

MAY 2007

ProAudio Review

The Review Resource for Sound Professionals

EXCLUSIVE REVIEW!

YAMAHA LS9 DIGITAL CONSOLE



In This Issue!

- **Crest HP-W Analog Console**
Incredibly Flexible For Live or Install
- **Worship Audio**
Moving Toward an All-Digital Facility
- **Frontier Design AlphaTrack**
Precise, Affordable DAW Control



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The Review Resource for Sound Professionals

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NEW REALITIES IN AUDIO

With the introduction of the AV-M8 and AV-P2, Aviom delivers new solutions for audio distribution and networking, saving system designers and contractors precious time, money, and labor.

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Analog to Digital in the Worship World



In studio, broadcast, post and every other facet of the audio world, digital is inevitable. And the growing segment of worship audio delivery is no exception. Check out Dan Wothke's latest installment of "Worship Audio" — large, medium and even small houses-of-worship are taking advantage of the efficiencies that digital products can deliver. From wireless microphone, mixer and distribution systems to archiving and distributing services to the public, digital is surely taking over. And the market has responded with plenty of products for installers and engineers to choose.

Just take a look, for example, at the digital distribution product niche, with major players, such as Aphex, Aviom, Light Viper, Rapco, Roland, etc., providing various systems for a variety of needs. Over the last three years, these products have been pushed to the forefront. In the analog days, you hardly ever saw a snake advertised.

From PAR's point of view, we will continue to evaluate the new gear that you are buying so it will make your decision a bit easier.

STUDIO BIZ BACK ON TRACK

Recently, I had a conversation with an LA-based mixing engineer about the music recording business. He offered that the big shakeout from the early part of the decade — numerous stand-alone studio closings and the rise of professional home studios -- has pretty much made the full transition. The market has stabilized, which has made his business more successful, the engineer noted.

I have heard the same state-of-the-industry assessments from other engi-

neers who have weathered the storm. Of course, business is done a bit differently with smaller facilities in homes, computer-centric recording, more plug-in processing, etc. Also, many tracking engineers are on the move a lot, grabbing their gear and going wherever the job is. (Just ask our busier than busy Nashville-based studio contributor Russ Long.)

As the LA engineer said to me, as long as there are at least a few good sounding rooms to record in pros like him can still enjoy the music produc-

From wireless microphones, mixer and distribution systems to archiving and distributing services to the public, digital is surely taking over. And the market has responded with plenty of products for installers and engineers to choose.

tion business that they love. And they can make a good living out of mixing, mastering, remixing and doing restoration projects, without leaving the house.

With Internet speed and fast parcel service on their side, these engineers get business from all over the world — not just from the U.S. market. These engineers never meet many of their clients; they communicate via Internet or phone, arrange a deal and commence business. Of course, just as in the old days, a good set of ears, dedication and the right tools to do the job are still necessary. The tools and the location may be quite a bit different, but the goal is the same: to make the best sounding recordings possible.

John Gatski is publisher and founding editor of Pro Audio Review magazine.

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Letters

HOW LOW CAN YOU GO?

Russ Long refers to the Apogee Symphony System (*PAR*, April 2007) as "very low latency", but what is the real bottom line? What is the delay a performer hears on their own voice or instrument while recording an overdub track, including a few plugins on their track as there might well be in most Pro Tools HD sessions, as compared to a Pro Tools HD TDM system, and the native LE as well? It seems like that calls out for measured test more than anything.

Bob Sykes
San Francisco, CA

Russ Long responds: Unfortunately I don't have any way to perform precise latency measurements but I can tell you that when I'm recording to ProTools HD I there is no noticeable latency when recording a track without

Feedback

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

any plug-ins inserted but if I insert virtually any plug-in, the latency becomes noticeable. The same is true with the Symphony System. There is no noticeable latency when recording a track without any plug-ins (at 96 kHz the Symphony System has a latency of approximately 1.6 ms which is unnoticeable) but like ProTools, if plug-ins are inserted on the tracks then the latency becomes noticeable.

Corrections

From our April issue:

In the title of Ty Ford's review of the SMQ Wireless Transmitter, located on page 54, the name of the manufacturer was inadvertently truncated. "Lectrosonic" should have read as "Lectrosonics." Our old fashioned wires must have gotten crossed.

In the Studio Consoles Buyer's Guide, located on page 76, the image accompanying the listing for the AMS Neve 88RS console is in fact an image for the Soundcraft Ghost LE. If you'd like to see a picture of a custom 88RS installa-tion turn to page 50 in this very issue.



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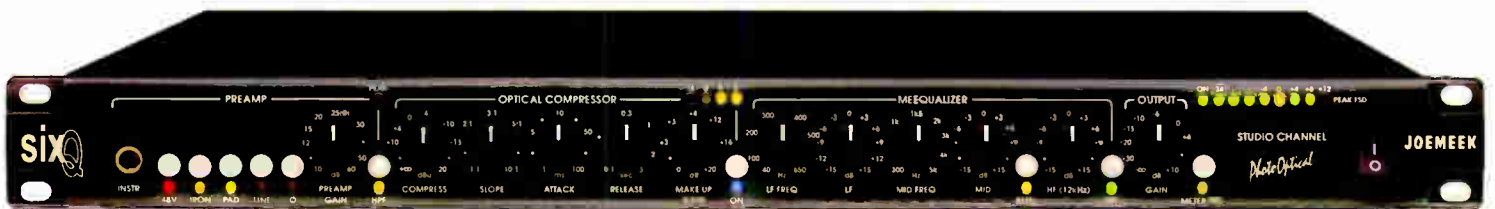
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CONTRACTING

The latest news and products

NEW PRODUCTS

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single speaker systems with stereo L/R inputs; three-driver, two-way in-ceiling/in-wall units; two-driver (mounted at 30 degrees relative to ceiling), two-way in-ceiling units; rectangular two-driver two-way unit; and rectangular three-driver, two-way units.

PRICE: \$449 - \$1,599.

CONTACT: Paradigm | ☎ 905-632-0180 ↪ www.paradigm.com.

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Love a good power conditioner, and I think you will, too, when you hear what the redesigned Furman Elite i-Series can do for your clarity. These conditioners feature smooth contours of black steel with clear blue LED lights. Using Linear Filtering Technology they LIFT your power usage to new heights. Plus, the Elite adds remote control capabilities to the new conditions for convenient operation. Also available are the Reference i-Series, also redesigned with black steel and silver brushed aluminum and clear blue LED lights, LIFT technology, Discrete Symmetrically Balanced Power and Dual

Screen Technology. Over thirty-percent greater noise reduction can be yours, and I know any professional can appreciate that.

PRICE: \$379- \$1,099 (Elite), \$889 - \$3,499 (Reference)

CONTACT: Furman Sound | ☎ 877-486-1310 ↪ www.furmansound.com.

D.A.S. AUDIO PowerPro Amplifiers



They say you have to watch out for the quiet ones; but in the case of amplifiers the strong, semi-silent types are A-OK. D.A.S. Audio's new PowerPro Amplifiers consist of four models built in rugged 1RU and 2RU steel chassis, and offering unequalled value

in proven amplifier technology. The PS-200, PS-400, PS-800 and PS-1400 offer XLR and 1/4-inch TSR connectors for the inputs, and the two-rack units (800 and 1400) have binding posts on the outputs. Because D.A.S. knows power doesn't have to be hard, the new PowerPro offers clip, protection and idle LED indicators for simplified troubleshooting. Also featuring input sensitivity selection, low-noise fans and a protected power supply, PowerPro offers all pros.

CONTACT: D.A.S. Audio | ☎ 305-436-0521 ↪ www.dasaudio.com.

WIREWORKS LumaVue Custom Panels & Plates



Imagine 30-year cabling veterans Wireworks held a ... panel discussion. And the panel agreed, what studios need is custom, rear-illuminated plates to help identify connections and switches in low-light situations. So LumaVue was born. Available in a variety of sizes and shapes, in 1/8- or 1/4-inch thickness, and UV stabilized, these durable non-metallic cell cast acrylic panels are perfect for broadcast studios and remote truck interfaces, as well as anywhere labels and diagrams could be helpful. Rear-engraved, and available in 10 high-impact, rust- and tarnish-free colors, these items provide maximum life and electrical isolation for organizing your audio/video cabling system.

PRICE: Starts at \$55.

CONTACT: Wireworks | ☎ 800-642-9473 ↪ www.wireworks.com.

Not getting enough mixing station news? **PAR** consoles you with some recent installations:

Allen & Heath's iLive (the iDR-10 stage rack and iLive-144 or 112 control surface) has been adopted by Santa Monica's Temple Bar live venue (below), Seattle's Emerald Downs horse racing track and London's Comedy Store.



Over in Vegas the Green Valley Ranch Resort, Spa and Casino gambled on installing two **Midas** XL8's, and live music fans won big.

The Cookeville Drama Center in Tennessee is finding productions utilizing the **Soundcraft** MH2 to be drama-free on the technical side.

Speakers also inspire techs to voice some opinions:

On-Stage Rentals and Pro Stage Productions, both based in Duarte, CA, have taken deliveries of **D.A.S. Audio** loudspeaker systems. On-Stage acquired 28 Aero CA-28A line array modules, 12 CA-215A subwoofers and 12 Compact 218Sub 2K sub bass systems. Pro Stage received four Aero 218A's, four CA-215A's, 12 CA-28A array modules and a DSP-26 loudspeaker management processor.

In Tulare, CA, the historic Tulare Union High School Auditorium has been restored and improved with the installation of **Electro-Voice** Xi2123 loudspeakers and Xi2183 subs, remote-control Precision amplifiers and EV microphones.

In Dallas, TX, the Granada Theater placed two suspended **WorxAudio** line arrays – featuring eight Trueline V8 two-way elements and 14 TrueLine TL215SS and WaveSeries 218S sub bass speakers. Vertically aligned on both sides are four 218S subs topped with three TL215SS enclosures. A Midas XL200 and Klark Teknik DN9848E manage the system.

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World Radio History

by David Rittenhouse

Yamaha LS9-32

This affordable live/install digital console offers plenty of familiar Yamaha features in a comparatively small footprint.

In the past year alone, I have viewed and worked on so many different digital consoles that my brain now only spits out ones and zeros. Okay, that's exaggeration, but during these digital mixing experiences many have asked me what stands out as a top digital console in various frame sizes and with various abilities. Well, I hope to now offer an answer in the form of the latest member of the vast Yamaha digital console family: the LS9.

FEATURES

The LS9 comes in two frame sizes — 16-channel and 32-channel — both of which are capable of expansion. The inputs are first sent through digitally controlled analog head-amps. These are the same preamps as in the M7CL and are fully recallable. The inputs are either mic or line level over the same XLR connection. The "head end" structure, plus much of the console, is set up identically as the M7CL. This means you get the same versatile, per channel four-band parametric EQ and dual dynamics processors (featuring selectable compressor, gating, limiting, ducking, de-esser, etc.) as the larger and more expensive M7CL. The internal sampling rate of the console can be either 44.1 or 48 kHz.

The output structure of the LS9 is 16-bus, eight-matrix to stereo and mono, which can also be configured as LCR. All outputs have to be routed to the "Omni" outs. The LS9-16 has eight omni's and the LS9-32 has 16. There are no dedicated outputs on the LS9; this allows anything to be routed anywhere. This also can be expanded through the MY expansion slots for additional I/O of various types (digital, analog using external pre-amps, CobraNet, even Aviom). The 16 mix busses can be set up as "Vari" for use as auxes, which can be pre- or post-fader per channel send or as "Fixed" for use like a group. This gives amazing flexibility to the use and functionality of this small wonder.

The LS9 offers the M7CL's familiar virtual FX/EQ rack. This is a full graphic representation of a physical eight-unit rack. You can place up to four of the renowned Yamaha Rev X effects units and four global 31 band EQs in the virtual rack. Or, if you need more EQ, you can place the Flex 15 GEQ units in the rack, which gives you a 31-band EQ of which you can use up to 15 filters. If you don't need any FX units, you can fill the rack with all Flex 15GEQs and have 16 channels of EQ to insert on groups or over every output like in a full monitor application. (If you need to grab more than 15 filters on a 31-band EQ then you have bigger problems than learning about a new digital console!) This is all in the digital realm, so it's internal to the console at no extra cost or loss of precious real estate.

The LS9 has one particularly cool new feature that I have yet to see on other consoles. In this digital age, we have done away with the large FOH expanse that used to eat up valuable real estate; now, all we need at FOH is a digital console, CD player or iPod and our laptop. And

now we can even throw the old CD player away: the LS9, through its USB port, can operate as a MP3 player and recorder. This means that I can walk in with the show stored and pre-programmed on my USB stick/thumb drive along with all the walk-in/walk-out music. I can then take another thumb drive and record the show for my corporate client to upload to the web. It is like buying a condo then realizing you have a full beautiful yard to play in.

IN USE

I received the LS9-32 a couple of months ago, and was able to use it on a variety of shows and in multiple configurations. It functioned wonderfully as both a FOH and a mon-



itor console. Having everything at your fingertips in one small console was amazing. The ease of control and quick set up was a life-saver in "run, set up and go" situations.

Every engineer that I sent out with the LS9 had never used the console (though they all were very experienced on both the PM5D and the M7CL). They had no problem with the set up, routing or structural layout of the LS9. Everyone I spoke with loved it and asked if we could replace some of our old small frame analog consoles (the Yamaha M2000, circa '96, for example) with the LS9.

The LS9 fit my needs for the standard repertoire of corporate galas and one-off musical acts for major conventions that have become my bread and butter. I recently put the LS9 through its paces on a large dinner gala for the Cancer Research and Prevention Foundation.

The night consisted of a big band playing the standards, dual lecterns, dual auctioneers on wireless headsets and a dance presentation from the Culkin School of Traditional Irish Dance. In this instance, you can see how filling up 32 channels is very easy, and how you don't want a 48-channel analog monster eating up floor space at a charity event — the space could be utilized more effectively with tables and seats. Tim Hartranft — the engineer I placed in charge of the event — had only

FAST FACTS

APPLICATIONS

Live reinforcement, installation, houses of worship

KEY FEATURES

Lightweight; small footprint; fully digital; ease of use

PRICE

\$10,999 (as tested)

CONTACT

Yamaha | ☎ 714-522-9011
 ☞ www.yamahaproaudio.com

played with the console in the shop a few days earlier. Both Tim and I were impressed with its ease of fluidity and abundance of features, which helped to limit the amount of outboard

PRODUCTPOINTS



- Ease of use
- Little to no learning curve
- Amazing flexibility



- Only 16 outs without buying an additional card
- Only up to 48 kHz, not 96 kHz

SCORE

The LS9 is affordable, capable and easy to use — a warm welcome to the digital age for the uninitiated live sound professional

gear needed on site. At front of house were the console, a CD player, an iPod, snake end and a “voice of god” mic — a very small footprint. Tim ran everything with excellence and the event was a wonderful success.

A local convention for Lockheed Martin was another high scale event for which the LS9 sounded like a perfect fit. This show had a large contingent of CEOs and higher-ups and the audio had to be clear and absolutely flawless. For this event, the console was left running for four days straight with multiple meetings running throughout each day and dinner receptions at night. The basic setup used 14 wireless lavaliers, four wireless handhelds mics for Q/A sessions, six video playback devices and four podium mics plus the CD and Instant Replay at front of house. Outputs were much simpler: left, center and right; fold-back for the stage; video record; and teleprompter monitor.

Billy Martin was my choice of high-end engineers for this event, since he was familiar with the digital structure of previous Yamaha digital consoles and with the client's needs. The LS9 performed throughout its heated workout with great efficiency, exceeding expectations. Its versatility was the saving grace in having the multiple functioning rooms of this style of convention. Billy did note that the flexibility and logical layout made it a great purchase for a large number of events that we work, and for some of our clients looking to purchase a digital console to replace one (or sometimes two) of their old analog consoles.

The sound of the console was beautiful. But while the preamps and EQ are well rounded and sonically ideal, it didn't quite have the full, gleaming presence of the PM5D. The LS9-

32, however, lists for an astonishing \$10,999, a fraction of the PM5D's \$50,000+.

SUMMARY

Digital consoles and audio in the digital realm are here to stay ... and to take over. They are showing up on nearly every artist's rider. Every new church install I see has a digital console sitting at both front-of-house and monitors. Digital desk prices have come down to the place where anyone can afford to own

one, and the ease of use doesn't require a PhD in computer engineering.

If you have never used a digital console before and are reluctant or fear you can't overcome the learning curve, the Yamaha LS9 is the board for you. Nothing is hidden or more than two steps (or clicks) away, which makes it great for churches and small club-style venues.

David Rittenhouse is a live sound engineer at RCI Sound Systems.

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by Dan Wothke

From the Old to the New



Photo credit: Doug Mann

sibility for any HOW looking to purchase. And digital should win versus analog in usability providing that the necessary time and preparation is taken for training and to set up the board. Then, the system is volunteer-friendly with presets customized to route signal to all of the prop-

It finally happened: we here at Belmont Church are packing up our cassette duplicators and sending them to the museum. What took us so long?

Houses of worship are on a much broader technology curve than the standard audio industry because of the vastness of the congregations we serve. We have to be prepared to be on the cutting edge. Those who want to get the message automatically can be supplied via Podcast. Others may need a CD. And still, at the same time, there are people who only have a cassette player. We strive to serve everyone's needs. This drives the necessity to keep what we consider outdated technology around until it has been completely phased out from the lives of our members. We are, after all, a service-oriented business.

Moving on from our trusty tape duplicators got me thinking about transitioning from the old to the new. CDs were introduced at our church years ago, and we started by outsourcing the duplication. As duplication products developed

and their pricing decreased it became more viable to have all CD printing and duplicating in house so the turnaround was almost instantaneous while cost was dramatically reduced.

TAKING IT UP A NOTCH

Taking that thought up a notch, why not jump fully into the digital audio pool? What could be the downside for houses of worship?

I would suggest that the two main factors involved in making this move are cost and usability. Cost is relative but I would garner that whatever amount spent on a good live analog board could translate into a comparable digital board — regardless of the price point.


Even at the lowest pricing, digital console technology warrants to be looked into as a pos-

er destinations at the touch of one button ... not as simple with an analog board.

Also, digital is a great time saver — especially in a HOW situation. Setups from week to week are not drastically different in most HOWs and some even have the same team of musicians who rotate weeks. Imagine having the entire board being recalled to the settings you last used with just the push of a button. Or, at worst, you scroll through a menu and then a sub menu to your preset and then, it's at a push of a button. Either way, it is generally still a more efficient way to work than analog.

I understand that the analog console is sometimes easier to navigate while mixing — it being without pages and menus — but with more new digital boards being introduced, that margin is becoming a lot smaller, not to mention the onboard effects and flexible routing offered with digital. Clearly, onboard effects and flexible routing are great benefits to any engineer.

Of course, the most important **WORSHIP** continues on page 14 ►



Alabama's Gardendale First Baptist Church recently made the jump to digitally-centered audio systems.

LS9

M7CL

DM1000

DM2000

PM5D

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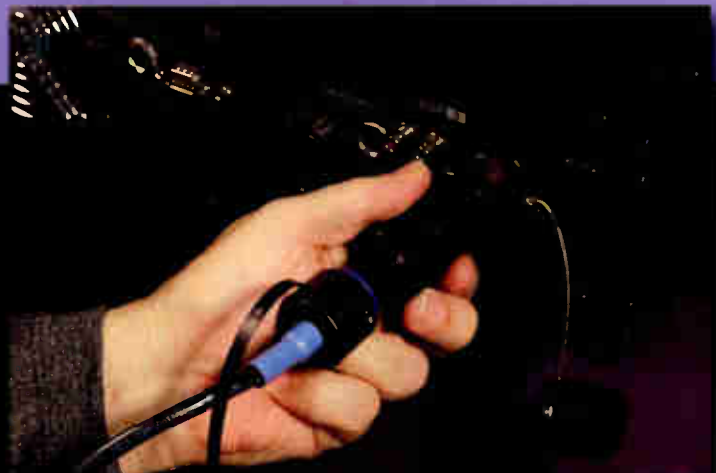
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WORSHIP AUDIO

WORSHIP Continued From Page 12

issue is sound. I have found that most engineers who have done their research and listened to different boards do end up taking the digital plunge. The days of poor A/D converters are thankfully becoming a distant memory. If you make the digital move, think of creative ways to recoup any lost analog characteristics; for instance, if you are still enthralled with analog, invest in a good mix bus compressor to add back the warmth that you desire.

HARNESSING THE POWER OF DIGITAL

Once the digital transition is complete at FOH, the next obvious step is to begin harnessing the full power of digital. Tying in some type of digital recording device allows the HOW to start producing a product, which provides another avenue to serve the congregation through the ability to record. Whether recording a teaching, a new song birthed from within the church or operating a demo studio offered to the congregation and public at a discounted rate, opportunities are abundant. This also has another purpose: using those recordings throughout the week to fine-tune mixes through the house system. Just by playing back the weekend's recording through the console, the engineer can work on more detailed adjustments that they may not have the luxury to make during a usually busy soundcheck.

