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Tom Petty, left, with Robert Scovill in a Kansas City, Mo., dressing room, just prior to showtime, June 2, 2017



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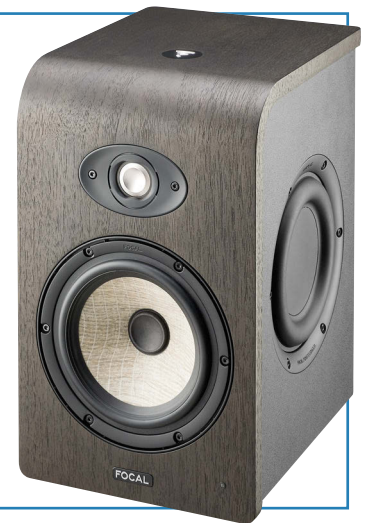
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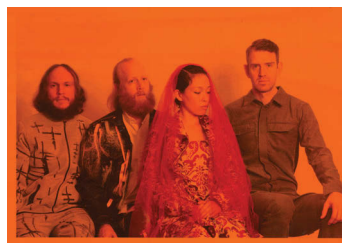


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**On the Cover:** Tom Petty and the Heartbreakers are celebrating their 40th anniversary on tour, with veteran front-of-house engineer Robert Scovill a sound collaborator for the past 24. Petty and Scovill are pictured in a Kansas City dressing room, late May 2017, just before showtime.  
**Photo:** Steve Jennings.

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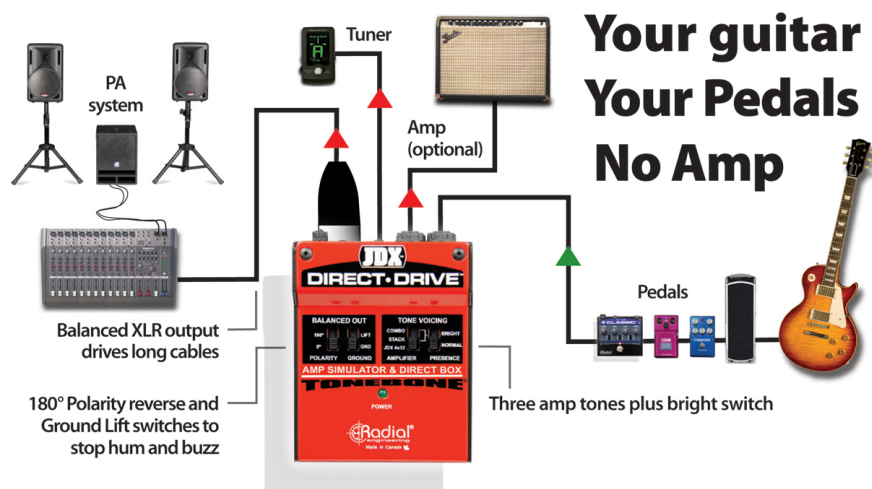




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## From the Editor

### MUSIC AND THE SOUNDS OF SUMMER

In the summer of 1987, I was a grad student at Indiana University and had been married one month when my new wife and I got a wild hair and decided to drive from Bloomington to Philly for the weekend, to see Petty, Dylan and The Grateful Dead at JFK Stadium with 80,000 others. Because that's what we did. There were far fewer festivals around the country, but there were days of stacked-headliner concerts, from the late Bill Graham's famous Day on the Green in San Francisco to Farm Aid in Urbana-Champaign, Illinois.

I knew nothing of the P.A. back then and had no idea what front-of-house meant. I do remember that the decibel level, about midway into the crowd, would rise and fall periodically, and I remember that it was nearly impossible to make out a lyric. Looking back, I can say, "What can you expect from a 1987 stadium sound system?" Watching Petty, Dylan and The Dead, I didn't care. I was a fan, and it sure was a fun day.

Flash forward to the summer of 2017—actually, mid-May—when a week before flying in to Indianapolis to see family, my brother calls and says he has an extra ticket to Tom Petty & the Heartbreakers at Klipsch Music Center on Saturday night. I changed my ticket and flew in early. Me, my brother Mike and his two adult daughters, Kate and Maddie, up on the lawn, what we call GenPop. Man, what a show! A fantastic crowd, singing along, and the mix never got too loud. Just clean and clear and rocking. You could hear the words! Robert Scovill mixed the house, as he has for Petty the past 24 years.

Two weeks later, completely by chance, I was back in Oakland and was offered John and Helen Meyer's Sunday night tickets to see Dead & Co. at Shoreline Amphitheater in nearby Mountain View. Damn! I first saw the Grateful Dead at Shoreline in 1988, and many times after that. It never sounded this good. Derek Featherstone of Ultra Sound/Pro Media, a longtime member of the extended Dead circle, has been mixing the various offshoots since 2005. A Gamble board and Meyer LEO system. Fantastic clarity and punch.

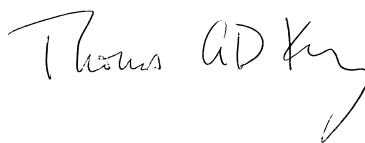
In the 30 years between those two Petty/Dead shows, there have been mammoth leaps in loudspeaker technologies, power distribution, cabling and connectors, mixing consoles, workflows and system control. I've been fortunate to live and work in the heart of it,

and I understand that technology advances are a huge part of why concerts sound so much better today. No question. But we should never ignore the contributions that come out of the relationship between the artist and the engineer. That's what drives development, whether in engineering a new amp design in conjunction with a guitarist's need, or mixing front-of-house for a smokin' band that's been together for decades.

As an industry we tend to feature the creative producer-engineer-artist relationships that endure in the studio, like Martin/Emerick with the Beatles, Nichols with Steely Dan, or Al Schmitt, Tommy LiPuma and Diana Krall, whose last session together is featured in this month's Regional section. But you can argue that the trust, respect and confidence between artist and engineer is even more critical to live performance, where the audience expects perfection from the downbeat. No overdubs, no second takes. Think Stan Miller with Neil Diamond, Big Mick with Metallica, Dave Rat with the Chili Peppers, or the late, great Bruce Jackson with Barbra Streisand. These are great-sounding shows. Top of the craft.

It can take years to build that kind of trust and respect with an artist, Scovill says in this month's cover story, celebrating the 40th Anniversary of Tom Petty & the Heartbreakers on the road. Scovill has been a member of the team since 1993, and he's ushered in a host of advances in all aspects of live sound, from console and workflow developments with Avid to his own health/nutrition tips and advice blog for road dogs everywhere. Plus, he's a damn fine mixer.

This month marks the first time that *Mix* has put a Live Sound engineer, paired with an artist, on its cover. It's also served as a reminder to me of how important live music has been in my life. Forever a fan.



Tom Kenny  
Editor





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InfoComm 2017, held in Orlando, Fla., June 14-16, was bustling from start to finish, and the editors of *Mix* and *Pro Sound News*, representing NewBay Media's Pro Audio Group, roamed the floors, waded through the flood of new products, and then announced their selections for Best of Show. The winning products, listed alphabetically by manufacturer, are:

**Allen & Heath dLive C Class:** Offering the full digital mixing and processing power of the highly acclaimed dLive S Class but in a new compact format, dLive C Class brings three new Surfaces and MixRacks to the dLive family: the 20-fader, single-screen C2500; a 24-fader, twin-screen C3500; and the ultra-compact C1500, dLive's first 19-inch rack-mountable model. MixRacks also come in three sizes: 64-in/32-out, 48-in/24-out; and 32-in/16-out.

**Ametek SurgeX Large Format UPS:** Each of the new large-format UPS models (10,000, 15,000 or 20,000 volt-amps) features online double-conversion technology, in addition to an integrated isolation transformer to ensure that if the source power is dirty, unstable or lost, connected AV systems continually receive isolated and regenerated power.

**Avid NEXIS | PRO:** Powered by the Avid MediaCentral Platform, NEXIS | Pro professional-class storage is designed for smaller broadcast and post-production environments, enabling up to 24 contributors to simultaneously share the same assets for active collaboration, while delivering real-time 4K performance at up to 2.4 GB/s.

**Clair Brothers C12-TrueFit:** The first modular and fully custom waveguide available for venues, the C12 and C8 systems utilize a wider bandwidth component arrangement that allows the mid-range and high-frequency output to be waveguide-loaded from the same point of origin. Each TrueFit system is designed collaboratively with the customer, consultant and venue staff.

**Martin Audio XE Stage Monitor Series:** Combining low-profile enclosures with unique Coaxial Differential Dispersion technology, the XE300 (12-inch) and XE500 (15-inch) deliver a defined coverage pattern that allows the artist freedom of movement—whether directly over the monitor or further back, there are no significant changes in SPL or tonal balance..

**Meyer Sound LINA Very Compact Linear Line Array Loudspeaker:** As the newest and smallest member of the LEO Family, the new self-powered LINA loudspeaker measures only 20.27 inches wide and weighs in at a mere 43 pounds. On the inside, LINA has been outfitted with new drivers and an updated amplifier and signal processing package to conform with the LEO Family design philosophy.

**Shure Axient Digital Wireless System:** Building on the UHF-R, ULX-D and Axient wireless systems, Axient Digital provides high-performance RF, exceptional audio quality, command and control, and hardware scalability. The two receiver options (dual and quad) are compatible with AD Series and ADX Series transmitters, which incorporate ShowLink for real-time control of all parameters, along with interference detection and avoidance.

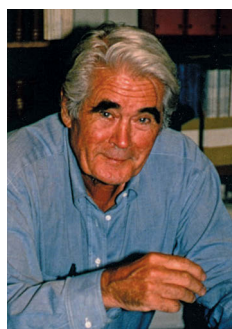
**Vicoustic VicBooth Premium:** A portable, doorless, affordable acoustic booth with wood structure and built-in window, VicBooth Premium minimizes sound propagation from any source. Covered

in natural wood, with fire-retardant fabrics and acoustic foam, VicBooth is ideal for voiceover and instrument practice, wherever neighbors are a concern.

**Williams Sound, LLC Hearing HotSpot:** This new listening technology allows any venue to stream real-time audio via Wi-Fi, directly to an individual's smartphone or tablet, with user-friendly LCD front panel for setup, status and audio level adjustment.

**Yamaha Corporation of America TF-RACK:** An all-in-one digital mixing solution in a compact rackmount chassis, TF-RACK is built around TouchFlow Operation, the TF Series operating system, and includes the core Yamaha workflow tools: 1-knob EQ/COMP, GainFinder and QuickPro Presets; it's also compatible with TF StageMix for wireless Wi-Fi remote mixing via iPad, and the MonitorMix app for aux send mixing.

*NewBay Media's Best of Show Awards are judged by the editors from submitted nominations. Criteria include ease of installation and use/maintenance, performance, relevance, value, network friendliness, versatility and reliability.*



## Ham Brosious, 1924-2017

Huston Hamilton ("Ham") Cobb Brosious, of Oxford, Conn., died on May 25, 2017, after a very brief illness. He was 93. To his last days, his buoyant, vibrant personality shone through, and he was truly Ham, making new friends of those who cared for him, and saying good-bye to those who loved him with jokes and humor and irrepressible, natural charm.

Born April 12, 1924, in Philadelphia to Barbara Lee Milligan and Eugene Warren Cobb, he was raised in Sunbury, Pa., by his mother and stepfather, William George Brosious. In 1942, he enrolled as a freshman at Pennsylvania State University, and shortly thereafter enlisted in the Army. Ham served in the US Army with distinction in the 10<sup>th</sup> Mountain Division and in the Pacific theater in World War II.

After the war, he resumed his studies at Penn State and graduated from the School of Journalism in 1949, with a B.A. in Advertising. He soon began selling an early broadcast automation system called International Good Music (IGM), putting him at the forefront of what was becoming the modern recording industry. He was a pioneer in developing the market for magnetic recording equipment in the 1960s when he served as VP and General Manager of Scully Recording Instruments in Bridgeport, Conn.

In the 1970s, he co-founded Audiotechniques Inc. as a professional audio equipment dealer. For two decades, Audiotechniques was a major player in the professional audio industry, naming most major recording studios and broadcast facilities within its NYC market as customers.

He is survived by his beloved partner, Ann Krane, his children Barbara Lindsay, Matthew Brosious and Sarah (Paul) Vaivoda, as well as seven grandchildren, two great grandchildren, and an extended family including Ann Krane's children, their spouses and her grandchildren. Memorial donations may be made to the Cyrenius H. Booth Library, Newtown, Conn. ■

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# Music

PRODUCER OAK FELDER

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Photo: David McClister

Producer, engineer, and songwriter Oak Felder usually works out of his personal studio in Atlanta, Ga.

## OAK FELDER'S MEGA HITS AND HAPPY ACCIDENTS

Grammy-Winning Producer on His Work with Alessia Cara, Niki Minaj & More

By Sarah Jones

**I**f you're tuned in to the Top 40, you've heard Warren "Oak" Felder's work. As part of the Pop & Oak songwriting and production duo with partner Andrew "Pop" Wansel (son of Gamble and Huff staff songwriter/producer Dexter Wansel), Felder has helmed blockbuster hits by Alessia Cara, Nicki Minaj, Kehlani, Elle Varner, Alicia Keys, Busta Rhymes, Tamia, Usher, Jennifer Lopez, Miguel, and Monica.

He's earned Grammy Awards for Alicia Keys' *Girl on Fire* and Usher's "Good Kisser," and he was honored with a Top Producer Award at the 2013 BMI R&B/Hip-Hop Awards. Last fall, he wrote and produced "How Far I'll Go" with

Alessia Cara, for Disney's *Moana*.

*Mix* caught up with Felder in his home base of Atlanta, to get his perspective on capturing killer vocals, and re-imagining classic tracks.

### How deep do you dig into production, as far as tracking and mixing?

I am very hands-on. I don't use a recording engineer; I track myself. As a producer, a vocal producer, when I'm tracking a vocal, I've found that the lag of time that it takes from me having an idea to relaying it to the artist to relaying it to the engineer on how exactly to record it, sort of destroys the potential for the right feel that I want.

### When you're working with vocalists, are you doing a lot of comping to get that final track that you want?

I'm not one of those guys who likes to take certain sections and punch in a bunch of times, because you don't get as natural a performance. So I'll put the artist in the booth and tell them to go for what they know, and give them as much room as possible to naturally perform.

As time goes on I'll try to get them to zero in on certain aspects of their performance, but for the most part, I'm like a large net: I'm catching everything that they're doing; I'm recording everything.





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## TIPS & TECHNIQUES

### From the Pros

#### 1 You Don't Need to Slam an Input at 24-Bit

In the analog days, it was often desirable to drive preamps as hard as possible, for tonal purposes. The same held true in the 16-bit world, but for issues relating to the noise floor. However, neither of these issues apply to 24-bit, so give yourself valuable headroom—you'll need it later on.

#### 2 Check for Mono Even though it's 2017

In the old days, one often checked mixes for mono compatibility due to technological constraints of the times. You should still do this today, since your average listener won't hear a mix in perfect stereo (think sitting in the driver's seat, or sitting on the left side of a couch).

#### 3 Try Out a Manual De-Esser on Vocal Tracks

What is a manual de-esser? The answer is, you. Go through the track and manually gain down each sibilance, either by clip or pre-fader automation. Pretty quickly, you'll learn to recognize the football-like shape of a peaky sibilance, which will expedite the process. Sure, it takes time, but it's one of the most natural ways to tame those ear-splitting "ssssss" sounds.

