also purchased a video-type battery to power it off the grid. Then comes the pair of ADAT ODI I/O connectors and, then, a set of MIDI I/O jacks for MTC synchronization and MMC control; they can also be used for the aforementioned bonsaiDRIVE firmware updates using MIDI SYSEX.

Now we get to the "regular" jacks; there are Word Clock output and sync input BNCs, timecode I/O RCAs, audio I/O RCAs (menu-adjustable to various operating levels — very helpful) and, finally, six BNC jacks across the bottom row, which — if you follow the labeling carefully — can be used for composite, component or S-Video I/O. There's also (on the review unit) a blank panel where the SDI option card might be installed, were I to have the auxiliary connecting equipment and available cash to do so.

A new Gigabit Ethernet option board should be available by the time this article is published. It will allow the user to transfer bonsaiDRIVE QuickTime movies and broadcast .wav files to and from any other computer or bonsaiDRIVE via FTP, using a new

codec that Rosendahl will provide. This option board will go inside the unit and will be an IDE slave device at the hard disk IDE bus, hooked to an RJ45 connector on the back panel. For older units, Rosendahl will provide a new back panel with extra breakout connector.

### IN USE

Where shall I start? For an example, let's go to the previously mentioned gig. It was a choral concert where the video became as important as the audio. Good thing I've now got a secret weapon to preserve audio in this world where video has established a significant footing!

For recording and space considerations I established a signal chain that all fit on a little table underneath a Manfrotto tripod. First was a vacuum tube stereo Neumann SM69 (with 0.9-micron Stephen Paul diaphragms) out in front of the chorus, feeding the tiny Apogee Mini-MP stereo mic preamp back on the little table. I split its audio output towards both the bonsaiDRIVE and the XLR inputs of the Panasonic camcorder, whose S-Video (Y-C) output was also sent to the

**BONSAI** continues on page 69 ►

by Alan Carter

# MVI Post Goes "XT" Step with Fairlight

**A**t MVI Post — a full-service production and post house in the Washington, D.C. suburb of Falls Church, Va. — there is an obvious passion. This is evident from the award-winning jobs the owners and staff produce to the top-of-the-line outfitting of the facility. MVI Post's clientele include those whose standards of quality are known industry-wide to be very stringent: National Geographic Channel, Discovery Channel, BBC, PBS and NASA, to name a few. And, as a result of these projects, accolades have been forthcoming, such as Emmy awards, Oscar nominations and even an ITVA Distinguished Achievement Award for Frank Maniglia, Sr., founder of MVI Post.

## NO CHALLENGE UNMET

I recently toured MVI Post with Craig Maniglia, vice president of this family-run business nearing its 50th anniversary. Craig has more than 22 years in the business, and is an award-winning sound designer. His brothers and teammates Michael and Stephen, meanwhile, are an independent producer, director and cinematographer whose credits include "Law and Order: Special Victims Unit" and "The Sopranos" and a graphic designer/compositor who is editing and compositing film and video using software such as Smoke, respectively.

Together this family has assembled a robust trove of talent and gear. Among the most recent acquisitions that MVI Post added to its arsenal are three Fairlight DREAM Constellation-XT consoles, used for a series of high-definition suites.

"It's an unbelievable piece of equipment for what we do," Maniglia explains. "The DSP fader movement allows us to do several mixdowns all in one pass. Coupled with the audio-based program that it has inside, we can have more than 150,000 sound effects on line and 450,000 pieces of production music. That allows us to do sound design and mix simultaneously, backing out massive time restraints in the evenings for junior mixers working on programs so that the (senior)

mixers come in the next day and mix it.

"On top of that, the consoles take plug-ins," Maniglia continues. "That is a new option for Fairlight. You name a plug-in, and we can get it and put it in here. It works instantly and it's remembered."

While a sizable investment, Maniglia confirms that the management at MVI felt the efficiencies the DREAM Constellation-XT offered far outweighed the issue of comparative cost.

"You are hiring mixers, these creative people to do the show — they shouldn't be picking the effects," Maniglia offers. "If you can

MVI Post's clientele include those whose standards of quality are known industry-wide to be very stringent: National Geographic Channel, Discovery Channel, BBC, PBS and NASA, to name a few.

take out the time it takes to do [some of the background preparation work] and make it transparent, you are in a much better world."

## LOOKING FOR EFFICIENCIES

Maniglia says the digital audio suites at MVI have become very popular for sound design and mixing in the Washington production community because of their multiple track layout ability and their capabilities in 5.1. "When you do your 5.1 mix, you can fold the program down instantly," he said, "and then you can go in and tweak the fold down separately in the 5.1 mix."

In the past, you would do a stereo mix first, Maniglia explained, and you would break it out into a 5.1 mix. "You were spending twice as long to do a show. Now, you just build it in 5.1, hit one button that folds it down into a stereo mix, and you can tweak little areas."

This feature came into play recently when MVI did a "Planet Earth" television project; the production house replaced the audio

voiceover of Sir Richard Attenborough in the BBC version with actress Sigourney Weaver in The Discovery Channel version.

As an additional convenience/precaution these types of sessions can be backed up, meaning no matter how many years later they can be brought back to an exact moment. "So, when a client does a job here, if they want to 'reversion' it, we can call that mix back, re-edit it and put it back."

## VIDEO WITH AUDIO

Another strength of MVI Post is its random access video via the Fairlight Pyxis high-definition, non-linear system used with the DREAM Constellation-XT. "The Pyxis allows us to take the video in with the audio, if we want to, at HD resolution uncompressed," Maniglia says. "The client is watching their show uncompressed random access with the audio. So where the audio is, the video is. There isn't any tape transport. It all makes the room much faster than any traditional audio mixing room which is using tape."

With 96 busses, Maniglia explains that the DREAM Constellation-XT gives users the ability to do so many different things. "We can do a spot here and e-mail it right off the console," he says. "Before you had to go to tape and reload it back into the PC."

The Pyxis HD also allows for Ethernet HD audio and video to be transferred between MVI's Smoke HD composition system and the DREAM Constellation-XTs. An additional Pyxis was purchased for MVI's color enhancement room. "This room speaks to the hard drives of our Smoke rooms by Ethernet," Maniglia says. "It can just take over its drives and mix. It just speeds up the whole process. It is pretty powerful."

Further complementing the facility's upgrades is the Dolby LM100. The LM100 Broadcast Loudness Meter with Dialogue Intelligence, through which MVI runs a program after finishing the mix, measures loudness variations between program or television channels. Maniglia credits this piece of gear to MVI receiving the "Planet Earth" production for Discovery Channel and the BBC. It is a complicated piece of equipment, Maniglia explains: "It is almost an art to get it to be right."

But, as evidenced by the projects coming from MVI Post, "Get it right" could be the facility's unofficial motto.

Alan Carter — a reporter, editor and publisher — is a former sales manager of Pro Audio Review.

# POST

## | Review

VIENNA Continued From Page 35

in animal documentaries and action scores. It would be nice to have additional drums recorded on VSL's "silent stage" to blend with VSL products. Native American and European frame drums would be a nice addition.

But I'm nitpicking: this is a versatile set. The saxes and muted trumpets and trombones lend a jazz versatility, while the electric guitar takes it into action score territory. These are pro sounds with plenty of useful articulations.

The Appassionata strings answer the mail for those who felt that VSL strings are too pure or precise. This is a lovely cinematic sound for sweeping themes. The small ensemble strings, woodwinds and classical guitar are also excellent. I loved the Epic Horns in the Horizon series and I don't know of any other all-in-one set that has such a sound.

While these instruments do not have all of the articulations or detailed range of samples of the Vienna Instruments products they were selected from, the sound quality is the same. These are beautiful recordings that work well in many genres, including symphonic mock-ups, TV and game scoring, rock and pop production, and music education.

The intention of Vienna Instruments SE is to quickly capture a realistic performance so you spend more time creating the music and less time sweating the details.

VSL records their samples in an acoustically dry environment. The bad news is that you have to add reverb to make a symphonic piece sound like it's in a concert hall. The good news is that you have complete control over the acoustic setting. Logic's Space Designer convolution reverb with a scoring stage or concert hall works wonders.

I like the fact that much of the processing and memory are handled by a separate process, the VSL server, which shifts much of the memory and CPU burden from the sequencing or DAW application. This frees

# LOSSLESS COMPRESSION



MaxCom actually reveals sonic details lost with ordinary compressors.

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up DAW resources for software synths and other sample plug-ins. The VI software includes options for optimizing RAM utilization by clearing samples not in use in a MIDI recording. This makes laptops and some older computers a viable platform.

Thirty-two bit applications like SE can use up to 4 GB of RAM. Since SE runs outside the DAW application, an 8 GB machine supports a hefty number of instruments in SE while leaving another 4 GB for the DAW and other plug-ins. Theoretically, if you had 12 GB of RAM you could add another sample player that runs outside of your DAW.

As this article went to press, VSL announced their Vienna Ensemble product, which they say will be a free update for Vienna Instruments users. They say that the Vienna Ensemble stand-alone player is designed to host Vienna Instruments on networked computers, and balances memory use when run on the same computer with the DAW. It also adds support for 64-bit PCs and Macs.

### | SUMMARY

Wrangling a symphonic orchestra, even one as easy to use as SE, requires practice.

While the skills for "conducting" a symphonic library differ slightly than the live orchestra, the goals are similar. The performance should flow smoothly and dynamically, and the instruments should blend acoustically into a symphonic sound.

SE does not let you tweak every conceivable nuance of a performance but most of the tweaking that you need to do is either easy or — better still — it's automatic. The intention of SE is to quickly capture a realistic performance so you spend more time creating the music and less time sweating the details.

SE includes a huge selection of professional symphonic instruments. I don't know of any other all-in-one set that includes solo strings and horns this expressive. If you want top grade pro sounds at an affordable price, look no further. SE is an excellent value and a serious musical tool.

*Carlos Garza is currently scoring an action feature film. His work has been heard on Image Entertainment DVDs, Turner Classic Movies and the National Gallery of Art. He is a regular contributor to Pro Audio Review.*

by Stephen Murphy

# Painting with Words: On Career Growth



into our already busy schedule and further reduce our ability to effectively and objectively manage our professional growth; thus, the success-driven holding pattern (See Wikipedia, "Forest for the Trees," A. Larch et al).

**M**y apologies to everyone. I accidentally left my PowerPoint presentation back at the office. I'll just have to "paint with words"...

[Actual words spoken at a press conference on which I had the dubious honor of working. Had to share with someone...]

From freelance engineers to facility owners, we are all subject to similar challenges. These challenges that can constrain professional growth [First slide: Picture, if you will, a hamster in its tiny wire cage. Awww...so cute!]. They can keep you from making forward progress no matter how hard you work [Next: A very tasteful page-curl transition to a hamster running on exercise wheel]. And, after it's too late, you come to realize that your career has been stopped short [Last slide: Picture the result of a pen stuck into the hamster wheel, which was totally spin-



PAR's eco-friendly editorial recycling system.

ning way too fast because someone WD-40'd the axle – what? No, don't call the SPCA... I was just painting with words, remember? Painting with words...]

## TYPE AV (NEGATIVE)

Career growth can be limited deservedly, usually for reasons that are obvious, such as an overt lack of enthusiasm; blinding self-importance (usually accompanied by a dash of delusional omnipotence); persistent lack of patience; an unwillingness to learn; predictable reactionary responses to direction; or any of the fine choices available in the

Practicing Anti-Socialist's Cookbook.

The result is a shunted-to-ground career and, unfortunately for the rest of us, the perpetuation of the archetypal "Audio Engineer with a Bad Attitude" image.

Based on my exhaustive survey of destructive psychosocial expression (meticulously researched and compiled during the period between 10:07 and 10:15 this morning using the unassailably accurate data source Wikipedia), it appears that such unprofessional behaviors are often insecurity-driven defense mechanisms caused by shortcomings in professional knowledge and skills.

A perfect example is the perceived threat and inappropriate reaction when confronted with new technologies and industry trends that he or she has not bothered to learn.

Since you are reading *Pro Audio Review*, you couldn't possibly be a serial practitioner of the above negative behaviors; but you may know someone who is, and you may be in a position to help.

To paraphrase the old Ann Landers chestnut, leave this column sitting open on the mixing console and ask if the person recognizes anyone in the article. Do this at your own risk. We are not responsible for the cost of emergency transport or, ah, the delicate extrication procedure.

## TYPE AV (POSITIVE)

A cruel irony is that hard working, talented and respected audio professionals may find their careers stagnating because they are in demand. The danger comes from the inversely proportional relationship between the amounts of time spent using skills professionally and the amount of time left for expanding professional knowledge, staying abreast of the latest tools and technologies, and planning and effecting changes in rates, marketing and other aspects of a developing career.

It is understandable that, when faced with a growing amount of business, our first inclination is not to put the breaks on, turn down incoming work from existing and new clients, and set aside quality time to plan how best to proceed.

Instead, we accept the work, shoe-horn it

## TYPE OH

One of the best opportunities to break out from career limitations, stagnation and the threat of being left behind by a fast-evolving industry happens to be the Audio Engineering Society Conventions.

No, I'm not just echoing some publication mandate or toeing an industry line. Actually, I couldn't be more sincere when I say that there is no better way to spend two or three days and come away with a complete picture of the latest audio technologies, an expanded network of colleagues and potential collabo-

Since you are reading *Pro Audio Review*, you couldn't possibly be a serial practitioner of the above negative behaviors; but you may know someone who is, and you may be in a position to help.

rators, plus a better understanding of current issues and career trends.

Much of these benefits come from the part of AES conventions nearest and dearest to my heart, and that which I strongly encourage readers to seek out: the ever-enlightening workshops, tutorials and master classes held throughout the show. These are your best opportunity to receive streamlined career-building insights and see presentations from the most accessible and knowledgeable voices in the industry.