Again, digital technology wins out over analog not only on the console and the recorder type, but also on the interface. By interfacing digitally with FOH, the church can avoid the high cost of multichannel analog cabling, which is nowhere nearly as efficient as the most common digital interface mediums. If everything remains in the digital domain

between FOH, studio, and/or elsewhere, the cost and headache of grounding is greatly minimized. Churches that are equipped with an isolated splitter and have already delved into recording will still greatly benefit from making the transition to a digital recording format.

This thought process was accentuated with a review that is running in this same issue of *Pro Audio Review*. Granted, the product – ADK's LYVE Tracker – is not the first digital board/DAW pairing; rather, it's yet another representation of a growing trend in pro audio products introduced in order to serve our market. It



The Yamaha PM1D

does offer a solid, user-friendly interface that is extremely cost effective and a powerful recording back-end to capture all that occurs from the pulpit, from the spoken word to worship.

REAL WORLD APPLICATION


I recently spoke with Mark Ramsey, the Minister of Media at Gardendale's First Baptist Church (www.gfbconline.com) in Gardendale, AL. The church has made the switch from a large format analog console to the digital Yamaha PM1D in their main Worship Center. The primary reason for the change was out of respect for the Sunday morning and Wednesday evening services. Mark stated that with an analog board it was virtually impossible to get the mix recalled to the exact settings from week to week, which was causing delays and unnecessary headaches when the 30+ piece orchestra and full band was set up and ready for sound check. As with Gardendale, churches' main sanctuaries resemble Swiss Army Knives throughout the week. One night a sanctuary may be used for a graduation celebration, the next a drama rehearsal and the next a small live worship set with teaching. But if that is all done at the expense of the Sunday AM services suffering then something must change. After researching, Mark and his team decided on the PM1D and, despite the price tag on a board of that magnitude, Mark says the payoff on Sunday morning has been well worth the price. Now, with an exact recall at the push of a button, everyone at Gardendale can simply focus on the music come Sunday morning.

This principle applies to churches of all sizes: the primary focus is the church service, but we also have to be ready to flip the room to various setups. Digital technology naturally offers the most flexibility.

I suggest that you look, as Gardendale did, for a natural window to make the digital switch. Gardendale was to a point where they needed to invest in an upgrade and it was a logical time to make the switch. Consider the pros and cons of going digital. We all owe it to ourselves and the congregations we serve to test the waters within the digital pool.

Dan Wothke runs the gauntlet of all things media at Nashville's Belmont Church in his role as Media Director. He invites you to e-mail him at dwothke@yahoo.com.

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by Will James

Crest Audio HP-W Console

Crest Audio offers an affordably priced and well-performing USA-made analog live mixer.

Crest Audio has long been a name associated with high-end audio products; back in the day, the industry saw such live sound product giants as the 4001, 6001, 8001 and 10001 power amps, as well as consoles by respected designer Jim Gamble. Crest Audio, like many manufacturers, has expanded its product lines to include consoles that meet a variety of needs, the newest being the eight-bus HP series as well as the HP-W.

FEATURES

The Crest Audio HP-W analog live mixer is a solution for installations that could benefit from affordable flexibility — environments such as houses of worship, auditoriums and small stadiums — while certain segments of the board are ideal for spoken-word purposes. The particular model we tested was a 40-channel console with four stereo returns and eight Automix channels (a signature feature to be addressed below).

The HP-W 40-channel version, which is actually 36 inputs and 4 stereo returns, has a relatively small footprint, being only 90 inches

wide, 37 inches deep and 5 inches tall, and weighing in at 250 pounds). The mono inputs feature XLR and line inputs with the input sensitivity and 25-dB pad affecting both modes. Also at the top of the strip are a polarity reversal switch and a 70 — Hz high-pass (low cut) filter switch. The EQ section offers four-band control of

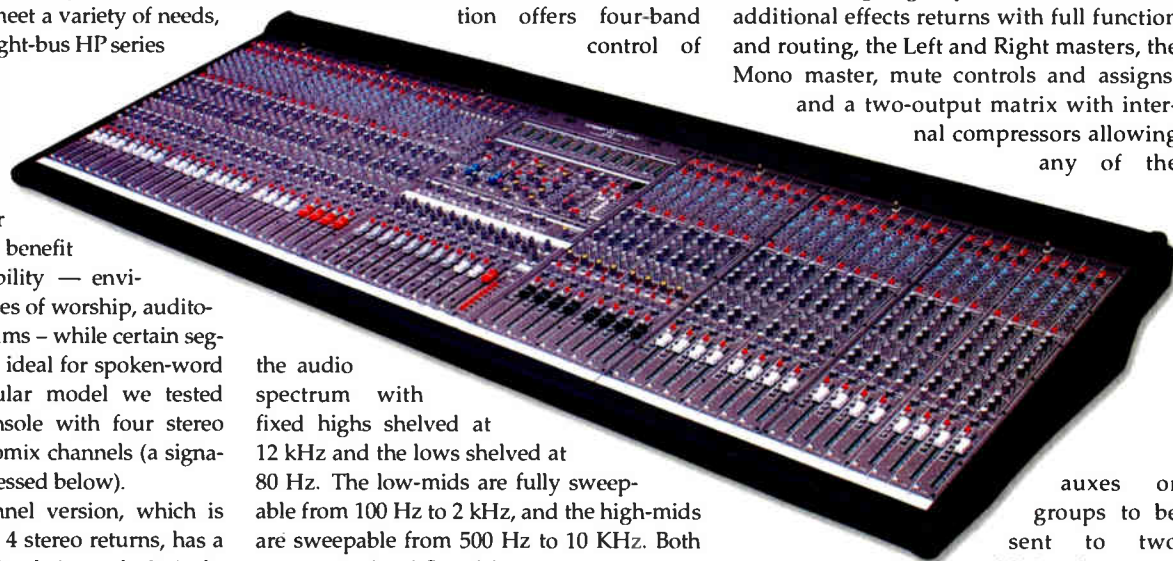
the audio spectrum with fixed highs shelved at 12 kHz and the lows shelved at 80 Hz. The low-mids are fully sweepable from 100 Hz to 2 kHz, and the high-mids are sweepable from 500 Hz to 10 kHz. Both sweeps are fixed Q and feature separate (non-concentric) cut/boost and frequency knobs.

The auxiliary section features 10 sends, allowing for control of monitors from a FOH position or use of the console as a pure monitor desk. The first six sends are switchable from pre to post as a bank of six, and the next two pairs are switchable from pre to post in two-channel banks. A likely scenario would be the first six feeding monitors in pre-fader mode with the second two feeding a couple of reverbs and the last two feeding a vocal delay and a sub woofer in post-fader mode. The bottom of each strip concludes with a 100 mm fader, a stereo pan knob, L/R/Mono assign, eight group-output assigns, a mute switch and a PFL monitor switch.

One of the most interesting features of the Crest HP-W is a section called Automix, which is designed to assist in multi-mic dynamic control without the use of outboard

dynamic processors. Crest's Automix section works like this: in the group of eight Automix channels, one channel can be designated as the most important via a "Dominant" button. Once engaged as dominant, the other seven channels in this module will basically remain signal-dependent on the dominantly assigned channel. That is, the designated channel will receive priority in the gain-sharing Automix scheme. In addition, each of the eight channels in that module has its own individual compressors with variable threshold that operate independently of the Automix function. In addition to the Automix and mono inputs, the Crest console has four dual stereo inputs with separate input sensitivity, four-band shelving EQ and Aux routing along with stereo RCA connectors on each.

The output and Master section contains all of the eight group master faders, two additional effects returns with full function and routing, the Left and Right masters, the Mono master, mute controls and assigns, and a two-output matrix with internal compressors allowing any of the



auxes or groups to be sent to two additional masters

for delay speakers or fills.

The rear panel of the HP-W is well arranged with each input having an XLR mic and 1/4-inch TRS line input jacks, as well as a single-point (unbalanced Y-cable scheme) 1/4-inch insert. The master outputs are XLR and the eight group outputs are on 1/4-inch TRS connectors; all feature single-point insert jacks. The Aux outputs are a mix with the first eight being XLR and the last two being 1/4-inch TRS, but all have single-point 1/4-inch TRS insert connections. The on/off switch for the internal power supply and its related IEC connector are also rear panel residents.

IN USE

The Crest HP-W was employed at several fair and festival events. One recent event was Country Thunder in Florence AZ, a sub-

FAST FACTS

APPLICATIONS

Live Sound — Houses-of-worship, fixed installation and touring

KEY FEATURES

Eight Automix channels; LCR outputs; 10 auxes; 8 groups

PRICE

\$7,500 (40 channels, as tested)

CONTACT

Crest Audio | ☎ 866-812-7378
 > www.crestaudio.com

urb of Phoenix. We supplied stage, lighting and audio for each of three stages that surround the main stage for a music festival on a 60-acre site. The Crest console was employed at one of the stages featuring up and coming label acts. For this type of event we generally provide one 48-channel console per stage that performs both FOH and mon-

itor functions. The Crest HP-W was perfectly suited for this purpose. Additionally, the console's outputs were perfectly suited for this gig because all of our snakes are XLR connections including drive/return lines. All of our EQs were easily inserted into the signal paths with good solid connectors on the rear panel as were the XLR connections to the snake fanout.

Setting up blind mixes — or wingin' it, if you will — was actually quite easily done on the HP-W. The actions of everything on this console — from the input sensitivity to the master fader — were easy to pick up, as they were totally in line with 90 percent of the consoles out there. The Automix modules, referred to as HP-W-A modules, worked surprisingly well. If you are good at building mixes through proper gain structure, then you will find the Automix function to be a friendly addition that certainly does not hurt to have available. We applied Automix to a vocal mix of four voices and found it to maintain a nice lead vocal 3 - 5 dB edge over the backing vocals regardless of intensity of vocal energy (quiet versus loud passages).

The overall sound quality of the console

was quite respectable with friendly, responsive EQ that certainly augmented the signal quality (as opposed to some consoles that totally degrade signal quality). The faders were smooth and responsive and felt to be of very sufficient quality to provide good longevity in torturous environments ... and nothing is as torturous on faders as Arizona dust and grit. It's like high-carbon sandpaper.

PRODUCTPOINTS



- Very good sound quality
- Low noise
- Plenty stout for trailer tours
- Excellent owner's manual



- An 80 Hz fixed low-band frequency in the EQ section, and a little lower low-mids sweep

SCORE

A well-built and affordably priced mid-level analog live mixer — a good performer with nice features

| SUMMARY

All in all, I would give the Crest HP-W a very good grade. It offers some very impressive features, is exceedingly well built and affordable, and it should provide many years of mid-level use.

Will James, owner and chief engineer of Atlantis Audio and Lighting, is a regular contributor to Pro Audio Review.

| REVIEW SET UP

A-Line Acoustics AL10 line array (six per side); A-Line Acoustics LS218 powered subs (a line of 8); Klark-Teknik Square One graphic EQs; BSS AR133 direct injections various Audix microphones

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s o u n d

by Dan Wothke

ADK Pro Audio LYVE Tracker

ADK Pro Audio's new live sound recording solution is reviewed with its standard Steinberg Cubase DAW and a Yamaha PM5D front end.

The widespread acceptance of Yamaha digital consoles amongst live sound professionals has spawned the need for a compatible and easily interfaced digital recorder — one that provides engineers with the ability to capture both live and studio performances. Yamaha, well known for great live and studio products, has never fully ventured into the recording arena. Recognizing the need for a software-based DAW at some point, Yamaha had the foresight to acquire Steinberg in early 2005. As the need developed for Yamaha to interface an integrated, one-step recording system to over 2,000 PM5D consoles — not to mention big brother PM1D and the growing number of DM Series

consoles currently in use — the company decided to bring in ADK, a proven entity, to develop the hardware and interface.

ADK (Advanced Design of Kentucky, not to be confused with ADK Microphones) has nearly 10 years of experience in building custom high-end, PC-based DAWs. Their client list is a who's who of high-level recording acts and audio engineers including U2, Peter Frampton and Chuck Ainlay. Point being, ADK has staying power, reinforcing Yamaha's decision to team with ADK in developing the LYVE Tracker.



Vista when it has proven the test of time) and an internal DVD burner. Other connections available on the system include IEEE1394 Firewire 400 ports, USB 2.0 ports and Ethernet. The four-space rack-mounted computer is a well-built workhorse and has proven durability (based on the number of tours that rely on ADK to provide recording hardware).

Each LYVE Tracker comes equipped with Cubase 4 (or the latest version) by default, and is upgradeable to Nuendo for \$1,200. If the console is already equipped with ADAT interface cards, the system is still viable with the addition of a RME ADI 648 MADI/ADAT converter for an additional \$1,900. Yamaha has started to incorporate Ethersound cards into the system, which will provide the same track capability via CAT5 cabling. There are also some processor upgrades available for each system.

Should a client's needs vary from one of the standard setups — such as a third-party PCI DSP card — ADK is available to customize the

LYVE Tracker and will consult with the client to find the combination that works best. The LYVE Tracker ships with a comprehensive one-year warranty, which is

upgradeable to three years.

Virtual sound checks are most definitely growing in popularity and the LYVE Tracker enables the engineer to utilize this desirable feature. What is a virtual sound check? Basically, the engineer gets microphone levels and a basic EQ set, then records a few songs of the band who are then free to go on their way. The engineer can then play back the songs through the console and get a mix set up for the house. Granted, there are some drawbacks to virtual sound checks — the engineer is not dealing with sound created directly from the live instruments — but when doing a multi-show tour, this feature has proven to be worthwhile in dialing in a rough mix night after night before the band arrives.

Another application for the LYVE Tracker — particularly the Studio system — is in audio post-production houses. The more common Yamaha console for this application is the DM2000 (due to its controller and automation capabilities for Nuendo).

Engineers will appreciate that the LYVE Tracker has the dongle for Cubase/Nuendo installed inside the case. The software is rendered useless without the dongle, and some

FAST FACTS

APPLICATIONS

Live, installed sound, studio, audio post

KEY FEATURES

Yamaha digital console-accompanying recording system with Cubase or Nuendo DAW; House System allows 64 tracks at 48 kHz/32 tracks at 96 kHz; Studio System allows 192 tracks at 48 kHz/96 tracks at 96 kHz; pre-proven durability via custom ADK DAW systems already on tour

PRICE

House System: \$4,999
Road System: \$6,799
Studio System: \$10,799
Cubase 4 to Nuendo 3: \$1,200

CONTACT

ADK Pro Audio | ☎ 859-635-5762
🌐 www.adkproaudio.com

FEATURES

The LYVE Tracker is a pre-built recording system designed to easily interface primarily with the PM5D, although it can be tied into any Yamaha digital console that allows for digital interface cards. The LYVE Tracker is available in three configurations (\$4,999 - \$10,799) designed to fulfill different needs — from houses of worship to live tours to even audio post-production facilities. All of the systems are based on the latest available Intel core processors. The "House System" employs a MADI interface allowing up to 64 tracks at 48 kHz or 32 tracks at 96 kHz with 320 GB of recording storage and four hot-swap removable bays. The "Road System" doubles the MADI cards, track capabilities, and storage and still offers the four removable bays. Finally, the "Studio System" has a total of three MADI cards offering 192 tracks at 48 kHz or 96 tracks at 96 kHz with storage capacity of 1280 GB in a RAID 0 configuration. Again, four hot-swap bays are in place. The systems are designed to be ready to record right out of the box with no need for the end user to install software or hardware. Included with the system is Acronis backup software, XP Professional (or

of the smallest details can stop a show in its tracks. But not this detail in this case.

| IN USE

I was able to comprehensively test the LYVE Tracker at Franklin TN's CTS Audio in their demo suite. Upon arrival, a Yamaha PM5D was set up and ready for interface. All I had to unpack was the ADK system along with its LCD monitor, wireless keyboard, mouse and the Audio-Services MADI cards.

The first step was to properly set the dip switches on the MADI master card, which basically told the card to work with a PM5D. Other desk options included the PM1D, DME, DM2000, DM1000 and 02R96. Once

PRODUCTPOINTS



- Simple to interface with select Yamaha digital consoles
- Already proven performance on the road (via custom live DAW systems)
- Reasonably priced for installed sound, live sound and studio/audio post applications



- None

SCORE

The LYVE Tracker is a simple, affordable and reliable DAW for Yamaha console-based live and studio rigs.

the card was set to the proper configuration, I had to power down the PM5D and remove the four slot covers from the back of the console. I was then able to install the MADI master card in slot 4 and the three slaves in the remaining slots. The slots interface with each other via ribbon cables and although it takes a bit of maneuvering to get the connections complete with a doghouse on the PM5D, the install of the cards only took a few minutes. The MADI master card actually sticks out of the back of the console by about half an inch, so there is a frame that goes in around the card to prevent debris and dust from making it into the slot.

The only other configuration on the master card is the dip switch to determine the sample rate. There are three options on the card: 56ch, 64ch and DFS. 56ch is for support of an older MADI format and is not applicable to the LYVE Tracker. 64ch supports 64 channels at 24 bit/48 kHz and DFS supports 24 bit/96 kHz. The PM5D is capable of 64 tracks at 48 kHz and 32 tracks of 96 kHz, but multiple consoles can be linked to provide for more tracks. LEDs on the master card indicate proper lock once all of the cabling is attached.

To verify the successful installation of the MADI cards in the PM1D, we scrolled to the Word Clock page and looked for the MY16-AT cards listed. This is actually the model number for the ADAT card but is also the generic model number listed for any non-Yamaha proprietary card successfully installed in the system. Once the MADI cards were installed, we opted to interface with the LYVE Tracker via BNC coaxial cable although Optical LC connectivity is an option. The sample rate needs to be set from within the console and the physical switch on the back of the master MADI card. The Word Clock page on the PM5D console provides lock indicator lights to validate the digital chain.

The LYVE Tracker configuration for the MADI is even simpler to configure as the cards are preinstalled in the system. Launching the Hammerfall DSP interface, the user can customize the configuration or set the clock to the incoming MADI, which will automatically align the

settings with the incoming MADI input. The lock status was instantaneous and we were ready to record.

The LYVE Tracker is configured to automatically open Cubase when booted up, so all we had to do was arm all of the tracks and hit record. The entire system was a breeze to set up, and once all of the components are installed and the sample rates set the only requirement from show to show is the cable connection. The LYVE Tracker could not be more user friendly, and allows for the fewest steps possible for worry free recording.

| SUMMARY

If a PM5D is already in use, whether for an install or on a tour, the LYVE Tracker is a no-brainer as it can become a reality for \$5 -11k (depending on the chosen system and interface) including the software, recording and interface hardware. For any facility or tour considering the PM5D (or any of the other supported Yamaha products) the next obvious choice is to interface a LYVE Tracker with the system. The LYVE Tracker is exactly what is needed for DAW accompanying a Yamaha digital desk front end: it's simple, affordable and, most importantly, reliable.

Special thanks to Chris Adler and the team at CTS audio for the use of their facility and providing the PM5D and interface cabling for the review. CTS is a full service company providing audio/video installations, retail sales and consulting firm located in Franklin, TN. They can be reached online at www.ctsaudio.com or their online store www.roaddogonline.com.

Dan Wothke runs the gauntlet of all things media in his role as Media Director at Belmont Church in Nashville. He can be reached at dwothke@yahoo.com.

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by Strother Bullins

Small Format Mixers: A Little Money Goes A Long Way

Today it is most definitely a buyer's market when it comes to small-format mixers, i.e. studio and/or live audio consoles generally under 16 channels and \$1K in price. Makes, models, features and configurations abound, benefiting the shopping audio engineer. But there are major considerations to be made when selecting a small mixer — I/O configuration, FireWire/USB connectivity, channel and buss count, routing options, plus pre-amp/EQ type and quality are just a few.

With so many possibilities available in the pro audio marketplace, finding the best mixer for your needs can be confusing. And, as

always, *Pro Audio Review* is here to help you, the professional audio engineer, in your continued quest to be equipped in the best way possible. In this feature, small mixer authorities at three major pro audio retailers share their insight on selecting the right mixer for your needs, while revealing their opinions on how the latest mixer technology — and competing technology — can positively affect your live and/or studio rig.

THE MIXERS THEY ARE A CHANGIN'

Ray Nostrand, Pro Audio Sales Manager for B & H Photo/Video/Pro Audio, has witnessed a bevy of notable changes in the small mixer market within the last two years, trends that started nearly a half-decade ago. Live, small mixer users carry around far less unused channels, while in the studio the only small mixer might be found floating on a computer screen.

"Five years ago, a lot of the people buying the small mixers were working musicians — acoustic trio members, coffee shop performers, and so on — along with engineers," offers Nostrand on sales in the live realm. "Then, the 12-, 14-, and 16-channel mixers were most popular. Turning the calendar forward to two years ago, the small mixers we sold to musicians were even smaller and — for the keyboard player or drummer, for example — bought to send their own main mix to

FOH. The choices have changed, too; only five years ago the Mackie 1402 and 1202 were the small mixers. Now the smaller Behringer XENYX 802, the 502, and tiny two-, three- and four-channel mixers from a wide range of manufacturers (Behringer to Soundcraft and others) are available. Everything is smaller: footprint, channel count and price. Five years ago, the lowest investment in a small mixer was \$300. Today, it's \$50. The small mixer has been redefined. And, with all the smaller channel mixer versions now available, people can buy just what they need."