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**Do you take that same approach whether you're working in rap, pop or hip-hop?**

Certain pop vocalists don't lean too heavily on the vocal side; it's more about the sound of the song. For instance, I worked with Kehlani recently, and the approach to doing her vocal was a lot more focused. She's doing runs and she's adding a whole bunch of harmonies, and she's doing different versions of choruses, and chorus leads. It's so many intricate parts that you only really have one option: You can record the entire thing in the most natural way that you can, and after, you can go back in and focus on certain sections.

**Do you have a go-to signal chain for vocalists? When I listen to Alessia Cara, her vocal has such an interesting, raw quality; what's your setup?**

On Alessia Cara's vocals, we used a Telefunken ELA M 251 and a Teletronix LA-2A, and that simple combination made her voice sound so magical. And to be fair, it's not hard to get an amazing tone out of Alessia Cara—but I found that combination was more transparent than anything, because I really wanted to get the true tone of her voice vs. coloring it. We also used the Slate Digital virtual console. It emulates the feel of having your vocal pass through an SSL console or even an old-school EMI console. It made her vocal pop off the track.

**Are you doing all of your production in the box?**

Every once in a while we'll go out to an SSL, depending on which studio



Felder in the studio with Usher

we're in. But I find that a lot of the modern emulation plug-ins get close enough to not make much of a difference, especially in pop music. It's not that we shouldn't focus on sonics, because that's the craft, but at the end of the day, not a huge percentage of the audience is hearing it the way we intended.

**What monitors do you use?**

I monitor on a pair of KRK Rokits 8s. At first it started off as a monetary issue; I couldn't afford anything more. But then when my career started to progress and I started to make more money, and bought the more expensive, high-end stuff—the Barefoot monitors are another pair that I have, and I love those—but I tend to go back to the KRKs more often because I find that you have to work to make those things sound great, but if mixes sound great on the KRKs, they're going to sound great everywhere else.

**Tell me what else you have in your studio.**

For my interface, I have an Apogee Quartet and the Apollo. I don't use a lot of UA plug-ins; I like the Apollo because it's a thunderbolt interface. My setup is literally my Macbook Pro. And that plugs into three screen monitors, and connects to my interface, which connects to everything else in my studio via one USB3 cable. That way, if I travel to another studio, I'm not going to use their system. They're not going to have the plug-ins I have, they're not going to have the setup that I have. I track all of my vocals through Logic X.

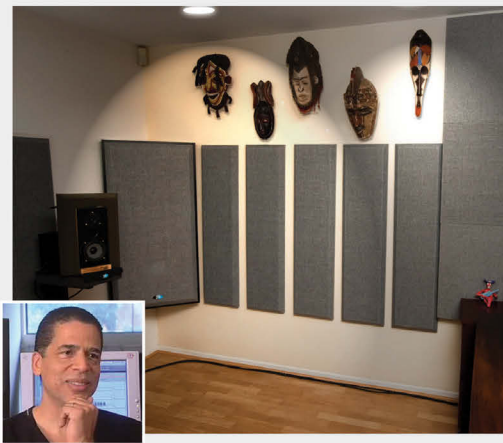
## Primacoustic... better design, better



"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**

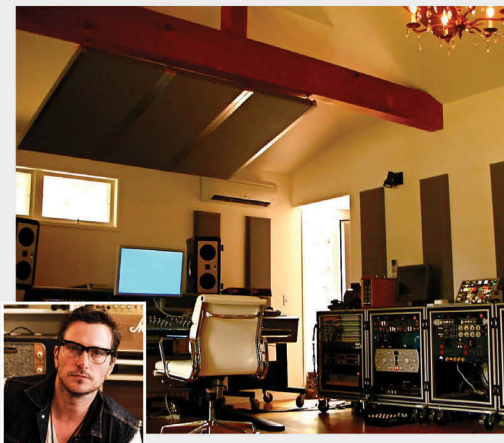
Founding member - Mötley Crüe.



"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***

### Could you describe your collaboration with Niki Minaj?

Every record that we've ever done with her has literally been us tracking out and sending her the beat, and she returns with what she wants to do with it. She's one of the few artists that I haven't vocal-produced. Although we have a great relationship with her, she knows exactly what she wants to do.

### How is your work with her different on pop vs. rap styles?

Honestly, the more pop stuff there hasn't been an approach; it's always been a mistake. The song we did, "Your Love," my partner, Pop, sent her the track by mistake; it was from a previous attachment that he meant to send to someone else. And she responded like, "Yo, this is crazy, this is dope; I'm gonna write for this tonight."

### This was the track with Annie Lennox's "No More I Love You's"?

Exactly. A few days later, Pop gets a copy of the song, and she's singing on the record. A few months later, the song leaked. And it charted on the Hot 100. Shortly after it charted, the label determined that this could be a good song, so let's clear the samples. So they went to Annie Lennox and asked her to clear her master, and she didn't want to clear it. Then we found out that the master was owned by her, but the holder of the publishing was Jimmy Iovine. We said, let's get permission to release the song, and re-create the master.

We set about re-creating that intro to "No More I Love You's." It took a day-and-a-half; it was very intricate. I researched exactly which synths were used in the original version—I think there was an Oberheim SE6, I know there was

a Proteus and they had a Moog of some sort; I don't know what it was, but I had a Voyager, so I used that. They had a modular synth, and I didn't have one but I had an emulator that sounded close enough. We re-created a minute of the original record just to sample that section.

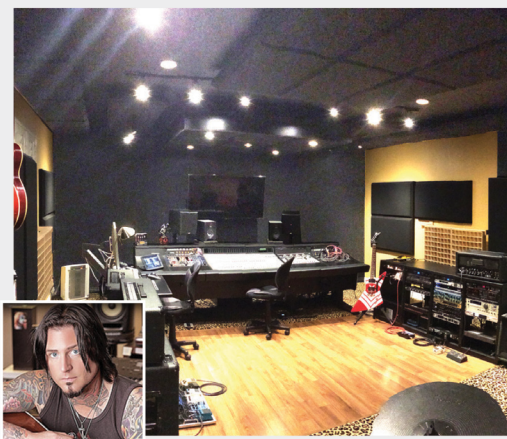
### How about the notion of interpolations in pop and hip-hop: Alessia Cara's "Here," for example, has such a distinct sound with that Isaac Hayes sample.

That was a happy coincidence. Growing up in the '90s, I was a huge Portishead fan; their song "Glory Box" samples Isaac Hayes' "Ike's Rap II." I was very familiar with that loop, although I wasn't as familiar with the fact that it was an Isaac Hayes sample. My partner, Pop, grew up in Philadelphia, and his father was a producer; he grew up with all of these vinyls of soul artists.

"Here" was partially written before it got to us, and one thing that was similar [to the sample] was the chord progression and the hook. [Alessia Cara] and Sebastian Kole started playing it, and Pop and I look at each other, and in my mind, I'm thinking, I know the perfect sample to put to this: Portishead "Glory Box." And in his mind, he's thinking, "Ike's Rap II."

I think the reason that sample works so well, and why sampling in general works so well, is because you have an audience that's already familiar with the original sample, so that automatically endears them to the song. So let's go back and grab those songs and write new songs to them. It's sort of a continuation of the hip hop tradition of taking the break and loop from "Good Times" and writing the record that Sugar Hill Gang did over it. You're pulling from the past to add to it. ■

## performance, amazing results!



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~ Jason Hook - Five Finger Death Punch.



"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.



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

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

~ John Rzeznik

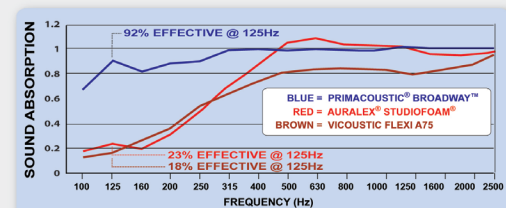
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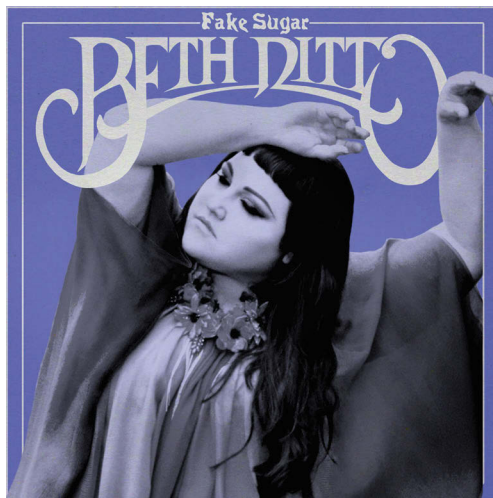
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## BETH DITTO'S 'FAKE SUGAR'

When producer Jennifer Decilveo met Beth Ditto, they were instant friends, despite their musical differences. Decilveo had composed for and produced successful female R&B and pop musicians, including Andra Day and Melanie Martinez, which didn't seem to complement Ditto's experience as one-time frontperson of garage punk-cum-dance group The Gossip. However, it's just this combination of talents that gives Ditto's first solo album, *Fake Sugar*, its ferocious bite. Ditto and Decilveo did their songwriting, demoing and pre-production in Decilveo's home studio in L.A. and at Capitol Studios. They then decamped to Barefoot Recording to track and overdub the instruments separately.



The focus of *Fake Sugar* is on Ditto's remarkable, versatile voice. According to Decilveo and engineer Cian Riordan, there are two distinct vocal chains. For modern and polished vocals, like on "We Could Run," it is a Telefunken ELA M251 microphone into an UnderToneAudio mic pre. For vintage/warm vocals on songs such as "Savoir Faire," they used an RCA 44 into an Altec 1567A mic pre. Compression for both was via a Universal Audio Blackface 1176 and LA-2A; Decilveo EQ'd with the studio's UnderToneAudio console and captured everything to Pro Tools.

"The approach was to record dark and old sounding, and then brighten up with analog gear and overdubs," says Decilveo. "Michael

Brauer did some epic analog mixing, like taking stuff that was stereo and making it mono, which made everything sound rich and took the songs to the next level." —Lily Moayeri

## COOL SPIN: CHUCK BERRY CHUCK (DUALTONE)



When Berry passed away in March, he had *Chuck* in the can. We're told that Berry had been working on songwriting and tracks for *Chuck* in a personal studio, on and off since the 1980s, but efforts to

release the album clearly ramped up more recently, as guest stars on the album include Gary Clark Jr., Nathaniel Rateliff and Tom Morello. Berry's band comprises sidemen Robert Lohr (piano), Jimmy Marsala (bass), Keith Robinson (drums), and two of Berry's children: Charles Berry Jr. (guitar) and Ingrid Berry-Clay (vocals and harmonica).

Many flavors of Berry are represented: there's his iconic, signature guitar licks on "Big Boys"; sultry blues on "You Go to My Head"; a gritty spoken-word track called "Dutchman" set to a funk rhythm section; and a reggae-influenced spinoff of "Havana Moon" called "Jamaica Moon." *Chuck* is a fine album and a generous last gift from the man who gave us at least 28 of the greatest rock 'n' roll songs of all time.

Producer: Chuck Berry. Additional production: Jeremy Lutito. Engineering: David Torretta. Additional engineering: Lutito, Logan Metheny and Tim Gebauer. Mixing: Lutito and Metheny. Mastering: Chris Athens Masters (Austin, Texas). —Barbara Schultz

## LITTLE DRAGON'S 'BUTTERFLIES IN THE CLOUDS'



The members of Little Dragon record in the group's studio in their hometown of Gothenburg, Sweden, and they rarely allow outside involvement in their process. However, the band did allow James Ford in for some co-production and mixing on their latest album, *Season High*, with the group's Håkan Wirenstrand also doing some of the mixing, including the standout track "Butterflies."

The group records to Cubase, but Wirenstrand's curiosity about analog gear brought him to a 1978 MCI 24-channel tape machine and MCI 428B mixer; Wirenstrand updated the mixer by replacing its op amp with one from Sage Electronics, and he used the 428B to mix "Butterflies."

Wirenstrand employed a Mutable Instruments Clouds granular audio processor on Yukimi Nagano's voice. "For the intro I sampled a piece of the vocal, froze, and scrolled back and forth on that sample with Clouds, making kind of a vocal sound," explains Wirenstrand. "For the end, the ambient stringy sounds are a sample of the brassy chord sound already recorded in the project. I froze that in Clouds and scrolled back and forth, making this really nice atmospheric sound."

"Clouds takes pieces of the sample, or grains, and reorganizes them a bit, to smear them out. It also makes them pseudo stereo by taking grains and placing them in the stereo field. It's a great way of finding new sounds. It also has inputs to modulate parameters. The vocal effects on the chorus are Clouds real-time sampling the vocals and spreading the grains in the stereo field. I modulated the pitch with an LFO to get that extreme vibrato so it sounds like a ghost choir." —Lily Moayeri



# DIAL BACK SOUND

## Digging Deep for Analog Gold

By Jim Beaugez



Studio owners Bronson Tew (left) and Matt Patton

**I**nside the studio's unassuming walls, the stories are as memorable as the music. When Iggy and the Stooges dropped by to record a cover of Junior Kimbrough's "You Better Run," the punk/rock icon menaced the studio, shirtless just like at a show, his Stooges blasting back at him through the monitors while he barked his vocals.

"We do that a lot," laughed Matt Patton, co-owner of Dial Back and bassist for Drive-By Truckers and The Dexateens. "Especially if we're having trouble getting a singer to come out of the shell, we're just like, forget about all this, we're gonna blast this track at you."

Tucked inside a former church parsonage on a quiet street in the hills of Water Valley, Miss., Dial Back allows musicians like Bobby Bare Jr., Alvin Youngblood Hart and Water Liars to unplug from the world while cranking up a roomful of vintage amps and instruments, captured via classic mics and tape machines.

Engineer Bruce Watson opened the studio in 2009 as the successor to his Money Shot studios, where he recorded Hill Country and Delta blues musicians for Fat Possum Records. Watson continued that tradition at Dial Back before deciding to move to Memphis in 2015.

"[Bruce] called me at eight in the morning after we'd worked until about 2 a.m.," recalls engineer Bronson Tew. "I was here doing Seratones for Bruce, and Jimbo [Mathus, of Squirrel Nut Zippers] was producing. He was like, 'You wanna buy the studio?'"

Watson advised Tew to find a partner, and

Tew's first call was to Patton, an old friend who had done session work at Dial Back and lived nearby. The two acquired Dial Back in April 2016.

Dial Back has a homey feel that's a function of the layout as much as the owners' friendly, laid-back vibe. Down a few steps from the main tracking room is a small hangout with couches and an apartment where bands can stay. Outside, bench seating overlooks a fire pit and a cooler stocked with domestic brews. The three main studio areas—control room, drum room and the main tracking room—are connected by hallways that have been converted into isolation booths. All of the tracking rooms are built as rooms-within-rooms.

"Because [the building] has a traditional foundation, we don't have the trapped-bass problems you'd have with a cement foundation," notes Tew. "Low end escapes below us, and the attic is eight feet in the peak, so low end can escape [there]. You're not having standing-wave issues."

Originally used as the control room, the drum room has a floating floor built an additional eight inches off the original floor, giving it additional room for low end to go. The unfin-

ished bead board on the walls has been cured over years of near-constant cigarette smoking by Watson and company, giving the room an amber glow.

"I love the isolation here [in the drum room], because I can make decisions while we're tracking. I really am trying to get it right going down to tape. That's why we don't EQ to tape, either, so we have just a good, straight-to-tape sound. We've got three vintage drum kits, five great snares and a bunch of cymbals. And we just move stuff around until sounds right."

