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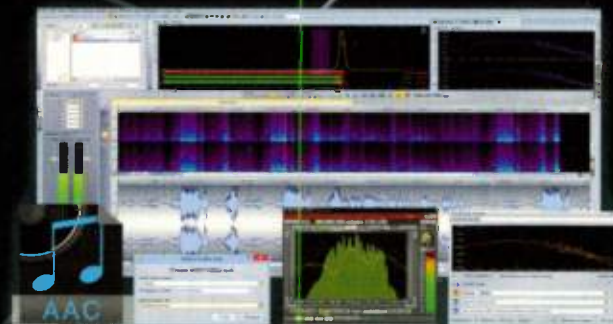
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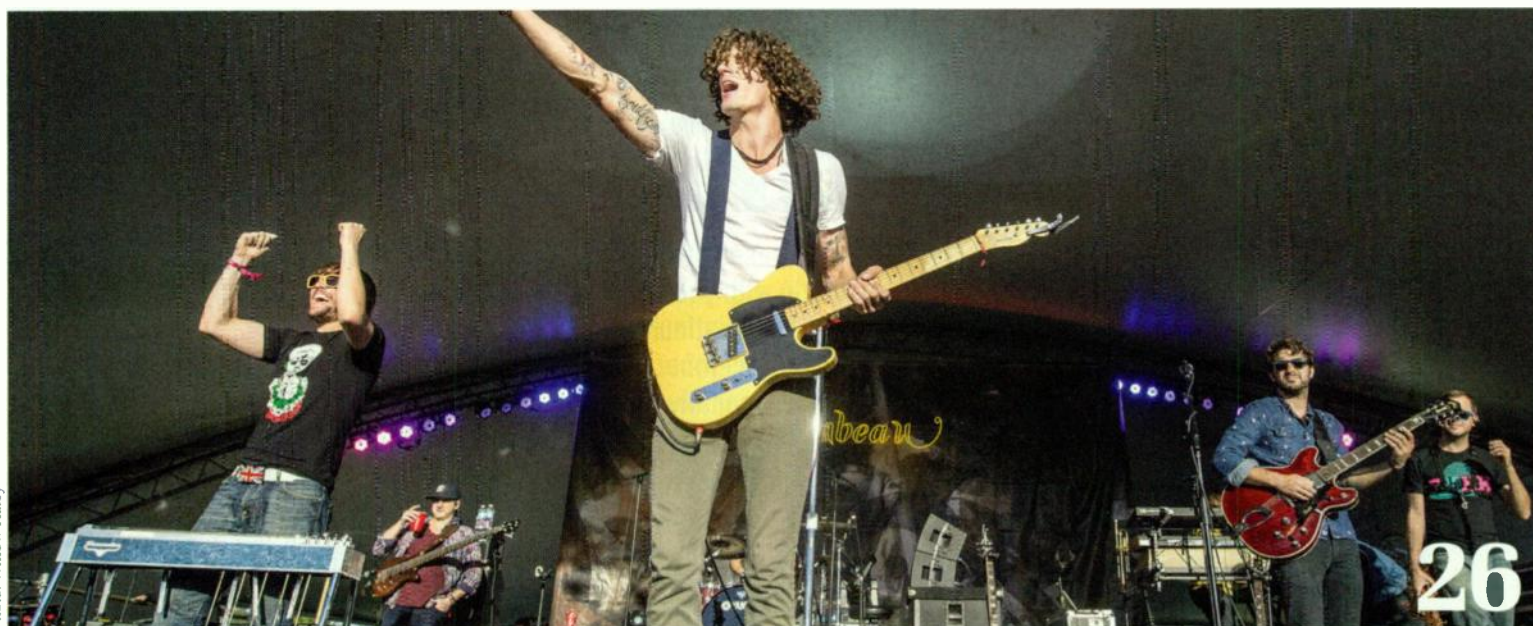
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On the Cover: Jason Graham, Trent Walker and Milo Lefler at the API Vision console, in a track/mix control room underneath the Mormon Tabernacle. Photo: Welden C. Andersen, Copyright IRI 2014.

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From the Editor

"IT WORKS FOR US..."

I recently had the rare opportunity to go up in the rafters and down underground at Temple Square in Salt Lake City, from preamps in the catwalks to a world-class studio in the basement and more world-class rooms in and around Assembly Hall, the Mormon Tabernacle, the 21,000-seat Conference Center auditorium and master control. A massive amount of live, recorded and broadcast production comes out of the three-city-block headquarters of The Church of Jesus Christ of Latter-day Saints, to be distributed to more than 80 countries in up to 90 simultaneous languages on over 2,000 radio and TV stations. Daily, weekly and monthly, from the studio and from on-location.

It's a truly amazing operation with a thoroughly modern workflow that can scale to any size of production—from a Church leader narrating in a vocal booth, to a Temple Dedication in Tonga, to a Christmas special live to 21,000 and a year later on PBS, with guest artist, 350-voice Mormon Tabernacle Choir and 100-piece orchestra. They went to digital recording by 1995, mixed their first 5.1 in 1997 and bought a Euphonix System 5 in 2002, right when they came out, so they could have easy 48k to air.

When the Conference Center opened in 2000, studios were added, networking increased, and the scope and scale of productions rose. Most of the major specials, as well as the weekly Music and the Spoken Word, are still held about 3,000 feet away in the Tabernacle. Built from 1864-67, with its original horsehair plaster and legendary acoustics, the Tabernacle had undergone revisions over the years while maintaining its signature sound and structure. In 2007, the team went in and made over the basement studio, where the Euphonix mix was the last stop before hitting the transmission path to air.

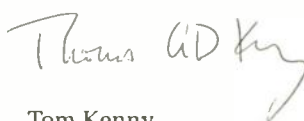
That studio rebuild provided the audio team the opportunity to re-evaluate what they were doing. They had pre's in the ceiling and long cable runs. There was noise. So they started testing alternatives, with real A-B listening tests, doing their due diligence. They started re-evaluating mic and mic pre combinations, then started stockpiling analog units from API and Millennia. They went and listened to speakers. Lots of speakers. And they ended up with Wil-

son Audio Sashas and Duets, from Dave Wilson just down the road. Converters, too. Same for mics. When it came time to replace the System 5, they again shopped around and tested what was available, analog and digital. It took two years to convince the Church management, but they convinced them to spend the extra money for an analog API Vision. In 2014. In a relatively fast-paced, multifaceted production environment.

"I think if we were just a television studio, playing program off of tape, then a digital desk would make sense," said Trent Walker, senior audio engineer for the Church. "But we're sort of like a recording studio on steroids, with an emphasis on spoken word and live shows and a 350-voice choir. We like the depth and the clarity of the analog chain. So this is what works best for us."

What works best for us. It seems so simple. Cynics will say, "Well of course it's simple; they're bankrolled by the Mormon Church." That's true. They have a bigger budget than most, but it's not unlimited. And the audio team has to make the same justification for quality vs. price to a team of accountants and leaders as anybody else in the business. The important point is that even with a lot of amazing high-end gear already at their disposal, the audio team took the time, over a couple of years, to honestly listen, evaluate, and then base their decision on quality. And what worked for them.

In the following pages, you are going to see a lot of attention on product awards from both NewBay Media and from the TEC Awards. It's awards season, and these are all worthy nominees. And there are many other products out there worthy of awards, as well. But that's not the important thing. When buying audio gear, whatever your budget, whatever your audio path, do your listening tests, do your due diligence, use Quality as your guide, then buy what works for you.



Tom Kenny

THE BEST DOG & PONY SHOW IN TOWN

Dog & Pony Studios out of Las Vegas, NV recently upgraded their sound system to feature Yamaha's NUAGE Advanced Production System. As the premier recording studio in the entertainment capital of the world, Dog & Pony's resume features everything from MGM Resorts MLife TV to the recently released Elliot Smith documentary, "Heaven Adores You." With all that goes on in this studio, it's obvious that what happens here definitely doesn't stay here. We sat down with studio Owner/Producer John McClain to get his thoughts on the new system.

"My favorite thing about Nuendo is how you can find multiple ways to solve the same problem. The competition hands you their DAW and says "Work within these predefined parameters." In contrast, Steinberg hands you Nuendo and says, "Work how you want and define the parameters for yourself."

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— John McClain

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SFCM's Digital Audio Keyboard Lab offers a Meyer Sound system and comprises 14 stations equipped with dual-display iMacs, M-Audio Fast Track Audio Interfaces, Yamaha P255 88-key digital pianos, and Pro Tools and other music production software.

San Francisco Conservatory of Music Adds Technology Program

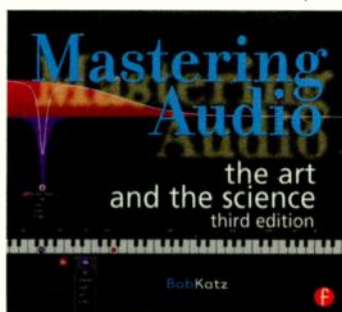
The San Francisco Conservatory of Music's new undergraduate degree program in Technology and Applied Composition integrates compositional craft with music technology to develop composers who are

adept in the fields of concert music, sound design, and film and videogame scoring. The Conservatory is accepting applications for its inaugural Class of 2015 through February 1.

The program will offer certification exams in Logic ProX, Final Cut Pro, and Pro Tools, and courses using Cycling '74's Max/MSP visual programming language. Visiting professionals from companies such as Electronic Arts and Skywalker Sound will join resident faculty in evaluating student portfolios.

To support the program, SFCM is constructing four studios featuring equipment from sponsors Meyer Sound, sE Electronics and Rupert Neve Designs. Facilities include a Digital Audio Keyboard Lab with 14 stations offering Apple iMacs, software, and Yamaha digital pianos; an acoustically tempered Live Room with grand piano; a Mixing Classroom for recording and teaching that is networked to the school's three performance halls and equipped with a 32-channel Neve console, a Meyer HD 5.1 surround sound monitoring system and Moog synthesizers; and a Premium Listening Suite with 5.1 surround sound and computers running orchestral sample libraries designed for editing, mastering and post-production work.

To learn more, visit www.sfcm.edu/tac. ■



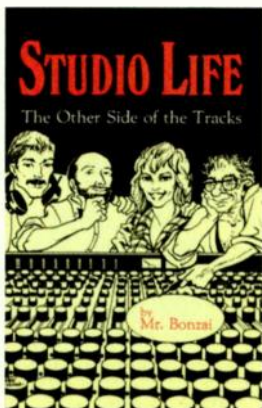
Mastering Audio: The Art and the Science, Third Edition

Completely rewritten and organized from previous editions, this third edition (\$39.95 in paperback)—written by veteran professional recording, mixing and mastering engineer Bob Katz—details mastering by providing a step-by-step approach to the process, covering practical techniques and basic theory, and then advanced theory and practice.

It includes several new chapters addressing the influence of loudness measurement and assessment, and provides an explanation of how mastering engineers must integrate loudness measurement and PLR as-

essment in their mastering techniques.

It also includes the newest approaches to equalization, monitor response measurement and correction, the psychoacoustics of clipping, an extended discussion of restoration and noise reduction techniques, an extended set of listening examples, and an updated chapter on surround mastering, including coverage of Pure Audio Blu-ray. ■



Studio Life: The Other Side of the Tracks

The 30th Anniversary Edition of Mr. Bonzai's illustrated fictional book is now available as an eBook from Bookpeople. The book is a collection of Mr. Bonzai's stories that were originally serialized in *Mix* magazine from September 1979 to January 1982. It was the first title to be published by Mix Books in 1984.

The book's synopsis: "Join the crew at Ryan Recording—Mr. Bonzai, Cart, Layla and Smilin' Deaf Eddie—as they struggle for respectability and profits in the music industry. It's a satiric and whimsical journey through the hidden world of recording, filled with colorful characters and bizarre sessions."

Learn more and order the book at www.mrbonzai.com.

Adder at Skywalker Sound



Skywalker Sound was one of the first to embrace 512x512 routers in-house and was pioneering in its use of EDNet technology to connect its Bay Area and Southern California facilities back in the early to mid-1990s. Times and technologies change. Recently, Skywalker Sound, now part of the Disney family of companies, purchased new IP-based KVM technology from Adder Technology to share and move files and data in near-real-time within the Skywalker Ranch Technical Building and around the world.

The AdderLink Infinity Dual 2112T and 2000R were deployed hundreds of miles apart to extend the Skywalker infrastructure, exhibiting extremely low latency. With an easy-to-use GUI, and being IP-based, the AdderLink Infinity was quickly deployed over a private network, crossing multiple subnets, to facilitate remote use of workstations during the edit and mix on recent projects. The facilities also exchanged and shared high-quality video with complex motion without USB latency across their network with a minimal physical footprint.

"Adder's KVM switches and extenders have enabled us to simplify a complicated environment and provided us with a reliable, user-friendly solution," says Brian Long, Sound Engineering at Skywalker Sound. "High-quality remote collaboration is a common expectation of the industry workflow, whether communicating across town or across the planet."

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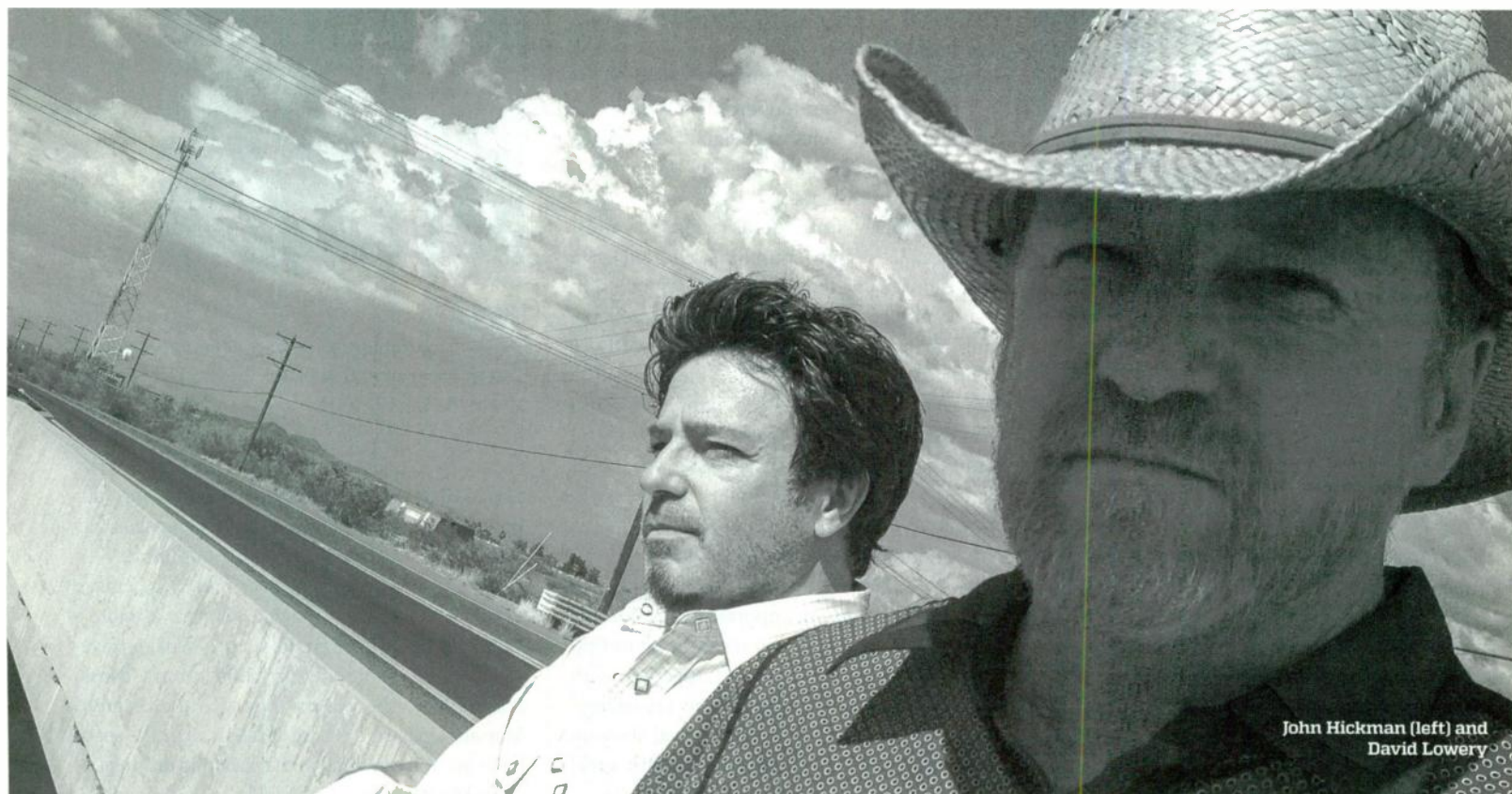
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CLASSIC TRACKS: THE RAMONES

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John Hickman (left) and David Lowery

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New Rock and Country California Travelogue

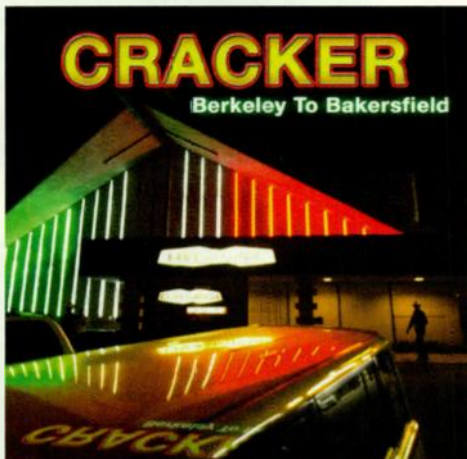
By Blair Jackson

David Lowery can't get California out of his mind. Though he has mostly divided his time in recent years living in Athens, Ga., and Richmond, Va., his ties to the Golden State remain strong. He still makes music with both of the major bands he started there—Camper Van Beethoven and Cracker. And Cracker's fine new double-CD, featuring the group's classic lineup of Lowery, guitarist Johnny Hickman, bassist Davey Faragher and drummer Michael Urbano on much of it, is a concept album of sorts about California, called *Berkeley to Bakersfield*.

The eclectic "Berkeley" disc is mostly rock-oriented, with strains of The Clash, Led Zeppelin and Bowie peaking through at various points, as well as bits of Stax/Memphis soul ("Waited My Whole Life") and the folkie political kick-off tune, "Torches and Pitchforks." There's clever social commentary throughout—very Berkeley—and all but one of the songs are credited to the four band members. The "Bakersfield" disc, dominated by tunes penned by Lowery alone, is country-flavored, with acoustic guitar underpinnings, a different bassist and drummer (Sal Maida and Bryan

Howard), as well as prominent pedal steel from Matt "Pistol" Stoessel and some fiddle and banjo sprinkled in. The discs were cut in Berkeley, Athens, Richmond, and Appleton, Wis., of all places. Drew Vandenberg was the primary recording engineer; he also mixed it.

Lowery says of the project's genesis, "I was working on our every-10-years, sort-of-country Cracker album here in Georgia [with John Hickman and some local players], and in the middle of this we did a session with the original Cracker lineup. Michael Urbano and Davey Faragher got together for some filming on a



documentary, and we did a couple of shows together. We all had some time in September of [2013], so we went into Michael's studio in Berkeley—East Bay Recorders—and we ended up making up pretty much that entire 'Berkeley' disc in about three days." The group cut mostly live to just eight tracks ("I think there were only two mics on the drums," Lowery says), and though intended as demos, two of those recordings, augmented with overdubs, ended up on the album. "There was something about the garage-ness and the I-don't-give-a-shit-attitude in the demos of those two songs that was cool," Lowery says.

"I got home in October," he continues, "and I was playing it for Drew [Vandenberg] and Johnny [Hickman] and my wife [and manager, Velena Vego] and we thought, 'Maybe we have two albums here and we'll do them sequentially.' But we also have these two distinct threads through Cracker—the alternative rock, harder-edged kind of songs, and the more rootsy stuff. That's the essence of Cracker, so we started trying to figure out how to make those two things work together. And the best way to do that was to turn them into a double-album, which required a lot more recording, more writing, and became this monster."

Recording resumed in Athens at Chase Park Transduction studios with Vandenberg (Of Montreal, Toro y Moi, Widespread Panic, recent Camper Van Beethoven, et al) at the helm. Chase Park is a two-studio complex, with Sony MXP 3036 consoles in each control room "and a great tracking space," Vandenberg says. "We went out of Pro Tools through the console and then mixed to tape—[Ampex] ATR-102 half-inch. I think it sounds better.

"The vast majority of it was live," he adds. "Oftentimes Lowery would redo the vocal, and occasionally we would go back and Johnny would want to punch in the solo, so we would pick parts up here and there." Vandenberg prefers to use traditional analog signal processing, rather than plug-ins, whenever possible, "and Chase Park has more than enough great out-board gear for me."