In the studio realm, such small mixers have bowed to an even smaller mixer: the one available in most every recordist's DAW.

OPTING FOR POWERED LIVE SPEAKERS

Asked about powered small-format mixers, our trio of expert pro audio retailers agreed that, while such products are still available to end-users that can realize their benefits, high-quality live monitors have increasingly pushed users toward having their amps in speaker cabinets for a variety of good reasons. "If you put too much into one component, it may fit someone's needs, but then it's not as flexible," explains Mike Picotte, Senior Sales Engineer for Sweetwater. "If you buy a powered mixer, you're stuck with a certain power requirement."

Further, the powered live monitors currently available are very good and flexible. "The high quality of currently available powered speakers has done it," offers Ray Nostrand, Pro Audio Sales Manager for B&H Photo/Video/Pro Audio, of the trend. "With a couple of cables right out of a small mixer, suddenly you're a PA company. Today, you can go out, see someone running a couple of self-powered speakers and say, 'That sounds great!'"



Yorkville U15P (www.yorkville.com) is part of the new Yorkville Unity Series.



The new Yamaha MG Series MG124CX (www.yamahaca.com) with simple on-board digital effects and four-channels of 'one-knob' compression adjustment.

"Even two years ago, studio-based small format mixers had already gone to the desktop," offers Nostrand. "Various FireWire and USB connectivity of new small mixers are very important to some guys. But those features aren't quite what we thought they would be; some just opted to put the same amount of

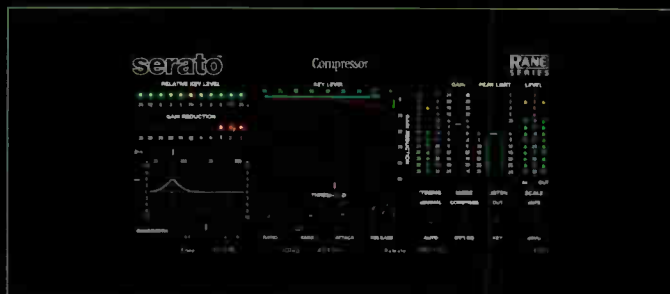
MIXERS continues on page 24 ►

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



:: GREG NELSON, FOH: Pearl Jam and Incubus

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IN THE CONSOLE OR IN THE RACK

money — or, I hate to say it, half the amount of money — into buying a really good sound card. There's a lot more walk-away value for the customer who puts more money into [a good sound card]. With that in mind, the USB or FireWire studio mixer is essentially a transitional piece for those who aren't yet comfortable with what can actually take place within their software."

Bryan Bradley, Director of Pro Audio/Recording Merchandise for Guitar Center, echoes this sentiment. "One of the biggest impacts on small mixers in the studio format has been the introduction of the affordable multi-channel interface," he explains. "These products have multiple line inputs/mic pre-amps and are typically bundled with software applications that really make them complete recording solutions. The

shoppers looking to use the same mixer in both live and studio applications. Mike Picotte, Senior Sales Engineer for Sweetwater, insists that the number of inputs still determines most shoppers' range of choices, but he sees FireWire or USB features opening up a world of useful possibilities.

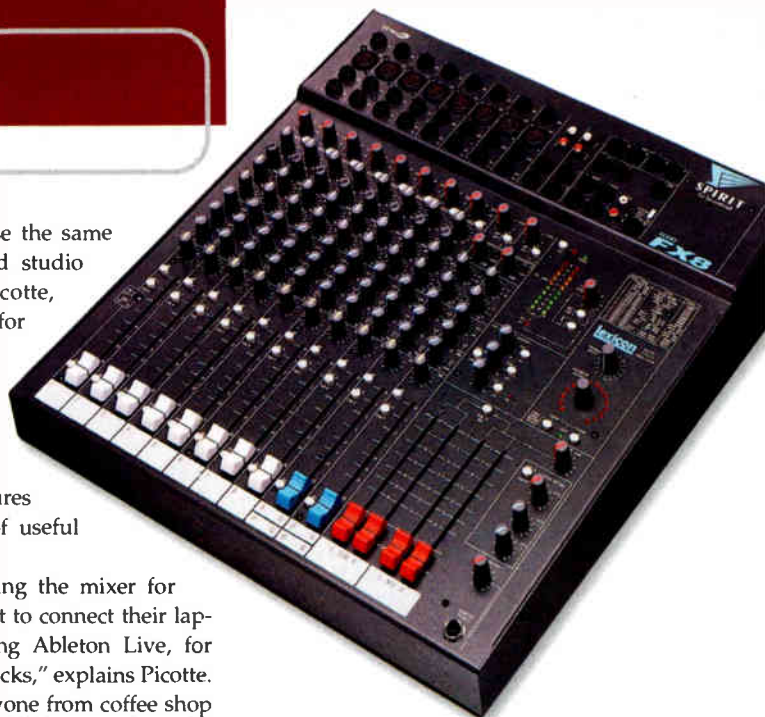
"If someone is buying the mixer for live use, they may want to connect their laptop where they're using Ableton Live, for instance, for backing tracks," explains Picotte. "We're hearing of everyone from coffee shop performers wanting the USB two-track out for recording to smaller bands wanting FireWire to record tracks for an entire live show."

Even aspiring recordists in elementary school are finding FireWire and USB features useful: "FireWire and USB features on the small Alesis mixers have become popular with schools that may take its outputs straight to [Apple] GarageBand. Such mixers get more people into the idea of recording."

However, not having USB or FireWire options is still "not a deal-breaker," explains Picotte. "For instance, the Allen & Heath Mix Wizard Series comes to mind as an extremely popular mixer because

of its sound quality. It has no recording options with FireWire or USB, but it does have direct outs [for recording]. For someone who wants that quality, they'll get the Allen & Heath."

On that note, a general follow-up question will be whether a particular mixer's direct outs are pre- or post-EQ. "On the Mackie Onyx Series, for example, it's an



The Soundcraft Spirit FX8 (www.soundcraft.com) offers their legendary quality and sound alongside on-board effects, globally switchable pre/post-faders, and much more at a very affordable price.



The XENYX 502 (www.behringer.com) is one of the smallest and cheapest small mixers available; it offers five inputs, one mic preamp, a post fader EFX send per channel, two band "British" EQ and more for under \$50 street.

result is that a small format mixer is no longer a necessity when recording multiple instruments in a home project studio."

LIVE WITH USB AND FIREWIRE ... OR SIMPLY DIRECT OUTPUTS

The latest mixer equipped with USB (for two-track I/O) and/or FireWire (for multi-track I/O) may be the perfect choice for those

| MAYBE YOU DON'T NEED A MIXER: MONITOR MANAGEMENT SYSTEMS

Considering the proliferation of home studio DAWs and their associated pre-amp and I/O-based hardware, maybe a small-format mixer isn't what you require. Would a studio control center — such as Mackie's Big Knob or Presonus' CentralStation — be a better choice?

"Absolutely," answers Ray Nostrand, Pro Audio Sales Manager for B&H Photo/Video/Pro Audio. "It's funny to think that if you introduced something like the Big Knob 10 years ago, people would've looked at you like, 'Are you out of your mind? I've got a knob on my mixer for that.' But you can see the progression here — it's an evolution. Your desktop, your DAW, is a mixer and has all the proper sections. The studio control center is a product that shows the evolution to that need for a control center or for just that monitoring gain stage."

advantage that you can track everything FireWire, and a lot of people like that pre-amp," offers Picotte. "But you can't switch it to post-EQ. If the user is doing a quick demo and has dialed in an EQ on the Mackie, they may want to take that EQ with them rather than going back in the DAW and EQing all over again. However, using the Onyx live with FireWire is great because you don't want the EQ recorded right after the pre-

MIXERS continues on page 26 ►

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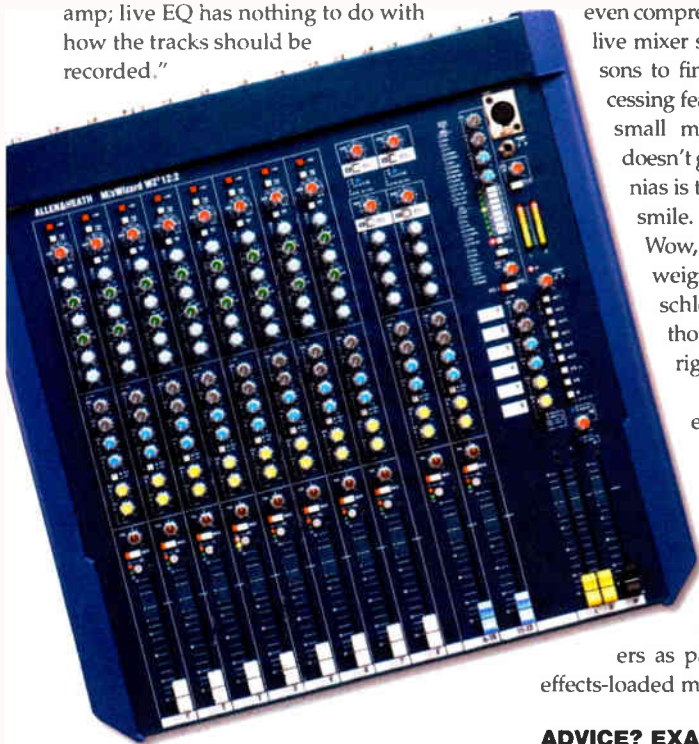
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amp; live EQ has nothing to do with how the tracks should be recorded.”



The MixWizard3 12:2 (www.allen-heath.com) is a 12-channel live mixer with built-in DSP effects, Allen & Heath quality, and a street price of well under \$1K.

even compression. But, pound-for-pound, live mixer shoppers have very good reasons to find a mixer with internal processing features. “Finding a lightweight, small mixer that sounds good and doesn’t give you back spasms and hernias is the key,” says Nostrand with a smile. “Now add built-in effects? Wow, that’s convenient. It keeps the weight factor down. Anyone who’s schlepped around gear has thought, ‘How can this 50-pound rig become 30?’”

Picotte agrees. “Built-in effects are often spoken for those who don’t want to carry extra rack gear but do need basic reverbs or delays,” he offers, while noting the Allen & Heath Mix Wizard, Yamaha MG Series and Soundcraft Spirit Series mixers as particularly good examples of effects-loaded mixer options.

ADVICE? EXAMINE WORKFLOW, BUY INPUTS AND QUALITY

Ultimately, finding the best small-format mixer for your needs requires research and thought regarding your current (or future)



The new Concert Series of live mixers (available direct from Carvin at www.carvin.com) offers built-in digital effects as well as S/PDIF I/O and USB connectivity for live two-track recording straight to a DAW.

LIGHTENING THE LIVE LOAD WITH BUILT-IN EFFECTS

All studio-based mixer shoppers may not desire in-board effects — reverbs, delays and

workflow demands. And, in the end, our trio of pro audio sales experts recommends buying based on input and routing needs, while

MIXERS continues on page 28 ►

| WHY I BOUGHT IT: PAR REVIEWERS SPEAK OUT

ROB TAVAGLIONE ON THE MACKIE 1202-VLZ PRO:

“I find myself doing lots of interview and talking head stuff on location for video. A lot of times you have to mix only a couple of mics down — not a lot. This mixer has four mic pre-amps, which is ample for the application. The thing I really like about it is the XLR outputs — which not all small-format mixers have — that are switchable between microphone and line level output. A lot of times, video camera operators want to use mic level input since they’ll combine a shotgun mic on the front of the camera with a lavalier mic; they’ll have the camera set for mic sensitivity. This way, you can mix down another mic and still send it to them at mic level. Kind of a weird application, but it’s very helpful.

“The other things I liked about the 1202 VLZ-Pro were improved features — channel mutes and PFL Solo buttons, which are terribly important to me. I missed those features on the older 1202; you really have to be able to PFL stuff when you’re on the fly.

“I don’t generally find much use for sub-mixers in the studio, because the mic pre-amps typically aren’t very good compared to outboard studio pre-amps. I do have one use for them, though. I like to do a thing where I have a number of really unusual mics: for instance, little plastic mics from the 1960s’ reel-to-reel tape recorders. I’ll hook up four or five on these to this mixer, and when I go back into the control room I’ll have a singer run through them, doing a few lines on each until we find the one that really sounds great. That’s a nice way to find what is oftentimes an unbalanced microphone, get its output up to line level to survive the trip through all the cabling. That’s really the only studio application I have for such mixers.

“My small-format mixer before this one? It was the previous Mackie 1202. It’s still in perfect working condition, but I needed the PFLs, channel mutes and the mic-level balanced output on XLR. The original 1202 only had TRS output. And even though TRS outputs are balanced, they’re just a pain to use in a professional application; you always have to adapt everything, and there’s no time for adapting when you’re out in the field.

“Finally, the VLZ-Pro’s mic pre-amps are cleaner and seemingly flatter in frequency response with more headroom and less noise. All around, they’re just better.”

Ultimate System

Plug-ins

Recording

DiGiCo



Rob 'Cubby' Colby
 "These tours have put this console through some of the most demanding traveling schedule's as well as climate exposure and never once was there an issue. The console is very easy to navigate and most of all Sounds Just GREAT!"
 FOH - Shakira, Robbie Rosa, Luis Miguel, R.Kelly and Juanes

Paul Ramsay
 "Most importantly for me is the sound quality of the pre amps. They are excellent and on par with, if not above that of, high quality analogue desks. The OS has an analogue feel about it in all respects, with instant access to the control via the touch screens and no multiple menus to go through. The EQ has a warm analogue feel about it and I love the fact you can have multiple screens doing separate things. I've rarely had to look at the manual for anything, or had to contact anyone, but even so, the back up from the team at DiGiCo has been amazing."
 FOH - The Who

Image by William Synder



Jim Yakabuski
 "Compared to DiGiCo, the other choices of digital consoles are either too large, too expensive or as yet untested for the long haul. I had such great results last time around and I really love the sound of the OS, so I didn't seriously consider using anything else."
 FOH - Avril Lavigne



Jim Ebdon
 "I was so impressed with the sound quality and ease of operation, that I bought one and now with the plug-ins I couldn't leave home without it."
 FOH - Aerosmith



Steve Law
 "The ability to use plug-ins with the OS is just the next phase in the evolution of this amazing console. I am primarily using a few LA2A's and some 1176's from a UAD-1 card mounted in an ADK Dual Opteron Computer and connecting to the OS via an RME MADI card. To take what is already a great sounding console and add this is like injecting rocket fuel into your car, hold on tight, it's a great ride."
 FOH - Keith Urban



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"For example, if someone says, 'I have to definitely have eight mic inputs,' chances are that they'll need more on a project or two down the road," reasons Picotte. "It's not that big of a jump for a beginner to get a few more inputs. For pros, a lot of guys may thing of the inputs they need, but not think whether the direct outputs are pre- or post-EQ, for example. With they have enough aux sends that are

pre/post switchable?"

To Bradley, selecting based upon quality and brand can assure years of solid performance. "The main piece of advice I would offer anyone in the mixer market is once you find the format that suits your needs, spend the time and money to purchase a quality product from a reputable brand," he says assuredly. "A good mixer will last a very long time, especially in the studio environment."

| WHY I BOUGHT IT: PAR REVIEWERS SPEAK OUT

DR. FREDERICK J. BASHOUR ON THE M-AUDIO NRV10:

"In the past five years, audio quality has gone up a lot, especially in mic pre-amps and effects circuits. In the past two years, connectivity has started to 'make sense' in that FireWire interfaces are being combined with analog mixers, giving users, in effect, the best of both worlds. The next step will be to give them full bi-directional multichannel computer/mixer communication with software insert effects. The M-Audio NRV10 is the first such product to be marketed.

"Compared to other small mixers, the inclusion of a multichannel FireWire interface is most important since increasingly more musicians are including computers in their live performances. Compared to other FireWire-equipped mixers, all the NRV10's mic pre-amps and EQs are included in the signal path to the computer; and, since each of the FireWire outputs feeds the corresponding NRV10 channel on the return trip, not only can they be used on the way back, but this also makes monitoring a snap.

"Furthermore, two software features make the NRV10 notable. First is the ability to use it with Pro Tools M-Powered. But even more noteworthy is the inclusion of Audiffex's standalone software application 'interFX.' The Czech developer formerly known as DSOUND, Audiffex now markets several fascinating computer music software applications. InterFX gives each NRV10 channel two VST insert slots and a dedicated compressor and expander/gate. You can use your own VST plug-ins, or choose (in the version of interFX which is bundled with the NRV10) from flanger, chorus, bpm delay, and distortion — all with simple adjustments and very usable presets.

"An optional 'pro' version of interFX

gets really interesting since — besides adding more effects and effects chains — it adds MIDI which means the NRV10/interFX system can host virtual instruments, can control external devices, and can be controlled by MIDI. It also adds extensive ReWire support as well as playback and recording of individual tracks and mixes of anything going in and out of the NRV10. For me, it's a no-brainer upgrade.

"The NRV10 makes my workflow more efficient; I can keep my mics and instruments connected whether or not any of my computers are, and play and rehearse, treating it as a standard analog mixer. But, as soon as a computer is connected, anything plugged into any input can be tracked immediately into Pro Tools. While recording, the monitoring setup is very pristine, with the control room and headphone outputs driven directly from the DAW. The sound of the NRV10 in general is the best I've ever heard from a piece of equipment in this price range.

"Before the NRV10, I chose between several possibilities based on the 'importance' of the live gig or the intended destination of the recording. For one of my label CD projects, of course I would not use a small-format mixer; neither would I for an important gig that was being recorded live — I would use the most expensive gear I owned. But for the past 10 years or so at 'regular' club gigs or performances with my family band, I would usually choose between my little red Fostex VM88; or, if I required higher quality sound and more inputs, better effects, etc., I'd feed that mixer into a 6U portable case containing a Rane SM82 line mixer, a Dan Alexander stereo mic pre-amp, and various effects units I've owned since the '80s: a PCM70, an Aphex Compellor, and a stereo tube equalizer. That rack weighs about 70 pounds and, now that I've got the NRV10, it's history!"

M-AUDIO

The new vintage.

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"Until recently, my trumpet recording setup was a Royer ribbon mic with a Neumann U67—that was until I heard the Sputnik. Everything I've recorded for my new album has been on the Sputnik and the Royer, side by side. *It's the best trumpet sound I've ever had*—smooth and transparent, with just the right amount of coloring. It stands beautifully against some of the best mics in my collection... very well done."

—Mark Isham, composer

"The M-Audio Sputnik is *my new favorite microphone*. Anyone searching for a high-quality tube microphone can begin and end their search with Sputnik... it's destined to join that select group of 'go-to' mics... it really does have that 'magic!'"

—Pro Audio Review

"The way this mic captures sound is *all in the subtleties*. You can't fake pinpoint accuracy, and you can't fake the perfect rendering of real live sound."

—Tape Op



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> boutique quality



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by Tara McCartney

Taking the “Edge” Off the Field Museum

The Field Museum was incorporated as the Columbian Museum of Chicago in the State of Illinois in 1893; its purpose was stated as the “accumulation and dissemination of knowledge, and the preservation and exhibition of objects illustrating art, archaeology, science and history.” The museum’s name was changed in 1905 to The Field Museum of Natural History, honoring its first major benefactor,

Jackson Park to its present site on Chicago Park District property near downtown, where it is part of a lakefront campus.

One hall in particular — the Stanley Field Hall, with its gleaming marble interiors and “Sue,” the largest, Tyrannosaurus rex fossil yet discovered — is used for all types of corporate and private receptions as it accommodates up to 7,500 people. Beautiful, yes, but from an audio perspective it sounds horrible.

“Corporate and special event producers don’t choose to hold events in rooms because they sound good,” states Rich Mullen, EDGE Audio Services.

“They want large, architecturally interesting spaces in a desirable locale.

To many corporate producers audio is rarely important in the planning stages, and never seems to get much attention until the show starts. Then it becomes the most important thing and unless the audio company is used to challenging jobs, that could be too late.”

EDGE Audio, with a yearly schedule of over 400 shows, handles production for high-profile events in many of the most challenging environments imaginable. The Field Museum’s Stanley Field Hall, which measures 240

feet x 60 feet, is certainly near the top of that list. EDGE met the challenge of the Stanley Field Hall once again during a recent corporate event for a pharmaceutical company featuring the group The Mutaytor.

