

FEBRUARY 2011 | VOLUME 17 | ISSUE 2

ProAudio Review

The Review Resource

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- TECHNICALLY SPEAKING: Absolute Polarity Redux
- STUDIO SENSE: Retaining Clients



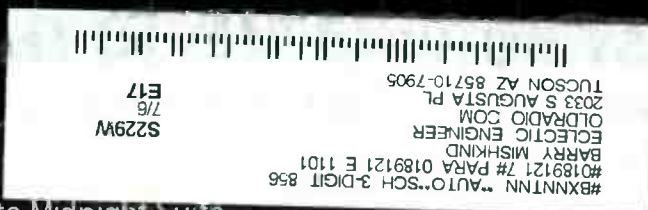
LARGE DIAPHRAGM CONDENSERS PART II

with Audio-Technica, Lauten Audio, sE Electronics, Shure & Sontronics

APPS & TOOLS iPad Goes Pro

more reviews

AKG Perception 820
iLive T112 • Focusrite Midnight Suite



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FOH Magazine June 2010

EXPERIENCE MORE .: INSPIRED SOUND .:

"The 4080 is a marvelous microphone."

MIX August 2010

"I'm loving the AT4080 and AT4081 – enough so that I purchased the review units."

Tape Op July/August 2010

"These ribbons aren't sissies! These ribbons will rock and take sonic abuse, opening up a new world of appropriate ribbon mic applications."

Pro Audio Review July 2010

"The AT4080 yielded great results on just about everything I tested it on."

Gearwire.com May 2010

"[The AT4081] is capable of taking on massive SPLs and is built like a Sherman tank—it will easily handle the heat of rock 'n' roll."

Premier Guitar November 2010

"The prices seem to define them as mid-level ribbons, but their performances clearly have them nipping at the heels of all the top-shelf ribbons."

Pro Sound News August 2010

"Remarkable ribbons ... Highly recommended."

Electronic Musician June 2010



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Offered in 16 or 32 channel models (expandable via the SB168-ES stagebox), the LS9 features a wide assortment of EQ and dynamics, recallable head amps, a built-in MP3 recorder/player, an intuitive interface and much more. With all good things that make a lasting impression, the LS9 is showing its staying power at an early age.



With the new WSG-Y16 mini-YGDAI I/O card from WAVES, the most desired third-party set of plug-ins are now available to be at the fingertips of the largest group of live sound engineers on the planet.

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The Review Resource for Sound Professionals

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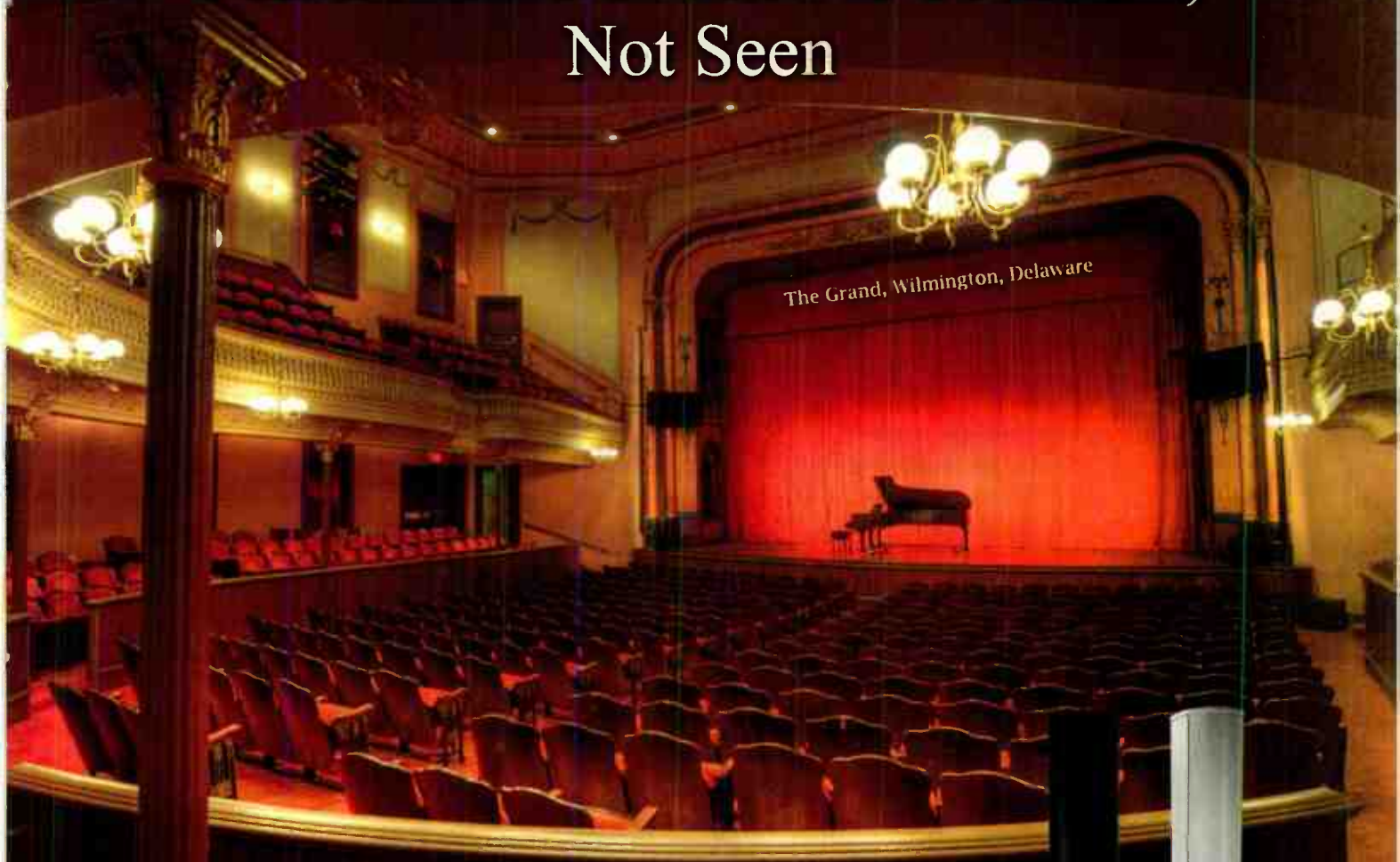
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Absolute Polarity Redux

Last month's column on polarity prompted a major studio's staff discovered that an early version of a multi-hundred-thousand-dollar console had an absolute polarity inversion on the outputs. Inserting a couple of simple polarity flippers reportedly "made a huge difference — especially when soloing a kick drum."

A acquaintance that formerly worked at SSL, Wayne Kirkwood, wrote with interesting perspectives from his experience: "A number of years ago on the Prodigy-Pro forum, I posted two 'identical' sound files and asked the readership if they heard any difference in the two. Most responses were that they were different — different mic or EQ was the most common statement — with one regular poster and experienced engineer going so far as to ask if they were the same take. The difference, which I'm sure you've already figured out, was polarity."

"Some instruments, due to their waveforms, just sound 'right' or very wrong — to me at least — depending on whether they're upside down or right side up. I've found that I almost always chose positive pressure to the ear. As you know, whether an inverted electrical waveform appears right or wrong is a virtual coin-toss once the chain is broken and the signal passes through an inverting link."

"One sure-fire way that I've found to check the polarity of a mic is to simply speak or sing 'ah' or 'ee.' The glottal pulse our vocal cords produce always generates positive pressure and will have positive asymmetry. Once verified, this mic can be used to confirm 'up' and 'down' for the rest of the chain all the way to the speaker. I learned this in my work in speech recognition and cochlear implants. It's a great tool to detect fundamental pitch [f0] in speech."

Sometime around 1993, I built a 'meter' which would check electrical, and with a known polarity mic, acoustic polarity. My thought was engineers could use it to check both electrical and transducer polarity throughout the chain making sure that 'up stayed up' all the way to the master. Although there are 'poppers' to do this designed for sound reinforcement setup, I proposed a meter to be used on actual material much the way the typical console phase meter indicates (or tries to indicate) relative phase. The polarity meter I designed would indicate not only absolute polarity on signals which have asymmetry but also the degree of asymmetry. Signals which had high even-order harmonics, and thus a higher degree of asymmetry, would drive the bargraph higher."

This is interesting fodder for thought, and confirmation that maintaining absolute polarity is worthy of validation in your signal chain.

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new studio products



Focusrite RedNet Audio Interface

Focusrite has unveiled its RedNet professional audio networking system. Launching with five new products and comprehensive control software, it utilizes the Dante by Audinate protocol. Dante uses conventional IP-based Ethernet switches to carry up to 256 channels (128 inputs and 128 outputs) of high-resolution digital audio over a single, standard Ethernet network.

RedNet reportedly provides low latency: under 3 milliseconds analog-to-analog at any sample rate when using the optional Focusrite RedNet PCIe card. It is non-proprietary, meaning it will work with any ASIO- or Core Audio-compliant DAW, including Pro Tools 9, Logic and Nuendo.

Price: TBA

Contact: Focusrite | focusrite.com



Rycote InVision Studio Kit

Rycote has launched its InVision Studio Kit, a microphone mount and vocal pop filter system that promises to accommodate almost any large-diaphragm vocal microphone, and also "allows mics to be swapped without the need to change the suspension and pop filter at the same time."

One component of the system is the Universal Studio Mount (USM), a non-elasticated microphone suspension that reportedly will accommodate any large-diaphragm microphone from 18 to 55mm in diameter. The other component is the Universal Pop Filter. The filter's ergonomic frame is designed for placement near the mouth and face of a vocal artist, and fits a specially manufactured acoustic foam-mesh filter, which can be removed for cleaning or replacement (spare foams are available separately).

Price: TBA

Contact: Rycote | rycote.com



Zildjian Gen16 Digital Cymbal Vault

Gen16 by Zildjian has debuted with the Digital Vault, offering high-resolution acoustic samples of the company's master "reference" cymbals, along with limited-edition cymbals never available to the public. Each cymbal has been hand-selected by Zildjian's cymbal tester, Paul Francis, from the "cymbal vault" at the company's Norwell, MA workshop, and recorded by percussion sampler, John Emrich.

Powering the Gen16 Digital Vaults is a custom version of FXpansion's BFD Eco, a drum playback/production environment based on BFD2 technology. The BFD Eco engine allows users to change pitch, mix or add effects to these Zildjian samples to create more sounds.

Also included in the Digital Vault are full libraries of drum and percussion groove tracks from such drummers as Michael White, Dave DiCenso and Peter Michael Escovedo. Each performance is available in various audio and general MIDI formats for flexibility.

