

# pro sound news

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March 2018



LESTER COHEN/GETTY IMAGES FOR THE RECORDING ACADEMY

**GRAMMYS AT THE GARDEN**—The telecast of The Recording Academy's 60th Annual Grammy Awards was held at Madison Square Garden on January 28, marking the first time in 15 years the ceremony was held in New York City. For the occasion, Elton John belted through an Audio-Technica AE6100 hypercardioid dynamic handheld microphone for a duet with Miley Cyrus on his hit, "Tiny Dancer."

## IEM Mixing Matures for Houses of Worship

BY STEVE HARVEY

While contemporary worship music can trace its roots back to the 1960s in the United States, it's only relatively recently that audio technology has ushered in the concept of the so-called "silent stage." Where once the congregation may have struggled to lift its collective voice

above the volume level of the praise and worship band, now, through a combination of strategies including the adoption of personal monitor systems by the musicians, a better equilibrium can be achieved.

In-ear monitor options go far beyond wired or wireless systems to include numerous interface-based, AoIP-enabled

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## A Hot Time in Havana

18

One of the oldest continuously working studios in the world, Cuba's Estudios Areito recently recorded *Orquesta Akokán* for Daptone Records. Engineer José Raul Varona Cancino talks about the facility and cutting an album in such a historic location.



## NAMM Show Opens Pro Audio Wing

BY CLIVE YOUNG

ANAHEIM, CA—For years, the NAMM Show filled every square inch of the Anaheim

Convention Center and yet needed more, so it was with great excitement that this year's edition expanded into ACC North, a newly built,

200,000-square-foot facility devoted solely to pro audio exhibitors. Among the manufacturers presenting their latest and greatest offerings, reactions to the new building were generally positive.

With two levels, both 25 feet high, it's an enticing space for presenting loudspeaker hangs and the like, but there's a caveat: The new building is separate from the rest of the convention center. To get inside ACC North, visitors have to either leave the main convention cen-

ter and then wait on security lines to get into the new facility, or go to the second floor of the convention center to take a pedestrian walkway—dubbed the Skybridge—between the two buildings.

Accordingly, there was some trepidation about whether attendees would make the effort to see the pro audio area, but concerns proved to be largely unfounded.

"We've been getting ex-

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## Tori Amos Endures on the Road

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The singer/songwriter is a longtime road warrior, perpetually on the move, playing to packed houses around the world, but there's far more to tackling audio for a one-woman show than you might expect.



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|-------------------|-----------------------|----------------------|-----------------------|---------------------|-----------------------|---------------------|
| A Thousand Horses | CBS Television        | Eric Clapton         | Jimmy Eat World       | Marianas Trench     | Queensrÿche           | Steve Vai           |
| AC/DC             | CeCe Winans           | Eric Johnson         | Joe Bonamassa         | Marillion           | Radiohead             | Steve Winwood       |
| Adele             | Celine Dion           | Erykah Badu          | Joe Chiccarelli       | Mark Egan           | Randy Bachman         | Sting               |
| Aerosmith         | Cheap Trick           | Evanescence          | Joe Jackson           | Mark Knopfler       | Randy Brecker         | Styx                |
| Al Schmitt        | Chicago               | Eighth Day Sound     | Joe Satriani          | Mark Ronson         | Randy Travis          | System of a Down    |
| Alan Parsons      | Chick Corea           | Fall Out Boy         | Joe Walsh             | Mark Tremonti       | Rascal Flatts         | Taylor Swift        |
| Alice Cooper      | Chris Cornell         | FFDP                 | Joey DeFrancesco      | Maroon 5            | Ray LaMontagne        | The Band Perry      |
| Alicia Keys       | Chuck Rainey          | Fitz & The Tantrums  | John Hiatt            | Matt and Kim        | Red Hot Chili Peppers | The Beach Boys      |
| Alison Krauss     | Cirque du Soleil      | Fleetwood Mac        | John Jorgenson        | Marty Stuart        | Rhonda Smith          | The Black Crowes    |
| Alter Bridge      | City and Colour       | Florida Georgia Line | John Legend           | Matchbox 20         | Rival Sons            | The Black Eyed Peas |
| American Idol     | Clair Brothers        | Foo Fighters         | John Mayer            | Megadeth            | Rihanna               | The Black Keys      |
| Andy Grammer      | Coldplay              | Foreigner            | John Patitucci        | Meghan Trainor      | Ringo Starr           | The Corrs           |
| Annihilator       | Cold Creek County     | Frank Filippetti     | John Petrucci         | Melissa Etheridge   | Robert Plant          | The Decembrists     |
| Antoine Dufour    | Colin James           | Franz Ferdinand      | Jordan Rudess         | MENEW               | Robert Randolph       | The Doobie Brothers |
| Arcade Fire       | Creed                 | Frightened Rabbit    | Jordan Rudess         | Metallica           | Rod Stewart           | The Eagles          |
| Avenged Sevenfold | Crosby, Stills & Nash | G.E. Smith           | Justin Bieber         | Metric              | Roger Hodgson         | The Flecktones      |
| Babyface          | Crowded House         | Garbage              | Justin Meldal-Johnsen | Michael Bublé       | Roger Waters          | The Killers         |
| Barbra Streisand  | Culture Club          | Genesis              | Josh Groban           | Miike Snow          | Royal Blood           | The Lumineers       |
| Barenaked Ladies  | Cyndi Lauper          | Godsmack             | Journey               | Miranda Lambert     | Rush                  | The National        |
| Blue Man Group    | Daniel Lanois         | Gomez                | Juanes                | MØ                  | Rusty Cooley          | The Rolling Stones  |
| Beck              | Dave Natale           | Goo Goo Dolls        | Justin Timberlake     | Monster Truck       | Sam Roberts           | The Tenors          |
| Beyoncé           | Dave Stewart          | Grand Ole Opry       | Kaiser Chiefs         | Mötley Crüe         | Santana               | The Tragically Hip  |
| Billy Idol        | Dave Matthews         | Green Day            | Kanye West            | Mumford & Sons      | Sarah McLachlan       | The Prodigy         |
| Billy Joel        | David Bottrill        | Guns N' Roses        | Katy Perry            | Muse                | Scissor Sisters       | The White Stripes   |
| Blue Rodeo        | David Gilmour         | Gregg Allman         | k d lang              | My Morning Jacket   | Seal                  | The Who             |
| Billy Sheehan     | Deadmau5              | Gwen Stefani         | Keb' Mo'              | Nathan East         | Selena Gomez          | Timbaland           |
| Biffy Clyro       | Death Cab for Cutie   | Hall & Oates         | Keith Urban           | NBC Television      | Sevendust             | Tom Waits           |
| Blake Shelton     | Def Leppard           | Herbie Hancock       | Kelly Clarkson        | NEEDTOBREATHE       | Shakira               | Tommy Emmanuel      |
| Bob Dylan         | Depeche Mode          | Hedley               | Kenny Chesney         | Neil Young          | Shania Twain          | Tony Bennett        |
| Bon Jovi          | Derek Trucks          | HAIM                 | Kenny Loggins         | Nelly Furtado       | Shawn Mendes          | Tony Levin          |
| Bonobo            | Devin Townsend        | Havok                | Kings of Leon         | Nickelback          | Sheryl Crow           | Toots & the Maytals |
| Bonnie Raitt      | Diana Krall           | Hinder               | Korn                  | Night Riots         | Shinedown             | U2                  |
| Bootsy Collins    | Dimmu Borgir          | Il Divo              | KISS                  | Nine Inch Nails     | Simple Plan           | Usher               |
| Brent Mason       | Disney                | Imagine Dragons      | KT Tunstall           | Of Montreal         | Slash                 | Van Halen           |
| Boston Pops       | Dixie Chicks          | Iron Maiden          | Lady Antebellum       | One Republic        | Slayer                | Victor Wooten       |
| Brad Paisley      | Dolly Parton          | James Taylor         | Lady Gaga             | Our Lady Peace      | Sleeping with Sirens  | Vince Gill          |
| Bruce Hornsby     | Don Ross              | Jamiroquai           | Lenny Kravitz         | Panic! at the Disco | Slipknot              | Vintage Trouble     |
| Bruce Springsteen | Dream Theater         | Janet Jackson        | Leland Sklar          | Pat Metheny         | Snow Patrol           | Volbeat             |
| Bruno Mars        | Duran Duran           | Jason Mraz           | Leo Kottke            | Paul Boothroyd      | Soundgarden           | Weezer              |
| Bryan Adams       | Dwight Yoakam         | Jeff Beck            | Linkin Park           | Paul McCartney      | Stanley Clarke        | Will.I.Am           |
| Buddy Guy         | Earth, Wind & Fire    | Jennifer Lopez       | Lionel Richie         | Paul Simon          | Steely Dan            | Whitesnake          |
| Butch Walker      | Ed Sheeran            | Jerry Douglas        | Little Big Town       | Paul Weller         | Steve Earle           | X Ambassadors       |
| Cannibal Corpse   | Elton John            | Jason Aldean         | Luther Dickinson      | P!nk                | Steve Lukather        | You Me At Six       |
| Carrie Underwood  | Eminem                | Jason Derulo         | Macy Gray             | Portugal. The Man   | Steve Miller          | Zac Brown Band      |
| Casting Crowns    | Emmylou Harris        | Jacquire King        | Marcus Miller         | Peter Gabriel       | Steve Morse           | Zakk Wylde          |
| CBC Television    | Enrique Iglesias      | Jimmy Buffett        | Mariah Carey          | Pink Floyd          | Steve Stevens         | Zella Day           |

\* The above is a partial list of artists and sound companies that currently use or have used Radial products. No endorsement is offered or implied by being listed here. Sorry if we've missed you - let us know and we'll include you next time!



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# Behind the Scenes of the Grammys' Sound

BY ANTHONY SAVONA

NEW YORK, NY—During sporting events, the prestigious Madison Club at Madison Square Garden gives season ticket holders all the amenities of a luxury box experience, but for the 60th Annual Grammy Awards, held

in New York City for the first time in 15 years, the Madison Club was turned into Sound Central, holding monitor mixers, Avid Pro Tools rigs, cabling and all communications hardware for the mega-event.

“Instead of trying to smash the volume of gear that we have [in the Madison Club] backstage—with all the risers moving around and trying to stick us underneath something—we took over the entire club, which is about 120 feet wide by 20 feet deep,” states Firehouse Productions project manager/sound system designer Mark Dittmar (Red Hook, NY).

For the Grammys, the Madison Club’s two coat check rooms, at opposite ends of the club, each housed an Avid Pro Tools rig, with the one

on the left handling sound for stage left and the one on the right handling stage right. Next to the left Pro Tools rig were all the hardwired communications for the show, followed next by the wireless communications; able to accommodate up to 1,024 channels, the team (thankfully) used about 60 channels going to 300 destinations.

And in a space as dense as the Garden in NYC, there was more to worry about than sharing frequencies. Dittmar explains, “The problem the wireless communications team had to deal with from the start is, when you turn on two frequencies, harmonics are made into modulation distortion, which creates other problems. So for every channel,

we have to calculate out the third harmonic to keep some space between frequencies—100 transmitters could have 800 harmonics!”

Next to Communications was Split World, where all audio came in and went out, with feeds coming in/going out for front of house, music trucks and the broadcast trucks. “It all comes in here via fiber,” says Dittmar. “It all gets split up via analog and it all gets shipped out via fiber. That gives us a heck of a lot of redundancy, so the single points of failure don’t take you down.”

Across the way sat a rack of preamps for the music, and the person responsible for running them, engineer [and longtime PSN reviewer]

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## briefs

### Clear-Com Nets NAMM Award

ANAHEIM, CA—Clear-Com (clearcom.com) was honored at the 2018 NAMM Show with the NAMM Milestone Award for 50 years of service in the music products industry. Presented annually by NAMM president/CEO Joe Lamond, the Milestone Award recognizes music businesses that have flourished through changing business environments to reach a noteworthy anniversary. Noted Lamond, “Clear-Com has demonstrated the perseverance and passion to stand the test of time, inspire countless others and create a more musical world for the benefit of all.”

### PAD Launches Education Division

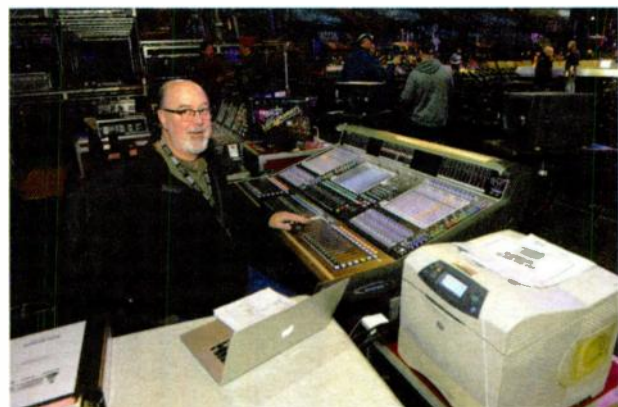
HANOVER, MA—Retailer/design firm Pro Audio Design (proaudiodesign.com) has launched a new education division that will assist schools in developing music technology concentrations. The division is led by John Krivit, pro audio educator and past president of the AES. President Dave Malekpour noted, “We will offer strategic guidance on curriculums and instruction, accreditation and state licensure, faculty hiring and professional development, admissions and marketing, federal gainful employment requirements growth strategies and plans for facilities and technology that align with institutional success.”