Tew prefers to track live to a 1-inch Otari 8-track machine through a Sony 3036 console, and then he ports to Pro Tools for overdubs if needed. He uses drum mics sparingly—often only an RCA 77 overhead, and maybe a Mojave for kick or snare; typically there are no more than four total.

"[Live takes are] the goal," Tew says. There's never a 'scratch' anything. They can redo the vocal, but the first one should be keepable."

There are no digital effects at Dial Back, only springs, plates, tapes and tubes. The effects racks house Telefunken V72 tube preamps, Frank Lacy compressors and pre's, and a tape space echo. Tew also uses a Lawson plate reverb, and they're currently building a dedicated echo chamber.

"I think [artists] come here for the earthiness of this region," said Patton. "This is about 45 minutes south of Holly Springs, and people are drawn to the old stomping grounds of T-Model Ford or R.L. Burnside. They think they're gonna come get some of that magic on it, and I think they're right." ■





## CHANCE THE RAPPER *BE ENCOURAGED TOUR 2017*



Mix caught singer, songwriter, record producer and three-time Grammy Award winner Chance the Rapper in late April, at the beginning of his *Be Encouraged* tour, at the Golden 1 Center in Sacramento, Calif.



"I'm mixing on a Solid State Logic L500 Plus console," says **FOH engineer Kyle Bulman**. "It has a great sound, workflow and there's a bit of that classic SSL character in the preamp. But the converters and mix engine really stand in a league of their own. The front end is so good that it does remind me of a top-shelf analog desk. The character of each microphone and DI is on full display in a way that makes you rethink your normal choices. On the digital side, I never find myself wrestling with the channel EQ, compressors or internal headroom. The Stem architecture that is unique to the SSL lets you organize and route things without restriction."

"With this show, I ended up using both the onboard effects and plug-ins," he continues. "The Dynamic EQ on the SSL is the best I've used. I have that on vocal mics and trumpet to help shape the more dynamic moments. I also use the onboard Variable Harmonic Distortion to give some grit and definition to the Moog Voyager, while the Sonic Enhancer and Chorus effects live on the Nord."

"For external plug-ins, there's an SPL Transient Designer and Waves H-Comp on kick and snare for transient shaping and parallel compression. I use a Brainworks Saturator on the tom bus to help keep the toms from getting lost when everybody ramps up for a big moment. I also use a couple of Waves PSE instances to help manage bleed on the background vocal mics. There's a Crane Song STC-8 compressor that's just on lead vocal and a Rupert Neve Master Buss Processor that handles the compression for everything else. I use a Bricasti M7 for instrument reverb, a Lexicon 960 for vocal reverb, and the Lake LM44 is inserted on the vocal stems that feed FOH and front fills."



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"I also mix on the SSL L500 Plus," says **monitor engineer Rob Ziembra**. "I love being able to drag faders around and change my layout in real time, without audio interruption. I'm using the stems feature to feed all my talkback/shout mics into, which I matrix out with my cue, so I can always hear everyone, no matter what or who I have cued up."

"For plug-ins, I use the L500's internal SSL bus compressor gently on each ear mix, which is great," he adds. "I'm also using the internal Dan Dugan Automixer for all the talkbacks and shout mics. It's been keeping things nice and clean."



"Our vocal mic for Chance is the new Shure KSM8 capsule on Shure Axient sticks," Ziembra says. "I haven't had much on-the-job experience with the KSM8 capsule before this tour, but we've been really liking it. It sounded like someone took a blanket off the mic when we A/B'd it with some other popular capsules."



"The tour does not have a lot of RF channels," says **RF tech Eric Marchand** of Solotech. "We carry six channels of Shure Axient for Chance and the BGVs. The whole band and techs are using 14 channels of Shure PSM1000 for IEM. The complexity of the gig was mostly to find a way to bring the RF noise as low as possible for the receive antennas due to the LED wall creating destructive interferences. I was able to accomplish that by using the proper antennas for the RF mics and by keeping a great signal-to-noise ratio for the IEM using the proper cables."

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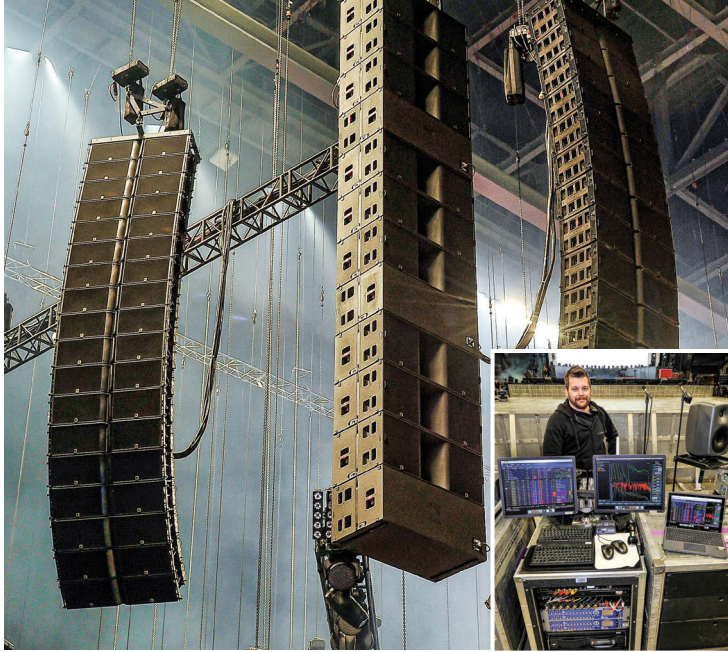


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"Solotech is the sound company for the tour and it's an all L'Acoustic system," says **system tech and audio crew chief Louis-Philippe Maziade**, of Solotech. "Per side, the main P.A. is 14x K1 and 4x K2; flown sub is 12x KS28; side P.A. 18x K2; floor subs are 12x KS28; and fills are four Kara with two Arcs Focus. We use 4x X15Hiq for wedges and 4x Arcs as side fills. To maintain the same sound quality every show we use a Galileo 616AES and Galileo 616 to feed the rocket audio network, then going to the LA12X to be controlled by the LANetwork Manager. We have one computer with Smaart8 to view the frequency content of signals or measure the response of our electrical and electro-acoustic systems."



While FOH mixer Bulmann determines mic choices and placement on drums, **drum tech Kenny Stahl** handles it day-to-day: Beta 91A and D6 for kick; Beta 57 and 181 on snare 1; MD-441 on snare 2; Beta 98Amp on snare 3; Beta 181 on hi-hat; Beta 98Amps on toms 1-4; a D6 on tom 5 and gong drum. Underheads are SE Electronic 4400a, three of which live in Kaotica Eyeball acoustic baffles with a figure-8 pattern.

"That allows me to minimize the bleed from the snare drums as they sit nicely in the null of each mic," Bulmann explains. "The Eyeballs kill high-frequency reflections off the drum riser that would otherwise spill into the back side of the figure-8 pattern, and you end up with a very clean look at the cymbals, especially after some compression."



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# SASQUATCH! MUSIC FESTIVAL

POWERED BY CARLSON AUDIO, SEATTLE

// PHOTOS BY TODD BERKOWITZ



The annual Sasquatch! Music Festival took place over Memorial Day weekend along the Columbia River at one of the world's most scenic outdoor venues, The Gorge, in George, Wash. Headlined by Chance the Rapper, Twenty One Pilots and LCD Soundsystem, the three-day music-fest was produced by Live Nation, with audio systems provided by Carlson

Audio Systems of Seattle.

Founded in 1988 by local production pros Mark Carlson and Jonathan Stoverud-Myers, Carlson Audio today provides sound systems and support for nearly all large-scale events throughout the Pacific Northwest, from corporate to concerts, installation to pop-ups, including Project Pabst NW (Beck, Nas, Iggy Pop, Spoon) and Bumbershoot (Lorde, Flume, Haim, Solange, Vince Staples).

For Sasquatch!, Carlson deployed d&b audiotechnik-based audio packages for the Main Stage, BigFoot Stage and Dance Tent, with consoles from Avid, DiGiCo, Yamaha and Midas. Wireless systems were all Shure UHF. The Carlson team was led by FOH system tech Morgan "Mongo" Hodge and FOH tech Jesse Turner on the Main Stage, with stage crew including Anthony Riek, Brian Dale "Doc" Fall, Vince Agne and Courtney Rusk. The BigFoot Stage was led by FOH system tech Andrew Pardo and a stage team of Kyle Mooney, Jeremy Davidson and Tony Hoffman.

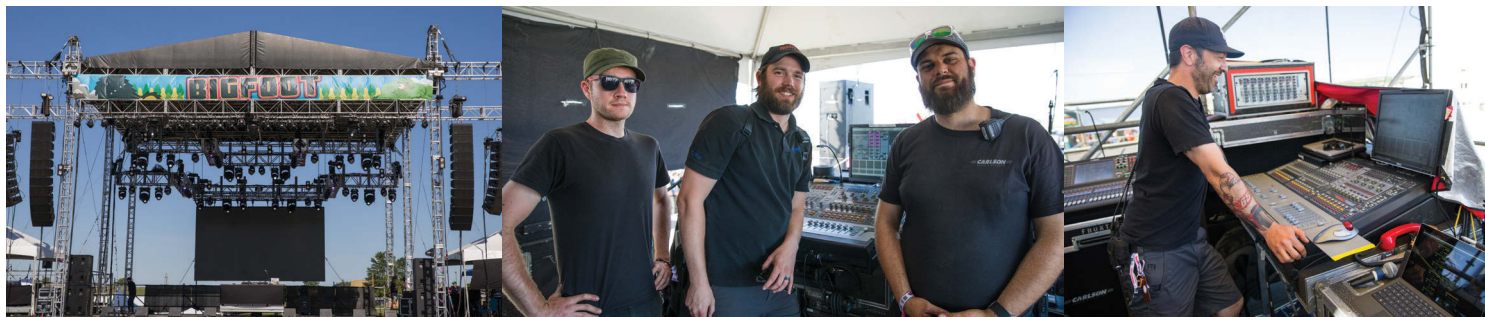
Mix art director and photographer Todd Berkowitz was on-site to document the three days. For more images, visit the Sasquatch! photo gallery at [mixonline.com](http://mixonline.com).



Left to right: FOH System Tech Morgan "Mongo" Hodge and FOH Tech Jesse Turner running the Main Stage at Sasquatch.



Main Stage Sasquatch! stage crew, left to right: Anthony Riek 2nd Patch, Brian Dale "Doc" Fall of the Pacific Northwest Monitor Tech, Vince Agne Lead Patch, Courtney Rusk Lead Monitor Tech



The BigFoot Stage at Sasquatch!.

Big Foot Stage crew, left to right: Kyle Mooney Stage Patch, Jeremy Davidson Monitor Engineer, Tony Hoffman Lead Patch.

Andrew Pardo FOH System Tech of the BigFoot Stage.





The Shins



Sleigh Bells



Bleachers



Chance the Rapper



Big Freedia



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Courtney Marie Andrews



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The Head & The Heart

#### > MAIN STAGE AUDIO

**Consoles:** DiGiCo SD10, Avid Profile Mix Rack Console; (3) Avid Profile; Midas XL88, Yamaha QL1 // **FOH Cabinets:** (24) d&b J8; (8) d&b J12; (4) d&b V12, front fill; (16) d&b V8, off stage; (24) d&b B2 Subwoofer; F 106 Drive Rack, 3-LM26 // **Stage Monitors:** (16) d&b M4 wedge; (6) d&b Q1, sidefill; (4) d&b V-SUB Subwoofer, sidefill; (2) d&b Q-SUB Subwoofer, drum // **Wireless:** All-Shure UHF system, with Beta 58, SM58 and KSM9 capsules.

#### > BIGFOOT STAGE AUDIO

**Consoles:** (2) Avid SC48; Midas XL88; Yamaha QL1 // **FOH Cabinets:** (16) d&b Q1 + front fill; (12) d&b B2 Subwoofer; (12) d&b V-SUB Subwoofer; F 102 Drive Rack, 2-LM26 // **Stage Monitors:** (14) EAW MW12 MicroWedge; (4) EAW SB 850zr, sidefill; (2) EAW SB 250zR, DJ/drum // **Wireless:** All-Shure UHF system with Beta 58A capsules.

#### > DANCE TENT AUDIO

**Consoles:** Avid SC48 Remote; Avid SC48 Stage 48, rack; (2) DiGiCo D-Rack 32 x 16 w/ Optics; 2 DiGiCo D-Rack; 1 DiGiCo SD9 // **FOH Cabinets:** (8) d&b V8; (8) d&b V12; (4) d&b Q7, frontfill; (24) EAW SB 1000 // **Stage Monitors:** (10) EAW MW12 MicroWedge; (4) d&b Q1; (4) d&b Q-SUB Subwoofer; (2) EAW SB 250zR, DJ/drum // **Wireless:** All-Shure UHF system with SM58 capsules.



## RODRIGO Y GABRIELA CELEBRATE 10 YEARS

Mexican guitar duo Rodrigo y Gabriela are out on a 2017 summer tour, through the States and into Europe, to mark the ten-year anniversary of the debut of their eponymous first album. Playing to sheds, arenas, theaters and West Coast wineries, the flamenco-styled guitarists bring a joy and percussive energy to their instrumental live shows. *Mix* caught them in Seattle in late May.

"I would describe the sound of Rodrigo y Gabriela's live performances like an explosion of dynamic energy, combined with sophisticated, intricate and varied moments," says FOH engineer David Marchant. "It's all about Rodrigo's dazzling lead work and crunch sound, and Gabriela's unique rhythm play."

After ten years of recording and touring, the duo has assembled a tight audio touring package, provided by Brown Note Productions out of Thornton, Colo., and based around the DiGiCo SD12 with SD Racks at FOH and monitors and Waves SoundGrid Extreme Server package (with MADI-toEthernet DigiGrid interface at 192 kHz). The artists also carry sidefills, wireless systems, and power distribution. The venue provides P.A. and wedges.

"We are working with 24 inputs, which are connected to a passive splitter and are distributed to one DiGiCo SD rack with 1 to 24 for front of house and 25 to 48 for monitors," Marchant explains. "This way we can use only one rack without sharing gains!" For plug-ins, Marchant turns to an SSL G-Master Buss Compressor and H-EQ Hybrid Equalizer for the left and right bus; an F6 Floating-Band Dynamic EQ and C6 Multiband Compressor for guitars; and Primary Source Expander for Rodrigo's vocal.

Rodrigo y Gabriela listen through a Shure PSM-1000 in-ear monitor system, and guitars make use of a Shure UHF8R wireless system (four channels for main guitars, plus four for backup guitars).



Rodrigo y Gabriela perform at Showbox SODO in Seattle, May 2017.

Photos: Todd Berkowitz

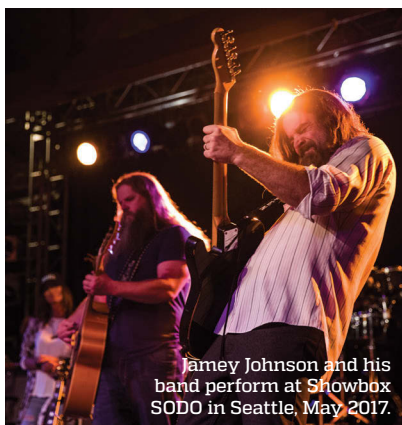


FOH engineer David Marchant

"The Yamaha guitars of Rodrigo and Gabriela have two outputs," Marchant explains. "One corresponds to a group of six piezoelectric contact microphones, mixed and tuned through a Yamaha EQ-mixer preamplifier. The other output corresponds to an under-saddle

pickup transducer with internal preamplifier. To achieve this sound, I found the need to duplicate these two channels with an active splitter three times. As a result, I have eight channels per guitar to work with dedicated frequencies and panning per channel, having the opportunity to create a guitar sound with Natural nylon strings and a low-end kick drum sound, and also a nice snare sound in the case of Gabriela's guitar. In Rodrigo's guitar, I have added two more channels, one for octave sounds and the other for distortion on the metal songs." —Todd Berkowitz

## JAMEY JOHNSON FILLS THE STAGE



Jamey Johnson and his band perform at Showbox SODO in Seattle, May 2017.