Do your career a favor and make time at next year's convention to attend some of the excellent educational panels and featured presentations. Oh, and if any forget to bring their PowerPoint presentations, be sure to suggest that they just "paint with words"... It will be much appreciated, I am sure [no need to mention you read it here].

PAR Studio Editor Stephen Murphy has over 20 years production and engineering experience, including Grammy-winning and Gold/Platinum credits. His website is [www.smurphco.com](http://www.smurphco.com).



## **"ALL FOR A DIGITAL CONSOLE?" -- WOTHKE RESPONDS**

I am looking at your article, "From the Old to the New" [PAR, May 2007], and there are few things I like to comment on after reading it. You clearly are all for a digital console. You say, "... whatever amount spent on a good live analog board could translate into a comparable digital board ...". Actually, that is the main difference.

Maybe since you live in a music capital of the world, you are used to see venues and churches with top of the line gear. At my church, we recently purchased a new Allen & Heath GL2400-32 board for \$2,000: a great deal, excellent sound quality, and it does the job very well. We have a small church and it will do the job for next five years.

I am friends with the sound crew at another larger local church seating about 1,500; they are running a nice analog Soundcraft board that costs \$24,000. It does the job well for them.

Keeping in mind that 85 percent of churches have less than 200 people, it would be obvious that very few people will take your article and run to the church board asking for \$85,000 to spend on a nice used PM1D console. Would you agree? Correct, the features and time saved with a digital board are far surpassing any analog one, but very few can simply go and buy one with the budget they have.

Also, is there any particular reason you are so biased towards PM1D?

**Pavel**

[a PAR subscriber]

**Dan Wothke Responds:** *The essence of what I was saying was that it is now worthwhile to look into the option of going digital. Not that it is an exact and right fit for everyone, but the days of blowing off digital — either because of cost, usability or sound — are behind us. Am I for an all-digital facility? Not always ... but I do think it warrants serious consideration.*

*"Maybe since you live in a music capital of the world, you are used to see venues and churches with top of the line gear."*

*No, I work with churches of all sizes from new churches with 20 - 40 people on up. In fact, that is why I love doing this; there is such a broad spectrum and I am always learning. Some of the smaller churches are the most creative in handling technical issues ... because they have to be.*

*"At my church, we recently purchased a new*

*Allen & Heath GL2400-32 board for \$2,000: a great deal, excellent sound quality, and it does the job very well. We have a small church and it will do the job for next five years."*

*And that is great ... if it is the right fit for your church. My challenge for you to consider would be what is available for \$2k in the digital realm that would offer you the same functions and more? If there is nothing that would make you decide differently, then the A&H is a great fit (we have one for our Youth).*

*"I am friends with the sound crew at another larger local church seating about 1,500; they are running a nice analog Soundcraft board that costs \$24,000. It does the job well for them."*

*I would say that at that price point, there are a number of comparable digital boards that would offer them more flexibility and routing options, but again, it boils down to preference and the environment: monitoring, routing and, most of all, user comfort.*

*"Keeping in mind that 85 percent of churches have less than 200 people, it would be obvious that very few people will take your article and run to the church board asking for \$85,000 to spend on a nice used PM1D console. Would you agree?"*

*Absolutely, this is why I wrote that there are comparable digital boards regardless of the cost options. In one of our smaller rooms we have a Behringer DDX3216 digital board because anyone can recall a preset by following instructions that will allow the microphones in the room to be used. Is it perfect? No, but for that room it works great. Just curious ... how do you come to the "85 percent" number? I am always looking to find reliable numbers regarding church size.*

*"Also, is there any particular reason you are so biased towards PM1D?"*

*No. I am not biased at all towards the PM1D, and realize that Soundcraft, Mackie, Tascam, Digidesign, Allen & Heath, Yamaha, even Peavey, among others, are dipping into the market ... and they are all great options. The PM1D was only mentioned (and pictured) because it was used at the church I spoke to when writing the article.*

*For what it is worth, we have a Soundcraft G2 analog board at Belmont and have for about nine years. The time is coming when we will need to replace the board and, at that point, we will be looking long and hard at a digital replacement in the \$10k to \$25k range.*

*My point is this: the days of just buying analog without even researching the digital options are behind us. Digital continues to develop and more manufacturers are getting involved, which is good for us; that means higher quality and*

*less cost. If nothing else, when we spend the time researching digital consoles we will become more educated and know what it is that we do want for the next time around.*

*Again, thanks for taking the time to email. I love to get feedback and realize I do not have every piece of the puzzle: we need each other to make this work.*

*Keep up the good mixes ... regardless of the format.*

## **YOUR AUDIO'S PERSONAL JEEVES**

I came across your article "Phonic America PAA2 Personal Audio Assistant" [PAR 12/2003] and have just recently acquired the item from a friend who had not much knowledge in using it and thought I may have better use of it. I was interested in the product for applications involving sound feedback problems or tuning audio systems to be able to deliver maximum output with very little feedback problems. I am a neophyte in this field and would appreciate a step-by-step instruction on how I could possibly use the PAA2 to solve such a problem.

**Benjie Mirasol**

**Steve Murphy Responds:** *Sorry for the delay — was out of the country.*

*An analyzer product such as the PAA2 is a good tool for your needs (identifying and removing feedback frequencies, tuning a system for better performance and compensate for room problems).*

*A detailed instruction set is beyond what little time I have, but there are some excellent tutorials available on the web (written by far more experienced live sound engineers - I am almost exclusively a studio and broadcast engineer).*

*A good place to start is The Live Sound Manual by Ben Duncan, Paul James. If you search for "live sound manual analyzer" on Google, the first link is to a Google books excerpt of the relevant section, so you can check it out right away. If you want a good book that covers all the basics of sound systems and recording check out Audio Made Easy or How to be an Engineer Without Really Trying by Ira White. The book has a horrible name, but it's a great (and funny) book that does a great job of covering a school year's worth of knowledge with little effort.*

**Benjie Mirasol Responds:** *I was not really hopeful I would get an answer from you but it was really a pleasant surprise to get one. I will surely look up the leads you gave.*

# PAR EXCELLENCE AWARD WINNERS



Each year at the US-based Audio Engineering Society Convention, a select group of audio professionals peruse the exhibit hall to find the latest and greatest pro audio gear. Later, while sequestered in a secret location, these judges then nominate and vote on their choices for *Pro Audio Review's* coveted *PAR Excellence Award*, based on the following criteria:

Innovation • Performance • Value

The 2007 *PAR Excellence Award* winners are among the many new audio products displayed and demonstrated at this year's annual American AES show. As always, these selections (as well as others not specifically selected by *PAR's* panel) play a notable role in setting audio production and performance standards for the next year and beyond; these major product introductions inevitably help shape trends simply through their impending availability to professional engineers and producers.

For example, more than a few manufacturers unveiled products, thus kick-starting trends, via smaller mixers with bigger analog hearts (AMS Neve, API, Rupert Neve Designs, etc.); ever-shrinking DAW controllers and interfaces with higher-quality components and capabilities (Apogee, Digidesign, etc.); higher-resolution I/O products with increased flexibility for DAW-dependent recordists (Lynx, RME, etc.); higher quality yet relatively inexpensive microphones (Cascade, Heil Sound, sE, etc.); digital networking systems for studio, live and installation needs (NetworkSound, RSS by Roland, etc.); and more new, high SPL-handling ribbon microphones than you can shake a stick at (Crowley & Tripp, Groove Tubes, among others). Rest assured, all of these products will do their part in making a significant impact on the way people choose to work with audio in 2008.

To win the coveted *PAR Excellence* title, an AES debuted product must be scheduled to ship by June of the next year. Of the hundreds of worthy new products introduced since the last American AES show, only 46 were given the 2007 *PAR Excellence Award*.

Here, in alphabetical order, are this year's winners:

## A-Designs Hammer HM2EQ



**Features:** Dual mono three-band tube equalizer; 2U box; two channels with 12AT7 Philips tubes, toroidal power transformer; per-channel switches for bypass, high- and low-cut; six large aluminum rotary knobs for EQ at 17 total band selections with +/-13dB boost/cut per frequency range. Price: \$2,695.

**Judges' Comments:** "A high-end, dual-mono, three-band tube EQ that offers a unique filter system enabling only the desired, even-order tube harmonics to color the audio."

**Contact:** A-Designs | 818-716-4153 | [www.adesignsaudio.com](http://www.adesignsaudio.com)

## ADAM Audio S7A MK2 Powered Studio Monitor

**Features:** Loudspeaker with acoustically dead aluminum honeycomb plate designed for soffit installations at the retro-fit or large studio design level; active four-way d'Appolito design with two 15-inch paper woofers, two 9-inch HexaCone mid-woofers, two of ADAM's newly designed X-ART folded midrange drivers and one X-ART tweeter; 20 – 50,000 Hz response; PWM amplifier design. Price: \$44,000 a pair.

**Judges' Comments:** "Very large and pricey, the S7A can fill up large rooms with lots of mega-dBs of ribbon tweeter smoothness and monster sub-20 Hz bass from its two 15-inch woofers."

**Contact:** ADAM Audio USA | 818-991-3800 | [www.adam-audio.com](http://www.adam-audio.com)



## Adamson Systems Engineering Metrix Sub Sound Reinforcement Subwoofer

**Features:** Convertible cardioid sub featuring two 15-inch ND15-L Kevlar Neodymium bass drivers; ultra-compact tuned, vented and fully braced line array cabinet for multi-purpose, series built for small to medium-sized houses-of-worship (HOW), nightclubs and theaters; AIR system rigging, pole mount. Price: \$4,500.

**Judges' Comments:** "An impressive, high-quality subwoofer that integrates smartly into the company's product line; it's a versatile, ultra-compact line array series built for small-to-medium-sized houses-of-worship (HOW), nightclubs, and theaters."

**Contact:** Adamson Systems Engineering | 905-982-0520 | [www.adamsonproaudio.com](http://www.adamsonproaudio.com)



## AMS Neve Genesys

**Features:** Hand-built, expandable analog recording console offering DAW control; base configuration includes 16 mic/line pre amps; 16 channel DAW monitoring and control for Pro Tools, Logic, Nuendo and others; analog summing at mix; eight aux busses; eight group busses; dual main outs; four effects returns; 5.1 monitoring; two cue mixes, talkback; internal power supply; and extensive metering; can be expanded to over 60 channels with options such as motorized fader automation, recall, installed A/D and D/A converters, digitally-controlled classic Neve EQ and dynamics, remote mic amp control, etc. Price: Starting at under \$50,000.

**Judges' Comments:** "For budget-conscious, consummate audio pros with the need for a real high-end mixer, the Genesys is a hand-built, expandable analog recording console offering incredible DAW control starting at under \$50,000."

**Contact:** Audio Agent | 866-570-8847 | [www.audio-agent.com](http://www.audio-agent.com)



**PAR EXCELLENCE** Continued On Page 44

Let your ears decide...  
you'll be in **good company.**

**Patrick Leonard** | producer; Madonna, Rod Stewart, Roger Walters

*"For over 20 years I've basically stayed with my U47 and C12. With the Sputnik, I was not only surprised but very happy to have a new mic that falls perfectly between the two. It has taken a permanent place in the vocal booth."*

**Butch Vig** | producer/artist; Garbage, Nirvana, Smashing Pumpkins

*"One of the first things I listened to on the EX66 monitors was the title track off our last record, Bleed Like Me, which we mixed on Genelecs. I was amazed because I heard lots of things on the EX66s that I didn't hear when we mixed the record."*

**Tom de Gorter** | Emmy-winning supervising sound editor; Lost, The Shining

*"I use my MicroTrack on practically every episode of Lost. The sound quality is top notch and it's incredibly versatile... I carry it everywhere I go for recording sounds in the field."*

**Vinnie Colaluta** | drummer; Sting, Faith Hill, Frank Zappa

*"Just plug into the Octane, record your source, play it for people and don't tell them what you used—the classic blindfold test. Say it was your super-expensive stuff and see what they say... then tell them the truth, after they've heard the truth."*



**EX66** Professional High-Resolution Active MTM Reference Monitor

**Sputnik** Multi-Pattern Large Diaphragm Vacuum Tube Condenser Microphone

**MicroTrack II** Professional 2-Channel Mobile Digital Recorder

**Octane** 8-channel Preamp and A/D Converter with ADAT Lightpipe



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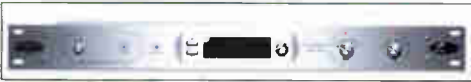
www.m-audio.com

World Radio History

PAR EXCELLENCE Continued From Page 42

## Antelope Audio Isochrone OCX Master Clock

**Features:** Atomic Clock input; 32 – 192 kHz sampling rates; Superclock output; jitter management module; output options include eight Word Clock, two AES/EBU and two S/PDIF channels. Price: \$1,695.

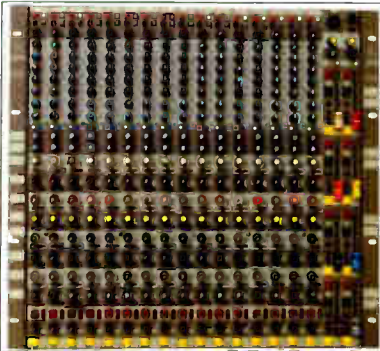


**Judges' Comments:** "For the studio or mastering house that needs precise, up to 24-bit/192 kHz digital clocking, the ultra-accuracy of the 10M's atomic clock is about as good as it gets."