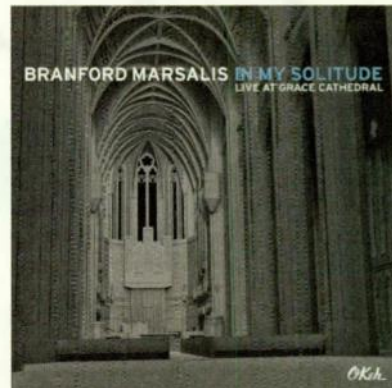
Because of the wide range of material on the two discs, Vandenberg used different combinations of mics and signal processing, depending on the style of the music. For example, on Lowery's vocals, "A lot of times on the 'Berkeley' stuff he'd use a dirtier, almost intentionally crappy-sounding mic and go a little more heavy-handed on the compression so I could get a little bit of harmonic distortion," the engineer says. "Sometimes we'd use a [Shure] 58. Sometimes we'd use this little Electro-Voice 635A, a little handheld omni that has a really biting sound. It's great if you want a more blown-out, aggressive vocal. But some of the stuff is a [Neumann] U 47—when we were tracking up in Wisconsin they had a vintage one that sounded incredible."

Mark Golde's Rock Garden Studio in Appleton became an important stop for the project, "because it was so hard for us to find five days for all of us to get together with our schedules and finish up the recording," Lowery notes, "but we had a festival show in Wisconsin and we wanted a studio with a real board and we found one up near Green Bay."

"Johnny and David [Faragher] did a lot of background vocals up there," Vandenberg says. "Johnny did some guitar overdubs, David replayed a couple of bass things; we did some percussion, acoustic guitar—finishing touches. Mark owns a really awesome console—a custom-made Aengus from 1972, from Indigo Ranch. That board—holy shit!—when I pulled up tracks that I recorded at Chase Park that I already thought sounded great, it blew me away."

A few tunes were mixed on the Aengus, too, but Vandenberg did most of the mixing at Chase Park. Primary reverbs were a pair of mono EMT 140 plates, along with an Ursa Major Space Station and some Lexicon PCM 41. "I also used actual slap-back from a quarter-inch machine we have. That's great for vocals, especially on the country material. But it's not an effects-heavy record. Neither of the two [styles] called for much more than was already there." ■

BRANFORD MARSALIS: ETHEREAL SOLO SAX



Saxophone great Branford Marsalis has appeared on countless albums as both a leader and backing others, but incredibly, he had never played a true solo concert until he stepped into San Francisco's majestic Grace Cathedral on October 5, 2012. The concert he played that night, a mix of diverse songs and four improvisations, is now out on a wondrous CD called *In My Solitude: Live at Grace Cathedral*.

Marsalis' longtime engineer and FOH mixer, Rob Hunter, recorded the date, which was quite a logistical challenge given the venue. "What an awesome place," Hunter says by phone from Gdansk, Poland, where he was on tour with the Branford Marsalis Quartet. "It's hard to take it all in, the space is so vast. You can stand in the place and drop a pencil and hear it everywhere for like seven seconds."

Hunter has recorded many Marsalis gigs, capturing most of them on Tascam DA-98HR MDMs. For this gig, however, when the DA-98s were damaged in transport, he had to scramble but managed to land a pair of DA-78HRs from Silent Way Audio in SF. A Pro Tools rig served as backup.

Armed with several Earthworks mics and Millennia HD-3 preamps, Hunter captured Marsalis from different vantage points—two omnis facing the audience out into the church; two left and right in front of Branford, about 10 feet away; and another omni in the middle, about 15 feet in front. "The two in front of Branford were surprisingly clean—almost like a tight room sound. The ones that were pointed into the crowd had the really long reverb on them. The middle one was pretty direct, too."

The project was mixed at Marsalis' Durham, N.C., Studio in the Country on a Sony DMX R100 console.—Blair Jackson

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Classic Tracks

By Barbara Schultz



"ROCK 'N' ROLL HIGH SCHOOL"

The Ramones

It's a song, it's a movie, and it marks one of the oddest chapters in the history of New York punk: the time when The Ramones went to L.A. to record songs for a musical comedy film, and ended up working with Phil Spector.

First came the film: Producer Roger Corman and director Allan Arkush hired The Ramones to perform and record music for a movie about fictional Vince Lombardi High, where a new principal has been hired to whip the troublesome pupils into shape. P.J. Soles stars as "Riff Randall, rock 'n' roller," a delinquent student/songwriter whose dream is to see The Ramones in concert and get them to record her songs.

The Ramones—Joey, guitarist Johnny, bass player Dee Dee, and drummer Marky—demo'd two songs for the producers: "I Want You Around," and this month's Classic Track, the title track of the film. The demo of "Rock 'n' Roll High School" was arranged with a catchy drum beat intro, and was recorded mainly in an 8-track studio that engineer Ed Stasium had set up in the basement of Sire Records' office building in New York City.

"We did the band demos down there, but we didn't do the vocals there," Stasium explains. "Joey was spooked by that studio, so we did vocals at [producer/musician] Moogy Klingman's studio on West End Avenue. I think there were some lyric changes on 'Rock 'n' Roll High School'

from the demo to the final product, but the arrangements were done."

The Ramones left for California to start production on the film, and Stasium followed. On November 25, 1978, they all went into Cherokee Studios to track the movie music. "It was the only time I ever worked at Cherokee," Stasium says. "They had a Trident A-Range console at the time."

Stasium recalls some of the other equipment in Cherokee largely because he had by then developed tried-and-true methods of capturing the band. "Dee Dee had his SVT rig and his Precision bass; that went direct and I probably also miked it," the engineer says. "Johnny's guitar amp would have been miked with a 57 on the cabinet and an [Neumann] U 87 back further. I probably also put a Pultec on his guitars, and an LA2. Those are still my go-to items."

Stasium set up guitar and bass rigs in iso rooms. "We rented some guitars," Stasium recalls: "a Martin D28 and a Stratocaster, which is what I play. We also borrowed Joan Jett's Les Paul for power chords. One of The Ramones' roadies, Little Matt—there was a Little Matt and Big Matt—was a friend of Joan."

Marky Ramone, who had taken over as drummer after Tommy left the band, was out in the main tracking room. "As powerful as Tommy sounded, he had played pretty lightly," Stasium says. "Marky played very hard, very solid. Tommy had more of a swing, and Marky was more rigid in his playing. Tommy invented the Ramones beat and played on the first three records; Marky gave it more definition and precision."

Stasium used the same miking scheme on Marky as he had on Tommy: Shure SM57 on snare top and bottom, Sennheiser 421 on kick, Neumann FET 47 outside the kick, 421s on toms, AKG 451s on hi-hat and ride cymbal, and AKG 414s or Neumann U 87s. "I also would have put up a couple of room mics," Stasium says. "Once I was lucky enough to work with [engineer/producer] Roy Thomas Baker. He enlightened me to the beauty of ambient sound."

During band tracking, Joey sang a guide track in a booth. "We might have set up an SM7 during tracking, but for overdubs my usual vocal chain on him was a [Neumann] U 67 through a [Teletronix] LA-2A and Pultec EQP-1A," the engineer says.

Stasium mixed a mono track for the film at Cherokee and made "some quick stereo mixes" that would come in handy for future releases. "We also did a version of P.J. Soles singing 'Rock 'n' Roll High School' for the movie," he says. "I'd made a safety copy of the Ramones version so we could put P.J. on it with the Ramones playing, but she couldn't sing in the key that Joey sang; it needed to be higher. The guys were all gone, so I changed the key and played all the guitars myself."

What Stasium didn't know was that Phil Spector, who had for some time wanted to produce The Ramones, had somehow become involved in the project. Sire Records gave Stasium's tracks to Spector, who remixed both Ramones songs. "So, the wall-of-reverb 'Rock 'n' Roll High

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NOAH

School' and 'I Want You Around' ended up on the soundtrack record," Stasium recalls. "You had to love it. Phil Spector was an early influence on me: 'Be My Baby,' 'You Lost That Lovin' Feeling'—his records sounded great to me. He probably put some of that Gold Star chamber onto everything."

L.A.'s famed Gold Star Studios—renowned for those echo chambers used on recordings by artists from Eddie Cochran to The Ronettes to Herb Alpert—was also the site of yet another rendition of "Rock 'n' Roll High School." After remixing the film tracks, Spector signed on to produce a full-length album with the band, who hoped that Spector's genius at crafting pop hits would boost their commercial success. And for some reason, Spector and The Ramones decide to remake "Rock 'n' Roll High School" yet again for the album *End of the Century*.

Stasium again joined the band in L.A. He's credited on the album, as "Musical Director"; in fact, his role encompassed playing numerous guitar parts, singing background vocals, and acting as intermediary when things went off the rails, but not engineering.

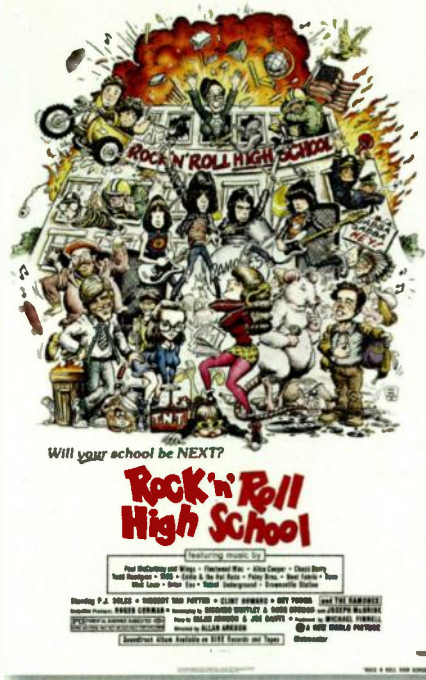
"Phil had his longtime engineer, the great Larry Levine, at the board, but I think Johnny felt uncomfortable being by himself with Phil. He was suspicious, and rightly so, because Phil had some eccentric methods. I had played bits and pieces on a lot of the Ramones records, especially *Road to Ruin*, but while we were doing *End of the Century*, I was in the studio with the band for every song."

Stasium recalls playing his Strat with Johnny's Electro-Harmonix Mike Matthews Freedom amp. "It was a practice amp for him, but that's what I used to do my tracking, through all the pain and the glory of making that album," Stasium says.

Over the years, some exaggerated accounts of the sessions have surfaced. In a memoir, *Lobotomy: Surviving The Ramones*, Dee Dee wrote that Spector held the band at gunpoint. He also maintained that Stasium actually played all the bass parts on *End of the Century*.

"I never, ever saw a gun," Stasium says. "I was there the entire time except for the mix, and I never saw a gun. And it's untrue that Dee Dee didn't play on the album. There's one song that The Ramones did not appear on—where I am the only Ramone [other than Joey]—and that's 'Baby I Love You.' Jim Keltner played drums on that; Barry Goldberg played keyboards. But during all the other songs on *End of the Century*, The Ramones played. It's no secret—Dee Dee had substance abuse problems. He may have forgotten, but Dee Dee played bass on the record."

And as for the stories Johnny later told about being forced to play the opening note to Spector's revised arrangement of "Rock 'n' Roll High School" repeatedly for 10 hours? "It was more like two or three hours," Stasium says. "Phil had both of us, Johnny and I, in the studio getting feedback. We could see Phil and Larry in the control room, and Phil was telling Larry to do something. Johnny's looking at me with his eyes up in the air, like 'We're doing this again? Oh my God!' We'd count it off and play the note: *braaaaaang*, *feedbaaaaaack*. 'Okay stop, stop,' Phil's on the talkback. At this particular time, I didn't know what they were doing, and when they



played it back, it didn't sound like anything spectacular was going on."

It was while Stasium and Johnny Ramone were playing that first note seemingly endlessly that Johnny threatened to quit the album. "So being the Henry Kissinger of rock 'n' roll that I am," Stasium says with a laugh, "I staged a summit meeting at Joey's room at the Tropicana Hotel. Phil and his bodyguard, George, came. Everybody was there, and I had to say, 'Phil, Johnny can't work under these conditions anymore. He doesn't want to play stuff over and over,' and from there Johnny started talking and Phil started talking. Ultimately Johnny agreed to stay and finish the sessions."

The Ramones were lucky to have an "honorary Ramone" who was willing to step into whatever role they needed. Stasium filled musical gaps and interpersonal ones, helping them all weather the tumultuous studio environ-

ment Spector created.

"Phil would have little hissy fits about things," Stasium says. "If he couldn't express himself, he'd start stomping his feet and swearing. He had also worked out a sign language because he listened back so loud, you couldn't hear anything even if he yelled. If he wanted the snare to come up, he would pantomime hitting the snare drum with one hand and point up or down with the other. He would tap Larry on the shoulder, do the gesture, and Larry would bring up the snare. If [Spector] wanted more reverb on something, Phil would gesture a vocal or a guitar, and then he would slap his tongue, which meant, make it wet."

As he wasn't the engineer on the sessions, Stasium doesn't remember much of the equipment used at Gold Star, except he knows that Joey's vocal microphone was a Neumann U 47, because they shared the mic for background vocals.

Later, Stasium was asked to overdub further guitar parts for the album. So, he took Levine's tracks over to Scream Studios in Studio City. "I'm going to reveal something now," Stasium says. "When I pulled up the tracks of the song, there was one track of just my guitar and Johnny's guitar combined that sounded like it was sent through an Eventide Instant Phaser or Flanger. It was just going *swish swash*. And I thought, 'That's what he was doing for two or three hours?' And I erased it! I was on my own, and I needed a track so I wiped it. And I don't hear any phasing or flanging on that first chord on the album, so I guess Phil didn't miss it."

Today, Spector is incarcerated; he was convicted of second-degree murder of a female guest in 2003. All of the Ramones but Marky have passed on, but their recordings continue to be repackaged and reissued. Stasium's mix of "Rock 'n' Roll High School" was not released until 1988, as part of the compilation *Ramones Mania*, but it was subsequently added to further collections, and often shows up in Internet radio and streaming services as the "Ed Stasium Version."

"I kept those masters for years, but they disappeared when Rhino started remastering various collections. A picture of the box is all I have left," Stasium says. "I kick myself now for not carrying a camera around in those days." ■

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Eric Hart's Glaus Haus Studios

Writing, Tracking, Mixing at Home—With Glass and Stone

By Tom Kenny

A little more than a year ago, Eric Hart was writing, playing, producing, tracking, mixing and mastering out of a condo-loft space in Universal City. A small black room with walls of Sonex foam and “no distinction between day and night,” he says. Today he works out of a Studio City home, with 180-degree views of the Valley off the tracking room, overlooking the pool. He has the rooms at the end of the hallway to the right when you enter. To the left is the house.

“My wife and I had been looking for the right mid-century for about three and a half years,” Hart says. “Most of them are small. When we saw this one, the hallway when you walk in, left to right, is about a city block long. About 70 percent of the house is glass. At the very end of the hallway to the right there is a room, and off that room is another room, sort of like a guest house connected to the main house. When I saw it, I thought, ‘We can put a huge Fleetwood acoustic door right there, and that will be the tracking room. Then off that will be the control room.’ It was perfect.”

His is not necessarily a household industry name, though maybe it should be. In many ways, Hart is emblematic of the new recording industry, a multi-hyphenate professional who has built a career and now wants a better space, with the means to make it professional. He’s a bit different, in that he has a Ph.D. in physics and has built his own 1176

and LA-2A, from hand-sourced components. He also knows the Synclavier and Fairlight and jazz and dub step. He knows rock and EDM, and he writes for picture and for the club. He’s certainly done all right in his career.

Still, he wanted a better room.

While still in the condo-loft studio, and increasingly unhappy with his space, Hart was told by Rich Williams, head of Burl Audio, that he should contact Hanson Hsu, principal of Delta H Design Inc. Hart called, then went for a listen of Hsu’s ZR Acoustics approach at Universal Mastering. He asked Hsu to come look at his studio. Three months later, he asked him to come look at his new house, still in escrow, which he was planning to gut and rewire.

“It was beautiful,” Hsu recalls. “A classic mid-century home, with one angled roof line, back to front and a panoramic view of the city. The entire roof is solid wood, all two-by-fours. He’s only the third owner. We didn’t do any construction, we didn’t do any isolation design. We strategically covered about 50 percent of the walls and ceiling with ZR product, and every golden-ear client we have says it has exactly the same performance as Universal Mastering. There’s no bass traps and no room EQs. Per the owner, he can walk anywhere in the room, leave the doors open or closed, and it sounds the same, bass compression is solid, image does not change.”

Hart made the decision early on to go with product rather than floating floors and ground-up isolation, wanting to preserve the glass-stone feel. There are two glass doors out of the control room. One whole wall of the tracking room is glass. The products on walls and ceilings are ZR Micro 2x2s, V.2 1.25-inch-thick panels, complemented by the Fibonacci-inspired wood ZR Sample Rate 8-Bits.

“The acoustics are more direct,” Hart says. “The weakest thing now is not the room but the speakers. We spent a lot of time on the optimum speaker position, and once we got that right, everything else kind of disappeared. There’s no bass trap in this room and there’s no bass buildup.”



The tracking room, with all that glass and stone, includes treatments across roughly 50 percent of the wall and ceiling space, with a custom acoustic curtain to cover the glass. Hart says he doesn't even notice reflections.

Hart brought over most of his equipment—Mackie controller, ADAM S3A monitors, Pro Tools 10/11, Burl gear, lots of keyboards—though he did add a second ADAM Sub 12. “The Sub 12s are in plane with the S3A speakers, and they’re basically coupled acoustically,” he says. “If you’ve ever heard bass on stereo subs, it’s amazing.”

As we talked in mid-November, Hart had just finished the mix for an album by Swedish artist Krister Lider, and just wrapped up producing and mixing *The Master*, an album from Warren Cuccurullo and Ustad Sultan Khan, now under consideration for a Grammy.

“The new rooms let me mix at a higher resolution,” Hart concludes. “There’s no calculation in your head for the room. What you hear is what you get, and you learn how to trust what you’re truly hearing. It’s very quick. You set an EQ point, you boost, and the way it’s coming out of your speakers is exactly how it’s going to translate. And it translates on laptop speakers and large speakers. It’s amazing. It’s the best money I’ve ever spent in audio. Hands down.” ■



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Ed Sheeran at the SAP Center in San Jose, Calif.

ED SHEERAN

Solo Acoustic Singer-Songwriter Calls for Dynamic, Hands-On Live Mix

Photos & Text by Steve Jennings

To the general public, artists like Ed Sheeran can seem to appear out of nowhere. A hit song appears, or an opening spot on a big tour, and suddenly the media is talking. That's the myth. The truth is, there are years of hard work behind any overnight sensation.

Sheeran learned guitar at a young age, his songwriting began in high school, and he was accepted at the National Youth Music Theatre as a teenager. His first independent EP was released in 2005, to be followed by several others between 2009 and 2011. All that time he played hundreds

and hundreds of club gigs, drawing the attention of such notables as Jamie Foxx and Elton John and an ever-growing fan base. He has won several Brit Awards, co-writing hits with One Direction and Taylor Swift in 2012, and opening for Swift on her sold-out 2013 tour. Sheeran's second studio album, *X*, was recorded with producer Rick Rubin and includes the singles "Tenerife Sea" and "Sing," featuring Pharrell Williams. The song "Don't" entered the *Billboard* Hot 100 at Number 10, his highest U.S. charting single.

Mix caught up with singer-songwriter and multi instrumentalist at the SAP Center arena

in San Jose, Calif., on the U.S. leg of his current tour before he heads back to England, then onto 13 dates in Australia in 2015.

Front-of-house engineer Chris Marsh started mixing Sheeran years back on a DiGiCo SD11, making use of the onboard FX and doubling up by mixing monitors from it as well. He then moved on to an SD10 and now mixes from an SD7, where he feels most at home. "Although fundamentally we are using only nine inputs, it is what we do with the nine inputs that requires the power of the SD7," Marsh says. "I can see, change, effect and adjust everything, all of



Front-of-house engineer Chris Marsh at the DiGiCo SD7.



Guitar Tech Trevor Dawkins

the time. On top of all this, there is 100-percent redundancy in the SD7, which gives me a lot of confidence.”

“Many people have rolled their eyes when they have seen my input list and told me that I must be the luckiest guy on the planet to mix a gig with so few channels, and at first I thought that, too,” Marsh continues. “However, it is one of the hardest challenges I have ever had. Everything has to be correct, there is nothing that can be hidden—everything happening is fundamental to the overall sound of the show. [You get] one sound wrong and the entire song sounds wrong.”

“Ed’s show is very dynamic, and he never plays a song the same way twice; it cannot be heavily snapshotted or cued. I use a lot of dynamic compression, and this allows the guitar to breathe when he is playing quietly but then grabs the right frequencies when he slams the guitar. I also EQ the P.A. a little differently, to the way that you would if it were a band onstage. I need the ‘mid-high’ boxes to deal with an acoustic guitar and vocal only so it gets highpassed really high. Meanwhile the subs handle what we call the ‘boom boom,’ Ed’s percussive slapping of the guitar. I gate the subs, the same way as you would a kick drum for some songs, and leave them open and with a different EQ for some ballads where a more subtle low end is required.”

Sheeran sings into a Sennheiser 2000 Series microphone system with a customized capsule. Originally he used an 865 capsule because Sheeran cups it a lot. Mark Saunders from Sennheiser worked with the team on a custom capsule based on the 5235, but fitting on a 2000 Series stick. “I now have a high-end condenser capsule with great rejection that can handle a bit of abuse!” Marsh exclaims.