FOH engineer TW Cargile

Alabama-born and now a Nashville favorite son, Jamey Johnson has taken his rockin' 12-piece country roadshow—complete with horns, two more guitars,

keys, steel guitar, bass, drums, percussion and backup vocalists—across the States in 2017 and will keep humming through November.

With audio provided by Sound Image out of Nashville and tour management and FOH mixing by TW Cargile, Johnson's longtime studio engineer, the theater-shed-arena tour has been running smoothly, carrying everything but racks and stacks.

"I engineer and mix all of Jamey's albums so he finally pulled me out on

the road five years ago to try and get that defined Jamey sound as close to the albums as possible," says Cargile, a 25-year studio veteran who counts Johnson as his only live gig. "For me that started with letting Jamey and the boys' dynamics show. They can go from a whisper to a hurricane in one song, and you have to understand how to let that happen."

To mirror the studio setup, Cargile mixes on an Avid SC48, with 48 inputs and 16 outs. Drum mics are an Audix package, with the same D6 on kick that he uses in the studio. Vocals are all Audio-Technica mics; Johnson sings into an A-T Artist Edition model.

"I don't use any effects at all on the road," Cargile says. "I tend to let the venue space be a part of the sound. Usually we have a good space and it works. I use the console's onboard EQ and Dynamics for the most part, and I do use the EQ7 plug-in on Jamey and a couple other instruments. I also use the Joe Meek Meequalizer for electric guitars. I use it in the studio, as well, and absolutely love it for getting a guitar tone."

"The sound from the stage is dynamic, powerful and emotional," he adds. "Jamey has such a unique and defined voice that I start with that. I tend to put him a little farther up in the mix than most concerts I've been to, and that allows me to put space between the instruments. I like everything to be heard and have a purpose. We have an amazing band and they are really starting to learn each other." —Todd Berkowitz



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# On the Cover

By Sarah Jones // Photos by Steve Jennings

## TOM PETTY AND THE HEARTBREAKERS

40 Years on the Road and the Evolution of a Signature, Quality Sound



Tom Petty sings into a Telefunken M80 microphone.

**I**'m thinking it may be the last trip around the country," Tom Petty told *Rolling Stone* last December regarding his 40th Anniversary Tour, which kicked off earlier this year. After four decades, thousands of shows and reaching "the back end of their sixties," as Petty says, no one would fault the band if they decided to dial back their touring careers.

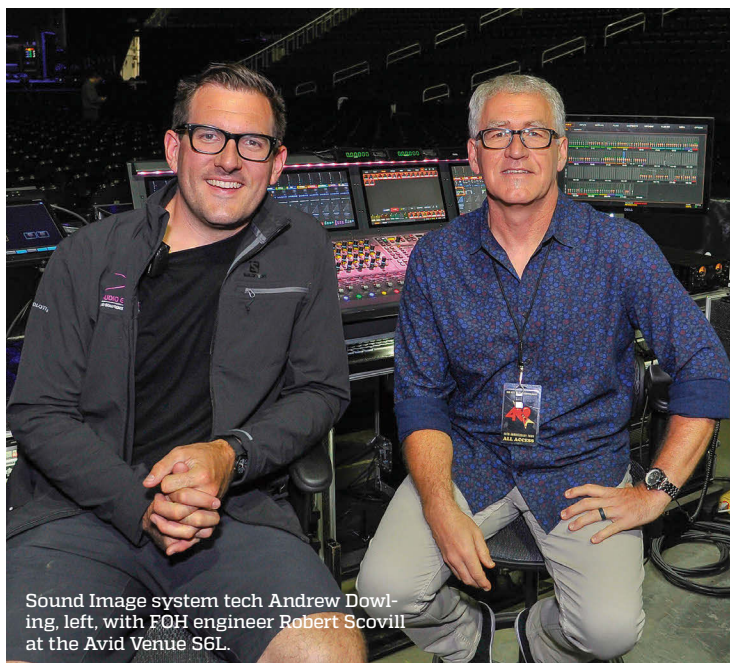
But whether or not this six-month, 46-city tour is indeed the last big run, these rock giants show no signs of slowing down—selling out arenas all over the country, night after night delivering a two-and-a-half hour showcase of heartland rock anthems that have formed the soundtrack to countless lives, closing each set with that ultimate sing-along, "American Girl," giving fans one more chance to catch one of the greatest touring bands in rock 'n' roll history.

Petty shows set a bar for high-tech audio production, thanks in large part to the efforts of longtime FOH engineer Robert Scovill, who has been mixing the band for nearly a quarter-century. For decades, Scovill has strived to bring studio-level audio production to live shows; however, things were a little different in 1994 when he got the call to work with Petty, who was gearing up to tour in support of *Wildflowers*. Back then, Scovill had a casual familiarity with the band, at best.

"During my first few days of rehearsals, I don't think I heard a single Tom Petty song, just versions of cover songs," Scovill recalls. "It was pretty apparent they were just getting loose and trying to simply reconnect with each other on this really, really cool level, and the music was the vehicle for it. This was so unlike anything I had been involved with, and I remember thinking, 'Man, this is a gig I could stick with for a long time.'

"I think [Tom's] relationship with me has developed over time to where he will ask my input on things now; things he certainly wouldn't have approached me about in the





Sound Image system tech Andrew Downing, left, with FOH engineer Robert Scovill at the Avid Venue S6L.



Monitor engineer Greg Looper, left, at the Avid Venue S6L with monitor tech Fumi Okazaki.

first one or two tours that we did together," he continues. "Not that he'll always take my opinion, but he'll certainly ask it now. I think it's driven by the idea that I'm not going to lie to him, and I'm not going to fluff him up just because it's his idea."

"Robert is very much an artist himself," Petty says. "He is the member of the band with no spotlight. If he doesn't do an excellent job with the sound coming from the stage, the audience cannot receive an accurate account of what we're doing. If the sound is bad, my performance was for nothing. Rob will not let that happen. His talent is such that he always delivers an exquisite mix that allows me to perform with the subtleties you need for a great performance. His job is very hard."

"He has made us grow into the reputation of having great concert sound, even in some very tough rooms," Petty continues. "Because of his great experience on the road, he can tell us what nearly any venue sounds like. We consult with Robert on every gig we book. If he doesn't think it can be made to sound good, we don't go there. In my many years in this business, I have never met anyone who approaches the talent level of Robert Scovill."

"We walk out knowing that we're going to sound better than anybody has in that venue," adds Heartbreakers keyboardist Benmont Tench. "And that's big, because our band pays a lot of attention to the colors and shades in the tones of the instruments. Tom and Mike [Campbell] don't just change guitars for the show, and I'm not running a used-keyboard emporium, either. We're after something specific. And we know Robert will capture that."

## COVERING THE HOUSE

While Scovill has been the architect in the evolution of the band's live sound, on this tour he is working hand in hand with Sound Image and a crack crew; tour production planning began in January, specing out system design and collaborating over the cloud via Evernote. Scovill provides his own custom racks of specialized ancillary gear, stored and ready to go at a moment's notice.

The tour P.A. is an EAW Anya/Otto software-controlled system with customizable coverage capabilities to match venue seating geometries

system (62 Anya boxes, plus 48 Anna for stadium-show delays; 13 Otto subs). "We used this system for the first time in 2014 on the Mojo tour," says Scovill. "It is far and away the most 'point-source'-like sounding multi-enclosure system I have ever worked on."

For frontfills, Scovill came up with an unorthodox way to provide directivity and localization in a challenging coverage zone, using a com-

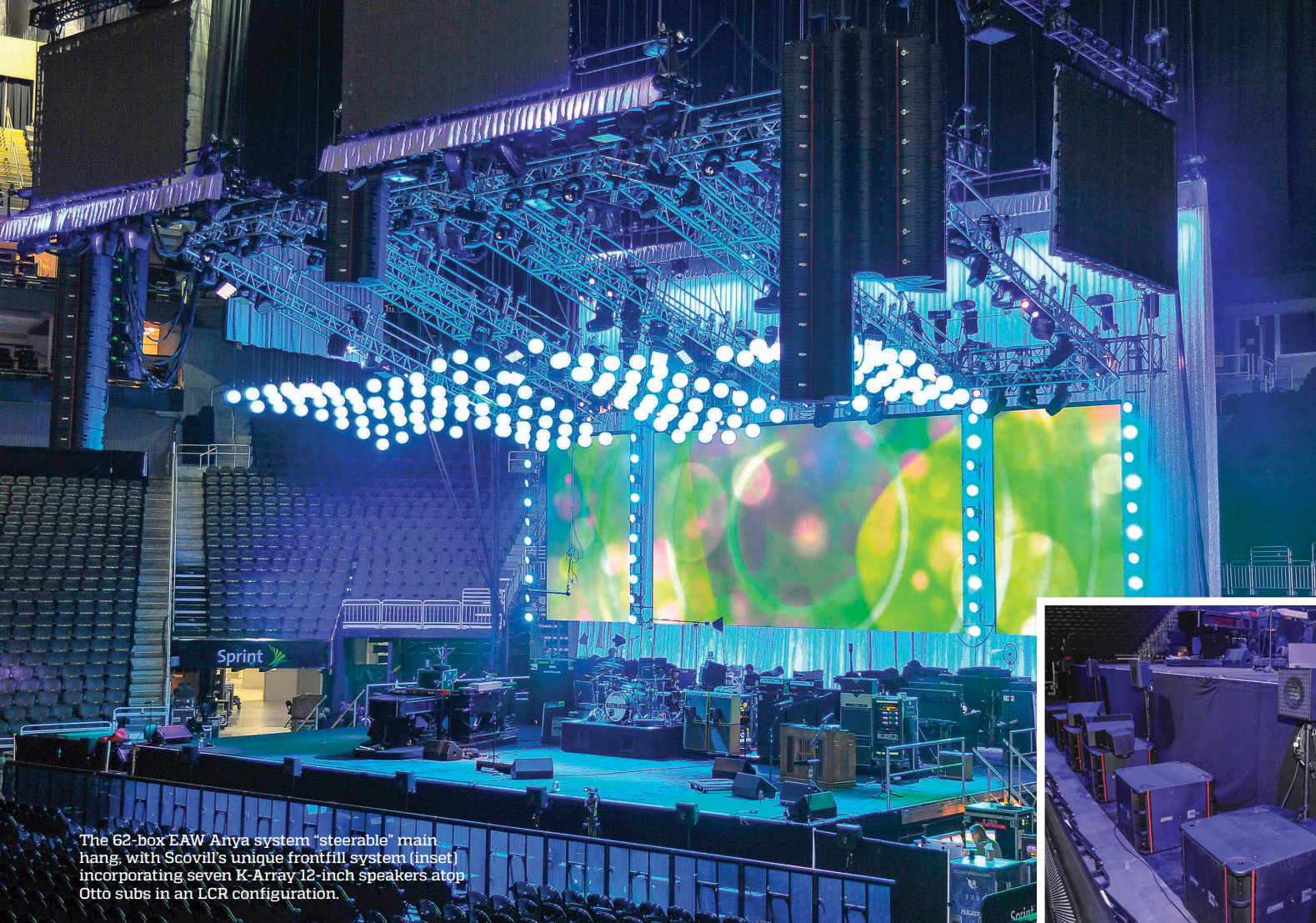
## THE VIRTUAL SOUNDHECK SURPRISE

Scovill was doing analog virtual soundchecks with Tom Petty for many years before Petty was hip to the process—until one day in 2005. "When we moved to the Avid [then Digidesign] Venue D-Show console in 2005, I was in rehearsals at Sony; we had the P.A. and everything set up, just as we would do it for a normal show, and I came in early one afternoon and thought, I'm just going to go into playback, break everything down here, just check everything out and work on some sounds and mixes," Scovill explains. "So I started doing this, and probably worked for two, three hours, with the P.A. at full volume, only at some point to turn around and realize that Tom was in the back of the room, sitting on a couch, taking it all in."

"You have that moment of panic, where you think, okay, what did he just hear me do to his music for the past two or three hours? I might just be out of a job here. But at some point, he came up to me and said, 'I didn't know you could do that. That might just be the coolest thing I have ever seen in my life. I have never heard what we sound like out front.'"

It was a moment of bonding, says Scovill. "I knew within 30 seconds of that conversation that what I had actually done was instill confidence in him in my abilities. But I also saw the light bulb going on over his head when he said, 'Can you do this for monitors as well?'"





The 62-box EAW Anya system "steerable" main hang, with Scovill's unique frontfill system (inset) incorporating seven K-Array 12-inch speakers atop Otto subs in an LCR configuration.

bination of small K-Array KRX 802 12-inch coaxial speakers (seven for arenas, 14 for stadiums) attached to EAW Otto DSP-controlled subs with custom brackets provided by Sound Image. Seven high-end "speakers-on-sticks" stations are distributed across the front of the stage to support the LCR configuration of the main P.A. system.

"I spend a lot of time down there trying to get that area to sound right and get it really in phase with the backline," Scovill explains. "The Tom Petty stage is a very live and active stage; there are a lot of guitar amps, a lot of drums, a lot of piano and keys and stuff going on up there. So it takes some concerted effort to get that mixed correctly for that first four or five rows. From talking to Tom, he can see it in people's eyes down there. If it doesn't sound good, he can make eye contact with them and know that something is amiss. I remember being that fan down there, and I desperately want that experience to be killer."

Petty tours have been carrying Avid Venue D-Show consoles since that product was released in 2005; on this run, they've upgraded to the Venue S6L. This latest version features new processing and workflow capabilities, including virtual soundcheck functionality designed in part by Scovill, who for the past decade has served as Avid's Senior Specialist for Live Sound Products.

Scovill designed his virtual soundcheck process while in early rehearsals with Petty in 1994 and says he's happy to see that experience come full circle. "That whole workflow was a survival mechanism for me with the Tom Petty camp," he explains. "I just developed it over 10 years of using

## THE 57 INCIDENT

Trust takes time, as Scovill learned right out of the gate with Tom Petty back in 1994. "I was trying to get this vocal sound out of him singing into his then-iconic SM57 without the windscreen, and at that point he was surrounded by four huge wedge monitors, no ear monitors or anything, and let me tell you, it was a real struggle.

"About three or four days in, I was kind of feeling my oats, and had already interacted with him on a couple of occasions, and felt pretty confident when I approached him and said, 'You know Tom, I don't know how married you are to the 57 here, but I'm pretty sure if we try a couple of different vocal mics, I could get a much better vocal sound than I'm able to get right now.' Without even batting an eye—he didn't even look up at me, I can remember it like it was yesterday—he had his hand up on the microphone and was kind of leaning on the mic stand and looking down, and he said to me, 'You know, Rob, that's what the last guy said right before he departed.'

"I instantly had this moment of, 'You know what, let me just give that mic another try.' I was able to get him to change that mic over time, but the lesson learned there was that respect is earned; it is not freely given."