### METAlliance Set for Capitol Studios Event

HOLLYWOOD, CA—The METAlliance (metalliance.com) will take over Capitol Studios on March 10-11 for its “In Session with The Guys” education program. Attendees will participate and interact with the METAlliance founders in live recording and mixing sessions with the likes of Chuck Ainlay, Ed Cherney, Frank Filipetti, George Massenburg, Elliot Scheiner and Al Schmitt.



Russ Long sets the preamp levels for the more than 200 inputs coming in off the stage.



Ron Reaves in a familiar position: mixing FOH for an arena filled with Grammy Awards attendees. The FOH systems featured a Yamaha Rivage PM10 production console and a DiGiCo SD7 music mixer.

PHOTOS: KEVIN WINTER/GETTY IMAGES



## Inaugural AES@NAMM A Success

BY STEVE HARVEY

ANAHEIM, CA—The Audio Engineering Society brought its 70 years of experience in professional audio education to bear on this year’s NAMM Show for the first time. The inaugural AES@NAMM Pro Sound Symposium was held concurrently with the 2018 NAMM Show January 25-28 in Anaheim, CA, and was presented in an area of the Anaheim Hilton Hotel designated the NAMM U Education Center.

According to AES president David Scheirman, “With the professional audio industry growing and changing rapidly, we believe it makes sense for our society’s in-person gatherings to evolve as well. Considering the rapid advances that are taking place in the technologies and tools we use as audio professionals, there is nothing like direct, in-person exposure to the latest advances in audio equipment and workflow processes.”

The education and training pro-

gram, encompassing nearly 300 sessions on topics including audio science and technology, entertainment wireless technology and sound system measurement and optimization, was targeted to working professionals in the live sound, recording and performance audio communities. The sessions were held in 20 rooms on the Hilton’s fourth floor and outside on the hotel’s roof deck level.

The program additionally included education/training courses for which attendees received a Certificate of Attendance to confirm their participation. Nearly 20 manufacturers participated in the AES@NAMM Academy program.

The post-show tally of attendees indicated that the AES@NAMM symposium was a success, with business manager Richard Wollrich reporting that approximately 3,000 individuals participated. Pre-planning is reportedly already underway for a Board of Governors review and approval for next year’s event, to be held concurrently with the 2019



The Live Mixing Console Academy included instructors and digital mixers from three different suppliers: QSC, Yamaha and, pictured here, Allen & Heath, which hosted a dLive training session.

NAMM Show in Anaheim.

Of course, no AES gathering would be complete without the traditional presentation of peer-reviewed papers. AES@NAMM’s Audio Science & Technology Sessions additionally included daily presentations in Spanish by Juan de Dios Martin on “Mixing in the Box,” and in Man-

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**Studio Showcase: Virtue and Vice . . . 20**  
 Who among us has not suffered from gear lust and the certainty that acquiring that one piece of equipment will, well, solve everything? For Anthony “Rocky” Gallo, owner of Virtue and Vice Studios in Brooklyn, that one item was a vintage Neve 8026 mixing console—his last big upgrade ever, he insists.

## SOUNDPOST/BROADCAST

**SYN Goes International . . . . . 25**  
 Duran Duran’s Simon LeBon has produced lots of music, but you wouldn’t normally connect him to production music—yet he co-founded global production music house SYN in 1991, and the company’s impact today is bigger than ever.

**Building La-Rocc-A-Fella Center. . . . . 25**  
 Scoring mixer, engineer and producer Jason LaRocca has recently been working on *A Series of Unfortunate Events* for Netflix, but it was a series of fortunate events that led to the relocation of his personal recording and surround mixing facility, La-Rocc-A-Fella Center.

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## SPECIAL REPORT

**Special Report: HOW Sound . . . . . 1, 42, 43**  
 Houses of Worship may share timeless insights, but their audio systems are increasingly expected to be modern by congregations used to hearing quality audio everywhere else in their lives. With that in mind, we look at choir miking and how different HOWs are approaching consoles, PA systems, acoustic treatments, IEM mixing and more.

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VERIFIED

# Pro Audio Is on the Rise Worldwide

The annual NAMM Show always provides a chance to take the temperature of the pro audio marketplace and get a glimpse of the year to come. The 2018 edition was exciting, to be honest—and that's a welcome change from just a few years ago, when the Great Recession was officially "over," according to statistics, but not even vaguely over according to reality.

The recession slammed every part of the pro audio world, and trade shows were no exception. As events meant to generate excitement about gear and the industry, they were subdued, sometimes even morose affairs where seemingly everyone we interviewed sooner or later said a variation on "I think this is the show where it turns around," though many clearly didn't believe it. As recently as five years ago, manufacturers would quietly explain over a cup of coffee that the reason they had no new products at the show was because, while the next-generation XYZ was ready to go, they were holding off on releasing it until the economy improved. There was no point in releasing equipment that an understandably cautious marketplace didn't have the nerve to invest in yet.

Thankfully, times have changed—in fact, the industry is investing so heavily these days that, as one example, a new report suggests the global sound reinforcement market will exceed \$9 billion by 2023. According to Dublin-based Research

and Markets' "Sound Reinforcement Market—Global Outlook and Forecast 2018-2023," increased spending on consumer goods, restaurants and concerts is boosting the entertainment industry, and that in turn will drive demand for new sound equipment in the global market, fostering replacement of installed gear in government offices, courtrooms, campuses, nightclubs and elsewhere.

Of that \$9 billion, digital equipment is expected to account for more than 58 percent of the total market share and to generate revenue of about \$5,856 million during the forecast period. Likewise, the report predicts that the microphone marketplace will build to a value of \$3,043.2 million by 2023. Geographically, the region spending the most money over the next five years is expected to be APAC countries like India, China and Latin America, generating revenues of more than \$2,979 million.

If the report is truly indicative of the marketplace, that may be part of why this year's NAMM Show was hopping. Pro audio exhibitors were thrilled to move into the new, separate ACC North building, dedicated solely to pro audio. (This is a complete 180° from the 1990s, when pro audio was cordoned off in the dismal arena and desperately wanted to be located on the show floor proper with the rest of the convention.)

Giving pro audio its own building created a space to facilitate the kind of expansion that the Research

and Markets report is predicting. NAMM execs say the addition of ACC North helped raise the number of pro audio and event technology companies present, contributing to a 9 percent overall growth of exhibitors at the show. In total, there were 7,000 brands and nearly 2,000 exhibitors at NAMM, and they were visited by 115,085 attendees. In keeping with the international push predicted by the Research and Markets report, NAMM's international attendance increased by 8 percent this year, with representation from more than 100 countries totaling 19,356 registrants, so it's fair to guess that a good portion of them were from the APAC countries expected to power the SR marketplace in the coming years.

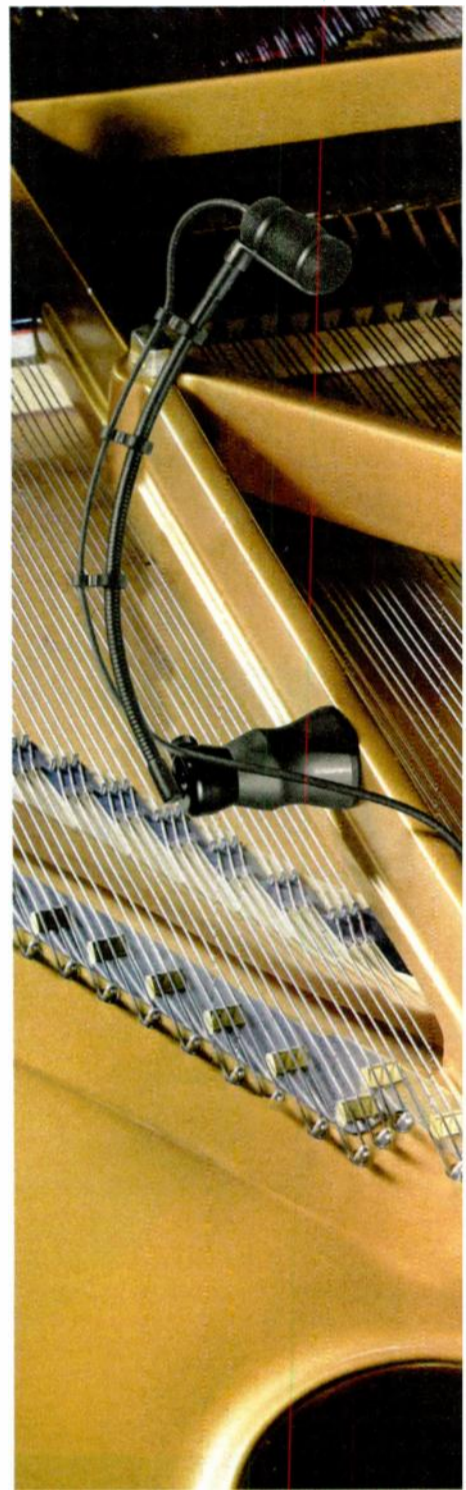
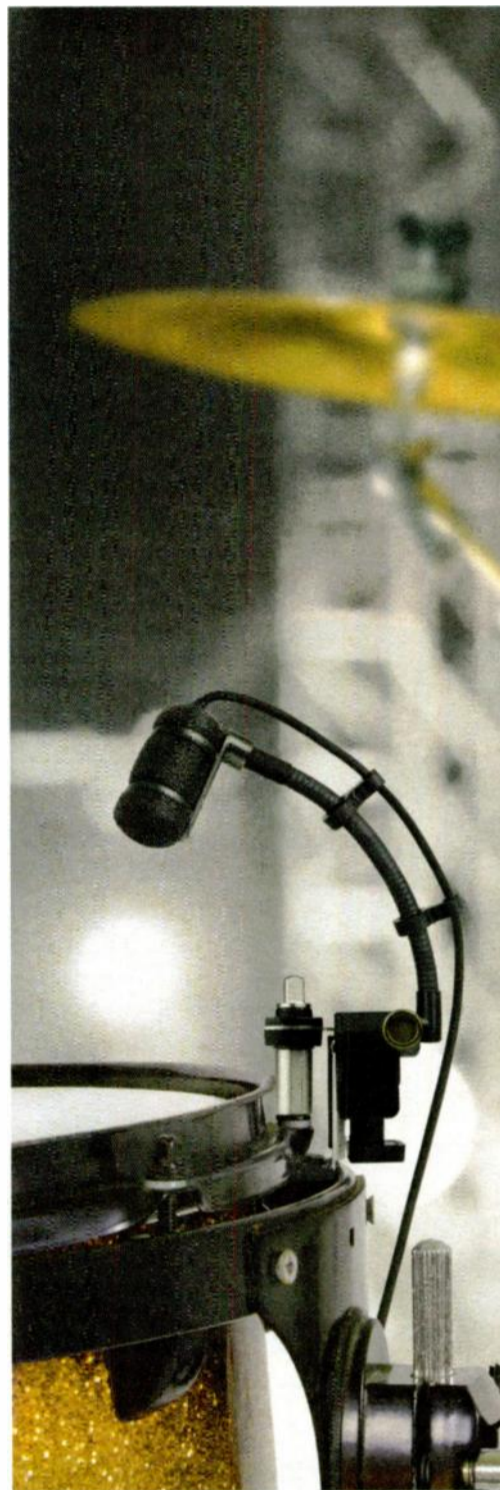
No predictive market report is ever 100 percent correct, and as 2008 taught us, the pro audio world can be buffeted by economic forces no one would ever see coming. What's demonstrated by this year's NAMM Show—and indeed, last year's AES and InfoComm trade shows, too—is that the pro audio industry is once again confident and moving forward. Products are introduced with fanfare and there's no glum coffee-cup asides—in part because there's no time to get a cup of coffee. Will all those rosy predictions come true? There's no way to know, but the pieces of the puzzle—the gear, the marketplace enthusiasm, and now, with the addition of ACC North, a deal-inspiring location—are in place.

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# Radial Acquired by Ultimate Support

BY DANIEL GUMBLE

ANAHEIM, CA—Radial Engineering founder Peter Janis has left the company, following its acquisition by Mike Belitz, president and CEO of Ultimate Support Systems, two days prior to the start of NAMM 2018.

Established in 1991, Radial Engineering was originally developed as a range of cable products by founder, president and CEO Janis. The release of its first direct box in 1996, the Radial JDI, was the first in a long line of releases that saw Radial become a leading name in direct boxes and audio solutions.



Radial Engineering announced at the NAMM Show that it had been acquired by Ultimate Support, with which it shared a booth.

Over the years, the brand and its distribution network has grown to include a diverse range of brands, in-

cluding Primacoustic, Tonebone, Reamp, Hafler, Dynaco, Iso-Max and Jensen Transformers Inc.

“I have always been passionate about premium accessories in the music industry,” said Belitz. “Instruments come in and out of fashion, but musicians and audio professionals will always need well designed, high quality solutions. Ownership of Ultimate Support Systems and Radial Engineering will offer incredible possibilities for the future.”

Janis currently has no plans to stay in the pro audio industry following his retirement.

Radial Engineering  
radialeng.com



Martin Berger, CSO of Riedel Communications; Matthias Bode, CEO of Archwave; and Thomas Riedel, founder and CEO of Riedel Communications

## Riedel Acquires Archwave and R&D Hub

WUPPERTAL, GERMANY—Riedel has acquired Swiss engineering company Archwave, creating a new research and development hub in Zurich and increasing Riedel’s global engineering team to more than 100 engineers.

Archwave is an audio networking and streaming specialist that promotes open standards for the interconnection of audio and video equipment in professional environments, according to a statement from Riedel. The acquisition will expand the company’s R&D capabilities for IP and standards such as AES67.