Price: \$109 and \$249 (Soundpack1/Soundpack2 and Gen16 Z Pack)

Contact: Zildjian | gen-16.com

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*Sources: Trends in Middle East Arabic TV Series Production; Bazzy Allen, Hamilton, Arab Media Outlook 2010; Media on the Move 2009. **Kearney.

new studio products



Audio-Technica AT2022 X/Y Stereo Condenser Microphone

Audio-Technica has introduced its AT2022 X/Y stereo condenser microphone. A dual-element condenser microphone designed for stereo recording, the AT2022 features two unidirectional condenser capsules in an X/Y configuration pivot to allow for 90-degree [narrow] or 120-degree [wide] stereo operation for pickup. The capsules also fold flat for storage and transportation. It is designed for general stereo recording, as well as field sound capture.

The AT2022 includes a 1.6-foot cable terminating in a 3-pin XLR-type and a 1/8-inch connector. The output of the microphone is a 3-pin XLRM-type connector. The microphone requires a 1.5V AA battery for operation.

Price: \$349 list

Contact: Audio-Technica | audio-technica.com

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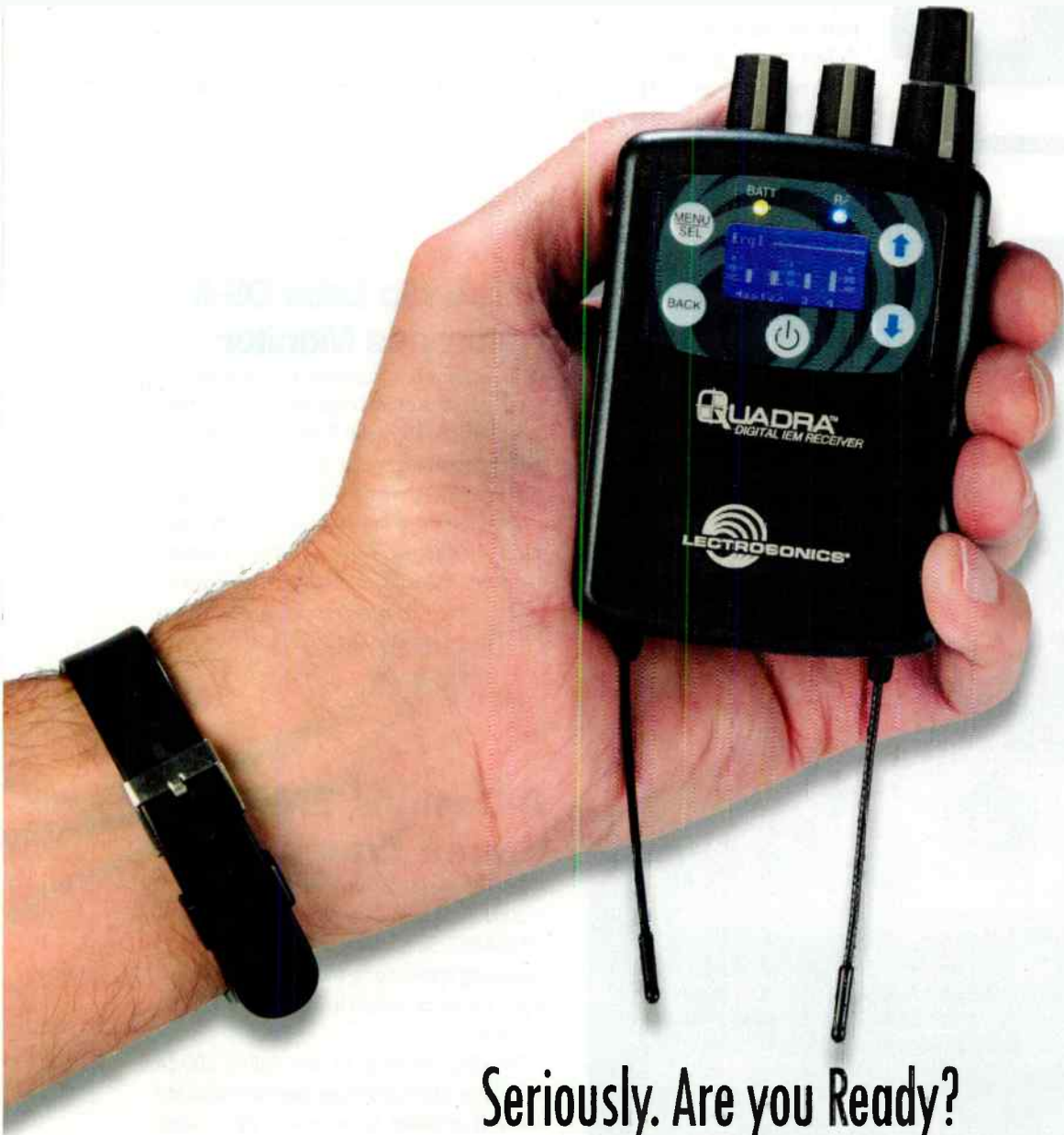
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new studio products

Lehmann Studio Headphone Amps



Lehmann Audio has introduced the Studio Cube headphone amplifier. Similar in spirit to the existing Lehmann Black Cube, the Studio Cube is smaller and linkable, allowing multiple units to daisy-chain and accommodate the headphone count of varied pro audio scenarios.

Two Neutrik quarter-inch TRS headphone are used for output. Stereo inputs use Neutrik XLR/TRS jacks. A pair of TRS "thru" outputs enables linking. An input selector switches between mono and stereo source, and front-panel LEDs monitor input signal presence and overload.

Price: \$499 list

Contact: Lehmann Audio (dist. by TransAudio Group) | transaudiogroup.com

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World Radio History

KK Audio Labs DS-6 Reference Monitor

KK Audio Labs has launched its DS-6 6-inch, 2-way powered studio reference monitor. The company is led by Keith R. Klawitter, who was the founder and owner of KRK Systems.

The DS-6 features a 6-inch, low-frequency driver utilizing proprietary composite cone material together with a 1-inch, custom-designed, titanium-composite, high-frequency tweeter. KK amplifier modules deliver 200W to the tweeter and 350W to the woofer.

Price: TBA

Contact: KK Audio Labs | kkaudiolabs.com

A-Designs EM-EQ2 Stereo Equalizer

A-Designs Audio has unveiled a 2-channel, rackmounted stereo equalizer known as the EM-EQ2. Suited for tracking, mixing and mastering applications, the EM-EQ2 is a dual-mono equalizer housed in an all-metal 2U chassis.

Sonically nodding to the Pultec EQP-1A sound, the EM-EQ2 utilizes the same discrete Class-AB amplifier found in A-Designs' solid-state EM-PEQ and Pacifica mic pres. Other features include a nickel core output transformer, gold Grayhill rotary switches, Wima caps and a true, hard bypass.

Price: \$2,695 list

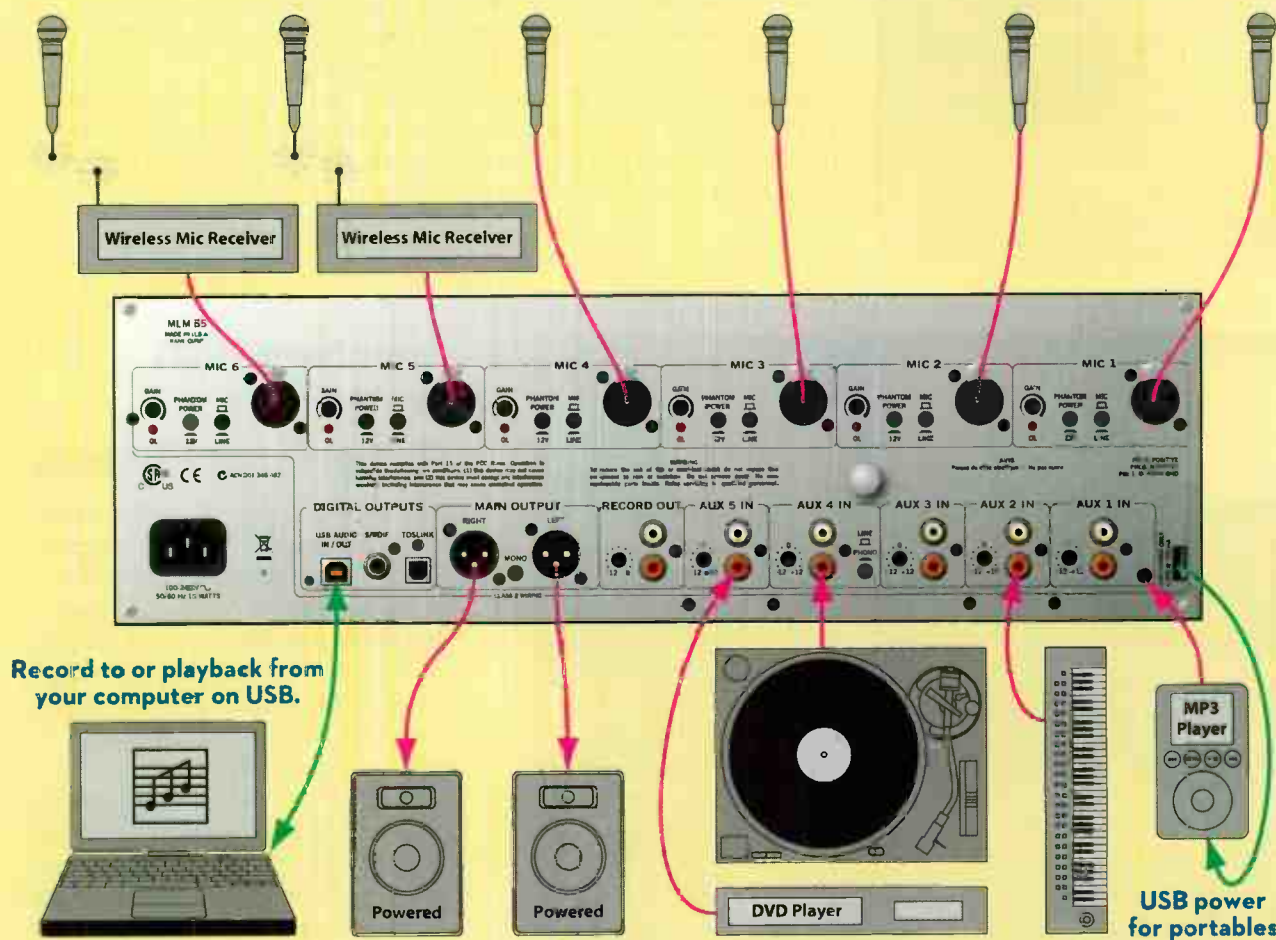
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new studio products



König & Meyer iPad Holder

Whether at the studio, at home or on the stage, König & Meyer's iPad Holder can be secured to any pole/mic stand with a diameter from .27 to 1.18 inches, thanks to the prismatic clamp with ergonomic screw. The iPad can be clipped into and out of the frame. The swing range of the clamp is said to make it possible for each user to get the individual position needed, and the swing movement can be adjusted to swing easily, or to be held firmly in place (or somewhere in between). The iPad can be turned between portrait and landscape format.