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Tom Petty and the Heartbreakers, live in Kansas City, Mo., in early June 2017



Guitarist Mike Campbell



Keyboardist Benmont Tench

it, and through my work with Avid was presented an opportunity to get it into a product as an actual feature.”

One of the biggest benefits of virtual soundcheck is that, once mixers are able to focus on technique without anything “at stake”—meaning an audience in the room or a band onstage—they are free to grow in their craft. “Mixing the show is so much fun now,” says Scovill. “You can just stay focused on the music—not only refine the mixes, but start to refine your actual technique and skill. I have not seen the band in the building

for soundcheck since 2005. To say it has positively impacted their touring lifestyle, and in turn, their longevity while on the tour, would be gross understatement.”

### THE HEART OF IT

For Scovill, art and technology go hand in hand, and presenting that classic Heartbreakers sound means leveraging an analog soundscape with plug-ins and digital control. “From my perspective, the main attraction

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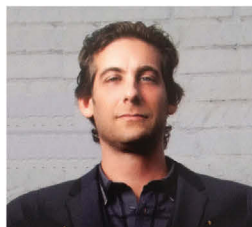


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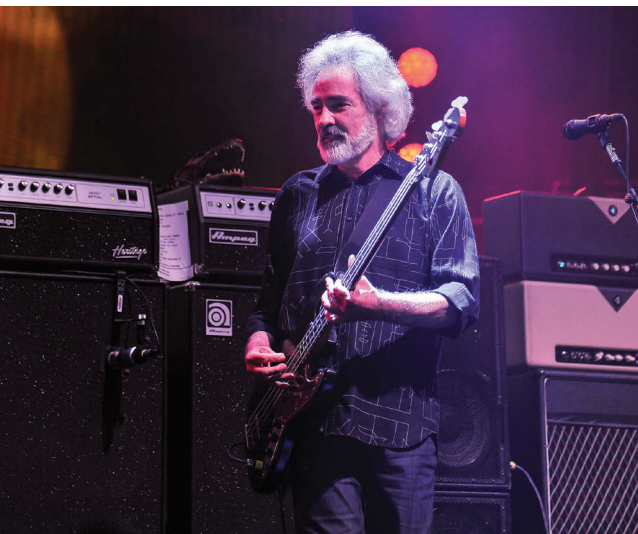
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Ron Blair on bass



Scott Thurston on keys, guitar and harp



Drummer Steve Ferrone

to digital was the accompanying plug-in architecture for digital consoles, the ability to build and emulate the analog qualities that my ears have been programmed to over years on the road and in the studio—but at the same time being able to take advantage of the programmability and system scale that digital offers,” he says.

“What really bugs me is when I hear my peers romantically extolling the virtues of analog as if it’s some sort of magic elixir,” he adds. “Or, worse yet, presenting it as a means to an instantly great-sounding show,

the minute you turn it on. As a mixer, you still have to do the work, whether it is on an analog or digital system. It makes me crazy when I hear someone claim, ‘That show sounded great, and it was all analog,’ as if it could not have sounded as great if it was all digital. You can rest assured that it sounds great because the person behind the console is a master at his craft. The gear is simply a choice we make.”

*Continued on p. 44*

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# FLAGSHIP MIXING SYSTEMS FOR LIVE PERFORMANCE

BY STROTHER BULLINS

The following new product entries mark some of the most interesting large-format live mixing products announced thus far in 2017. All of the following incorporate touch GUIs, are notably versatile, modular and/or expandable, and are ready for our industry's increasingly networked live-installed sound environments.



**Allen & Heath** has expanded the line of digital interface options for its dLive mixing system with superMADI and a range of AES3 I/O cards. The superMADI interface card includes 8 BNC connectors and 4 SFP

slots for fiber optic transceivers. Both coaxial and optical formats offer up to 128 I/O at 96 kHz each, and redundancy and sample rate are switchable per link pair, with a choice of Smux or High Speed 96kHz mode. The superMADI card can also be used by engineers and rental companies to link to any MADI-enabled third party console for high-channel-count digital splits, for example, between FOH and monitor positions.

**Avid's** flagship live mixer, the Venue S6L, features a bevy of updates in version 5.4, to follow up 5.3's ability to record and play back up to 128 tracks to and from Pro Tools over Ethernet AVB, and a user-definable fader layouts feature. With Version 5.4, updates have been made to Venue Snapshots and Events systems; a new Output Sharing feature allows any engineer on the AVB network to take ownership of the system's shared Stage 64 outputs on a per-output card basis and more. Notably, output channels can now be rearranged via dragging and dropping Aux master, Group master and Matrix masters channel strips in the External GUI > Outputs page.



**Crest Audio**, a division of Peavey Commercial Audio, has announced the pending shipment of its Tactus Digital Mixing Systems (Q3 or Q4). Crest partnered with Waves Audio to create Tactus, a modular touchscreen mixer, processor and controller incorporating Waves' eMotion LV1 software. The GUI displays all audio routing, processing and mixing tools at hand, working with the Waves Audio's eMotion Mixer for SoundGrid. The Tactus range comprises three hardware products—Tactus.FOH (the Waves SoundGrid-based audio signal processing engine), Tactus.Stage (32-in/16-out remote stage box that can be linked to make 64/32) and Tactus.Control (a 16-channel surface fea-

turing dual motorized master faders with mute, cue and select buttons).



As the company marks its 15th anniversary, **DiGiCo** has unveiled its new SD12 live mixer, a compact desk based around dual 15-inch touchscreens and 72 input channels with full processing, 36 aux/group buses, a 12 x 8 matrix, LR/LCR bus, 12 stereo FX units, 16 Graphic EQs, 119 Dynamic EQs, 119 multiband compressors and 119 DiGi-TuBes, 12 Control Groups (VCA) and SD Series Stealth Core 2 software. Options include a Dante module, which can be plugged straight into the back of the console, alleviating the need to purchase an Orange Box. A Waves module can also be fitted to take full advantage of the SoundGrid platform.



Aimed at the professional production and install markets, **Mackie's** AXIS Digital Mixing System brings together the superb 32-channel DL32R digital mixer with the DC16 control surface to create a system intended for houses of worship, performing arts centers and other small- to mid-sized venues with advanced production needs. With 32 remote-controllable Onyx+ mic preamps and 16 outputs paired with built-in DSP, the system relies on Dante for communication between the DL32R mixer and DC16 control surface, enabling additional networking capability. Visual feedback is provided by large, full-color channel displays.



**PreSonus** has introduced the StudioLive 24 digital console/recorder to its StudioLive Series III line, with 24 physical input channels with touch-sensitive, motorized faders and recallable XMAX Class A preamps. The main L/R bus also has a touch-sensitive, motorized fader. All 32 internal channels can be addressed digitally via USB and AVB. PreSonus Capture multitrack recording software with virtual soundcheck runs onboard the StudioLive 24 console, allowing users to record up to 34 tracks to the console's onboard SD recorder. Recordings are simply transferred to the company's Studio One software as a session, including fader levels and Fat Channel settings. The Fat Channel processing section presents a plug-in-style workflow that features vintage-style EQ and compression





QSC has effectively updated its entire TouchMix Series with the newly unveiled Version 3.0 software for TouchMix-8 and TouchMix-16 and Version 1.2 for TouchMix-30 Pro. The former provides 20 key enhancements, including Anti-Feedback and Room-Tuning Wizards, Real-Time Analyzer (RTA), Copy-and-Paste, playback of MP3 files on a USB drive, Input Delay, Output PEQ, 15 dB Digital Gain, Channel Overview, Channel Safe, Tap Tempo, Tablet Follows Mixer, additional User Buttons (on connected tablet), and the ability to configure Aux 7/8 and Aux 9/10 as balanced, mono outputs (TouchMix-16). QSC loudspeaker tunings are also present in Version 3.0, including presets for the company's new K.2 Series. The new firmware is available as a free download for current users and will be factory-installed in new production units.



Roland's flagship M-5000 line offers a compact model, the M-5000C, with 8 outputs and all the power of the full-size M-5000. With its Open High Resolution Configurable Architecture (OHRCA) design, the

M-5000C is flexible, ready for Roland's own proprietary REAC connections, as well as Dante, MAD1, Waves SoundGrid, etc. Key features include 24-bit/96kHz operation throughout; a built-in 16x16 USB audio interface for laptop recording and playback; and a total of 128 freely assignable audio paths.



The Solid State Logic Live L200 mid-scale console is centered on the company's unique inverted T chassis

console design, keeping key parameters within close reach of the operator. Further, arms can be mounted on either or both sides of the console and can be specified as screen mounts or laptop/utility trays. L200 features a row of three 12-channel Fader Tiles, providing a total of 38 faders including the Master and Focus Faders in the Master Tile. A centrally located 17-inch multi-gesture touchscreen gives users access to all of the console's functions, plus Quick Controls in the central Fader tile. The Master Tile, located alongside the screen also provides Mute Group, Solo/Talkback, Assignable keys, and Automation controls.

Built specifically for Si Series live mixers, Soundcraft's new Mini Stagebox 32i and Mini Stagebox 16i provide multiple channels of remote-controlled MAD1 I/O and Studer-designed preamps in two distinct sizes, either connected to the mixer via standard RJ45/Cat5 cable up to 100 meter runs. The 3U 32i offers 32 mic preamps and

options on every channel, from classic tube limiters to passive EQs. A 6-band, fully parametric EQ is available on all mix outputs.

A/D converters and 12 XLR analog line level outputs; the 2U 16i offers 16 mic preamps and A/D converters and 8 XLR analog line level outputs. Soundcraft offers a free firmware update for its Si Impact mixing console, enabling up to 80 mix tracks when used in conjunction with stage boxes.



Approximately two-thirds the size of the existing CS-R10 surface, the new Yamaha CS-R10-S control surface offers the same operability for applications in a smaller footprint. A Dual Console

function (to be supported in a future update) will allow two CS-R10 and/or CS-R10-S control surfaces to be connected to a single DSP-R10 DSP engine (e.g., FOH and monitor mix positions). A CS-R10-S will also be able to be used as a sidecar for a CS-R10. Also, Yamaha's TF Series now boasts the no-footprint TF-RACK, a compact, rackmount version of its TF Series desktop models, accessible via third-party GUI. Yamaha specifically notes that it is intended for smaller-scale or portable mixing applications—"particularly when a proper mix position may not be available." ■

Strother Bullins is Technology Editor for NewBay Media's AV/Pro Audio Group. [sbullins@nbmedia.com](mailto:sbullins@nbmedia.com).

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Photo: John Songdahl

Snoop Dogg with Dave Malekpour of Professional Audio Design

## SNOOP DOGG'S BEACH CITY MUSIC

Snoop Dogg's new personal facility, Beach City Music, was designed by Dave Malekpour of Professional Audio Design, along with loudspeaker consultant Jerry Steckling of JSX Audio, Jonathan Deans of Westlake Pro, and builder Bruce Miyaki.

"The Beach City Music complex is a 20,000-square-foot building located within five minutes of LAX. It houses three recording studios, a radio station, a video post-production studio with a soundstage and green screen, plus a full basketball court and offices for Snoop's empire in music, film, weed and related lifestyle brands," Malekpour says.

"The facility was designed to be totally private for Snoop and the artists and producers he is working with. At the heart of Snoop's project was a desire to have everything needed for to record music, video, TV and film all in house."

In Snoop Dogg's main music-production studio, called the Mothership, the 750-square-foot control room features an AMS Neve Genesys Black console, Augspurger Quattro15-Sub218 monitoring, Avid Pro Tools HD12, and plug-ins from Slate Digital, Waves, Antares, Sonnox, McDSP and others.

"The vision Snoop had for the facility was a Star Trek-inspired theme, where all the hallways have color-changing LED tubes and Star Trek murals and posters," Malekpour says. "There's a wrap-around console and various stations that can be manned by multiple producers, all centered around the mix position. And at the center of it all, a red leather massage chair that is on top of a riser, allowing Snoop to oversee all the team."



Bill Appleberry produces and mixes the iTunes releases from *The Voice*.

## The Voice at Henson



Producer/mixer Bill Appleberry has just wrapped season 12 of *The Voice*, the NBC-TV talent show that he's worked on for the past six years, producing all of the singles recorded by the show contestants.

"My job is to produce, record and mix all the songs we sell on iTunes and Apple Music through Republic Records," he says. "It's basically the same process of

making a record for any other format except that we're operating at an accelerated pace to meet the demands of the show."

Every short-form performance that viewers see on TV becomes a full-length single in the studio, and each song goes online the same day the show is aired. "From day one, we do [songs from] all the blind auditions and follow each phase of the show, through the finale. In any season, I'm averaging about 180 songs per season, and there are two seasons per year," Appleberry explains.

He makes it work with a staff of up to nine engineers and *The Voice* band, which remains consistent, and always ready to roll. "But I do all the final mixes myself," Appleberry says. "About three years ago, I started bringing everything to Henson, which is great because we need three or four rooms happening simultaneously."

Appleberry was on staff at Henson in the '90s, when it was still called A&M. The facility allowed him to build his own Pro Tools mix room on site—a room-within-a-room, inside some available office space. However, all of the band tracking takes places in Henson's more spacious Studios A and D, while Appleberry enjoys vocal recording in B.

"During the live part of the season, on Fridays we will go in about 9 a.m. We'll grab 12 songs with the band, grab 12 vocals in another room, and then if we can stay on schedule, I will start mixing late Friday night, and we basically don't get home till very early on Sunday; that hour to get home and back is too valuable, because Apple has very strict deadlines. Five a.m. Sunday morning is when we need have the final masters approved and starting to upload to Apple, to be in the store by Monday night. We have to stay disciplined and sometimes we have to make quick decisions; but over time we have learned not to sweat over the small stuff, so it really helps that Henson has such a great staff and top-of-the-line gear to lean on!"



Photo: Allison Offenberger



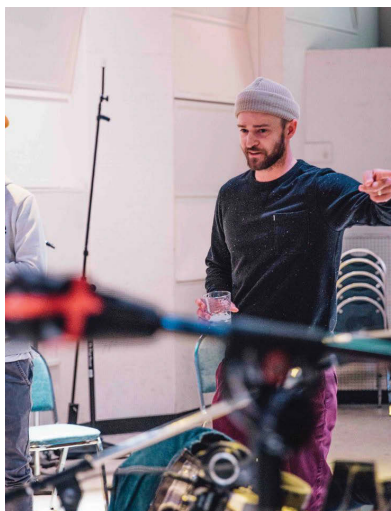
**L-R: Amy Burr (GM/studio manager), Ben Milchev (assistant engineer), Aaron Becker (chief technical engineer)**

## JESSIE J AT LARRABEE STUDIOS

Pop singer Jessie J visited Larrabee Studios to record vocals in Studio 4 with engineer Simone Torres, vocal producer Kuk Harrell and project producer DJ Camper. Though he can't divulge too much about the project, staff assistant engineer Ben Milchev offered a few insights about the session, and working at Larrabee in general:

"She used a Sony C800 vocal mic," Milchev says. "I believe that is her regular mic.. The atmosphere was very comfortable, very friendly and Jessie was tracking vocals from the live room. We had a little vocal booth set up for her, and Kuk was in the driving position at the [SSL 4000G+] console on the other side of the glass, producing and just watching everyone work together. For me, as a fly on the wall, it was really magical just seeing them work together."