**Contact:** Antelope Audio | 415-869-9661 | [www.antelopeaudio.com](http://www.antelopeaudio.com)

## APB-Dynasonics ProRack-Monitor/House Rack-mounted Mixers

**Features:** These 10RU mixers are based on Spectra Series circuitry; 16 input channels each (all mono for Monitor; 12 mono input, four dual-mono/stereo input channels for House); variable frequency high-pass filters on all channels; fixed high/low frequency EQ bands, two mid-sweep EQ bands on mono channels; House offers six aux sends; Monitor can create eight stereo mixes plus two mono mixes. Price: \$3,690 (Monitor M1016); \$3,490 (House H1020)

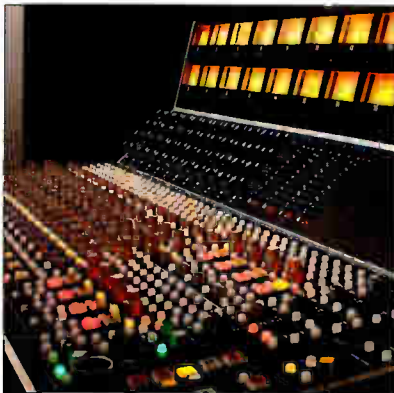


**Judges' Comments:** "All the great sonics of the Spectra series, housed in a compact Monitor or House rack configuration."

**Contact:** APB-Dynasonics | 973-785-1101 | [www.apb-dynasonics.com](http://www.apb-dynasonics.com)

## API Audio 1608 Analog Production Console

**Features:** Console with 16 548B inputs featuring 312 mic/line inputs and DI; 12 550A three-band EQ; four 560 10-band graphic EQs; space for eight additional 500 Series or VPR Alliance modules; a 5.1-capable center section; comprehensive VU metering and rear connector patches; with additional inputs (eight effects returns), the 1608's total line input is 24 channels; ships with 16 manual input faders and a stereo master fader; moving fader automation for the system is coming soon. Price: Starting at \$49,900.



**Judges' Comments:** "API offers its accuracy, unique sonic signature, and user friendliness in an ideally sized, fully featured, small format analog recording console."

**Contact:** API Audio | 301-776-7879 | [www.apiaudio.com](http://www.apiaudio.com)

## Apogee Electronics Duet Portable Audio Interface

**Features:** FireWire interface offering Apple Logic Pro, Soundtrack Pro and GarageBand control functions with Apogee Maestro software; two mic/line pre amps with phantom power; I/O breakout cable featuring XLR and TRS line I/O; headphone jack; front-panel dual LED level metering; large Encoder Knob. Price: \$495.

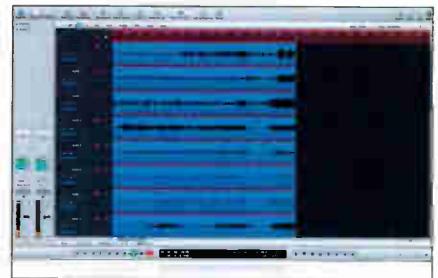


**Judges' Comments:** "Apogee adds its mark to the low-budget computer audio interface product realm; it looks like an Apple product and is built and sounds like an Apogee."

**Contact:** Apogee Electronics | 310-584-9394 | [www.apogeedigital.com](http://www.apogeedigital.com)

## Apple Logic 8 Studio Digital Audio Workstation

**Features:** Single-window interface for multi-take management, Quick Swipe comping, snap-to-transient editing, graphical time stretching, True Surround instruments/effects/tracks/busses;



MainStage 3D interface allows live usage of Studio Instruments, any of 80 Studio Effects, AU plug-ins, any MIDI/USB controller; Soundtrack Pro 2 features restoration/postproduction tools for film/video, Final Cut Studio integration. Price: \$499 (\$199 upgrade from Logic 6/7, Platinum/Gold 5/6; \$299 upgrade from Logic Express).

**Judges' Comments:** "Logic 8 features a new one-window design that will surely lure many music recordists who can now use the power Logic, thanks to greatly improved ease-of-use."

**Contact:** Apple | 800-275-2273 | [www.apple.com](http://www.apple.com)

## Audio-Technica ATH-M50 Studio Monitor Headphones

**Features:** 10-ounce reference headphones featuring 45 mm neodymium magnet drivers; 15 Hz - 28 kHz rated response; 99 dB sensitivity; 38 ohm impedance; circumaural swiveling ear pieces. Price: \$199.

**Judges' Comments:** "Great comfort and very good sonic accuracy in a very reasonably priced sealed headphone."

**Contact:** Audio-Technica US, Inc. | 330-686-2600 | [www.audio-technica.com](http://www.audio-technica.com)



PAR EXCELLENCE Continued On Page 46



# LIVE PERFORMANCE MASTERY.

## Superior Vocal Quality

Engineered to exacting standards, the KSM9 wired microphone unites studio quality with stage durability, all while providing exceptional consistency across all frequencies. With its dual diaphragm design and switchable polar patterns, the KSM9 is versatile enough to handle any environment. And for wireless applications the KSM9 capsule is also available with the UHF-R® Wireless System.

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PAR EXCELLENCE Continued From Page 44

## Audio-Technica SpectraPulse Ultra Wideband (UWB) Wireless Microphone System

Features: Secure wireless utilizing precisely timed pulses carrying up to 14 simultaneous channels operating without RF competition, frequency hunting/coordination, white space issues or infringement from other wireless systems or radio sources; NIST-approved AES 128-bit standard encryption package available. Price: Components range from \$1,300 - \$8,600.

**Judges' Comments:** "This unique 6 GHz wireless technology from A-T allows the corporate/conference world to bypass an increasingly congested RF bottleneck to deliver clear, intelligible audio."

Contact: Audio-Technica US, Inc. | 330-686-2600 | [www.audio-technica.com](http://www.audio-technica.com)



## Benchmark Media ADC1/DAC1 USB Digital Converters



Features: Two-channel 24-bit/192-kHz digital-to-analog converters with advanced USB input; balanced, unbalanced outputs; jitter-immune, phase-accurate UltraLock clock system; HPA2 headphone amplifier. Price: \$1,775 (ADC1 USB); \$1,275 (DAC1 USB).

**Judges' Comments:** "Benchmark offers the simplicity of driverless USB-1 connectivity to its superb line of digital converters/headphone amp combos."

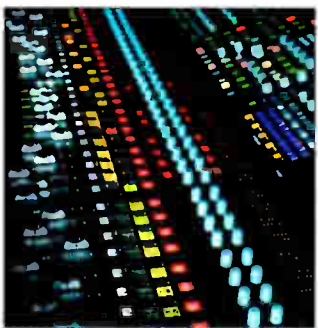
Contact: Benchmark Media Systems | 315-437-6300 | [www.benchmarkmedia.com](http://www.benchmarkmedia.com)

## Calrec Omega Broadcast Console

Features: Using Bluefin High Density Signal Processing technology, features 160 channel processing paths packaged as 48 stereo plus 64 mono channels, allowing up to 24 x full 5.1 surround channels; 4-band EQ, 2-band filters, Compressor/Limiter, Expander/Gate; 2-band EQ and 2-band filters for Dynamics side-chain; motorized, touch-sensitive faders; user-definable TFT metering capabilities; optional I/O expansion. Price: POA.

**Judges' Comments:** "Utilizing Bluefin DSP, premium broadcast console manufacturer Calrec offers a powerful small-format digital broadcast board that is ideally suited for live broadcast 5.1 audio."

Contact: Calrec | +44 1422 841 310 | [www.calrec.com](http://www.calrec.com)



## Cascade Microphones FAT HEAD II Ribbon Microphone

Features: Aluminum, 2.5 micron-thick, 1 7/8 x 3/16-inch ribbon; hand-tuned element with true figure-eight polar pattern; 30 -18,000 Hz response; super-wide radian grill; suspension shock mount; wood box; aluminum case; one-year warranty; optional Lundahl transformer. Price: \$199.

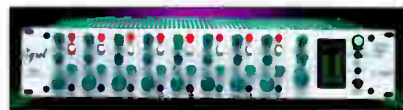
**Judges' Comments:** "Entry-level price yet high-quality ribbon performance is available from this unique-looking microphone."

Contact: Cascade Microphones | 360-867-1799 | [www.cascademicrophones.com](http://www.cascademicrophones.com)



## Crane Song Egret Converter/Mixer

Features: Serves as a DAW back-end with eight channels of D/A, a stereo line mixer with



Crane Song "color options" for analog-summed digital mixes; mixer level control, cue send, color control and pan control per channel; each channel also offers an analog/digital source button, as well as Solo and Mute; balanced analog inputs and direct outputs allow outside processing options. Price: \$4,500.

**Judges' Comments:** "Yet another notable product from the great mind of engineer Dave Hill; the Egret serves as a DAW back-end with eight channels of D/A and a stereo line mixer with Crane Song 'color options' for analog-summed digital mixes."

Contact: Crane Song | 715-398-3627 | [www.cranesong.com](http://www.cranesong.com)

## Crowley & Tripp el Diablo Ribbon Microphone

Features: Proprietary super-strength material Roswellite mimics aluminum leaf with no sagging, forging a ribbon kick drum mic with "the sound of a 421 inside the drum and a 47 FET out by the hole." Price: \$2,750.

**Judges' Comments:** "Designed in conjunction with Mercenary Audio, El Diablo is essentially a drum kit ribbon mic that can really take the pressure, thanks to the patented ribbon material known as Roswellite."

Contact: Crowley & Tripp | 508-231-4515 | [www.soundwaveresearch.com](http://www.soundwaveresearch.com)



## DPA Microphones 4017 Shotgun Microphone

Features: Super-cardioid technology allows for high output, wide dynamic range, low self noise; uncolored off-axis response and virtually no rear lobe; permanent high pass filter works to reduce wind and handling noise, supplemented with high boost and bass roll-off filters; only 2.6 ounces and eight inches in length. Price: \$2,079.

**Judges' Comments:** "With Danish Pro Audio's 4017 shotgun, you have the rejection of a great shotgun with the sound of a high-quality studio condenser."

Contact: DPA Microphones | 303-485-1025 | [www.dpamicrophones.com](http://www.dpamicrophones.com)



PAR EXCELLENCE Continued On Page 48

# One Mic Scales the Competition.



The SCX25-A delivers a pure, open-air sound unlike any other microphone, especially on acoustic piano. Used in conjunction with the Dflex clip, the SCX25-A can be mounted directly on to a rail and positioned in close proximity to the strings. Even when the piano must be used in short stick or closed lid position, the SCX25-A is able to maintain the sound integrity of the piano beyond its competition.

With a patented shock mounted capsule design, the SCX25-A is a "go-to" choice in the studio, reproducing vocals and acoustic instruments with exceptional detail and clarity.

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**AUDIX**  
MICROPHONES

PAR EXCELLENCE Continued From Page 46

## Earthworks PM40 PianoMic System

**Features:** Two 40 kHz omni random incidence High Definition Microphones provide superb sound with the piano lid either up or down; incredible gain before feedback; virtually no leakage from surrounding instruments. Price: \$4,495.

**Judges' Comments:** "This innovative, stereo mount, high-end microphone system allows for placing two mics inside the piano for recording without bleed from other instruments in the room."

**Contact:** Earthworks Precision Audio | 603-654-2433 | [www.earthworksaudio.com](http://www.earthworksaudio.com)



## Eventide TimeFactor Twin Delay Stompbox

**Features:** 10 signature effects without the need for a rack-mount; rugged cast metal houses digital, vintage DDL, tape echo, ducked, multitap, reverse and more, with customizable parameters for 27 native presets (or unlimited by MIDI); true analog bypass; tap tempo; real-time editing by 10 knobs; wet/dry expression pedal port; USB port for upgrading functionality. Price: \$499

**Judges' Comments:** "A perfect example of a dream coming true — TimeFactor offers Eventide sounds that guitarists love in an honest-to-God, tweaky, twin digital delay stomp box".

**Contact:** Eventide | 201-641-1200 | [www.eventide.com](http://www.eventide.com)



## Fairlight Xynergi Media Production Centre

**Features:** Features self-labeling key switches that display full-color images, icons or text; "on-demand" QWERTY keyboard; eight touch-sensitive rotary controllers; multiple soft keys control multi-band EQs, three stage dynamics, multi-dimensional panning, aux sends and more; given an operator's specific task, relevant functions are displayed, while those that aren't are hidden. Price: \$23,000.

**Judges' Comments:** "Fairlight takes the next logical step with its Crystal Core processing engine and produces an integrated, powerful, ergonomically friendly workstation that is well suited for almost any post production audio duties, including broadcast film and music."

**Contact:** Fairlight US | 626-793-3940 | [www.fairlightus.com](http://www.fairlightus.com)



## Groove Tubes VELO 8 Ribbon Microphone

**Features:** Velocity-type studio microphone with 2- x .25-inch ribbon element; Neodymium; figure-8 polar response; selectable impedance/roll-off switches. Price: \$799.

**Judges' Comments:** "A great example of a reasonably priced, large ribbon element microphone that has that classic ribbon sound."

**Contact:** Groove Tubes | 818-361-4500 | [www.groovetubes.com](http://www.groovetubes.com)



## HHB Communications CDR882 DualBurn CD Recorder



**Features:** Steel 2RU chassis with genuine REC-REC drive configuration offering seamless extended recording time across two or more discs (up to 52X), simultaneous recording of two discs, high-speed duplication; 24-bit A/D and D/A converters with noise-shaped dither; balanced XLR analogue I/O, unbalanced phono analogue I/O, balanced XLR AES/EBU digital I/O, coaxial and optical S/PDIF digital I/O, external word clock input, RS232 remote control and parallel control interface; on-board sample rate converter accepts digital signals from 32 - 96 kHz; many modes. Price: \$1,149.

**Judges' Comments:** "HHB carries on the standalone CD-R tradition with a new, dual-deck burner with high-quality, sample rate converter/dither processing to get the most out of your CD from 24-bit sources."

**Contact:** HHB Communications/Sennheiser | 860-434-9190 | [www.hhb.co.uk](http://www.hhb.co.uk)

## Lavry Engineering LavryBlack AD10 Stereo A/D Converter

**Features:** 44.1, 48, 88.2 & 96 kHz sampling rates stereo converter; greater than 117 dB dynamic

range; less than .0009-percent THD+N, external Word Clock or AES sync, 24-bit AES/SPDIF and optical outputs; XLR, 1/2-inch inputs; Clear or Digital Alias-Free Emulation modes (Tube, Transformer, both). Price: \$1,480.