“At Riedel, IP standards are vital not only for our intercom portfolio but also for all of the other Riedel product lines,” said Thomas Riedel, founder and CEO of Riedel Communications. “By collaborating with Archwave, we are taking another important step toward providing complete networking solutions that allow broadcasters to work the way they want to work. With our new engineering team in Switzerland, we now have all the tools we need to create the plug-and-play workflows that our clients need for their transition to IP.”

As part of the agreement, Riedel will also acquire Cymatic Audio, an audio specialist within the music industry.

Archwave and Cymatic Audio will remain an autonomous unit within Riedel, while Riedel will adopt Archwave technology solutions for its own product portfolio. Riedel  
riedel.net

## Sound Devices Acquires UK Wireless Manufacturer Audio Ltd.

REEDSBURG, WI—Audio Ltd., a UK-based manufacturer and developer of wireless microphone systems, has been acquired by Sound Devices. Now a wholly owned subsidiary of Sound Devices, Audio Ltd. will continue to operate out of its offices in Watford, UK, with Kishore Patel and Lee Stone continuing as managing director and technical director, respectively.

Matt Anderson, CEO of Sound Devices, said, “We have long admired Audio Ltd. While working with their developers to implement SuperSlot compatibility on the A10

[digital wireless microphone system], we came away impressed with their leading-edge digital RF technology. Audio Ltd.’s long heritage of making great performing gear matches Sound Devices’ ethos.”

Audio Ltd. launched in 1963, making radio microphone systems for the film and television markets. Audio Ltd. systems have been used feature films including *2001: A Space Odyssey*, *Gladiator*, *Saving Private Ryan* and *Titanic*. Audio Ltd. wireless gear is currently being used on several dramatic TV series.

SOUND DEVICES



With the move, Sound Devices now distributes Audio Ltd.’s A10 Digital Wireless Microphone System in North America. Audio Ltd. began distributing Sound Devices products in the United Kingdom on Jan. 1, 2018. Sound Devices  
sounddevices.com

## Shure to Open Downtown Chicago Office

BY CLIVE YOUNG

CHICAGO, IL—Long based outside Chicago in Niles, IL, Shure will move its sales, marketing, customer service and market development employees into a new office in Chicago’s Loop district in the coming months.

Additionally, a Customer Experience Center will be developed at the new site to bring the company “closer to our loyal customers, especially in our ‘home market’ of Chicago,” according to Abby Kaplan, senior director of Shure’s U.S. Retail Group.

The company has taken a full 35,000-square-foot floor of The National Building at 125 South Clark St., marking Shure’s first footprint within the city. The expansion allows Shure to become more accessible to customers, while providing some breathing room within the Niles corporate headquarters, which the organization would otherwise reportedly outgrow by

year’s end. Shure plans to have upwards of 150 employees in the new office within the next few years, and anticipates the Customer Experience Center to be used as an interactive demonstration facility, making the Chicago location a key tent pole in its marketing efforts.

“Over the past several years we have increased our focus on the integrated systems market by introducing products like MXW and MXA,” said Jim Schanz, senior director, U.S. Pro/Systems Group at Shure. “A significant portion of this space will be dedicated to these new products, so that customers can experience all of their features and benefits in a ‘real world’ environment.”

Shure  
Shure.com



Shure’s new Chicago space at 125 South Clark St. will include a new Customer Experience Center.

BLUE STAR PROPERTIES

# Engineering and Production Grammy Winners Announced

BY STEVE HARVEY

NEW YORK, NY—Bruno Mars was the big winner at the 60th Annual Grammy Awards, taking home six trophies from six nominations, including the three most prestigious prizes: album of the year, record of the year and song of the year.

Mars' clean sweep meant that Kendrick Lamar was able to pick up only five awards from his seven nominations. Jay-Z, a local favorite at the show, which returned to New York City for its 60th anniversary after 14 years in Los Angeles, left empty-handed, despite having topped the nominations list this year with eight.

The engineering, mixing, remixing and mastering winners were:

**RECORD OF THE YEAR: "24K MAGIC" - BRUNO MARS**  
Shampoo Press & Curl, producers; Serban Ghenea, John Hanes & Charles Moniz, engineers/mixers; Tom Coyne, mastering engineer



Childish Gambino (L) and JD McCrary used Shure Axient Digital mics during the Grammy Awards telecast.

**ALBUM OF THE YEAR: 24K MAGIC - BRUNO MARS**

Shampoo Press & Curl, producers; Serban Ghenea, John Hanes & Charles Moniz, engineers/mixers; Christopher Brody Brown, James Fautleroy, Philip Lawrence & Bruno Mars, songwriters; Tom Coyne, mastering engineer

**BEST DANCE RECORDING: "TONITE" - LCD SOUNDSYSTEM**

James Murphy, producer; James Murphy, mixer

**BEST ENGINEERED ALBUM, NON-CLASSICAL: 24K MAGIC**

Serban Ghenea, John Hanes & Charles Moniz, engineers; Tom

Coyne, mastering engineer (Bruno Mars)

**PRODUCER OF THE YEAR, NON-CLASSICAL: GREG KURSTIN**

*Concrete and Gold* (Foo Fighters); "Dear Life" (Beck); "Dusk Till Dawn" (ZAYN Featuring Sia); "LOVE." (Kendrick Lamar Featuring Zacari); "Strangers" (Halsey Featuring Lauren Jauregui); "Wall of Glass" (Liam Gallagher)

**BEST REMIXED RECORDING: "YOU MOVE" (LATROIT REMIX)**

Dennis White, remixer (Depeche Mode)

**BEST SURROUND SOUND ALBUM: EARLY AMERICANS**

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## Sweetwater to House Purdue Music Technology Program

FORT WAYNE, IN—Sweetwater has teamed with Purdue University Fort Wayne to house most of the university's music technology program on the Sweetwater campus. As part of the endeavor, an existing 8,000-square-foot building will be converted into studios and classrooms by August, making the new facility available for the fall semester.

The facility will accommodate two proposed new majors: a B.S. in Music Industry, and a B.S. in Popular Music, which will offer concentrations in Recording or Songwriting. Designed by The Russ Berger Design Group, the new construction will include a recording studio with an adjacent teaching lab, three isolation booths, four editing suites, a student musical collaboration center, an equipment library, classrooms, conference rooms and administrative offices.

Sweetwater and its founders, Chuck and Lisa Surack, will provide \$1.6 million for the build-out of the facility, to be reimbursed by Purdue over a six-year period. Additionally, Sweetwater is gifting \$1.465 million toward the project by not charging



Collaborating on bringing Purdue's Music Technology Program to the Sweetwater campus were (l-r): Greg Jones, Purdue Chair, School of Music; Fort Wayne Mayor Tom Henry; Sweetwater founder and president Chuck Surack; Purdue Fort Wayne chancellor Ronald Elsenbaumer; and Angie Fincannon, vice chancellor for advancement.

interest or rent for the building. The State of Indiana and the English Bonner Mitchell foundation have each provided \$1 million to the Purdue music program, some of which will be used for gear and infrastructure for the Sweetwater campus project. Students and faculty will have access to corporate amenities at the Sweetwater campus as well.

School chancellor Ronald Elsenbaumer said, "This music technology facility is a major new collaboration

between Purdue Fort Wayne and the local business community. We're extremely grateful to Chuck Surack and Lisa for working with us in what I hope will be the first of many partnerships over the coming years."

Sweetwater founder and president Chuck Surack remarked, "Sweetwater's relationship with the music department at the IU and Purdue campus has been strong for decades. This music technology facility takes that relationship to an

entirely new level. It will not only provide a fully-equipped, state-of-the-art learning facility, but will allow for more collaboration and integration between students and the professional work of Sweetwater's talented and dedicated music professionals, as well as access through internships to our three professional recording studios and performance theater. We also look forward to having Purdue students here to explore and enjoy the many unique features of our campus."

Sweetwater Sound  
Sweetwater.com

## AES@NAMM

(continued from page 5)

darin by Professor Xiaowei Fan, lecturer in acoustics at Communication University of China, Nanjing College, on "Analog Logic in a Digital Era," with Bing Lin, chair of the AES Guangzhou Professional Section, focusing on microphone polar pattern design and use.

As Michael MacDonald, AES@NAMM executive chair and ATK Audiotek president, noted on opening day, the four-day event may have been about technology, but there was very much a human side, too. "For audio professionals, networking is typically first thought of in a technical sense, but networking with people is more important than ever. From my perspective, the NAMM Show is one of the biggest networking opportunities in our industry.

"The AES@NAMM Pro Sound Symposium has been designed to help AES members and non-members alike expand their 'human network.' Our program is formatted to merge in-person networking opportunities with hands-on training and expert tutorials about relevant topics affecting our industry today."

Audio Engineering Society  
www.aes.org

## Grammys' Sound

(continued from page 5)

Russ Long. "We have over 200 inputs coming in off the stage," says Long, "so I set those levels right when they come in off the stage. The conversion from analog to digital happens here as well.

"We have two MADI streams that feed the two mix trucks, so both music mixers [John Harris and Eric Schilling] have access to all the inputs. We use the Grace m802 preamps for mic level inputs, and then we use the Aphex for line-level inputs, which are the wireless RF and the Pro Tools outputs."

### DOWN IN FRONT

Far below the Madison Club at front of house was a sound reinforcement system with a Yamaha PM10 production console and DiGiCo SD7 music mixer at its nucleus. The house, filled for the evening with Recording Academy members and golden-eared producers, had sound managed by Firehouse Productions, which provided JBL VTX Series technology, including V25s for the mains, S28s in cardioid arrays for the subs and G28 subs on the ground.

Ron Reaves mixed the PA for the musical acts during the show, which he has done for many past Grammys—experience that came in handy when dealing with marquee-level acts. "A lot of these guys are our friends that I've known forever," he says. "We're here to help them, so whatever they tell us to do, we do it. I always equate it to producing records: You tell me what you want and I'll spin the knobs."

Each act had a representative stay with Reaves at FOH, but he was the only one who worked the board. In addition to each act's guest, Reaves had additional help from legendary engineer Leslie Ann Jones. "Leslie is the Grammy Award telecast advisor of house audio," says Reaves. "If we have some overzealous guests, she runs interference for us. She has incredible ears; she's the volume police. She is an integral part in this team."

### TRUCK STOP

Outside the Garden, up against the famed arena, were the large Denali broadcast trucks and two smaller Music Mix Mobile (M3) trucks. Each M3 truck has an identical interior setup and its own music mixer, with Eric Schilling in one and John Harris in the other. The two mixers divided the evening's music performances between themselves,

as they recorded the rehearsals; brought in the artist or a representative to go over the rehearsal and create snapshots for the show; and later mixed the performances during the live broadcast.

The saved settings from the rehearsals provided a jumping-off point for the live show. "I've got the static saved," says Harris, "and I can get the song to where everybody likes it. I go to the top and say, 'Well, this starts here with that guy up, the guitars panned over there and this guy over here,' and that's where I'm starting out. That's where I'll save it."

But even with the start saved, there are many more moves to consider once a song begins. "We have notes," says Harris, "but it's all pretty analog notes, even with all of this technology."

### ALL EARS ON YOU

As one can imagine, there is a lot of pressure when running sound for a room filled with top-level audio professionals. "This is probably the most heavily scrutinized I am all year because everybody here is either a record producer or engineer, and they are all listening to all the little subtleties," states FOH mixer and Grammy veteran Reaves. "To me, that's fun!"

The Recording Academy  
grammy.com



EAW Anna (left) and Bose Professional ShowMatch line array systems were hung from 25-foot ground-support towers temporarily installed on the roof of the Anaheim Hilton Hotel for the Line Array Loudspeaker System Academy.

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# ≡≡≡ Brown Note, d&b Avert Disaster for Gorillaz Tour

LONDON, UK—The kickoff for Gorillaz's world tour last year had all the ingredients of a massive audio disaster: One of the production's two audio vendors had its brand-new PA shipped direct from the factory to the tour, where it was then used by an audio team that had never heard the system before.

Luckily, that gamble by Denver, CO's Brown Note Productions paid off—its new d&b audiotechnik GSL system fit the Gorillaz tour perfectly and the audio team was thrilled with the PA. "It is quite a major step forward," said the band's longtime FOH engineer Matt Butcher. "It's been a revelation," added monitor man Dave Guerin.

Since that first show date at The Printworks in the spring of 2017, the Gorillaz tour in support of the band's latest album, *Humanz*, has circled the U.S. and Europe, and more dates around the globe are lined up for this year.

Ben Shapiro, Brown Note's client manager for the tour and head of their audio department, and company owners Ryan and Sara Knutson attended an early demo in Germany of the GSL system before the tour start-



Gorillaz's current world tour got a start with a UK run using a d&b audiotechnik GSL system.

ed. As Shapiro recalled, "What we heard was a phenomenal leap forward in technology and accuracy." Placing a purchase order immediately, Brown Note then partnered with Entec, the British audio vendor providing all desks, control and IEMs for the venture on the European leg of the 2017 tour, and had d&b ship the new GSL system from the factory in Germany direct to the tour.

For Matt Butcher, getting to know the new system was interesting. "I'd not heard it, but I'd heard from people who were at Glastonbury, where d&b beta tested it. But the bottom line is when d&b says they have a new system and that its cardioid way down, then of course I'm interested. We had one day to listen to it before the first show. We did our normal playback sound check off the desk

and immediately it sounded very clean, very clear and very near.

"Immediately I noticed an added punch out front. The snare sound emerging from the kit is just wonderful. Everything sounds much more direct. Perttu Kortenieni, my excellent system tech, and I have Y10Ps out front as desk monitors and on several occasions we've gone to turn them off, only to discover they were already off and what we're hearing is the main system."