AN AURAL THREE-RING CIRCUS

The Mutaytor combines 100 tribal drums, live-mixed electronic, fire perform-

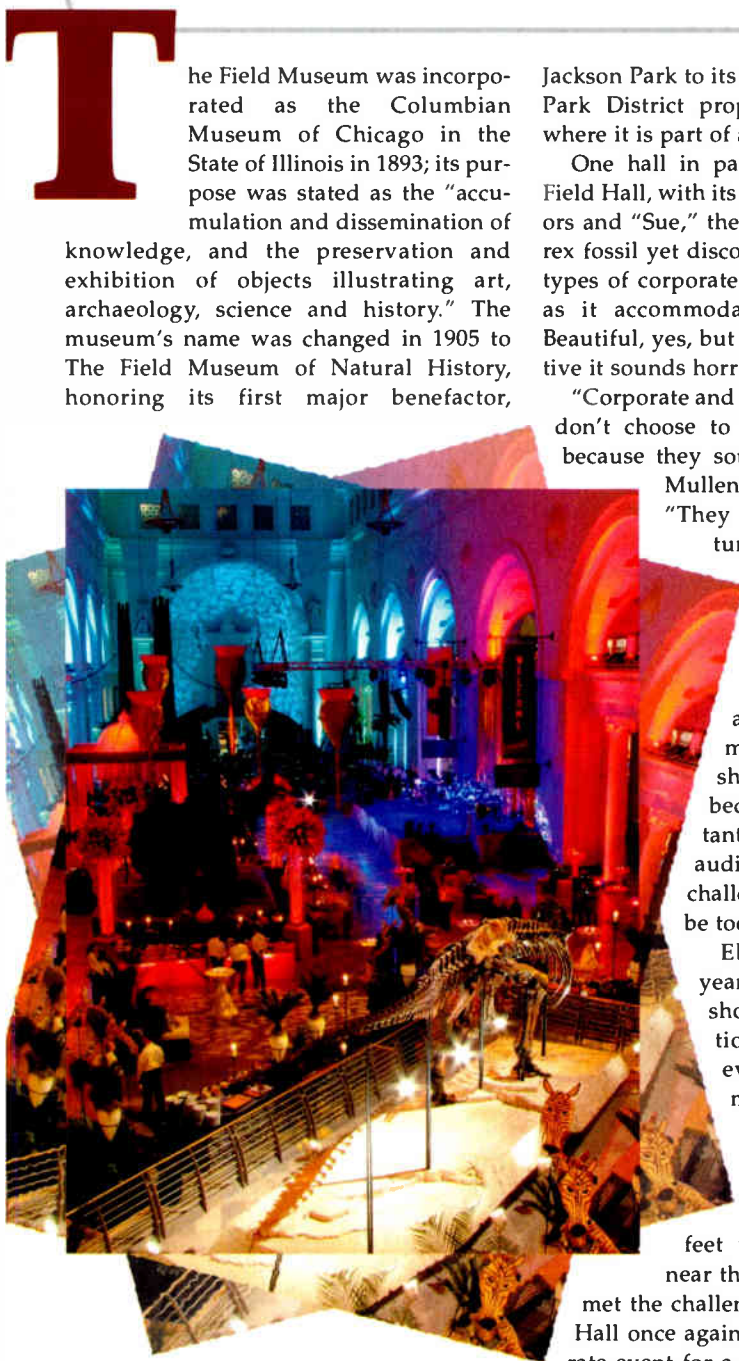
ers, hoop dancers, aerial artists, John Avila (Oingo Boingo) on bass, Steve Reid (Rippingtons/Supertramp) on percussion, a live horn section, Chinese parade lions, giant screen visuals and a bevy of interactive dancers and performers into part hip-grinding techno-retro-funk, part audience-interactive post-modern circus. The act takes drastically advanced elements of the Grateful Dead, Parliament-Funkadelic, the Crystal Method, Louis Prima and Blue Man Group and throws them directly at the audience as riotous surreal entertainment notable for “turning Civilians into Rockstars.” The sound is so tight, the show manic, the vibe all-inclusively friendly. They are on stage, above the audience, in the crowd. The band’s modular structure and effortless adaptability allows for shows ranging in size from roving hand percussionists and dancers at intimate events to full-sized stadium shows with giant propane cannons.

The Mutaytor offers quite a show to put on in a not-so-great sounding room, and makes hanging the PA a real challenge. EDGE Audio designed a system with 180 degrees of coverage using four hangs of a NEXO GEO S Series (the stage was positioned on a wide wall of the room). Eight box hangs covered corner shots of the room with four-box front hangs. All EQ and delay was accomplished within a Yamaha PM5D-RH console at front-of-house. The main PA was delayed to the out-fill clusters using the delay on the outputs of the console. Front-fills of NEXO PS 10s were used to help provide even coverage throughout the room. EDGE used GEO Subs on the floor for the first time in this type of application.

“Honestly, the NEXO rigs are terrific for this kind of work,” notes Mullen. “We go between corporate, special event, industrials and concert work pretty seamlessly; it’s all in the planning. The S rig has helped us succeed in all of the challenging environments producers wish to host their events, and Stanley Field Hall is probably the most challenging environments of all.

“It’s the combination of our crews’ skill and the consistent results of the S rig that have allowed us to succeed in The Field Museum,” continues Mullen. “That keeps us working! Shows there are never fun, but our staff is so skilled in using the GEO S, that we have that room dialed in and always seem to do very well.”

Camco V6 amplifiers are used on the top end, while Powersoft K-10 amps are



The Field Museum’s Stanley Field Hall

Marshall Field, and better reflecting its focus on the natural sciences. The museum moved in 1921 from its original location in

used on subs. Mullen says they use Camco amps primarily for their sonic characteristics, reliability and weight-to-power ratio; Mullen feels Camco is one of the best amp lines available. EDGE's microphone arsenal generally consists of a standard fare of Shure mics, with Beyer and Sennheiser models placed for specific applications.

LOTS OF I/O WITH NO OUTBOARD NEEDED

Mullen explained that the PM5D was a great advantage in designing The Mutaytor show. Events like this tend to use up outputs quickly, so you need a large console, he confirmed. However,



A Nexo Geo S Series Array

floor space is at a premium. "That's what's great about the 5D; the footprint is relatively small with a good deal of inputs and outputs. Plus, the flexibility of having many outputs all with dynamics, delay and EQ make it easier for an A1 to handle the many requests that come at you during events like these." Edge doesn't take any outboard gear on the road as long as they are using a 5D — instead, the console's on-board effects are utilized.

"This board is small for its I/O capability," continues Mullen. "In our corporate work outputs are more important than inputs, but conversely entertainment and concert work needs more inputs. The 5D can handle both needs on most shows. We needed one digital board that would be accepted for any of the myriad of shows we do. The 5D has been just exactly that. We are able to handle any of the national music acts as well as very large corporate and industrial events with this console."

In the end, what could've been acoustically disastrous if not handled carefully turned out to be another great sounding event at The Field Hall: "Despite what would normally be considered offensive volumes for the Stanley Field Hall, this event turned out to be the best we've done in there," says Mullen.

For more information on the Stanley Field Hall, visit the official website: www.fieldmuseum.org.

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by **Strother Bullins**

DiGiCo CS-05 Digital Mixing System

A streamlined, downpriced system for live and installs

DiGiCo has announced the availability of the new CS-D5, a specially packaged and priced digital mixing system featuring a streamlined version of the D5 live/install digital mixer. In addition, the CS-D5 package offers a compliment of other gear to provide users with a complete front end to any touring rig or installed PA. The main component of the CS-D5 system is the D5 worksurface frame with up to 128 channels in its standard configuration and 32 insertable processing channels.

The peripherals available as part of the CS-D5 system will surely turn heads; it comes with an effects package of reverbs, graphic EQs and multi-effects processing, along with a 328-foot digital snake, DiGiCo's stage DiGiRack with 56-inputs and eight outputs and a local mini-DiGiRack with eight analog and eight digital I/O. Finally, the system is plug-in and recording

ready; it works swimmingly with third-party recording products such as the new ADK LYVETracker DAW (reviewed in this issue). The complete CS-D5 system is available for a mere \$99,059 list.

According to DiGiCo Marketing Director David Webster, May 2007 marks the official rollout of the CS-D5 package, but the desk itself isn't that different than its proven (and pricier) older sibling, the D5. "In simple terms, the CS-D5 is a D5, but it has one less DSP card, which you can have as an upgrade at a later date if you wanted more channels," he notes. "It is also without the optics. Those are the major things that make the

big price difference."

A number of first-run systems have already been tested and proven on major tours as well as in demanding theater and house-of-worship environments. "There's already been one used for monitors for the last Aerosmith tour with a standard D5 at front-of-house," offers Webster.

Webster is quick to note that, alongside major US tours and venues, the D5 has found notable acceptance within the US houses-of-worship community. The special package and more affordable price point of the CS-D5 could nurture continued growth for DiGiCo in these burgeoning areas. "We have over 20 churches



in the US with DiGiCo [desks] with several different versions," says Webster. "And a few of them now have the CS-D5." — *Strother Bullins*

For more information on the CS-D5, visit DiGiCo's official website www.digico.com.

UPSAMPLER

Capsule Reviews and Product Review Updates

Heil Microphones

Price: \$10 by mail

Info: 618-257-3000 | www.heilsound.com

Audio legend Bob Heil — the guy who invented the talk box and went on to design the quad sound system for the Who's *Quadrophenia* tour — has written an appropriately titled booklet called "It All Starts with the Microphone". As the title suggests, it does all start with the microphone (if you don't count the music and the musicians), but unfortunately even when the best microphones are misused they sound bad. That's where this book enters the picture.

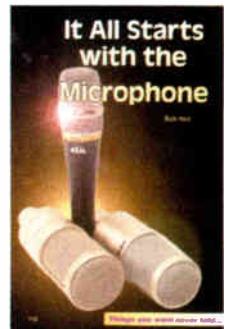
After a brief description of the various types of microphones

(dynamics, condensers and ribbons), the 17-page booklet goes on to explain several principles that are frequently overlooked and/or misunderstood by young engineers. These include proximity effect, Fletcher-Munson Curve and phase cancellation. The book also goes into detail explaining the do's and don'ts of using multiple microphones, various drum mixing techniques and other practices. Both live and studio engineers should find the book applicable to their work.

As is expected from a book that is published by a manufacturer, a large percentage of the information is directed towards the use of Heil Sound microphones. This might bother me if Heil Sound was just another company, but they're not. I use the PR 20, PR 30 and PR 40 nearly every day and they never cease to impress me.

Young engineers may find this book to be one of the more significant reads of their career, and experienced mixers will certainly find some useful parcels of information. If nothing else, it's worth getting a copy just to check out the interesting side-bar showing photographs of how the PR 40 was used to capture the cannons and rifles in Clint Eastwood's *Flags of Our Fathers* and *Letters from Iwo Jima*. A downloadable version may even be in the works, so when interested call Heil to find out how you can step up to the mic.

— *Russ Long*





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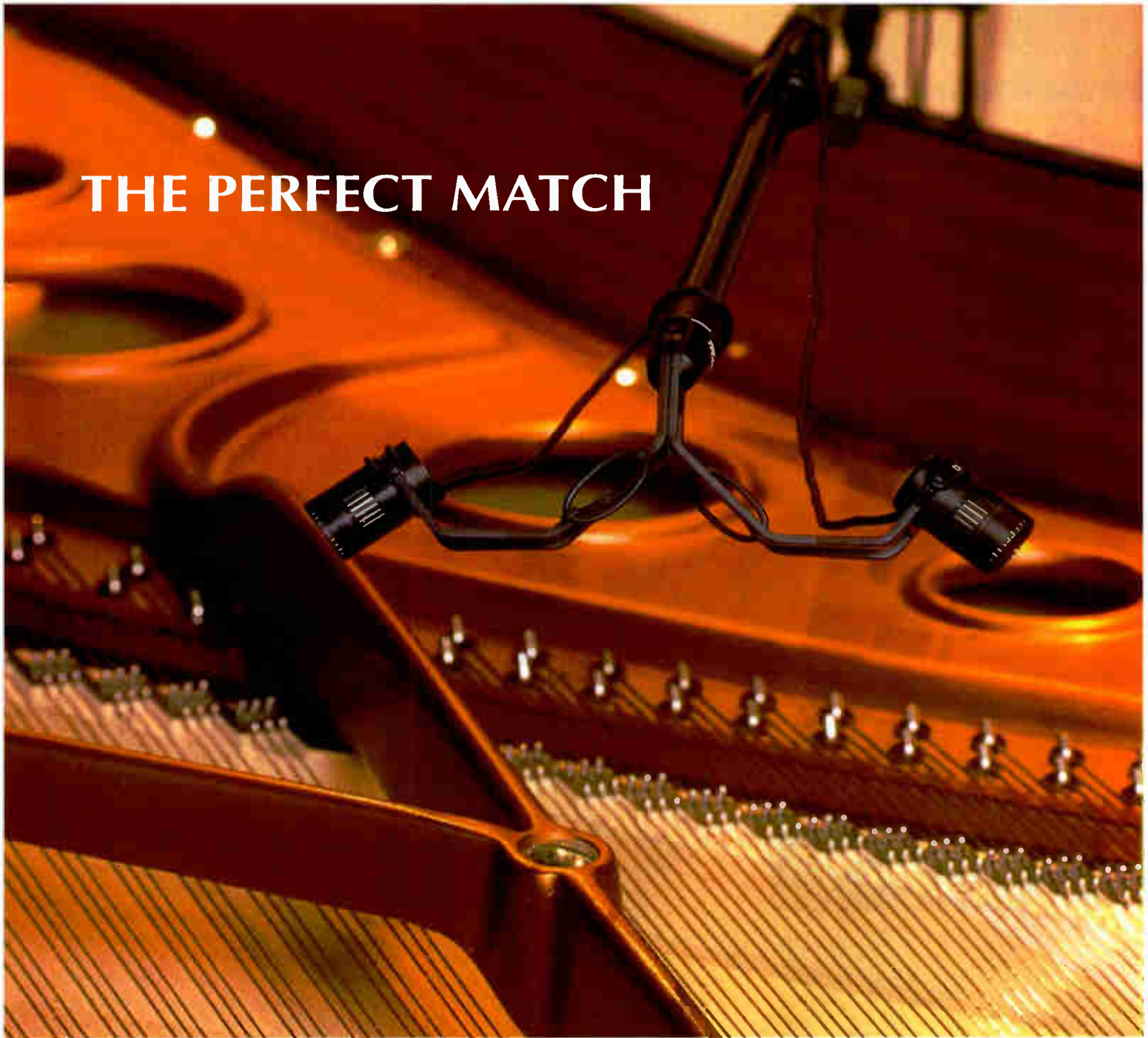
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DPA 
MICROPHONES

by Bruce Bartlett

Frontier Design AlphaTrack Control Surface

A new DAW controller takes on the pro audio world — with one fader.

Mixing with a mouse isn't for everybody. After a while, we long for the smooth glide of a real fader, or the tactile feedback of real knobs, buttons and control surfaces to do the job. But many folks work on one track at a time, so a multi-fader control surface might be overkill. Frontier Design came up with a smaller, lower-cost solution that makes a lot of sense: the AlphaTrack.

The company is well known for its TranzPort wireless control surface that lets you record tracks from anywhere in the studio. Their new \$249 AlphaTrack is a paperback-size DAW control surface with knobs, buttons and a single high-resolution fader



bargraph.

You can use only one AlphaTrack with your computer; it can be placed anywhere that is convenient, such as to the left or right of your keyboard. Its size is 8.5 x 6 x 3 inches (22 x 15 x 7.5 cm).

A unique feature is the touch-sensitive jog and shuttle strip. When you slide two fingers across its surface your project's timeline scrolls quickly. Lift one finger and slide for precise positioning. You can jump to markers by tapping on the left or right ends of the strip.

At the time of this writing, the only similar product is the PreSonus Faderport (\$229), which lacks the shuttle-strip and display that the AlphaTrack includes.

Connection and powering is by USB 2.0 or 1.1, so the AlphaTrack is easy to use with laptops (and you can shut off the fader motor to save laptop power). A 6-foot USB cable is included but the device will work with a 16-foot cable. I was happy to see a footswitch jack for punch-in recording. I often record myself playing bass guitar into my DAW and appreciate having my hands free to play while punching in.

Compatible with Windows XP and Mac OS X (10.3.9+, including Intel Macs), AlphaTrack works with DAW software such as Pro Tools, SONAR, Reason, Cubase SX/SL, Digital Performer and Nuendo. I tested it only with SONAR Producer 6.2.1. Support for more applications will be added regularly. Note that some plug-

ins might have parameters that do not respond to the AlphaTrack encoders; that's a limitation of the plug-in creator or host program rather than AlphaTrack. Also, if you unplug and replug the AlphaTrack your DAW will no longer find it unless you have Windows Service Pack 2. (This bug is part of Windows, not AlphaTrack.) Or in SONAR you can go into Options > Control Surfaces and re-select AlphaTrack.

| IN USE

The clearly written instructions guided me through installation and operation. I installed the AlphaTrack drivers and Frontier Design's SONAR plug-in. The system was up and running in 12 minutes without a glitch. SONAR recognized the device and everything worked smoothly.

The AlphaTrack and its LCD display correlated closely with SONAR's display on my computer monitor. For example, the read-

intended to speed the editing and mixing process.

| FEATURES

AlphaTrack features a 100 mm touch-sensitive motorized fader with 10-bit resolution; it feels smooth and precise. Three touch-sensitive continuous-turn encoders let the user adjust track and plug-in settings such as panning, aux send, EQ and looping. A group of 22 buttons and 21 LEDs include transport controls, record-enable, solo, mute, automation indication, function keys and encoder mode. Some DAW software lets you set up user-programmable functions on the AlphaTrack.

A 32-character backlit display above the encoder knobs shows the parameter name and value. When you put your finger on a knob, the display instantly shows detailed name and value information, such as a large

FAST FACTS

APPLICATIONS

Studio, project studio, audio-for-video edit suites

KEY FEATURES

One 100 mm touch-sensitive motorized fader with 10-bit resolution; three touch-sensitive continuous-turn encoders; a group of 22 buttons and 21 LEDs including transport controls, record-enable, solo, mute, automation indication, and more; a 32-character backlit display

PRICE

\$249

CONTACT

Frontier Design Group |
☎ 800-928-3236
🌐 www.frontierdesign.com

outs on the display matched the numbers on screen. When I clicked on a track with a mouse, AlphaTrack snapped to the track's settings and fader position. When I adjusted AlphaTrack's fader or panning, SONAR's on-screen controls followed right along. AlphaTrack recognized and controlled all the

PRODUCTPOINTS

- Easy to set up and use; no problems with SONAR
- Excellent correlation between software and controller
- Jog/shuttle strip and LCD display, touch-sensitive encoders
- Easy automation and programming
- Great value

- With some plug-ins, a mouse might be simpler to use than a controller (not a fault of AlphaTrack)

SCORE

If you don't need a full control surface, AlphaTrack gives you tactile control without the big price tag and the big footprint

plug-ins packaged with SONAR Producer. It also controlled some, but not all, downloaded plugs.

I thought that the device felt reasonably solid, and I enjoyed using its long-throw fader. The large, bright LCD display was easy to read. Using one or two fingers on the touch strip, I could navigate through a project quickly — especially by tapping on the ends of the strip to go to various markers.

Tapping the Loop button was faster than finding the Loop icon in SONAR and clicking it; the same goes for the pan, EQ and send buttons. While using the AlphaTrack during an actual session, I developed a two-handed workflow where I clicked a track with the mouse and adjusted its level and panning with the AlphaTrack.

For one test, I enabled an equalizer. Frequency adjustment was coarse when I turned an encoder knob, fine when I pushed and turned the same knob, and very fine when I pushed the Flip button, which lets the fader adjust parameters.

Fader automation is well implemented. To record fader changes, for example, tap Send, touch the fader and press the Auto button, press Play and adjust the fader. SONAR draws a volume envelope on the track that shows the fader's position. Go back and hit Play. AlphaTrack's fader follows the envelope. If you need to update a fader move,

start before the change, hit Play and re-write the new move. Aux sends, panning, EQ and so on can be automated, as well.

In SONAR's Tools menu is the AlphaTrack tools panel. From here you can set preferences for AlphaTrack operation and store setups for later recall. To program a function key, just select one on-screen and choose its function from a drop-down menu.

AlphaTrack has an option to use SONAR's ACT feature. With Active Controller Technology, SONAR can "learn" to map or associate controller operations with plug-in parameters. Basically you click on the ACT Learn button in SONAR, click on a parameter, rotate an encoder and click Act Learn again then the encoder controls that parameter. Very cool.

Not everything was rosy. For me, at least, adjusting plug-in parameters was easier with a mouse than with AlphaTrack's encoder knobs. I found that using a mouse to adjust frequency, Q and gain was more intuitive than using the encoders. AlphaTrack's implementation of encoders is excellent, but tweaking encoders can be cumbersome compared to point-and-click. Other users might have a different experience.

When I opened SONAR's Vintage Channel compressor-gate-EQ, AlphaTrack recognized all of its parameters and displayed each one as an abbreviation on its LCD screen. Learning these abbreviations took some time. It was easier for me just to point the mouse to the particular function I wanted to tweak.

Still, the AlphaTrack enhanced my workflow in all other operations. With enough practice any user could zip through a project.

| SUMMARY

If you don't need a full control surface, AlphaTrack gives you tactile control without the big price tag and the big footprint. It works very smoothly with SONAR. Great job, Frontier Design.