**Judges' Comments:** "Dan Lavry's new entry level 24-bit/96 kHz sample rate A/D offers up excellent conversion, as well as several new processed emulation modes for a bit of color."

**Contact:** Lavry Engineering | 360-598-9757 | [www.lavryengineering.com](http://www.lavryengineering.com)



## Lexicon PCM96 Stereo Reverb/Effects Processor



**Features:** A total of 28 complex reverb, modulation, delay algorithms in a 1RU space; two channels XLR analog, two channels XLR AES/EBU digital I/O, MIDI, Word Clock, Ethernet and FireWire connectivity; 44.1, 48, 88.2, 96 kHz operation; DAW automation, FireWire streaming through plug-in format; HiQnet compatible. Price: Contact Manufacturer.

**Judges' Comments:** "Lexicon has a real winner with the PCM96; it incorporates classic and new reverbs, along with DAW integration and plug-in management."

**Contact:** Lexicon Pro | 801-568-7567 | [www.lexiconpro.com](http://www.lexiconpro.com)

PAR EXCELLENCE Continued On Page 50





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PAR EXCELLENCE Continued From Page 48

## Lynx Studio Technology AES16e PCI Express Card

Features: 16-channel AES/EBU digital I/O, routing, mixing engine; 192-kHz/24-bit single-wire and dual-wire modes; SynchroLock jitter attenuation; Word Clock, multi-card synchronization; 48 additional channels via Cat5, Cat6, AES50. Price: \$795.



**Judges' Comments:** "One of the best digital I/Os (with great converters) available just got more compatible with the latest generation of PCs and Macs using PCI Express architecture."

**Contact:** Lynx Studio Technology | 949-515-8265 |

[www.lynxstudio.com](http://www.lynxstudio.com)

## Marshall Electronics MXL Mic Mate



Features: USB pre amp with phantom power plus A/D converter allows your favorite microphone (dynamic or condenser) to become a USB mic; no special drivers required. Price: \$79.

**Judges' Comments:** "For \$79, Mic Mate is better than a USB microphone; it allows your favorite microphone to become a USB-connected microphone anywhere you and your CPU may roam."

**Contact:** Marshall Electronics | 310-333-0606 |

[www.mxlms.com](http://www.mxlms.com)

## Meyer Sound MM-4XP Self-Powered Miniature Loudspeaker

Features: Proprietary four-inch cone transducer; peak SPL 113 dB, 120 Hz – 18 kHz; peak, RMS limiters; receives balanced audio, DC power from Switchcraft EN3 connector; compact aluminum die cast enclosure/heat sink; MPS-488 external power supply; custom paint. Price: POA.



**Judges' Comments:** "The MM-4XP is a compact, installation-sized speaker with the respected Meyer Sound pedigree."

**Contact:** Meyer Sound | 510-486-1166 | [www.meyersound.com](http://www.meyersound.com)

## Millennia Media HV-3R Remote Microphone Preamp

Features: Ethernet-controllable eight-channel microphone preamp; Pro Tools plug-n-play via MIDI; ÆLogic software;



hi-definition meters, unlimited groups, scene management, voltage/temperature monitoring; ultra-quiet stereo-matched gain control; Entirely balanced audio path; 23 dB input headroom; 32 dB output headroom; toroid power. Price: \$4,999.

**Judges' Comments:** "John LaGrou and company add remote controlled ease-of-use to the highly regarded high-end HV-3 mic preamp."

**Contact:** Millennia Media | 530-647-0750 | [www.mil-media.com](http://www.mil-media.com)

## Mojave Audio MA-100 Small Diaphragm Tube Condenser Microphone

Features: Microphone with interchangeable, hand-selected three-micron cardioid and omnidirectional capsules, Jensen audio transformers, JAN 5840 tubes; 115 or 230 volt switchable power supply; 120 dB SPL. Price: \$795.

**Judges' Comments:** "Essentially, the MA-100 combines the virtues of a small diaphragm instrument condenser with tube technology by David Royer."

**Contact:** Mojave Audio | 818-847-0222 |

[www.mojaveaudio.com](http://www.mojaveaudio.com)



## NetworkSound Mamba Digital Snake

Features: Digital line-level audio transport system in 16 x 16 to 64 x 64 A/D-D/A configurations at a good price; can deliver



512 x 512 channels of 24-bit, 48-kHz uncompressed audio via standard CAT5/6; driven by MediaNet Protocol; offers up to 192 kHz sample rate support (with lower channel count) with all DB25 I/O. Price: \$1,760 - \$4,623.

**Judges' Comments:** "A killer 'ones and zeros' line-level, audio audio transport system in 16 x 16 to 64 x 64 A/D-D/A configurations at a good price."

**Contact:** NetworkSound/FDW Worldwide | 608-831-1946 |

[www.networksound.com](http://www.networksound.com)

## Prism Sound Orpheus FireWire Recording Interface

Features: Features eight A/D, D/A analogue channels, 10 digital inputs/outputs; four integrated mic preamps,



switchable phantom; Concurrent operation of ADAT and switchable S/PDIF or AES3 port; eight-bus DSP mixer; configurable for stereo, 5.1, 7.1 monitoring; dual headphone outputs; sample rate conversion; four-curve, SNS noise shaping; clock generation; MIDI IN/OUT; Windows XP/Vista, Mac OS X, standalone. Price: \$4,995.

**Judges' Comments:** "Prism's first foray into computer interface audio boxes gives us premium mic preamps with legendary Prism converter design."

**Contact:** Prism Sound | 973-983-9577 | [www.prismsound.com](http://www.prismsound.com)

## Real Sound Lab CONEQ Technology

Features: Measures and corrects linear distortions of electro-acoustic transduction devices (loudspeakers, microphones)



in different environments; 4,096-point response correction based on Acoustic Power Measurement. Price: POA.

**Judges' Comments:** "1U of sophisticated DSP-equalization to correct environmentally-induced speaker anomalies; it can be used for almost any application where there is a speaker."

**Contact:** Real Sound Lab | 949-861-3724 |

[www.realsoundlab.com](http://www.realsoundlab.com)

## RME ADI-8 QS FireWire Audio Interface



**Features:** Eight-channel, ADAT/TDIF format 24-bit/196-kHz interface (w/ FireWire connectivity); features eight A/D and eight D/A converters; low-latency conversion (eight samples of delay); dual Lightpipe (ADAT optical) inputs with RME Bitclock technology; eight AES/EBU I/O at 24 bit/192 kHz via D-sub; eight channel digital input trim; remote controllable via MIDI and MIDI via MADI. Price: \$3,399.

**Judges' Comments:** "This box provides RME's renowned digital transparency in an eight-channel, ADAT/TDIF format 24-bit/192 kHz interface with FireWire connectivity."

**Contact:** RME Audio | 330-259-0308 | www.rme-audio.com

## RSS by Roland V-Mixing System

**Features:** The 48-channel RSS M-400 live digital console plus Digital Snake stage unit uses Cat5e cable for transporting 24-bit digital streams with none of the bulk or noise of analog snakes; other features include rapid recall of setups, 100 mm motorized and touch sensitive faders, an 800 x 480 color screen, digital patchbay, 16 aux/mon sends, eight DCA's, eight

mute groups; PC link to send/receive data and prepare channel setups/configurations before arriving at the venue. Price: \$9,295 - \$13,795.

**Judges' Comments:** "The M-400 V-Mixing System offers complete live sound and recording capabilities via comprehensive digital networking; its incorporated digital snake and mix desk make it a flexible 'be-all, end-all' audio solution." **Contact:** Roland Systems Group | 360-594-4282 | www.rssamerica.com



## sE Electronics GM10 Acoustic Guitar Mini-Microphone

**Features:** Gold-sputtered mylar condenser capsule positionable through simple, effective clamp assembly; built-in shockmount. Price: \$595.

**Judges' Comments:** "A unique, alternative mic/mount system for recording acoustic guitar that sounds quite natural." **Contact:** sE Electronics/Sonic Distribution | 617-623-5581 | www.seelectronics.com



PAR EXCELLENCE Continued On Page 52

# StroboSoft™

StroboSoft Software Strobe Tuner for Mac / PC

Perfect tuning for instruments or samples can be made with razor-sharp precision using StroboSoft's 0.1 cent accuracy borrowed from our legendary hardware tuner line.

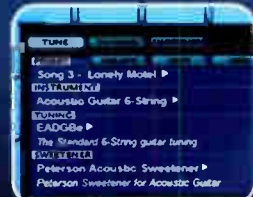
Take advantage of over 30 preset Sweetened Tunings™ that compensate for certain instruments' design flaws and optimize their sound. Use the integrated Buzz Feiten Tuning System® presets for your BF-equipped instruments.

Standard chromatic tuning mode and innovative 'Instrument Mode' provide professional tools for quick tuning or complete instrument set-ups.

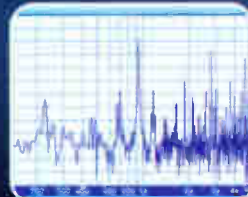
With more than 50 preset alternate tunings and unlimited capability to store your own presets, quickly dial in the tuning you need or compile play lists for studio sessions or your live shows.



Note/Octave window offers real-time response and multi-window provides cent offset, Hertz value, and MIDI note number.



Store unlimited presets for all your instruments or create a preset for each song in your set to compile a set list for studio reference or tonight's gig!



Use the spectrum analyzer to view the fundamental note and its harmonics, view noise floors, or to help you isolate tuning issues. Oscilloscope also included.

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VST/AU plug-in available late 2007.

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PAR EXCELLENCE Continued From Page 51

## Sennheiser MKH 8000 Instrument Condenser Microphone

Features: Omni-directional MKH 8020, cardioid MKH 8040, supercardioid MKH 8050 capsules; 10 – 60,000 Hz response MKH 8020, 30 – 50,000 Hz response MKH 8040/8050; extremely low distortion, low inherent self-noise. Price: \$1,299 each.



**Judges' Comments:** "Sennheiser improves upon the MKH 800 to make a better high-resolution instrument microphone for extended frequency response formats such as DSD and 24-bit PCM."

Contact: Sennheiser USA | 860-434-9190 | [www.sennheiserusa.com](http://www.sennheiserusa.com)

## Sony PCM-D50 24-bit/96-kHz Linear PCM Digital Recorder

Features: A 96 kHz/24-bit recorder with two-position (X-Y or Wide) stereo microphones; 4 GB internal flash memory; Memory Stick Pro-HG Duo slot; USB port for transporting .WAV files; digital pitch control; dual digital limiter; low-cut filter; Super Bit Mapping; A-B repeat; MP3 playback; XLR microphone adaptor. Price: \$599.



**Judges' Comments:** "The PCM-D50 is a quarter the price of the acclaimed PCM-D1 digital portable recorder, but still offers 80-percent of its performance — a bargain."

Contact: Sony Professional | 800-686-SONY | [www.sony.com/professional](http://www.sony.com/professional)

## Steinberg Nuendo 4 Audio/Post System

Features: A 32-bit audio engine with full surround throughout; VST3 plugins; new automation system; integrates into any monitoring setup; network collaboration tools for LAN/WAN; project exchange, cross platform tools. Price: \$1,799.



**Judges' Comments:** "Nuendo 4 continues its evolution into an incredibly powerful DAW best suited for audio post production; meanwhile, Cubase, Nuendo's sister DAW, continues to serve the needs of the pro music production studio."

Contact: Steinberg/Yamaha | 714-228-3301 | [www.steinberg.net](http://www.steinberg.net)

## Studer Vista 5 SR Live Sound Console

Features: A Studer Vista 5 digital console re-engineered in to a robust, road-ready package; steeper Viconics screens for increased visibility when standing in daylight; LED illumination for dark environments; temperature control system; flash memory; redundant power supplies, audio and control links. Price: POA.



**Judges' Comments:** "Studer smartly takes the power of the Vista 5 digital board and tailors it for an ideal high-end sound reinforcement console."

Contact: Studer USA/Harman Pro North America | 818-920-3206 | [www.studer.ch](http://www.studer.ch)

## TC Electronic Studio Konnekt 48 Digital Audio Workstation Interface



Features: FireWire-powered interface; four IMPACT II preamps; eight line-in's on rear; 12 analog outputs (two XLR); digital I/O features ADAT 96 kHz SMUX, TOS, S/PDIF and Word Clock I/O; DICE Jet jitter elimination engine; DSP effects; surround/speaker/bass management; compact remote. Price: \$1,500.

**Judges' Comments:** "TC has made a high-quality, all-in-one, hardware/software audio interface box with scads of useful I/O and four quality mic pres for under \$2,000."

Contact: TC Electronic | 818-665-4900 | [www.tcelectronic.com](http://www.tcelectronic.com)

## Telefunken USA Ela M 260 Small Diaphragm Microphone

Features: A condenser mic for all sound sources, features a NOS Telefunken EF732 tube and three capsules (cardioid, hypercardioid, omni); adaptor for AKG CK series, JZ/Violet, B.L.U.E. Systems capsules; 20 Hz - 20 kHz; 120 dB. Price: \$1,495.



**Judges' Comments:** "For \$1,495, you get the big, bright, crisp sound of the original AKG C60 and all three of its original capsules."

Contact: Telefunken USA | 860-882-5919 | [www.telefunken.com](http://www.telefunken.com)

## Trident 8T Eight-Channel Analog Console

Features: Based on original circuit designs for Series 80 EQ complemented with mic pre, auxs, direct outs, full monitoring, meterbridge; incredibly low noise and crosstalk specifications. Price: \$2,999 (includes meterbridge).



**Judges' Comments:** "John Oram's impressive, made-in-UK 8T analog series of consoles is now offered in a small eight-channel footprint — perfect for any job that needs fewer mics, with high-quality, low noise sound and that classic Trident EQ."