Guerin on monitors observed, "I can now actually hear things in my local wedge that was just not possible before. Things like the low end of an acoustic guitar or the keyboards; those sounds would formerly have been masked by the sound coming off the back of any system. It's so profound that there have been gigs where I've called up Matt out front on talk-back and asked if he's OK because from where I'm sitting it sounds like the PA is turned off."

With the European leg of the tour now complete, Brown Note's GSL system has been shipped to the U.S. **d&b audiotechnik** [dbaudio.com](http://dbaudio.com)

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~ **Jacquire King** - Shania Twain, Kings of Leon, Kaleo



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~ **Keb' Mo'** - Roots music legend

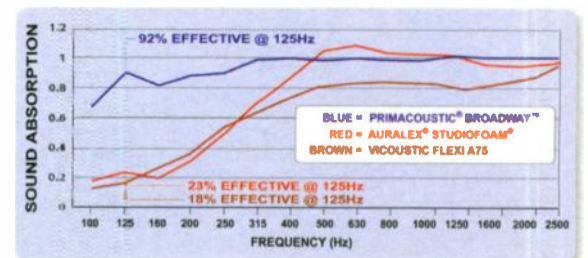


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~ **John Rzeznik** - Performer/artist/producer - Goo Goo Dolls.

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~ **John Rzeznik**

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## D.A.S. Climbs Aboard *Carnival Conquest*

MIAMI, FL—Carnival Cruise Line recently upgraded the live sound capabilities for the poolside LED video wall on its ship *Carnival Conquest*.

North Miami, FL-based Control AV designed and installed the system, with Control AV technical director Carlos Morales and project manager Carlos Obando working with their Carnival counterparts, Timothy McCormick, Entertainment Technical project manager, and Jeff Irving, manager of Entertainment Technical Operations-Audio.

The resulting system is based around 16 D.A.S. WR-320FXW installation line arrays and four WR-S218FXW subwoofers integrated into the sides of the screen. The new system had to be weatherized, and it had to project over a large area while maintaining speech intelligibility and music reproduction that could compete with surrounding sounds and the water.

The screen has a white frame that surrounds the top and sides of



The poolside LED video wall on the *Carnival Conquest* sports a D.A.S. Audio PA.

the LED video wall. On both the left and right sides of the display, the Control AV installation team positioned eight D.A.S. WR-320FXW installation line arrays in a vertical cluster. For low-frequency support, these two loudspeaker clusters are augmented with two WR-S218FXW subwoofers—vertically positioned underneath each cluster of eight line array loudspeakers. Installed last fall, the equipment was immediately put into service.

D.A.S. Audio  
dasaudio.com

## Dubai Digs Duality Deltas

DUBAI, UAE—Dubai-based multimedia production company B Pro Production recently purchased a pair of Solid State Logic Duality Delta SuperAnalogue consoles for two of its five music recording and mastering studios.

“My business partner, Jassim Mohamed, and I had our first inspiration for this project in 2012,” says company founder and CEO Ahmed Alali. “We imagined a single, multi-studio complex where all aspects of music production and post-production could be realized, for clients at all levels, at all budgets. That became B Pro Production.”

The facility’s primary customers are Arabic artists from Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates. Music in the region is wide-ranging, reflecting the cultural variety in areas such as Dubai, which has residents from almost every country in the world.

B Pro Production has four music recording studios and a mastering suite. Studio A is the flagship space, with a live room that can accommodate up to 75 musicians; it has a private lounge and a large control



B Pro Production’s Studio A houses a 48-channel SSL Duality Delta Pro Station console.

room with a 48-channel SSL Duality Delta Pro Station console.

Studio B has another private lounge and a tracking space with variable-surface walls. It features a 24-track SSL Duality Delta SuperAnalogue console and a range of outboard gear.

“Studios C and D are smaller spaces well suited to vocal tracking, songwriting, overdubs and sound design, as well as mixing,” says Alali. “And our mastering suite is unique in the MENA region. We have a specially designed area equipped with the finest gear, both vintage and ultra-modern.”

Solid State Logic  
solidstatelogs.com

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# Chattanooga Public Library Builds Upscale Recording Studio

BY KATIE MAKAL

CHATTANOOGA, TN—Whatever I was supposed to learn in my interview with Meredith Levine, head of youth services at the Chattanooga Public Library, my primary takeaway is disappointment that I'm not a kid with an interest in audio recording growing up in Chattanooga today. Her library's multi-room recording studio—whose soundproofed structure features a 24-channel mixing board, a Pro Tools setup, two dozen microphones, a drum kit, various video and audio monitors and, crucially, guided, structured training—serves as an incubator for young talent. With this space, called The Studio, the library is making emerging technologies accessible to the general public—everyone with a library card—and lowering barriers to musical experimentation.

Emphasizing more than just consumption of knowledge, modern libraries foster creation and innovation, both digital and analog. The Chattanooga Public Library boasts two independent spaces for creative expression; in addition to the recording studio on the second floor, there's a maker space on the fourth with laser cutters, 3D printing, a vinyl plotter, a photography studio and other high-tech amenities that appeal to local entrepreneurs, creatives, teachers, stu-



Studio instructor/engineer Charles Allison (in plaid shirt) at The Studio at the Chattanooga Public Library with local Chattanooga artists during an Open Studio session

dents and even local bands, who can record a single in the studio and then shoot, design and print marketing materials in the same building.

The advantages of outfitting a library studio with musician-grade equipment are both cost and ease of use. Besides being more expensive to fix or replace, higher-end equipment is more difficult to learn and not necessarily welcoming to the casual user. And that's the point. The Studio at Chattanooga Public Library hopes to turn young library patrons into audio engineers in training with good prospects for a future career in music if they so desire.

#### ABOUT THE STUDIO

The library received grant money

from two local organizations—the Benwood Foundation and Lyndhust Foundation in 2014—which placed the budget for the recording studio build-out at \$165,000.

Construction and electrical costs were offset by having the library's own maintenance department do much of the work, and doors and glass for the studio were recycled from elsewhere in the library. With this creative thrift, a large portion of the budget went straight to audio hardware and software.

The three-room, 1,000 sq. ft. recording studio is located on the second floor of the downtown branch of the Chattanooga Public Library in a space that was previously two classrooms and a closet. The control room

hosts a Mac Pro with both Pro Tools and Logic.

Levine notes that James Matchack, who was brought on to design the studio and consult on equipment and integration, was able to get the library some great deals through Guitar Center Pro and Sweetwater.

“When James designed it for us, he had education in mind, which is what makes the studio unique. The control room is actually the biggest room in the space. We can comfortably sit a class of ten people in there. We made good use of the space, too. When you walk in, the entry room is a vocal room as well. To the right is the live room, which looks into the control room, and then on the far left is the drum room. I believe we have 64 inputs total in the space, so we can record a full session band in there.”

Levine adds that the space is soundproofed and acoustically treated. “One thing we're teaching people is the physics of the room and the physics of sound.”

#### EDUCATION AND ACCESS

Levine says the twin goals of her library's recording studio are access and education. “It's giving our community access to state-of-the-art equipment and a space to work on anything from making a basic beat to actually producing a professional song. And we want to level up a little bit, too, so we want to give people experience in a real setting.”

(continued on page 24)

## A Hot Time in Havana

BY STEVE HARVEY

HAVANA, CUBA—Anyone who has listened to 1997's eponymous Buena Vista Social Club album will likely have been captivated by the energy and vibrancy that the room at EGREM's Areito Studios in Havana adds to the recordings. Twenty years later, the signature sound of Areito's Estudio 101 infuses the grooves of Daptone Records' first Spanish-language release, *Orquesta Akokán*.

“This studio has a virtue. Even if you have many musicians, the acoustics of the space define every session,” says EGREM engineer José Raul Varona Cancino through a translator. “This space was not a recording studio originally, so at a first glance you might think it wouldn't have good acoustics, but the builders made such a good job of it that it works, and it sounds great.”

Musician, engineer and Panart Records founder Ramón Sabat converted the former 1920s colonial house into a recording studio in the '40s, which makes it one of the oldest continuously working facilities in the world. After the 1959 Cuban Revolution, his label was nationalized and renamed EGREM (Empresa de Grabaciones y Ediciones Musicales) and the studios became Areito (“fiesta,” in the language of the indigenous Caribbean Taino people).

The building's structure and its wooden floors and ceiling are unchanged, says Varona. The wood-paneled walls have bass traps, but contrary to modern studio design preferences, they are parallel. The only change has been the addition of several iso booths, which were not used on this session, he says.

As he tells it, this was just another day at the office where he has



Standing, left, in Estudio 101 is arranger and pianist Mike Eckroth.

worked for a decade on projects by the likes of Juan De Marco Gonzalez, Los Van Van, Simone, Pablo FG and Eliado Ochoa, as well as with musicians from North America and Japan. “I know the space; I know where to position the instruments to get a better sound,” he says. “I didn't use any special or new techniques.”

Orquesta Akokán is a 16-piece outfit of Cuban and American musicians assembled and led by Cuban vocalist José “Pepito” Gómez, now a New Jersey resident. The album, scheduled for release on March 30, was produced by New York-based Chulo Records' Jacob Plasse (who

(continued on page 23)

# Clarett USB



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## Virtue and Vice and Gear Lust in Brooklyn

BY STEVE HARVEY

BROOKLYN, NY—Who among us has not suffered from gear lust and the certainty that acquiring that one piece of equipment will, well, solve everything? For Anthony “Rocky” Gallo, owner of Virtue and Vice Studios in Brooklyn, that one piece was a vintage Neve 8026 mixing console—his last big upgrade ever, he insists—and, happily, it has had a positive effect both on his work and his bookings.

Gallo, formerly chief engineer at The Cutting Room Studios in Manhattan, has worked with some major names—John Legend, Common, Norah Jones, Carly Simon and Jon Bon Jovi, to name but a handful. He has likewise worked alongside such engineers and producers as Steve Lillywhite, Eddie Kramer, will.i.am, Track Masters and Jimmy Douglass.

Yet a cool vintage desk can have as much impact as an impressive résumé, it seems. The 8-bus console, featuring 24 channels of 1084 modules and offering 48 channels on mix-down, has caught a lot of people’s attention since he installed it near the end of 2017, he says.

“When people walk in and see that massive desk, it just gets them,” he says. “They say, ‘Now we’re making a record.’”

The desk had previously been refurbished by Vintage King Audio for its previous owner, who had a private facility but ultimately had to sell. “I guess it was that or put his kids through college,” Gallo chuckles.

Having also purchased his previous console, a Neve 5315, from Vintage King, he was happy to give them his return business. “Vintage King has a great reputation and they are thorough. It was a little bit more expensive, but the risk factor goes down to next to nothing,” says Gallo, noting that he can’t afford any downtime because of maintenance issues. “I don’t have the ability to miss out on even a week of work—this is all funded by records and credit cards.” To that same end, he also had the board commissioned by Nat Priest, a Neve guru with his own private facility in Brooklyn.

A console like this can have a significant effect on bookings compared to other gear upgrades, says Gallo. “A U47, a \$15,000 investment into your business, should have some kind of monetary reward, but, unfortunately, it doesn’t. And if you spend 40 or 50 grand



Anthony “Rocky” Gallo, owner of Virtue and Vice Studios in Brooklyn, purchased the facility’s Neve 8026 mixing console from Vintage King Audio.



The 8-bus console, featuring 24 channels of 1084 modules with a pair of 2254 compressors, was installed in late 2017.

on outboard gear, you’re really not going to see a lot of interest.” But in an era where people are making perfectly good records on laptops, certain clients’ eyes still get a little bigger when they first see the Neve, he says.

The switch to the 8026 came on the heels of his move to a new facility in a former warehouse in Brooklyn’s South Williamsburg neighborhood that offers a tracking room larger than his entire previous studio, around 600 square feet, with high ceilings. “We found it on Craigslist,” he reports, after visiting 70 other potential locations. Some building owners hung up on him when he phoned and told them he ran a studio. “But this guy couldn’t be better; he’s amazing,” says Gallo.

“He said, ‘You’re not going to make enough noise to bother me. Just don’t bother the hotel behind us.’ The first week, I had to get

working and had a hardcore band with five Marshall stacks and a bass rig that looked like it came out of the new *Mad Max* movie. It was insane, and so loud. I went outside, and with the street noise and it just being New York, you couldn’t hear it. It was good to get that box checked early on.”

There wasn’t a budget for an expensive studio design, he says, “but we treated the room where we saw problems. I feel extremely confident about the drum sounds you can get here. I’d put them up against any classic drum sounds.”

He prefers to mix unattended. “If someone is sitting two feet over from the sweet spot, they don’t know what they’re listening to. So, listen to it at home, where you can properly give me notes.”

Gallo employs a method similar to Chris Lord-Alge when mixing, relying on tried and trusted signal

chains. “I’ll patch things the exact same way and the settings stay nearly the same. I take five or six iPhone shots; that’s my mix setup.” He also uses plenty of plug-ins, he says, not least because Pro Tools offers recall, unlike the console.

There is a ton of outboard gear: API, Calrec, dbx, Drawmer, Empirical Labs, RCA, Scully, Alan Smart, Universal Audio, Warm Audio and on and on. The mic collection includes some of the expected AKG, Audix, E-V, Neumann, Royer, Sennheiser and Shure models, plus a Warm Audio WA-47. Gallo evaluated the WA-47 against another recreation, he says. “The Warm Audio had a little more sparkle, and it sounds super rich.”