Some users might prefer to use a mouse when adjusting plug-in parameters. But, generally, AlphaTrack makes editing and mixing faster and easier than with a mouse — and it reduces repetitive stress syndrome.

Bruce Bartlett, a regular Pro Audio Review contributor, is a technical writer, a recording engineer and an audio journalist.

ALPHA TRACK continues on page 56 ►

by Russ Long

Peterson StroboSoft Tuner

Pro Tuner manufacturer offers Mac/PC software version.

Last year, Peterson — the world's oldest and most respected tuner manufacturer — entered the software market with the release of the StroboSoft software tuner. They are now the first ever tuner manufacturer to offer both hardware and software tuners. StroboSoft is a software-based strobe tuner that provides 0.1 cent tuning resolution without the addition of any special hardware. The application is available in three versions: the Standard Version (\$49.99), the Deluxe Version (\$79.99), and the StroboSoft Suite (\$109.99) - a boxed Deluxe version along with a Tuning and

Intonation DVD, a full users manual and a sound card adapter jack that converts a mic/instrument cable to the standard 3.5 mm computer input.

FEATURES

StroboSoft has a pitch accuracy of 0.001 semitone (0.1 cent) and a note range of Eb0 (MIDI note 15) to Eb8 (MIDI note 111). Its frequency range is 20 Hz – 5 kHz with an accuracy of 0.005 Hz (frequencies and notes can still be measured below 20 Hz and above 5 kHz, but not with the same level of accuracy). It has an auto-sample rate but includes selectable rates of 22.05, 44.1, 48, 88.2 and 96 kHz.

If running on a Windows based computer, StroboSoft requires a 1 GHz Pentium or equivalent processor running Windows 2000/XP/Vista with at least 256 MB of RAM (512 MB recommended). If running on a Mac, the processor must be at least a G4 running Mac OS 10.3 or higher with at least 256 MB of RAM (512 MB recommended). Both Windows and Mac systems require that the computer is equipped with a sound card with mic/line input, a video card with True Color 24-Bit capability, and 30 MB of hard drive space. No special sound card is needed to attain optimal tuning results.

StroboSoft has 27 built-in tuning instrument presets that include standard tunings or the ability to choose from over 50 alternate tunings for various instruments (the alternate tunings are only available with the Deluxe Version). The application also

allows easy chromatic tuning of brass and woodwind instruments. Alternate tunings not included as presets can be stored and recalled.

The nearly 40 exclusive Sweetened tuning presets can be applied to the standard tunings to allow more precision when playing certain chords. These presets address inherent instrument problems without decreasing the ability to play in a lot of keys. These presets make the strings more consonant and eliminate the need to retune or tweak the tuning afterwards. The Deluxe Version also offers full support for Buzz Feiten-equipped instruments by providing presets for open

FAST FACTS

APPLICATIONS

Studio, project studio, broadcast, postproduction, sound reinforcement

KEY FEATURES

Supports 11.025, 12, 22.05, 44.1, 48, 88.2, and 96 kHz sample rates (11.025, 12 auto-select only); 27 built-in tuning instrument presets including standard tunings; 59 alternate tunings for various instruments (Deluxe Version); easy chromatic tuning of brass and woodwind; two interface options — a Standard Chromatic Strobe Tuner and an Exclusive Instrument Tuner featuring Sweetened tunings for fretted and unfretted instruments; oscilloscope; spectrum analyzer

PRICE

Download \$79.99 Deluxe, \$49.99 Standard; Boxed \$109.99 Suite

CONTACT

Peterson | ☎ 708-388-3311
 ☞ www.StroboSoft.com



string and intonation setting built-in. The application contains 12 built-in temperaments (including

Equal Tempered) and the Deluxe version allows an unlimited number of user temperaments to be created and saved.

StroboSoft Deluxe provides two different interface options: a Standard Chromatic Strobe Tuner and an Exclusive Instrument Tuner featuring nearly 30 custom sweetened tunings for fretted and unfretted instruments including instruments featuring the Buzz Feiten Tuning System.

The the application also includes valuable, even though not exceptionally powerful, features including an oscilloscope (which can be helpful in analyzing noise) and a spectrum analyzer (which provides harmonic detections and visual recognition of fundamental frequencies).

| IN USE

StroboSoft installed and authorized in a snap. In no time I was ready to tune like a pro. The Chromatic Tune mode is most like the traditional Peterson strobe tuner and it can be set to automatically select a note or the notes can be selected manually. The tuner's transposition can be set to different keys and the base reference from 440 Hz can be tweaked.

PRODUCTPOINTS



- Low Price
- Extremely accurate
- Easy to use



- Main window size can't be changed (Peterson assures StroboSoft's new version will have a "mini" mode to make the display smaller - Ed.)
- Not available as a plug-in (Peterson projects VST will be available to all in July, with a free upgrade extended to Suite users - Ed.)

SCORE

This software tuner is an indispensable tool well worth its price

I work with a lot of independent bands and, for some reason, being independent seems to have a strong correlation with not realizing the importance of playing in tune or even owning a tuner. Having StroboSoft constantly running has frequently been a godsend. I send a mult of the signal that I'm recording to my laptop running StroboSoft, and I'm able to always be aware of the tuning of the instrument that I'm recording.

I found it extremely helpful that the Left and Right selectors allow you to individually access the left and right channels of a stereo input. When tracking multiple instruments, there can be two instruments simultaneously connected, one on the left channel and one on the right, making it easy to switch between these instruments without physically reconnecting them.

Unfortunately, StroboSoft and Pro Tools|HD cannot be used simultaneously

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(this will soon change as the next version of StroboSoft can be used as a VST plug-in and users with FXpansion Wrappers can adapt the VST for RTAS use.). This is not a

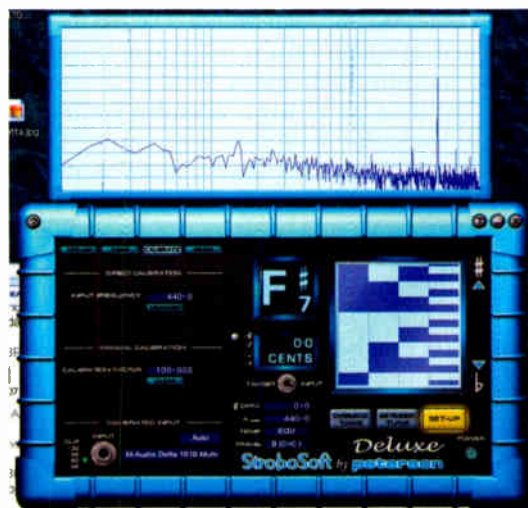
so it doesn't interfere with Pro Tools' operation. This allows the tuner to be active and visually accessible at all times. I wish the application provided the ability to change the size of the tuning window to either a smaller footprint or full-screen (so the tuner can be easily seen from across the room).

At first, I considered StroboSoft's Spectrum Analyzer to be a bit gimmicky; after a bit of use, however, I found that it allows me to immediately get a feel for what type of input signal StroboSoft is looking at. If I see that there are spikes or a large amount of background noise then I know it will be helpful to activate the Noise Filter.

| SUMMARY

After using the Peterson StroboSoft Tuner for several weeks I've found it to be an indispensable tool well worth its price. The application's accuracy is unmatched and it is quick and easy to use.

Russ Long, a Nashville-based producer/engineer, owns The Carport recording studio. He is a regular contributor to Pro Audio Review.



StroboSoft Calibrate Screen

problem with other DAWs or Pro Tools|LE systems. In order to keep StroboSoft running at all times, I installed it on my laptop

by Dr. Frederick J. Bashour

M-Audio ProFire Lightbridge

This 34-in/36-out interface offers inexpensive lightpipe entry into the Pro Tools world.

The M-Audio ProFire Lightbridge — a 34-in/36-out FireWire lightpipe interface — is quite literally a bridge between all our MOTU, RME, Apogee, etc. interfaces and Pro Tools M-Powered software, therefore it provides a quick and easy multiple multi-track entry into the Pro Tools world. Indeed, it allows you to hook up an elaborate multi-track setup and record directly into Pro Tools M-Powered 7.3 (and simultaneously into Digital Performer and Ableton Live 6.01) using various interfaces ... while using no other M-Audio hardware whatsoever except this tiny (and inexpensive at \$499) unit. [All devices used in Fred's test setup are either stand-alone converters or operate in standalone mode. As such, they are not operating as audio interfaces. We only bring this up so readers are aware that not just any audio interface hooked up to their com-

puter can then be brought into Pro Tools M-Powered via Lightbridge. Visit M-Audio's website for more information. — Ed.]

FEATURES

And tiny, it is. Although nominally "half-rack" in size, the Lightbridge is even smaller than M-Audio's FireWire 410 interface and measures only about 8 x 6 x 2 inches. The front panel has a headphone jack with associated level pot, a general level pot (with stereo DAC circuit) and 17 status LEDs showing sample rate, sync source, MIDI status, and lightpipe activity for input and output on the four ADAT I/O ports. Over on the right is a power pushbutton and associated blue LED. The rear panel is simple: four pairs of ADAT-ODI format ("lightpipe") I/O connectors, a set of 1/4-inch TRS-balanced analog monitor outputs, a 6-pin FireWire jack, a 12VDC power connector (which mates with a cable from a hefty 1 amp line lump power supply) and then the DB15 connector which mates with an identical breakout cable from M-Audio's 1010LT interface, supplying clearly labeled S/PDIF, MIDI and word clock I/O connectors.

The ProFire Lightbridge specifically

allows the user to connect up to eight eight-channel lightpipe plastic fiber optic cables — each of which can contain eight channels at 44.1 or 48 kHz (or four channels at 88.2 or 96 kHz), plus a stereo coaxial S/PDIF I/O pair. All can be routed to and from any DAW application. Assuming they already own various ADCs and DACs, the user can "mix and match" to assemble an input (and output) system that integrates seamlessly with their DAW software. If the user only needs output for stereo monitoring, an external DAC should not be necessary: the



ProFire Lightbridge has a built-in stereo DAC.

Then there's the Pro Tools connection. Historically, one had to previously invest in high-priced Digidesign hardware to gain entry into this world. Avid acquired Digidesign about 13 years ago and soon introduced a lower priced, entry-level "LE" version of Pro Tools with its own dedicated hardware set. A few years ago, M-Audio joined the Avid stable and various lower priced M-Audio interfaces began to appear; one of these interfaces is required to work with the "parallel universe" version of Pro Tools LE known as Pro Tools M-Powered. But even the most sophisticated of these interfaces (such as the FireWire 1814 or the ProjectMix I/O) contained only a single ADAT I/O set and supported only eight channels of ADAT I/O; at the highest possible sample rate, four channels of optical I/O were supported. Further, Pro Tools M-Powered recognizes only one interface at a time.

Now, a real sea change has occurred. The ProFire Lightbridge, makes it possible to connect several ADCs and DACs from any

FAST FACTS

APPLICATIONS

Studio, project studio

KEY FEATURES

32-channel ADAT I/O plus stereo S/PDIF to/from computer via FireWire; also handles high sample rates via S/MUX

PRICE

\$499

CONTACT

M-Audio | ☎ 866-657-6334
 ☞ www.m-audio.com

manufacturer to M-Powered Pro Tools.

| IN USE

For this test, I locked all converters to a Rosendahl Nanosyncs reference clock. For converters — tracks 1-8 — I used my standard mixer, the Crane Song Spider, set to lock to the 88.2 kHz clock from the Nanosyncs, and connected various mic sources to its first four channels. From its first set of ADAT outputs at 88.2 kHz (channels 1-4), I sent a high-quality plastic fiber

PRODUCTPOINTS

- Allows 18 track digital entry into the world of Pro Tools from any digital interface(s) via ADAT I/O
- Permits 32 channel real-time interfacing between digital mixers and DAWs to save CPU load and/or mixer channels with any DAW software from any manufacturer
- It requires Pro Tools M-Powered 7.3 for Pro Tools use with its maximum 18 input limit at any sample rate

SCORE

This digital interface is an excellent bridging element for audio workstation users.

optic cable to the ProFire Lightbridge ADAT input #1, and immediately saw “activity” on its first green LED — a good sign! Getting to the second ADAT input was a little more difficult. I already had a pair of vintage vacuum tube AKG C60 mics over a Mason & Hamlin piano. These mics go into a pair of Manley MicEQ500 mic preamps, which feed the first two channels in a Genex GXA8 ADC unit. But, as that box doesn’t do S/MUX, I had to first send its AES/EBU output into a RME ADI-192 converter, which turned it into that. I then sent the RME’s S/MUX output to the ProFire Lightbridge and its second LED started flashing. Yes!

Working in a testing mode I didn’t attempt to fill up all the inputs in my preamps and converters. What I did assemble I routed through the ProFire Lightbridge to a little “Mac-tel” Mini! And, believe it or not — maxed out with RAM and with its CPU resources tweaked — the Mini was able to run all 18 channels in Pro Tools, Digital Performer and Live simultaneously (at 88.2 kHz) to do this test! Anyway, for the third ADAT input into the Lightbridge, I connected a Apogee Trak2, which can send its own stereo feed via S/MUX. A C24 fit the bill

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perfectly as input source and, again, rang the bell on the M-Audio interface.

For the final ADAT input, I went to my MOTU 896HD which — being from the previous generation of MOTU’s development cycle — sends only channels 1-4 via S/MUX on its sole lightpipe output. But when I connected a pair of Gefell M930s to channels 1 and 2 and a fiber optic cable to the appropriate port on the Lightbridge, the fourth green M-Audio signal presence LED started flashing.

I first set up the Pro Tools M-Powered session (note that the Lightbridge requires version 7.3). Once I had configured the I/O matrix properly, made the requisite number of new mono and stereo tracks and clicked them into record, everything worked and I heard every single mic I had set up coming through the monitors ... and it all sounded great. So yes — the Profire Lightbridge works as advertised and, what’s more, it worked the first time I tried it. I was able to monitor 16 track outputs via a Genex GXD8 DAC (fed from ADAT output #1) and the 8-channel ADAT card in an Apogee Trak 2 (fed from ADAT output #2) as well as a stereo software mix via the ProFire

Lightbridge’s own coaxial S/PDIF output.

I also ran Digital Performer and Live 6.01, and every time I upped the inputs in the M-Audio control panel, each of those applications updated its input list and I was able to record everything I recorded in Pro Tools into the other programs, as well.

Thus, the bottom line is that this tiny M-Audio box enabled me, for the first time in my life, to connect every interface I had in the studio to every DAW software application I use. Everything worked perfectly the first time!

| SUMMARY

I think this is one of most important digital audio products of 2007. Now the relatively closed world of Pro Tools M-Powered has opened up to allow the use of multiple non-M-Audio multi-track digital interfaces.

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 been a regular contributor to Pro Audio Review since its second issue.

by Alan Silverman

TAB-Funkenwerk V78M Vacuum Tube Mic Preamp

A faithfully recreated Telefunken V72S meticulously built by Oliver Archut's boutique audio firm.

Thanks to Oliver Archut, much of the knowledge required to faithfully recreate some of the finest designs of German vintage vacuum tube audio has been preserved for posterity.

At his first job at AEG Telefunken as a young man of 21, Oliver was assigned to work with the scientists responsible for such classics as the M49 microphone and the preamp designed for it, the V72. These were the kind of men instrumental in the WWII design of U-boat SONAR and the guidance systems for the V-2 rocket. At the war's end, the Allies barred German industry from all military development so many scientists and engineers moved to more peace-

ful pursuits, such as studio and broadcast audio.

As Oliver was just entering the field



some 30 years later, these men were approaching retirement and were sent to run training centers as there was no place for them elsewhere in the company. This was a time when giants such as AEG Telefunken and Siemens were literally throwing out the past, filling dumpsters with thousands of pages of engineering details, metallurgical formulae, schematics and even complete working machinery for the manufacture of transformers, inductors and tubes, as German industry transitioned to miniaturization and solid state. Oliver began an avid vocation of rescuing and collecting whatever he could of the then-obsolete, but now-precious, technology: the essential knowledge that the great German audio alchemists had created for turning materials such as copper, glass and nickel alloy into the sound of gold. Had he not done so, much of it would have been lost forever.

Today, Oliver's company — TAB-Funkenwerk — is engaged in the manufac-

ture of transformers, inductors, exact replacement parts and complete designs faithful to the vintage originals. The V78M (\$1,195) was conceived to be true to the historic V72S, the mic preamp that was a key component of the early Beatles sound that swept the world. The V78M is an authentic piece of superb vacuum tube audio engineering and available at a price well within the reach of the small or mid-level studio.

FEATURES

The V78M is a single-channel, 1U racked preamp designed for budget studios interested in a mic preamp of the highest quality. It is sonically identical to the V72S, the studio version of the famous V72, which in its day was the standard preamp for German broadcast. The V72 rolls off at 15 kHz and 40 Hz to meet the requirements of FM broadcast, while the

“S,” or studio version, is full range at 20 Hz - 20 kHz. The V78M's faithfulness to the original V72S requires a lot more than just lip service. The alloys needed for the transformer cores and plate inductors are no longer made, so TAB-Funkenwerk set up its own metallurgy shop where precise proportions of nickel, iron and cobalt are combined according to the original formulae. Original dyes are used to stamp the cores and a hydrogen atmosphere is utilized for proper annealing. The transformers are hand-wound and are identical to those in the historic V72S. The company has amassed a large collection of NOS Berlin and Ulm-made Telefunken tubes. These come standard in the preamp and are shock mounted. (Oliver maintains that modern Eastern European and Chinese-made tubes just don't cut it.)

The preamp contains over 2.5 pounds of nickel alloy and mu-metal shielding at a raw materials cost in the hundreds of dol-

TAB-FUNKENWERK continues on page 44 ►

FAST FACTS

APPLICATIONS

Studio, broadcast, live sound, location

KEY FEATURES

Single-channel; impedance matching, gain, phantom power, phase and low-cut filter switches; NOS Telefunken tubes; nickel alloy transformers.

PRICE

\$1,195

CONTACT

TAB-Funkenwerk | ☎ 785-697-2257
 ☞ www.tab-funkenwerk.com

DON'T TAKE OUR WORD FOR IT...

Here is what the PRO'S are saying about the latest microphone from **MXL**:

The **MXL V69M Mogami Edition** large diaphragm, Tube microphone, has a classic sound that will enhance vocal and instrument performances in any recording environment. The extremely low noise FET output circuitry, wide dynamic range and warm, airy, tube sound makes the V69M a perfect complement to all analog and digital recording devices. The **MXL V69M** comes housed in a deluxe flight case with a pop filter, shock mount, and dedicated power supply. The V69M is internally wired with Mogami cable and is supplied with Mogami Tube and low-noise studio microphone cables. All at a price that's unbelievable! Audition one today at your local music or pro-audio retailer. You will not believe your ears.

"It was detailed throughout the frequency spectrum, and from a near-whisper to a wail, the V69 caught every nuance. The Marshall **MXL V69 Mogami** edition is an excellent microphone, and when you factor in the low, low price, the price performance becomes downright amazing."

Scott Burgess Pro Audio Review

"So, we tested the V69 against - count 'em - 11 other popular condensers, ranging in price from \$169 to \$5,000 list... both the engineer/producer and the singer picked the V69 over the other 11 mics. None of them had the same combination of classic tube warmth and top-end air of the V69."

Fett, Songwriter Magazine

"If you're looking for a mic that performs like it costs a bunch more, give the V69 a very close look. You'll be thrilled at how little money you have to shell out, and you'll be even happier at how well it does it's job."

Mitch Gallagher, Editor Eq Magazine

"Soundwise, I was very impressed that the V69 could hold its own against an industry standard like the U47. It struck me as very versatile and of higher quality than other budget tube condensers."

Pete Weiss Tape Op Magazine



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lars! Resources have obviously been put where they contribute to the quality of sound. The cost cutting essential to meeting the low price point has been accomplished in benign ways such as through the use of a printed circuit board instead of point-to-point wiring and a no-frills silk-screening of the front panel.

Additional features have been added to enhance the preamp's usefulness and versatility. German broadcast was all about standardization and modularity. The pre-

PRODUCTPOINTS

- Sound quality
- Authentic classic German vacuum tube design mic preamp
- Versatile source matching
- Original Telefunken tubes and transformers

- Cosmetics take a back seat to functionality

SCORE

One of the greatest mic preamps in history faithfully recreated

amps then were all of fixed gain and fixed input impedance so they could be used anywhere in the network. This is not really a benefit in modern studio work where a wide variety of mics and gain structures are encountered.