Marsh uses an Avalon 737 on Sheeran’s vocal. “I love this unit and have always used one on every artist I have worked with,” he says. “The EQ is subtle and the compression is so transparent. I also use a pair of Bricasti M7s, which are the only unit that I have found that can give me that wonderful classic Lexicon sound.” He uses an Eventide Eclipse to “fatten” the vocal harmonies layered in some songs.

Sheeran plays Martin guitars, and he is not always easy on them. His main guitar for the stage is a custom Martin LX1, and maintenance is a large part of guitar tech Trevor Dawkins’ job. “We’re lucky to get 50 shows out of a new one before it needs to be retired!” Dawkins says, laughing.

Dawkins has been with Sheeran for two-and-a-half years, and in that time the two have come up with a unique looped pedal setup they call “The Chewie Monsta.”

“The system we opted for is the Mobius 2 VST plug-in hosted by Ableton Live, which had already been tried and tested by a number of other acts that we knew and seemed solid in live situations,” Dawkins explains. “I have an FC-300 with me, set up offstage by the laptops and play racks, which is the brains behind the looping system, controlling all the different record and play functions that Ed needs to put the live loops together. The FC-300 is in turn controlled from the stage by Ed using ‘The Chewie Monsta.’”

The pedal now allows him to record, overdub and play back on any one of four synchronized loops, each of which has its own output. “He can also now mute the loops individually, allowing him to alternate between different sections, such as a verse/chorus scenario, as well as an undo function allowing him to clear the last overdub should he need to,” Dawkins adds. “The sound quality of the system is absolutely perfect with no compression whatsoever, and you can overdub almost infinitely, being only limited by the amount of RAM installed in the laptops. We run an A/B system allowing for 100-percent redundancy, with the two sets of outputs from the RME Fireface interfaces being controlled by a Radial SW8 switch.”

Major Tom out of the UK is supporting the tour, and wherever possible worldwide they either bring or spec a Meyer system. “The LEO and LYON systems from Meyer are by far the best out there,” Marsh says. “It is the only system where I have not struggled with definition and depth in the mix. Ed’s vocal effortlessly stands out and most importantly this mix is fully projected to every seat in the arena. It was not a decision I took lightly. I had the support of Ed’s management and some family and friends whom had all agreed that the shows with LEO had sounded better than any of the other shows we had done.”

Sheeran uses four Meyer MJF212a monitor speakers and sidefills that comprise two Meyer HP700s and a JM1P per side. Marsh says they’ve tried to use in-ears. “It would really clean the sound up as Ed’s monitoring is pretty loud, but he is not keen on using them. He enjoys the interaction with the crowd and likes to be able to walk in and out of the focus of the speakers. It is a very raw and open sound onstage.” ■

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VOODOO FEST 2014

PHOTOS BY WILLOW HALEY

The 2014 Voodoo Music + Arts Experience took place in New Orleans' City Park from October 31 through November 2, headlined by Outkast, Arctic Monkeys and Foo Fighters, and showcasing an array of local and national bands and artists including Trombone Shorty, Rise Against, Slayer, Pretty Lights, Death From Above

1979, the Rebirth Brass Band, and many others. The festival reportedly drew more than 100,000 attendees over three days.

Here, we present a handful of photos of the festival's performers, from photographer Willow Haley. To see more of her photos, head to mixonline.com and check out the photo gallery.



Foo Fighters headlined on Day 3, with frontman Dave Grohl fresh off an HBO series and a new album release.



Trombone Shorty, a favorite son.



Rock is not dead. Slayer proved that on opening night.



Jamie Cook, guitarist of the Arctic Monkeys



Local favorites The Revivalists, from the main stage.



Rise Against rocked the main stage, taking the crowd from daylight into night.



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Thirty Seconds to Mars



Filip Aaby: FOH Engineer for Death From Above 1979



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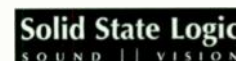
Presented by the NAMM Foundation, the 30th Annual TEC Awards will be held at The NAMM Show in Anaheim, Calif., on Saturday, January 24, 2015. The TEC Awards recognizes the individuals, companies and technical innovations behind the sound of recordings, live performances, films, television, videogames and other media. TEC Awards nominations are made by a panel of industry professionals and voted upon by members of various professional organizations and audio industry media, including NewBay Media publications. A special

TEC Awards Voter's Guide will be distributed digitally to eligible voters in early December.

The 30th Annual TEC Awards is presented by the nonprofit NAMM Foundation, which, as the charitable arm of the NAMM organization, seeks to advance active, lifelong participation in music making by supporting scientific research, philanthropic giving and public service programs of the music products industry.

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TEC AWARDS HALL OF FAME

The TEC Awards Hall of Fame was created in 1988 to recognize those individuals whose careers have best exemplified the spirit of creative and technical excellence in professional recording and sound.

HALL OF FAME: ED CHERNEY



Ed Cherney is a Grammy-winning producer/engineer whose credits include Eric Clapton, Bob Dylan, Bonnie Raitt, Keb' Mo', Lyle Lovett, Bette Midler, Sting, and the Rolling Stones, among many others. Highly respected by his peers, he's amassed six Grammy nominations and two wins, in addition to seven TEC Award nominations and five wins and three Emmy nominations.

Cherney believes in the power of community and always finds time to give back. A founding member of the Music Producers Guild of America, the precursor to The Recording Academy Producers & Engineers Wing, Cherney currently serves on The Recording Academy's Los Angeles Chapter board. He is also a board member at McNally Smith College and a founding member of META (Music Engineer's Technology Alliance).

Cherney has recently completed mixing tracks for Sarah Brightman, music for Lee Daniels' *The*

Butler with Lenny Kravitz and Gladys Knight, a Latin Jazz album for Alejandro Fernández, a new Matthew Morrison (*Glee*) project, and is currently working on a new release for Queen Latifah.



HALL OF FAME: NATHAN EAST

A founding member of the chart-topping contemporary jazz group Fourplay, renowned bass player Nathan East was 16 years old when he got his first break and found himself on the road with Barry White. The next time the phone rang, Quincy Jones was on the line. The calls kept coming, and for the past 40 years, East has been churning out hit songs with artists such as as Eric Clapton, George Harrison, Michael Jackson, Phil Collins, Whitney Houston, Beyoncé, Barbra Streisand and Stevie Wonder.

His genre-crossing groove has earned him both the recognition—a Congressional Record for his contributions to the worldwide music community, for one—and the boundary-busting respect of his peers, illustrated by his current appearances on two hit records as diverse as Andrea Bocelli's *Passione* and Daft Punk's *Random Access Memories*.

More than 2,000 recordings make East one of the most recorded bass players in the history of music.

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On the Cover

By Tom Kenny // Photos by Welden Andersen

AUDIO FROM TEMPLE SQUARE

Quality Sound for Choir, Orchestra and the Spoken Word



FOH position at the Conference Center, with the new SSL Live console. The "auditorium"—which has a 6,800-pipe organ, seats 21,000 and has room on stage for the church leaders, a 350-voice choir and a 100-piece orchestra—has two balconies and no visible vertical supports in the house. It's described as huge, yet intimate.

The Mormon Tabernacle Choir gets the headlines, as they should. The 350 voices, with accompanying 100-plus seat orchestra—all of them volunteers—have entered the vernacular and become, as Ronald Reagan once called them, America's Choir. Their first performance was in 1847, one month after the arrival in Salt Lake City. Their first performance in the Tabernacle was in 1873, a few years after the famous structure was completed. Their first radio broadcast was in 1929, and they've been on the air every Sunday morning since, now reaching a network of 2,000 radio and TV stations worldwide through Music and the Spoken Word. There is some real history here. There is some real quality audio, as well.

If all that the small-yet-mighty audio team at the Church of Jesus Christ of Latter-day Saints did was the choir, their audio legacy would be secure. But there's so much more audio coming out of the three-

city-block Temple Square, on a daily, weekly, monthly and annual basis, that if you're not Mormon, you have no idea. There are Temple dedications and remote gigs in any of 80-plus countries, with many more close to home. There are General Conferences twice a year for 21,000 live and local, also broadcast to the world. There are the holiday specials, leadership meetings, training programs and scripture. Everything goes out in at least three languages with simultaneous live translation, and most go out in 10 or 11. The General Conference is up to 94 simultaneous live streams. There is an archival effort that would make the Library of Congress proud.

What NFL Films is to sports production and Skywalker Sound is to film sound, the Mormon Tabernacle is to sound for houses of worship. There's really nothing like it. But it wasn't always this way.

"I got a job with the Church in March 1982, and in April I mixed my



Audio Control, in the Conference, with SSL C200 console.



The Tabernacle itself, built originally from 1864-67 with horse-hair plaster, hosts Music and the Spoken Word every Sunday morning, as it has since 1929.

first General Conference,” recalls Milo Lefler, senior sound designer. “I was the only real audio guy at the time. We had a little Neotek console behind the auditorium in the Church Office Building, and the night before my first mix, I spent all night rewiring panels so I could get languages out anywhere in the U.S. Later, I built a matrix with an output that I could switch by sticking in a pin. We had eight language booths, and we sent it out over phone lines during conference—I might send Spanish to Oakland, California, for example. The box had 30 outputs at one point. Within about six years they had built 24 translation booths underneath the Tab, then 40. By 1990 we would record 40 languages on two 24-track reel-to-reels, 5,000-foot rolls, at 3.75 ips to get two hours.”

In 1995 they went to digital recording with DA-88s, modifying them to get the requisite 120 minutes (all sessions are two hours long). In 1997 they held their first experiment with a 5.1 broadcast—very early on for surround TV. When the Euphonix System 5 came out in the early 2000s, at the same time that the Conference Center opened with new studios, they bought one, for the 48k to air. Later, they bought a couple of SSL C200 consoles. They were a digital facility with a thoroughly modern workflow. Then, about three years ago, they began a return trip to analog. Analog to air.

“We are mixing on great consoles, Euphonix and SSL desks,” says senior audio engineer Trent Walker, who joined the audio team in 2001

as a live sound mixer, soon after the Conference Center opened. “But we always felt like we were missing something—just the texture of a violin coming through a digital board. Digital consoles are great for smaller groups, but when you get orchestra and 100 sopranos screaming, something happens that isn’t always pretty.”

It took two years to convince the Church management that they should spend significant money on analog technology in 2013. They thought the audio team was nuts. So they held experiments, did their due diligence, and in January 2014 installed a 64-channel API Vision console, with 88 API mic pre’s, in the main studio underneath the Tabernacle. For every major production, whether from the Tabernacle or the Conference Center 3,000 feet away, it’s the last stop before hitting transmission.

“We had picked up a lot of API pre’s when the Tab was redone in 2007,” Lefler says. “We have long runs, and when we got them the noise issues disappeared and the clarity increased. When it came time to replace the console, the Vision had just come out in 5.1, with three stereo paths. We thought it was built just for us!”

Walker organized a visit to Middle Tennessee State University for a test drive. He brought a Christmas show he had done at 24-bit/48kHz, hit play, turned up the faders and said it was like an answer to his prayers. “Everything was there,” he recalls. “There was such detail, and there was a depth that we had been missing.”

Two more APIs were purchased, 1608s for a room in the Assembly Hall and another in the East Wing. The SSL C200s reside in Studio A and Audio 2 at the Conference Center, with a large vocal booth, close to Master Control and the network routers. An SSL X-Live sits at front of house, with an L’Acoustics rig feeding the audience. All major recordings take place either from the Tabernacle or the Conference Center. While they have identical mic and layout schemes, with the same signal chain, there is a slight variation in that one is farther away.

“In the Tabernacle, we have really long lengths,” Walker explains. “So we have a tube mic hanging in the ceiling, say a Peluso P47 or Royer 122V, which is feeding an API pre and is coming in line level to the API desk. It comes through the desk, and all we’re running on the stereo mixes are the 2500 API bus compressors. On the 5.1 mix, we’re inserting the 6500 surround compressor, which by the way is the greatest thing since sliced bread. Then it hits Lavry 4496 converters A-to-D and then hits the transmission path at 24-bit/48k.

“When we go to the Conference Center, we’re about 3,000 feet away,” he continues, “so the same tube mic hits an API pre, then it hits an RME M32 A-to-D, then it comes over MAD1 fiber at 24/96 and hits another RME D-to-A, then hits the console. Then the Lavrys and to transmission.

“In the Tab we have 96 channels of API pres. 48 channels of Millennia HV3R, with more in the Conference Center. And the Direct Out Andiamo 32-channel preamps. Then the portable rig has another 64 channels of API in it. We have a lot of preamps.”

Two full-blown Pro Tools systems record everything multitrack, and a JoeCo Black Box serves as backup. Last year, after working for years on a variety of mixed and matched monitors, with B&W 802s up front and Genelecs in the rears, they standardized on the hi-fi Wilson Audio Sashas up front, LCR, with Wilson Duets in the rear. Dave Wilson, the founder and designer is local. Walker was blown away at first listen.

Microphones? They have hundreds, too many to list. Suffice to say they are hanging large-diaphragm tube condensers from the ceiling for



The producer's desk behind the API Vision includes three API 2500 Bus Compressors and the 6-channel API 6500 surround compressor.

The LDS Audio Team

These are the guys who really make it happen.

Mixers: Trent Walker, Jason Graham, Milo Lefler

Post Engineer: Adam Berrett

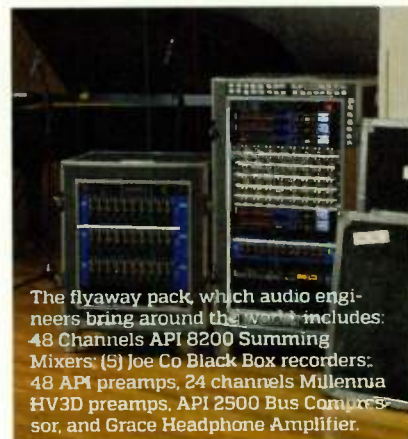
FOH Engineers: Chris Martin and Joey Russell

Monitor Engineers: Curt Garner,

Troy Morgan, Ben Warner

System Engineers: Sean McFarland,

Jerrick Mitchell, Sean Adams.



The flyaway pack which audio engineers bring around the world includes: 48 Channels API 8200 Summing Mixers; (5) Joe Co Black Box recorders; 48 API preamps, 24 channels Millennia HV3D preamps, API 2500 Bus Compressor, and Grace Headphone Amplifier.

choir and miking every instrument.

"We close-mike everything, which kind of goes against the traditional classical recording philosophy," Walker says. "But that's what works for us. Our mixes are going live to air to picture. If you see in the score that this harp glissando is featured, then you want that. The close mics give the producer and conductor what they want. We do one rehearsal and then go live to air. We have to be able to capture everything we can capture.

"All of our strings are on DPA 4080 contact mics, a cardioid pattern that clips on every violin, every instrument. For woodwinds and brass, we've found that Beyer ribbons, the little 160s, are money. They are so smooth, and they're deaf as a door nail to the others. Then we use Sennheiser MKH 50 and MKH 40 for area miking. Some Schoeps. The main left-right pair are the new Royer 122Vs, the new valve mic. Their ribbons sound phenomenal as a left-right pair. And I use a lot of Peluso mics, the P12 pair over the woodwind section."

"In our Music and the Spoken Word, we used to be very minimalist and understated," says broadcast audio engineer Jason Graham, who joined the team about six years ago after stints at Berklee, BYU and a few studios. "Now we have this quasi-classical feel with a film score aspect to

it. If we have a little bit more of a Broadway tune, then we can emphasize the close mics and that feel. Then the next number might be Handel's *Messiah* and we want a big wide choir sound. So we have the best of both worlds in miking. I think we tend to lean more toward area and room mics. That's the foundation of the sound."

It's hard to overestimate how important the "sound" is to so many Mormons, and others, around the world. It's the familiar voice of a Church leader, delivering a message from a pulpit with two DPA 4081s in a custom mount. And it's the familiar voices of the Choir, in an acoustically magnificent Tabernacle, through the finest audio gear, mixed by some fantastic engineers who are comfortable and creative in their milieu. It doesn't get any better than that.

"I used to hang out in Temple Square as a child while my parents would go to General Conference, many years ago," says Lefler, who will be retiring this year. "It's been a big part of my life from the very beginning. Then I studied voice and violin in school. I've done 66 General Conferences since, haven't missed one in 33 years. I know enough to know that I could never be in the Mormon Tabernacle Choir. But I get to record them, just how I like to hear them. I am truly blessed to be a part of it." ■



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Vlado Meller Mastering

40+ YEARS IN NEW YORK,
HELLO CHARLESTON

BY TOM KENNY

Vlado Meller is a mastering engineer. That's all he does. That's all he's done since landing in New York City in 1969 and going to work at CBS Records in tape duplication and loading. While he did take violin lessons as a child, he never formed a band, never mixed live sound, never really tracked or mixed a record. He does mastering, and he's still at the top of his game, one of a handful occupying the upper echelon of the craft worldwide.

But the mastering game has changed. Most sessions today are unattended, projects arrive in pieces, often from different engineers and producers, budgets are gone and label-run operations have been shutting since the mid-2000s. Top-level mastering engineers figured out awhile ago that they no longer had to be in a metro location to keep clients; they just needed to deliver the sound. Ludwig went to Portland, Sax moved out to Ojai, and now Meller, who has a longer tenure than them all, has moved to Charleston, South Carolina, setting up a home base within Bruce Freshley's Wes Lachot-designed Truphonic Studios complex. He admits it was a huge move for a typical New Yorker, but it's even further away from his childhood roots.

Meller was born in Czechoslovakia and took violin lessons, later trained in music school. He was an electrical engineering student in Prague in the Spring of 1968 when the revolution broke out. Returning to the city after a break, he realized that half of his friends had fled the country in advance of the looming Soviet crackdown. He looked around, then jumped on a train for home. He said goodbye to his parents and snuck across the border to Austria. He spent four months in a refugee camp of sorts, with no papers or visa. Four months later he landed in New York City. Two months after that he had a job at CBS Records. These stories don't happen anymore.

Meller worked at CBS Records (then CBS Sony, then Sony BMG, then back to Sony; same company) from 1969-2007, actually starting



Photo: Bruce Freshley

to cut vinyl in 1971. When Sony Studios shut down operations on West 54th in 2007, he went to Universal Mastering, where he stayed until 2011, when they shuttered. A brief stint at Masterdisk followed, and now he is happy in Charleston, with Vlado Meller Mastering at Truphonic Studios. With recording, mixing and mastering again under one roof, he says that he feels recharged.

At this point Meller has hundreds and hundreds of records under his belt, from Celine Dion to Red Hot Chili Peppers to Julio Iglesias to Kanye. But let's go back to New York City, where it all started.

So it's 1969 and you land in New York, then get a job at CBS Records. I was blessed. I started out loading tapes, but I worked for huge labels, with huge clientele. I would come in the morning and my supervisor would say that Michael Bolton is coming at 10:30. Or Celine Dion. This is how I met people over 40 years. The biggest producers, artists and engineers in the world. I was lucky to meet them, work with them and have dinners with them. I have friendships with these people. That's impossible to do today. Even at Sterling or Masterdisk at the time, they had to go hustle for clients. I didn't have to do a thing.

I would get everything from Jack White or Harry Connick Jr. to Metallica. From Red Hot Chili Peppers to Celine Dion, from System of a Down to Juilo Iglesias, from White Stripes to Susan Boyle, from



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Meller's room is not huge, but it works hand in glove with his PMC monitors and Bryston 7B and 4B amplifiers.



Photo: Courtesy of Wes Lachot Design

The Truphonic Studios live room, within the same complex. Meller says that he feels recharged by the interaction with new artists, tracking sessions and mix dates under the same roof.

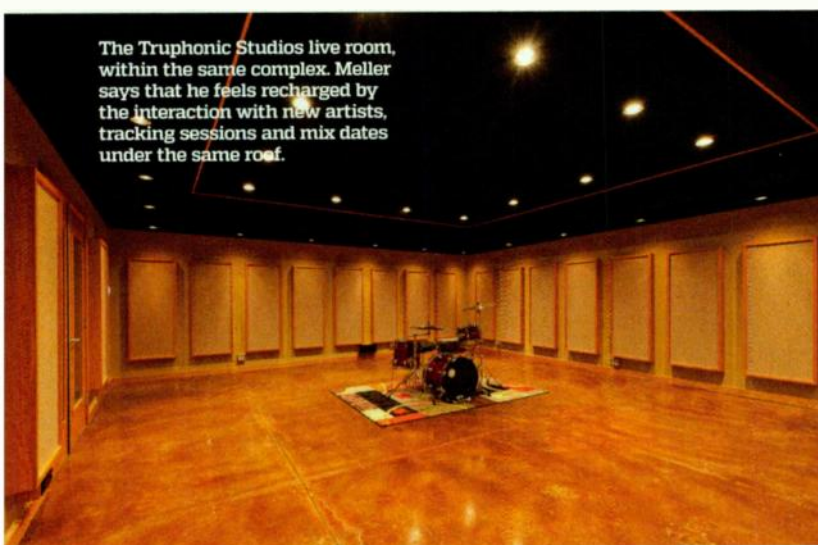


Photo: Courtesy of Wes Lachot Design

Il Divo to Kanye. I do pretty much everything. I'm one of the few guys in this country who does that type of range because I worked at the big labels. Whatever they threw at me I mastered it. I had to go through A&R, to the artist, the producer. They showed up for sessions. I learned about the whole business. Again, I was blessed to have that opportunity.