Price: TBA

Contact: König & Meyer | k-m.de



Universal Audio UAD-2 Satellite

Universal Audio has announced the impending release of its UAD-2 Satellite Duo and Quad FireWire DSP accelerator packages. As the newest members of the company's UAD-2 powered plug-ins platform, the UAD-2 Satellite family was conceived to combine DSP acceleration with the plug-and-play simplicity of FireWire 800/400, targeted for Intel-based iMacs and MacBook pros.

Available in Duo or Quad processor format (with either two or four Analog Devices SHARC processors, respectively), UAD-2 Satellite packages aim to provide a processing "boost" for digital audio workstations, and include a selection of classic analog emulation plug-ins.

Price: TBA

Contact: Universal Audio | uaudio.com



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Steinberg/RND Portico EQ, Compressor Plug-ins

Steinberg Media Technologies now offers two Rupert Neve Designs VST/AU signal processing plug-ins, the Portico 5033 EQ and 5043 compressor. According to Steinberg, Rupert Neve had been "looking for the right technology to port his legendary designs to the digital domain. With Yamaha's Virtual Circuitry Modeling (VCM) technology, this coveted intention was able to be realized."

The RND Portico 5033 five-band equalizer comes with three bands of fully parametric filters, each with dedicated gain, center-frequency, and Q controls as well as one band each of high- and low-shelving filters. A global bypass switch and trim control are also available.

Price: TBA

Contact: Steinberg | steinberg.net

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Retaining Clients

While retaining clients has usually been a rather simple function of “good business” practices, obtaining new clients historically meant some tricky business. That said, I’m not sure that this tendency remains the case in 2011.

Historically, retaining clients has typically boiled down to basics, assuming you could achieve the expected level of creative comfort and audio quality at your price point; this has required promptness, a positive attitude, treating people right and maintaining reasonable competitiveness, both gear- and price-wise.

An average metropolitan market that once only had a handful of mid- to upper-level studio competitors now has literally hundreds, with all the various price/quality combinations to completely fill the continuum with every imaginable option. More significantly, our clients are now making music (and/or sound synched to video, for that matter) in markets turned so upside down by technological revolution that it’s hard to determine the source(s) of their revenue stream(s).

Thus, today’s recording studio client has so many options to explore. These trends are evidenced at all levels of the recording studio business, as technology’s voracious appetite eats up all things in her path, with reckless disregard for hourly rate, tradition or discography.

Competing Against New Vistas

Sometimes even the best practices can’t keep up with the marketplace. Example: I had a young band at Catalyst who knocked out a reasonable debut EP with no real difficulties of any kind. Everybody was pleased and had fun, but the client told me that the guys were going to do some recording at a few different places in the near future, as they were newbies and wanted to see what it was like at other studios with other

methods. He explained that these other studios — “artist studios” — were either free or nearly free, so they didn’t really have anything to lose. I really can’t blame them; who wouldn’t want to try out new vistas and get some perspective?

They may just come up with recordings that offer as much “utility” (if not as much fidelity) within their rapidly changing music market, one that finds most young bands

ing and then use our logo, too ... It’ll look like you’re signed,” “Use our online mix service for that ‘radio-ready sound.’” It’s daunting and indicative how aggressive some competitors are getting for what used to be under-the-radar, fairly small-time work.

Many clients are experimenting with DIY. Example: Another client did some pre-production here, and we put together a plan with a modest EP budget, a budget that

“An average metropolitan market that once only had a handful of mid- to upper level studio competitors now has literally hundreds, with all the various price quality combinations to completely fill the continuum with every imaginable option.”

giving away their wares anyway. If I cannot make my recordings and their associated budget work in this band’s complicated business plan, then I cannot expect to have their business, period.

Some of my clients are virtually hunted. Example: A moderately successful client of mine with a mainstream sound has had suspicious offers from all over the country. “Come up here for a free spec deal recording,” “Use our expensive, big-label master-

they frankly cringed at. Instead, the band has opted to record drums at a place even cheaper than mine and do all the overdubs on their personal DAW setups. I’m in there lobbying for the mix work, but it’s no sure thing. Will they tire of the frustration and pull me in for some completion? Will the product be as compelling as a normal studio production would have been? You may be a top-shelf producer, you may be a mid-level trench fighter like me, or you may be



a novice with merely a laptop, a work ethic and a dream: Chances are your clients are experimenting with self-production even if they're satisfied with your performance.

Competing Upstream

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A view from inside Tavaglione's Catalyst Recording in Charlotte.

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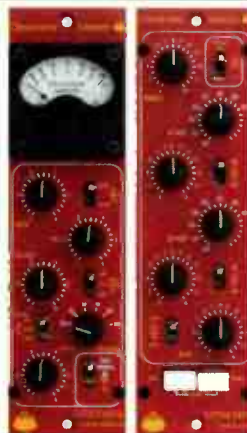


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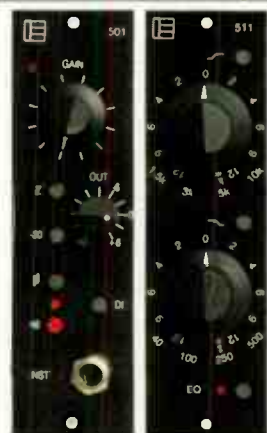
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LARGE-DIAPHRAGM CONDENSERS

PART II

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It has been 10 installments and over two years since our first Session Trial was published (*Pro Audio Review*, January 2009). In Session Trial — PAR's ongoing series of comparative gear evaluations — I've had the privilege of meticulously reviewing premium products side by side in actual recording sessions: everything from handcrafted ribbon microphones to small-diaphragm condenser pairs, from workhorse DI boxes to arguably the highest-quality channel strips commercially available.

Almost as if Session Trial has concluded its own Book One, we come full circle, back to our very first Session Trial category, Large-Diaphragm Condenser (LDC) microphones. However, this time our contenders are priced within a narrower range: all five can be purchased between \$549 and \$999 street. Additionally, these LDCs are more similar than the contenders in Part I; Part II features solid-state, dual-diaphragm and multi-pattern (at least cardioid, omni, figure-eight) models, each with an output pad and included shock mount.

The Contenders

These five LDCs are, in alphabetical order:

1 Audio-Technica AT4047MP — With a transformer-coupled output and a reportedly "early FET" (field-effect transistor) sound, the AT4047MP has an 80 Hz HPF (high pass filter), -10 dB pad and handles a whopping 155 dB without the pad. List price: \$1,055.

2 Lauten Audio Clarion FC-357 — Touted as providing a blend of classic and modern FET sonic characteristics, the Clarion FC-357 features a zinc-alloy body, transformer output, a +/-10 dB cut/boost switch, and flight case with wooden box, shock mount and pop filter accessories. List price: \$799.

3 sE Electronics SE4400A — Unique in this Session Trial for its feature-based flexibility — offering four polar patterns (hypercardioid is the bonus), two bass cuts at 60 Hz and 120 Hz, and two pads at -10 and -20 dB — the SE4400a came as a hand-matched pair kit, but we'll try to ignore those additional useful features. List price: \$999 each.

4 Shure KSM44A — Characterized by a transformerless design, -15 dB pad, an 80 Hz HPF and a 115 Hz bass roll-off, the KSM44a comes with a flight case and, most notably, the low self-noise of 4 dB in cardioid, which Shure attributes to its trademarked Prethos Advanced Preamplifier Technology. List price: \$1,249.

5 Sontronics Orpheus — Aesthetically striking with its large, spherical grille, the Orpheus is notable for an extended high-frequency response as well as a 10 dB cut or boost function. It comes in a wooden box and is the most affordable of our group. List price: \$639.

The Session

For this Session Trial, I employed the chops and opinions of The Wiggle Wagons (a band of western/country/rock transplants from California) to carefully audition the mics and use their favorites on a song for their new full-length album.

We first established our baseline sound, did some test tracking with all five LDCs on drum room, picked our favorite mic, and then laid down the song with everybody playing together (no click) and kept the drums (first take, no punches). We then replaced each instrument and vocal track one by one, first test-recording each LDC and then laying keepers with our favorites (with no compression, EQ or signal processing of any kind, unless noted).

On Drum Kit

Drummer Chris Slezak's new Ludwig five-piece Keystone Series kit was miked with my usual array of AKG, Audio-Technica, Electro-Voice, Neumann, Sennheiser and Shure favorites (an array of dynamics, ribbons and condensers), but I substituted our test LDCs in place of my usual ribbon room mic(s). Frankly, I felt I was sure to miss the girth and depth of the ribbon mic for the room, but hoped to get some punch and texture (and not just cymbal wash) from our LDCs.

We went with an omni pattern on all of our test mics (even though this revealed some undesirable traits from my nearby glass), placed it about six feet in front of the kit, at tom height and aimed downward at the kick with no pads, no boosts and no filters, then amplified by the very clean AMS-Neve 4081 mic preamp.

We had a hard time reaching consensus, but ultimately chose the Shure KSM44A for our track (hear it on audio webclip #1). The guys thought it was the "biggest" and "punchiest" — we all liked the way it enhanced the snare sound when blended into the kit at about -6 dB (at 0 dB it became rude and "cymbal forward"). I liked it too, but found the top end to be a little dirty (which was A-OK), especially if compared to our number-two



Audio-Technica
AT4047MP

Selected Audio Clips from Session Trial:

Large-Diaphragm Condensers, Part II

For this -- our 11th Session Trial -- we introduce another helpful component to our ongoing series of comparative gear evaluations: online .WAV files of product performances as directly referenced in the text. We hope you find these both informative and further illustrative of the conclusions made by our ST Contributor. - visit the web page below for a listen! —Ed.

proaudioreview.com/article/34452

pick, the Lauten Clarion. The Clarion had the most clarity, fullness and smoothness of the whole lot — pulling up some kick drum that made it my number-one pick — even if the band found it a little mid-scooped for their taste in this application.

We couldn't decide between the well balanced but slightly dirty-sounding Audio-Technica AT4047MP and the downright snarly dirt of the Sontronics Orpheus, so they are tied for third. The sE SE4400a had a brash high-mid response in this app and a lean bottom end too, although I found myself appreciating its light weight and easy-to-manoeuvre shock mount (I just hoped its plastic mounting ring would hold up for the duration of the Session Trial, which it did).