The session was Milchev's first assisting Torres, though he has known her since they both attended Berklee College of Music. Part of the Larrabee staff since last September, Milchev observes, "Larrabee is mostly a mixing studio, so tracking sessions are always a treat. But also being in the same facility as mix engineers such as Manny [Marroquin, who works in Studios 2 and 3] and Jaycen [Joshua, who mixes in Studio 1], just being able to talk to them and work alongside them is a privilege." ■



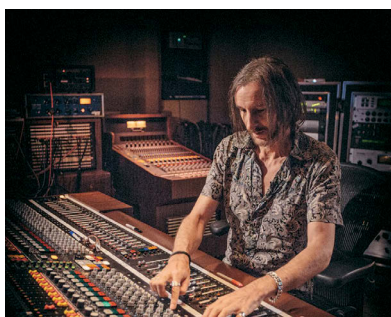
Justin Timberlake producing Shadow Boxers



Hillsong United



Seal



Nick Launay

### EASTWEST STUDIOS

Shadowboxers, who also visited EastWest Studios last August, were back in the studio working on new music with engineer Chris Bell and producer Justin Timberlake. "They were in Studio 1," says assistant studio manager Keith Munson. "There's an 80-channel Neve 8078 console in there, and it's actually one of the larger rooms in town." Studio 1 is also one of the L.A. area's most historic. That Neve console is the one used on *Thriller*, and the room—which first opened in 1965—has hosted sessions from Sinatra and Marvin Gaye to Blondie. EastWest also recently held a listening party for Shania Twain, whose upcoming album was mixed at the facility.

### RECORD PLANT

Electronica group Hillsong United tracked their latest album, *Wonder*, in Studio SSL4 at the Record Plant. SSL4 is equipped with a 9000J console and custom Augspurger monitors. Engineering the session was James Rudder, with help from first assistant Tim McClain and second assistant Chris Dennis.

### CAPITOL STUDIOS

In addition to the Diana Krall album sessions detailed on page 36, Capitol hosted tracking sessions with Seal for a Decca Records project. Seal worked with producer Nick Patrick, engineer Don Murray, staff assistant engineer Nick Rives and conductor/arranger Chris Walden.

### SUNSET SOUND

Recently at Sunset Sound engineer/producer Nick Launay was in, mixing new music from Nick Cave and the Bad Seeds. Additional sessions include Epitaph artists Rancid working with producer Brett Gurewitz and engineer Kevin Bivonia; David Crosby self-producing with engineer Dan Garcia; and Herbie Hancock self-producing with engineer Cesar Mejia.



# DIANA KRALL AT CAPITOL

## Al Schmitt Recalls His Final Session with Tommy LiPuma

BY KEN MICALLEF



was going on in the booth. He just worried about getting the content down. And it was remarkable.”

Noting Krall’s preference for tracking vocals and piano live with the musicians, Schmitt recorded and mixed at 192k via Capitol’s Neve 88RS 72-input console, with very little post-production editing.

“The Neumann U47 sound—ed fantastic on Diana,” Schmitt

says. “It’s my go-to vocal mic, the same one Sinatra used on his Capitol records. I placed it about five or six inches from Diana. I also used a Neve 1073 preamplifier and just a touch of my Fairchild 660 compressor for the warmth of its tubes, compressed a dB or two. I ran Diana’s voice through Capitol Echo Chamber #4, blended with my Bricasti Design [Model 7 Stereo] reverb to get the sound that I want.”

Schmitt covered Krall’s custom-ordered Steinway grand with two Neumann M 149 mics, touched lightly with a Thermionic Culture Vulture Phoenix compressor. Each M 149 was placed a foot above the piano: one over the hammers, one over the instrument’s lower half.

“Diana sings softly, and she plays piano reasonably soft,” Schmitt explains. “She’s not a banger. We got a nice blend and tried to separate the piano from the voice as much as possible. We used a sleeve that fits over the piano. The sleeve has two holes where the microphones go in; that gives us separation between her vocal and piano, keeping the two clear and distinct, somewhat, not 100 percent.”

On *Turn up the Quiet*, as he did many other sessions, LiPuma worked with the musicians in the live room, wearing headphones to hear what they heard.

“Tommy didn’t press a button and talk through the glass,” Schmitt says. “He loved to be with the musicians. He didn’t worry about how things were sounding because he knew I was taking care of that. He concentrated on what he wanted to do.

“Tommy would say that if his ass started shaking then he knew the record was in the pocket,” Schmitt adds. “When he started dancing, you knew you were in the groove. Tommy was one of a kind; a very special human being. He was kind and giving and knew what he was doing in the studio and what he was trying to get out of the artist. And he did that in such a nice and easygoing way. There was never any friction; sessions always ran smoothly. Tommy was amazing. We won’t have another one like him.” ■

“Tommy made the artist feel so comfortable,” says celebrated engineer Al Schmitt when discussing his longtime friend and studio collaborator, the late producer Tommy LiPuma.

“All the musicians loved Tommy. With him, it was all about the music. There was no ego. All that crap got out of the way. It was about getting the music; getting the groove. Tommy was a master of that and there was no one better. Everyone loved working with Tommy.”

Beginning with Dave Mason’s 1972 LP, *Alone Together*, Schmitt and LiPuma worked together on more than 100 recordings, including George Benson’s *Breezin’*, Bill Evans’ *You Must Believe in Spring* and Natalie Cole’s *Unforgettable... with Love*, Paul McCartney’s *Kisses on the Bottom* and ao many more. The magical production duo also recorded many of Diana Krall’s million-selling albums, including *When I Look In Your Eyes*, *The Look of Love*, and LiPuma’s final work, Krall’s latest standards-filled out-in *Turn up the Quiet*.

The recipient of 22 Grammy Awards, Schmitt considers *Turn Up The Quiet* to be one of his and LiPuma’s best projects.

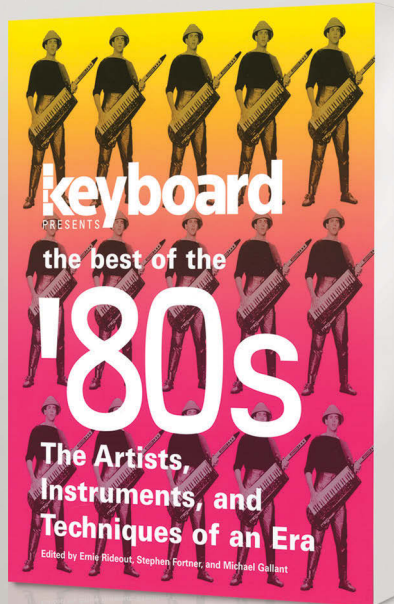
“It was like back in the old days in the way we recorded,” Schmitt says. “With great material, great musicians, and it was all about getting the right feel in the studio. We made Diana feel at ease. We didn’t get in her way. We’ve recorded 111 albums together—Tommy and me. We didn’t talk much. He always let me do my thing and he did his. He didn’t have to worry about what



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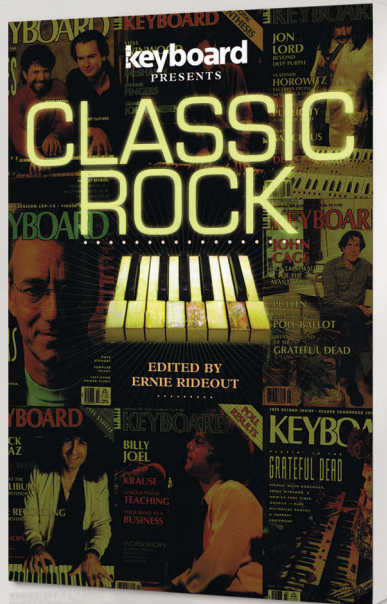
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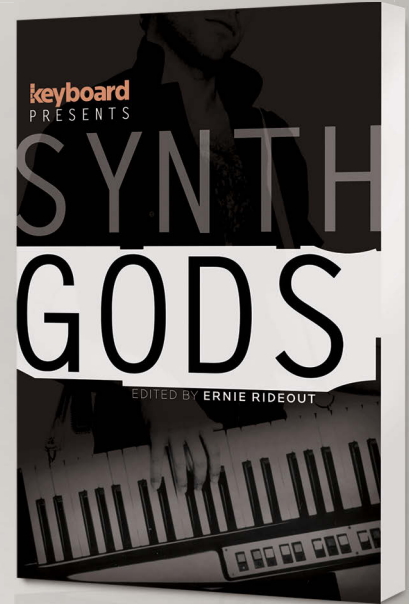
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# Tech // new products



## PSP PRECURSOR 2

### EQ Plug-in With Analog Attitude

PSPaudioware has released preQursor2, a specialized EQ plug-in with uniquely designed filters with low resonance peaks that reduce ringing artifacts (\$69; free crossgrade). Features include modeling of the preamplifier and filters to accurately re-create an analog-like behavior controlled per instance, or globally per group of instances. The result allows the user to virtually create the input console for all tracks in a mix with easy and convenient controls.



## PRESONUS STUDIO ONE 3.5

### Update Brings 60 New Features

Presonus has released Studio One 3.5 (\$399.95; free upgrade Studio 1 3.0), bringing 60 new features and enhancements, including native low-latency software monitoring and Dropout Protection. Other features include a completely

revised Project page with file-independent track markers and updated loudness detection and display to meet the latest loudness metering standards; a revised Spectrum meter offers several new features, including Segments and 12th Octave views (a convenient keyboard scale).

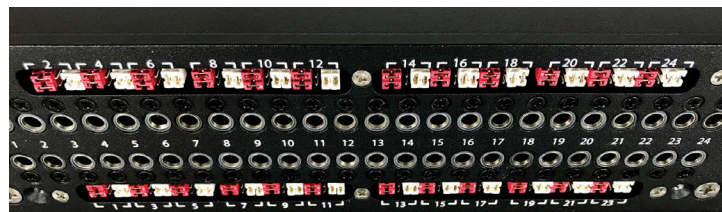


## QCON PROX-3D CONTROLLER

### Tactile DAW and Plug-in Control

Icon Pro Audio's QCon Pro X (\$899.99) features nine touch-sensitive motorized faders (10-bit resolution), eight rotary dual-function encoders, a 12-segment LED meter bridge and a Dual 2x56 large backlit LCD. Interchangeable DAW specific modules and overlays

allow the surface to control Pro Tools, Cubase, Nuendo, Samplitude, Logic Pro, Ableton Live, Reason, Reaper, Studio One and Bitwig. QCon Pro X also provides tactile control of VST, RTAS, Direct X and AU Plug-ins. Dial in EQ frequencies, Q or gain with the rotary encoders.



## BIT TREE PS4825F PATCHBAY

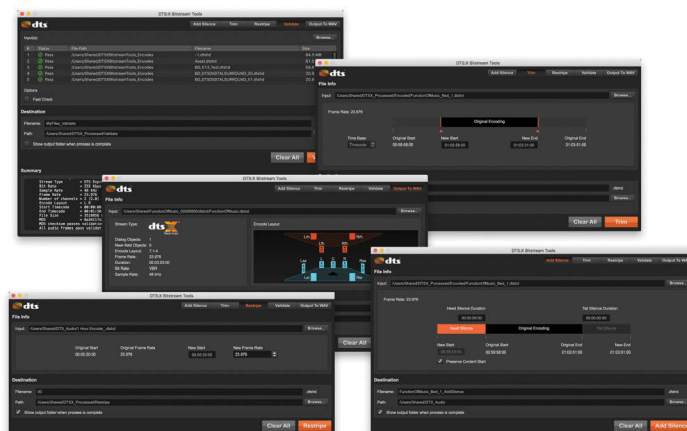
### Sturdy, Affordable Signal Router

Bit Tree's PS4825F patch bay (\$624) enables users to define and alter their audio signal flow easily between equipment or around the studio. Features include 48 TT (Bantam) connectors in a 2x24 configuration, with DB25 rear connectors for interfacing with Avid Pro Tools and Tascam gear. The sturdy PS4825F offers a metal front panel; solid-gold switching contacts are welded and electrically bonded to the leaf springs, providing superior durability and higher electrical current ratings.

## DTS:X CREATOR SUITE

### Immersive Content Distribution Software

The DTS:X Creator Suite (\$3,995) provides professional content creators the ability to mix and deliver immersive DTS audio content for cinema, Ultra HD Blu-ray, Blu-ray, and other formats and services. Features include MDA Tools with full DTS:X ecosystem support based on a royalty-free, open standard audio technology, support for up to 11.1-channel and object-based encoding, and creation of DTS Headphone:X content for Ultra HD Blu-ray and Blu-ray.







## SOFTUBE CONSOLE 1 MKII

### Affordable Hardware/Software Mixing System

Softube Console 1 Mk II (\$499) features support for 60 UAD Powered Plug-Ins from Universal Audio. Plug-ins are all pre-mapped and easily selectable, so no MIDI mapping is necessary. Other features include control over input gain, volume, pan, and solo/mute switches for each channel, plus the ability to group multiple channels for making level changes or EQ tweaks to multiple tracks.

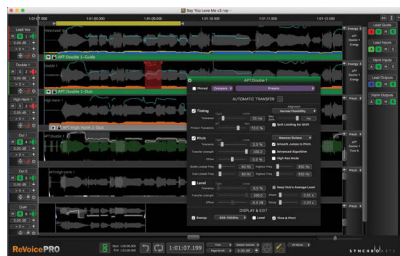


## NEVE DAWSYNC PLUG-IN

### Machine Control and Sync for Pro Tools

Specifically for use with the Neve DFC3D digital film console, the DAWSYNC plug-in (free) provides an elegant, simple solution for Machine Control integration with Pro Tools. The plug-in provides instant lock from the Pro Tools timeline to the DFC3D automation so that audio, video, and console automation instantly roll together without any delay, and without complicated sync setups. Features include a virtual 9-pin interface for transport commands, track arming, and PEC/Direct switching, plus a direct connection to the DFC3D via Ethernet.

## REVOICE 3.3 SOFTWARE UPDATE

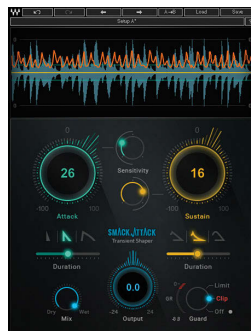


### GUI and Operational Improvements

Revoice Pro 3.3 (free update) brings major upgrades to level and pitch editing, along with a processing intensity display showing

the amount of editing the APT and Warp processes apply to the signal, selection-based processing in Logic Pro 10.3, high-speed, automated workflow for Studio One 3.3.4, and further improvements in workflow and audio processing quality.

# New Sound Reinforcement Products



## WAVES SMACK ATTACK PLUG-IN

### Bargain Transient Shaper With Extras

Smack Attack from Waves (\$49) promises to control the exact level, shape and duration of transients, with pinpoint control over the transients' shape and duration, including sensitivity control for selective transient shaping—you can process all your transients, only the loudest ones or anything in between. Features include a user-friendly GUI with real-time graphic waves display, limiter/clipper and a Wet/Dry mix control for parallel processing.



## RCF M18 TABLET MIXER

### Small Footprint, Big Features

The RCF M18 (\$699) is a fader-free, portable, self-contained mixer with an onboard WiFi access-point with integrated internal antenna allowing all functions to be controlled wirelessly.

Features include 18 input channels (two Lo-Z), eight outputs, internal power supply, plus 18 simultaneous studio-grade effects, including two amp simulation blocks, two distortion pedals, three vintage delays, three chorus/flanger modulations and more. Other features include footswitch, MIDI and USB connections, headphone output, stereo file player and recorder, and a universal power supply.