But Sony closed in 2007, Universal shut down in 2011, and I tried at Masterdisk for a while, but it didn't last very long. It seemed a logical thing to go out on my own.

And so you thought of Charleston...?

Like everything else in life, it was chance and accident and who you know. My daughter graduated from Columbia, S.C., University of South Carolina. On the weekends when my wife and I would visit, she would suggest we go to Charleston. I had heard of it, a charming place, historic city, so we took a ride one day. It was the shock of my life. A beautiful place, great restaurants, beautiful scenery. It looks like an old French or English town with cobblestone streets and horse carriages.

At the same time, my former boss at Universal, Paul West—who's my partner now in the business—has a house down there, so when he heard I was visiting my daughter, he said, "You should check out this studio down there." Me, being a typical New Yorker who worked all my life in the city, said, "Who would build a studio in Charleston?" I'm used to Hit

Factory, Electric Lady, Sony, and all these amazing places.

Then when I came here and checked out the studio [designed by Wes Lachot], I couldn't believe the place. It's gorgeous. It's like a mini Sony Studios. Beautiful woodwork, fabrics on the wall, polished concrete, acoustics. I was totally floored. We meet for dinner and drinks and he knew my story through Paul. He asked me why I was living in New York City and New Jersey. "Why put up with that life? Come down here. It's an easier life, you can enjoy yourself. You can go to the beach or the studio. We have a beautiful facility here, I'll give you two rooms. We have a tracking room, a control room, and we have space."

I looked around—I don't jump on a horse immediately. I had worked in huge studios my whole life, so I needed to think about it. I was working at Masterdisk at the time. So I talked to my wife. My daughter had already graduated college. My son is a senior at West Virginia and could end up anywhere. I thought to myself, "I own all the gear, more than probably anyone in the world. Why am I sitting here? I can take it all down there."

So it's all your gear. I imagine so after 40 years.

I have top-of-the-line gear, probably more than any mastering engineer in the world. That started at Sony. Sony made sure that whatever we had was up to date and top of the line. I have an analog digital console/monitoring system from Chris Muth. It has eight digital and eight analog inputs, with a flat plate and a silver knob. He only made a few of them back in 1995, and Sony bought a couple. It's the best system there is. I use Weiss EQs and Weiss compressors. I've set up the monitoring for surround, so I use the Z-Sys 6-channel EQ and compressor. We also master a lot of surround from stereo, so I use the TC 6000.

But it's all about the PMCs. The PMC speaker, to me, is the best you can have. It doesn't matter if it's low level, mid-level or high level, there is clarity. You hear every little nuance. Some producers come here and are shocked when they listen, because they couldn't hear it in the mix.

I got the PMCs at Sony about 12 or 13 years ago. The room I had at Sony was beautiful, and it was huge. It was two stories high, and it was wide. I looked like a little peanut in there. It was almost too big to be a mastering room. We tried a bunch of different speakers, and when they brought these PMCs in, I was blown away. I played some records, even vinyl from the '70s, and I heard everything. I listened and thought to myself that is exactly what I did. I knew this was a correct speaker, and to this day I trust these speakers 100 percent. I have enough amplifiers to kill a horse, the Bryston 7B and 4B. When you bought PMC back then, you had to buy Bryston. They are a perfectly matched pair. I had the same system at Sony, at Universal, and I brought them to Charleston. I hear the same thing.

So you have your gear, what did you think of the rooms?

Bruce [Freshley, owner of Truphonic Studios] had two rooms for me, some production rooms. The rooms are wonderful acoustically. We did a few slight modifications with panels on the wall because I work in surround. My speakers are huge—they're seven feet tall, left-center-right—and they are very close, so we had to make sure they worked in the space. I've found that the low end is even tighter in this room than I've ever had. It floored me when I heard the low end here. It's absolutely perfect. Some people think this might be overkill, but I can tell you, if you play them at low level, they play like regular speakers with even response. At all levels. If the client comes in, they are free to turn it up as much as they want. I don't tell them how loud to listen.

But more importantly, there is no place left that has recording and mastering together [Editor's note: except maybe Capitol Studios and Abbey Road]. I love to be on my own, locked in my own room, doing what I do, not having to deal with clients day to day. But I miss the interaction. This whole business is about interaction. If you look at the studio business over the past 30 years, it's all about the time people spend in studios.

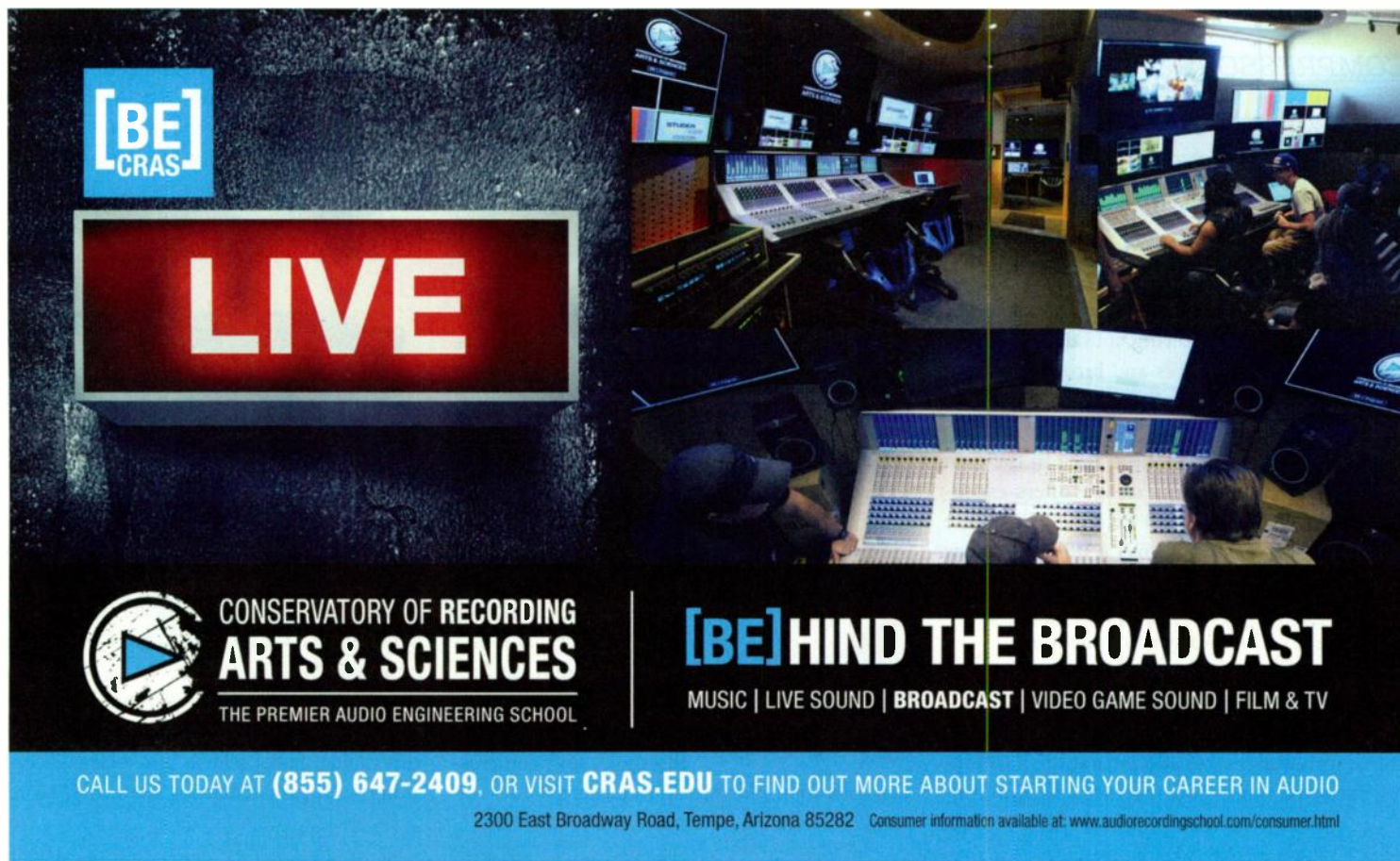
You've been there since opening on March 1. What do you think?

I never missed a beat. Our major labels are always busy. It's across the board... albums from Smokey Robinson to Slipknot, Matisyahu, SBTRKT and Susan Boyle, to remastering the Red Hot Chili Peppers for iTunes high definition. I did all those Chili Peppers albums originally. Then slowly but surely the regional bands found out I'm here because they are using the Truphonic Studios. They see my Gold records and ask me what I do, believe it or not. I show them what it sounds like, what they can expect. One after another they start asking for me. I'm very proud of that. These bands come to the sessions and sit with me. They are floored with what they get. I just finished a local band two days ago. There is a lot of music here for a small town. You have R&B, hip-hop, rock, you name it. I expect that in NYC, but I thought Charleston was a little place with old conservative Republicans sitting around on porches. But it's not. I'm very happy here. Paul West is the financial guy and he's in Los Angeles. Peter, my booking manager, is in New Jersey. If I get a call at night, I can be at the studio in 10 minutes. In New York, it would have been the next day.

You've also started a mastering workshop.

That actually started two years ago in New York. At my age and my experience, I don't worry about clients. I worry about the new generation coming in. Young people come to me today and ask me about mastering, and I almost feel sorry for them. How do you prove yourself and show that you're the guy to master the album? The client will ask what you've done, what you've mastered. If you don't have a past, which in our case is a discography, you are nobody. You could be the greatest computer genius, the biggest technologist, if you don't have 20 albums that charted, nobody will talk to you. So if they want to learn, I'm here to teach.

We do it two or three times a year. We have one coming up in January, then March and maybe June. Usually it is three or four people. I want to keep it small and be personal. I could take nine of them and take their money, but I want to teach. And most of them want to open their own mastering place when they go home. They realize this is a niche in the industry they can make money in and have a job. I have an international clientele. From Poland, Sweden, China, Colombia, Germany, France. I was totally floored. Then I got people from NYU. They spent a quarter-million dollars on school and then come to me at the end. I explain the whole process, how albums are done these days, with different producers, engineers and studios. I always stress that at the end of the day, it's not the gear you use but the sound you achieve. You can have different EQs and compressors and workstations, as long as you can achieve the sound and the client likes it, you are the winner. ■



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NEW HARDWARE PROCESSORS AND CHANNEL STRIPS

BY THE MIX EDITORS

Although we live in a world dominated by digital audio workstations, hardware releases for the front and back end have been strong of late, especially in the a la carte category. In this collection, we round up a selection of compressors, EQs and channel strips, in both rackmount and 500 Series formats, that have debuted beginning around the 2013 AES Convention. Note that the channel strips usually include a preamp. The products covered here include solid-state and tube processors, which gives you a range of flavors from which to choose.

COMPRESSORS



ART PRO VLA II

The ProVLA II is a tube-driven Vactrol-based compressor/leveling amplifier designed for tracking, mixing, mastering, and dynamic control of live sound sources and broadcast audio. Instead of using VCAs to handle level detection, the Pro VLA II uses an opto-electronic circuit coupled with a 12AT7 vacuum tube in the gain stage. Its transformerless design offers exceptional signal integrity with extremely low noise and low distortion. The ProVLA II is a soft-knee leveling amplifier by design. Backlit analog VU meters display input and output levels while 10-segment LEDs display gain reduction.

BLACK BOX ANALOG DESIGN HG-2

The Black Box Analog Design HG-2 is a line-level stereo unit designed to add saturation, harmonics, natural compression, increased RMS and en-



hancement during mixing and mastering. The HG-2 uses Cinemag input transformers to feed two paths: The main signal path travels through a 6U8A pentode tube stage that then drives into the triode stage that follows, to achieve results ranging from subtle harmonics to full saturation. The input transformer also feeds a parallel signal path that uses a set of 12AX7 tubes, voiced specifically for harmonics and saturation.



CRANE SONG FALCON

Crane Song's Falcon 500 Series compressor features three attack time and three release time settings, hard and soft knee choices for compression or limiting, two different audio path sounds, and wet-dry mixing for parallel compression. When linked, the master unit controls all functions on the slave except for wet-dry and make up gain. The linked system is capable of doing 5.1 surround sound. The Falcon's front panel has controls for attack and release speeds, compression and limiting, gain and threshold, and compression coloration, plus a backlit VU meter.



DANGEROUS COMPRESSOR

Dangerous Music's Dangerous Compressor (reviewed in Mix's November 2014 issue) is a dual-mono/stereo compressor for tracking, mixing and mastering designed by Chris Muth. Its Smart Dynamics feature employs two independent slopes in the detection circuit. One stage of the detector controls the average level, while the other handles only rapid transients. By default, the unit is set to Auto Attack/Release mode. Engaging the Manual Attack/Release button allows the manual use of the attack and release knobs. Dual-Mono mode has two completely independent paths, while Stereo Mode may be applied to stereo instruments, stems or complete mixes.



DRAWMER 1973 COMPRESSOR

Drawmer (distributed in the U.S. by TransAudio Group) introduced the 1973 3-band FET Stereo Compressor in September 2014. The all-analog Drawmer 1973's features include three independent compressor sections with two variable-frequency 6dB/octave crossovers to separate them into low, middle and high-frequency compression sections. Each section contains familiar threshold, gain, attack and release controls, along with gain-reduction metering. Moreover,

each section can be independently muted or bypassed for straightforward setup and monitoring. The low section possesses a Big switch for enhanced low-end, whereas the high section possesses an Air switch for enhanced high-end.



KUSH AUDIO TWEAKER

Introduced at the October 2014 AES, the Kush Audio Tweaker is a discrete, single-channel, 19-inch rackmount VCA compressor with Variable Drive, designed to emulate the sound of transistor-based compressors of the 1970s. The unit's Sidechain Shaper changes the sound and behavior of the sidechain circuit, from high-pass filters to complex multi-shelving filters, with an additional Contour control. A Curve knob controls the knee and ratio at once, starting from a 2:1 soft-knee ratio to 30:1 hard limiting. The attack ranges from 10 microseconds to 70 ms to allow extreme transient control or transparent attack.

SSL STEREO BUS COMPRESSOR

The SSL Stereo Bus Compressor 500 Series format module, which occupies two X-Rack slots, delivers the center section compressor from SSL's 1980s G-Series analog consoles. It features six ratio settings ranging from 1.5:1 to 20:1, five release settings and an Auto Release function. It further offers SSL's ultra-high-bandwidth,



ultra-low-noise SuperAnalogue circuit design, with classic Threshold, Attack, Ratio, Release, and Make Up controls. True stereo sidechain input is accompanied by a "link" feature, which enables multiple modules to be combined for surround processing.

EQUALIZERS



ANAMOD REALIOS A9052 EQ

Originally designed for the Olympic Studios console by Dick Swettenham with guidance from engineer Keith Grant, this equalizer provides high and low shelving bands, two midrange/low frequency bands of equalization, and a two-position high-pass filter. The equalization points chosen provide instant control over musical timbre. An addition to the original three-transistor makeup gain stage is a Class-A transistor output stage. Also included is a step-down

input transformer and step-up output transformer, which provides 6dB greater headroom than the 500 Series voltage rails would normally allow.

BETTERMAKER EQ 232P, EQ542

The EQ232P combines a passive EQ with parametric filters, offering an analog signal path



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along with 399 available cells for user presets that are recallable with one touch. Users can save settings in the EQ's internal memory as well as in a DAW with user-defined automation. It has an A/B comparison function supported by AU, VST, and RTAS (32- and 64-bit). EQ 232P features 10 filters (five on each channel), including two highpass filters and four parametric filters with wide frequency ranges, and two Pultec sections, in which shelf filters are offered in combined, matched stereo. The Bettermaker EQ542 is the parametric EQ section of the EQ 232P in a 500 Series format.

CRANESONG INSIGNA 500 EQ

Insigna is a tube equalizer in a 500 Series package using a dual triode circuit with a 12AX7 tube. It has three bands and filters, as well as 24dB/octave highpass and lowpass filters,



each with seven frequencies. The top and bottom band are shelving each with eight frequencies. The mid-range band is peaking with eight frequencies. The three bands work by using buffered RC circuits in the negative feedback path around the tube amplifiers. Insigna further features a dual-triode circuit with buffered RC circuits in the negative feedback path around the 12AX7-based tube amplifiers.

ELECTRODYNE 2511 EQ

The Electrodyne 2511 is a classic 2-band discrete transistor reciprocal active inductor equalizer using 1969-1970 design technology. Electrodyne's original designer makes the 2511's custom inductors and output transformer to strict factory manufacturing tolerances as small as 2% to allow consistent EQ



performance and repeatability from channel to channel. It promises smooth performance and EQ response from minimum to maximum gain at all frequencies to provide unusually broad sonic and tonal options not experienced since the 1970s.



KUSH CLARIPHONIC 500

The Clariphonic 500 Series Module offers a mastering grade signal path and brings the midrange into focus, designed with six parallel signal paths that produce a form of additive-only high frequency equalization, and are said to produce an air, clarity, and presence previously found only in old, expensive analog

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"The ease of install really allowed us to experiment with placement and with the quality of the treatments, we achieved the sonic balance we were looking for!"

~ **Tommy Lee**
Founding member - Mötley Crüe.



"Being able to fine-tune a room on site makes all the difference. The Impaler mounting system make the panels easy to install and let you make adjustments without trashing the surface. It works!"

~ **David Rideau**
Engineer/producer - Janet Jackson, Sting, TLC, George Duke and Jennifer Lopez.



"The Primacoustic is up and kicking butt at my new studio in Santa Monica. I love the way the control and tracking rooms sound now... and so does everyone that records here!"

~ **Butch Walker**
Engineer/Producer - Avril Lavigne, Fall Out Boy, Pink, Sevendust, Hot Hot Heat, Simple Plan, The Donnas.

"I love the way the control and tracking rooms sound now... and so does everyone that records here!" ~ Butch Walker

equalizers. Two high-shelf filters are blended in parallel on each channel, with six carefully selected corner frequencies. The filters give you control over the midrange, presence, and air bands. The front panel has switches for selecting Silk, Shimmer, Sheen, Presence, Open and Lift, and knobs for Clarity and Focus.



LIGHTNING BOY AUDIO FLUX BENDER EQUALIZER

The Flux Bender is a passive stereo EQ made with ultra-transparent sounding paper in oil capacitors, cryogenic NOS 12AT7 vacuum tubes, matched pair of cryo-treated NOS 6X4 tubes, a pair of NE-2 tubes, and hand wired point to point with silver plated wire. The Flux Bender uses Sowter input transformers, Jensen

interstage transformers and custom designed Cinemag output transformers and inductors. It also includes a Lightning Boy "Juice Box" external power supply with power tether included for ultra low noise operation, high quality Alps and PEC pots, plus Alps rotary switches and heavy duty toggle switches.



RUPERT NEVE DESIGNS NEVE 551 EQ

The 551 features three bands of EQ and a custom-tapped inductor EQ, along with custom-wound inductors, transformers and Class-A gain blocks. The LF band can be used as either a shelf or a peak filter. The 551's inductor midrange band can sweeten vocals and instruments while bringing them forward in a mix, and its proportional "Q" response makes it well suited for minimizing problem-

atic frequencies. The high frequency band blends inductor circuitry with capacitor-based topologies. The highpass filter is a 12dB/octave design with a fixed 80Hz frequency, and can be used in tandem with the low frequency EQ.



PHOENIX AUDIO NICE DI/500

This Class-A discrete unit is an API 500 Series compatible direct input channel and EQ tilt control processor, with a custom wound transformer, for use on guitar, keyboard and all line-level sources. The DI has a 10-meg input load, which promises the ability to capture all frequencies and reproduce a

full sounding tone. It has a DI input, through and a switch to accept balanced line-level. The unit's 3-way tilt control has tilt points at

Continued on p. 74

performance, amazing results!



"I put up Primacoustic Broadway Panels on the walls and MaxTraps in the corners. The difference was amazing... the room went from unruly to tight and controlled!"

~ Daniel Adair Drummer - Nickelback.

"Not only does my room sound amazing, it's also really beautiful!!!"

~ John Rzeznik

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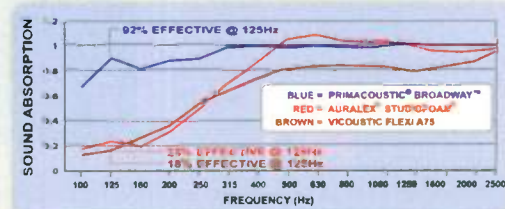
"We've got a mixture of bass traps, diffusion and clouds and the result was phenomenal. It ended up costing less than 25% of the custom solution and it turned out very cool."

~ Keb' Mo' - Grammy winner, roots-legend.

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"Not only does my room sound amazing, it's also really beautiful!!!" ~ John Rzeznik - Goo Goo Dolls.