He sold his 24-track tape machine some time ago. “I found myself getting worse sounds. With converters, what you’re putting in is exactly what you’re getting back. With tape, it’s almost like I’m putting Vaseline on the lens. But I always mix down to the 2-track.”

Gallo had been enjoying the sounds he was getting from his previous Neve desk, which was installed at his former location in nearby Greenpoint. “The 53 series is absolutely fantastic, and it was really hard emotionally to get rid of it. It had done so much for my career.”

But the 80 series desk has upped the ante on sound quality. “You’re getting great sounds until you realize you’re selling yourself short and you can get something even more out of control,” he says.

The 8026 also adds functionality, including subgroups, that better fits his workflow. Gallo was used to working fast on the SSL at The Cutting Room, especially on a series of remote live performance broadcasts for KEXP-FM in Seattle. “Ever since I started, and with budgets maybe being more restricted, I don’t know any other thing, just that people want to work faster.”

Summing to groups, he says, “I can get things concrete right away, rather than finding a blend of sources in post. It’s kind of a UK thing, committing to the sounds.”

That experience has been useful with a newer client who runs an online bass course and has brought bass players and their bands to Virtue and Vice to record sound and video. “He’ll have a 12-piece band and they need to roll in 10 minutes. I can do that; I’ve been here before.”

Virtue and Vice Studios  
virtueandvicestudio.com

# The Year of the Platform



BY CRAIG ANDERTON

There's a new buzzword in town: platform. Granted, the term itself isn't new—we're all familiar with the macOS and Windows platforms, which are neutral environments under which application programs can run. Platforms have existed in our industry for years as well. But at the 2018 Winter NAMM Show, the concept became more front of mind.

Given the pro audio and music industry's relatively small slice of the economic pie, a platform makes sense. It's increasingly difficult to

power was designed into the hardware thanks to copious flash RAM and reserve processing power, which has allowed significant updates since the Helix's introduction. It's also spawned a native plug-in version, several cottage industries of people selling presets, and an effects-only

multi-effects (no amps) at NAMM 2018. This kind of staying power has allowed the time for Helix to gain traction, while the constant reinvention that's generally associated with platforms keeps it fresh.

Voltage, a modular soft synth from Cherry Audio, is another platform. Sure, it's a plug-in, but what earns it platform status is that users can create their own synth and sig-

nal processing modules in Java—like a Eurorack where code replaces resistors, capacitors and ICs. Voltage has another element that's almost a platform requirement: a marketplace for third-party products that support the platform.

The company making the biggest splash about platforms is no stranger to platforms: Native Instru-

*(continued on page 48)*

The world is changing, and platforms are becoming places for the tribes to gather.

bring a product to market (today's software has a whole lot more lines of code than software in the '80s or '90s, and materials costs for hardware continue to rise), so products need staying power that allows amortizing development costs over as long a time as possible—and the longer the life, the more easily a platform can acquire enough users and partners to gain momentum.

For example, Pro Tools is a platform that has cultivated partners to foster longevity and broad acceptance. Events like the Alliance Partner Conference promote the platform by disseminating information on what's new, and showing developers how to use the Avid Marketplace and Alliance Partner Program to their advantage—which is ultimately to Avid's advantage, but also helps their user base. Sibelius is getting a platform makeover, too, with much of it living in the cloud and cross-pollinating with the Avid Artist Community.

Line 6's Helix effects processor is a different kind of platform. When introduced in 2015 and described as a "platform," there was skepticism—a floor multi-effects platform? Seriously? However, time has shown it can be so. Staying

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**ARTIST:** GHOST & THE CITY  
**ALBUM:** TIME EP  
**LABEL:** INDEPENDENT  
**PERSONNEL:**  
**Produced by:** Aki Ehara  
**Engineered by:** Aki Ehara  
**Mix Engineer:** Aki Ehara  
**Studios:** Sleepy Wizard Studios (Oakland, CA)  
**Mastered by:** Bijan Sharifi at Bijan Sharifi Audio (Berkeley, CA)  
**EQUIPMENT NOTES:** Vocals were tracked via Vintech 1272 Neve Clone or a Universal Audio 2-610 pre, depending on the song; Steinberg CC-121 control surface; Steinberg Cubase 8.5



**ARTIST:** GLAARE  
**ALBUM:** TO DEAF AND DAY  
**LABEL:** DUNE ALTAR / FUNERAL PARTY RECORDS / WEYRD SON RECORDS  
**PERSONNEL:**  
**Produced by:** Glaare  
**Engineered by:** Joseph Calleiro, with assistance from Nathaniel Eras  
**Mix Engineer:** Joseph Calleiro  
**Studios:** Bedrock Studios (Los Angeles, CA)  
**Mastered by:** Nick Zampiello at New Alliance East (Cambridge, MA)  
**EQUIPMENT NOTES:** Avid Pro Tools



**ARTIST:** MATTHEW CARROLL  
**ALBUM:** LEFT TO BURN  
**LABEL:** INDEPENDENT  
**PERSONNEL:**  
**Produced by:** Matthew Carroll  
**Engineered by:** Jason Elgin  
**Studios:** Synchronmesh Studios (Tarrant, AL)  
**Mastered by:** Jason Elgin

at Synchronmesh Studios (Tarrant, AL)  
**EQUIPMENT NOTES:** Undertone Audio LC24-JE console, Pelonis Model 42 monitors, Avid Pro Tools



**ARTIST:** THE SHACKS  
**ALBUM:** HAZE  
**LABEL:** BIG CROWN RECORDS  
**PERSONNEL:**  
**Produced by:** Leon Michels and Max Shrager  
**Engineered by:** Leon Michels and Max Shrager  
**Mix Engineer:** Jens Jungkurth, Leon Michels and Max Shrager  
**Studios:** The Diamond Mine (Queens, NY); home studios (Princeton, NJ, and Brooklyn, NY)  
**Mastered by:** Alex Abrash at AA Mastering (Plainview, NY)  
**EQUIPMENT NOTES:** Tascam 388, Spectra Sonics 1024 (modified by Jens Jungkurth), 1970s Audiotronix console; Altec Big Red 604E, ADAM A7X and ADAM A5X monitors; recorded to tape machine



**ARTIST:** C-TROX  
**ALBUM:** SLIGHTLY INTOXICATED  
**LABEL:** INDEPENDENT  
**PERSONNEL:**  
**Produced by:** T-Halp, Medasin and Vowl Ian Ewing  
**Engineered by:** Nicco Catalano (NeekAttack)  
**Mix Engineer:** Nicco Catalano  
**Studios:** Neek Attack Studios, professional home studio (North Hollywood, CA)  
**Mastered by:** Nicco Catalano at Neek Attack Studios (North Hollywood, CA)  
**EQUIPMENT NOTES:** KRK Rokit 6 G2 studio monitors, Beyerdynamic DT 770 pro headphones, Apple Logic Pro X, Avid Pro Tools



**ARTIST:** FAFA GALOURE  
**ALBUM:** AS YOU ARE  
**LABEL:** INDEPENDENT  
**PERSONNEL:**  
**Produced by:** Omer Hershman  
**Engineered by:** Keren Or Bitton  
**Mix Engineer:** Ofer Prion  
**Studios:** Kitcha Studio, live (Tel Aviv, Israel); Jaffa Sound Art, strings recording (Tel Aviv, Israel); Bardo Studios, live (Ramat Gan, Israel); Omer Hershman's private studio, vocal recordings (Ramat Gan, Israel)  
**Mastered by:** J.J. Golden, Goldenmastering (Ventura, CA)  
**EQUIPMENT NOTES:** Harrison console; Behringer studio monitors; Avid Pro Tools; Steinberg Cubase DAW, primarily with a Neve 1073 preamp



**ARTIST:** IAMX  
**ALBUM:** ALIVE IN NEW LIGHT  
**LABEL:** CAROLINE INTERNATIONAL / UNIVERSAL  
**PERSONNEL:**  
**Produced by:** Chris Corner  
**Engineered by:** Chris Corner  
**Mix Engineer:** Chris Corner  
**Studios:** Orphic Studios (Los Angeles, CA)  
**Mastered by:** Chris Corner at Orphic Studios (Los Angeles, CA)  
**EQUIPMENT NOTES:** Mackie Control Universal Pro, Adam A7, Apple Logic Pro



**ARTIST:** JULIAN MORGAN  
**ALBUM:** COMPANY  
**LABEL:** PREPARED RECORDS  
**PERSONNEL:**

**Produced by:** Drumma Boy and Julian Morgan  
**Engineered by:** Chef Boy Music  
**Mix Engineer:** Jaycen Joshua  
**Studios:** Icon Studios (Atlanta, GA)  
**Mastered by:** Mastering Company  
**EQUIPMENT NOTES:** Avid ICON D-Control, Augspurger monitors, Avid Pro Tools



**ARTIST:** SPIRITUAL CRAMP  
**ALBUM:** MASS HYSTERIA  
**LABEL:** REACT! RECORDS  
**PERSONNEL:**  
**Produced by:** Mike Fenton and Grace Coleman  
**Engineered by:** Grace Coleman  
**Mix Engineer:** Grace Coleman  
**Studios:** Different Fur Studios (San Francisco, CA)  
**Mastered by:** Will Killingsworth at Dead Air Studios  
**Equipment Notes:** Tascam 388; SSL 4000 E/G console; Barefoot MM27s, Yamaha NS-10s and Westlake Reference Series monitors; Avid Pro Tools



**ARTIST:** WINDHAND  
**ALBUM:** WINDHAND / SATAN'S SATYRS SPLIT  
**LABEL:** RELAPSE  
**PERSONNEL:**  
**Produced by:** Garrett Morris  
**Engineered by:** Garrett Morris  
**Mix Engineer:** Garrett Morris (Windhand tracks); Garrett Morris and Clayton Burgess (Satan's Satyrs tracks)  
**Studios:** Phantom Sound Recording & Reproduction (Richmond, VA)  
**Mastered by:** Brad Boatright for Audiosiege (Portland, OR)  
**EQUIPMENT NOTES:** Tascam M-2516 recording mixer; Polk Audio Monitor 30 speakers; Tascam MSR-16 1/2-inch 16-track analog tape recorder

## notes

### 5088 Meets 2001 in Austin

AUSTIN, TX—Producer and FOH engineer Brett Orrison has installed a 16-channel Rupert Neve Designs (rupertneve.com) 5088 console, with 16 of the company's Shelford 5052 mic preamp/EQ modules, at his Austin Recording Service. Built in 2017, the facility features studio design and interior inspired by the movie 2001: A Space Odyssey.

### ManAlive Offers DSD and 4K

FRANKLIN, TN—The Annie Moses Band has opened ManAlive Studios near Nashville, featuring a 4,000 sq. ft. soundstage with full lighting, six 4K cameras, an SSL AWS console, PMC monitors, and Avid Pro Tools HDX and DSD recording, using Pyramix (merging.com) MassCore with two Horus networked audio converters.

### 55TEC Tops China Charts

BEIJING, CHINA—Recording studio 55TEC in Beijing, established by owner and Golden Melody Award-winning recording engineer Li You and designed by WSDG Walters-Storyk Design Group (wsdg.com), has produced six number-one hits in China plus three additional Top 10-charting hits since opening its doors in May 2017.

### Smalls Gets the Call at United

HOLLYWOOD, CA—Spinal Tap bass player Derek Smalls visited United Recording (unitedrecordingstudios.com) in Hollywood to track one of his newest songs, "Butt Call," which is included on his first solo album. *Smalls Change* features an all-star lineup and was produced by longtime collaborator C.J. Vanstor.

## Areito Studios

(continued from page 18)

also played the guitar-like tres on the album) and arranged by Latin music aficionado and jazz pianist Mike Eckroth, also based in New York.

The original plan was to use tape, says Varona. “We ended up using Pro Tools because the console blew during one of the rolling blackouts that occur frequently in Havana.”

Varona collaborated with Chris Connors, a producer, engineer and multi-instrumentalist who works out of a project studio, Concrete Sound, in Brooklyn. EGREM has a collection of high-end microphones, but “there isn’t much outboard gear at Estudios Areito,” says Connors. The control room houses an Amek Mozart RN mixing console (featuring Rupert Neve-designed circuitry) and a couple of newer Rupert Neve preamps, he says, “but with those players, in that room, we had all the vibe we needed.”

“We did this in three days of recording, the last day recording vocals” using Focusrite preamps, reports Varon. “[Pepito’s] voice sounded wonderful in the room. The space helped to give it depth since he sings bright and loud, like a trumpet.” The guiro was also overdubbed, he says.

“Before we started recording, we did a day of rehearsal where Chris and I listened and placed the mics where we thought they sounded best,” he continues.

They monitored through Behringer speakers. “They are really flat and don’t emphasize the highs, mediums or lows. Whatever you hear is translated to the recording,” Varona explains.

The project evokes Cuban music of the ’50s and ’60s from artists like Antonio Arcaño, Pérez Prado, Beny Moré, Arsenio Rodríguez and Cachao. Recordings at Areito at that time used only two ambiance mics for a full band and singer, says Varona, rather than a mic on each instrument and voice. The concept behind Orquesta Akokán, where the musicians recorded live as an ensemble, was to emulate that same spirit, he says.

Connors recalls, “On the first day of tracking, we set up all the musicians in a circle around our main microphone, an omnidirectional vintage Neumann U87. The Cuban engineers—José Raul and Roberto—and I spent a fair amount of time moving the mic and the musicians to get the right blend. Because the trumpets and percussion were so loud, they were farthest from the mic. As a result, they sound a bit more distant

than the other instruments on the U87. But to me, that’s a crucial part of the sound of the album, hearing those trumpets activate the room.”