The V78M includes an input sensitivity rotary switch that varies the load impedance seen by the microphone from 1 kohms to 20 kohms. The switch legend is given in nominal dB to avoid patent infringement with another company that managed to patent the notion of a microphone impedance selector. The precise dB changes will depend on the source impedance of the mic in use. The sensitivity selector allows for a wider range of mics to be matched to the preamp, from low-output ribbon designs to modern high-output transformerless types. A rotary makeup gain switch is also implemented for the purpose of level matching, or for the intentional effect of overdriving the preamp's final stage. The overall gain range is 22 dB - 60 dB, sufficient for all but the lowest output ribbon types. (TAB-Funkenwerk is plan-

ning a future model with a 40:1 input transfer, similar to that in the V77, with 18 dB of additional gain.) Phantom power is onboard with the added nicety of ramping up slowly to avoid damaging sensitive ribbon mics that might be inadvertently plugged in when phantom is turned on. TRS jacks are also available in addition to the usual XLR connections. Finally, there are switches for polarity reverse, 120 Hz high-pass filtering, and 100-ohm ground resistance to minimize hum.

| IN USE

My first trials were of acoustic guitar and voice. A Neumann M 49 tube mic was connected to a transformer splitter box feeding the V78M, an original V72 racked by TAB-Funkenwerk and an Amek Neve 9098. The signal outputs of the three preamps were captured with a Mytek 8X96 converter running at 96 kHz direct into Sequoia for precise final level matching and blind comparisons. The 9098 is a pretty good mid-level preamp — maybe not in the same league as a John Hardy or Millennia Media preamp, but quite decent — and it is roughly the same price as the TAB-Funkenwerk unit. Unfortunately, in this comparison, it was eliminated rather quickly. Its sound seemed artificial and inhibited in comparison with the V72 group. The V78M and the original V72, however, were very close in character. A little HF shelving EQ could make one sound like the other by compensating for the roll-off in the original V72 design. The V78M did, however, sound more energetic and unrestrained than my older V72. This is likely the result of the inevitable drift in the component tolerances of the vintage unit over time. The V78 had that instantly recognizable "live in the room" effect/characteristic of a great audio design.

The V78M was then sent to Max Illidge, a talented young producer/engineer and artist previously signed to London Sire and Warner. Max has one of the best sets of ears I've encountered lately; he was able to score 100 percent on a blind test to identify different software algorithms for upsampling from 88.2 kHz PCM to DSD — a test that a few of my tonemeister friends did not do as well on. Max was producing a number of rock bands at the time and seemed like an ideal candidate for testing TAB-Funkenwerk's claims of the V78's versatility. The initial report came in regard-

ing a classic set up: an SM57 on snare. Max said it was the first time he could really hear all the aspects of the drum — the snap, the ring, the shell and depth — and he did not need to EQ the snare in the mix. "All the frequencies and transients cut through the mix," he commented. "The highs and lows were all there." He described the sound on vocals with a U 47 as "creamy, rich, and not too sibilant with all the vocal tones and enunciations clear as a bell." Then finally, a few days later, he called with the defining comment, "I can't live without it."

Max begrudgingly did return the unit for my use on a series of vocal sessions with Judy Collins and Rufus Wainwright at Sear Sound in Manhattan. Engineers expect their gear to be capable of capturing both the power and nuance of a performance. In this regard, the V78 excelled. The signal chain for the overdubs consisted of a choice Neumann M 49 mic, a Pultec EQP-1A program equalizer, and a Tube Tech CL-1B compressor. This combination has never worked so well for me as it did with the V78M at the front end. The character and emotion of these great and unique voices came through as big as life and sounded absolutely stellar.

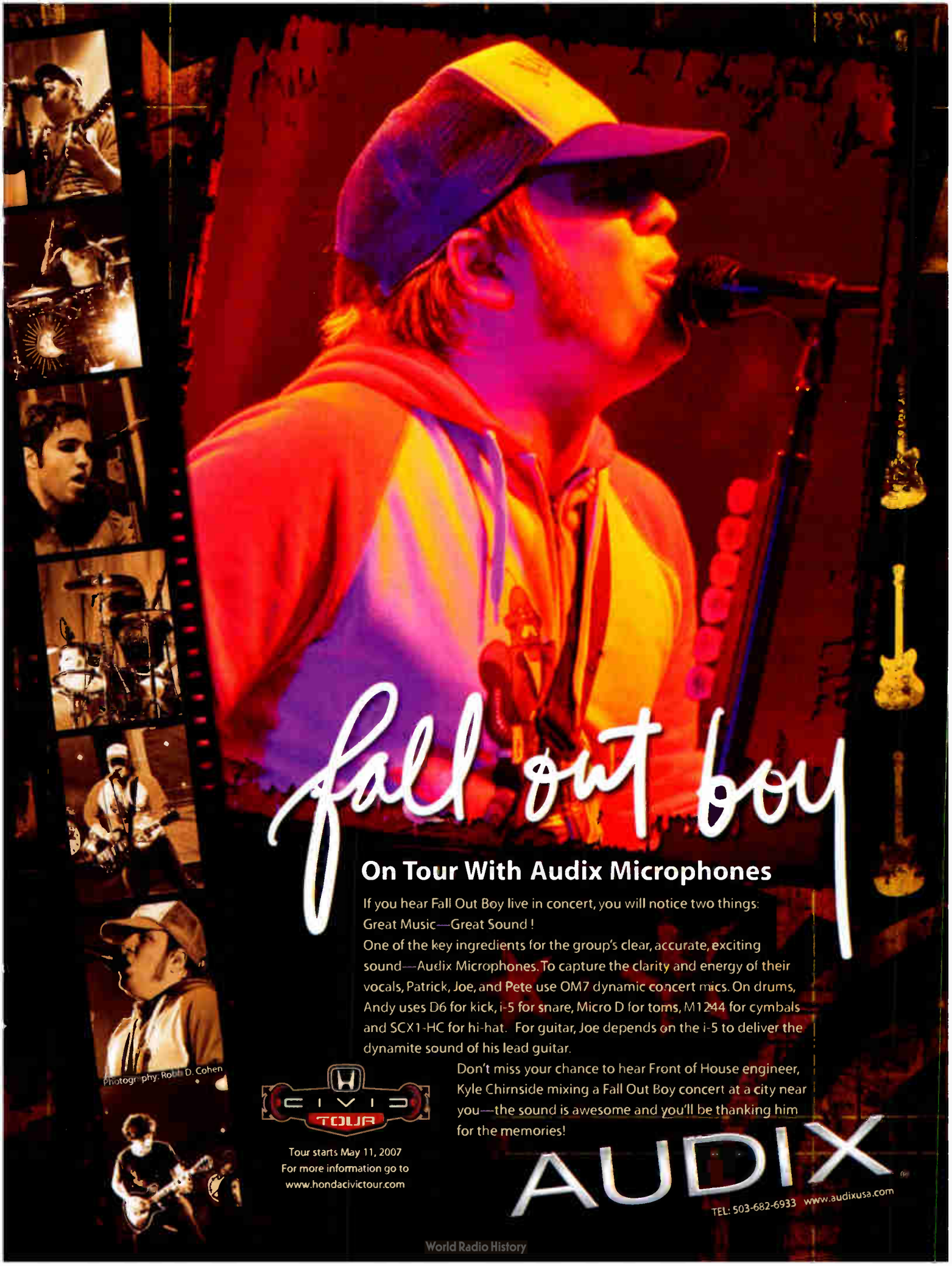
| SUMMARY

The V78M makes a compelling argument for properly implemented, faithful recreations of classic audio designs. An original V72S is exceedingly rare today since only 300 or so were ever produced, and the V78M is a product functionally identical to a V72S as new in the mid-1960s. Clearly, such an endeavor as building a recreation requires the utmost commitment to accuracy on the part of the manufacturer to be successful. You have to admire a tiny company that makes its own nickel alloys, hand-winds transformers, and makes available one of the best sounding preamps on the planet — not to mention an authentic piece of audio history — all at a price that nearly every working engineer can afford. The V78M is fantastic.

Alan Silverman, formerly an engineer at the late great A&R Recording, is founder of Arf! Digital, a 96/24 and 5.1 mastering facility in NYC; www.arfdigital.com.

| REVIEW SETUP

M49, U67 and SM57 mics; vintage V72 preamp, Neve 9098 preamp; Pultec EQP-1A equalizer; Tube Tech CL-1B compressor; Lipinski Sound L-707 monitors



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by Stephen Murphy

Sony Cinescore 1.0 Soundtrack Creation

Reasonably priced PC-only software for custom music bed creation.

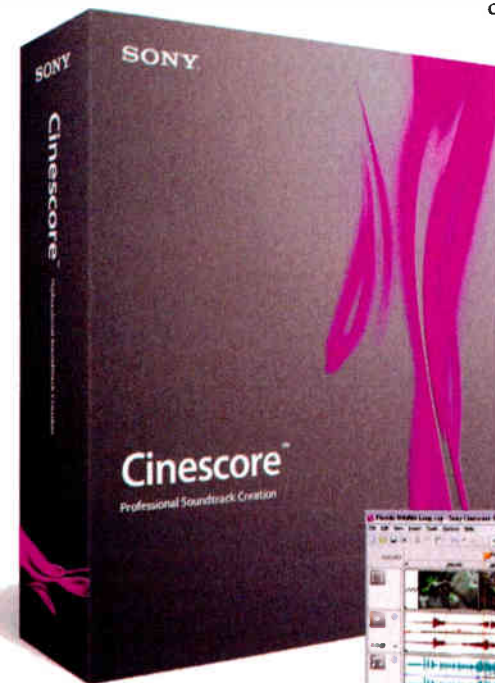
Sony Media Software's Cinescore is targeted primarily for non-musically inclined people (and even engineers and producers) who have the need to create custom

| FEATURES

Cinescore generates custom music cues through the choice of an overall Theme and its many associated Variations. The program comes with 20 Theme sets; each Theme comes with around 20 Variations. Cues can be further customized via a series of options and timeline "hints" that affect tempo and the development of dynamics, structure and arrangement over time.

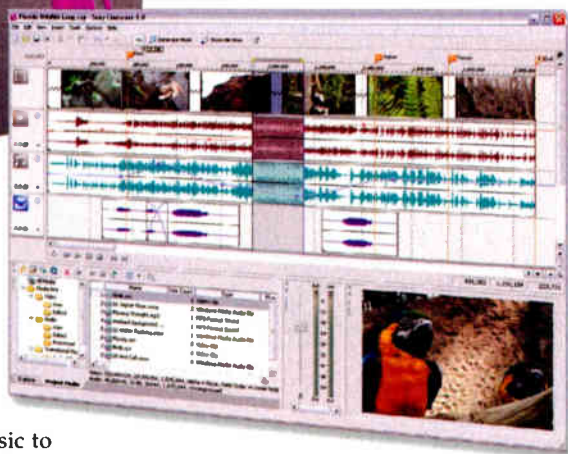
The stated system requirements for this PC-only application are relatively modest – Windows 2000 or XP, a 1.5 GHz processor and 512 MB of RAM (see website for complete listing) – but I imagine anyone who is working with audio and/or video professionally already has a system that runs rings around these requirements.

The main window of Cinescore most closely resembles Sony's Vegas video/audio editing software: a horizontal timeline-style



music beds with a minimum investment in time, effort and money.

Cinescore may be of particular interest to project and personal-production studio owners looking to offer an alternative for canned library music to their clients. Royalty-free cues of custom lengths, themes, moods and arrangements can be easily auditioned and produced for a variety of uses including corporate and industrial projects, advertisements, books on tape, PSAs and, of course, soundtracks. Sony's list price for Cinescore is a very reasonable \$200, though it can be found at several major retailers at the extremely reasonable price of \$150.



area for the display of the video and audio tracks across the top half of the window, and a multi-purpose window-docking area across the bottom half that can be used to display various windows including a file explorer, project media explorer, audio meters and video preview. Like other Sony Media applications, section divisions can be resized and windows can be shuffled, layered in tabs or undocked and

placed elsewhere on the desktop.

The program limits the number of tracks to one video track and an associated audio track for extracted synchronous audio, a dedicated audio track for the Cinescore-generated music, and an "Audio Transitions" track that can be used for hits, sweeps, swells, sound effects or anything else that strikes your fancy.

Cinescore can import a fairly wide variety of media formats including AVI, AIF, BMP, JPG, MP3, MPEG-1 & MPEG-2 video, PCA, PSD, QT, SWF, WAV, WMA and WMV, as well as still image sequences. Finished projects can be rendered out as AVI, AIF, AVC, AAC, MP3, MPEG-1 & MPEG-2 video, Real Audio & Video, WAV and Windows Media Audio & Video.

| IN USE

A user with any Sony Vegas experience can be up and generating music in a matter of minutes. The interface is straightforward enough that I can't imagine anyone with half a head for production, even without that Vegas familiarity, getting bogged down for long. Sony has struck a smart balance between entry-level friendliness and creative control of generated music.

Music cues are generated via a dedicated dialog window that, unfortunately, takes the user away from the timeline (and sync video playback). The generator dialog presents hierarchical levels of choices that ultimately cause a specified length of generated music to be rendered and placed on the Cinescore timeline.

FAST FACTS

APPLICATIONS

Studio, broadcast, audio post, project studio

KEY FEATURES

Custom music generation; 20 Themes provided, each with 20+ variations; external monitor preview; Cinescore plug-in for use within Sony Vegas; 16-bit, 44.1- or 48-kHz audio space, and up to 24 bit/192 kHz when used in Vegas; optional Theme Packs available

PRICE

\$200

CONTACT

Sony Media Software |
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The user first chooses an overall Theme; the 20 included Themes encompass a decent range — from classical to techno. Specialty Theme Packs (such as the lush and varied "Incredible

PRODUCTPOINTS

- Easy to use straightforward interface
- Reasonably priced
- Wide variety of formats imported
- Cinescore Plug-In for Vegas is included

- Music cues are generated via a dedicated dialog window that takes the user away from the timeline and sync video playback
- Some MIDI instrument recordings are flat and artificial-sounding
- No ReWire or time-stamped broadcast WAV file support

SCORE

Cinescore allows production of custom music beds with a minimum investment in time, effort and money

Vistas") can be purchased from Sony. The Themes and Variations that came with the program provide some very good musical material with which to work. Despite the fact that the program works by putting together audio samples and loops, most of these are recordings based on MIDI instruments, some of which sound quite flat and artificial. I was hoping that Sony (and its contracted composers) would have made better use of Sony's amazing and vast collection of actual-instrument samples and loops.

A decent analogy for the Cinescore hierarchical order is to consider a Theme as a double-disc concept album by a specific artist. In this analogy, Variations are the equivalent to the 20 or so related songs spanning the album. Each of these songs (Variations) has numerous parts (choruses, bridges, verses) and arrangement changes (breakdowns, dynamics, restate-ments). Cinescore asks the user to choose a Theme and Variation and then provides a number of choices to tailor the part order, volume and dynamics, and instrumental arrangement.

The program employs timeline Hints, the most powerful tool provided for affecting the development of the generated music. Hints can

be added anywhere along the mini-timeline in the generator dialog, and can affect change in mood, stylistic deviation, song structure randomness, adjacent section variance, tempo, dynamic intensity and more.

Cinescore has been unfairly criticized because Hint changes sometimes don't take place immediately, but instead happen at the next musically appropriate opportunity. If the program changed to a different section irrespective of meter and other musical factors, users would end up with jarring and unusable cues (much like what I get from video editors when they try to edit music, barking "Just fix it!"). Tools such as tempo changes, transitions, dynamic changes, sound effects and good old two-track editing can easily create proper changes.

The biggest workflow issue in the software is, as mentioned earlier, all the generation of music takes place in a dialog box apart from the timeline. This is really only a headache when working with video — playback from the generator dialog does not support video playback, so it's hard to know if the changes being made are appropriate to the picture. If not, you

SONY continues on page 63 ►

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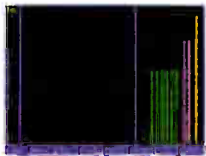


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20th Century Fox has installed the world's largest AMS Neve analog console (below) in the legendary Newman Scoring Stage. The custom-built 96-input 88RS console is now the centerpiece of the Los Angeles facility, offering amazing clarity in a 5.1 scoring matrix.



The console joins additional AMS Neve DFC film scoring consoles in what is one of the original four sound stages at 20th Century Fox Studio (built in 1928).

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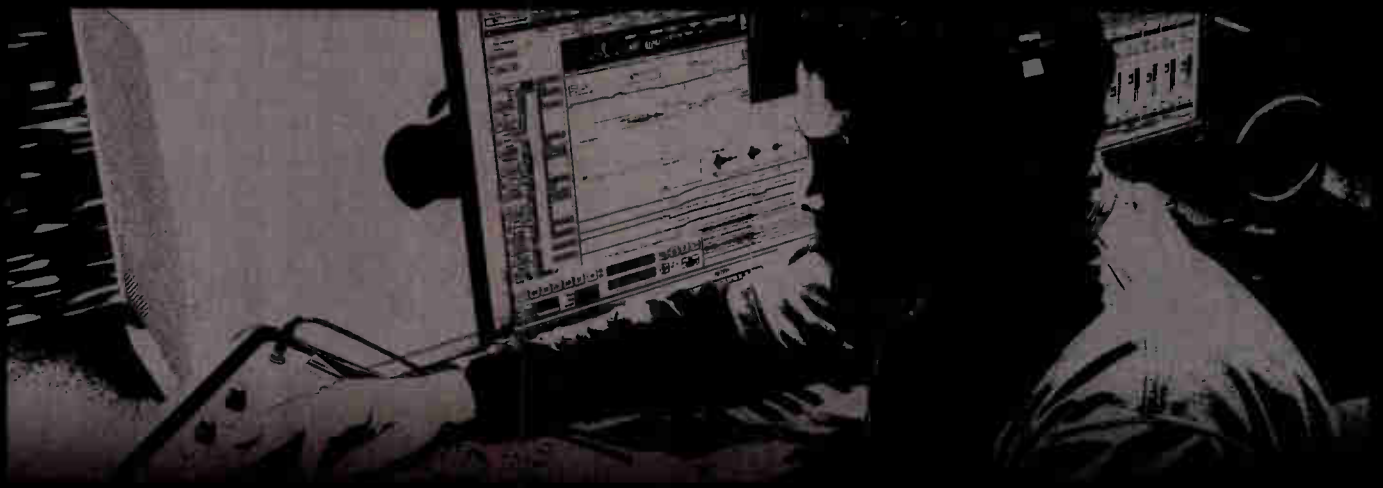
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SSL C300 Digital Post-Production and Film Console

by Mel Lambert

These days, innovating large-format production consoles is not for the faint-hearted. As workstations continue to dominate the pro audio landscape – and offer “within-the-box” functionality that often cannot be rivaled by component systems – the stand-alone mixing desk seems an anachronism. But there are a number of tasks for which a dedicated digital production console comes firmly into its own. In an environment where the device will be banged on maybe 15-20 hours a day, where bulletproof reliability and instant reset are the primary requirements, the new SSL C300 might be just what the doctor ordered. Despite the mind-numbing power of DAWs and their ubiquitous plug-in arsenal, I doubt if even their nimblest innovation could offer the sheer ease of operation, reliability and user-friendly surface topology that Solid State Logic's best minds have devised. And if DAW integration is needed, as it often is, the C300's integrated HUI control offers the best of both worlds.

MAIN FEATURES

The new SSL C300 Digital Production Console is a configurable, multi-operator digital system designed to handle a variety of production and post chores and includes TimeFreeze automation, serial control of external tape/disk transports plus a four-machine timecode synchronizer. It is aimed at film and post facilities that need scalable I/O, DAW control and no-compromise mixing capabilities. Stand-out features include support for a quartet of digital audio workstations via HUI control to accommodate multiple operators (music, dialog and effects plus a four-dubber-type device); a new Centuri DSP engine that can be reconfigured on the fly without a system re-boot (5.1-channel panning to 7.1 – no problem); TimeFreeze nonlinear automation that supports multiple operators

and will read/write at any playback speed; access to over 500 fully featured inputs from a single engine with routing to 80 busses; and up to three simultaneous operators from a single DSP core.

The C300's economically designed work surface provides excellent visual feedback with high-resolution TFTs that show routing and processing functionality. The total of 80 mix busses can be assigned to multiple hardware ports in arrays that accommodate 7.1-channel surround with a comprehensive monitor matrix and a 32x16 re-recording matrix. Fold in comprehensive monitoring capabilities to ensure seamless integration of DAW-based mixing and editing environments including an 128-by-8 monitor matrix, 64 PEC/Direct switches and a very useful eight-channel insert array and we begin to appreciate how thoroughly SSL's engineering department

designed the C300's topology.

Each DSP card (up to eight) provides assignable processing for filters, EQ, dual-process dynamics, insert points and channel delay, and can be set up in one of three channel/bus models: Short, with 32 channels feeding all 80 busses; Tall, with 48 channels feeding 56 busses; and Grande, with 64 channels feeding 40 busses. Built-in latency compensation automatically assigns all channel models regardless of their allocated DSP capabilities. In addition, SSL considers, rightly, that allowing the user to dynamically choose which of the 80 console-wide busses are fed by each DSP card, in both single- and multi-operator configurations, results in a smaller, cheaper console that can be used for a range of productions. AES- and MADI-format digital I/O and analog line/mic I/O options are available, as well.