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THE BUNKER STUDIO

Jazz double-bass/jazz fusion electric bass player John Patitucci worked with engineer Joe Barbaria in Studio A...Guitarist

Jim Campilongo and country jazz and western swing band Honeyfingers did live tracking to a Studer A80 2-inch, 24-track of a six-piece band in Studio A with engineer Aaron Nevezie...Jazz trumpeter/composer Dave Douglas did live tracking in Studio A with engineer Geoff Countryman...Drummer/composer Mark Guiliana tracked (Studio A) and mixed (Studio B) with engineer John Davis...Drummer Jojo Mayer and his electronica band Nerve tracked (Studio B) and mixed (Studio A) their latest EP with engineers Davis and Jacob Bergson.



Keith Richards at Germano Studios being interviewed by Matt Lauer for *The Today Show* for the release of the book *Gus & Me*.

GERMANO STUDIOS

Singer/songwriter Rob Thomas recorded vocals in Studio 1 for a new solo album, with Matt Serletic producing and James Brown engineering (Atlantic Records)...Pop boy band One Direction recorded vocals in Studio 1 for their new album,

with Ben Chang engineering (Sony Music UK)...The soundtrack for the movie *Into the Woods* was stereo mixed for director Rob Marshall in Studio 1, with Mike Higham producing and Andrew Dudman mixing (Disney Pictures)...Singer/songwriter John Legend wrote and recorded in Studio 1 for Meghan Trainor and Kelly Clarkson, with Jason Agel engineering (RCA & Columbia Records)...Rolling Stones guitarist/singer-songwriter Keith Richards recorded and mixed in Studio 1, with Steve Jordan and Richards producing, and Dave O'Donnell engineering...DJ/producer/rapper Diplo and hip-hop duo Rae Sremmurd wrote and recorded in Studio 1 with Kenta Yonesaka engineering...R&B/soul singer-songwriter Aretha Franklin did background vocal recording sessions in studios 1 & 2, with Harvey Mason, Jr. producing and Dave Rowland engineering (RCA Records)...Indie-pop group Haerts recorded in studios 1 & 2 their debut album with Andy Baldwin/Ben Gebert producing and engineering (Columbia Records)...Musician/singer-songwriter St. Vincent recorded tracks in Studio 1 with Boots Asher producing and engineering.

STRANGE WEATHER

Guitarist/singer-songwriter Bombino recorded with his four-piece band in the live room (in addition to Bombino's lead vocal), with engineer Daniel Schlett...



Ghostface Killah (left) with producer Fame

(of M.O.P.), recording a variety of instruments and voices for the new Ghostface album using the Sony C-37A mic. Schlett also engineered the sessions...Black-metal band Liturgy recorded primarily live together in the main room, with Jonny Schenke and Hunter Hunt-Hendrix producing, and Schenke also engineering...Producer Frank London and engineer Marc Alan Goodman worked on the score for a yet-unnamed film, featuring Uri Caine, Greg Cohen, Kenny Wollesen, Mark Helias, London, Mark Feldman and Jennifer Charles, among others. The session was tracked live to Pro Tools, and no compression was used during tracking, and almost no EQ—they focused on getting the right sound at the mics.



Live room

and oversees every session: Engineer Jeremy Sklarsky worked with producer/songwriter Chris Phillips to mix Season 1 of actor/musician Denis Leary's new FX show, *Sex, Drugs, and Rock & Roll*...Engineer Mike Wuerth worked with producer Matt Serletic recording vocals for Rob Thomas' next release in Studio A...New Music Seminar "Artists on the Verge" winners Van Lady Love were in Studio A to record for their forthcoming release, with Wuerth engineering...Working with participants in Threshold's partner non-profit organization "Road Recovery," engineer Sklarsky mixed two songs with lead guitar contributions from legends Peter Dinklage and Tom Morello...Threshold has also expanded its voice-over portfolio, including recording recent spots with actor Michael Douglas for the Global Zero non-proliferation initiative and chef Anne Burrell for the Food Network.

BREWERY STUDIO

Brewery Studio recently celebrated its fifth anniversary at its current studio location in Williamsburg, Brooklyn...MC/hip-hop artist Joey Badass worked over several weeks with engineer and Brewery owner Andrew Krivonos on mixing his debut album. Statik Selektah produced the sessions...Singer-songwriter Jhené Aiko worked with producers Dot Da Genius and

Indie-rock band Modest Mouse worked with producer Andrew Weiss and engineer Chris Shaw on new material...Rapper Ghostface Killah worked with producers Andrew

Kelley, Schlett, and Fame (of M.O.P.), recording a variety of instruments and voices for the new Ghostface album using the Sony C-37A mic. Schlett also engineered the sessions...Black-metal band Liturgy recorded primarily live together in the main room, with Jonny Schenke and Hunter Hunt-Hendrix producing, and Schenke also engineering...Producer Frank London and engineer Marc Alan Goodman worked on the score for a yet-unnamed film, featuring Uri Caine, Greg Cohen, Kenny Wollesen, Mark Helias, London, Mark Feldman and Jennifer Charles, among others. The session was tracked live to Pro Tools, and no compression was used during tracking, and almost no EQ—they focused on getting the right sound at the mics.

THRESHOLD RECORDING STUDIOS NYC

All of the following sessions were produced and/or engineered by Threshold staff, and owner James Walsh executive produces

and oversees every session: Engineer Jeremy Sklarsky worked with producer/songwriter Chris Phillips to mix Season 1 of actor/musician Denis Leary's new FX show, *Sex, Drugs, and Rock & Roll*...Engineer Mike Wuerth worked with producer Matt Serletic recording vocals for Rob Thomas' next release in Studio A...New Music Seminar "Artists on the Verge" winners Van Lady Love were in Studio A to record for their forthcoming release, with Wuerth engineering...Working with participants in Threshold's partner non-profit organization "Road Recovery," engineer Sklarsky mixed two songs with lead guitar contributions from legends Peter Dinklage and Tom Morello...Threshold has also expanded its voice-over portfolio, including recording recent spots with actor Michael Douglas for the Global Zero non-proliferation initiative and chef Anne Burrell for the Food Network.



L to R: Artist Jhené Aiko, producer Dot Da Genius, studio owner Andrew Krivonos, and fashion designer Jessica Yuen (of Bedford Street Laundry).

writer Skrillex stopped by to collaborate with producer Clams Casino (Skrillex and various assistants also engineered the sessions). Since then, Clams has been in the Brewery working on his own debut project.



Chromee (Dave 1 and P-Thugg) in Studio A with the Duality.

A with Gratton engineering...Rapper Bobby Shriver was in Studio A with Gratton engineering...Hip-hop group Wu-Tang Clan was in studios A and B with Gratton and Joseph Colmenero engineering...Electro-funk/disco duo Chromee was in Studio A with engineer Tom Gardner...Indie-rock band Cold War Kids performed tracks from its latest release, *Hold My Home*, live to the radio for station KEXP. Gardner engineered the session, with Gratton assisting...Actor/rapper Jaden Smith was in Studio B with engineer Gratton.



Jerry Wonda and Jennifer Hudson

Andrew Robertson engineering...Pop singer-songwriter Lady Gaga was in Studio J with producer DJ White Shadow and engineer Dave Russell...Artist/actress Jennifer Hudson worked on her album *JHUD* in Studio K, with Wonda producing and Tsai and Lance Powell engineering...South Park creators Matt Stone and Trey Parker were in Studio J with engineer Lance Powell recording material for the episode "Stick of Truth" (as well as for the game of the same name)...DJ/producer DJ Mustard was in Studio K with engineer Tsai working on new material.

THE CUTTING ROOM

Singer-songwriter Lana Del Rey and songwriter-producer Rick Nowels were in Studio A with engineer Kieron Menzies, assisted by John Gratton...Hip-hop artist Chance the Rapper was in Studio

A with Gratton engineering...Rapper Bobby Shriver was in Studio A with Gratton engineering...Hip-hop group Wu-Tang Clan was in studios A and B with Gratton and Joseph Colmenero engineering...Electro-funk/disco duo Chromee was in Studio A with engineer Tom Gardner...Indie-rock band Cold War Kids performed tracks from its latest release, *Hold My Home*, live to the radio for station KEXP. Gardner engineered the session, with Gratton assisting...Actor/rapper Jaden Smith was in Studio B with engineer Gratton.

PLATINUM SOUND

Rock singer-songwriter/guitarist Melissa Etheridge worked on her album *This Is Me* in studios K and J, with Jerry Wonda producing and Serge "Sergical" Tsai, Ralph Rhim, and

Andrew Robertson engineering...Pop singer-songwriter Lady Gaga was in Studio J with producer DJ White Shadow and engineer Dave Russell...Artist/actress Jennifer Hudson worked on her album *JHUD* in Studio K, with Wonda producing and Tsai and Lance Powell engineering...South Park creators Matt Stone and Trey Parker were in Studio J with engineer Lance Powell recording material for the episode "Stick of Truth" (as well as for the game of the same name)...DJ/producer DJ Mustard was in Studio K with engineer Tsai working on new material.



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~PHIL ALLEN
(Grammy Award Winning Engineer)


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SCOTT JACOBY AT EUSONIA STUDIOS

BY LILY MOAYERI



Photo: Andrew Matusik

Scott Jacoby was halfway through medical school before he was able to accept that choosing to make music his career was not a self-ish decision. Not to be confused with the actor of the same name, Jacoby has been an established songwriter, producer, engineer, mixer, musician and composer for more than 15 years. The philosophy behind what Jacoby does is the same as when he was pursuing a career in medicine: to do it in the most unselfish way possible.

This ethos is partially why the Grammy Award winner doesn't limit himself, playing multiple roles in his New York City-based Eusonia Studios. It is also why there are no restrictions on the mediums through which his Scojac Music Productions expresses itself, from Jacoby as a recording artist to scoring films and commercials. Most importantly, there is no style of music that Jacoby won't work with, showing a knowledge and aptitude for a wide range of genres, from pop and R&B to soundtracks and electronica.

Eusonia Studios, which opened its doors in 2000 on Park Avenue, is a reflection of Jacoby's open attitude, with the convenience of modern amenities and a cache of vintage equipment. The roughly 800-square-foot studio has two rooms, both fitted with Pro Tools and Logic rigs. Packed with gear, everything is laid out so it is within arm's reach, with easy patching and hooking up capabilities. The main room is all-in-one and headphone-driven. There is no opportunity to tweak, EQ, and compress while playing; it's all about listening back and working from that point.

Jacoby's talents and setup have attracted the likes of Vampire Weekend, for whom he mixed "Unbelievers" from *Modern Vampires of the City*; Vanessa Hudgens, for whom he wrote, produced and mixed "Last Night" from *Identified*; Hamilton Leithauser, for whom he mixed "Alexandra" from *Black Hours*;

and Jose James, for whom he wrote "Trouble" for his Blue Note album, *No Beginning No End*, just to give an idea of the breadth of his musical inclinations.

"The goal of the studio is to embody modern and vintage vibes," Jacoby says. "I lean toward analog, sounds-wise, but I realize that we live in an age where you have to do things like recalls immediately, so I've devised a system where I can be entirely hybrid with digital and analog that works really well. Live half inside the box and half out, but with the quickness of someone who is straight out of the box."

While Jacoby's formal education has primarily been in health careers—first with an undergraduate degree in psychology and then medical school—he started playing drums and piano around 10 years of age. All through his college years he was writing songs and making recordings. Self-taught, Jacoby explored the technological advancements of the mid- and late-'90s in a makeshift home studio in his parents' basement with a Tascam DA-88 digital tape machine and a Mackie 1604 mixer.

Jacoby has guitar credits on a number of records he's produced, but he confesses, "I'm terrible at guitar. I basically play one string at a time, that's my guitar credit. Anything that involves chords or solos, I bring guys in. As a producer in this day and age, I feel that combination of piano and drums is particularly useful. You can make your way around most anything with a background in those two. If your beat is good, you're 80 percent done with the track."

With Jacoby's mixed bag of credits and talents, there is a signature stamp on his work that is the main draw for the artists who work with him. He calls it musicality, explaining: "My goal for mixing is to make it so you can turn the volume up and it would never get harsh and abrasive, even if it's with programmed sounds. With songwriting, if you're writing a song that's the most basic pop song and is not very interesting, there's some twist, something that's different, pushing the envelope in different ways. On the Vanessa Hudgens track, for example, I did it in 5/4 and she loved it."

A sister endeavor to the studio, the wholly independent Eusonia Records, started in 2007, follows Jacoby's unrestrictive approach. The label took off with a bang with the Jacoby-produced Maiysha album being nominated for a Grammy and scoring the soundtrack to the film *My Last Day Without You*. Eusonia Records has been dormant for the last couple of years, but now the label is reinvigorated and ready to reemerge with James McKinney as a partner. And with Eusonia Records' latest signing, Jacoby is entering uncharted territory working with the exotic twin sister DJ duo MezMez, who come to music after successful endeavors as restaurateurs, party throwers and club owners—plus, one of them is a best-selling author.

"My labor of love in the music business was to start a label," Jacoby says. "We've gone very deep into that phase where everyone is, or can be, a record label unto themselves. That's great in so many respects—for creative control, for business purposes. But then, when you think about it, there's a reason why labels exist. In essence, it's to let artists be artists and focus on the things they do best." ■

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MATTY AMENDOLA REBUILDS 825 RECORDS STUDIO

BY BARBARA SCHULTZ



Musician, producer and label owner Matty Amendola has built his own career and his company, 825 Records, on a foundation of hands-on production and artist development. “We’re a music incubator that works on developing artists’ product from start to finish,” Amendola says.

Until this past fall, Amendola had been running things from a Brooklyn basement studio in a building owned by his family (his dad is drummer Billy Amendola). Audio equipment, label offices and a video suite were wedged into a space where Amendola shared engineering and production duties with Grammy Award-winning engineer Butch Jones (Talking Heads, Iggy Pop, Stan Getz).

“It had been a pseudo studio for about 30 years,” Amendola says. “Butch had been working there, and he realized I was interested in learning about recording. He started teaching me, letting me sit in on sessions. I was producing bands, and when I started the company officially, Butch became our chief engineer.”

Amendola and 825 Records outgrew the basement studio—physically and logistically. The young producer wanted to start fresh with a facility that suited the workflow he had developed with Jones. “The space we had was big, but the ceilings were low, and it was a mess,” Amendola says.

He took an apartment one floor up from the basement studio and worked with Jones and studio design-builder Chris Harmaty (Converse Rubber Tracks/Jungle City Studios) and technical consultant Brian Dorfman (Orchard Design) on the new studio, which includes a live room, con-

trol room, video suite and overnight accommodations for visiting artists.

“Of all the New York designers we talked to, Chris was the one who liked all the crazy ideas I was throwing at him in terms of keeping windows but still having floating rooms as soundproofed as possible,” Amendola says. “Brian handled all of the wiring and drew up plans from my ideas for Chris to build.”

Jones mapped out the studio patchbay and pared down Amendola’s initial equipment list, which Jones says “... started out more like a Christmas wish list. But I could see that, having worked with me for quite a while, Matty had equipment on there that fell right into my needs—mostly SSL external.”

“I grew up using digital, but I also grew up understanding that records made in analog had a lot more depth,” Amendola explains. “So I started figuring out how to build a true hybrid setup that makes heavy use of analog equipment while remaining in the digital world that can keep up with everything.”

Amendola chose an Avid Artist Control and Mix Series control surface because he enjoys the system’s version of faders. “I’m also using two Universal Audio Apollos as my interface; I’m a big fan of their pre’s as well,” he says. “I’m cascading the Apollos and using a UA 4710D as well as an LA610 and SSL Alpha VHD pre’s. All of this is built into a custom desk by Sterling Modular, outfitted with other classic analog components.

“We have the option to route every pre through its own SSL EQ and SSL Compressor via two loaded SSL X-Racks, as well as utilizing UA’s console software in conjunction with our patchbay to flip them right into hardware inserts inside the DAW,” he continues. “We try to get the channel strip of an SSL being recorded from the live room as much as we can.”

Construction of the new studios took about four months, with contractors working simultaneously on different functions to get the business up and running to meet pressing deadlines.

“I’ve been one of MetLife’s main composers for three years,” Amendola says. “They were requesting a lot of work, so the second the studio was up and running, it was right back to work, and a lot of late nights.”

Also during the studio’s first couple of months, Amendola produced the new album from former Vanity Theft guitarist Brittany Hill, who performs as Kerchief. “She came from Tennessee, stayed here at the studio, and we tracked her entire record—10 songs in seven days,” Amendola says.

“This studio is designed as a private facility for my projects and Butch’s projects, and I work primarily with solo artists and singer/songwriters—artists who play one instrument, and I’m essentially their band, or I will bring other musicians who are best for the project.”

“Matty has learned from me, and I’m constantly learning from him,” Jones says. “I’ve been in the industry a long time, and all the fresh sounds and production that Matty is bringing to the table have been a recharge for me.” ■

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World Radio History

2014 INNOVATIVE PRODUCTS

Selected by the
readers of **MIX**

Welcome to the NewBay Media Pro Audio Group's (*Mix*, *Pro Sound News*, *Pro Audio Review*) first annual, year-end Innovative Product Awards, as we salute a few of the breakthrough technologies of the past year, broken down into six convenient categories.

Products were submitted by the manufacturers in September, and NewBay Media readers voted online for the winners. Take a look at the following innovators, then please let us know what you would pick.

CONSOLES CHANNEL STRIPS

MANLEY CORE REFERENCE CHANNEL STRIP



The CORE analog channel strip comprises a mic preamplifier, compressor, equalizer, and limiter. The compressor section offers Manley's ELOP technology. The compressor is placed before the mic preamp and uses a 3:1 ratio, with continuously variable Attack, Release, and Threshold controls, and a Silent Bypass switch. The CORE also has a fast-attack FET brickwall limiter with continuously variable Threshold and Release controls. The unit's equalizer gives you low and high Baxandall shelves (80 Hz and 12 kHz) with ± 12 dB range, and a sweep-able midrange bell EQ, 100 to 1k Hz, or 1 to 10k Hz with ± 10 dB range.



SSL XL-DESK

Solid State Logic's XL-Desk is designed for tracking and mixing engineers who require an analog console within a DAW centric studio, but don't want or need the integrated DAW control and analog level automation found in other SSL console products. XL-Desk is a 24 into 8 analog console with more than 40 inputs of SSL SuperAnalogue summing, an inbuilt 18-slot 500 Series format rack (with an SSL Stereo Bus Compressor pre-loaded), eight SSL VHD mic pre's on board, four stereo Mix Buses, a fully featured monitoring and talkback section (with an SSL Listen Mic Compressor) and an array of connectivity and routing options.

PRESONUS STUDIOLIVE RM SERIES

Based on the StudioLive AI-series engine and controlled with UC Surface software for Mac, Windows and iOS, the StudioLive RM16AI and RM32AI 32x16x3 rack-mount Active Integration digital mixers are scal-



able, compact, and 100 percent recallable. PreSonus' new UC Surface control software runs on Mac and Windows computers, as well as iPad, and works for live and studio mixing. The 3U rack-mount RM16AI provides 16 locking XLR inputs with recallable XMAX Class-A preamps, eight XLR line outs, and three main outs (left, right, and mono/center); 32 internal channels and 25 buses; a 52x34 FireWire 800 recording interface; 96 kHz operation; and extensive signal processing.



NEVE GENESYS BLACK

The Neve Genesys Black, hand-built in the company's UK factory, is a digitally controlled analog recording console with eight channels of 1073 mic/line preamps; 16-channel DAW/tape monitoring; hands-on DAW control for Pro Tools, Nuendo and more; eight channels of Neve digitally controlled analog 4-band EQ; eight channels of Neve digitally controlled analog VCA dynamics; and channel AD/DA conversion via MADI, AES and FireWire formats. A central touchscreen, eight auxiliary buses, eight group buses, two main outputs, four effects returns, comprehensive metering, 5.1 monitoring, two cue mixes, talkback services and an integrated footprint with internal power supply provides all the power you need.

INTERFACE WITH PROCESSING



APHEX USB RACK CHASSIS

The USB 500 Rack combines a 500 Series rack and a USB 2 audio interface into one product. Use your favorite mic preamps as inputs directly to your DAW or use your favorite analog compressors and EQs as hardware inserts in your DAW, all while monitoring through the USB 500 Rack, which includes Mono and Dim functions along with two high performance, independent headphone amplifiers. Modules can be chained in the analog domain for channel strip operation or linked for stereo compression. The USB 500 Rack also provides balanced XLR connections for use as a standard analog 500 series rack.



EVENTIDE DDL 500

The DDL-500 is a single-wide module for 500 Series lunchboxes. It features 10 seconds of pristine delay at a 192 kHz sample rate and a unique design that strictly limits the amount of digital circuitry to the bare minimum. Soft saturation clipping, lowpass filter, feedback, insert loop, relay bypass, and +20 dB boost are all analog. 500 series is, by and large, analog and the DDL-500 is "as analog as possible." The DDL-500's digital circuitry is kept to a minimum—just the chips necessary for delay. All of the other sound-shaping features are implemented in the analog domain.