On Bass Guitar

Bassist Kevin Taylor played an excellent, active Music Man 4-string (with its very defined, bell-like high mids) through my tube SWR rig with JBL E140 speaker. We did capture a DI signal for the final mix; we only monitored the LDCs for this evaluation. For mic amplification, we used my Manley TNT's tube channel; the LDCs were positioned a foot off the



Lauten Audio
Clarion FC-357

amp, in cardioid this time, with no pads/boosts/filters.

The AT4047MP was really quite boomy and "peaky" on certain notes, and overall too muddy for our tastes. The SE4400a had a more extended bottom end, but too much power through its thick mids, with not enough detail in the higher register to pick up the octave notes and plucks.

The Clarion was honestly clean and pleasantly fat, yet somehow didn't move us, despite a lack of definable negatives. The KSM44A was nicely balanced and full-spectrum, but, like the Clarion, didn't move us. The Orpheus impressed us all with liveliness, a good image and a well-defined top; the band unanimously wanted to use this mic, and I nearly concurred. I simply couldn't get over how good my AEA R92 ribbon sounded on our scratch track, with its tempered, musical mids. The scratch performance was flawless to boot, so it became our keeper. I know, I'm not playing by the rules.

On Guitar Amps

We kept our LDCs in cardioid, used the pads and kept the HPFs off for this guitar testing. Once again, we used the Manley TNT — this time, with its solid-state "cool" side (without optional transformer coloration) — and close-miked the speakers just off the grille cloth and angled slightly inward, between center dome and outer edge.

Vocalist/guitarist Daniel Grigg was planning to double his rhythm guitars, first laying down a Gibson Les Paul gold-top (with P-90 soapbar pickups) through a groovy, old 1960-era Magnatone Troubadour amplifier, then again with a Fender Telecaster through a Peavey Classic 50 tweed combo. We started with the Les Paul/Magnatone, and ultimately we chose it paired with the AT4047MP for our keeper track (audio webclip #2), as Daniel liked it the

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most; it did offer a nice musical balance with just a touch of additional gritty character. The Lauten Clarion received our second pick, for nearly opposite reasons: its "pure amp" cleanliness and accuracy. The third pick, the SE4400a, added a little honk to the low-mids (on lower chords) that wasn't ideal for our use, but I found the mic worked really well on higher single notes and snappy funk strumming.

Lead guitarist Bud Burke liked the SE4400a's tone a lot; he wanted Daniel to use it and tweak its EQ into a useful mix notch, and Bud may just have had a point. The KSM44A had a nice, focused midrange with a slight "ringiness" up top that seemed to distract from the amp tone and was comparably thin on single notes. The Orpheus could not handle the cranked Magnatone (an amp with no master volume); the

mic overloaded and noticeably distorted even with its -10 dB pad in, although a little less SPL out of the amp would've had us in the clear.

Next, we went for the double on the twangy Peavey rig and, again, chose the AT4047MP (webclip #3), this time through a True Precision 8 preamp (which added just the touch of "five o'clock shadow" of its own to that pointy Fender chin).

On Bud's smokin' countryfied/surf and slapback-laden solos, we used the Peavey rig and, again, found ourselves with too many options and too many valid opinions. We did actually agree that, especially on this application, we could use any of the five LDCs and be fine with the choice. Ultimately, we struggled to pinpoint the Orpheus as our first choice (webclip #4) for a certain attitude and bite up top that Daniel called "evil character," a perfect fit for a track about the walkin' dude, Old Scratch, entitled "The Man In Black" (and I don't mean Johnny Cash). We liked the Clarion every bit as much for its smooth, accurate transient reproduction and polite nature (webclip #5). Unable to reach agreement, the only logical choice



SE Electronics SE4400A



was to track both and guarantee smiles on mix day; so we did.

On Male Vocals

Daniel's lead vocals varied from a smooth, husky baritone to a few moments with some rocky growl, so we tested all five LDCs with a Stedman pop filter, back from the mics about six inches (just a touch of proximity effect), in cardioid, with no pads/filters. We utilized the Manley TNT, its tube side engaged with built-in 80 Hz HPF. We evaluated without any compression or EQ, but patched in a Chandler Germanium compressor (using the medium germanium diode setting) once we chose our favorite, then went for keepers.

The AT4047MP was just fine here, with a lean bottom and musical mids, but was a little plain, or "vanilla," as one band member said. The KSM44A was in a similar boat in that it too was reasonably balanced, had musical mids in a U87 kind of way, with a touch of emphasized sizzle up top, yet not providing the spice we sought. The Orpheus had that spice, alright, but it also was quite sibilant, just too overly crisp for my tastes (although some of the band disagreed and lovers of overtly emphasized vocals probably would, too). The runner-up, the SE4400a, translated a unique sound with strong low-mids and a super-smooth top that handled sibilance gracefully: a very classy and refined presentation that would be ideal for jazz, blues or many female vocals across the stylistic board. We finally chose the Lauten Clarion (webclip #6) for its aforementioned cleanness and smoothness, but I specifically liked its midrange fullness, unfettered dynamics and lack of unwanted high-frequency disturbance (with no audible sibilance, spitti-

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ness or clickiness).

Bud's harmony vocals were below the melody with a laidback delivery, and the Orpheus was the perfect fit. Its abundant top end and forward mids helped define his low pitches and brought out the minute, gritty details of his slightly smoky delivery.

On Acoustic Instruments

Unfortunately, "The Man In Black" didn't call for either piano or acoustic guitar (keyboardist Joseph Hamrick laid down a Hammond B3-type part via MIDI synth), so I was compelled to do a little pure acoustic testing on my own to check the more sensitive abilities of this Session Trial's contenders. With my Taylor solid-top 6-string, I laid down a descending pattern, captured by all five mics simultaneously (in cardioid with no pads, boosts or filters) about one foot off the guitar, squeezed in very close together to try to get as close to coincident as possible, all mics aimed at the 17th fret

(right at the body), each amplified by a channel of the True Systems Precision 8 preamp. After I ranked my tracks, I moved the mics around to different positions in the array and confirmed my judgments were accurate with each mic in the sweetest spot.

Without exaggeration or hype, I must say all five LDCs sounded pretty darn good, with no noise floor, sensitivity or midrange irregularities. The KSM44A's self-noise was so quiet I could hardly tell that it was on.

Although the Clarion had the deepest bottom and best extension, the cleanest top end and the truest dynamics, it still got my number-two pick. My top pick, the SE4400a, sounded so big, punchy and flat from bottom through mids to top (web-clip #8). I'd probably prefer the Clarion for classical work, but the sE seems to flatter without any noticeable hype or undue personality, just like a masterful makeup artist. My third pick, the AT4047MP, was quite smooth and pretty, with a nicely understated top end, musical low end and a touch of dynamic compression.

Both the KSM44A and the Orpheus were mid-forward, top-end heavy and a little overbearing for my taste. The KSM44A was slightly compressed, lean and sculpted up to 10-12 kHz where it gets a little rowdy up top. The Sontronics was more open and airy, but mighty slim through the middle, which might be just right for mixing in with a full ensemble.

Summary

Considering the fact that all five mics got the top slot at one job or another, considering that no one mic had a monopoly on voicing, or musicality or usefulness, I cannot rank the five overall. Yet allow me highlight some strengths.

The Audio-Technica AT4047MP is indeed sort of "old school" in its sonic signature and especially good at warming up things. It's excellent on electric guitars, kind and gentle on acoustic sources, and, I imagine, it would be a good choice on female vocals, too.

Overall, the Lauten Clarion FC-357 was the most dynamic, cleanest and clearest of the group, making it my number-one choice for classical work, acoustic work and apps that demand transparency without coloration. Its solid build quality, impressive shock mount and accessories make it a fine value, too. That +10 dB switch did offer a little more high-end juice, as well as overall boost.

The sE Electronics SE4400A is probably the most versatile of the bunch with its C 414-like numerous pads, filters and patterns. Its versatility aside, the SE4400A also has voicing versatility: It sounds



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somewhere between low-mid strong and perhaps slightly honky on some apps, while delightfully flat, musical and flattering on others. It may not be your "only LDC," but it's very good as one of your LDC flavor choices.

The Shure KSM44A surprised us all by its abundance of character. With some sculpting through its mids and bottom and some color way up high, it offers good mid articulation and cuts through a mix. Its dynamics taming, colorful mids and lean bottom will make it a wise choice for many male vocals.

The Sontronics Orpheus had the hottest output of the group, with the trickiest of sonic personalities. It is tight through the lows, a bit unpredictable through the high-mids, and always cutting up top.



Sontronics Orpheus

When its signature fits, it really works well, with lots of "magic" and excitement, but when it doesn't fit, it's way off. The Orpheus's +10 dB boost made the mic even brighter, perhaps a bit too much.

Compared to our first group of LDCs in Part I two years ago, this group offers far more affordable prices. Yet Part II's LDC collection did not slouch, just presented more bang for the buck, lots of utility and the sonic qualities to please all but the very most discriminating of seasoned audio engineers' ears.

Gear used in PAR Session Trial: Large-Diaphragm Condensers, Part II: Soundcraft Ghost console; Blue Sky SAT8 and SUB212 monitoring; Digital Performer 7.2 DAW; AMS-Neve 4D81, Manley TNT and True Systems Precision 8 microphone preamplifiers.



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iPad Audio Production Tools

In less than a year, the Apple iPad has morphed from the toy we didn't need to the tool we can't live without. Here, *PAR*'s senior contributor details his favorite iPad apps and tools, all useful for the audio professional.

After attending the 2011 Winter NAMM show, I'm convinced that anyone previously skeptical of the iPad's validity as a legit audio tool would be crazy not to have a change of heart.

Less than a year after its initial release, the market has been flooded with a host of apps and accessories that practically make the iPad appear to have been designed specifically for the music industry. If the second version of the iPad hasn't already been announced by the time you read this, chances are it is right around the corner and it will, no doubt, be even better suited for the music industry.

I've been wading through iPad apps and accessories since purchasing my iPad last summer. While there are literally hundreds of options out there, these are the ones I consider the cream of the crop.

The Apps

I've fallen for two recording apps, Sonoma Wire Works' StudioTrack and Sound Trends' studio.HD. The Sonoma Wire Works' FourTrack iPhone app has already been a favorite of iPhone and iPod touch recordists, so it is no surprise that the StudioTrack app is among the top of the iPad crop. The \$39.99 app (sonomawireworks.com/iphone/studiotrack) is the closest I've encountered to real-world recording, and it's the only recording or programming app covered in this article that is so intuitive that I was able to fully utilize it without even



Sonoma StudioTrack

briefly consulting a manual.