“If the musicians play well and know what to do and are aware of what’s needed from them, I don’t have to do much—just set up microphones. It’s not complicated,” laughs Varona.

“Technically, we might not have the best conditions,” he adds, “and the version of Pro Tools that we use isn’t the most current one, but what I consider the most important part is the studio. This studio is special. It has a really interesting sound that you cannot find anywhere else in the world or in modern studios. The acoustics of this space are the most important and beautiful thing.”

Connors continues, “Once we had the U87 sounding good, we set up spot mics on all the instruments. For horns, we used Neumann FET U47s, one per pair of players. We had to work the mic placement from song to song to make sure the players were balancing correctly on their shared mics.”

The timbre of the piano posed a challenge: “The Steinway grand piano at the studio had more bite and attack than any I’ve ever heard, especially in the high register. We tried some conventional miking with Neumann condensers but ended up relying mainly on one Sennheiser MD 421. It was just detailed enough to hear the nuances of the piano and just blunt enough to withstand those piercing high notes,” says Connors.

Vocals were also tricky, he says. “Pepito has a bright, loud voice. We tried a few options but ended up using an Electro-Voice RE20 and a FET 47, blending them to get the right sound.”

As for the acoustic bass, says Connors, “I placed an RE20 on the bridge and baffled it off to get some separation from the louder instruments.”

On percussion, “We used RE20s and MD 421s. They didn’t have a lot of microphone options at the studio, but luckily the mics they had were perfect for this type of recording,” says Connors.

“Recording live with percussion is a bit more complicated,” says Varona, “since percussion has its own dynamic. But then again, if you listen to ’50s and ’60s recordings, there wasn’t a way for you to control that other than what the musician did. That’s why you need a good musician. In my opinion, 60 to 70 percent of the recording depends on the musicians more than my work.”

“One of the main challenges with



The Orquesta Akokán album is released March 30.

The cowbell level was still an issue during the mix process because it’s almost impossible to turn it down, says Connors, who mixed the album at Seaside Lounge in Brooklyn. “Cutting the close mic causes it to sound distant, so we had to dial in the EQ and compression to make the bell blend in with the rest of the ensemble.”

As Varona notes, top-flight musicians make the engineer’s job easier. “The musicians are professionals; to me, they are the best in Havana in that they understand the process. You hand them a sheet and they know what you want from them. They’ve studied different styles—mambo, cha cha cha—and they can read and play whatever is needed from them. They know the music; they are great musicians.”

Daptone Records  
daptonerecords.com

recording a band like this is getting the cowbell sounding right,” says Connors. “The players need to be able to hear it to keep time correctly, so it can’t be too far away. But it’s super loud and bleeds onto all the other mics in the room. Thankfully, the player was a total pro and managed his volume at all times, balancing to the rest of the band.”



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## Chattanooga

(continued from page 18)

She continues, “And then, if they come to our classes and they have access to the space, that can lead to potential jobs, whether that’s in running live sound or actually in a studio, or even getting a kid to want to go to school for audio engineering.”

The Studio opened on July 1, 2017, with educational sessions programmed by Dynamo Studios, a local nonprofit whose goal is to empower students and musicians through innovative and exciting educational experiences built around music production and the arts. Dynamo-taught classes at the Studio focus on topics in studio recording, audio engineering, mixing, mastering and marketing.

Chattanooga’s recording studio initiative is evolving in response to how library patrons are using it. While their partnership with Dynamo gave the Studio a strong start, feedback from the community convinced them that they also needed to hire an audio engineer, which they have in Charles Allison.

Allison is a full-time employee whose audio expertise has allowed The Studio to offer Open Studio Blocks, three-hour sessions that may be reserved to work on personal projects. Levine says of Allison’s role, “He’s there for that one-on-one instruction and guidance to help people work on their specific projects” during Open Studio.

She says the goal is that users start with Dynamo Studios classes, where they learn the fundamentals like signal flow and mic techniques, then graduate to independent work. “From what they learn in those classes, they can then come into Open Studio and actually work on a personal project.”

Levine explains the process. “When somebody comes in for Open Studio time, we’ll actually check all of the equipment out onto their library card—microphones, personal mixers, mic stands, headphones—and then we check it back in when they’re finished. That helps with the accountability, but what we also get from that is statistics. So we’ll be able to see how many times that SM7 [mic] was used. And that will help us for further funding or to see what else we need to purchase and get a good idea about what’s being used in there.”

### A GOOD PARTNER TO THE COMMUNITY

Levine points out an important distinction of Chattanooga’s Studio: it is an “educational recording studio”



(Left) Teen librarian Crissy Varnell teaches VaynerMedia staff how to patch cables for their podcast. (Right) From left, Shakeem Holloway of the *Times Free Press*, Dynamo Studios instructor Tyler Orr, and Dynamo Studios interns Jafet Mendez and Sheau Moore run the board for the *Times Free Press Music Wednesdays* Facebook Live event at The Studio at the Chattanooga Public Library.



and not a professional studio where artists record full-length albums. It is not their goal to put any studios out of business, she says—in fact, she sees the library studio as a partner with the local audio community.

“We don’t see ourselves as a competitor with the recording studios in town. We see ourselves as a catalyst, hopefully, for more business through them. And we’re very forward in saying that this is an ‘educational recording studio,’ which is going to deter some people from wanting to use it. Our hours are a little different—it’s open the same hours the library is open. We have a very strict guest policy. You can’t drink alcohol or smoke. We have certain library policies that we have to follow. And the three-hour Open Studio block is really not a lot of time. So if you wanted to record a full-length album, it’s going to take you a year to do it.”

“Our goal is to teach people the art of recording, the language of recording.” Then, once they’re ready, they’ll be able to take those skills to one of the local recording studios and pay for studio time to do more intensive work. “So we’re hoping that it’ll actually drive more business to them.”

Another point Levine stresses is that Open Studio is not a something-for-nothing situation. Library staff members are not going to engineer an artist’s next album for them. Studio users will get results commensurate with their effort, but Levine will make sure they get loads of practical experience while they’re there.

“The engineer who’s on staff here, he’s not producing your record for you. He’s there to teach you. He has 15 plus years of experience. He’s also a local musician in town. He’s a master of his craft and he’s now going to be teaching musicians from all over the city about how to do this, which is really cool,” Levine says.

She envisions the Studio as a hub

joining various parts of the local music community—artists, audio engineers, local studios, students and radio stations. It is an ideal venue to join musicians who need a song recorded, or an audio engineer (in training) who needs a band and recording practice.

“We’re going to put a big cork board outside the studio and we want bands to post flyers for shows, or if they’re looking for an artist, or maybe there’s a studio that has a special [sale] going on,” Levine explains. “But our goal is to really drive more business to the studios that we have in town, which we hope will happen.”

### CURRENT PROJECTS IN THE STUDIO

Levine explains that while Open Studio only launched within the last couple of weeks, several projects are already underway. She says, “There’s a lot of interest in podcasts in Chattanooga. We have two podcasts that happen out of here: Studio Next and the Camp House podcast. Those are very community-focused. They’re bringing in community leaders into our space and having discussions about what’s happening in Chattanooga, and then they put that out there.”

The local newspaper, the *Chattanooga Times Free Press*, hosts a Facebook Live event called “Music Wednesdays” from the Studio. The shows feature a live musical performance and discussion with a local artist or performer. Levine explains that these sessions are actually run by teens involved with the library’s audio programs.

“We have teen interns who go to the Dynamo Studios classes who are actually running the board during those sessions. It’s great experience. And it’s live. Everybody who’s on Facebook in Chattanooga at that time is watching it, so the pressure’s on. And they’ve gotten so much better at it. It’s so cool to watch.”

## Chattanooga Public Library Recording Studio Equipment

### Control Room

- Avid HDX C24 Pro Tools Studio System
- Argosy Mirage NC 24 Desk
- Audient Microphone Preamplifiers
- Apple Mac Pro
- Avid Pro Tools Mac Keyboard
- Lynx Aurora AD/DA Converter
- Dangerous 2 Bus LT
- Dangerous Music Monitor System with Remote
- PreSonus Nearfield Monitors
- PreSonus Sceptre Studio Subwoofers
- Key Lab 61 Keyboard and Stand
- 4K Television
- ADAM S5A Mk2 Active Studio Reference Monitor Speakers

### Plug-Ins/Software

- Pro Tools
- Waves
- Waves Horizon
- Antares 8 Auto Tune Native
- Native Instruments Komplete 10
- Ivory II Piano

### Microphones

- 4x Audio-Technica AT4040
- 1x Audix D6
- 4x Shure SM81
- 4x Shure SM57
- 4x Shure SM58
- 4x Shure SM7B
- 4x Sennheiser E604
- 1x Sennheiser E602II
- 2x Sennheiser E614
- 4x sE Electronics 2203A II C Large Diaphragm Condenser Microphone
- 1x AKG D112 MKII Pro Bass Mic
- 24x Various Mic Stands

### Headphones

- 10x Shure SRH840 Pro Monitoring Headphones
- 10x Behringer 16 Channel Personal Mixer



briefs

NWE Delivers with Fairlights

FREMONT, CA—New Wave Entertainment used its Fairlight (blackmagicdesign.com) DAWs for sound design on the advertising campaign for 20th Century Fox feature film *Murder on the Orient Express*, delivering domestic and international TV spots and trailers for broadcast, radio and online, as well as in-theater advertising, behind-the-scenes pieces, and social media marketing spots for Instagram, Facebook, Snapchat and more.

Alchemy Adds Foley to Berlin Station

WESTCHESTER, NY—Under the direction of Ruy Garcia, supervising sound editor for the EPIX cloak-and-dagger drama *Berlin Station*, the team at Foley studio Alchemy Post Sound (alchemypostsound.com), led by founder Leslie Bloomer, is using every resource at its disposal to provide the second season of the series with cinematic sound, from interior footsteps to weapons and spy gadgetry.

Post Shop Opens with AID

LOS ANGELES, CA—L.A. systems integrator Audio Intervisual Design (aidinc.com) was onboard from the beginning to assist post-production facility Central Post LA—which specializes in localization and ADR—in opening its full-service complex comprising four control rooms, three recording spaces (one accommodates up to six people) and a machine room, and is one of the few facilities in L.A. to offer Dolby Atmos-at-Home mixing.

Shure Delivers at Grammys

NEW YORK, NY—Shure (shure.com) wireless microphones, in-ear monitor systems and hardwired mics were on hand at New York's Madison Square Garden for the live 60th Annual Grammy Awards broadcast on CBS, where RF coordinator Vinny Siniscal used Shure Axient Digital as the default wireless mics for artists on stage, including the night's big winner, Bruno Mars.

SYN Goes International

BY STEVE HARVEY

TOKYO, JAPAN—Global music production house Syn closed out 2017 on a high note when a promo spot the company scored for CNN scooped up 16 awards at PromaxBDA, including Best Use of Music and Sound Design, closely followed by an Emmy Award for Outstanding Promotional Announcement. The company was founded in 1991 by Simon Le Bon of Duran Duran, his wife, Yasmin Le Bon, and longtime friend Nick Wood. The name comes from their first initials.

Syn's music is not only heard globally, it's also produced globally, at the company's three facilities and by a team of collaborators worldwide. The company was established in Tokyo, where it maintains its largest facility. Syn added a studio in Los Angeles in 2014 and, in 2016, one in Beijing. The company's client list includes brands such as Adidas, Mercedes-Benz, AMC and Wrigley's.

At age 23 and newly signed to Virgin Music, Wood moved to Japan after falling in love with Tokyo while on vacation. "Virgin Japan asked me to write a song for a Japanese singer;



SYN's Tokyo studio sports Amphion monitors and a 32-channel AMS Neve Genesys console with Pro Tools HDX.

that became a big hit and was used in a TV campaign. Back then, Japan was very innovative in how they promoted music through advertising, and that really appealed to me. I saw an opportunity to be part of something both exciting, different, challenging and very innovative," he says.

"Simon and I both thought Tokyo would be an amazing place to establish Syn's headquarters and do something very different in the land of

*Blade Runner*," Wood adds. The Tokyo studio recently added a pair of Amphion monitors in its control room, which is centered on a 32-channel AMS Neve Genesys console, with Pro Tools HDX and plenty of out-board gear and microphones at hand.

"The beauty of the console is its digitally controlled analog. These days, since we're a full-time, 24-hour working production facility, it's really (continued on page 26)

Building La-Rocc-A-Fella Center

BY STEVE HARVEY

NORTH HOLLYWOOD, CA—Scoring mixer, engineer and producer Jason LaRocca has recently been working on *A Series of Unfortunate Events* for Netflix, but it was a series of fortunate events that led to the relocation of his personal recording and surround mixing facility, La-Rocc-A-Fella Center, in late 2017.

"I was a little bit of a nomad for

a while," says LaRocca, who had decided that he no longer wanted to work from his home studio. Some of his composer clients, such as Mark Isham, have their own studios. "And some of the films or TV shows I work on have the budget to put us in a commercial place; we'll mix at Capitol or The Bridge," he says. With composer Nick Urata, for the film *Paddington*, LaRocca got to work at AIR Studios in London.