SOFTUBE CONSOLE 1 DAW INTERFACE

Softube Console 1 is a tightly integrated hardware/software system that can be used with any major DAW to deliver the analog sound of Softube's plug-ins in combination with using physical knobs and buttons. Insert-



ing the Console 1 plug-in on any or all mixer channels of a DAW routes the sound from the DAW into the Console 1 mixer and back; users then press a track selector button on the Console 1 hardware and start adjusting the knobs. Each function on the channel strip has a corresponding knob or button on the hardware. The Console 1 package includes Softube's model of the Solid State Logic SL 4000 E analog console.

INTERFACES

ANTELOPE AUDIO ZEN STUDIO



Antelope Audio's Zen Studio is a professional, portable audio interface with best in class analog and digital connectivity. The 12 world-class mic pre's, Antelope's signature clocking, the onboard DSP effects with multiple monitor mixers and the proprietary low-latency USB connectivity make Zen a world-class mobile recording system that can fit easily inside a backpack or gear bag. Zen Studio is designed to meet the needs of the modern day producer or engineer on-the-go, as well as location sound engineers, sound designers, independent bands and musicians in search of greater sound quality and flexibility.



APOGEE ENSEMBLE

The Apogee Ensemble is the first Thunderbolt 2 audio interface to offer superior sound quality, the lowest latency performance and the most comprehensive studio functionality all in one box. Ensemble includes eight Advanced Stepped Gain mic preamps, monitor controller functionality including talkback, front panel guitar I/O, two headphone outputs and digital connectivity for a total of 30x34 I/O. Blending acclaimed innovations, groundbreaking new features and an effortless user interface, Ensemble empowers you to capture inspiration when creative lightning strikes. Launched in 2007, the first Ensemble re-defined the possibilities of the personal studio interface, setting new standards of quality, simplicity and value.



MOTU 1248

The 1248 audio interface is the flagship product in a new generation of audio interfaces equipped with AVB technology, along with the industry's first low-cost (\$295) five-port AVB switch. These products are now mainstreaming AVB Ethernet in broad segments of the pro audio market, with their affordable price tag, compelling and complementary I/O configurations, very high quality analog performance, extensive 48-channel mixing, DSP effects, universal computer connectivity through Thunderbolt and USB 2, wireless control over Wi-Fi, scalable expansion possibilities, and high-performance AVB audio networking features. In short, the 1248, and MOTU's other new AVB interfaces, deliver on the promise of AVB-driven networked audio for everyday audio workflows.

SOFTWARE PROCESSING SYSTEM



IZOTOPE RX4

iZotope's award-winning RX is the industry standard for audio repair and enhancement, fixing common audio problems like noises, distortions, and inconsistent recordings.

Post-production professionals, audio engineers, and video editors alike use RX to transform previously unusable audio into pristine material. RX's suite of automatic, intelligent modules reduce manual tasks in your audio production workflow, freeing you up to focus on creative experimentation. And for professionals who need to quickly deliver quality results, RX 4 Advanced offers even more specialized post-production tools. RX 4 is the result of iZotope's collaboration with working professionals to identify new ways of improving workflows and enhancing sound.



UNIVERSAL AUDIO UAD-2 SATELLITE THUNDERBOLT DSP ACCELERATORS

UAD-2 Satellite Thunderbolt DSP Accelerators are a sleek, powerful way for Thunderbolt-equipped Mac users to "supercharge" their systems and run larger mixes filled with rich, DSP-intensive plug-ins. These desktop-friendly units provide full access to UAD Powered Plug-Ins, including exclusive titles from Studer, Ampex, Lexicon, Neve, Manley, SSL, and more. Available in QUAD or OCTO models with a choice of four or eight SHARC processors, UAD-2 Satellite Thunderbolt DSP Accelerators can also be integrated alongside UAD-2 PCIe cards and Thunderbolt-enabled Apollo interfaces, including Apollo Twin, Apollo, and Apollo 16. UAD-2 Satellite Thunderbolt DSP Accelerators are available in Core, Custom, and Ultimate software packages.

LOUDSPEAKERS SYSTEM CONTROL STANDS



PMC QB1-A

The PMC QB1 Active is a large-scale, ultra-high-resolution main studio monitor with analog and digital (up to 192kHz) inputs. Ideal for either soffit-mounted or free-standing use, each QB1-A incorporates the latest generation of PMC's driver designs, 4825W of Class-D amplification, Advanced Transmission Line (ATL) bass-loading technology, DSP control, and a quartet of 10-inch carbon fibre/Nomex piston bass drivers to create a single reference monitor that has the transparency, resolution, dynamic range, frequency response, forensic sense of detail, and wide, consistent imaging demanded by the international audio elite. Its cutting edge DSP technology delivers ultra precise EQ, Driver optimization and non-invasive driver protection.

ELITE ACOUSTICS SUNBURST

The Elite Acoustics Sunburst is a studio monitor speaker that can also be used as a mixer/P.A. system or portable hi-fi Bluetooth-enabled sound reinforcement. Designed and assembled in the U.S., the Sunburst Gear



along with your MP3 player.

M3BR8 is a professional high fidelity reference monitor speaker system that is compact and portable. The bi-amplified design features a 5-1/4-inch speaker paired with a 1-inch tweeter to provide maximum sound clarity. With three channel inputs, the Sunburst Gear M3BR8 speakers have inputs for a variety of instrument and microphone combinations as well as an aux input for jamming

float in free space, resulting in authentic, clear, uncolored sound.

MICROPHONES/WIRELESS/ACCESSORIES



AEA N22 RIBBON MIC

Featuring the same Big Ribbon technology that has earned AEA its reputation, the N22 offers an incredible sound in close-mic applications like acoustic and electric guitars, piano, vocals, and drums. With phantom-powered JFET electronics and a custom German transformer that provides an additional 12dB of output, the N22 achieves optimal performance with a wide range of preamps including USB or FireWire audio interfaces in home studio setups. The highly protected pure aluminum ribbon allows for using the N22 in live sound applications and vocal recording without the need for an additional pop filter.



AUDIO-TECHNICA AT5045

The AT5045 is the latest addition to Audio-Technica's flagship 50 Series of premier studio microphones. This hand-assembled and individually inspected cardioid condenser features large-diaphragm characteristics and fast transient response that make it an ideal instrument microphone. The AT5045 offers the performance of a large-diaphragm, side-address condenser in a convenient, stick-type



ISOACOUSTICS MODULAR ALUMINUM ISOLATION STANDS

IsoAcoustics Modular Aluminum Isolation Stands can be custom-configured to meet the needs of studio engineers and producers, sound designers, acousticians, musicians and sound contractors for both small and large scale situations, including recording and production facilities, performance stages, nightclubs, theaters, concert halls and many other venues. The Modular Stands markedly enhance sound clarity and performance of studio monitors, subwoofers, sound reinforcement loudspeakers, and guitar, bass and other musical instrument amplifiers in both large and small scale venues, using the company's patented isolation technology that allows the speakers or subwoofers to

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body. Despite the space limitations imposed by its capsule, the AT5045 boasts Audio-Technica's largest single diaphragm—a two-micron-thick, vapor-deposited gold rectangular diaphragm. The microphone's circuitry has been honed to the essentials to optimize performance, resulting in exceptionally low noise, high SPL capability (149dB SPL max) and a dynamic range of 141 dB.

DPA D:SCREET NECKLACE MICROPHONE

The new d:screet Omnidirectional Miniature Necklace Microphone addresses an industry need for a mic that can be mounted and removed quickly several times by untrained talent without a sound expert nearby. Especially useful for instances when mounting and consistent audio output are the primary requirements, the d:screet Necklace Mic is ideal for situations requiring quick costume changes. Featuring DPA's legendary d:screet 4061 Omnidirectional Miniature Capsule in a soft rubber necklace, the d:screet Necklace Mic offers fast, repeatable, "do-it-yourself" mounting and is designed specifically for use by non-technicians. It is available in black, white and brown and in lengths of either 18.3 or 20.9 inches.

RADIAL J48 DIRECT BOX

Using only 48V phantom power, the Radial J48 is an active direct box that produces an exceptionally linear response that extends from 20Hz



up to well above 40kHz. Low distortion of all types is achieved via a unique digital switching power supply that raises the internal operating rail voltage for added headroom and improved signal handling. The results are truly amazing. The J48 delivers an ideal even-order harmonic cascade and a sonic performance that outperforms DIs costing several hundreds more. And like all Radial products, the J48 is both feature-rich for studio and made tough to handle the road.

SHURE GLXD16 WIRELESS SYSTEM



New from Shure, the GLXD16 Wireless System provides guitar players with a durable, cost-effective wireless solution that delivers exceptionally clear digital audio with seamless operation. The system features the GLXD6 Guitar Pedal Receiver with an integrated tuner, and an ergonomic bodypack transmitter with a lithium-ion rechargeable battery. Built with a durable metal construction, the system's GLXD6 Guitar Pedal Receiver features a built-in chromatic instrument tuner with both strobe and needle tuning views. A first-ever for Shure, the GLXD6 Guitar Pedal Receiver is the perfect solution for guitarists as it mounts onto any pedal board. ■

HV-32P HV-35P The portables*



Packed into rugged aluminum chassis and powered from 12-15 VDC so they can go anywhere, Millennia's new portable preamps bring you the clarity of the acclaimed HV-3 in two flavors: the dual-channel HV-32P, with two 200 Series HV-32 preamps on board, and the HV-35P, a portable version of our 500 Series HV-35 preamp.

Carry them with you, stack them horizontally or vertically, bolt three of them into a Middle Atlantic rack shelf—these preamps are designed to deliver Millennia quality from desktop to treetop.

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POSITIVE GRID FINAL TOUCH APP

Real-Time iPad AAC Encoding/Auditioning

Developed alongside Apple engineers, Positive Grid has released Final Touch Audio Post Production System for iPad (\$19.99), featuring the new AAC format preview. The update adds real-time auditioning through the Apple AAC encoder, providing accurate level metering and preparation for Mastered for iTunes process on a Mac. Final Touch combines seven essential mastering tools into one integrated system: Pre and Post Linear Phase EQ modules, a Dynamics module with a highly flexible stereo/mid-side

multiband compressor/limiter, Stereo Imaging, Reverb, and a Maximizer with Comprehensive Dithering and noise-shaping options. The final mix can be exported and shared via email, Dropbox, iTunes and SoundCloud.

ROB PAPER PUNCH-BD

Virtual Bass Drum VI

Punch-BD from Rob Paper (\$59) is a powerful bass drum virtual instrument for Mac (OS X 10.6 or higher) and PC (Windows Vista, 7 and 8), allowing users to stack up to six samples. Its six sequentially numbered BD pads can be divided across an external controller keyboard for performance purposes—in 6 Notes Play Mode (with the six “notes” repeated over the whole keyboard range). Simply Stacked, Stack or Tuned Stack Play Mode (which follows the pitch of the keyboard).



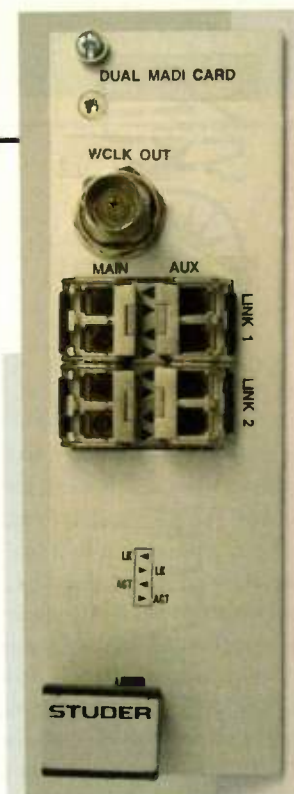
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Entry Level USB I/Os with Waves Plugs

The newly upgraded M-Track (\$99) and M-Track Plus (\$149) interfaces from M-Audio feature a metal chassis, low-profile design, two XLR/ 1/4-inch combo inputs with phantom power, switchable inputs, zero-latency monitoring with USB/analog direct balance control, headphone out, and two balanced 1/4-inch main outputs with dedicated level control. Both include AudioTrack,



Eddie Kramer Effect Channel, and TrueVerb plug-ins from Waves, along with Ableton Live Lite. The main difference between the two is that the M-Track is limited to 48kHz/24-bit operation, while the M-Track Plus offers 96kHz capability.



STUDER MADI CARD

Vista Console I/O for D23 Frame

In correlation with the introduction of its D23m I/O system and A-Link 3 Gbit/s optical interface, Harman's Studer division has released the first MADI

I/O card specifically designed to fit in the new D23 frame. Designed to work with Vista X and Vista V digital consoles, the card may also be used in the Vista 1 I/O card slot. The new I/O is a dual-slot card fitted with two redundant MADI interfaces and provides up to 128 channels of inputs and 128 channels of outputs on the two fully redundant interfaces. SFP modules are used for the front panel MADI interfaces, and these hot-pluggable devices are available in a variety of optical and electrical formats. The MADI interfaces will run at 44.1, 48, 88.2 and 96 kHz in the D23m frame. Channel count is halved unless two pairs of cables are used.

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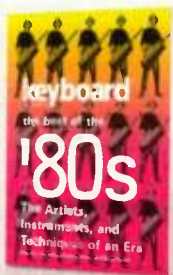
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TELEFUNKEN M60 MICROPHONE

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The Telefunken Elektroakustik M60 (\$595, cardioid only; \$995, three-capsule set) is the company's first non-vacuum tube, FET-based solid-state condenser microphone. Using a proprietary circuit topology, this re-interpretation of the classic FET mic amplifier promises exceptional transient response and SPL handling capabilities. Carefully selected and tested components are hand-plugged into gold-plated circuit board traces to provide an ultra-clean true Class-A discrete amplifier with a frequency response of +/- 2dB from 20 to 50k Hz. The output is matched with a custom American-made transformer that offers an especially low self-noise and a typical THD+N of 0.015% or better, making it ideal for critical recording applications. The M60 is designed to use the same interchangeable TK6X capsule systems as the company's ELA M 260 tube microphone.



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72 Channels of USB I/O



These two new audio interfaces from MOTU, each \$995, offer 24 channels of high-quality analog audio input or output in a single-rackspace, combined with three banks of ADAT optical, for a total of 72 channels of I/O. The 24Ai and 24Ao are equipped with DSP-driven mixing/effects and AVB Ethernet. Other features include digitally controlled analog trim on analog inputs, 32-bit DAC trim on analog outputs, 48-channel mixing modeled after large format mixing consoles, DSP effects with 32-bit floating-point precision, flexible matrix-style routing and splitting, stand-alone operation, Wi-Fi control, and industry-standard AVB networking with sub-millisecond network latency.

IK MULTIMEDIA SAMPLETANK 3 SE

Entry-Level Groove Workstation



Designed for Mac or PC, this introductory special edition of IK's flagship sound and groove workstation is available as a stand-alone program (Mac/PC) or as bundled software with iRig KEYS, iRig KEYS with

Lightning, iRig KEYS PRO, iRig MIDI 2, iRig Pads and iRig PRO. SampleTank 3 SE (\$199 upgrade; \$349 new) comes with a 6.5 GB library of 400 high-quality instruments, and more than 250 loops and 150 MIDI patterns.

New Sound Reinforcement Products

MACKIE COMPACT MIXERS

Affordable and Portable

Mackie has released three new compact live mixers, including the Mix5 (\$69.99) 5-Channel Compact Mixer, the Mix8 (\$109.99) 8-Channel Compact Mixer and the Mix12FX (\$159.99) 12-Channel Compact Mixer with Effects. The range promises the right mix of I/O, EQ and routing for applications that don't require a lot of inputs or multiple racks of output; all feature high-quality Mackie preamps and electronics in proven high headroom, low-noise designs. The Mix12FX offers a selection of 12 integrated effects including reverbs, choruses and delays to easily create mixes that sound great. Each model features an all-metal chassis, high-quality components and a sleek rugged design that's built to last.



FAIRLIGHT QUANTUM. LIVE TABLE-TOP

Portable Mixing System

Based on Fairlight's leading-edge audio processing and control surface hardware, the entry-level Quantum.Live 'TT' (\$40,000) is the smallest console in the company's Live line-up. It comes with faders accommodating 144 signal paths over 12 layers, delivering fast tactile access and full command over two monitor systems. A second 'TT' frame can be added, increasing the system to 24 faders. At the core of all Fairlight's Live consoles is an audio processing engine designed with FPGA technology. The Audio Processor combines the F-Crystal Core engine; a redundant power supply; all interfaces for control screens, GP I/Os, storage; local control room I/O; MADI connections for remote I/O; and other system hardware. A Quantum.Live Table-Top base configuration includes 12 faders, a center section, audio processing engine with 48 channels, 32 buses and a full complement of local audio I/O.



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ROLAND M-5000 MIXING CONSOLE

O.H.R.C.A. Architecture Defines New Desk

Roland's M-5000 (\$21,995 without stage boxes) is built on a new platform, O.H.R.C.A. ("Open," "High Resolution," and "Configurable Architecture") that delivers freely definable audio paths, supporting multiple audio format protocols, plus 96kHz operation. The desk features two built-in REAC ports, plus two expansion card slots for Dante, MADI, Waves SoundGrid, or more REAC ports, as well as future formats. The back panel includes 16x16 analog I/O, 4x4 AES/EBU, a 16x16 USB audio interface, connection for control via an iPad connected or wireless, and control ports including footswitches, GP I/O, RS-232C and MIDI. Control includes 12-inch color touchscreen, 28 channel faders in four groups, anchor points, DCA spills, multifunction knobs and buttons, plus a user-assignable section.



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—Vance Powell,

Grammy Award-Winning Chief Engineer,
Blackbird Studios



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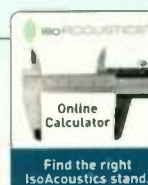


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The new Series Protection system (PD-28-SP; \$270) from Middle Atlantic Products is engineered with non-sacrificial and non-degrading protection to ensure system reliability by effectively absorbing surges without contaminating the system ground. The new MOV protected 2-Stage unit (PD-215; \$170) is the industry's most compact stand-alone surge protection device that deflects surge events from line to neutral without contaminating the system ground. It safeguards against both over- and under-voltage events, and its two-stage technology provides enhanced surge protection. Quality fire-protected components eliminate the risk of fire associated with surge events.

ALTO PROFESSIONAL LIVE SERIES

Four for the Road

Alto's new Live Series mixers offer a modern look, low-profile design, low-noise, high-headroom DNATM preamps, extensive EQ, built-in compression, Alesis DSP effects and USB audio/connectivity. They come in four configurations: Live 802: 8-Channel, 2-Bus (\$229); Live 1202: 12-Channel, 2-Bus (\$279); Live 1604: 16-Channel, 4-Bus (\$499); and Live 2404: 24-Channel, 4-Bus (\$599). Mono channels feature an XLR input, balanced 1/4-inch line input and a TRS insert jack. Each mono channel offers a low-cut filter, gain control, 3-band EQ, pan knob, mute switch, and a 60mm smooth-travelling fader. Stereo channels trade the insert jack for a second balanced 1/4-inch input. Along with two more send knobs, 4-bus models include a pre/post fader switch for the first two sends.



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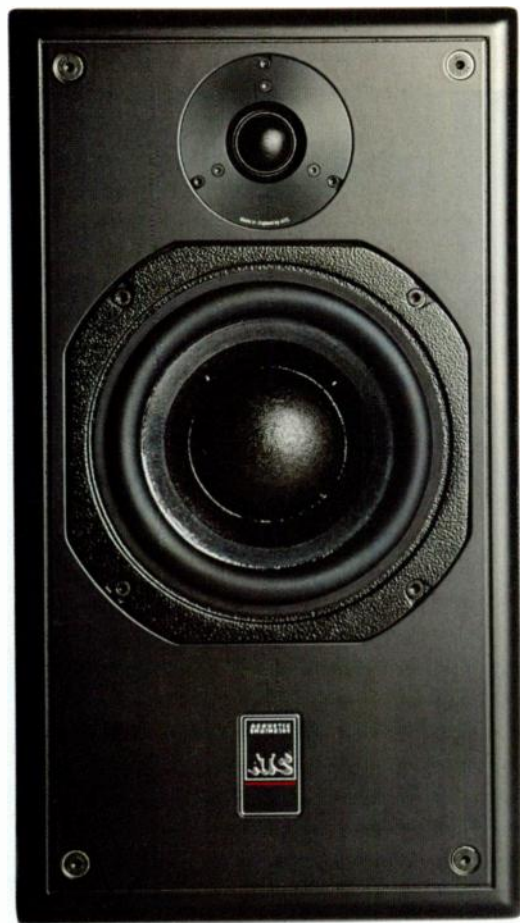
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Tech // reviews

ATC SCM20PSL MONITORS

Two-Way Passive Design, Legacy Sound



The SCM20PSL's low- and high-frequency drivers are both designed and manufactured by ATC.

Acoustic Transducer Company is a UK company known for its high-end professional and consumer hi-fi audio reproduction systems. The company's products include preamps, amps and monitors, both active and passive. The U.S. distributor is TransAudio Group out of Las Vegas.

Since my move to Nashville, I've been using ATCs every day in my work at The Blackbird Academy. Six of the nine rooms at companion Blackbird Studio have soffit or stand mounted SCM300ASL Pros and SCM150ASL Pro monitors for stereo and surround playback. Over the years I've been in many rooms with installed mon-

itors, and there are only a few I've heard that I'd consider "usable" in everyday work. The big ATCs are at or near the top of this list.