Contact: Trident Audio | +44 1474 815 300 | [www.tridentaudio.co.uk](http://www.tridentaudio.co.uk)

## Violet Design Flamingo "Magic Ear" Cardioid Microphone

Features: Vacuum tube microphone using large electrostatic capsule with gold sputtered Mylar film diaphragm; tensioned on brass back-plate; multi-level internal shock mounts; acoustic filter within grille; sequential, soft-starting power supply. Price: \$6,890.

**Judges' Comments:** "This very unusual-looking custom-made microphone with an ear-shaped capsule utilizes premium parts to make for a very linear, accurate recording microphone."

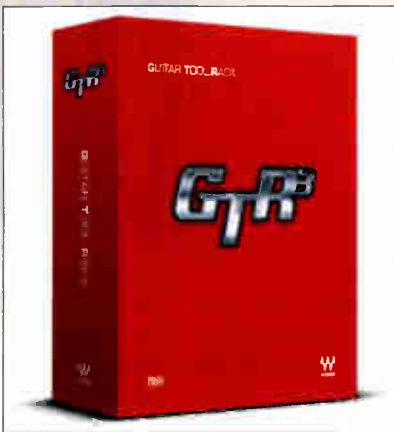
Contact: Violet Design/FDW Worldwide | 608-831-1946 | [www.violet-design.com](http://www.violet-design.com)



# PAR EXCELLENCE AWARD WINNERS

## Waves GTR3 Guitar Processor Software

Features: Virtual, custom-sampled amp and effects featuring 19 guitar amps, seven bass amps, 22 cabs, 26 stoms, multiple mics and mic settings; custom hardware interface; realistic dynamic response, expert presets, FX chains, sync-to-host BPM effects, drag-and-drop simplicity; real-time MIDI control; standalone, TDM or native. Price: \$1,200.



**Judges' Comments:** "Utilizing a new sampling technology, Waves' new bundle of classic amp tones for DAW recording may be one of the best ever for the fully-digital recording realm."

**Contact:** Waves | 865-909-9200 | [www.waves.com](http://www.waves.com)

## Wunder Audio CM49/50 Tube Microphones

Features: The CM49 condenser comes with original AC701K tube, M7 capsule; capable of remote pattern control; the CM50 comes with original AC701K tube and Spherical capsule recreating small pressure transducer in the surface of a 40 mm

Lucite sphere. Price: \$6,395 - \$6,895.

**Judges' Comments:** "Although Neumann U47s get all the thunder, the M49/M50 models are the pinnacle of vintage tube mic design. Wunder has done an admirable job of faithfully recreating these two classics." Prices: \$6,395/\$6,895  
**Contact:** Wunder Audio | 512-338-6777 | [www.wunderaudio.com](http://www.wunderaudio.com)



## Yamaha Commercial Audio Systems ACD1 Amplifier Controller



Features: Complete remote control/monitoring of Yamaha Tn, PC1N, XP, XM, XH series power amp; interfaces with computer running NetworkAmp Manager II. Price: \$2,600.

**Judges' Comments:** "Comprehensive, yet easy to configure and use, this is a multi-amp controller for Yamaha's various live sound and install amplifiers that have hit the market over the last year."

**Contact:** Yamaha Commercial Audio Systems | 714-522-9011 | [www.yamahaca.com](http://www.yamahaca.com)



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by Strother Bullins

# AES: Quality Over Quantity



Photo credit: Doug Rice/Allure

theory is a state of pro audio that I will refer to as "assistantdom" ("staffdom" would work, too). In this state, you're not choosing the gigs, but rather you're choosing to work, meet talented people and learn a lot about the craft from your peers.

**H**ow often are you completely exhausted, feeling that you are stocking the now-virtual shelves of the music industry all by yourself? Now that's busy — or, in biz-speak, that's a large quantity of deliverables you're working on.

If this sounds familiar, you may have been so busy from October 5 - 8 that you (a.) didn't make the 123rd Audio Engineering Society Convention in New York City, (b.) didn't feel it was worth the expense to be there, or (c.) didn't even realize it was happening. Regardless, you still missed out and, most likely, in some way or another, chose quantity over quality. At AES quality was in high supply almost everywhere you looked and listened.

## CHOOSING THE AES DIFFERENCE

The difference between AES and any other pro audio industry convention that hosts gear manufacturers as exhibitors is this: members of AES are generally most concerned about the advancement of audio technology, as it is their stated mission, and some of these cats are downright nutty about it. But if you, too, are concerned about audio quality to the point of sacrificing all kinds of quantities — recording sessions started and finished, masters completed, as well as microphones, processors, recording mediums and mix channels owned — AES is you. Pro Sound News Editor and AES exec Frank Wells said it in a recent editorial: "These Are My People." You know what? They're mine, too. Are they yours?

In New York, I was reminded repeatedly of the organization and its event's value and, as a result, I flew home and promptly renewed my lapsed AES membership. The \$80-per-year fee is support for the only organization that regularly stands for quality over quantity and, I assure you, a far better value than the last cheapie microphone you bought. And if you happen to find a bargain for around \$80 on the exhibition floor of AES, rest assured that its manufacturer understands the common desires and needs of the average gold- or silver-eared convention attendee; regardless of price point, the bar of quality — not quantity — is always higher at AES.

## TWO BIRDS, ONE STONE

This subject of quality over quantity works in a variety of interesting ways amongst us pro audio types, both personally affirming and business savvy. Doing better work via having more time to do it allows us to feel better about what we've created within a stereo or surround aural spectrum. As a result, your deliverables are of much better quality, therefore are more desirable and likely to be picked up by the buyers and the sellers alike (the latter of which, in pro audio work, are the true "deciders," if you



The exhibition floor of the 121st AES Convention: 'twas the place to be in October.

will). Better quality at a reasonable pace and more money for less work? Holy crap, where do I sign up!

## A BIRD IN THE HAND ... YADA, YADA

Admittedly, it's nerve-racking to hang yourself out there as someone cutting back on quantity and banking on whether quality will pay bills. But look: a lot of people record music non-professionally. This crowd of aspiring amateurs will continue to expand. For any pro (or aspiring pro), isn't it simple self-defense to produce the best deliverables, rather than the most? In general, a successful engineer's recording industry "buzz" is about classic and "modern classic" productions, i.e. solid foundations of time invested upon which long, successful careers in audio are built. As in any business, better investments allow longer stints. Invest more (of your time to your work, focusing on the details and improving quality across the board) and the business (and The Business) will follow. The business will increase in quantity (The Business will improve in quality).

An exception to this "quality over quantity"

Assistantdom is a necessary, yet often temporary state, and there's no rule to how long any of us will reside there. Citizens of Assistantdom — keep your eyes on the prize and it'll all work out for the best.

And, as in all utopias (where I digress), everyone wins.

## ENTER AURAL UTOPIA

You'll find that putting quality above quantity is a process, and, if performed correctly, is a never-ending one. Next year, you can officially kick off the long process by attending AES. If you were only on the show floor this year, hit at least one paper session or a workshop next year. Then the next year, hit three. Each year you can return home with all you've learned, continue to choose quality over quantity, and continue to reap all the benefits of membership in the future. In this competitive industry, better quality of work may be your only hope and is definitely your ticket to increased aural fulfillment.

## A FINAL NOTE: "TRICKLE-UP" AUDIO

It is most certain that all commercial audio isn't "AES audio," and it doesn't need to be. Better audio quality is increasingly trickling up from conventional musicians, thanks in part to the obvious influences of conventions such as NAMM, modern day marketing of personal computers, and associated "consumer" technology.

Producer Matt Squire experienced this "trickle-up audio" trend while working on the 2005 modern pop "emo" classic *A Fever You Can't Sweat Out* by Panic! At The Disco. The boys in Panic! are Apple GarageBand whiz kids, and brought Squire some high-quality demos that were heavily incorporated into the album's production ... I'm sure you have a similar story.

Knowing the history of our industry, it's amazing to observe how the tools of musicians and pro recordists barely separate us anymore. Today, we are left with little difference amongst us in our pursuit of quality audio other than our personal amounts of willingness to invest the time and the knowledge to realize it.

*Strother Bullins attended his first AES convention as a student in the mid-1990s. He's been making his way back ever since.*

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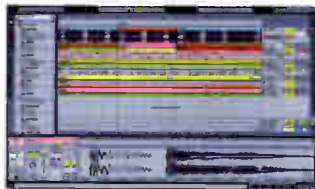


# LIVE

The latest news and products

## NEW PRODUCTS

### ABLETON Live 7



You don't have to be in the studio to be all about "mastering" and "levels," because Live 7 can take your manipulating audio to the next level. An enhanced audio engine features 64-bit mix summing, POW-r dithering, anti-aliasing, optimized sample rate conversion and more. Compressor and filter side chains, optimized MIDI engines, spectral analysis, device chains and large sample library management add maneuverability. Time signature changes can be

inserted in an Arrangement timeline and tied to Session scenes, multiple automation lanes can be manipulated, a "tempo nudge" function helps synchronization, and a "Drum Rack" allows drag-and-drop samples, instruments and effects working as hits and MIDI clips. Add-ons use physical modeling technology and multi-layer sampling for tweakable instruments.

**PRICE:** \$499 Download; \$799 Suite Download

**CONTACT:** Ableton | ☎ 646-723-4550 ↻ www.ableton.com.

### L-ACOUSTIC SB28 Subwoofer Enclosure



Emeril Lagasse cornered the culinary market on "BAM!" But when kicking live audio up a notch it's L-Acoustics cooking up the BOOM! The four-ohm SB28 contains two front-loaded, 18-inch direct radiating transducers capable of operating down to 25 Hz thanks to bass-reflex vents allowing truly laminar airflow. Ultimately delivered is +5 dB SPL output compared to the previous articulation standards. Accompanying

is an amplified controller that offers two drive modes, "standard" and "cardioid," plus DSP filters/crossovers/EQ/thermal protection to pair with KUDO, V-DOSC, dV-DOSC, ARCS and KIVA systems. Made of high grade Baltic birch plywood and a durable black epoxy perforated steel grille, the cabinet also features industry standard aeroquip rails for column rigging, a single 4-pin Neutrik Speakon connector on the rear panel, integral side handles for portability.

**PRICE:** \$4,620

**CONTACT:** L-Acoustics | ☎ 805-604 0577 ↻ www.l-acoustics.com.

### ZAXCOM STA200 Microphone Input Adapter



A message, a mood, a microphone – one of these things should not make the others harder to share. So meet the ideal adapter. Designed specifically for dance or theatrical performance, this is a valuable tool for transmitting multiple audio channels from a single body pack. The new adaptor expands on the feature set of Zaxcom's popular TRX900 wireless microphone transceiver by allowing the production staff to connect two auxiliary microphones, say to face downwards for mounting on a performer's tap shoes or hand percussion and be transmitted on a discrete channel. The STA2000 also supports audio out for an earpiece/click

track, to communicate stage instructions, or to be recorded on the TRX900's flash recording capability.

**PRICE:** \$295

**CONTACT:** Zaxcom | ☎ 973-835-5000 ↻ www.zaxcom.com.

### NATIVE INSTRUMENTS Traktor 3.3



Nowadays, "DJ" means "digital juggling" as much as "disc jockey," and Traktor 3.3 maximizes the flexibility of up to four simultaneous digital playback decks, plus integrates Traktor Scratch to allow for advanced tactile precision through turntable and CD controls. Now, whether going it virtual or vinyl, the robustness and response expands with storable loop manipulation, analog-modeled EQ, MIDI instrument sync/control, enhanced iTunes/iPod support, live broadcasting, non-destructive recording, plus Vista/Leopard compatibility. DJ = diggable jams, indeed.

**PRICE:** \$229; \$99 Traktor Scratch user; free to registered Traktor 3 user.

**CONTACT:** Native Instruments | ☎ 866-556-6487 ↻ www.native-instruments.com.

An APB-DynaSonics Spectra t56 console recently handled mixing duties at a performance of the China Broadcasting Performing Arts Group and China Film Symphony Orchestra, held at the Great Wall (pictured).



Rane has recently been granted a US Patent for its Perfect-Q "Linearized Filter Band Equipment and Processes," whose output response precision is found at the heart of the company's popular DEQ 60 and DEQ 60L graphic EQs, as well as RPM series Programmable Multiprocessor DSP units and Serato Rane Series Graphic Equalizer Pro Tools plug-ins for Digidesign ICON and VENUE.

It would take much less space to list where Sennheiser and Neumann haven't been recently, but for now we'll do a quick round-up of appearance: On Hilary Duff's "Dignity Tour," at Madison, Wisconsin's "Opera in the Park," with the traveling production of the Color Purple Broadway musical, in stadiums with British trio Muse, on stage with jazz artist Diana Krall, opening shows with multi-instrumentalist Ellis Hall, and performing with Daniel Lanois at the premiere of his Here Is What Is documentary in Toronto.

Two Yamaha PM5D digital sound reinforcement consoles supported the Today Show Concert Series at the Plaza at Rockefeller Center. While two PM5Ds, two DM2000 consoles, two HS80M studio monitors, two ADK LYVE Tracker recorders, NEXO GEO S 805s, S 830s, S 1210s, S1230, PS8s and PS10s speakers, plus Yamaha PC9501n, PC6501n and T4n amps were constructed into a 5.1 house system for the world premiere of "Love In: A Musical Celebration of 1967" in San Diego.



# QSC Sure Thing Amplifier Rebate

Not everything in life is a safe bet, but owning a QSC amplifier is as close to a sure thing as you're ever going to get. QSC is the #1 selling amplifier line in America. QSC performance and reliability are legendary. And, QSC keeps you covered with a free 6-year extended warranty (but odds are you're never going to need it). Add some bonus cash and you can't help but feel like a winner.



PLX2 SERIES	MODEL	REBATE
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	PLX1804	\$50
	PLX1802	\$25
	PLX2502	\$50
	PLX3102	\$75
	PLX3602	\$100

RMX SERIES	MODEL	REBATE
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	RMX1450	\$35
	RMX1850HD	\$50
	RMX2450	\$75
	RMX4050HD	\$100
	RMX5050	\$100

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[www.qscaudio.com/rebate](http://www.qscaudio.com/rebate)

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by Dave Rittenhouse

# Powersoft K10 High-Power Amplifier

This high-revving powerhouse is an industry top performer.