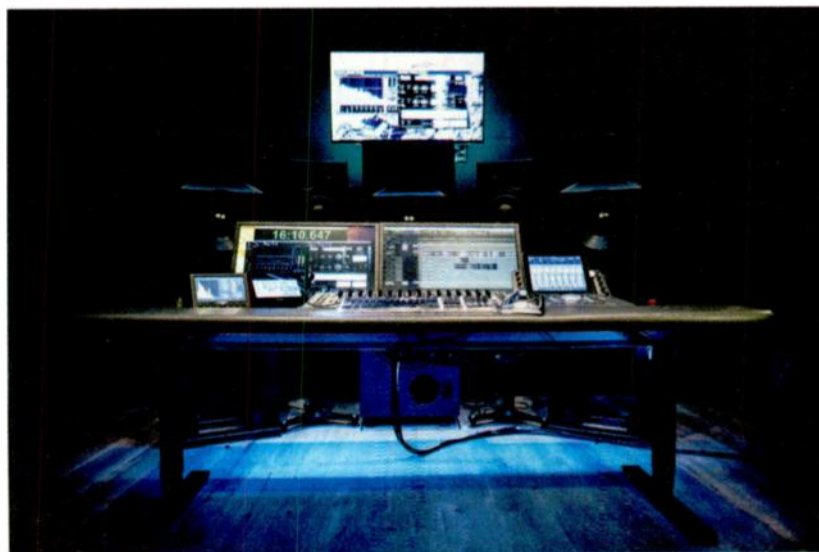
But not all his clients have a suitable studio. "Guys would call last-minute and I'd have to find a room, and sometimes there wasn't one available," he says.

LaRocca went looking for a new spot and found an available room at Fab Factory, a multi-studio complex in North Hollywood that was established in 2016 by multi-award-winning music mixers Shaun Fabos, Jared Lee Gosselin and Dave Pensado. "I've been here since October," he says, "and I haven't looked back."

One reason LaRocca had to move his studio out of his house was that he was running out of space for his gear, he says. But in another fortunate turn of events, he lucked into a ready-made 7.1 setup designed by Tom Marks, a freelance dubbing mixer who often works at Warner Bros. and who had also decided to stop working from home.

"He's a total science genius; he designed the entire rig as a Dolby Atmos setup. I was mixing out of his room for a little bit and I was quite happy with it. He didn't want it at the house, so I said, can I buy it?"

The gear list at La-Rocc-A-Fella (continued on page 28)



Jason LaRocca's La-Rocc-A-Fella Center sports a 7.1 setup featuring Meyer Acheron mains, JBL cinema surrounds and a Meyer X-400 sub with QSC Q-Sys monitor configuration control.

## SYN

*(continued from page 25)*

hard to incorporate true analog audio into all of our mixes. Many times the sessions just move too fast and require too many back and forth revisions to recall a console and outboard analog gear. Having the Genesys definitely helps," says Wood.

The Amphion One18 monitors have become a staple at the Tokyo facility, which is used for music production, mixing and mastering as well as voice—narration and ADR—recording. "We're really liking the clarity and versatility of these monitors," he says.

The studio's collection of outboard includes a GML 8200 and a Tube-Tech CL1B, "a go-to favorite for tracking," says Wood. "And we love the [Lexicon] 480L and use it whenever we can. We also have a vintage Fairchild Model 670 and some beautiful microphones—a matched pair of U47s, Telefunken ELAM, Neumann U67."

In addition to working in a production suite in L.A., the company's team takes advantage of the city's numerous commercial facilities. "There's definitely an abundance of them, and they all have different characters and vibes attached to them," says Wood. "We'll be working on a full-service studio in L.A. hopefully later this year."

"Why We Go," a promo spot for CNN's "Go There" campaign, is indicative of Syn's global reach. The spot follows CNN reporter Nima Elbagir as she reports from locations around the world, including a Syrian refugee camp in Greece. It was shot by Klaus Obermeyer, a director based in Los Angeles; it features music composed and produced by Syn in Tokyo and L.A., orchestrated in Toronto by Todd Hayen, and recorded by a 40-piece orchestra in



The principals of SYN: Simon Le Bon, Yasmin Le Bon and Nick Wood

Macedonia.

"We have been using ISDN codec technology for 25 years," says Wood, who first used it as an alternative to sending tapes via FedEx. For the "Why We Go" sessions, he says, "We used Source-Connect and Skype to communicate between the scoring session in Macedonia, our studio in Tokyo and our producers in Los Angeles. It was a pretty incredible way of working."

Syn also uses Source-Connect and ISDN for remote ADR sessions, he says. "Sometimes we'll have voice artists in Japan who will need to be plugged into a production studio in L.A., or vice versa. I still love the ISDN codec; just last week [English electronic music band] Clean Bandit came into the Tokyo studio to record a live radio show using it."

Whether Syn is producing original music, acting as music supervisor and licensing songs by clients such as Deep Purple, Lenny Kravitz or the Rolling Stones, or reinterpreting favorites by artists such as—not surprisingly—Duran Duran, the empha-

sis is always on helping to convey the story, emotion and mood of the spot. Every project is very different, says Wood, "but it really all starts with the creative brief. We like to spend as much time with our clients talking about their vision and what they can possibly imagine a spot sounding like. Once we have our minds wrapped around the creative, we often go to our ever-expanding and evolving Rolodex of composers and look closely at which ones might be the best for the project.

"We always welcome ideas from our composers; most of the time we choose them for that very reason. This creates what we like to think is our collective sound palette."

When he first viewed "Why We Go," Wood was immediately struck by the drama. "It's not made up; it's obviously a tragic story of the refugees from the Middle East and North Africa getting to Greece, risking their lives, being in this refugee camp with the aim of getting to Europe. It's a very emotional, moving piece of storytelling."

From the outset, he says, "We knew that we had to create something beautiful and emotional that would touch people's hearts without it being over-sentimental but would help tell the story. It would help the various sections, the arc of this beautifully crafted piece of work."

Wood's first thought was that the piece needed an orchestra, but he had been told there was insufficient budget. "So, we went through many demos. We did a mock-up using sampled strings and we worked to picture and went back and forth," presenting the client with several different choices and directions, he says.

"I think it would have been very difficult to emulate that emotion with a non-real orchestra. I'm not a big fan of using sampled strings; I'd rather find another way. We always find a way based on the confines and the

restrictions. That brings out great creativity."

The theme eventually selected is based on melodies that Syn previously created for CNN's "Go There" campaign four years ago. Syn and CNN have been working together for nearly 10 years. "This is kind of an arrangement of that melody with some artistic license. We definitely felt that this version—the one that's finally on-air—was by far the one that we should go with," he says.

At a recent convention in Hollywood, the MC5's Wayne Kramer, who has created a lot of production music, noted that current or former band members don't always respond well to such commercial music's collaborative environment. As Le Bon observes, the world of production music is certainly different than working in Duran Duran. "You have much tighter parameters to work within, especially in terms of time," he says.

Wood also had to make that transition and is a better composer for it, he believes. "I think one of the biggest challenges I've had to learn is to open my mind to explore types of music that I wouldn't necessarily be familiar with otherwise. You often will find yourself thrown into areas of music you might have never thought you'd be working in.

"The challenges have opened my musical mind and given me amazing opportunities to develop skills that perhaps, if I'd have stayed in the world of writing pop music, maybe I wouldn't have evolved and developed as much as I feel I have as a composer. I'm really grateful for that opportunity."

Syn

syn.world

AMS Neve

ams-neve.com

Amphion

www.amphion.fi

## RTW Meters at Olympics' IBC

PYEONGCHANG, SOUTH KOREA—RTW's TM3-3G Smart TouchMonitors were installed in several editing suites at the International Broadcast Centre (IBC) in Pyeongchang, South Korea, for use during the Olympic Winter Games.

BPM Broadcast & Professional Media, a long-term partner of RTW, supplied several RTW TM3-3G Smart TouchMonitors to BNC Broadcast Network Connections for editing suites at the 2018 Winter Games.

RTW's TM3-3GS units were used in production primarily for the ORF in the IBC, where programs for the Winter Games were edited.

RTW's TM3-3GS TouchMonitors were part of BNC's effort to increase the capacity of its mobile editing suites, not only for the Winter Games but also for ski tournaments, Formula 1 races, cultural events (Salzburger Festspiele, etc.) and political events such as elections.

"We chose RTW's TM3-3GS TouchMonitors because they re-

move the need for a dedicated de-embedder," said Enrico Ganassin, managing partner of Broadcast Network Connections.

"The digital audio outputs are connected to the audio mixing console. The SDI-3G input signal is looped through to the video monitor, which ensures that what we see is exactly what is measured. RTW is our first choice



RTW Smart TouchMonitors were deployed in several editing suites at the Olympics' IBC.

when it comes to audio metering."

RTW

rtw.com



# THE AUDIOVISUAL AND INTEGRATED EXPERIENCE EVENT

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## NBC Olympics Takes Calrec to the Games

PYEONGCHANG, SOUTH KOREA—NBC Olympics, a division of the NBC Sports Group, selected Calrec Audio equipment for its production of the XXIII Olympic Winter Games, which are taking place in Pyeongchang, South Korea.

Calrec Audio supplied a Summa console for the primetime audio control room in NBC's production compound at the International Broadcast Centre in Pyeongchang. In addition, NBC used a 56-fader Artemis Ray as its primary console at the sliding venues in the mountain resort of Alpensia for coverage of bobsled and luge events.

A 72-fader Artemis Ray served as the primary console at the speed skating venue and indoor venues at the coastal city of Gangneung. In addition, a Calrec RP1 remote production system and a compact Brio console supported operations at the coastal studio, giving NBC Olympics the ability to control the production remotely from multiple control rooms in its headquarters in Stamford, CT.

"We are very happy to once again have Calrec support our production of the Winter Games, this time in Pyeongchang," said Karl Malone, director, sound design, NBC Olym-



Calrec desks were brought to bear on this year's Winter Olympics.

pics. "We continue to take full advantage of the new Calrec technologies, having used Calrec AoIP modular cards in Brazil [for the Rio 2016 Summer Olympics], and now Calrec Waves modular cards

in South Korea. We are very fortunate to also have Calrec's latest Brio and RP1 systems to facilitate NBC's production."

Calrec Audio  
calrec.com

## La-Rocc-A-Fella Center

(continued from page 25)

Center includes a Pro Tools rig with Avid S3 and Dock control, Meyer Acheron mains, JBL cinema surrounds and a Meyer X-400 sub, together with a custom patchbay and a Dante network linking the system with a 32-channel Focusrite RedNet 3 interface and QSC Q-Sys monitor configuration control. "I brought in my stuff—my modular and synths and outboard pre's and compressors," he adds, as well as his collection of Neumann U47 FET, TLM-170 and KM 184; Lewitt Audio 640, 940, DTP 340 and LCT 340; Flea M50 and 47 tube; and other microphones.

Q-Sys is central to the system's operation, he explains. "It takes the digital out from Pro Tools, feeds digitally to the Focusrite, which then goes to the Meyers. The Focusrite is my D-to-A; I'm not using Q-Sys for that."

A QSC touchscreen controller on his desk enables LaRocca to switch between speaker configurations and route external inputs—say, from a client's network-connected laptop—to the monitors: "It was programmed to the nines by Tom Marks. This was his personal system, so he put a lot of love into it." Marks' programming was the foundation of a new Q-Sys preset created for the relocated setup by LaRocca and Dolby's Andy Potman, who came in to tune the room.

"Q-Sys has onboard EQ, so all of the X-curve stuff is programmed in. It's eq'ing all the speakers; I can select different speakers and it's got mute and dim, 85 dB reference level. We can quickly downmix to stereo on

the speaker system, or to mono, or upmix to 7.1. Those are things that even consoles can't do, but I have it all on Q-Sys. Even with the new Pro Tools systems and MTRX, this still does some things that others can't do."

The move came at a busy time for LaRocca. "Everybody suddenly called at the same time. Had I not had the studio, I don't know what I would have done. You wonder, would I have gotten all the calls if I didn't get the room? But the void got filled, up until the [December] holidays."

LaRocca enjoys the confidence of knowing that he's working in a tuned, professional studio with a pedigree—Justin Bieber is among the many former clients—and expects that will

help bring more attention to him and his clients' work. But there's also a new responsibility: "It's a constant stress to keep the room busy, and keep yourself busy," he says.

Not that he needs to be too worried. In this multiplatform digital age, the idea of the season hiatus has gone out the window—which is another good reason to have a studio handy.

"Now, you work in the summer and well into December," he says. A film producer will take a break in December but expect the music to be mixed when he or she returns. "So you get your holiday the first or sec-

ond week of January, when nobody calls you. I take it when I get it; I call it mandatory vacation," he laughs.

On the other hand, he continues, "We do have some shows, like ABC's *Once Upon a Time* [now in its seventh season], where it's always the same thing: It picks back up in September, goes until March, then it's done. I like that. Then everything else is sprinkled around it."

Some of those additional projects have included a special episode of *Black Mirror* directed by Jodie Foster for Netflix; two episodes of *Phillip K. Dick's Electric Dreams* for Amazon; *Cloak & Dagger* for Marvel/ABC; and feature films such as *The Accountant*, *Life*, *Snowden*, *Whiskey Tango Foxtrot* and *Joy*.

Streamers like Netflix and Amazon have certainly helped upend the old, established processes. "Netflix will work on something, then put it away. They'll open it back up again when they know they've got time. We have to open mixes sometimes two months after we've turned [the score] in," he says.

With *Unfortunate Events*, the opening theme for every episode always requires a mix recall: "The theme we're doing has a different insert for every episode. The little bridge has a different character, giving you a preamble to what's happening in that episode, and we have to mix a version for every single episode for every season, even though the song is done."

With schedules becoming so dynamic, he says, "We sometimes get caught off-guard. Everything can move around. It's very malleable in terms of time. We have to be prepared—so I need a professional studio like this."