The SCM20PSL passive monitors tested here feature sealed wood cabinets finished in ATC 'Pro-Black' and measuring 17.3x9.9x11.9 inches (WxHxD), and weighing 44 pounds each. They fit well into the close-field category, perfect for meter-bridge or stand mounting. The cabinet is sturdy and bare bones with no integrated mounts. However, should you want to put them on a wall, the speakers can be modified to work with the K&M 24120 mount, available as an option.

The components comprise ATC's own 6.5-inch bass/midrange driver using a 3-inch voice coil, and ATC's first go at designing its own tweeter: the SH-25-76S, a 1-inch soft-dome developed by ATC's Billy Woodman and Richard Newman after six years of R&D. The crossover is a 2.8kHz internal, second-order, passive design, and the boxes output 108 dB of maximum continuous SPL. While not blistering, for a sealed cabinet they are plenty loud for tracking and mixing.

DIN AND JUICE

A poorly amped passive monitor will spit, and splatter, so I wanted to be sure I had plenty of clean power. For this review I used the new Moon 3300A power amp from SimAudio, a stereo version of the company's Neo 400M monoblock amplifier. The Moon 3300A amp offers 125 watts per channel at 8Ω, and 250 at 4Ω, with maximum output at 40 volts. The SCM20PSLs are rated at 8 ohms and call for 75 to 300 watts. Although the 3300A falls near the middle of the required power range, the over-engineered power supply offers plenty of headroom for hot, repetitive transients and other power-sapping source material. Signal to noise is 100 dB at full power, and on the bench, the THD between 20 Hz to 20 kHz at 1 watt is < 0.02%, and a very respectable < 0.05% at 100 watts. The SCM20PSLs can be bi-amped, but because I didn't have two 3300As or something else I trusted, I chose not to.

I broke in the ATC SCM20PSLs overnight to give them a chance to open up. In my experience, this process takes more time than you'd think, so I'm always willing to be kind on the first listen. As I usually expect with brand new speakers, on the first day, the ATCs were unimpressive in the low end, sounding very light in the bass range—the low end was just not responsive.

I had them on a couple of tracking and mixing sessions and switched back and forth between Genelec 1030As and ProAc Studio 100 passives powered by a Crown Reference 1 power amp. The ProAc monitors are a very popular speaker here in Nashville for

PRODUCT SUMMARY

COMPANY: Acoustic Transducer Company (ATC)

PRODUCT: SCM20PSL

WEBSITES: atcloudspeakers.co.uk,
www.transaudiogroup.com/atc.shtml

PRICE: \$3,149/pair

PROS: Passives align well with ATC legacy professional loudspeakers.

CONS: Woofers took some time to relax; price may be out of reach for some.

good reason: They're reasonably priced and sound great. At this stage, the ProAcs embarrassed the SCM20PSLs. While the ATCs were more open in the critical vocal range than the ProAcs, the low-end and punch on the ProAcs was excellent, due to the ProAcs' front port. It made me wish I could get that low-end extension in the ATCs, which would make them nearly perfect to my ears.

NOT LOST IN TRANSLATION

For fun, and to hear how the SCM20PSLs stood up to their (much) bigger brother, I A/B'd the passives against the wall-mounted ATC SCM300ASL monitors in Blackbird's Studio A. At this point, the bottom end still hadn't flowered on the passives (...wait for it), but I wanted to hear the differences in the midrange and high frequencies.

The translation between the two ATCs was very interesting. Of course, the low end was much more prominent in the larger speakers, but the mid- and high frequencies carried the same signature openness and smooth brightness that brought the vocal forward more in the mix. You could hear the lineage between the two. When I switched to the ProAcs, the blend changed more drastically. The vocal closed down on the ProAcs, but the bottom opened up, whereas the opposite happened when I switched between the two ATCs, which were very consistent with each other in the critical "money" range.

At this point in the review process, I parked the passives with the Moon amp upstairs in Blackbird's Studio I. Clients and weekend projects had access to the speakers for over a month. I have no idea how long, or hard, they were ridden but time revealed the booty.

Listening during my most recent tracking dates over two days was a treat. The bottom end was open, punchy and beautiful. The kick drum, which was recorded with an AKG D12VR inside and the new Neumann reissue of the U47 FET on the outside, offered plenty of punch and good presence at the bottom end with natural sounding definition from the beater. Without additional EQ (other than the AKG's onboard filters), this combo was killer. The bass, recorded through an Acme Audio Wolf Box III DI, paired with an RE20 on an Ampeg B15 amp, was great. In this instance, both channels were sent through an Empirical Labs Fatso Jr. for some extra mojo. Both channels of the Fatso were set to "Tracking," a combo of the G.P. and Buss Compressor settings, at a 4:1 ratio. The Tranny button was on and Warmth was set to 4, giving the bass a vibe that is hard to beat at the bottom of a mix.

Vocals, recorded through a Neumann U47 and an AKG 414 Combo mic through a Shadow Hills and Sonic Farm 500 Series preamp sounded great, yielding plenty of natural-sounding presence without being too bright or sibilant. Electric guitars through a variety of amps miked with a U87 and Royer 121 were perfectly edgy and in your face. The range of instruments, from shaker and cymbals at the top to bass and kick drum at the bottom, sounded convincingly real and was enticingly easy to listen to.

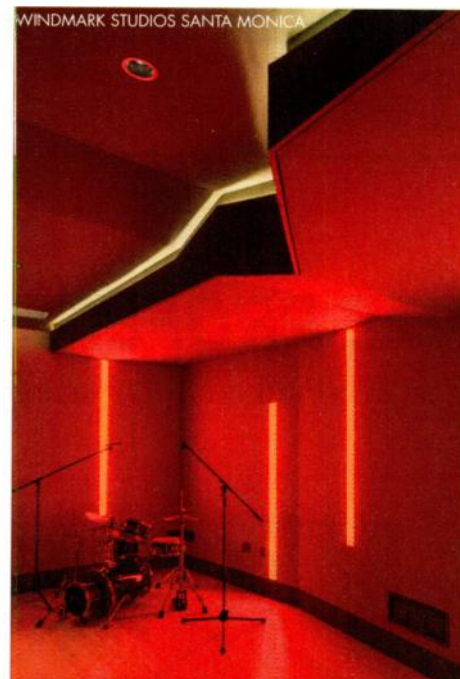
ALWAYS CONVINCING

These speakers grew on me. The low end was very stiff until I pushed the speakers for more than 40 hours. Once the woofer relaxed, the bottom end bloomed, and the speakers seemed to get better each time I heard them.

At Blackbird, I listen to ATC SCM300ASL Pro loudspeakers every day. I've sat in on many sessions where engineers use the mains all day, a rarity in my experience. The passives carry a very similar sonic signature, minus the lower-octave extension that soffit-mount speakers carry.

The SCM20PSLs are punchy, smooth in the top end, and easy to listen to across the frequency range. If these were mine, I'd add a sub, but they still work well without. If these monitors fit your budget and you've got a great power amp, they are an excellent choice for a great close-field listening experience. ■

Kevin Becka is Mix's technical editor.



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RTZ PROFESSIONAL AUDIO PEQ-1549

Feature-Packed 500 Series Parametric EQ



The PEQ-1549 is a component-packed marvel of multilayer, electro-mechanical design.

MUSICAL SPECS

To expand the PEQ's musical usefulness, both the high frequency (HF) and high-mid-band (HM) sections are dual-band. In normal mode, the HF band ranges from 1.5 kHz to 16 kHz and, when switched to Air-Band, it spans 3.4 kHz to 35 kHz. The HM band range is 350 Hz to 7.5 kHz but when the 2X switch is engaged, it covers 680 Hz to 16 kHz. The high and low Q values available in the HF section are 1.1 and 3.4, while the HM section's choices are: 1.5 and 3.8.

The Low-Mid frequency band ranges from 210 Hz to 2.3 kHz with a Q of 1.5 or 3.9. The LF frequency band ranges from 30 Hz to 320 Hz with a switchable Q of either 3.4 or a very narrow 12.1.

All Q values are specified at maximum boost/cut and were individually chosen for each section for their musicality—including the higher Q available in the low-frequency section—making it an exceptional musical tool.

COMPACT DESIGN

The PEQ's four EQ sections use NE5532 dual op-amps in a state-variable filter topology. The SVF design has the advantage of allowing easy and simultaneous adjustment of Q and frequency in each section without interaction. The HP and LP filters use Sallen-Key Butterworth filter circuits. The PEQ uses a THAT Corp. 1206 balanced line receiver for the input and a THAT 1646 balanced output line driver. You can order modules with an optional Lundahl LL2811 output transformer for additional "color" and true galvanic isolation.

It's obviously a challenge to build an equalizer with 10 knobs and 10 pushbuttons on the

TRY THIS

You can use a pair of PEQ-1549s as mastering EQs provided you take care in their setup and use. With such small knobs and the inter-detent settings possible, I first had to verify that my two modules were spot-on in calibration. As expected, a 1kHz tone was unity through the modules with all +/- controls zeroed and HP/LP filters off. Once I arrived at an EQ setting for my mix, I went back and re-toned to make sure both L/R channels were still equally set with matching EQs and level.

In Pro Tools, I placed my pair of PEQs in the insert paths before my usual stereo bus plug-in dynamic processors, an SSL Duende Stereo Bus compressor followed by a Sonnox Limiter. I liked that I could boost the lows and then use the HP filter to exactly carve the extension and level of the track's low frequencies before dynamic processing. Both the HF and HM sections proved to be wonderful sounding for overall brightening and making competitive-sounding mixes.

The PEQ-1549 Parametric EQ, RTZ's new entry into its Legends 500 line of single-channel modules for 500 Series racks, is a 4-band unit that covers the 25 to 35k Hz range with switchable high and low Q modes for all four bands, and switchable shelving modes for the high and low frequency bands. In addition, there are continuously variable second-order (12dB/octave) high- and lowpass filters. The HP filter sweeps from 25 Hz to 1.2 kHz, while the LP filter varies from 2.5 kHz to 35 kHz.



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front panel of a single-slot 500 Series module—it just might be the maximum number of controls readily adjustable by human fingers. To accommodate this, the inside of the PEQ-1549 is a component-packed marvel of multi-layer, electro-mechanical design. It uses a four-layer printed circuit board designed to maximize isolation and minimize the noise floor via a full split ground plane design. The ± 16 -volt power rails are routed on a separate internal power layer.

There are 10 conductive plastic pots made by BI Technologies that each have 11 detents with the center position set as unity for boost/cut controls. The six frequency controls (4-bands plus 2 for the HP/LP filters) also have 11 detents, and both frequency and gain pots allow fine adjustment in between the detents. Pushbuttons are E-Switch PBH series with silver contacts, as are the contacts in the Omcron G6K true bypass relay. One relay is used for the EQ bypass, the other switches the HFP/LPF in/out. Equalizer capacitors are Wima film caps and all electrolytic caps are Panasonic FC series.

IN THE RACK

For review I received two PEQ-1549s with the transformer option and I connected them from my API 6B 500 rack to my Pro Tools HD I/O so I could use them as inserts when mixing in the box. At first glance, they appeared daunting, with a busy and crowded front panel, but the design does allow room to get your fingers in there; plus, the detented rotaries give you a good feel of what you're doing. After a short time using them, I was getting around quickly.

At the top of the module, there is a green power LED, an easy-to-find red, in/out (relay bypass) button and a red O/L LED that lights at +20dB output level. The front panel silkscreened lettering is small and color-coded and, being nearsighted, I liked having the modules close to me for precision tweaking. All four EQ sections have white pushbuttons to toggle between the two Q choices and the two shelving modes. Using shelving mode overrides Q selection.

The PEQ allowed me to sculpt the tone of a Yamaha five-string electric bass that had onboard active electronics. My goal was to arrive at a big sound that "coupled" to the kick drum and fit into the track well without sounding like a synthesizer.

I began by using the HP filter set to 50 Hz to slim the subsonic—especially important whenever the Yamaha's open B string was played. Using the LF section, I boosted 6 dB at 80 Hz in high Q peaking mode to carve, in a very precise way, the overall size and low-end quality of the bass track.

The bass part was played expertly and smoothly but without a pick. For the mix, the producer required more "cut" and definition, so I used the PEQ's HM section and generously boosted +9dB at 1 kHz in high

PRODUCT SUMMARY

COMPANY: RTZ Professional Audio
WEBSITE: rtzaudio.com
PRODUCT: PEQ-1549 Parametric EQ
PRICE: \$845 base; \$1,010 with transformer option
PROS: Excellent problem-solver and smoothing tool in one.
CONS: Crowded front panel.

using the Air-Band mode in the HF section brightened the sound without getting harsh, strident and fizzy. To that end, I did cut about 1.5 dB (between detents) @ 4 kHz in the HM section with low Q and later added +3dB shelving at 80 Hz using the LF section. This brought the guitar track forward in the mix with a slightly brighter sound but without adding appreciable VU level.

By slightly overdriving the signal coming from the insert point in Pro Tools into the PEQ and then boosting in the LF or LM sections until the O/L LED starts flashing, I added the Lundahl transformer's saturation to the guitar's sound—both subtle and phenomenal. I liked this especially for rhythm parts that were recorded a little too clean; the PEQ got them chunky-thick and unruly sounding.

The two PEQs fattened up an edgy stereo electric guitar that was recorded with reverb and delay effects. Boosting at 28kHz shelving using the Air-Band mode in the HF section brightened the sound without getting harsh, strident, and fizzy.

Q. This extreme EQ did bring up occasional fret/string noises that I either had to edit out or clip-gain down later in Pro Tools—but the finished bass sound was all worth it. I got smoothness with more attack and greater clarity, and it evened out the loud, booming notes without having to resort to heavy-handed compression.

The two PEQs fattened up an edgy stereo electric guitar that was recorded with reverb and delay effects. Boosting at 28 kHz shelving

On a drum kit, recorded in a small room, the 2X position on the HM section in low Q sounded great boosting at 10 kHz (bell) and also the LM section in high Q to remove by -3dB the overall boxy room tone around 800 Hz. On the same kit's piccolo snare drum I used a Shure SM57 up close and found the high Q position worked well to boost +3 dB at 230 Hz in the PEQs LM section. But I also added a +6 dB shelving boost at 16 kHz with the HF section. This EQ opened up the sound and definitely played down the "coffee can" sound from of the snare drum and room. I certainly loved the

LF section for the kick drum. After locating the frequency center of interest by sweeping frequency using high Q mode, I just switched over to shelf mode, readjusted the boost to taste and I was done. To me, the sound here is like old British EQs such as found in the Trident A Range channel strips.

TASK MASTER

The RTZ Professional Audio PEQ-1549 Parametric EQ is up to any task, be it for gentle and smooth mix-program touchups, as a tracking utility EQ, or for major emergency surgery for audio on life support. I especially like the HF section's fully adjustable Air-Band mode and the LF section's intense low-frequency carving ability for bass guitars and kicks. Wake up your 500 rack with one or two of these little EQ tonmeisters. Highly recommended. ■

Barry Rudolph is an L.A.-based recording engineer and educator.

Mastering Engineer Adrian Carr Moves Upstate



Adrian Carr

With a desire to serve clients on both sides of the American-Canadian border, mastering engineer Adrian Carr recently opened his mastering studio in Plattsburgh, upstate New York. "It all started in April 2013 when a friend of mine in Plattsburgh, who has been very supportive, offered me a great 700-square-foot space that needed renovation," Carr says. "This was ideal for me because I could build the space the way I needed it to be."

The studio had its opening party on October 21, 2014. "The nice thing about building a new studio is that I got to ask questions about design and equipment, which is now optimizing my process and workflow," Carr says.

On the software side, Carr uses soundBlade as the platform for mastering, and iZotope RX in premastering to handle the issues that crop up with home studio recordings. On the hardware side, Carr uses Metric Halo, which he says "makes one of the most flexible interfaces on the market. I can design my own unique signal path that can be dependent on the needs of the project."

He also uses Weiss Gambit boxes, and has a 5.1 surround sound setup in his mastering room, so he can easily switch over to handle surround-sound mastering for DVD/Blu-ray. "Because of the high RMS level that most mix engineers are using, analog gear is less used in my studio today," he says. "Maybe that will change with new broadcast and streaming standards that are being introduced for loudness."

"I'm also using the latest technology," Carr continues. "And the price of technology is decreasing, as well as becoming more compact. Gone are the days when I needed racks of analog gear to do mastering. The most important assets are my ears and my experience."

During the past year, Carr has worked on two albums that have received Grammy Entry Nomination for Best New Age Album: *Paincelle*, by Margaret Maria and Robert Guerrier, and Carr's own solo album, *11*.

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MIX March 2015 - Build Your Own Studio
Equipment Spotlight: Studio Monitors
Bonus Coverage: Tools for Game Sound
Regional Focus: New England

EQUATOR AUDIO RESEARCH D8

Flagship Technology at a Reduced Price



The Equator D8 features a coaxial design, internal DSP and front-firing bass-reflex port.

One glance at Equator's new D8 monitor is bound to make you linger. The vertically oriented monitor stations its coaxial drivers at the top of its cabinet, its large bass port positioned below. When testing these unusual speakers, I would soon discover it pays to think outside the box.

NOW TWEETING

The Equator D8 (\$749/pair [factory-direct]) replaces the company's Q8 monitor, leveraging the flagship model's coaxial and DSP-based technology and substituting a tweeter for the Q8's horn. During the transition between products, Equator moved to a factory-direct sales model, allowing the company to drop the D8's price to one-quarter that of the Q8.

In coaxial designs, the high-frequency driver is nested inside the woofer, providing point-source propagation. But why use a tweeter instead of a horn for the highs? Horns are widely flared and typically larger than tweeters, so they tend to partially block the front of the woofer in a coax design. The typical sonic consequences are comb filtering, smeared imaging, a hole in the upper frequency response of the woofer (due to acoustic shadowing) and, for the tweeter, intermodulation distortion.

The D8 purportedly avoids all that. Its 1-inch silk-dome tweeter is ensconced inside a subtly flared circular ring that serves as

a waveguide, offering little physical impediment to the surrounding 8-inch polypropylene woofer. Equator's Zero-Point Reference technology uses internal DSP to time-align the two drivers, provide a steep 4th-order filter for their cross-over, and match their output levels and voicing. (The D8 is sold in pairs after being calibrated at the factory for matched performance.) The time-alignment consists of a group-delay adjustment that is said to deliver phase-accurate midrange response in the 900Hz to 3kHz range.

The D8 is bi-amplified, a 60-watt amp powering the woofer and a 40W amp providing juice for the tweeter. An LED on the D8's front face lights when power is applied. Drivers and amps reside in an all-wood (MDF) cabinet beveled on every edge: front, back and sides, both top and bottom. The bass-reflex port measures 2.5 inches; its exit out the

cabinet's front face makes it possible to place the D8 close to a wall without choking the monitor's bass response. The cabinet measures 14x10x12 inches (HxWxD) and weighs 22 pounds.

There are no external heat sinks for the D8's amps, but they do have protective circuitry that precludes overheating and short circuits. And the drivers are protected from clipping by a built-in limiter.

On the rear of the D8, you'll find a three-position rotary switch marked "Boundary." This control provides three alternate frequency-response curves, using built-in filters meant to compensate for various placements in a room. Position 3 is intended for freestanding placement; it creates a bell-shaped dip in response (roughly 2.5 dB and less than an octave wide) at 150 Hz and a boost of a few dB between 6.5 and 20 kHz. Position 2 applies filters to null Position 3's bell-curve dip and high-frequency rise. Position 1 is meant for placement in front of a wall; its response is the same as Position 2's except for additional filtering that rolls off the response 2.5 dB between 44 Hz and 1 kHz. Equator corralled award-winning engineers to devise these filter settings while referencing their hit mixes.

Also on the D8's rear panel, you'll find a stepped, rotary sensitivity control useful for precisely adjusting each monitor's level; Equator calibrates this control at their factory using a port on the rear face

TRY THIS

When setting up a pair of D8s in horizontal orientation, make sure the drivers are placed to the outside. This will produce a wider stereo image and a slightly more centered bottom end.

that's currently only sanctioned for the company's use. The calibration port's facility will eventually be expanded to allow users to recall additional frequency-response curves such as those for NS10M and Auratone monitors; user access to the port will be via a Wi-Fi dongle and a phone or tablet (Mac or PC).

Balanced XLR and TRS input connectors (the latter also accepts unbalanced lines), an IEC power receptacle and a power switch finish off the D8's rear visage. The included 3-pin power cord is detachable and measures roughly six feet in length.

The D8's frequency response is cited at 44 Hz to 20 kHz, ± 3 dB. The monitor delivers up to 106dB SPL (measured at 1 meter and 1 kHz).

LISTENING TESTS

For my listening tests, I set up a pair of D8s in vertical orientation (as recommended by Equator), placing them on Primacoustic Recoil Stabilizers. The front of my control room features an Acoustic Sciences Corporation Attack Wall, a modular arrangement of tube traps that tightens up imaging and impulse response at my mix position.