ERGONOMIC CONTROL SURFACE LAYOUT

The control surface is divided into several easy-to-interrogate areas. Above each channel bay is a Channel Information Display, while the lower half displays panning profiles, routing selections plus assignments as well as an overview of signal processing operations. Located within the upper half of each channel bay are one or more Bay Master Channel panels that provide dedicated controls of routing and processing parameters for any channel or bus output currently selected to that panel. The channel bay's lower half comprises a bank of individual Fader Strips with conventional pan, channel On/Off/PFL, Solo/AFL controls plus an electronic writing strip. Two sets of pots and switches can be assigned to any channel-control parameter on the Bay Master Channel. As might be expected, each motorized fader offers automation switches and indicators plus two displays for channel-link and grouping displays. Input meters for each channel are featured within the lower half of the fader area.

user-selectable options, plus a TFT touch screen used for console configuration plus monitor assignments, bus and monitor metering – dedicated buttons select keyboard/mouse control and video monitoring for a targeted workstation. A Monitor Control panel and companion TFTs beneath the main screen select different user configurations to the fader strips; alternatively, it can be set to display DAW information. And within the center section's fader area is a well-featured Automation and Motion Control panel.

The best way, I discovered, of getting your head around the C300's undoubted flexibility (without being overwhelmed with how to wrestle the beast to the ground and get it to pass audio in a sensible way) is to consider the C300 as a large array of parallel, mono audio paths that may be allocated for use as channels, busses and main mix outputs. All of these independent or linked signal paths can be formatted in stereo, LCR, 5.1 or other programmable formats up to a maximum of eight destinations

(as in 7.1 channel). Formatted channels feature linked panning, routing and

ate multitrack busses — instead of the latter directly feeding monitor outputs — they are directed to 64x8 monitor matrix, which, in turn, feeds user-definable monitor outputs and loud-speaker channels. This configuration enables PEC/Direct switching. And pan assignments from signal paths to busses automatically follow the way in which these latter have been designated. So if a targeted signal path is feeding a 5.1-capable bus, for example, the C300 software implements the appropriate LCR, Front/Back, Divergence and level adjustments for the sub bus.

COMPREHENSIVE SIGNAL PROCESSING

The C300's signal processing is comprehensive. Multiband filters with selectable 12, 18 and 24 dB per octave slopes, four-band parametric EQ, compressor and gate/expander with frequency-conscious side chain can be switched independently into the channel signal path. SSL's DSP algorithms are smooth and flexible, and sound damn fine — a legacy of SL4000 and SL6000 analog designs without a shadow of a doubt. The dynamics section in particular is able to cope with a wide range of problematic signal profiles and can be dialed in with

impunity. Usefully, a sequence of custom-designed icons beneath each channel meter display the user-selected processing order and which element has been inserted within the signal path.

In terms of sonic performance, the C300 is totally transparent thanks to the SSL's proprietary 40-bit floating-point algorithms.

Channel PFL and solo can be programmed to match your specific needs. Default mode sets SOLO as a conventional non-destructive AFL (After-Fader Listen). Normally, the C300's AFL bus feeds the active monitor output, but can be set to drive any other loudspeaker output. Again, the AFL bus can be formatted up to 7.1 to enable sources to be heard in their true surround perspective. Alternatively, AFL can be set as a destructive Solo-In-Place — useful when dealing with multiple channels, some of which may not be within your current field of view on the control surface. A total of 18 Auxiliary Sends are supported, with any channel individually assignable to any formatted aux bus up to 7.1-channel in switchable banks of six at a time.

Bank shifting and system integration is totally seamless. While formatted signal paths comprise a consecutive, ascending range of channels, links can be set up from any contiguous or non-contiguous set of channels. This keeps the control surface uncluttered

SSL continues on page 54 ►

input controls. The C300 is powerful, flexible and totally user-configurable. Additionally, initial setup and I/O mapping is a breeze thanks to some handy templates and the well-documented User Manual. All system configurations and panel layouts are stored in Projects that can be saved to and recalled from the Centuri Core's hard drive. Then, after mapping physical I/O ports to the virtual signal paths and hence assignable on-surface controls and displays, we are off to the mixing races.

Faders Strips and their associated signal processing can be globally assigned to control Bus Outputs, Main Outputs, and so on, quick selection being effected via the color-coded TFT screens and associated buttons. With sources assigned to fader strips and hence to appropri-

For multi-operator topologies, a C300 console may be outfitted with up to three Center Sections with pretty much complete freedom within the frame regarding where these are physically located. Each center section comprises several main elements, including a meter bridge fitted with

SSL Continued From Page 53

with just the important elements under your fingertips – plus, of course, VCA-style master faders and stem masters if that is the way you prefer to work – and dependent upon where you are in a post or film re-recording project. Rather than cluttering the control surface with component elements from a formatted or linked group, a really neat facility is provided that collapses the group, leaving only a single element assigned to a Fader Strip. The remaining on-surface channels within a recalled console layout automatically shuffle to fill the spaces previously occupied by channels in the linked or formatted path. Ingenious. (And, of course, you can hold back an individual or a group of faders from a linked group, so ensuring that they are always at hand – maybe a critical center-channel dialog contribution that needs finessing against other stem elements.) A Spill Function places all channels feeding a bus or set of formatted busses, or Fader Strips assigned to one of the 96 Control Group Master Faders, into a new dedicated console layout that now provides immediate access to the component signals in a pre-mix or stem array.

FLEXIBLE TRANSPORT AND DAW CONTROL

In use, DAW control via HUI is effortless – and remarkably speedy, thanks to some trickery that SSL has pulled in multi-MIDI porting – and gets the job done without fuss or muss. And for serial connection to RS422-capable external transports, the C300's built-in four-machine synchronizer and autolocator perform flawlessly. Given that SSL innovated the world's first disk-based automation system close to three decades ago, the C300's TimeFreeze automation system delivers the goods. Uniquely, it can read/write automation data at non-play speeds – perfect for slow-motion mixing of complex, sound-aggressive scenes. Also offered is simple cue-by-cue manipulation of automation parameters. The ability to automate several different items in different modes within a single pass provides the high level of parallel processing (and resultant efficiency) required by today's deadline-critical post environments.

For the time- and budget-conscious world of contemporary post/film, SSL's C300 Digital Post-Production and Film Console integrates the user functionality essential for getting the

job done quickly and creatively. The powerful combination of fully integrated automation, elegant control surface, built-in machine control and flexible, multi-stem monitoring meld into a cohesive whole. And the operational advantages, via HUI, of either mixing within the C300 Core or an external digital audio workstation, using the on-surface consoles to implement appropriate changes within the connected DAW Engine, offers a definite creative edge, since all project settlements can now be saved along with the edit project; as the cliché goes, "The best of both worlds." In fact, used in conjunction with a non-linear editor such as Avid's Xpress Pro, the C300 will form the heart of a powerful post environment, with obvious economies through cost efficiency and maximized productivity.

My sincere thanks to the technical crew at Media Concepts, Burbank, for providing access to a large-format C300 console, and to SSL Product manager Andrew Clark for answering a myriad of technical questions.

Mel Lambert is principal of Media&Marketing, a consulting service for the professional audio industry, and can be reached at +1-818-753-9510.

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STUDIO | Review

ALPHA TRACK Continued From Page 37

| SECOND OPINION

Having used and/or reviewed dedicated control surfaces — from the small-and-faderless (Red Rover and TranzPort) to the upper-atmosphere, large-format exclusives (Smart AV and SSL) — I have come to two seemingly contradictory conclusions: the more faders and controllers the better, and you can't judge a control surface by its number of faders and controllers.

The former conclusion applies across the entire range, because the closer a control surface approaches a 1:1 hardware control-to-DAW function ratio (e.g., SSL and Smart AV) the better; the latter conclusion applies to everything in the \$10K-and-under "mere mortal" range, where complex multiple-functions-per-hardware control, multi-layered menu systems and minimal LCD support (if at all) are necessary. These harsh realities of affordability conspire to create a dangerous situation for the controller designers, where reaching for a \$20 mouse proves easier than the gyrations required by the supposedly labor-saving hardware. In this most common situation, the number of faders won't save a controller with a poorly designed and cumbersome workflow.

What I find fascinating about the diminutive, fader-challenged and very affordable AlphaTrack is that it features one of the best-implemented core control sections found on controllers up to five or six times its price. In my best AlphaTrack impersonation, I shall now try to over-

come the size limitations of this second opinion's length and get straight to the bigger picture.

I put the AlphaTrack to work with Digidesign's Pro Tools and Steinberg's Nuendo workstations. Immediately notable are its ease of installation and recognition, the fact that it is bus-powered (notebook mixing heaven) and the head-on task Frontier took in researching and releasing in-depth native interfaces for the most popular Mac- and PC-based audio and video applications (instead of abandoning its users to a semi-implemented MCU/HUI generic). If there is one encompassing aspect that bodes well for this and future Frontier-marketed devices, it is that the AlphaTrack's many program-specific interfaces a) exist at all, b) were developed before the product was released, and c) were clearly written by or in close cooperation with people who regularly use the respective programs. Making the most out of limited resources takes significant thought and creativity. On the AlphaTrack, there are very few head-scratchers, misplaced priorities or missed opportunities as tested. On several mid-priced control surfaces I have used, pre-release program-specific development felt rushed and half-implemented, and in other cases development seems to have ended when the product left the gate.

I did find a few snags that require cleaning up programming-wise, including limited behavior with grouped tracks in Nuendo (it cannot navigate to the left across grouped faders) and the inability of the AlphaTrack to address anything but the first track in a group (despite the fact that a five-year-old Radikal has no troubles in this area). Though it has a tendency to initially implicate program limitations, Frontier's track record on sussing out and quickly addressing these types

of bugs has been impressive to date.

The biggest criticism I can level at the AlphaTrack, while not necessarily fair given its price and target market, regards certain fundamental reasons to use a control surface: access to any fader with a minimum of effort [effort = number of button pushes x the coefficient of net brain power as it diminishes over session length], to increase efficiency during automation passes, and the ability to perform interdependent and simultaneous fader moves. Which brings me to a few wish-list items: the ability to control additional software faders with the rotary controls and an idle mode (i.e., not currently making adjustments) time code/bars & beats display.

Some food for thought: despite that only one AlphaTrack can be installed on a computer, it was happy to run alongside a Radikal controller and X-Keys Jog & Shuttle and Button Panel programmable controllers (the Alpha/X-Keys combo makes a powerful, inexpensive pairing).

Frontier's AlphaTrack is clearly designed and priced to give control to the controllerless — the People's Fader, if you will — and not compete for those shopping the multi-fader/mid-range market. Yet the reach of this little wonder's adept transport, track and automation control implementation may be just high enough to snatch quite a few purchasers from the jaws of its competition. Or at least have them eagerly waiting for the (hopefully) inevitable time when the AlphaTrack spawns its own multi-fader family. I always return to my personal favorite: the easily programmable, streamlined, full scribble-strip sporting Radikal SAC-2.2.

— Steve Murphy



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CREST CV-20

FEATURES: 24, 32, 40, 48 and 56 mono input configurations; four-band sweepable EQ and fully parametric mid-frequency control on each input; 12 aux masters; eight subgroups; 128 VCA assignment and 144 mute scenes with MIDI control.

PRICE: \$15,695 - \$30,125.

CONTACT: Crest Audio at 866-812-7378, www.crestaudio.com.

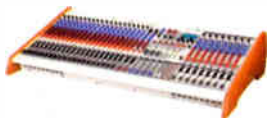


PEAVEY S32 Sanctuary Series

FEATURES: 32 channels; automatic features such as Synchronic* delay-speaker setting and Automix* enable hands-free mixing; DSP; USB output; Mid-Morph EQ.

PRICE: \$3699.99

CONTACT: Peavey at 866-443-2333 www.peavey.com.



MIDAS Verona

FEATURES: 24 to 64 inputs; four-band EQ; 48V phantom power; phase reverse; high-pass filter; pan controls; inserts; PFL; 100 mm faders.

PRICE: starts at \$14,043.33.

CONTACT: Midas at 952-884-4051, www.midasconsoles.com.



STUDER Vista 5

FEATURES: Up to 240 channels; modular; 32- and 42-fader models; onboard DSP; 5.1 surround sound; Viconics touchscreen controls; external I/O box and processor; compatible with Harman HiQnet routing system.

PRICE: \$125,000 - \$200,000.

CONTACT: Studer/Harman Pro North America at 818-920-3212, www.studer.ch.



SOUNDCRAFT Vi4 Digital Live Sound Console

FEATURES: 48 inputs on 24 faders; Vi6 features/functionality with a smaller footprint; 27 output buses; FaderGlow LEDs; Viconics II touchscreen user interface; compatible with Harman HiQnet routing system.

PRICE: \$75,000.

CONTACT: Soundcraft/Harman Pro 818-920-3212, www.soundcraft.com.



ALLEN & HEATH iLive

FEATURES: 80-, 112-, 144- and 176-channel control surfaces; separate DSP mix rack; up to 64 inputs, 32 assignable mixes; 16 DCA groups; up to 10 eight-channel I/O cards in rack, four in surface; eight analog inputs/outputs; assignable surface strips; PAFL masters; MIDI controllers; LCD, touchscreen.

PRICE: starts at \$49,999.

CONTACT: Allen & Heath at 818-597-7711, www.ilive-digital.com.



FBT Formula 248 Mixer

FEATURES: 24 or 32 x 8 bus; balanced XLR mic ins, plus stereo inputs with individual level controls; four-band EQ with dual mid sweeps, HF/LF shelving; eight aux sends; two stereo effects returns; mute; switchable 48V phantom power; 100 mm faders, PFL/AFL on all.

PRICE: TBA.

CONTACT: FBT USA, Inc. at 800-333-9383, www.fbt.it.



INNOVASON Sy48

FEATURES: 128 input channels; up to 144 outputs; 16 x 16 local inputs/outputs for inserts/sends; 72 inputs x 40 buses mixing; two monitor buses; DSP; 48 faders; 12" TFT screen; one-touch parameter access; separate rackmountable I/O box via Cat5, Fiber/Coax/Ethersound.

PRICE: starts at \$60,000.

CONTACT: InnovaSON at 888-344-3375, www.innovason.com.



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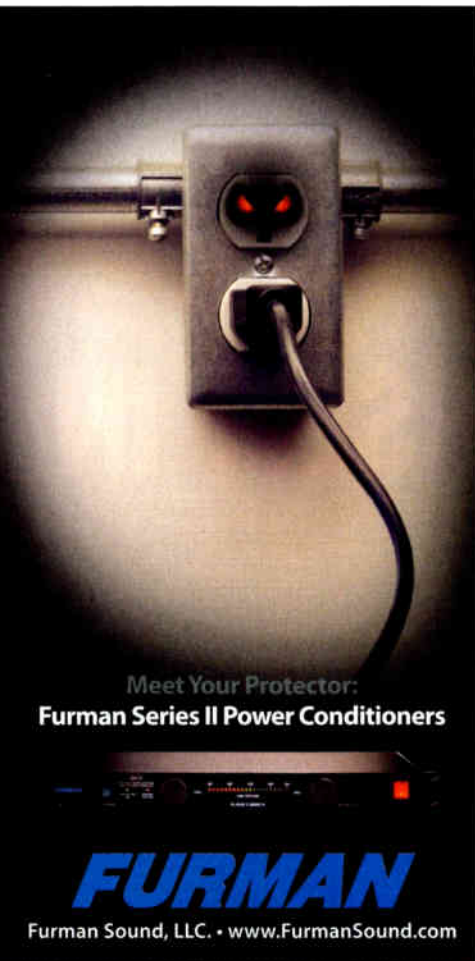
This simple AC outlet can be pure evil. At its kindest, it passes unfiltered AC power which can make your sensitive audio and video gear behave in unpredictable ways. At its most sinister, it can shove spikes into your expensive equipment that can leave it damaged or even ruined.

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YAMAHA M7CL

FEATURES: 32, 48-channel; 96 kHz sample rate; 24-bit/96-kHz A/D-D/A; onboard digital effects; four-band parametric channel EQ; delay; graphic EQ; 100 mm faders; three mini-YGDAI expansion slots.
PRICE: starts at \$19,999.
CONTACT: Yamaha at 714-522-9011, www.yamahaca.com.



APB-DYNASONICS Spectra Series Analog Consoles

FEATURES: 24 to 56 mono input channels; four stereo input channels; four-band EQ with variable high-pass filter; switchable HF/LF with 1-octave sweepable mids (Spectra C and Ci) or all bands sweepable including shelving/bell switches on HF/LF bands (Spectra T and Ti); TRS (Spectra C and Spectra T) or balanced sends and returns (Spectra Ci and Spectra Ti). Burr-Brown mic preamps, THAT VCA elements.
PRICE: start at \$13,500 (Spectra C 24 P) and go up to \$28,000 (Spectra Ti 56 P).
CONTACT: 973-785-1101, www.apb-dynasonics.com.



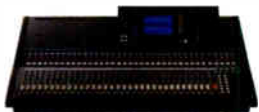
EUPHONIX SYSTEM 5-BP Digital Audio Mixing System

FEATURES: 24 to 112 faders controlling up to 300 channels; Digital and analog I/O with remote mic preamps and fiber options available; designed for live broadcast or live-to-tape; also for audio post of performance recordings.
PRICE: starts at \$200,000.
CONTACT: Euphonix Inc. 650-855-0400, www.euphonix.com.



YAMAHA LS9

FEATURES: 32, 64 mono channel; 16 or 32 on-board mic preamps; onboard digital effects, EQ, dynamics; built-in MP3 recorder; MY card slots.
PRICE: \$5,999 (32-channel), \$10,999 (64-channel).
CONTACT: Yamaha at 714-522-9011, www.yamahaca.com.



DIGICO D1 Live

FEATURES: Up to 160 input channels; four-band parametric EQ; comp/limiter; gate; six effects banks; 5.1 surround sound; 38x8 output matrix; TFT touchscreens; LED meters; separate rackmounted I/O box.
PRICE: starts at \$69,000.
CONTACT: DiGiCo at 310-326-5266, www.digico.org.



BEHRINGER Eurodesk MX9000

FEATURES: 24 fully inline channels with MIC/LINE, MIX B/TAPE RETURN paths; eight group buses; stereo main bus; six aux sends; four-band EQ with two semi-parametric mid-frequency bands; 15 dB boost/attenuation; low-cut filter; two-band shelving EQ; pan, level controls; mute; LED meters.
PRICE: \$1,629.99.
CONTACT: Behringer USA at 425-672-0816, www.behringer.com.



DIGIDESIGN VENUE D-Show

FEATURES: Up to 96 input channels; 16 stereo effects returns; 27 buses; eight mono matrices; eight stereo matrices; onboard DSP; 24 assignable graphic EQs; external I/O box; rackmounted digital mix engine; compatible with Pro Tools DAWs.
PRICE: Call.
CONTACT: Digidesign at 650-731-6100, www.Digidesign.com.



NADY CMX-16A

FEATURES: 16 channels; eight mono balanced (XLR, 1/4" TRS) inputs; eight balanced stereo (1/4" TRS) inputs; two aux sends, stereo aux returns; eight mono inserts; Master Mix, Control Room, Headphone Outputs; 60 mm faders; 10-segment LED meters.
PRICE: starts at \$419.95.
CONTACT: Nady Systems at 510-652-2411, www.nady.com.



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ML4 Limiter with 4 Band Gate, Expander & Compressor

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Features:

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- Multi-band dynamics processing
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ML4 Mastering Limiter

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SOFTWARE

FOR USE WITH:
PRO TOOLS LE 7
SOFTWARE

FOR USE WITH:
PRO TOOLS M-POWERED 7
SOFTWARE

WWW.MCDSP.COM

Continued From Page 59

AUDIENT AZTEC Live Performance Console

FEATURES: 32, 40, 48 or 56 input frames;

L, C, R buses with individual trims on each output fader; 12 VCA

sub-groups; eight audio sub-groups; eight mono, two

stereo aux sends; 12x8 matrix; 4-band EQ with parametric mids, switchable bell/shelving HF/LF; mute.

PRICE: starts at \$20,000.

CONTACT: Audient/Chris Walsh at 909-948-0997, www.audient.co.uk.



separate rack-mounted I/O, processor racks; all I/O module hot swappable; propriety high-speed communications protocols linking core elements.

PRICE: starts at \$380,000.

CONTACT: Cadac Electronics at +44-1582-404202, www.cadac-sound.com.

SOLID STATE LOGIC C100 HD-S

FEATURES: 24, 32, 40, 48 and larger "slimline" frames; up to 256 DSP channels (with EQ, dynamics), 256 additional

inputs on faders; 80

output buses; scalable I/O (MIC/LINE, analog, digital, MADI); TFT display channel monitoring/touchscreen; integrated workstation control option.

PRICE: starts at \$250,000.



allocated DSP for EQ, dynamics and bussing; TFT touchscreens; LED meters; separate rack-mounted I/O box; 24-bit AES/EBU; 56 2-bit channels MADI; 512 channel redundant optical loop.

PRICE: starts at \$144,000.

CONTACT: DiGiCo at 310-326-5266, www.digico.org.