StudioTrack provides up to eight tracks of audio on a multi-touch mixer that includes faders, knobs and metering. Like an analog console, StudioTrack allows multiple parameters to be simultaneously controlled and the channel order

can be easily rearranged making it easy to stay organized. The metronome beats (which can optionally be used in the mix) are courtesy of the Discrete Drums multitrack drum library and support 3/4, 4/4, 6/8 and X/4 time signatures. The tempo can be entered numerically or via a tap

function.

Once all eight tracks have been filled, the tracks can be bounced to a new song allowing the song to exceed eight tracks. This can be done an unlimited number of times and after the recording is complete, the WiFiSync option allows all of the original un-bounced tracks to be exported into a computer to be mixed.

Every StudioTrack channel includes a configurable effect rack. Configuration options include tempo-synchronized double delay, 4-band parametric EQ with Hi-Shelf, Hi-Peak, Lo-Peak and Lo-Shelf filters, one-band peaking parametric EQ and compressor. In addition to an effect send on each channel and a fully configurable reverb, the app includes a 4-band parametric EQ and a stereo-linked master compressor strapped across the stereo bus.

Sound Trends' \$9.99 studio.HD app (soundtrends.com/apps/studiohd-1) provides eight multilayered audio tracks providing up to 24 total tracks of playback. Studio.HD is more complex



Sound Trends' studio.HD

complex mix entirely within your iPad. Every track includes volume control and up to four real-time effects (including High and Low Pass Filters, Gate, Stutter Loop, Stutter Stepped, Stutter Gate, Bitcrusher, Flanger, Glitchy Repeater, Delay), Pan and Reverb. Mixes are exported as a 16-bit/44.1 kHz AIFF files.

The \$14 BeepStreet iSequence app (beepstreet.com) is to sequencing what studio.HD is to recording. And like studio.HD, it is somewhat sophisticated making the online tutorial videos a necessity. The app is built around an 8-track sequencer that includes 165 built-in instruments (with more available). The 8-channel mixer includes five configurable effect slots with the option of adding Filtering, Reverb, Flange, Delay, Lo-Fi Crusher, Equalization or Compression. Instruments, tracks and views can be switched without stopping playback, making it possible to compose, play and mix simultaneously. The app supports HSQ, MIDI, WAV export

“The market has been flooded with a host of apps and accessories that practically make the iPad appear to have been designed specifically for the music industry.”



Propellerhead's ReBirth for iPad

than StudioTrack and will require a slight learning curve, but Sound Trends has some excellent YouTube videos that make learning the app a breeze. While StudioTrack lends itself more to organic recording, studio.HD is perfect for more pop/hip-hop-oriented production including loops, remixing, etc. The app includes 900 loops: Loop sets are logically grouped into instrument parts (drums, bass, keys, guitars, etc.) that work well together. Loops can easily be auditioned at the current project's tempo. Comping is possible, and editing is quick and easy as all operations intelligently snap to either the bar or the beat depending on the Zoom level.

While StudioTrack supports easy export into a full-featured DAW, studio.HD supports fully automated mixing with volume, panning and 13 effects making it possible to complete a

and HSQ import.

There are two killer beat creation apps that recreate classic hardware devices, Propellerhead Software's ReBirth for iPad and Korg's iElectrube.

Propellerhead Software released ReBirth back in 1997, and it was a hit. Built into an easy-to-use package, the program recreated the classic sound of the Roland TR-808 and TR-909 drum machines and the TB-303 Bass synth. Propellerhead Software has resurrected this classic program as the \$14.99 ReBirth for iPad app (rebirthapp.com), which combines these three classic sounds with effects, pattern sequencers and a fantastic interface. ReBirth users will be able to use this app immediately as it is almost identical to the original. Completed songs can be shared

“My favorite iPad app is Neyrinck’s \$49.99 V-Control Pro that transforms the iPad into a full-featured, multi-touch control surface for Pro Tools.”

via URL, Facebook or e-mail as a RBS (ReBirth Song) file or MP3.

Though not as old as ReBirth, Korg’s Electribe•R has been a mainstay in the electronic and dance music for going on 10 years now. Korg has transformed the Electribe•R’s entire sound engine and sequencer into an iPad app with the release of its \$19.99 iElectribe iPad app (korg.com/ielectribe).

The iElectribe’s step-sequencer is intuitive and easy to use as it recreates the feeling of drum programming on a hardware machine. Like the hardware Electribe, iElectribe provides a 4-part percussion synthesizer and a 4-part PCM synthesizer. iElectribe patterns and performances can be transferred into a MAC or PC via iTunes, using CD-quality wav files ultimately allowing them to be used in a computer or iPad-based DAW.

Wizdom Music’s \$9.99 MorphWiz (morphwiz.com) is the most expressive and enjoyable iPad instrument that I’ve encountered. Like a Theremin, it won’t necessarily work on every track, but it’s always fun to try. MorphWiz is the brainchild of Dream Theater’s Jordan Rudess, and it is a blast to play. Receiving its inspiration from Lippold Haken’s Continuum controller, MorphWiz lays out

of performance to be exported as an audio file. The results can be exported, e-mailed or sent to apps that support AudioPaste.

My favorite iPad app is Neyrinck’s \$49.99 V-Control Pro (neyrinck.com/en/products/v-control-pro) that transforms the iPad into a full-featured, multi-touch control surface for Pro Tools. The app supports Pro Tools 7 and later on Intel Macs (PC support is coming soon) and uses the HUI control surface protocol via WiFi to control transport, editing, and mixing functions as well as advanced control of sends, automation, groups, auditioning, plug-ins, scrub/shuttle, I/O assignment and tons more within an easy-to-use interface.

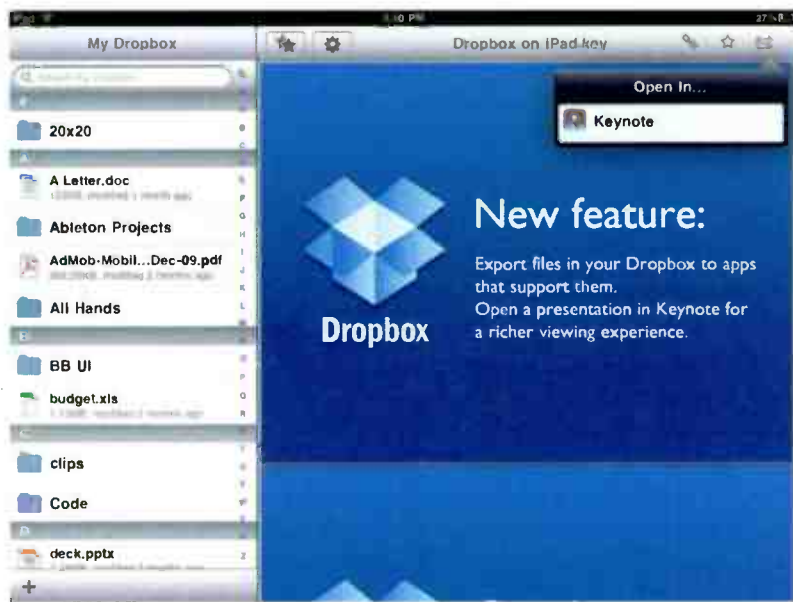
V-Control pro utilizes the free Ney-Fi utility that must be installed and run on the computer that is running Pro Tools. By creating a virtual software MIDI port, Ney-Fi allows Pro Tools to communicate with V-Control over a network.

If you don’t already use Dropbox (dropbox.com), it’s a necessity if you are an iPad user. Actually, it’s a necessity, period. The basic account, which includes 2 GB space, is free while Pro 50 (50 GB space) or Pro 100 (100 GB space) accounts are \$9.99 or \$19.99/month.

I became aware of Dropbox just over a year ago when many of my video clients began requesting it as the preferred method of delivering mixed audio for their projects. In addition to being a great way to send and receive files to and from your clients, backup your data and share photos, it provides an easy way to transfer audio information between your iPad and the rest of the world. Free iPad and iPhone apps provide easy access to your cloud data from virtually anywhere making it easy to share a project’s audio files or reference a mix or overdub anywhere.

Besides using the iPad to manipulate audio, program beats and create music, I’m routinely creating and editing Word 97-2010 (.doc and .docx) compatible documents and Excel 97-2003 (.xls) compatible spreadsheets using the Byte Office HD (\$7.99) app

along with the Apple Bluetooth Wireless Keyboard which allows lightning fast typing and data entry in comparison to the convenient yet extremely slow onscreen keyboard. Dropbox allows these files to easily be traded back and forth between my iPad, iPhone and laptop for continual editing and entry.



Dropbox for iPad

the notes of a preset or user-definable scale across the screen as vertical lines from low to high. Depending on how you drag your finger across the screen, sounds can morph from one sonic character to another. The app’s built-in recording function allows a single performance or several layers

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Hardware

The \$229 Future Sonics Atrio Special Edition in-ear monitors (futuresonics.com/FSatrios) are single-driver monitors perfectly suited to work with the iPad. The Atrio's MG7 proprietary dynamic drivers have an 18 Hz - 20 kHz frequency response and provide a more full, natural sound at volumes lower than other transducers. Included with the monitors are a large variety of silicone and foam sleeves insuring ultimate comfort and fit. In addition to physically providing up to 26 dB of ambient noise rejection, the Atrio, unlike 2-, 3- and 4-way earphones, have no electronic or comb filtering artifacts, no phase issues and no crossover dropouts. I've experimented with several different in-ear monitors (none with custom molds as of yet) and the Atrio lead the pack in detail, depth and low-frequency accuracy. Environmentally conscious engineers (which is hopefully everyone reading this) will be happy to learn that the earphones include eco-friendly packaging (including a case made with reclaimed-rubber from old truck tires).

I've found the \$89.95 Boa push iPad messenger bag (boobags.com) to be the perfect way to lug my iPad around in style. The bag is crafted from durable Twylon and Nappa leather and

they include Terralingq registration. This means that if you lose your bag and an honest person finds it, Terralingq will reference the bag's unique number (which you register on line after you purchase the bag) and will then contact you with the bag's location and the finder's contact information, allowing it to be safely retrieved.

While the iPad's built-in audio output is reasonably good, it's far from audiophile-quality, and its built-in mic leaves much to be desired. There is a wonderful-sounding workaround though. I picked up the \$29 iPad Camera Connection Kit that adds connectivity with some (it seems to be hit and miss as to which ones) USB audio interfaces. I used this method to connect the iPad to a Benchmark DAC1 USB D/A interface and was amazed at the sound quality I was able to achieve through a pair of Dynaudio BM-5A monitors. The Benchmark has a wonderful built-in, headphone amp which, coupled with the Future Sonics Atrio earphones, also yields a fantastic listening experience.

I was also able to use the Apogee ONE interface (look for my full review next month) with the Camera Connection Kit while working with StudioTrack and studio.HD. Unfortunately, the iPad doesn't provide enough juice to power the ONE, so I had to insert a powered USB hub into the chain to provide power to the ONE.