You may be saying, "Wow, another high-powered amp on the market. Ooh — let me run out and buy it now because it's the best new thing and this reviewer said it was awesome." (Please note the sarcasm.)

But I will spare you of any hype as I tell you about the new Powersoft K10, an amp

the "majors" of live amplifier options. All speaker processing can be handled at the amp. Its DSP features one of the coolest impedance adjustments to the damping factor ( $\pm 2$  ohms). This only applies to the low-end frequency range (400 Hz and below) to correct for the amount of cable you are using from the amp to your subs,

for example ... very impressive.

The K10 can also be networked (via an Ethernet option) with other Powersoft amps to be monitored and adjusted in real time with a laptop. The processing keeps a running log of temperature and faults that can also be accessed from the amp network. All of the processor changes can be mapped out and stored on a smart card (Powersoft-proprietary), which is interchangeable from amp to amp. If, perchance, you choose not to use the optional network, each amp can be connected to a laptop running the given Powersoft Remote control software via a RS485 interface on each amp. Finally, all functions can be controlled from the amps front panel menu screen without a laptop.

Powersoft has built a great series of protection circuitry into the K10, including full DC protection against infrasonic signals, VHF (Very High Frequency) protection, Thermal Protection (indicating a warning before the protection process shuts the amp down), AC protection and clip limiters that can be disabled (although that is not recommended). The input gain and sensitivity is user-selectable in the standard European dB steps of 26, 29, 32 and 35 dB. As with any live amp nowadays, the K10 comes with XLR inputs and

Neutrik 4-pole Speakon connector on the outputs.

## IN USE

I was delivered a big, fully-loaded (with DSP and Network capabilities) K10 for a demo, which equates "beat it up and see what it will do." Out of the box, I had to put on a power connector (20 amp) Edison since it came with bare wire ends; I understand this, since Powersoft won't know who will use this amp and with which power source. Outside of that, everything was ready to go. The amp currently networks via USB to CAT5, so I was sent those adapters and the remote software for my PC. The amp looks slick, but since it is only a single rack space the screen is pretty small ... I guess you have to give up some things for the size.

The day after I received the amp, I had somewhat of an emergency: I had multiple

that many of you may not be familiar with. However, I am speaking honestly when I say that you need to consider and hear the K10 before buying something else. This isn't the flash-in-the-pan/fly-by-night amp story you may expect. The K10 is the real deal.

## FEATURES

Just like Ferrari and Lamborghini, this little powerhouse comes from Italy. And much like those high-dollar and exotic sports cars, the \$8,395 unit packs a large punch in a small, sleek frame. The K10 sits in a 1U rack space and delivers 6,000 watts at 2 ohms per channel at a weight of only 26.4 lbs. Its bandwidth is rated at 5 Hz – 30 kHz at an 8-ohm load with a damping factor of  $>5000$ . Slew rate at 8 ohms is rated at 50 V/uS. A-weighted signal-to-noise ratio is  $>110$  dB from 20 Hz to 20 kHz with distortion rated typically at  $<0.05$  percent. The K10 also is equipped with a universal/worldwide operating power supply with Power Factor Correction (PFC) for extremely low main AC input consumption and a wide operation range. You can also set the maximum power output for each channel and the maximum current draw on the mains.

The K10 has optional DSP, putting it in

shows out and was lacking an amp for a simple DJ rig. While it might have been slight overkill, I sent the K10 out to unveil its power for the gig. The amp performed flawlessly, handling the subs with great ease; everyone at the Georgetown University gala were happy.

**POWERSOFT** continues on page 60 ►

## FAST FACTS

### APPLICATIONS

Live reinforcement, permanent installs

### KEY FEATURES

1RU; 6,000 watts at 2 ohms per channel; 5 Hz – 30 kHz at an 8-ohm load; PFC power supply; DSP; networkable.

### PRICE

\$8,395

### CONTACT

Powersoft Audio USA |  
☎ 973-785-2005  
🌐 www.powersoft.it

“The Serato Rane Series Dynamic EQ is fantastic. This is one tool I want to take with me **everywhere.**”

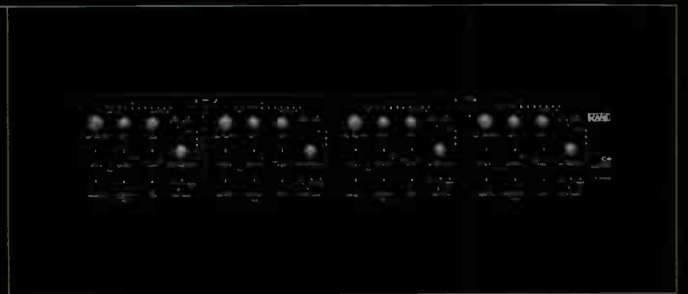


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With this said, I had to take the amp back in the shop and play around with the DSP and Remote control from my laptop. The DSP has everything and more you would need, plus menus navigation is laid out logically. The remote control software is a breeze (once you have network IDs assigned correctly) and truly makes this a system tech's dream. The fact that you can monitor load and temperature in real time, as well as current draw and usage, makes the K10 its own manager in its own league.

Once I worked up a standard DSP program for my EAW SB850s, I had the chance to test out the impedance adjustment for the cable gauge and length to my subs. So, about 100 feet of 12-gauge wire to my subs was adding about 1.7 ohms to my overall load. With that adjustment made at the amp, I could now accurately monitor the load on the amp and make it work more efficiently. This — along with the peak, power limiting and input sensitivity control — allows the user to set and con-

trol proper gain structure and output configurations to have the most efficient power ever.

Powersoft claims this amp (and all of their K Series amps) to be >95-percent efficient. That is a pretty impressive statement that I may not have believed until I heard and saw this amp run quiet and cool on a 20-amp breaker and still provided gut-pounding power. My dual 18-inch subs have never sounded so good; they moved air with power from a 1U amp that sounds better than the "old-tradition" two-space, heavy, obviously-inefficient amp. I only wish I had a full complement of Powersoft amps to test out and to power up a full rig ... a goal for another time.

### SUMMARY

If you are in the market for a powerful, sleek, chest-pounding amp that is fully loaded with all the latest features and runs more efficiently than anything else, the K10 is your amp. The fact that it sits in a single

rack space and provides more power than the amps each of us have and use (and does with greater ease and full DSP) means it is truly the top breed, exotic race car of which we all dream.

*David Rittenhouse is the senior sales executive and A1 engineer at Event EQ in Baltimore, MD, and a regular contributor to PAR.*

## PRODUCTPOINTS



- Amazing power
- Great DSP and Network
- One rack space



- Small menu screen on amp
- Network needs to be all CAT5

## SCORE

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### DA10 24 bit Digital to Analog Converter

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Discrete Headphone amplifier  
Crystal mode virtually eliminates jitter  
44.1, 48, 88.2, 96 kHz Crystal and Narrow mode  
Includes sample rate conversion  
32-200 kHz Wide mode

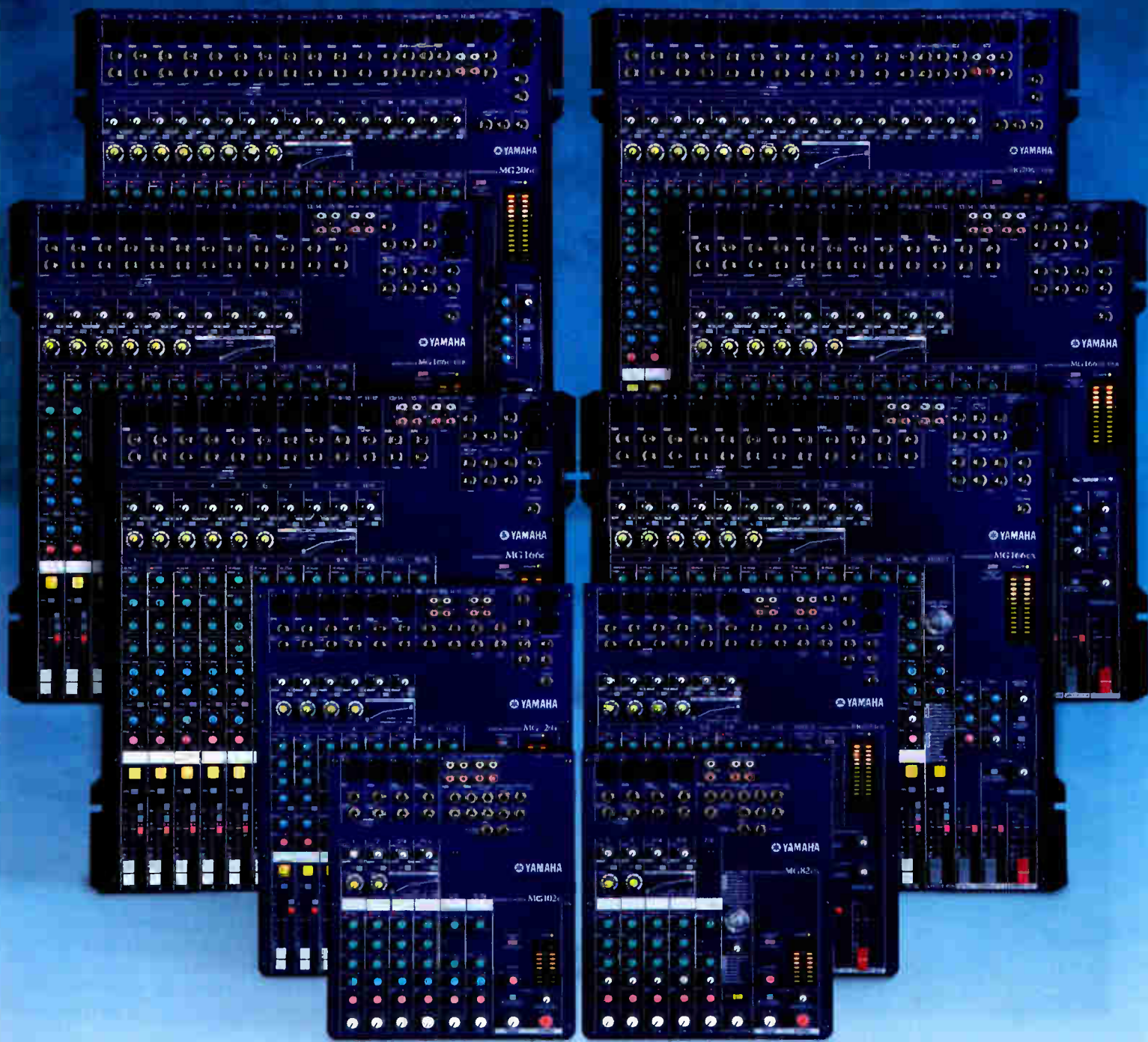
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by Tom Young

# Caesars Atlantic City: Raising the Stakes with Its New Audio System



has to be brought in and disassembled. The center cluster features three JBL VERTEC VT4887 compact line array elements, while four JBL PD5322/64 loudspeakers are installed for delay with six JBL Pro MS 28 front fill lip speakers.

I recently had the opportunity to preview the new sound system at Caesars Atlantic City, and it is nice to experience a design that has both the end user and performer in mind. While supporting a weekend with Tony Bennett and his quartet, the system performed flawlessly and exceeded all expectations. The audio team to thank is comprised of longtime Caesars employees Dave Wink and Paul Swenson, (who has been the Lead Audio Engineer for 28 years). Jim Esher, Technical Manager at Caesars, supervised the project, and no

cost was spared to produce a first-class technical facility. Finishing out the Caesars team is Stage Manager Ken Herman and Lead Lighting Designer Michael Bliss.

The audio upgrade for the 1,600-seat theater utilizes a Harman HiQnet system comprising dbx DriveRack processors and 29 Crown i-Tech amplifiers. The speaker system is a Left/Right, Center Design consisting of eight JBL VerTec VT4889 full-size three-way line arrays with six JBL VerTec VT4880A arrayable subwoofers per L/R side. The L/R clusters were hung with inverted motors in case the system ever

## TOTAL REDUNDANCY, MAXIMUM FLEXIBILITY AND SAFETY

The system is well designed, with total redundancy in many aspects for flexibility and safety to ensure no failure. The consoles selected by the audio team were DiGiCo D5 digital desks for front-of-house and monitors, including dual engines and backup power supplies. The entire system is connected via fiber optic cable, using AES/EBU digital audio connections from the FOH Digico D5's local rack. An interesting part of the system design is that it also backed up using analog outputs from the D5 local rack should the AES/EBU connections fail. This is the first time I have seen an install use this safety net.

The HiQnet system is configured and controlled with HiQnet System Architect software from the console to the amplifier. The software is set to control all amplifiers via AES/EBU; if the amplifier fails to see AES/EBU, it automatically switches to the redundant analog connections. The house speaker processing is done internally in the amplifiers' digital signal processing section. Additionally, if touring acts come in with their own consoles, they simply plug into the dbx DriveRack 4800 system processors. They can have either analog or digital inputs with equalization parameters through the 4800s to tune the sound system.

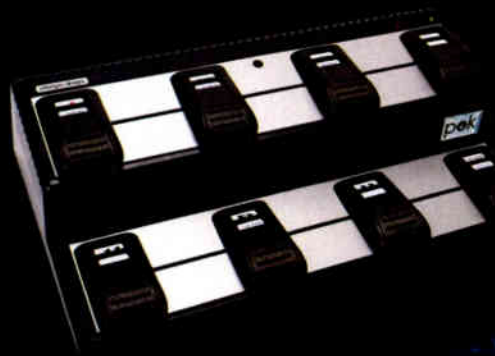
## ADDRESSING LATENCY ISSUES

Revealed in talking with Wink and Swenson, another interesting part of the design seems to be how they addressed latency within the i-Tech Crown amplifiers. Through research, they discovered that when using the loop thru feature of the amplifier it produces 35 ns of delay per device cumulative. However, when you have 10 amps in a rack you have now created 350 ns of delay to the speaker system. Just as importantly, when adding delay to various components (High-Mid-Low) in a line array, you could potentially affect the integrity and phase of the array itself.