CADAC S-Digital Mixing Console

FEATURES: From 72 input channels, 66 mix buses, three stereo listen buses; multiple operator/listen systems/control surfaces configurable;



DIGICO D5 Live

FEATURES: Up to 96 full channels; 38x8 output matrix; 40 buses; permanently

ALTO L-20 Live Sound Mixing Console

FEATURES: 20 channels; four aux send/return buses; four subgroups; 14 gold-plated XLR, balanced 1/4-inch

mic inputs; four stereo inputs with balanced TRS; 48 V phantom power; 60

mm faders; 4-band EQ on line inputs; 3-band EQ with mid-sweep on mic inputs; 24-bit DSP; 9-band graphic EQ; LED output meters.

PRICE: \$549

CONTACT: ALTO/Yorkville at 716-297-2920 or www.altopa.com.



CARVIN SL40



FEATURES: Four-band EQ; 48V phantom power; low-cut filter; 100mm faders; inserts; eight auxes; PFL; LED meters.

PRICE: \$2,999.

CONTACT: Carvin at 800-854-2235, www.carvin.com.

ALESIS GigaMix 4CD

FEATURES: Four-channel; three-band channel EQ; 48V phantom power; nine-band master graphic EQ; 100 preset digital effects; high-pass filter; onboard CD player; onboard 200 W amp.

PRICE: \$549.

CONTACT: Alesis at 401-658-5760, www.alesis.com.



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YORKVILLE Unity U15P Powered Speaker

FEATURES: Three-way; 15" neodymium woofer; three 5" ceramic mid range drivers; 1" throat HF horn. Class A/B amplifier topographies; 900 W program; integrated DSP; integrated fly points; 5/8" Birch ply trapezoidal enclosure.



PRICE: \$1,899 (Black Ozite finish), \$2,099 (Black Ultrathane finish).

CONTACT: Yorkville at 716-297-3689, www.yorkville.com.

CONTACT: Community at 610-876-3400, www.communitypro.com.

PEAVEY Versarray 112 Line Array

FEATURES: Two-way; 12" Neo Black Widow woofers with dual 4" flat-wound voice coils; dual-ribbon driver; neodymium magnet with Ram Air Cooling; rigging hardware; 13-ply Baltic birch cabinet.



PRICE: \$1,599.

CONTACT: Peavey Electronics at 866-443-2333, www.peavey.com.

PRICE: \$5,900.

CONTACT: KS Audio at 727-447-9656, www.ksaudiousa.com.

GALAXY AUDIO HOT SPOT VC Powered Monitor

FEATURES: Twin 5" NEOLITE ferrofluid cooled drivers; 250 Hz – 15 kHz; 200 W continuous; 16 ohms; seven-position volume control; one Speakon and two 1/4" inputs; built-in mic stand mount.



PRICE: \$179.99.

CONTACT: Galaxy Audio at 800-369-7768, www.galaxyaudio.com.

CARVIN TRX153B Loudspeaker

FEATURES: Three-way; 15" woofer; 8" medium throw midrange driver; 3" voice coil; 60 x 40 horn; passive, internal crossover or tri-amp access through NL8 Speakon connector; recessed handles; metal corner protectors; metal grille; 13-ply Baltic Birch DuraTex-coated enclosure.



PRICE: \$599.99.

CONTACT: Carvin at 800-854-2235, www.carvin.com.

YAMAHA Installation Series Speakers

FEATURES: Three, two-way systems and subs; 15" and 12" woofers; rotatable horns; barrier strip and Neutrik connectors; Finnish Birch cabinets; foam-backed elements; 14-gauge steel grilles; rigging points; YS3 software compatible.



PRICE: \$1,249 - \$2,999.

CONTACT: Yamaha at 714-522-9011, www.yamahaca.com.

MACPHERSON M2X-V2

FEATURES: Two-way; 15" woofer; 2" HF compression driver with CD horn; biampable; steel grille; pole mount socket; 13-ply Baltic birch cabinet; optional controller; rigging options.



PRICE: starts at \$2,270.

CONTACT: MacPherson at 847-674-3535, www.macpherson-inc.com.

JBL PROFESSIONAL VerTec VT4887ADP Powered Line Array Loudspeaker

FEATURES: Three-way; twin 8" woofers; four 4" midrange radiators; twin 1" exit HF drivers; onboard



Crown amplifiers; onboard dbx DSP; optional DrivePack Analog or CobraNet-compatible input modules; optional HiQnet compatible; foam-backed, steel mesh grille enclosure.

PRICE: \$5,749.

CONTACT: JBL Professional at 800-852-5776, www.jblpro.com.

L-ACOUSTICS 12XT Coaxial Loudspeaker

FEATURES: Two-way; 12" woofer; 3" compression HF driver; 55 Hz – 20 kHz; switch for passive/active operation (active filtering by La4 amplified controller); wedge-shaped, bass-reflex tuned enclosure.



PRICE: \$1,980.

CONTACT: L-Acoustics US at 805-604-0577, www.l-acoustics-us.com.

D.A.S. AUDIO Aero 38A Line Array Element

FEATURES: Three-way; twin 12" woofers with 4" voice coils; twin 10" mid range drivers with 3" voice coils; 4" diaphragm, 1.5" exit throat compression HF driver; Birch plywood cabinet; Isoflex coating; Class D amp; protections on each channel.



PRICE: \$7,400.

CONTACT: D.A.S. Audio at 305-436-0521, www.dasaudio.com.

COMMUNITY LOUDSPEAKERS TLF218

FEATURES: Dual 18" woofer high-efficiency subwoofer; 40 Hz – 125 kHz; 800 W RMS, 2000 W PGM; 4 ohm; Active Air cooling; Balanced Cone Loading; Ergo-Grip handles; black Tuf-Coat finish; four-point seat track rigging; stacking feet/cups; optional caster kit.



PRICE: \$2,583.

KS AUDIO Compact Powered Line Array

FEATURES: Two-way; twin 8" woofers; 1" neodymium compression driver; 60 Hz – 20 kHz; six built-in amplifiers; 800 W, 160 W peak; 131 dB peak; built-in controller (with time alignment, limiter, filters, phase response, frequency response; onboard Quick Lock flyware.



FBT Verve 15a Powered Speaker

FEATURES: Two-way; 15" woofer; 1.4" HF driver; rotatable 80 x 50 horn; two-band EQ; 48 Hz – 20 kHz; 350 W RMS Class G LF amp; 100 W RMS Class G HF amp; ADAP protection circuitry; fly points; socket mount; Baltic Birch plywood cabinet with steel handles; Tour Grade black finish.



PRICE: T.B.A.

CONTACT: FBT USA, Inc. 800-333-9383, www.fbt.it.

BUYER'S GUIDE continues on page 62 ►

Continued From Page 61

BEHRINGER Eurolive Professional B1800X PRO Subwoofer

FEATURES: 18" woofer; 1,600 W peak, 800 W RMS; 40 – 300 Hz; switchable crossover for optional passive or bi-amping operation; Neutrik connections.

PRICE: \$439.99.

CONTACT: Behringer at 425-672-0816, www.behringer.com.



NEXO GEO S 12 Series

FEATURES: Two-way; 12" woofer; 1.4" Hyperboloid Reflective Wavesource HF driver; S 1210 and S 1230 feature horn dispersion differences to achieve scalable building block, higher SPL; compatible with Nexo GeoSoft2 controller software; crossbow flying assembly; metal grille; Baltic Birch ply trapezoid cabinet.

PRICE: \$3,200 MSRP

CONTACT: Nexo/Yamaha Commercial Audio at 714-522-9011, www.yamahaca.com.



MARTIN AUDIO WT3 Compact Enclosure

FEATURES: Three-way; 15" horn-loaded woofer; 6.5" midrange Hybrid horn-loaded drivers; 1" horn-loaded compression HF drivers; switchable bi-amp/tri-amp operation; Birch ply cabinet; Neutrik connectors; onboard rigging system.

PRICE: \$3,019.

CONTACT: Martin Audio at 519-747-5853, www.martin-audio.com.



ELECTRO-VOICE PX2122 Phoenix Loudspeaker

FEATURES: Two-way; dual 12" woofer; dual 2" HF compression drivers; 45 x 30 rotatable manifold horn; 1,200 W; bi-amp only; integral handles; rigging points; black EVCOAT 13-ply cabinet.

PRICE: \$2,290.

CONTACT: Electro-Voice at 952-884-4051, www.electro-voice.com.



QSC Audio HPR122i

FEATURES: Two-way; 12" woofer; 3" voice coil and neodymium magnet; compression driver with a 1.4" diaphragm coupled to a 75-degree conical horn; operable between 53 Hz – 20 kHz.

PRICE: \$799.

CONTACT: QSC at 800-854-4079, www.qscaudio.com.



CERWIN-VEGA! Active CVA-121 Subwoofer

FEATURES: 21" woofer with stroker; 35 – 135 Hz; built-in amplification; 1,200 W continuous/2,400 W peak; onboard parametric EQ; master/slave outputs; aluminum grille/heat sink; hardwood enclosure available with paint/carpet/casters.

PRICE: \$1,999.

CONTACT: 818-534-1500, www.cerwin-vega.com.



OAP R-152 Loudspeaker System

FEATURES: Two-way; 15" woofer; 1" throat titanium diaphragm driver on an asymmetrical rotatable horn; 125 Hz – 16 kHz; Baltic Birch ply trapezoid enclosure; 12 fly points.

PRICE: \$998.

CONTACT: OAP at 800-788-1627, www.oapaudio.com.



DANLEY SOUND LABS SH-DFA

FEATURES: Two-way; 10" woofer; 1" HF driver; asymmetrical full-range horn; 13" tall; seamlessly integrated with SH-50; 80 Hz – 18 kHz; 500 W continuous/1,000 W program.

PRICE: \$2,088 (passive), \$3,340 (powered with built-in DSP).

CONTACT: Danley Sound Labs 770-534-7620, www.danleysoundlabs.com.



TURBOSOUND NuQ-12DP

FEATURES: Two-way; 12" low frequency driver; 1.4" HF compression driver on a rotatable 80

x 50 Converging Elliptical Waveguide; self-powered; networkable; Powercon, XLR and RJ45 network connectors; metal grille; onboard rigging; pole mount/OmniMount compatible; birch plywood trapezoidal cabinet.

PRICE: \$3,770.

CONTACT: Turbosound/Sennheiser at 860-434-9190, www.sennheiserusa.com.



EAW NT29 Compact Powered Loudspeaker

FEATURES: Two-way; 12" (3" voice coil) neodymium magnet cone; 1.4" throat (3" voice coil) horn-loaded neodymium compression driver; self-powered; bi-amped; onboard DSP; Baltic Birch ply enclosure.

PRICE: \$4,991.

CONTACT: Eastern Acoustic Works at 508-234-6158, www.eaw.com.



WORXAUDIO TECHNOLOGIES TL118SST-P Sub Bass System

FEATURES: 18" LF high-excursion transducer; under hung, 4" x 1.5" voice coil; neodymium magnet; self-powered; 1,000 W; twin digital processors; XLR transformer with isolated I/O; PowerCon switchgear I/O; tuned 21-ply Baltic Birch enclosure; weather-resistant, catalyzed polyurethane finish.

PRICE: \$5,350.

CONTACT: WorxAudio Technologies at 336-275-7474, www.worxaudio.com.



A-LINE EMMA SOLUTIONS-1 High-Definition Line-Source System

FEATURES: Two-way EMMA 806A module with 8 x 6.5-inch LF drivers, 8 x 6.5-inch HF ribbon drivers; EMMA

S410A 4 x 10-inch subwoofer; 1,500 W Bang & Olufsen ICEpower; onboard DSP; DuraTex-coated Birch ply enclosures; specially designed transport system, hardware.

PRICE: \$8,799.

CONTACT: A-Lines Acoustics at 716-524-4084, www.a-lineacoustics.com.



SLS LOUDSPEAKERS PLS8695 Powered Line Array

FEATURES: Two-way; eight 6.5" woofers; nine PRD500 ribbon HF drivers; onboard amplifier; onboard DSP; NeverMar coating.

PRICE: \$5,495.

CONTACT: SLS Loudspeakers at 417-883-4549, www.slsloudspeakers.com.



TANNOY iQ 10/15

FEATURES: Three-way; 15" woofer; 10" PowerDual concentric driver; biamp/triampable; birch plywood cabinet; steel grille; onboard mounting hardware.

PRICE: \$5,865.

CONTACT: Tannoy North America at 519-745-1158, www.tannoyna.com.



DYNACORD D-Lite 2000 System

FEATURES: Subwoofer/satellite system; 15" powered subwoofer; two satellite speakers with 12" woofers; polypropylene cabinets; 1,000W Class D amplifier; cables.

PRICE: \$5,500.

CONTACT: Dynacord/Telex at 952-884-4051, www.dynacord.com.



MEYER SOUND M2D Compact Curvilinear Array

FEATURES: Two-way; twin 10" low-frequency/mid drivers; 4" high-frequency driver; Ribbon Emulation Manifold; onboard 600W amplifier; QuickFly rigging system.

PRICE: \$7,500.

CONTACT: Meyer Sound at 510-486-1166, www.meyersound.com.



BAG END P-Quartz-R Subwoofer

FEATURES: Four 18" INFRA cone woofers; two Minima One onboard 1,000W amplifiers.

PRICE: \$5,750.

CONTACT: Bag End at 847-382-4550, www.bagend.com.



ALESIS ProVenue 15

FEATURES: Two-way; 15" woofer; 1" compression HF driver; pole mount socket; powder-coated metal grille; mounting hardware; polycarbonate cabinet.

PRICE: \$399.

CONTACT: Alesis at



401-658-5760, www.alesis.com.

AMERICAN AUDIO Tri Pack Live System

FEATURES: Subwoofer/satellite system; 10" powered subwoofer; two 6.5" satellite speakers; three-channel amp in subwoofer; pole mounts for satellites; ships with cables.

PRICE: \$699.

CONTACT: American Audio at 800-322-6337, www.adjaudio.com.



TALOS LK-2236L

FEATURES: Three-way; two 12-inch LF neodymium drivers; one hornloaded 10-inch MF driver; two 1.5-inch exit HF compression drivers with three-inch voice coils mounted to a dedicated waveshaping device; 48 Hz – 17 kHz; 120-degree dispersion; tri-ampable; flying points; integrated handles; metal grill.

PRICE: \$2,120.

CONTACT: Talos Professional Audio at 703-764-7005 ext. 105 or HYPERLINK "http://www.musictechnology.com" www.musictechnology.com.



BROADCAST | Review

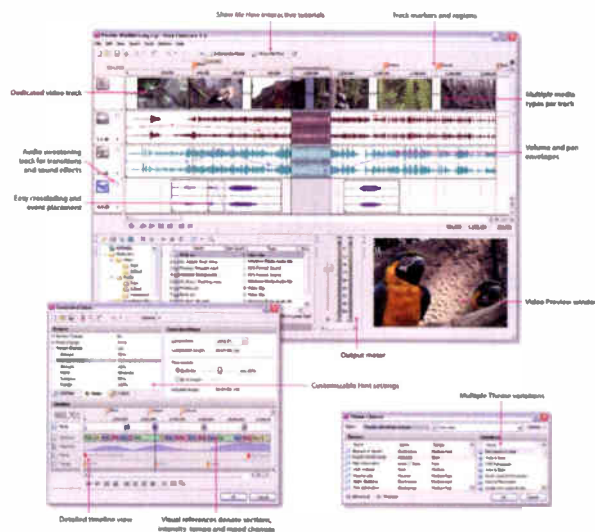
SONY Continued From Page 49

must go back into the dialog, adjust again, re-render, and check it against the video. [While playing back in the dialog, video playback will preview on the main window. — Ed.]

Ultimately I found a better way (for me) to work: once I'd settled on a Variation and tempo for a section, I rendered out many different versions (created using the various arrangement and dynamic options provided) and cut, pasted and crossfaded the various elements I needed.

A nice feature is that any audio event on the timeline can be instantly opened in your favorite editing software, edited and/or processed and saved automatically back to the timeline. This is a useful workaround for the fact that plug-ins are not supported in Cinescore. Also conspicuously missing for pro use is time-stamped broadcast WAV file support (or any timecode sync for that matter) and ReWire support.

Coming to the rescue is the included



Sony Cinescore callouts

Cinescore Plug-In for Vegas. As a plug-in, Cinescore's generator interface can be opened by right-clicking on a Vegas audio track and generated music inserted directly to the Vegas timeline. This allows the music-generating capabilities of Cinescore to be used in conjunction with all the audio and video capabilities

of Vegas, erasing most of the aforementioned limitations and providing access to audio plug-ins, unlimited tracks, surround mixing, ReWire support, timecode support, HD support and everything else that is available in Vegas!

| SUMMARY

Striking a balance between ease-of-use and complex musical control, Sony's Cinescore successfully provides users with the ability to produce custom music beds with a minimum investment in time, effort and money. Experienced musicians and engineers will hit the program's limits fairly quickly, but providing Cinescore as a plug-in for Vegas expands its professional-level usefulness immensely.

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.

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“(You Want To) Make A Memory” | Bon Jovi



(you want to)
make a memory

SINGLE: “(You Want To) Make A Memory”

ALBUM: Lost Highway (Island/Mercury Nashville)

RECORDING DATES: November 2006 through January 2007 at Blackbird Studio in Berry Hill, TN (Nashville) and NRG Recording Services in North Hollywood, CA

SINGLE PRODUCER: Dann Huff

SINGLE ENGINEERS: Mark Hagen (overdubs and digital editing) and Justin Neibank (basic tracks)

ASSISTANT ENGINEERS: Seth Morton (Blackbird Studio), Casey Lewis (NRG Recording Services), and Drew Bollman (for Justin Neibank)

SINGLE MIXER: Jeremy Wheatley

MASTERING: George Marino at Sterling Sound in New York City

OTHER PROJECTS: Hagen has worked for artists such as Keith Urban, Megadeth

SINGLE SONGWRITERS: Jon Bon Jovi, Richie Sambora and Desmond Child

RECORDING CONSOLES: 72-input Neve 8078 with 40 31105 preamp/four-band EQs (Blackbird), 64-input Neve 8078 (NRG Recording Services), Digidesign ICON (Huff’s private studio)

RECORDER: Digidesign Pro Tools|HD

MONITORS: ATC 300 (Blackbird) and Genelec 1031

VOCAL CHAIN (JON BON JOVI): Neumann M49, RFT Lorenz preamp and Empirical Labs Distressor EL8 to Pro Tools|HD

SELECT MICROPHONE PRE-AMPS: Neve 31105 preamp/EQ and RFT Lorenz

ENGINEER’S DIARY

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

Notwithstanding the occasional cowboy lyrical theme, superstar rock act Bon Jovi had never recorded what could officially be called a “Country” album... until now. More appropriately, *Lost Highway* — the veteran band’s latest full-length release — is simply their “Nashville album,” featuring a variety of new acoustic textures, a few Country music guest stars and one particularly hot, yet subtle ballad: the first single, “(You Want To) Make A Memory.”

“That song was always special,” recalls engineer Mark Hagen, who worked alongside producer Dann Huff on *Lost Highway*. “You could always tell that there was this vibe about it. It’s just a classic, great song.”

“Make A Memory” starts quietly, dry, and, as Hagen explains, “It keeps you on the edge of your seat. It has a stripped down quality to it, which adds to its intimacy.”

From Jon Bon Jovi’s close, nearly whispered first verse to the song’s tastefully built finale, lead vocals were captured with a simple, yet notable signal chain: a Neumann M49 to a vintage RFT Lorenz mic preamp to a Distressor EL8 “hitting him pretty hard” before residing at a PT|HD rig. On all other songs for *Lost Highway*, Jon’s voice was recorded via a Neumann M269. “I believe that the Lorenz was made during the ’50s in East Germany,” offers Hagen on the quite rare mic preamplifier.

According to Hagen, recording Richie Sambora’s guitar tracks was especially enjoyable. Between both Sambora and Huff’s extensive guitar and amplifier collections (Huff began his studio career as a first-call session guitarist), there was no desired guitar tone that was unreachable. Capturing guitar tracks involved such gear as Bogner Ecstasy and Matchless Chieftan amp heads with Bogner 4X12 and Matchless 2X12 cabinets, respectively, with two mics on each: a Shure SM57 and Royer R-121. For ambience, a pair of Neve U67s in a stereo X/Y about 15-20 feet from the cabinets were recorded through two preamps from a Neve 8078 followed by two Neve 2253 compressors.

In a rather elaborate routing scheme featuring a Little Labs PCP Distro signal distribution box, Hagen was able to utilize Sambora’s signature tone coming from the two amps in a very effective way. “I love the combination of the SM57 with the Royer,” Hagen explains. “It gives me a lot of control in shaping the tone coming out of a guitar cabinet.”



At NRG’s Studio B: Assistant Engineer Casey Lewis, Engineer Mark Hagen, Producer Dann Huff, Richie Sambora and Guitar Tech Willie.



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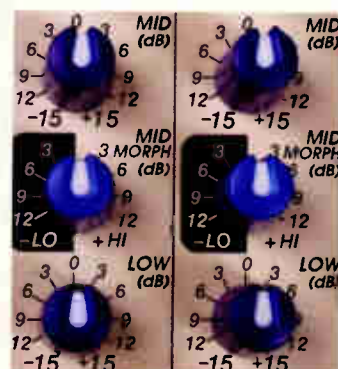
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