## DIGICO JOHN STADIUS' MIC PREAMP

### High-End Gainer for SD Consoles

The DiGiCo John Stadius Microphone preamp is a 32-bit SD Mic Pre-Amp Card for DiGiCo consoles (\$TBA.) Features include: a fully differential audio path from input to converter, twin 32-bit ADC conversion per channel, 730s conversion time, a dynamic range of 123 dBA, 20-22kHz <0.002% THD+N, and only one phantom power-blocking capacitor in the audio path.



## QSC K2 POWERED LOUDSPEAKERS

### Nextgen System Offers Presets, Scene Recall

The K.2 Series from QSC comprises the 8-inch K8.2 (\$649.99), 10-inch K10.2 (\$699.99) and 12-inch K12.2

(\$799.99) full-range loudspeakers, each equipped with a 2,000-watt power module matched to high-performance woofers and compression drivers. Other features include a library of preset contours for common applications, plus storable Scenes to recall user-configurable settings such as input type, delay, EQ, cross-over, and selected contour via the loudspeakers' LCD screen and control panel. All three models can be operated as either main P.A. or as a floor monitor or flown, wall- or truss-mounted, or placed on a speaker pole, either straight-firing or with 7.5-degree down-tilt utilizing the new dual pole cup. Coming late summer is the KS212C cardioid subwoofer (\$1,399.99).



# Tech // reviews

## EVENTIDE FISSION PLUG-IN

Processor Splits, Processes, Then Recombines Audio



The Fission plug-in separates audio into Transient and Tonal components for separate processing.

**F**ission is Eventide Audio's first plug-in to feature the company's patent-pending Structural Effects methodology for splitting audio, disassembling it into two fundamental components called Transient and Tonal. Able to be recombined completely in any balance, the Transient and Tonal components are available for individual processing using Fission's Transient Effects and Tonal Effects. The plug-in supports mono/stereo VST, AU, AAX, Mac OS 10.7+ and Windows 7/8.

The Structural Split Section resides in the center of the plug-in's GUI with the Transient Effects and Tonal Effects processor sections, respectively, above and below it.

The Structural Split core engine of Fission uses a frequency and time domain "sieve" to filter sound not by frequency but by its intrinsic waveform shape. Sustaining audio that seems stable and predictable, and whose waveforms have rounded and smooth curves, are characterized as Tonal. Audio that is unpredictable—i.e., fast dynamic peaks and jagged rise times—is characterized as Transient.

The process of tonal/transient separation begins by selecting

any of 13 different coarse algorithmic tunings called Source Types. The incoming audio is then chopped into approximately 40ms frames and analyzed, frame-by-frame, to determine what portions of the audio stream are tonal, leaving the rest as transient. The 13 Source Types are: Kick, Snare, Tom, Cymbal, Full Drum Set, Electronic Beat, Hand Drum, Percussion Set, Bass, Piano/Synth, Guitar, Vocal and General (default position).

Structural Split has two separate color-coded real-time waveform displays parading left to right that depict audio signals post-Structural Split but before the effects sections. The transient component is blue with the tonal content shown in gray, and the tonal component is shown in green, each of which is overlaid on top of the un-split original signal in gray.

I found that setting up the Structural Split first for a particular source was the best way to begin using Fission. With the Transient and Tonal effects sections switched off and their (always on) Output makeup gain controls set at unity, the Structural Split section's action

can be heard, adjusted and used on its own if desired.

Splitting artifacts might include low-level flanging/phasing "burbles" mostly noticeable on fading sustains—room ambience, reverb or ring-outs of the separated Transient audio. But I would add that as soon as you recombine nearly any amount of the Tonal back into the mix, these artifacts are not heard. Selecting a different Source Type, adjusting the Focus fader and/or the Smoothing and Trans Decay controls will minimize these artifacts.

The Focus fader crossfades the output of the Structural

### TRY THIS

Fission also works as a pair of parallel processors. With the Structural Split section turned off, the Focus fader now becomes a Send fader to route audio into both the Transient and Tonal Effects at the same time. For a tympani roll that I wanted to sound otherworldly, I set the Transient Effects to Phaser and used envelope modulation triggered from tympani's input. I blended a little of the Chorus effect from Tonal to make the sound more mysterious. Even though the two processors are not available separately for panning left and right, the two time-based effects I just described did add a lovely motion to the mono tympani track! Great fun!



Split section to either the Transient or Tonal effects sections of Fission. I found the optimum Focus position was near or exactly in the middle of its range for equally splitting audio, in both time and pitch, into separate Transient and Tonal components. The Smoothing control slows the fast, back-and-forth transitions in time and pitch between the Transient and Tonal audio streams. Additionally, turning up the Trans Decay control will constrain how quickly audio transitions from Transients to Tonal, but not back again like Smoothing.

The Transient Effects section has six processors selectable from a pull-down menu: Delay with Warp on/off; Tap Delays (up to 32 taps); Dynamics (compressor/limiter and expander/gate); a 32-pole Phaser with both LFO and envelope modulation; a high-density Reverb with basic controls; and Gate + EQ, a gate followed by a three-band EQ designed to be easily overloaded.

The seven Tonal Effects section are more pitch-based effects: Delay with Warp and voice chorusing modulation; Compressor/Limiter; a three-voice Pitch Shifter with a  $\pm$  one-octave range and micro pitch chorusing/doubling; a multi-voice Chorus with randomized modulation; a low-density Reverb; Tremolo with both LFO and envelope modulation; and finally, my favorite, a colorful three-band equalizer with a fully parametric midrange section.

Both the Transient and Tonal Effects sections have global controls for session tempo sync on/off, subdivision choices and modulation sources for the envelope follower and LFO. There is also an effect On/Off button (not mute), Output Gain controls with a -96 to +18dB range, Solo buttons, and Output meters that are post-effect and Gain.

To get started, Fission comes with 22 banks of presets listed by Instruments, Effects, Mixing, and Artists—well-known performance and recording artists. After I would first optimize Structural Split on the particular instrument or voice, I liked the Source Lock feature so that Structural Split setup would not change while auditioning presets.

I started with frequency shifting a rack tom track down in pitch. I've done this before with frequency shifting plug-ins and hardware, but the problem has always been that the attack—the sound at the moment the stick hits the drum—is also shifted, resulting in a flabby overall sound. I pulled down the Snare Source Type, used the gate section of the Gate + EQ processor in Transient Effects and the Pitch processor in Tonal. With Focus toward Tonal, the drum's attack transient hard-gated (in Transient) and the tom pitched down a 4th (in Tonal), I got a deep, more natural tom sound.

I especially liked Fission's bowed instrument presets that will change a (normally) picked, struck or plucked instrument into a whole new expressive voice for my mixes. I've developed presets for piano, acoustic guitar and electric guitar. On a bright acoustic guitar track, while soloing the Tonal side and moving the Focus fader toward Transient, I could hear more and

## PRODUCT SUMMARY

**COMPANY:** Eventide Audio

**WEB:** [eventideaudio.com/fission](http://eventideaudio.com/fission)

**PRODUCT:** Fission Structural Effects Plug-In

**PRICE:** \$179 MSRP

**PROS:** A whole new palette of processing power from subtle to extreme.

**CONS:** Occasional splitting artifacts in this 1.0 version.

more of the transient component removed from the Tonal Effects processor.

The Transient and Tonal section's solo buttons are X-OR, non-latching—so it's easy to audition back and forth between the two processors. (FYI: the solo button's state and more than 100 of Fission's parameters are automatable and saved with a preset.)

I used the Tonal compressor heavily with a medium release time, super-fast attack and Smoothing at 0. With the Focus fader just above the center position toward Transient, I fine-tuned Trans Decay so that a fingerpicked acoustic guitar part sounded completely reversed—but this is just one of many variations possible. Electric guitars (depending on the part and original recording) can be made to sound like a pedal steel with perfect volume pedal swells.

As I have been experimenting with Fission, I've come to realize that this is an incredibly well-thought-out processing system! Part sound design and part very musical audio processor, Eventide Audio's Fission offers a way to rebalance a sound source's fundamental nature and timbre with its facile manipulation of time, frequency, and amplitude. Super-exciting and awesome, and I'm highly recommending. ■

*Barry Rudolph is an L.A.-based engineer and educator. Visit him at [www.barryrudolph.com](http://www.barryrudolph.com).*



## PSP FETPRESSOR AND PSP 2445

Affordable, Great-Sounding Compressor and Reverb Plug-ins



Fig. 1. The PSP FETpressor loosely emulates classic FET compressors from the '70s and includes parallel processing, a highpass filter for its internal sidechain, stereo linking and independent channel bypass.

### PRODUCT SUMMARY

**COMPANY:** PSP

**PRODUCT:** PSP FETpressor

**WEBSITE:** [pspaudioware.com](http://pspaudioware.com)

**PRICE:** \$99

**PROS:** Sounds great. Easy to learn and use. Rock-bottom price.

**CONS:** Preset management system needs improvement

sounded: Raising the corner frequency for the sidechain's highpass filter made the kick drum louder and fuller (less squashed). A relatively fast attack and slow release tightened up the sound of rattling snare wires while preserving the stick hits, creating a compact yet crisp sound. The same at-

tack and release times made the toms sound absolutely monstrous, while controlling their peak levels.

On a rockin' double-tracked electric guitar vamp (hard-panned in stereo), I dialed in fast attack and release times and a 5:1 ratio for 15 dB of gain reduction on peaks. This put a firm lid on the track, leveling any amplitude fluctuations in the palm-muted low notes that alternated with higher-voiced chords. FETpressor also cleared out a little bit of low-mid boxiness, making the track sound a tad more present. Lowering the Blend control to around 30% restored some of the dry signal, creating the perfect mix of dynamics and density. The track sounded more powerful and aggressive. Unlinking FETpressor's channels also widened the stereo image slightly.

FETpressor also did a great job smoothing levels on a dynamic male vocal track. Dialing in moderate attack and release times, a 5:1 ratio and a 100Hz cutoff for the sidechain's highpass filter sat the track beautifully in the mix, with no audible pumping. Most impressive was how transparent the compressed track sounded with up to 8 dB of gain reduction on peaks; I heard only a subtle decrease in depth and very minor dulling of high frequencies. I also tried setting the ratio to 1:1 to hear what FETpressor's emulations of a makeup gain amplifier and output transformer brought to the table. Setting the plug-in's makeup gain control to boost output around 6 dB lent a beautifully saturated sound to the vocal track, mild enough to enhance it without sounding obviously processed. FETpressor rocks!

### PSP 2445 DIGITAL REVERBERATOR

The PSP 2445 Digital Reverberator plug-in, endorsed by EMT, was released just over a year ago. The plug-in emulates the essential characteristics of the EMT 244 and 245 digital plate reverbs, then adds advanced controls that let you change the sound. A three-way switch lets you select which reverb to use; you can also use both simultane-

**P**SP is known for producing high-quality plug-ins at affordable prices, and that's evident in two recent introductions, the PSP FETpressor compressor and PSP 2445 Digital Reverberator. Both plug-ins are available in AU, AAX, VST and RTAS formats. I reviewed the AU plug-ins in Digital Performer 9.01 and 8.06, using an 8-core Mac Pro running OS X 10.9.5.

### PSP FETPRESSOR

The PSP FETpressor is a feedback-type compressor plug-in, in the vein of 1970s FET compressors, with all the basic controls you'd expect, including knobs for adjusting attack and release times, ratio (from 1:1 to 16:1), threshold and makeup gain. There's also a high-pass filter in its internal side chain—its corner frequency adjustable from 10 to 1,000 Hz—that can prevent bass frequencies from making the compressor pump and thin the sound (Figure 1). A Blend control adjusts the wet/dry balance to produce parallel-compression effects. Toggle the Blend control's effect on and off by clicking on its title—an excellent way to instantly A/B its effect with 100% wet signal.

When processing stereo signals, FETpressor can link the two channels so they are compressed equally. You can also bypass compression on one channel, which is useful when the sides of a stereo signal must be compressed with different setups: Instantiate two instances of FETpressor in series, and use one instance to compress the left channel and the other to compress the right. The plug-in's virtual VU meter shows the amount of gain reduction to guide your hand.

Note that FETpressor emulates the sound of an unspecified makeup amplifier and output transformer. To color a track with that sound without compression, set FETpressor's Ratio control to 1:1.

I got great results using FETpressor on a spaced pair of room mics for drums. I could jack up the room's ambience to explosive effect while simultaneously controlling how tight and loud the traps





Fig. 2. The PSP 2445 plug-in lets you combine the sound of two reverbs, inspired by the EMT 244 and 245 plate reverbs. Advanced controls are accessed by opening the black panel at the bottom of the GUI.

ously, in which case their engines are blended at the plug-in's output.

After setting the input level, you can use the Delay control to adjust pre-delay from 0 to 84 ms. Rotating the Reflections control clockwise increases the early reflections mixed into the audio path before the reverb tail. The big red Time knob adjusts the reverb's decay time from 0.2 to 5 seconds.

Activating the Low-Frequency Time switch increases the decay time for reverberated bass frequencies by an arbitrary amount, whereas activating the High-Frequency Time switch decreases (damps) the decay time for high frequencies in the reverb tail (also by an arbitrary amount). The Gain control adjusts the output level of the single or dual reverb. The Mix control adjusts the wet/dry balance.

Clicking on the Open label reveals more controls (changing the label's title to "Close"; see Figure 2). They include switches that swap the routing of one or both reverb's left and right channels to the plug-in's output. Turn the Mod (modulation-multiplier) knob clockwise to make the reverb tail sound smoother and more chorus-y, or counterclockwise for a more resonant and grainy sound. The HPF knob adjusts the corner frequency for a highpass filter placed at the reverbs' inputs.

Two other knobs, Low and High, increase the reverb times for low and high frequencies in continuously variable fashion as you turn them clockwise; their parameter values are affected by the settings for the Low-Frequency Time and High-Frequency Time switches in the GUI's main view. The Width control adjusts the stereo width of the reverb(s), and the Balance control sets the relative balance of their left and right channels.

In my tests, the 245 plate's algorithm sounded a little darker than the 244's. Both had a smooth tail. Using both at once produced a broadly useful reverb that sounded more complex and had more movement. Using both reverbs at once with the Width control set fully counterclockwise produced a high-quality mono reverb.

I tended to keep the Mod knob at the noon position when processing pitched instruments and vocals, and between 9 and 10 o'clock with drums. (The 2445 sounded great on snare!) Set fully counterclockwise—using long decay times—the Mod knob produced faintly audible, metallic-sounding resonance in high frequencies on electric guitar tracks. With Mod set fully clockwise, I could hear subtle pitch modulation that was unnatural. Neither extreme was my cup of tea for most applications, but I was happy that PSP gave the Mod control so much latitude. One day, I might want to max out that knob in either direction for special effect.

The PSP 2445's reverb-time controls have enough range to adapt gracefully to a variety of sources. Crank-

## PRODUCT SUMMARY

**COMPANY:** PSP

**PRODUCT:** PSP 2445

**WEBSITE:** [pspaudioware.com](http://pspaudioware.com)

**PRICE:** \$149

**PROS:** Sounds great. Easy to learn and use. Affordable price.

**CONS:** Preset management system needs improvement.

ing the Low control fully clockwise produced a beautifully balanced reverb on midrange-y instruments, such as electric guitar, smoothing glare to the effect that would have otherwise been caused by the source. I often lowered the High control on soprano female vocals for the same reason.