FROM THE ROAD continues on page 69 ►



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by Strother Bullins

# Mackie Onyx 4-Bus Series Analog Mixer

This workhorse console offers great pre-amps and EQ at a price that can't be beat.

The folks at Mackie Designs are good at a lot of things. First and foremost, they are deservedly well known for their abilities to design/build very good mixers. Also, it is clear that they are willing to sell these mixers at very reasonable prices. After all, there is a reason why — no matter where you go as an audio professional — you will find (and happily use) a Mackie: it's there, and it works.

The ubiquity of Mackie mixers throughout our industry is no fluke; this company intimately understands the various ways

average American audio professionals work. We want intuitive, flexible gear that won't fail and sounds very good.

In this review, I will detail my nearly year-long experience with the Mackie Onyx 4-Bus — a multipurpose analog mixer, which, most notably, features Onyx microphone preamplifiers, Perkins EQ circuitry and a subtle analog stereo compressor/limiter. Simply stated, the Onyx 4-Bus (\$2,049.99) is a workhorse, and more than a good analog live mixer; this console is a no-brainer for those who need a solid analog

desk comprised of affordable, good sounding components.

## | FEATURES

The Onyx 4-Bus Series offers two models — the 24-4 and 32-4 — whose only differences are in total number of channels. The 24-4 has 20 mono channel strips and two stereo channels; the 32-4 has 28 mono channel strips and two stereo channels. I used a 24-4 in preparing this review.

The 24-4 measures 31.2 x 21.9 x 7.3 inches, and weighs in at 39.5 lbs. Power consumption is rated at 100 watts. Its steel chassis is solid and offers well-placed, recessed handles at either end. Designed at Mackie HQ in Woodinville, Washington, the Onyx 4-Bus is manufactured in China.

According to Mackie, technical specifications of the Onyx 4-Bus are as follows: its frequency response (mic input to main output) is +0, -1dB, <10 Hz - 80 kHz; distortion (mic input to main output) is 0.007 percent, 20 Hz to 20kHz; and signal-to-noise is -89 dBu (ref. +4 dBu, Mic In to Main Out, 24 channels and Main Mix levels at unity gain).

Each mono channel offers a mic and line

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— Reviewed by Beau Sorenson

Studio Engineer, Smart Studios, (Death Cab for Cutie, Garbage, Sparklehorse...)

*You have a real hit with this mic!...Our engineers now grab for it like inmates at the asylum try to grab people walking down the hall. So forgiving on vocals and loud guitar amps...*

— Reviewed by Bill Tullis

Studio Engineer, SoundsAtlanta Studios



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input connector and insert jack for the connection of external processing. Starting at the top, these channel strips offer a -20 dB pad switch; a Low-Cut (high-pass filter) switch, cutting frequencies below 100 Hz at 18 dB per octave; a 48V Phantom Power switch; and a rotary gain knob (unity to +60 dB) for the "studio grade" Onyx mic pre-amplifier (more on the amp later).

Next, the Perkins four-band EQ section on each mono channel offers sweepable mids with an EQ bypass switch for true hardware bypass. (According to Mackie, the EQ is based on the designs of Mackie Designs' collaborator Cal Perkins and is a "neo-classic" design with "British EQ" musicality.) The High EQ knob allows +/- 15 dB adjustments at 12 kHz; High-Mid and Low-Mid EQs offer two knobs each — one for +/- 15 dB adjustments and one for frequency adjustments at 400 Hz - 8 kHz and 100 Hz - 2 kHz, respectively; and the Low EQ knob offers +/- 15 dB boost/cut, fixed at 80 Hz.

At its bottom, each mono channel offers six pre/post-fader AUX Send knobs, a pan knob (with "Constant Loudness" for maintained apparent loudness), a mute button with LED, and a smooth, "long-throw" infinity-to-Unity-to-+10dB fader — the de facto fader for the 4-Bus. At the very bottom of the channel is a PFL Solo (pre-fader listen) button with green LED. On the right of the fader, four small LEDs indicate channel signal level after gain and EQ, marked -20 dB in green, 0 dB in green, +10 dB in yel-

low, and OL (overload) in red. Finally, three rectangular buttons for buss/main mix assignment (1-2, 3-4, Main Mix) are arranged vertically just below the signal level LEDs.

The 24-4's two stereo channel strips are similar in design to the mono input strips; however, they vary as follows, starting at the top: a -20 dB to +20 dB Gain knob adjusts level of stereo line inputs; and the Perkins EQ section features four fixed-EQ

knobs, -15 dB to +15 dB, at 12 kHz, 2.5 kHz, 400 Hz and 80 Hz.

Next, at the far right of the desk, is the Matrix, Compressor and Metering Section. In the long, skinny Matrix sub-section, 14 "infinity to max" knobs are arranged vertically in pairs (indicated A and B per seven), and are labeled GRP 1, GRP 2, GRP 3, GRP 4, Left, Right and Master, each for the creation of separate mixes. At the bottom, two

**MACKIE** continues on page 66 ►

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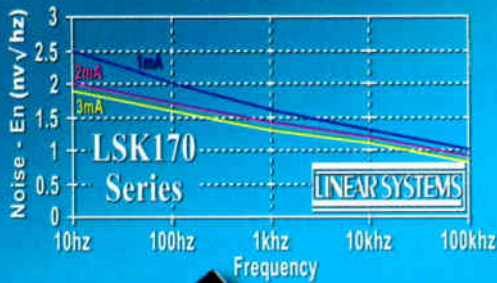
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## LIVE | REVIEW

MACKIE Continued From Page 65

AFL ("After-Fader Listen") solo buttons are paired with one LED indicator each. In the stereo Compressor/Limiter sub-section are three knobs and two buttons arranged vertically: a -30 dB to +10 dB Threshold knob; a Ratio knob ranging through Off, 2:1, 5:1 and Limit settings; a Comp Assign knob switch for Main Mix, Group 1-2, Group 3-4 and Off assignments; and the buttons for Fast Attack or Bypass Comp (with LED indicator) selection. This section also features a multicolored 24 LED Compressor meter — 12 for input signal level and 12 for Gain Reduction level. Finally, a 24 multicolored LED Left/Right Level meter offers 12 LEDs per side, ranging from -30 dB to +20 dB (CLIP). Also present are two Rude Solo LEDs (PFL and AFL, respectively), a 1/4-inch headphone jack, 12V lamp

### PRODUCTPOINTS



- Impressive microphone preamps
- Smooth, sonically pleasing EQ
- Incredibly flexible
- Good build quality



- One minor build flaw

### SCORE

The Mackie Onyx 24-4 tops its product category in sound, features, build quality and price.

connection and a power-on LED.

The Phones/Monitor, Solo, Mono and Talkback Section offers level adjustment knobs for Phones (at the stereo headphone output), Monitor output and Mono output, plus Talkback levels routed to the AUX or MAIN L/R outputs. The Main To Mon button routes the stereo L/R Main Mix (post-fader to both Monitors and Phones outputs), and four buttons grouped as a TB Assign sub-section routes talkback to AUX 1-2, AUX 3-4, AUX 5-6 or Main Mix outputs.

The Auxiliary Section boasts six Aux Send Masters and two Stereo Returns featuring a level adjustment knob and a pre/post, AFL (with LED), and Mute (with LED) button per send. Both stereo return channels offer three knobs: one level adjustment per 1/3 and 2/4 returned signals (each with a shift button/toggle), and overall level adjustment per return. Also present per return is a PFL button with LED indicator. Above the two stereo returns is a CD/TAPE level knob with To Mon/Phones and Break (Tape To Main) buttons. When depressed, the Break button's LED glows a unique blue.

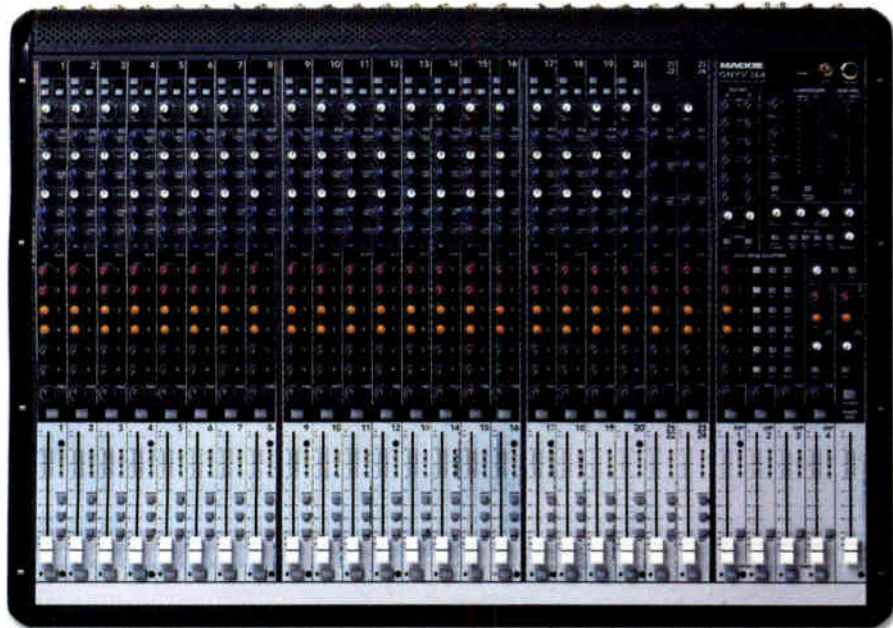
Finally, in the Group Section, four faders reside with the same signal level LED arrangement as the console's input channels. Per Group fader, a Mute switch, Pan knob, Main Mix assign switch and AFL Solo Switch are available. On the far right is the Main Mix fader with a Talkback switch (and Talkback LED indicator) above it.

As you would expect, the Onyx 4-Bus's rear panel I/O is comprehensive. Each mono channel offers (top to bottom) a 1/4-inch Insert, 1/4-inch Line and XLR Mic input; both stereo channels offer two 1/4-inch inputs. On the far left, 1/4-inch inputs are present as stereo

Returns, stereo Main Inserts, four Group Inserts and six AUX Inserts; 1/4-inch outputs are available via stereo Main Outs, two Matrix Outs, stereo Monitor Outs, four Group Outs and six AUX Sends. Very usefully, three DB-25 (TASCAM) connectors offer 24 channels of direct outputs, ideal for inputting post-gain/pre-EQ signal directly to an external recorder/DAW. Three Main Balanced Outs (Right, Left, Mono) are pro-

many masters and can be routed to do most anything. Further, Mackie Designs is notorious for crafting pro audio gear with intuitive work surfaces, not to mention incredibly well written (but rarely needed) user's manuals. So, as a result, you really don't need me to tell you how easy this desk is to use.

However, I will note what I found to be the console's three most appealing features, and why I think that anyone needing an



The versatile Mackie Onyx 24-4

vided via XLR. An XLR talkback mic input and Stereo RCA I/O is also available. Last, but not least, the rear panel's bottom left side provides the requisite IEC power connector and power switch.

## IN USE

As I mentioned above, I have had the Onyx 24-4 in near-constant use throughout the past year, and it has served many purposes. It mainly served as a front-of-house mixer, both with and without an attached digital recorder, though other roles served by the 24-4 included rehearsal mixer, monitors mixer (for a couple of large multi-band gigs) and a DAW tracking front-end (thanks to its incredibly handy DB-25 direct output connections).

Knowing *PAR*'s readership — professionals and semi-pros that have had their hands all over multi-purpose analog desks — I won't detail all the configurations that this particular 24-4 has been in. Simply by analyzing the above "Features" section, it should be clear to all *PAR* readers that this particular Mackie can sufficiently serve

mid-sized analog mixer should consider the 24-4 over most every similar product on the market. First off, the Onyx microphone preamp simply stunned me. Over the past 10 years, I have used all sorts of mic amps: big flagship console channel amps, esoteric/boutique standalones, cheap "it'll do" standbys and, of course, all those Mackie amps (the original Micro Series, VLZ, VLZ-PRO and now, the Onyx). So, I'll have to say that this desk — featuring 20 of these Onyx babies — is a bargain considering the amps alone. The included Onyx amps truly do rival amps that cost thousands of dollars more ... and if you don't trust me, just consider Tom Jung's own review of the amp (via the Mackie Onyx 400F product he spotlighted earlier this year in *PAR*). Our golden-eared expert called it as he heard it: "clean and uncolored." Nuff said.

Second, if you do need some "color," you may look no further than down the same channel strip to the Perkins four-band EQ. It worked incredibly well for me, either as a

**MACKIE** continues on page 68 ►



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# LIVE

## Review

MACKIE Continued From Page 67

surgical tool for removing offensive frequencies at concrete/cinderblock/beer-bottle club venues, or when using the Onyx 24-4 as a post-DAW studio mixer for drums, bass, electric and acoustic guitars, vocals, acoustic piano and various synth-based tracks (all of which were originally recorded on location at 96 kHz to an Alesis HD24XR via various pres — everything from Earthworks amps to the desk's own Onyx offerings). More than a half-dozen musicians in live, rehearsal, and tracking/mixing situations specifically commented on the complimentary sound of the Perkins EQ. One particular guitarist, who has used every studio EQ under the sun on his tracks, was amazed that we got what we did via the Mackie EQ. His exact words: "Wow, I can't believe that. How much did you say that was?"

Third, the stereo compressor/limiter in the master section sounds very good (or, more accurately, doesn't sound like any-

thing, except subtle dynamic control when used with care). As we all know, good gear is made of good components, and it's assuring to know that Mackie took the initiative to incorporate a comp/limiter chip from THAT Corporation, a respected name in audio IC manufacturing.