One of the coolest iPad accessories I saw at NAMM was the

“While the iPad in no way replaces a full-blown desktop or laptop computer when it comes to music creation, it does provide a long list of powerful recording and music creation tools that easily adapt into a professional's workflow.”



is equipped with a wide, comfortable seatbelt nylon shoulder strap and a sturdy snap-button flap closure. I've been carrying it for nearly six months now, and it gets as many comments as the iPad itself. In addition to carrying my iPad and keeping it safe, the bag comfortably holds my Future Sonics Atrio Earphones, iPhone, credit cards and drivers license.

Apogee ONE USB
audio interface

Besides being a great bag, one of the things that I love about the Boa push and the rest of the boobags is that

is equipped with a wide, comfortable seatbelt nylon shoulder strap and a sturdy snap-button flap closure. I've been carrying it

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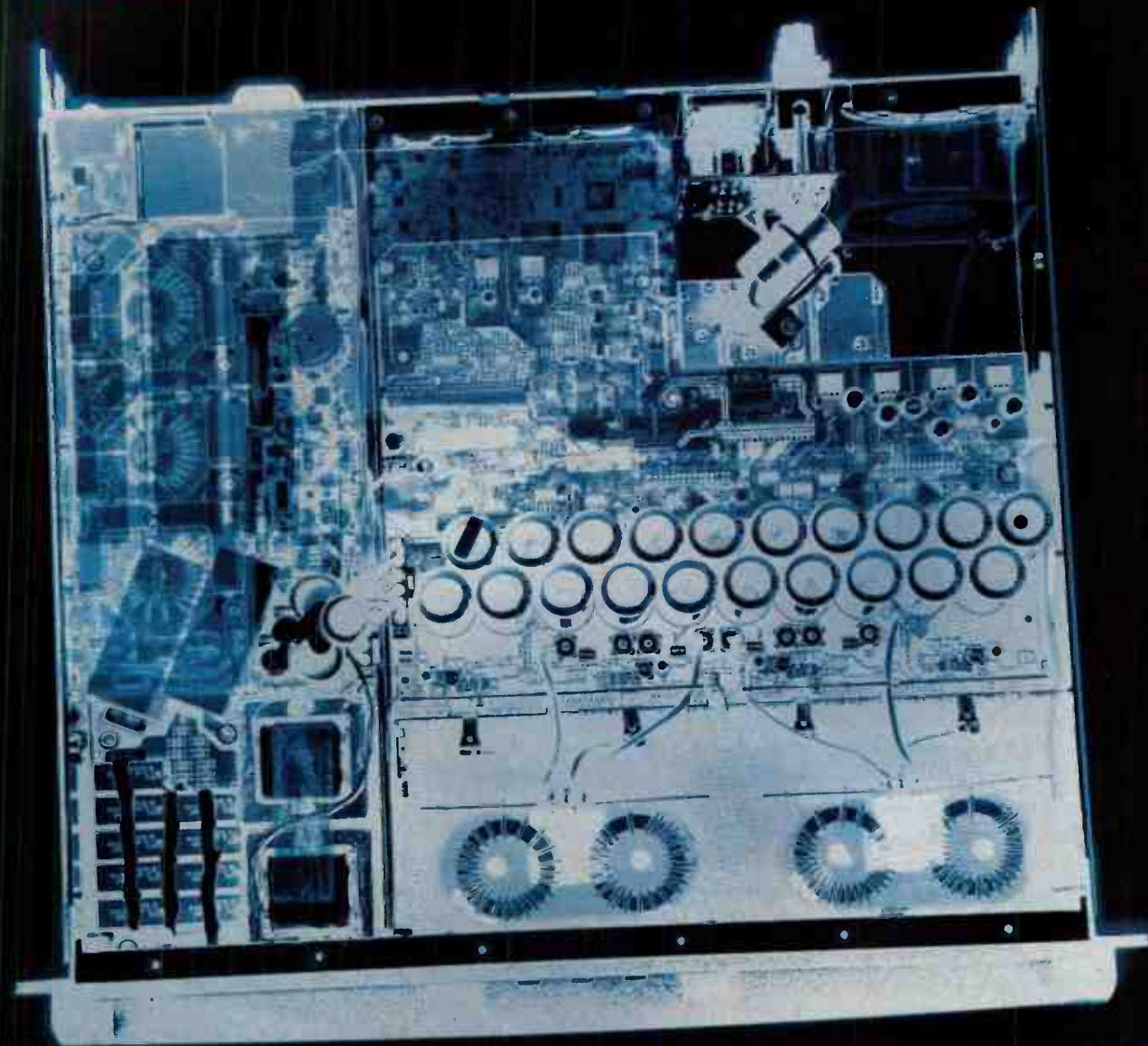
Alesis StudioDock (alesis.com/studiodock). At approximately \$199 street, this universal iPad docking station provides two inputs, via XLR/quarter-inch dual input connectors, with switchable phantom power and independently controllable gain. MIDI jacks allow external keyboard control, sequence recording or the ability to easily use the iPad as a sound module in the studio or for a live performance. Two quarter-inch outputs allow a pair of monitors to be connected to the dock, and a quarter-inch headphone jack provides headphone output (both have independent level controls). Direct monitoring is built-in to the headphone section making input monitoring possible with apps (like Tascam's Portastudio) that don't include input monitoring.

Summary

While the iPad in no way replaces a full-blown desktop or laptop computer when it comes to music creation, it does provide a long list of powerful recording and music creation tools that easily adapt into a professional's workflow. Frankly, I can't imagine how I lived without it.

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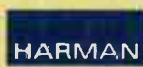
At the heart of the new I-TECH HD is the BSS OMNIDRIVEHD processing engine. Four times faster than its predecessor and featuring Linear Phase FIR filters and LevelMAX™ limiters, OMNIDRIVEHD provides unmatched clarity and sonically pure signal processing.

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DISPENSE AS WRITTEN



Focusrite Midnight Plug-in Suite

For under \$100, the Midnight Suite is “a supreme value,” declares *PAR*’s software editor.

Ninety-nine bucks for a plug-in sure seems like a good deal. So, how about 99 bucks for two plug-ins? Sounds even better! At that price, they must be of cheap quality, right? But what if the deal sweetens: These plugs are from a company with a well-established lineage of supreme audio quality? You’re now considering the case of Focusrite’s new Midnight Plug-in Suite.

Features

Based upon the Focusrite’s iconic ISA110 equalizer and ISA130 compressor, this new plug-in collection for VST, AU and RTAS uses the company’s latest code and DSP technology. It will run on Mac OS 10.5 or higher as well as Windows Pentium II 600 MHz and faster systems. Visually, the Midnight plug-ins look good — with the aesthetics of a blue brushed-aluminum faceplate — and feature analog style meters and large silver-metal knobs.

Download and installation is a breeze, and the software is activated through the Focusrite E-Store, which means no iLok is required. Each user gets four authorizations, so it can be installed on multiple systems. I have three rigs in use daily, so I like this method.

In Use

The Midnight EQ features an Output meter, which resides next to an Output Gain control

(± 18 dB). The layout is delightfully simple, with both a fixed-position Low and High Filter, as well as Low and High Shelf with corresponding Frequency knobs. Between those sit the Low and High Mids with associated Gain (± 16 dB) Frequency sweep and fully variable Q knobs.

The large knobs and logical layout make it easy to use. The sound can range from edgy to smooth, and I made good use of both the high and low filters. I used it on guitars, vocals, drum loops and acoustic bass, and I found it to be a fine, general-purpose EQ. As a side note, it reminded me the Focusrite Red EQ was the first software plug-in I used (many moons ago) that visually represented the EQ curve, something we’ve all grown accustomed to. I like the fact that Midnight makes you listen to, and not look at, the EQ.

The Midnight compressor, which is fixed as a “soft knee” type, offers a clean, simple design. There are two large level meters: The first displays either Threshold In or Output Level (switchable) and the other displays Gain Reduction. There’s ± 18 dB of In Gain, Threshold, Ratio, Attack (fast, slow, moderate), Release (and Auto Release button), and up to 40 dB (!) of Make-Up Gain. But what I really like is its continuously variable Blend control (from 100 percent Dry to 100 percent Wet).



In use on various instruments, I found the compressor to be fairly subtle — even when hit hard, it didn’t come across as aggressive or edgy. But it’s clean and effective.

With a drum loop, I played with turning the attack all the way up to slow, and setting the Release to max (4). By setting the threshold high enough that it squashed the audio, I was able to create a useful dynamic loop that “pulsed” with the snare. I had the Makeup Gain set to over 20 dB; it was a really cool effect/sound. I then turned the Blend control all the way to Dry and raised it until I liked what I heard. I wish more plug-ins had this useful Blend option.

Now, my gripes: when working in Avid Pro Tools, Midnight “takes over” the screen; you have to manually click off it to play your audio. Also, there are no presets. Presets are a great way to feel out a plug-in; I’m disappointed they didn’t include any. However, Focusrite informed us they are aware of the Pro Tools issue, and a software fix will be available shortly. Also, presets are forthcoming. Aside from that, Midnight sounds, looks and feels very good. And for \$99, it’s a supreme value.

Price: \$99

Contact: Focusrite | 310-322-5500 | focusrite.com



Rich Tozzoli is a composer, engineer/mixer and the software editor for *PAR*. richtozzoli.com



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World Radio History

AKG Perception 820 Tube Large-Diaphragm Condenser Microphone

This multi-pattern tube LDC is appropriate for the budget-restricted yet sonically discriminating recordist.

When it comes to multi-pattern, large-diaphragm condenser (LDC) studio microphones in 2011, what can you own for \$699 street?

Well, there are many choices, but I've yet to discover a LDC as affordable and truly multipurpose as the flagship model in AKG Acoustics' Perception line of Austrian-engineered, Chinese-built studio microphones. With the Perception 820 Tube, the aspiring yet budget-restricted recordist has a tool to capture nearly any sound source with great results. Though tube-amplified, it is not especially "vintage" in sound. More than anything, the Perception 820 is markedly neutral-sounding, neither warming midrange nor hyping higher frequencies.

Features

Designed by AKG engineers in Vienna, the 820 Tube has dual one-inch diaphragms and ECC83 (12AX7) triode vacuum-tube preamplification within its rather large (2- by 8.3-inch) baby-blue body with an attractive chrome-plated windscreen. From its Remote Control Unit, nine polar patterns (from omnidirectional through figure-eight) are switchable from the all-metal box's aluminum front plate, plus switchable bass cut filter (80 Hz @ 12 dB per octave), ground lift, and -20 dB pad, allowing the system to handle up to 155 dB SPL. Also included in the package are a sleek, sturdy nickel-colored shockmount; a nice suitcase-style case; and a 50-foot, 7-pin cable for mic-to-remote-control-unit connectivity.