I could produce an excellent ADT (automatic double tracking) effect—followed immediately by a subtle shadow of 'verb—by boosting the Delay and Reflections controls and setting the Time knob to 0.2 seconds. By adjusting the HPF control, I could change the timbre of the doubling.

The preset-management system for both the PSP FETpressor and PSP 2445 needs improvement: If I edited a factory preset but chose not to save my changes and I then recalled another preset, my edits to the first preset were saved regardless (overwriting the factory preset). And when I loaded a PSP-formatted custom preset via the Finder directory, the name of the factory preset that was last recalled continued to be displayed. PSP is working on fixes. Though initially confusing and a bit frustrating, these issues shouldn't stop you from buying both of these great-sounding plug-ins. ■

*Michael Cooper is a recording, mix, mastering and post-production engineer and a contributing editor for Mix magazine.*



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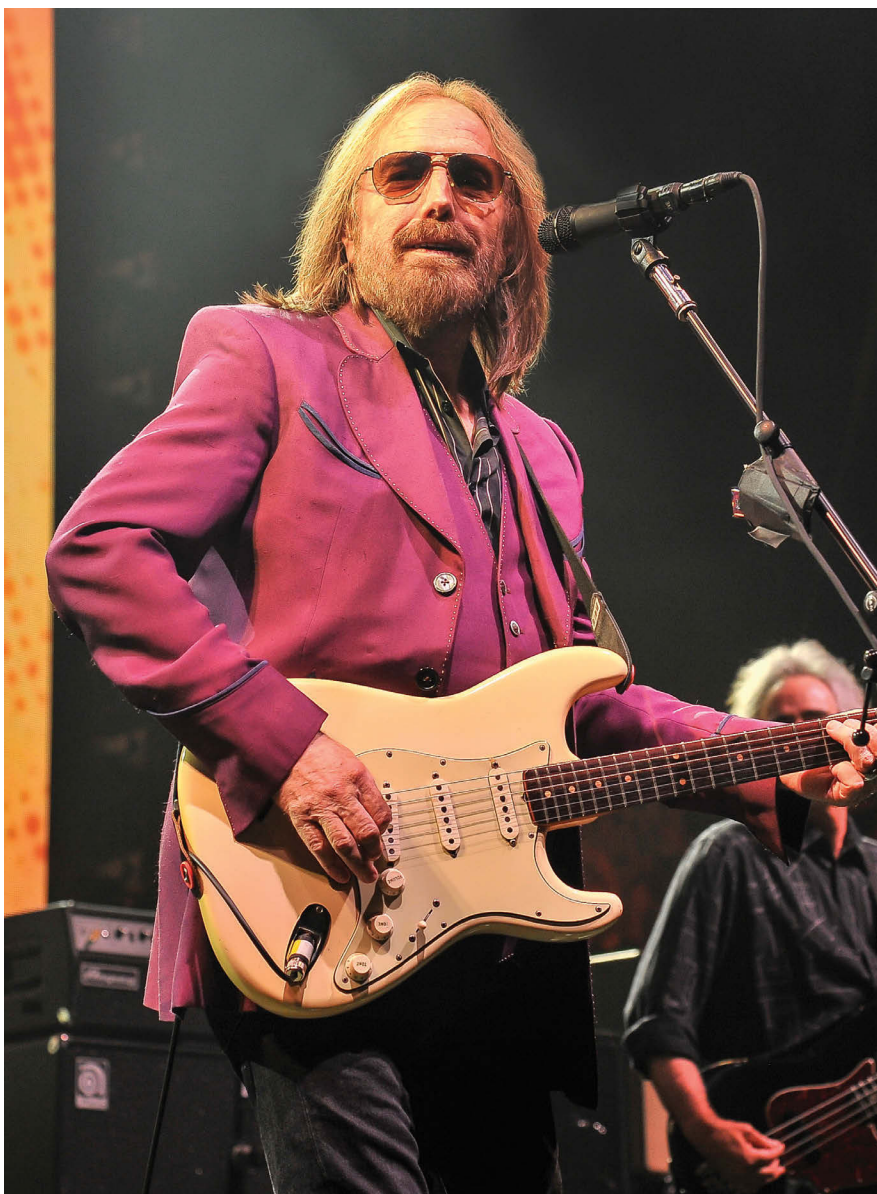
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Besides, Scovill says, this FOH mix is all about intelligibility and clarity, making sure Petty's vocal cuts through and that all the other instrumentation sounds musical and has an energy that matches the moment. Petty, who currently sings into a Telefunken M80, is a relatively quiet singer, Scovill explains, which presents EQ and gain-before-feedback challenges. And The Heartbreakers are all about dynamics, he adds, which keeps him on his toes.

"In the course of ten minutes in the show, they can go from an acoustic kind of just tearing-your-heartstrings-out thing, which is very quiet and intimate, to Led Zeppelin on 11," he says. "You've got to be prepared to handle that, and that really speaks to how I address some of the console architecture, in terms of how I emphasize some of their dynamics at times and de-emphasize their dynamics other times.

"But I can tell you, it is not a matter of just slapping on compressors and everything; that is not the answer," he says. "The answer is in intense

attention to detail and making fader moves, many times on the master fader, to make the dynamics of a given song work. There are times when we are just balls to the wall; there are times when we are intimate and spatial; there are times when we are midtempo, where everything has to be heard in place. You get the whole gamut in two hours in a Tom Petty show, for sure. Mixing is a verb!"

### MONITORING THE STAGE

Greg Looper has been touring with Petty since 2005, starting out as Scovill's system tech and progressing to monitor engineer in 2009. He also has maintained a side gig as Petty's studio engineer since 2009, recording the band live at their storage and rehearsal space, The Clubhouse.

On this tour, Looper mixes on an Avid S6L, and each bandmember has his own wedge mix, with Petty, Scott Thurston and Benmont Tench adding a single in-ear monitor in the ear opposite their wedge.

"They like the feeling of the isolation of the vocal in the in-ear, but the openness of hearing the rest of the stage," explains Looper. "Scott and Benmont, it's pretty much just vocals in their in-ear. There are a few instruments in Scott's in-ears—guitar, a little bit of bass and drums, but not much. Most of it's done with the wedge. The only things in Tom's wedge are his vocal and his acoustic guitars; everything else is in his earpiece."

Processing is minimal, Looper says, mainly some slight reverb treatment here and there and a 150-millisecond slapback on Petty. His main concern is latency: "As soon as they play a note, that note has to be right there; so it's just trying to keep my signal path as short as possible," he explains. "All of my processing has to be DSP console-based."

Looper says he doesn't worry about managing dynamics because the guys onstage essentially mix themselves, in relation to each other. "It's jaw-droppingly amazing how good these guys are," he con-

cludes. "Most of the time, it's just getting out of the way and giving them the things that they need."

### THE WONDER OF IT ALL

Reflecting on his long tenure on the road with Petty, Scovill says it can be difficult to contrast "then and now" ways of working, simply because the entire touring infrastructure is so much more mature than it was decades ago. "In the earliest days of this, it was totally flying by the seat of your pants," says Scovill. "But at the end of the day, you still have to point the speakers at the people and you still have to make it sound good," he says. "There's better catering now, I'll give you that."

Scovill remembers stepping back from that first Petty encounter, all those years ago, and thinking to himself, "This might be the greatest band in America right now." "I still feel like that today," he says, adding a slight twist: "This is America's greatest rock band, you know?" ■



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## Credit Where Credit Is Due: RIN Is Coming



By Kevin Becka

**O**rrin Keepnews, Gábor Szabó, Jim Gilstrap, Bruce Botnick, Don Sebesky, Larry Carlton, Deodato, Rudy Van Gelder... Recognize any of these names? I do, and I learned to cherish their work from one resource: album covers. The simplest came as a single cardboard sleeve that held the record, credits on the back and art on the front, some iconic. Santana's *Abraxis*, Big Brother and the Holding Company's *Cheap Thrills*, even the Beatles' *White Album*, which was edgy for the time and inadvertently predicted the future when music would bail on visual art. Inside was the paper album sleeve, some with more credits. Other records came with posters and stapled booklets packed with credits that I'd pore over. These names, thousands of them, drove my passion and influenced me in countless ways. That's all gone now, you say? Yes, for the most part. But RIN is ready to bring credits back into our world.

RIN is the acronym for Recording Information Notification, a standard created by DDEX for documenting recording session and music project info as metadata for use along the audio production supply chain. The drive to collect metadata is nothing new. *Mix* and I have been following the evolution of the metadata push for more than 10 years. I wrote about it back in 2014 when I asked, "Who pays for it? How do we manage it? Who collects it? Why should I care?" The questions are still valid, but there have been some recent breakthroughs that are bringing it closer to reality.

Why should I care? It comes down to money and discovery. Solid metadata drives better search engine performance and cross-referencing, enabling consumers to find and be exposed to your work. What's so exciting now is that the RIN standard can make this happen across a vast industry offering competing platforms. RIN offers 400-plus scalable fields of project information, including song title, plug-ins and audio gear, samples used, instruments played, studio credits, producer/engineer/songwriter credits, publishers, record companies, management—literally, you name it.

What's promising is trackable attribution of your work as a contributor, giving you proof of participation and access to back-end payment. There's also documentation of technical information such as original file format, recording, overdub, mix and mastering format (analog, sample/bit-rate), DAWs used and mix/remix iterations for all posterity. And then there's historical documentation of a project's timeline, including session dates, country, name and location of studios and production spaces, plus other details of the demo, tracking, overdub, mix, remix, and mastering sessions. I could go on.

Who collects and manages metadata? In short, you and I. For this to work and to reap the benefits, we all have to take an interest in the metadata game. How we collect data is where it's getting interesting. There's Jammber, a website for collecting credits, managing royalty splits, tracking songs, and streamlining the paperwork process. Jammber has offices in Chicago and Nashville, and is aimed at the artist, creator and manager. It sounds great and looks comprehensive, but it is overwhelming for the average working Joe (or Josephine)—the top-of-the-line experience is \$250 per month, and there's no RIN to be found.

Next is VeVaSound's StudioCollect, formerly BMS Chace, which along with the Grammy P&E Wing is a longtime proponent of pushing the metadata standard forward. VeVa is the gold standard for archiving recording data, down to the multitrack level, with offices in Nashville, New York, London and L.A. Its client list contains the top names in the industry. RIN is part of what they do, and it is the future, or so thinks The Library of Congress, UMG, and a boat-load of labels and artists.

Another player is Auddly, a service out of Sweden that lists Max Martin, Björn Ulvaeus (ABBA), and Ash Pournouri as investors. Auddly offers safe song data and file collection, a project communication portal, digital handling of splits and split negotiations, and app-driven access to your stuff. The interface is simple, allowing the creator to store the final mix, bandmembers, lyrics, memos and writer splits. Oddly, or Auddly, it has an "Ideas" section listed as "a great place to store and organize all of your thoughts and ideas." I could find no mention of RIN or the price.

Another company, PromusicdB is a service that for \$97 a year (too much) offers a profile page, 5 GB of secure storage space (not enough), the ability to pull in information from existing open music data sources and correct wrong information (interesting) and more.

The most exciting development bows this month: It's the RIN-M plug-in from Memphis software company Soundways. It is a free, DAW-agnostic plug-in for collecting RIN. It offers a way to marry metadata with each DAW session (brilliant). You can create profiles as you go, then update a project while you work, adding musicians, gear, writer credits, etc. It takes the sting out of having to leave the workspace to go online to update, add fields, and then take the data and move it with the project files as they evolve. RIN-M takes care of that with a handy export button. This compiles the data into a DDEX standard XML Schema Definition File that is sent to the mastering engineer, streaming service or whoever is down range.

What should you save in your 400-plus available RIN fields? Start with the basic credits list suggested by the Grammy organization and on the [grammy.org](http://grammy.org) site. RIN is the future. Get the plug-in, get onboard! ■





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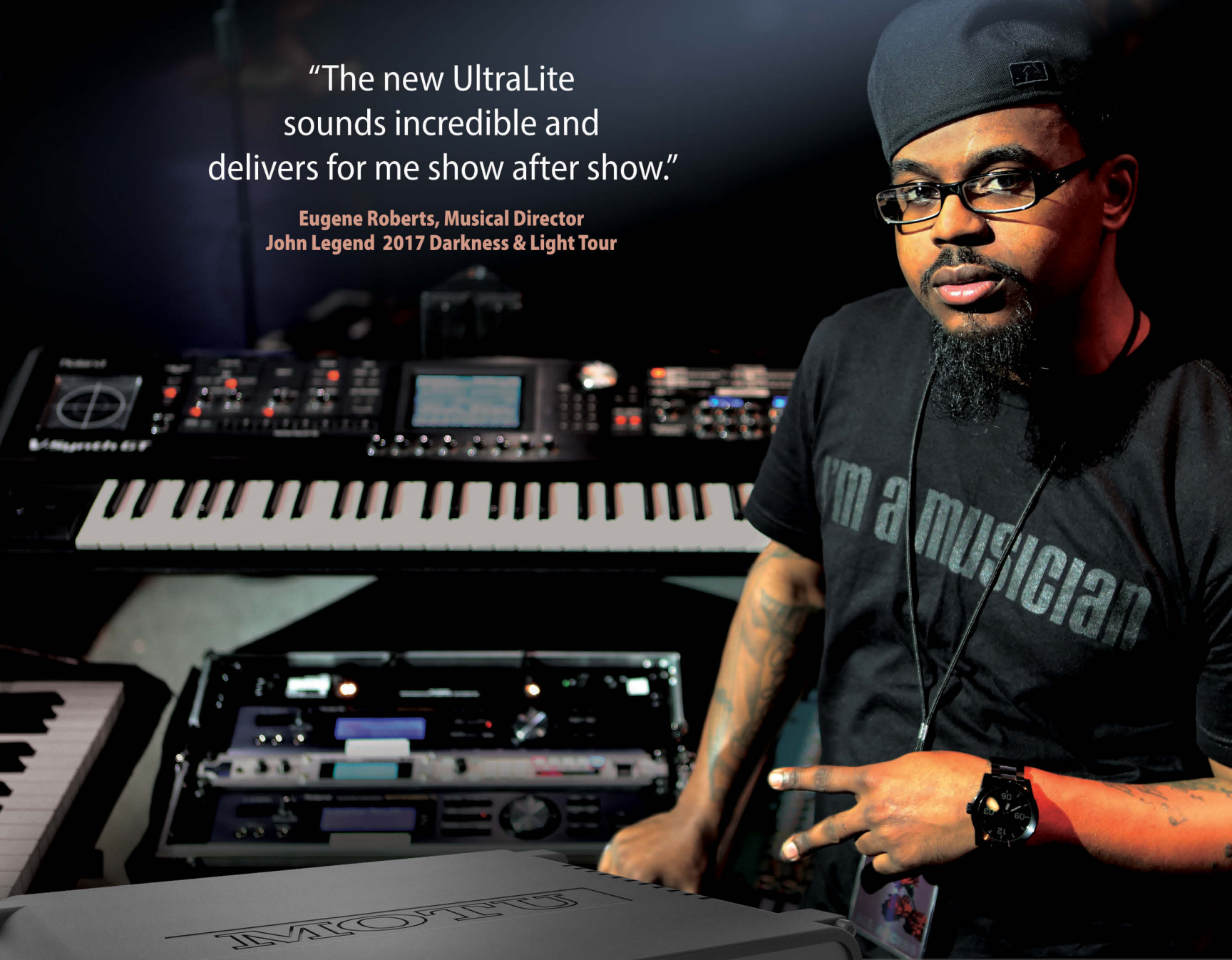
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