Because of the affordable per-channel price point of the Onyx 24-4, I was never

Over the past 10 years, I have used all sorts of mic amps ... So, I'll have to say that this desk — featuring 20 of these Onyx babies — is a bargain considering the amps alone.

afraid to throw it in the back of a van or whatever I was traveling in. I find this to be an incredibly important quality in any affordable analog mixer. After all, workhorse gear is of no use if it cannot take abuse, and, ideally, such gear should perform as well as the gear that you wouldn't consider pitching around.

On this particular Onyx 24-4, one minor

build flaw was present straight out of the box: its chassis wasn't square (i.e., it rocked on flat surfaces like a table with a slightly shorter leg). While annoying, it's far from a deal-breaker. Maybe this happened in shipping; you can't be sure. However, if that's the case, I would recommend that Mackie consider slightly sturdier packaging for its mid-to-upper-cost mixers to prevent this sort of thing from happening in the future. Other than this, the build quality of the 24-4 is superb: no wobbly pots, no junky-feeling faders.

### SUMMARY

If you're in the market for a 24-channel analog mixer to serve many purposes — live, in the studio and all those locales in between — you truly can't go wrong with a Mackie Onyx 4-Bus. Considering its low price point, all the included goodies, and its incredible flexibility, you just can't go wrong by purchasing it. If you decide later that you don't want it, somebody will. After all, it is a Mackie.

*Strother Bullins is the Reviews and Features Editor for Pro Audio Review.*

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# POST

## | Review

**BONSAI** Continued From Page 37

bonsaiDRIVE. And, believe it or not, I was 100 percent off the grid; no AC was available so I ran everything from batteries, including the Neumann tube mic!

The recording came off just fine, and I didn't need any safety "back-up" onto the camcorder's DV tape and its yucky audio tracks. Back at home in Studio Dufay, it was time to sweeten the audio and produce 50 DVDs over the weekend. No problemo — Steve Jobs was to the rescue via a 1.5 GHz G4 12-inch PowerBook running iMovie and iDVD. Since one still has to playback the bonsaiDRIVE's recording in real-time via analog, I used the ubiquitous, bargain-priced Canopus AVDC-100 as the computer's audio/video front end.

To keep the audio in sync with the video, I simply clocked the PowerBook's CoreAudio (locked to a M-Audio FireWire 1814 interface used mainly as the digital interface driving an external Weiss DAC1 for audio monitoring) from the bonsaiDRIVE's Word Clock output BNC connector. I inserted a pair of Rupert Neve Designs Portico 5033 EQ channels and a Manley Vari-Mu dynamics processor into the stereo audio signal path between the bonsaiDrive and the Canopus interface, hit the play button on the Rosendahl unit, made a few mastering-type adjustments, and started copying the concert into iMovie.

As you might expect, the audio results sounded pretty awesome; "awesome" was actually the exact word the first choir member who heard a production DVD played back through a TV set, no less, used to describe the sound. The video lost no obvious resolution that I could notice on a 23-inch Apple Cinema Display when comparing the original DV tape and a copy of the Rosendahl recording, which

# LIVE

## | Column

**FROM THE ROAD** Continued From Page 62

To minimize latency, the Caesars audio crew found a product made by ATI of Berlin, New Jersey: a two-input, 12-output AES distribution amp using Cisco switches to manage network traffic, rather than looping through all the amplifiers. (Actually, the Ethernet network and Cisco switches are only used to control amp parameters; the AES and analog audio is carried from the FOH local rack to the amp racks via Mogami 3161 AES/EBU multi-pair.)

This device minimizes latency and, with the system based on an Ethernet backbone, it is all set for future growth for network media transport. Each amp rack has a 1 GB, 48-port Cisco switch in it that handles all the HiQnet routing and switching to the amplifiers, enabling the HiQnet control and monitoring interface to be either at FOH or monitor position.

The Caesars sound system definitely raises the stakes for all sound systems in Atlantic City. After all, new theater sound system designs can benefit with the use of comprehensive digital technology. From first-hand experience, I can confirm that result of this particular design is seamless sound throughout the audience and a very quiet system.

*Tom Young is the live sound engineer for Tony Bennett.*

speaks volumes to the high quality of the "lossless" compression used in the bonsaiDRIVE.

I'm sure that, had I owned a more expensive camera with true component outputs, the video results would have been better. Further, if I had had a real SDI camera at my disposal (and had invested in the SDI option card for the bonsaiDRIVE) and had also purchased an expensive SDI computer interface, the quality of the video might have matched the quality of audio. But, as it was, the video I supplied it (and which the bonsaiDRIVE maintained) was of "standard DV issue," which was fine with me. The audio I supplied (also maintained perfectly) was of "high-end, professional quality" — the original goal in considering this system in the first place.

### | SUMMARY

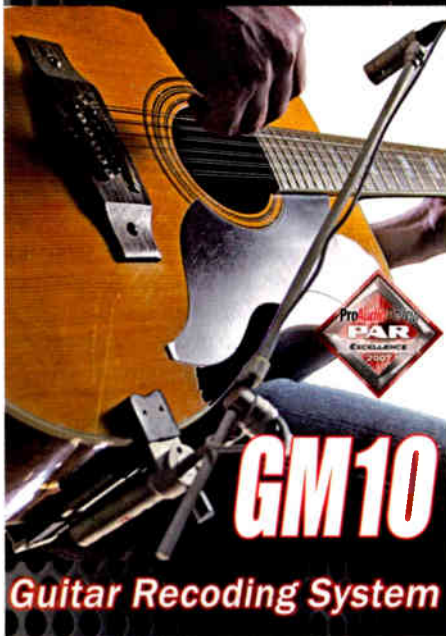
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*Dr. Fred Bashour holds a Yale Ph.D. in Music Theory, and currently performs as a jazz pianist and church organist. During the past 25 years, he has received credits on hundreds of recordings released on over a dozen labels. He has also been a regular contributor to Pro Audio Review since its second issue.*



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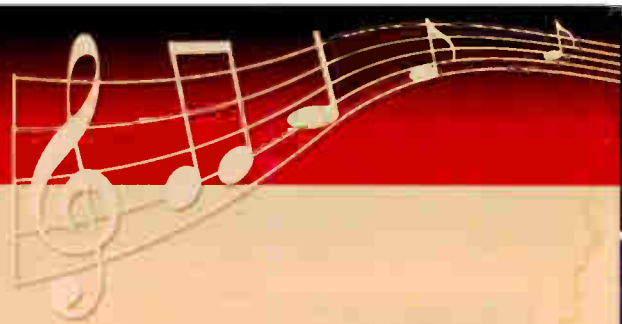
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## “Walk of Life” | Shooter Jennings



**SINGLE:** “Walk Of Life”

**ALBUM:** *The Wolf* (Universal South)

**DATE MASTERED:** July 3, 2007 at MasterMix in Nashville

**PRODUCER:** Dave Cobb

**ENGINEERS:** Dave Cobb, Erick Jaskowiak, Mark Rains

**MIXERS:** Chris Lord-Alge, Greg Gordon with assistance from Nik Karpen, Jason Mott

**MASTERING ENGINEER:** Hank Williams

**OTHER PROJECTS:** For 30 years, Williams has mastered for artists including Dolly Parton, Willie Nelson, Alan Jackson, Brad Paisley, Lucinda Williams, George Strait.

**SINGLE SONGWRITER:** Mark Knopfler

**MASTERING MONITORS:** PMC BB-5 with Bryston amps and crossovers (main); Rogers LS 3/5a with Crown Macro Reference amp (alternate).

**MASTERING CONSOLE:** Custom built Class A mastering console with signal path, interface and ancillary equipment designed by Ken Love, circuit design and production by Grant Carpenter of Gordon Electronics.

**MASTERING WORKSTATION/RECORDERS:** Sonic Solutions HD (24-bit, 88.2-kHz ata files), Cube-Tec Audio Cube, ATR Services ATR-102.

**MASTERING PROCESSORS:** Prism Sound Dream DA-2 and AD-2, Sontec MES-430B, TC Electronic System 6000 running Massenburg DesignWorks Hi-Res EQ and TC Electronic Multiband Dynamics, Avalon 2077 EQ, Prism MLA-2 compressor.

## ENGINEER'S DIARY

*Strother Bullins is a North Carolina based freelance writer specializing in the professional audio, music and entertainment industries.*

For Shooter Jennings' raw version of the Dire Straits classic “Walk Of Life,” Nashville-based mastering engineer Hank Williams was given an analog mix on 1/2-inch tape to create two separate masters: the single and the album cut. Most important to this particular mastering job, offers Williams, was to keep the vibe intact: “It had to stay tough,” he offers.

According to Williams, no analog compression was used for the single, while Prism Sound Dream AD-2 and DA-2 converters brought him in and out of the digital realm. “[Mixer] Chris [Lord-Alge] did a stellar job on the single,” explains Williams. “His use of dynamic control is masterful. That’s why I didn’t use any more analog compression in my signal chain; sometimes you need to stay out of the way. The Sontec MES-430B worked well with the single’s timbre — more so than my other EQs. I typically have three analog EQs in my console to choose from, and the Avalon 2077 did the trick for Greg’s mixes on the rest of the album.”

For the album version of “Walk Of Life,” Williams used the same Prism converters, Avalon 2077 EQ and a Prism MLA-2 compressor alongside the TC Electronic System 6000 running Massenburg DesignWorks dynamics.

At MasterMix, one of the country's most prolific mastering houses, Williams and his team have crafted a purpose-built facility like no other. “Our mastering console does exactly what we want,” explains Williams in describing the unique signal paths available at his firm. “That’s why we had to have it custom-made. Our facility was designed by the amazing people at Russ Berger Design Group; our Technical Director, Jim Kaiser, keeps MasterMix ready for the future.”

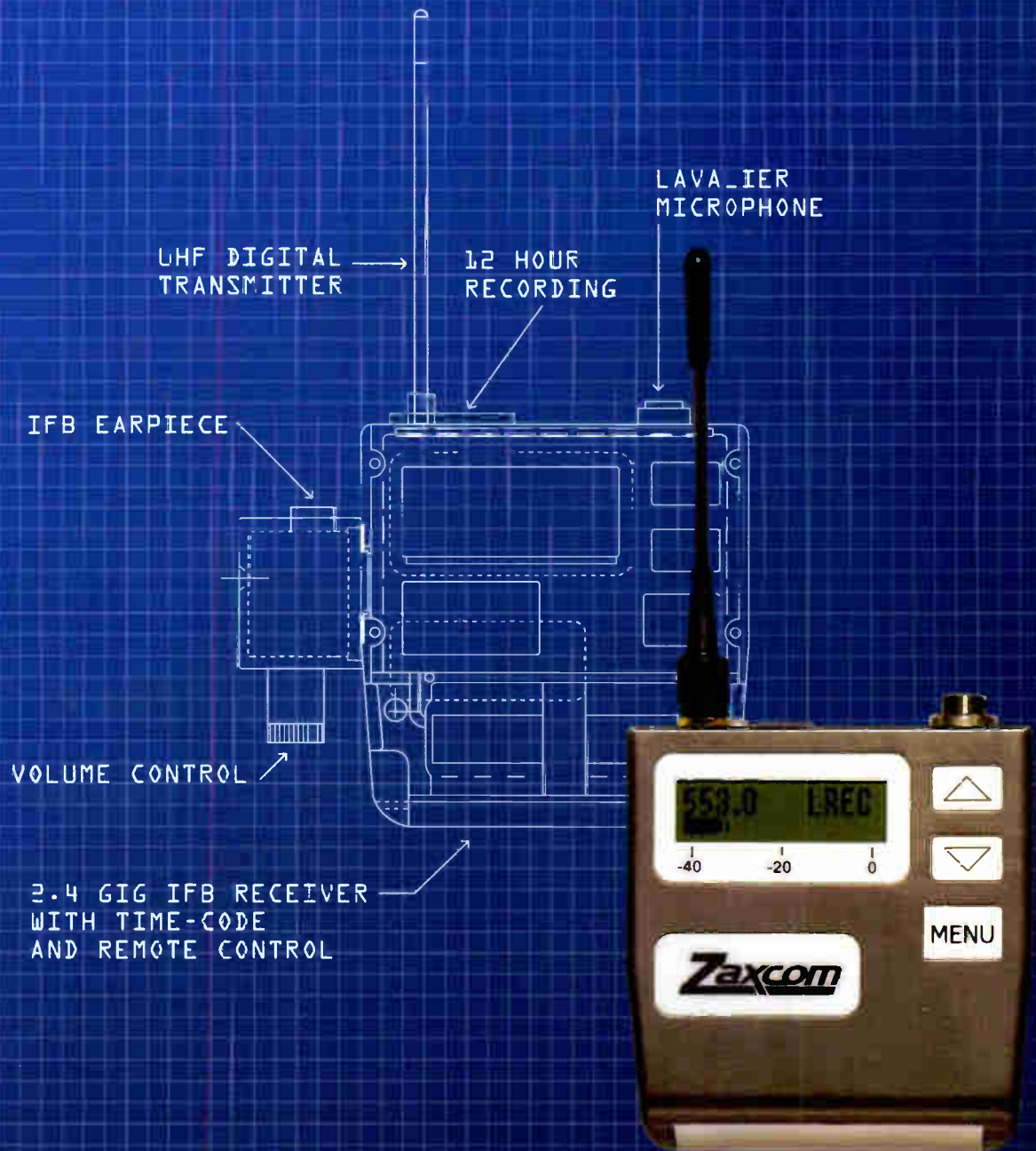
Jennings' latest project came Williams way via Universal South Records President Mark Wright, a long-time client of Williams and MasterMix. “My goal was to keep the energy and rawness of Shooter’s track,” he explains. “At the same time, I gave Mark a vocal perspective that he expected.”

According to Williams, Jennings' cover of “Walk Of Life” took a lot of ... gumption: “I don’t think I’ve ever run across someone with the stones to re-cut a Dire Straits tune. Hey, he pulled it off and he owns his version!”



Hank Williams

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And the list goes on...