In Use

For this review, AKG graciously sent two Perception 820 Tube kits, thus allowing use in stereo applications with impressive results. Most notably, the dual 820 Tube mics used as a spaced pair in omni for drum room coverage were lovely, full-bodied and provided the majority of a roomy, classic drum kit sound. On solo instrument sources — most notably, a full-bodied lead male vocal — polar pattern audition was easy, thanks to the RCU's nine-position detented rotary switch; many times I chose a wide cardioid "in between" pattern, allowing the vocal that touch of extra air that helped better define its unique place in the mix. Those nine polar pattern options are a nice luxury for a mic at this price point, in my opinion.



Those who stood in front of the mic were clearly impressed by its looks. One vocalist even called it "fancy," surely due to its attractiveness and effective branding (a large AKG logo on its barrel).

If tight positioning wasn't a limitation, there was rarely a time I didn't opt to use the 820 Tube (over other LDCs) during my time with it. Between it and another very good-sounding Chinese-built LDC (the solid-state Sontronics Orpheus, featured in this issue's "PAR Session Trial: Large-Diaphragm Condensers, Part II" cover story), the Perception 820 Tube was ever so slightly smoother through the upper midrange, most notably on a tenor male vocal.

If there is a near-universal weak point amongst "affordable" tube LDCs I've used over the past few years, it seems to be the power supply. While the Perception 820's RCU does its job perfectly well and looks impressive from its front panel, some less-than-industrial feeling switches are weak points. For example, one of the two RCU's power switches wouldn't firmly click into place straight out of the box, and the ground-lift pushbuttons on both units felt less than sturdy. I would fear for the RCU's longevity in a commercial studio environment. That said, both RCUs performed well the entire time I used them for this review, not to mention that the mics sounded virtually identical to each other.

Summary

Though AKG wisely relies on its heritage of Austrian design, they have adopted Far East manufacturing for its Perception line, producing some feature-rich products with very competitive pricing. Admittedly, build quality of this class of microphone is determined by price, yet the sonic performance of the Perception 820 Tube is clearly indicative of its legendary heritage. Simply stated, the 820 Tube is a great-sounding, flexible studio LDC worthy of wearing its big, blue AKG insignia.

Price: \$849 list

Contact: AKG Acoustics | akg.com

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

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new live products



HK Audio Elements Modular Sound Reinforcement PA Systems

Now available for the first time in the U.S., St. Wendel, Germany's HK Audio (distributed by Korg) offers its Elements modular sound reinforcement, which merges the benefits of modern line-array technology with the portability of ultra-compact PA systems. Elements enables users to easily put together a system suitable for various situations using six easy-to-combine components. The system can be configured to support anything from an intimate speaking engagement to a multi-instrumental concert with a full 3,600W of FOH power.

Setting up the Elements system and tearing it down again is reportedly quick and easy. With E-Connect, HK's proprietary integrated signal routing system, even the largest Elements setup is performance-ready in just a few minutes with a minimum of cabling. Due to its compact design, every configuration fits into a small car, for ease of transportation.

The Elements system consists of the following components:

1. E435: The mid/high unit is made from extruded aluminum and is based on line-array technology. It houses four 3.5-inch broadband speakers and weighs 5.2 lbs. Thanks to E-Connect, the E435 quickly and easily connects with other modules.

2. EA600: Aesthetically and performance-wise, this amp module blends in well with the E435. The 600W Class D power amp provides power for up to four mid/high units or one passive sub and two additional mid/high units. It weighs 6.1 lbs.

3. E45: This stand is equipped with extendable feet, serving as a solid base for mid/high units, amp modules or the mounting pole.

4. E110 SubA: This portable 10-inch subwoofer weighs 41.9 lbs. The 600W digital Class-D amp provides power to feed another passive subwoofer or two more mid/high units. Equipped with two E-Connect sockets, the E110 SubA also serves as a base for additional elements.

5. E110 Sub: For applications requiring more low end, this passive sub is an appropriate add-on; it is powered by an active E110 or an amp module. To accommodate auxiliary elements, this sub is also equipped with an E-Connect socket.

6. EP1: The mounting pole facilitates rigging up smaller Elements setups. It is continuously adjustable and provides cordless signal routing to the mid/high units.

For more convenient transport, three models of protective bags are available. One model holds four mid/high units or amp modules and a mounting pole, another fits one stand, and a third fits one subwoofer.

Prices: E435 — Mid/High Unit, \$549; EA600 — Class-D 600W Power Amp \$839; E45 — Base Mount \$249; E110 SubA — Class-D 600W Subwoofer \$1,499; E110 Sub — Passive Subwoofer, \$999; EP1 — Pole Mount, \$139

Contact: HK Audio | hkaudio.com



QSC KLA Line-Array Loudspeakers

QSC Audio has introduced its KLA Series active line-array system. Built on the same platform as the company's K and KW Series powered loudspeakers, KLA is targeted for a range of portable and permanently installed applications including houses of worship, entertainment venues and a variety of other locations where the use of a line array is indicated.

The KLA Series is comprised of two models, the KLA12 12-inch, 2-way, line-array element; and the KLA181 18-inch subwoofer enclosure. Both models feature a 1,000 Watt (continuous), Class-D power module and include QSC's proprietary Intrinsic Correction. The KLA's self-contained SOLO (Single-Operator Logistics) rigging system is said to enable users to quickly assemble (and disassemble) a line array without the need for special tools or external hardware.

Price: TBA

Contact: QSC Audio | qscaudio.com



K-Array KR400S Portable Loudspeaker

Sennheiser has announced the U.S. arrival of distributed brand K-array's latest portable loudspeaker, the KR400S. Crafted in Italy, the KR400S is a 2-way loudspeaker designed for small to medium wavefront systems in both mobile and installed applications.

It includes two KR400 satellites and two KL21ma powered subwoofers. The KL21ma subwoofers feature a 2,500-watt, 21-inch drive unit with Neodymium magnet structure and suspension, engineered for maximum line excursions. Its light reflex cabinet is fitted with four pocket handles and one 35mm pole-mounting point for installation of satellite speakers.

Price: TBA

Contact: K-array | k-array.com



Behringer X32 Digital Console

Behringer has debuted its X32 digital mixing console, which the company claims, "allows the audio engineer to focus on the event, instead of navigating a vast sea of knobs, buttons and menus."

The X32 offers 40 processing channels and 25 mix busses, all equipped with signal processing (dynamics, EQ and inserts), said to be configurable to meet the demands of any gig, large or small. A top-panel USB port is provided for recording an uncompressed, 2-channel "board mix" straight to any standard USB thumb drive.

Price: TBA

Contact: Behringer | behringer.com



new live products

Lectrosonics Quadra IEM System



Lectrosonics has debuted the Quadra fully digital wireless monitor system. The system, consisting of the M4R belt-pack diversity receiver and M4T half-rack transmitter, features digital RF modulation, two or four channels of 24-bit/48 kHz digital audio, analog or digital inputs, and a mixing interface for users. The Quadra system operates in the license-free ISM band between 902-928 MHz and reportedly has a throughput latency of 1 ms for analog inputs and <0.5 ms for digital inputs.

The M4R diversity belt-pack receiver features a high-resolution, backlit LCD and membrane switches. A 4-channel mixer allows the performer to tailor the mix in real time, based on what is sent to the transmitter from the monitor console.

The M4T half-rack transmitter features transmission power of 200 mW for extended operating range. Locking XLR connectors allow up to four channels of either analog or digital (AES/EBU) audio sources to be applied to the transmitter.

Price: \$1,765 and \$2,875 (M4T transmitter and M4R receiver, respectively)

Contact: Lectrosonics | lectrosonics.com

Electro-Voice R300 Wireless Microphone System



Electro-Voice has introduced the R300 an "entry-level professional" wireless microphone system with features including ClearScan and EZsync. Three different microphone configuration packages are available: handheld, headworn or lapel; the package includes the R300 receiver, BP-300 bodypack and HT-300 handheld transmitter.

With the touch of one button, ClearScan scans through the R300's 32 preset channels and selects the clearest channel. EZsync uses infrared technology to set the transmitter to the correct frequency, confirming operation in one automatic step. Other features include a 14-hour battery life from two AA alkaline batteries; metal transmitters with backlit LCD display and battery gauge; 32 preset channels, with compatible groups of eight channels for simultaneous use; detachable half-wave receiver TNC antennas for use with an APD4+ antenna distribution system; and a metal receiver chassis with optional rackmount ears and front-mount antenna cables.

Price: TBA

Contact: Electro-Voice | electrovoice.com/r300

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Allen & Heath iLive T112 Digital Mixing System

PAR's longstanding live-sound contributor hits the road with the T112 and finds it an intuitive, highly capable digital mixing system that he can enthusiastically recommend.



Remember the heyday of analog consoles? Of course you do. How can you forget that your front-of-house (FOH) rig required a dozen stagehands and a forklift at load-in?

As the owner of a sound/lighting/stage/roof company, I can vouch that firms such as mine have historically been encumbered by the sheer weight and size of all our equipment, both in setup and transport. Meanwhile, manufacturers have become very good at the whole modern-day "shrinking process" for live pro audio gear, producing marvels like small powered line arrays, powered stage monitors, in-ear monitoring (IEM) systems and — as we investigate here — feature-packed digital consoles. One such manufacturer is England's Allen & Heath, a firm long known for its fine analog

consoles. And, with the iLive digital mixing console series, the company has fully entered the pro-grade digital live console arena.

Features

Allen & Heath (A&H) manufactures several combinations of digital mixing systems, best considered in two parts: the tactile mixer/control surface and the "brain" or computer/CPU, which A&H refers to as the MixRack; the two are joined together by the umbilical/snake, which, in this case, is a Cat-5 Ethernet cable.

The iLive Series can be most accurately described as comprehensive in size and scope. Offerings include the iLive R72 (12 faders/6 layers/72 total strips), the iLive T80 (20 faders/4 layers/80 total strips) and — reviewed here — the iLive T112 (28 faders/4 layers/112 total strips). MixRacks come in several sizes as well: the iDR 16 [16 in/8 out, three rack spaces] the iDR 32 [32 in/16 out, six rack spaces] the iDR 48 [48 in/24 out, eight rack spaces and iDR64 64 in/32 out]. You can mix and match any control surface with any MixRack or combination of MixRacks. A&H was kind enough to supply us with the T112 control surface and the iDR48 MixRack for this review.

The T112 control surface is approximately 42 inches wide, 25 inches deep and 11 inches tall, weighing in at a modest 60 lbs.