Listening to my mastered mixes, the boundary switch's Position 2—which yields the flattest response of the three settings—sounded the best to my ears. I immediately noticed the D8's excellent transient response and copious rendering of high-frequency detail. A strong, resonant peak between roughly 7 and 8 kHz, however, made male lead vocals sound strident and ringy on certain notes. Understated upper-bass and midrange response created a very open sound but a response that was nevertheless decidedly inaccurate.

Imaging was decent, except on elements of the mix attenuated by the trough in the D8's midrange response. Violin sections, high-register electric guitar parts and BVs receded far into the background of every mix I listened to. Electric guitar parts played on lower frets and middle-register piano parts sounded thin, with understated fundamentals. And while I didn't expect deep bass extension with an 8-inch woofer, the bass response above the 3dB-down point (44 Hz) sounded pillowy and understated. Obviously, the other Position settings (which boost highs or cut bass) couldn't and didn't help these numerous problems.

I also listened to a reject mix of mine, a Southern rock tune in which

I had added too much upper bass and mixed the bass guitar too loud. On the D8s, the bass guitar sounded like it had a thin timbre and had been mixed at about the right volume. Had I mixed that track on the D8's, I surely would've compensated for what I heard and ended up with an even boomier bottom end than what I had on my throwaway mix.

End of story? Nope. I decided to place the D8s on their sides, bass ports to the inside, to see if that would make a difference in their sound quality. It surely did. The improvement was dramatic: The bass and lower midrange bands sounded fuller and tighter. Imaging improved greatly, producing a rock-solid phantom center image and pinpoint localization for panned instruments.

Why the improvement? Placed on their sides, a lot more of the D8 cabinets' surface areas were in contact with my Recoil Stabilizers, providing greater decoupling. And having the woofer resting less than 2 inches above the Recoil Stabilizers—versus suspended above a lot more enclosed air space, in vertical orientation—likely helped quell cabinet resonances and focus the bottom end. While the horizontal orientation didn't help the sizzling high-frequency peak and the trough in the midrange response, the improved spectral balance overall made them sound far less objectionable.

CONCLUSIONS

The D8 requires horizontal orientation and acoustic decoupling for serviceable performance. The monitor's strengths are excellent transient response and highly detailed reproduction of high frequencies. Its main shortcoming is its decidedly understated midrange response, which presents a challenge in setting correct levels for violin sections, electric guitars, piano and background vocals. In my opinion, the D8 is not flat enough to serve as a reliable reference for mixing.

But don't take my word for it. Equator offers an unconditional, 60-day money-back guarantee. Take the D8 for a spin yourself, and see if you like it. ■

Mix contributing editor Michael Cooper is a recording, mix, mastering and post-production engineer and the owner of Michael Cooper Recording in Sisters, Ore.

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BENCHMARK MEDIA SYSTEMS AHB2 POWER AMPLIFIER

Innovative Design Promises Lowest Noise, High Efficiency



Benchmark Media collaborated with THX Ltd. to implement the first use of Achromatic Audio Amplifier Technology to lower self-noise.

Benchmark Media's AHB2 is a professional analog audio power amplifier designed for high-resolution audio playback systems found in recording and post-production studios or high-end audiophile/home theater systems. The AHB2 is a hybrid Class-A/B unit that delivers super-low distortion, high efficiency, low noise and high dynamic range specifications.

As measured on the new Audio Precision APx555, Benchmark Media's AHB2 showed a THD+N of -116 dB (0.00016%) at full rated power of 100 watts into 8 ohms, both channels driven at 1 kHz measured over a 90kHz bandwidth or 380W bridged mono into 8 ohms. The signal-to-noise ratio is 132 dB A-weighted in stereo mode and 135 dB in bridged mono. Dynamic range is specified at 132 dB and frequency response is rated at 0.1 Hz to beyond 200 kHz (+0dB/- 3dB).

METICULOUS DESIGN

The AHB2 is a compact, 2U desktop unit with heat sinks on both sides; it measures 11.04 inches wide and weighs about 12 pounds. Also available in a rackmount version, it is easily installed in con-

trol or listening rooms, as there are no cooling fans. Nonetheless, the unit runs only slightly warm at full music power levels.

The AHB2's tight-fitting enclosure along with mu-metal shielding prevents ultrasonic switching noise from the resonant switch-mode power supply from entering the audio path as well as radiating externally. The supply's very fast control loop tracks and detects changes in current demand made by audio peaks in the amp's main output section and by changes in the incoming AC line voltage. The power supply continuously adjusts to maintain constant rail voltage and therefore maximum output power and overall efficiency.

THX PATENTS

Benchmark Media collaborated with THX Ltd. to implement the first use of Achromatic Audio Amplifier Technology, a new patent design that uses a combination of feedback and feed-forward error correction to make distortion "vanishingly small." Crossover distortion can create significant problems at low signal levels, but the new THX-patented technologies eliminates this source of distortion.

The AHB2 uses an FPGA-based digital control system that powers up or shuts down the amplifier in a specifically defined sequence. The amp will shut down or not power up at all when there is: overheating in critical areas, over-current or low AC voltage, distortion, DC offset, output short circuit, or excessive input levels.

The rear panel has an IEC AC connector (auto-ranging 100 to 250 VAC), balanced XLR inputs for left and right channels, stereo/mono mode switch, huge audiophile-grade gold speaker cable binding posts, Neutrik Speakon jacks for left, right and bridge mono outs, and 12-volt trigger jacks for remote on/off power sequencing.

There is also a three-position input sensitivity switch with +22, +14.2 and +8.2dBu positions for accommodating a wide range of typical operating levels.

IN THE STUDIO(S)

For my first listening test, I substituted the amplifier(s) used in the alternate speaker monitor system at LAFX studios in North Hollywood, Calif. I set up a pair of their Tannoy SGM10 monitors with Mastering Lab crossovers and connected them to the AHB2 using a pair of short, custom-made #10 gauge cables fitted with Neutrik Speakon connectors.

At the +22dBu input sensitivity switch position and for a given loudness, you may find your system's volume control nearly maxed out, so switch to the +14.2dBu position. Both the studio's vintage API console and my own Avocet monitor controller worked fine at +22 dBu.

I used a well-known "reference" recording on a CD played through an Alesis ML9600 MasterLink deck. For consistent source program while comparing different power amps, I looped certain song sections to play over and over.

Immediately I heard that the AHB2 reproduced the ambient space captured (or added artificially) as open and wide, with reverb tails hearable down to the recording's noise floor. I could hear all the reverb, not more reverb, and low-level detail—much like wearing headphones vs. listening on speakers in a room. There was a pristine and smooth quality to the high and middle frequencies heard on the Tannoys. By comparison, another well-known power amp sounded "trashy" and harsh in the upper midrange.

With the AHB2 there was an overall vibrancy and transparency, not a hyped, bright sound. The transients—snare hits, cymbal crashes and kicks—were crystal clear. Deep bass notes and loud kick drums were effortlessly reproduced without power amp compression as I sometimes hear on powered monitors. If there was any distortion, it was the woofers themselves over-extending.

The clean and clear sound of the AHB2 was apparent on the studio's Yamaha NS10Ms as well. The AHB2 offers zero coloration; if you've been relying on your power amp to impart a flattering sound to your NS10Ms, it might take time to get used to them powered by the AHB2. But hearing those trusty ol' 50W Yamahas with this super-clean amplifier pointed out how basically primitive and useful those speakers are. I've never heard those speakers sound this tight and good.

HIGH-RESOLUTION SOLUTION

For listening to HRA directly at my studio, I bypassed my monitor controller completely and used Benchmark Media's DAC2 L digital-to-audio converter directly connected to the AHB2, using its XLR outputs and a short pair of VOVOX Link Series silver audio cables with gold-pinned XLR connectors. For this test I borrowed a pair of Manley Tannoy ML10B monitors.

I downloaded 24/96kHz PCM and 1-bit DSD files from htracks.com and other sites and played them (via USB) on my Mac using Audirvana Plus Version 2 software. I downloaded examples of acoustic music, orchestras, piano concertos and jazz ensembles. Whether listening to 24/96 files or .DSF 2X files, the sound was awesome, with amazing depth and realism. Depending on the particular record's production, typically there was no harshness from file size compression or extreme mastering EQ/compression.

If you like loud and room filling spectacular sound

PRODUCT SUMMARY

COMPANY: Benchmark Media Systems, Inc.

PRODUCT: AHB2 Power Amplifier

WEBSITE: www.benchmarkmedia.com

PRICE: \$2,995

PROS: Super-clean, low distortion at any power level.

CONS: Some may want more power—buy two of them!

for classical pieces, you'll not be disappointed. The AHB2 and the ML10Bs came through with unfaltering and thrilling performance every time.

DAW PLAYBACK

I then connected my Pro Tools HD 11 system using the same setup. I collected all the CDs nominated in the final round for Best Engineered Non-Classical for last year's Grammy Awards and imported them into a 24-bit/44.1kHz Pro Tools session. The DAC2 L automatically switched to

PCM 24-bit/44.1kHz. I found having each song on a separate stereo track a good way to compare these great sounding recordings—back to back or randomly by clicking around the timeline.

As compared to my powered monitors, working on mixes in Pro Tools HD 11 through this system sounds more real, detailed and clear. In addition, this is a dead-quiet, noiseless system. With no music playing, I could crank the DAC2 L's volume control wide-open and hear nothing—even with my ear right on the speaker cone. There is only one word for the new Benchmark Media Systems AHB2 power amplifier: Impressive. I highly recommend it! ■

Barry Rudolph is an L.A.-based audio engineer and educator. Visit him at www.barryrudolph.com.



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Continued from p. 43

800Hz, 1.2kHz and 2.2kHz. A sweepable tone control makes the Tilt EQ either darker or brighter, and will affect both the low and high frequencies.



PULTEC EQP-1A3

The EQP-1A3, a reissue of the Pultec EQP-1A, is a single-channel, 2-band tube-based equalizer with switchable frequency selection and variable bandwidth. The 2-band design offers flexible high-shelving and low-shelving control, but because the boost and attenuate controls work independently, the company says that users can use an old trick to add thump to the bass region while also notching a bit above the cutoff point by boosting and attenuating at the same time. The high-shelf is said to function in a similar manner as the EQP-1A, except that with the EQP-1A3, users can set separate ranges for the boost and attenuation.



TRIDENT SERIES 80B-500

This module was designed in the U.S. and built in the UK, where the original Trident Series 80 consoles were designed and built. The Series 80B 500 Series EQ incorporates a classic 4-band equalizer that is identical to the one employed in the Trident Series 80 console. The 80B is a single slot 4-band EQ with frequency-switchable highpass and lowpass shelving bands combined with sweeping low and high-midrange bands and a

fixed 12dB/octave, 50Hz highpass filter. Each band features a ± 15 dB gain. The 80B is described as offering an especially large overlap between bands.

CHANNEL STRIPS

APHEX PROJECT 500 CHANNEL STRIP

The Project 500 features a Class-A preamp,



an optical compressor, a 2-band, overlapping EQ and a Jensen JT-11DL nickel output-balancing transformer. The optical compressor uses a proprietary optical element designed to be as fast as possible. Gain reduction can be adjusted from 2:1 up to 6:1. The compressor can also be turned on/off with the lighted Comp button, and can be placed before or after the EQ with the lighted Post button. It has two bands of semi-parametric EQ. The Lo Freq can be adjusted between 20Hz and 2kHz, while the Hi Freq can be adjusted between 200 and 20k Hz.



DAKING PRO AUDIO 500RS

The Daking 500 RS is not a channel strip in one box, but rather, it is a package of 500 Series units that are marketed as a recording channel. It is offered as a complete 2-channel recording system comprising a separate Class-A mic pre (Daking Mic Pre 500), VCA compressor (Daking Comp 500) and inductor EQ (Daking EQ 500) per channel. The six 500 Series modules come preinstalled and preconfigured in an included API 500-6B Lunchbox. Also included is a custom DB-25 jumper cable for chaining the outputs from the preamps into the inputs of the compressors and so forth.



HARRISON 32CS

The 32cs provides one channel of the Harrison 32 Series console in a single rackspace. The filter section provides separate on/off switches for the highpass and lowpass filters. The filters use the wide overlapping ranges that were pioneered by Harrison in the 32-Series consoles. The highpass filter features a switch for Harrison's "Bump" fea-

ture, which provides a resonant boost above the selected frequency. The EQ section provides four bands with widely overlapping frequency ranges. The "Low" and "High" controls default to shelving, but can be individually switched to a bell curve. In "Bell" mode, all four bands provide a proportional-Q design that imparts a wide bandwidth when making small adjustments, and a narrower bandwidth as gain is added.



MANLEY CORE

The CORE analog channel strip comprises a mic preamplifier, compressor, equalizer, and limiter. The compressor section offers Manley's ELOP technology. The compressor is placed before the mic preamp and uses a 3:1 ratio, with continuously variable Attack, Release, and Threshold controls, and a Silent Bypass switch. The CORE also has a fast-attack FET brickwall limiter with continuously variable Threshold and Release controls. The unit's equalizer gives you low and high Baxandall shelves (80 Hz and 12 kHz) with ± 12 dB range, and a sweepable midrange bell EQ, 100 to 1k Hz, or 1 to 10k Hz with ± 10 dB range.



PRESONUS RC 500 CHANNEL STRIP

The RC 500 channel strip combines a low-distortion, high-gain, solid-state Class-A preamplifier with custom-designed FET (Field-Effect Transistor) compressor and semi-parametric EQ circuitry. Controls include fully variable attack (0.5 to 10 ms), release (30 to 500 ms), and threshold (-25 to $+20$ dBu), as well as hardware bypass. Ratio is fixed at 3:1. The 3-band semi-parametric EQ combines isolated filters and optimized, per-band Q to provide subtler signal shaping without harsh artifacts. All bands have Gain (± 16 dB) and Frequency controls, with overlapping frequency ranges between the midrange and high bands and fixed Q (0.5). The low and high bands are switchable between shelving and peak. Both the Compressor and EQ sections feature a relay bypass. ■

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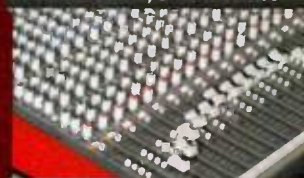
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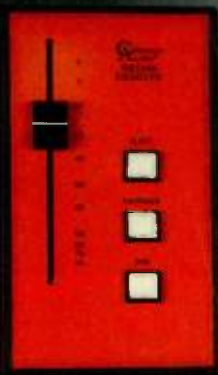
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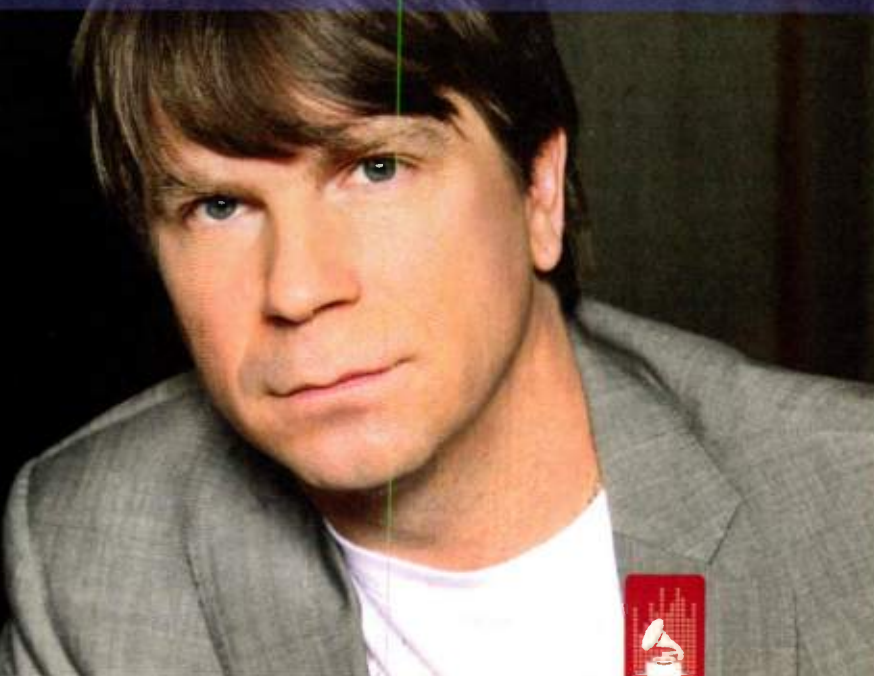
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Genelec M Series Eco-conscious studio monitors

Genelec's innovative bi-amplified M030 and M040 active studio monitors blend earth-friendly technology and studio-grade monitoring into an impressive package with custom high-efficiency Class D amplifiers and a unique Intelligent Signal Sensing automatic power-off feature. The Natural Composite Enclosure is made from wood fiber composite material for a low carbon footprint. Help Planet Earth while enjoying that extremely clear 'Genelec sound' that's perfect for critical listening.



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TechTalk

Gifts I Will Give Myself



By Kevin Becka

December usually means some much deserved downtime for the holidays. It's when we start to think about what to get that certain audio someone, or even gift ourselves back for another 12 months spent working, or looking for it.

I've always had the hi-res audio bug, and in 2015 I'm resolute on upping my portable HD audio game. So for my gift to me, I had ear impressions made and my Ultimate Ears Custom Reference IEMs are in the mail. UE and Capitol Studios collaborated on their design and tuning, and somehow they've fit three "proprietary balanced armature speakers" into each monitor. I'm camped by my mailbox. This partners with my Galaxy S5, which has a Wolfson WM5110 192kHz/24-bit DAC. But even with the Wolfson, the analog output of the S5 is the weak link, so the next step up is to figure out how to get digital audio out of my S5's USB connector for a better analog back end through a third-party DAC. This topic is causing much angst on the Android forums—it seems that Samsung doesn't allow audio out of that port. Bummer! Pono may be my next stop.

Speaking of Pono, it's shipping in 2015 and for \$399 you can get the slick looking, triangular, high-resolution audio player. It features balanced and unbalanced outputs, supports a 64GB microSD card, and plays FLAC, ALAC, 192kHz WAV, AIFF, AAC, and MP3s (!?) for up to 8 hours. There's plenty of cool download content now from HDTracks, and soon to come from Pono, that will keep you busy finding great material to own. Yup, I know it's a streaming world, but with Big Machine Records pulling Taylor Swift's record off Spotify, and selling 1.2 million units in the first week, ownership may be trending again soon. But not without a fight, high-res streaming is a reality waiting for a pipeline. Orastream out of Singapore allows you to upload music files up to 24-bit/192 kHz, and losslessly stream them back at 9,216 kbps (bandwidth allowing). It's getting exciting!

Aratech Labs is bowing a LITE version of its cool Apolarmic augmented reality app that maps a microphone's polar pattern in real time from a handheld device. The full version is only \$119.99 and is perfect for the student, home recordist or audio instructor who wants to bring a high-tech teaching tool to school. It offers full specs and tech info for a range of mic manufacturers, including AEA, Royer, Mojave and many more, with AKG, and Gefell coming soon.

What do you get the audio-head with everything? How about some high-end cable? Swiss-made VOVOX offers a range of speaker, mic, instrument and other cables for those with an audiophile's heart. Sure they're pricey, but what says I love you more than high-purity, solid-core conductors? VOVOX sister company Myrnix takes existing microphones and brings them to the next level (see my review in September Mix). You supply the mic (and \$1,700), and you get back a very cool-looking and great-sounding upgraded transducer. Everything is swapped out, including the cabling, which comes integrated into the wooden body, and as you might guess, is made by VOVOX. The integrated, and swappable, pop filter is made of an organic material and covers a robust, and proprietary, metal grille.

One of the best buys I saw coming out of AES were the Ashman SOM50 microphones. Like the classic AKG M50, the Ashmans are omni below 2k, and increasingly directional above. It looks like a ray gun from a 1950s movie, sounds excellent, and you can buy a pair shipped in a plastic case with two K&M clips and a three-year warranty for \$599. For two great mics, that's a steal.

Got a 500 Series friend with some open slots? Kush now offers the Clariphonic parallel EQ in the vertical 500 format. It's certainly a different take on equalization, sporting parameters called Clarity, Focus, Lift, Sheen and Shimmer. I've had my hands and ears on the rack version and it's no BS. This is one of the coolest things you can have in your rack for under \$700. If you've got a bit more (\$899), the Eventide DDL-500 is one of the best delays you'll hear in any format. I've had one to play with for a while now and it's a time machine with personality. The important bits are analog, with the digital end limited to just the delay. And with a 12kHz to 192kHz variable sample rate, you can go on a tweaker's holiday and create up to 160 seconds of unique delay effects.

Millennia just released its first stocking stuffable preamps in the 2-channel HV-32P (\$1,079.99) and single-channel HV-35P (\$719.99). Both offer high quality, low noise gain, phantom power, switchable pads, and the HV-35P throws in a Hi-Z input and 80Hz HPF. You can even run them on a standard 2,000mAh battery pack. Also stocking ready, the Radial Engineering IceCube IC-1 (\$69.99) is an ultra-compact balanced line isolator. It's perfect for nixing hum, buzz and other noisy hangers-on caused by ground loops.

It's been a great year for Nashville and Mix families. I'm always thankful for the opportunity to connect with you through my column, reviews and on the web. Thank you for reading, and here's a toast to a healthy and happy new year for us all. ■

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