Will James, owner and chief engineer of Atlantis Audio and Lighting, is a longstanding PAR contributor. atlantisaudio.com

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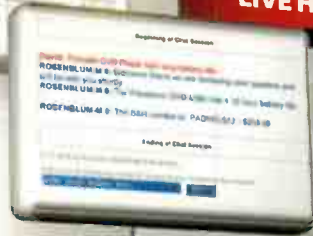
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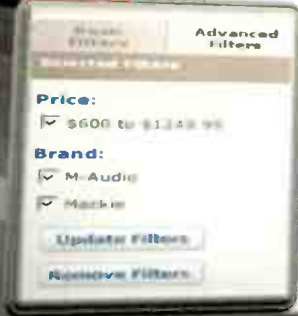
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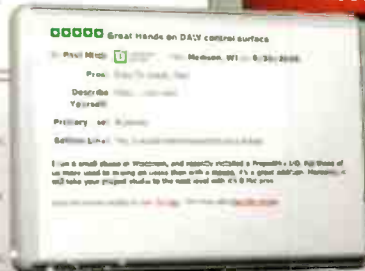
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Its surface is scratch-resistant, black, textured steel. Located at the top right of the T112's work surface, the touch screen GUI allows users to reach into the heart of the T112's operating system; here, you can access all of the main OS functions, essentially management windows, that control the routing of signal, storing of scenes and metering functionality.

The main portion of the control surface is taken up by the faders and channel strips, arranged in clusters of four, with the first bank containing three clusters of four, and second and third banks

view button can also be assigned to put the mic gains on the rotary encoders for quick level changes during soundcheck.

Just above the fader and buttons, is the color-adjustable channel label, where you can enter the name of the channel, or use the convenient onboard list of names and color-coding. At the very top of each strip is an LED stack showing input level, post trim.

The MixRack can be located at the console in a monitor application, or located on stage, conjoined to the FOH position by means of the Ethernet snake. It features a field of XLR connections on a



containing two clusters of four, for a total of 28 faders. Above the faders are the MIX, MUTE, PFL and SELECT buttons and Rotary control. MIX shows the various outputs to which each channel has been assigned, such as AUXs, Masters, groups, etc. When used in combination with the Assign switch, MIX routes the signal of that channel input strip to the actual various masters. MUTE is self-explanatory, as is PFL/AFL. The SELECT button does a few things at once: when depressed, it allows for parameter adjustment on the master control strip, such as full parametric EQ, comp/gate/delay/limiter/de-esser for any strip, input or output. The rotary allows for L/R pan and, when so assigned, can be your subwoofer send. The Alt

black box that is rackmounted and contains the actual CPU of the iLive mix system. The point of connection is referred to as the Audio Control Ethernet link, or ACE link. Additional consoles and mix racks may be added to the system via an additional Ethernet connection provided on both the control surface rear panel and the front panel of the MixRack.

I did not delve into the iLive's remote-control capabilities, such as its controllability via the iPod, iPad or a laptop; I did not use these features in this review process. If these are features that would interest you, I recommend that you also consider them in your purchase decision process. For more information on those specific



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features, please visit A&H's iLive webpage: allen-heath.com/ilive.

In Use

Probably the most important part of setting up a digital mixing system such as the iLive is creating audio pathways; assigning fader actions to inputs, groups, DCAs, masters and layers; and labeling names and colors of all the strips. This is all done through the Set Up mode via touch screen, with button differentiation of the MixRack versus the Control Surface.

For our first time out with iLive, we decided to set the system in a somewhat conventional (as well as generic) layout, with the first 20 faders being inputs 1 through 20 on Layer 1 and 21 through 40 on Layer 2, with the various layers accessed on each bank of faders separately, with options up to four layers. We reserved the last bank's eight faders for several layer options. On Layer 1, we had five sub-groups, L/R and Subwoofer. On Layer 2, we had four sends for onboard effects and four effects returns. Layer 3 was reserved for eight monitor mix masters, and Layer 4 was set up for four stereo IEM mix masters.

Before describing a blow-by-blow mix setup, it is important to note that the iLive is a very user-friendly digital console, allowing near-novices to walk up to the console and, with very basic knowledge, get to their mix duties immediately. The iLive comes with a basic template setup, pre-loaded in the memory. If you are a seasoned digital console engineer, it will satisfy your needs as well, allowing you to go very deep into parameters and operations of your mix and create your own setup.

The first gig we did utilized the iLive T112 as FOH console for perennial counter-culture favorites, the Kottonmouth Kings. My son is their FOH engineer, so we took the iLive to a 2,000-seat venue, where setup was quick.

The initial setup for a new engineer is very simple. From the main screen's push button selector, we went to the Name/Color menu; there, depressing the Select button of the channel strip allows you to assign the channel number, the name of the input (which can be selected from a pre-loaded menu of terms, or you can define your own) and the color code of the input (grouping of like channels with the same color, from a menu choice of six color choices). At a certain point in setup, it is desirable to go to the main screen menu titled Scenes and touch the Store All choice, so as to back up your settings to the main drive.

Within the channel strip LCD display there are many points of

control that are displayed about a particular channel's status, relative to its corresponding output masters. First, it will tell you if it's an Input or type of Output, DCA or Return. Further, it will show your currently selected mix operation, such as accessing an Aux, Group, FX Send or Matrix. Channel's Aux sends are normally Post Fader, Global per aux changing to Pre is done by depressing the desired aux master's Mix key, it will illuminate blue — then press the master Pre Post switch Select on the desired Aux you want to be pre. It will now show as pre in the faders LCD window. It is also possible to change selected inputs to either pre or post send.

Assigning a channel to a master or series of masters is simple, too; depress the desired master's Mix key, then press/hold Assign while pressing the Mix key of the desired individual channel you wish to link to the selected master.

There are many more possible operations on the iLive — I would need far more space than this review allows — that further reveal

Fast Facts

Applications

FOH or monitor mixing, anywhere in between large touring to specialized fixed installations

Key Features

Lightweight, fully featured digital console for live/touring and installed/theater and club use; loaded with tools; user-friendly operation; superb audio quality; intuitive touch screen operation.

Price

(T112 configurations): \$11,999, \$18,998, and \$21,999 (28 faders/without iDR DSP engine, 28 faders/with iDR-32 DSP engine, and 28 faders/with iDR-48 DSP engine)

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“One of my favorite features of the iLive — beyond its GeQ faderflip — is the onboard, on-screen tutorial.”

the sheer user-friendliness of the functions with this system. Here are some of the functions that I particularly enjoyed.

Accessing the iLive's parameters is spectacularly simple. By depressing the Select key on any channel strip (Input or Output), you get a full complement of control, displayed in the entire upper half of the console, adjacent to the menu screen. The input sensitivity controls offer not only trim, but also fully adjustable high-pass filter (from 20-400 Hz), a -20 dB pad, polarity reverse and insert in/out switching. The 4-band fully parametric EQ is fantastic, with excellent frequency control, bandwidth control (0) and actual boost/cut rotaries, and an adjacent rotary LED band to show the relative amounts of each parameter. The upper control channel area also hosts a very nice gate section, with threshold, release and side chain with internal frequency bandwidth. Additionally, this section has an excellent compressor circuit, with hard and soft knee, threshold, ratio, gain, attack/release times and a side chain with internal frequency band control. Next to the compressor is the limiter/de-esser circuit, offering similar parameter controls.

When accessing an output, you may Select into upper strip control as well, applying all of the available features to the composite signal of the selected master. When in this mode, you may access one of my personal favorite features of the iLive: its GEQ graphic equalizer. Each individual output has a 4-band parametric EQ and a 1/3 octave graphic EQ. Pressing the GEQ key places all of the channel strip faders into graphic EQ mode and, at the same time, displays the frequency point of control in the LCD window. Since there are 28 faders, they display the spectrum from 63 Hz to 16 kHz. Each fader then becomes the real-time level control for that particular frequency. Parametric EQ control is accessed through the upper control region's parametric EQ. This particular EQ Master

application is a nice feature when the iLive is being used as a monitor console.

On that note, the iLive really excels as a monitor desk for either conventional wedge mixes, IEM mixes or any conceivable combination thereof. With a total of 24 master outputs, you can have any combination of wedges, ears, effects and full upper control section assignment to any input or output.

During the week between Christmas and New Year's Eve 2010, we had several national acts through our in-house casino gig. In particular, we employed the iLive as a monitor-only desk for two well known and respected country acts: Mark Chesnutt and Colin Raye.

In the case of Mark Chesnutt, the monitor engineer was an old-school guy and not overly thrilled with the prospect of using a digital console. But as the evening progressed, he became clearly happier with it. By the end of the evening, he had logged some quality time on the iLive and said he felt pretty comfortable. He commented several times about the high quality of the console's audio, while band members specifically said they did not recall their ears and wedges sounding that good. Further, the engineer finally commented about how comfortable the console was for a first-time digital gig.

The next night with Colin Raye, one of my own staff members — a seasoned digital guy — mixed monitors. He commented that the band remarked several times about the “very clear audio quality” of the iLive. The console setup was achieved through the same processes described earlier. One nice feature he noted was the iLive's ability to use either the single rotary knob or the fader on the individual fader strips to send signal to the Monitor masters when in Mix mode.

Summary

I find that the Allen & Heath iLive system is capable of holding its own in an increasingly populated field of far more expensive (and complicated) consoles. It offers superb sound quality, a highly intuitive and easily accessible menu system, and the capability to be used anywhere ranging from the simplest to the most complex levels of audio competency.

One of my favorite features of the iLive — beyond its GEQ fader flip — is the onboard, on-screen tutorial. There is a little question mark on the touch screen menu: At any point in your workflow processes, you may tap it to consult for further direction on a variety of helpful iLive topics.

Allen & Heath has set a new standard that, regardless of console needs — be it any musical style, or anywhere between large tours or a fixed installation — should supply the user with a total quality experience. So, if someone needs a very high-quality digital mixing system that won't require a huge payment, I would highly recommend the Allen & Heath iLive T-112.

Product Points



- ▶ Solid Construction; superb sound quality
- ▶ Clean, quiet preamps
- ▶ Very stable operating system, very reliable
- ▶ Small footprint, relative to the amount of onboard goodies (Graphic EQ on each of 24 outputs, great-sounding onboard effects)
- ▶ Well illuminated GUI, very legible printing



- ▶ I could find none

Score

The iLive T112 offers superb sound quality, a highly intuitive and easily accessible menu system, and the capability to be used anywhere ranging from the simplest to the most complex levels of audio competency. Highly recommended.

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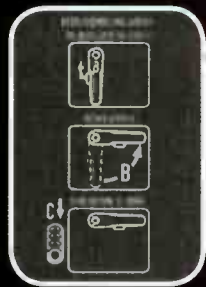
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