QSC  
www.qsc.com

"Everybody suddenly called at the same time. Had I not had the studio, I don't know what I would have done. You wonder, would I have gotten all the calls if I didn't get the room?"

Jason LaRocca

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# innovations: the manufacturer's view



## A Singular Reference

### SONARWORKS REFERENCE 4

BY MARTINS POPELIS

Sonarworks' introduction of the Reference series back in 2012 began with a stark realization of a problem that is pervasive in our industry: all recording studios and headphones used in the monitoring process ultimately sound different. This has presented an enormous obstacle for music creators that can typically only be overcome with acoustic treatment or expert room tuning—which can be expensive and time-consuming.

At Sonarworks, we saw an opportunity to develop software that could capture state-of-the-art knowledge in the world of acoustics—and apply this to a simple tool enabling anyone to make their rooms or headphones sound as close to reference as possible. For us, the market need was clear: Too many people are monitoring in rooms with inferior acoustics, and even in “world class” studios with great acoustics, the room response is always changing. New equipment is introduced, furniture is moved, or new speakers are brought in. These days, nobody has the budget to keep fixing their rooms, yet they all have at least one or two things that could be improved.

One of the biggest challenges we faced when building Reference was the simple fact that if you measure the frequency response of a room with a microphone, and then move it around even by a fraction of an inch, the measurement changes. So if you

take 100 readings in the room, there will be 100 different measurements—and the difference can be dramatic, since the acoustics of the room are not even. So the critical question becomes, How can we translate an “uneven reality” into a measurement that is consistent no matter who does the measuring?

One of our original founders had a clever idea that we should measure many points across an area where we would want optimization to be done, then work out a “smart average” of these measurements so they would match. After all, as human beings, our brains are already making “smart averages” anytime we hear something. So we had the idea that if we could mimic the way a human actually hears things in a room, while working with averages around the area where an individual usually sits, we could figure out how to match this average to the way an individual hears sounds.

With this idea in mind, we started an initial prototype of Reference and did some early critical listening tests with a small group of experts, who came back with very positive feedback. This encouraged us to work further, and conduct more tests in studio environments. Our tests were met again with very encouraging feedback and results. Once we finished prototyping it and gained similar feedback, we decided to build a company around it.

One major milestone during our development was the realization that we can also measure headphones.

Headphones experience similar challenges that room measurements face: For instance, if you measure a single headphone 100 different ways, you will get 100 different results. So the question becomes, Which is the right way to measure a headphone? We figured out the answer using proprietary tools, software and methodologies, and ultimately realized that we can make headphones sound the same as calibrated speakers sound in a well-tuned room. So we introduced headphone calibration in Version 3.

Another milestone was figuring out how to apply calibration profiles to the signal path—correcting frequency responses that needed to be corrected, but without introducing any other audible artifacts in the signal chain. This meant working out nuances in our filter algorithm and optimizing our DSP engine so that it sounds clean and transparent to our experts and critical listeners.

A third milestone in our development was making our software accessible and easy to use for everybody—so that it would not be limited for use by experts or trained professionals. We spent a lot of time perfecting and fine-tuning our user interface so that it is as easy to use as possible. I think we've done a good job with it, but we are constantly trying to make it better and even easier to use.

In Reference 4, our latest edition, we've done three more things: first, we introduced zero latency with the filter engine. This has opened up our software for use in live tracking and monitoring environments, where zero

## Sonic Accuracy

Reference 4 is the latest version of Sonarworks' pro audio software program that helps music creators remove unwanted coloration from studio speakers and headphones. The Windows/Mac product consists of three modules: First, a DAW plug-in that delivers “reference sound” and zero-latency processing for loudspeakers, as well as calibration profiles and filter modes for more than 120 headphone models. Second, a “system-wide” app that works at the OS level and calibrates all outgoing audio, and third, room measurement software and a microphone that creates a streamlined and easy process to measure and correct room acoustics. A deluxe version of the product includes a measurement microphone.

latency is required. Second, we simplified the product offering, reducing it to two versions: the Headphone Edition and the Studio Edition. Lastly, we refined the user interface even further.

Very soon we will be introducing a common reference standard for the entire music creation community so that music creators can share the same reference sound across different rooms or headphones they are working on. This reference standard will be location-agnostic, so users will no longer need to be concerned if they are working in different rooms or monitoring on different devices. Once we introduce this, music creators will finally have the assurance that they are working with a single reference standard, hearing “apples to apples” every time.

Finally, in a much broader context, we are bringing this same reference sound to consumers—so when a piece of music is created in the studio, listeners are finally able to hear exactly what the artist intended, instead of another sonically colored version of the song. Our mission as a company is to ensure that music creators and listeners never have to worry about sonic translation ever again—so they can get on with creating and listening to music.

Martins Popelis is VP of Professional Products, Sonarworks.



Sonarworks Reference 4

Sonarworks  
sonarworks.com

## GRACE DESIGN M905 ■ AUDEZE LCD-X HEADPHONES ■ MAGIX SOUND FORGE PRO MAC V3

### GRACE DESIGN M905 MONITOR CONTROLLER

While the market seems saturated with economy monitor controllers, the list of truly professional options can be counted on one hand. At the top of the list is Grace Design's m905, a beautifully designed controller with a wide range of options, making it easily adaptable to practically any monitoring situation.

Arguably more important than any other element in the control room, the monitor controller is the heart of the modern studio. It has significant impact on every creative and critical decision made during the music creation process. To be considered a "professional" monitor controller, the device's signal path must be both exceedingly accurate and meticulously transparent, and it must provide accurate volume control, including the ability to work at a definitive, properly calibrated listening level, while providing an ample selection of sound source inputs and speaker outputs. The m905 fits this bill.

The Grace m905 replaces the critically acclaimed m904, which has been an industry standard for nearly a decade. While the m905 looks similar to the m904, it has been completely redesigned internally, and both the analog and digital signal paths provide significantly improved performance. The box also boasts an upgraded user interface, including a large customizable TFT display.

The m905 incorporates a 2U rack unit and a tabletop remote control panel. The substantial rack unit is 9 inches deep and weighs almost 8 pounds. The nearly blank front panel simply incorporates an illuminated

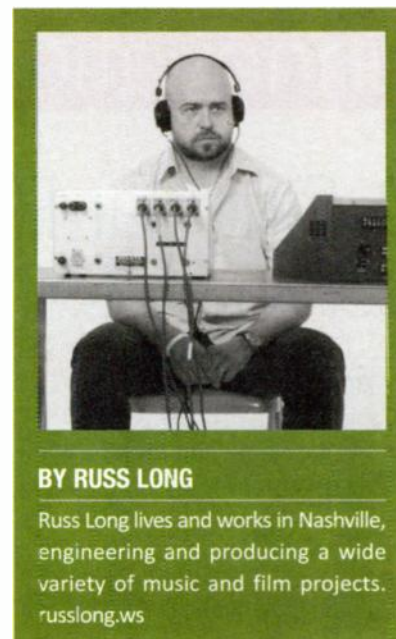
power button and a 1/4-inch headphone jack; the comprehensive analog and digital connectivity is found on the rear panel. Analog connections include three pairs of speaker outputs, artist cue out and a multimode stereo subwoofer/DAC/meter output all via pairs of male XLR connectors. Since I don't have a subwoofer in my mix room, I configured the multimode outputs to operate as program feeds for my Dorrough meters and it worked wonderfully. This type of configuration flexibility is a reminder of the brilliant planning that Grace put into the box's design.

A single male XLR provides talkback output. Balanced (via female XLR) and unbalanced (via RCA) connectors accommodate analog input. Digital input includes two AES3 (via female XLR), S/PDIF (via RCA), TosLink optical, ADAT optical, and USB computer input. The DAC de-emphasis filter can be set to off, on or auto, and is independently configurable for each digital input. Both AES3 (via male XLR) and S/PDIF (via RCA) digital outputs are available, as is toggle switch terminatable word clock I/O. The asynchronous Class-2 USB connection supports stereo PCM audio up to 24-bit/192 kHz and DoP 1.1 DSD audio. When connecting a computer to the m905 via asynchronous mode USB, the m905 becomes the master clock and the computer's USB bus syncs to the 905's USB DAC. Syncing the computer to an actual crystal-based audio clock signal significantly lowers the jitter, providing bit-perfect playback.

Grace has covered the bases with the m905's interfacing options. For example, the AES3 inputs can be configured for dual-wire operation; and both the AES3 and S/PDIF inputs support the DoP 1.1 format, providing for standard and dual-speed DSD connectivity. Check the company's website if you have unique needs, but I can pretty well guarantee that the unit will have you covered.

The remote control panel measures 8.9 x 6.25 x 2.3 inches and weighs just over 2 pounds. It incorporates a built-in tilt base that allows the unit to be easily configured for the appropriate desktop viewing angle. The large, color LCD screen (4 x 2.25 inches) displays the current volume setting for both outputs in a large, easily readable font with the selected output notated in green. The default display is scaled from 0 to 100 dB and is adjustable in half-decibel increments. Alternatively, a reference level can be set for each speaker and the LED can display the level, in decibels, below or above this reference point.

The panel connects to the rack unit via a 25-foot control cable utilizing 15-pin D-Sub connectors (longer cables can be utilized for custom installations). The panel incorporates a switchable (configurable as latching or momentary) talkback mic, which can be routed to the cue output signal (while simultaneously dimming the speaker outputs and, optionally, the cue source). The same internal mic is used to derive a sound-pressure level of the monitoring environment; that value is displayed on the



#### BY RUSS LONG

Russ Long lives and works in Nashville, engineering and producing a wide variety of music and film projects. [russlong.ws](http://russlong.ws)

LCD panel as a handy guide to monitoring level (with customizable A and C weighting filters, peak-hold and ballistics settings).

The device incorporates a built-in mic pre with switchable phantom power and adjustable gain (+15 to +70 dB) to accommodate an external talkback mic. A 1/4-inch TRS jack allows the talkback to be activated foot-switch and a tally-light output is offered on the same socket for a remote switch. The rear of the control panel includes a 1/4-inch headphone jack wired in parallel with the headphone jack found on the front of the rack unit. Mini USB connectors on both the rack and the remote control accommodate system firmware updates.

The talkback mic doubles as the SPL meter source, with the SPL level constantly displayed below the speaker volume setting. The digital input source details including sample rate, word depth, clock source and s-Lock status are displayed below the headphone volume setting.

Monitoring functions are control-

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Audeze LCD-X Headphones and Grace Design m905 prove a formidable combination while mixing.

## AUDEZE LCD-X HEADPHONES



Audeze LCD-X Headphones are extremely comfortable despite their near 1.5-pound weight, even after lengthy listening sessions.

I was introduced to the Audeze (pronounced Odyssey) LCD-X headphones at the 2017 Winter NAMM Show. I've spent enough time in the audiophile world to be familiar with the Audeze name and reputation, but I had yet to experience the joy of listening through a pair of its headphones. While audiophile and pro audio have a lot in common, audio products often work well in one of these worlds but not the other. This is no real surprise given that the goal of

an audiophile is to enjoy music perceived as accurately as possible and the goal of the audio professional is to do the highest-quality audio work possible.

California-based Audeze has built a strong reputation for its LCD Series of planar magnetic headphones in a rather short amount of time. (The company has been around for just a decade). Planar magnetic headphones are operationally similar to moving coil (dynamic) headphones

as they both utilize the interaction of two magnetic fields to cause motion, but rather than moving a voice coil, Planar magnetic technology uses a thin, largely flat film as a diaphragm; and instead of focusing energy on a small area, it spreads it across the entire diaphragm. This process generally requires more magnets that are larger and stronger than a dynamic driver, as they are needed on both sides of the larger diaphragm. This explains why the majority of planar magnetic

headphones are somewhat large and often heavy.

The Audeze LCD-X (\$1,699) is an over-the-ear, open-back black headphone fit with either lambskin or microsuede ear pads. The beautiful headphones are packaged in a small, rugged SKB flight case. In addition to the headphones, the case includes several cables and connectors, providing for 1/4-inch, 3.5mm and balanced inputs. (Sadly, a Lightning adapter isn't included.) The headphones weigh nearly 1.5 pounds, which seems a bit steep but is quite average for a planar magnetic design, and they are designed so well, you would never guess they weigh that much when they are sitting on your head. The build quality is fantastic and they are extremely comfortable, even after lengthy listening sessions—I've used them for over five hours in a single sitting multiple times and they never became uncomfortable or burdensome.

The LCD-X is an attractive headphone for the music community: it was designed with efficiency in mind and it requires far less power than other planar magnetic headphones for optimum performance. This is important. In addition to listening to audio through a high-quality headphone amp, artists, producers and engineers need the ability to reference mixes on their phones, and I found the LCD-X to work surprisingly well with the headphone amps in my iPhone 6, iPad Pro and MacBook Pro. While the iPhone and iPad don't have the necessary amplification to fully maximize the potential of the LCD-X, they still do an impres-

*(continued on page 32)*

## MAGIX SOUND FORGE PRO MAC V3

I became acquainted with Sound Forge back in 2003, shortly after Sony purchased the Windows-based Sonic Foundry product line. Sound Forge, along with Acid Pro and Vegas Video, became the backbone of Sony's Creative Software division. In those days, I was regularly using a PC alongside a Mac in the studio, as Acid Pro offered functionality that wasn't then available on Mac computers. Sony finally released an OS X version of Sound Forge a few years ago, but Acid Pro never left the Windows umbrella. In mid-2016, Sonic Foundry and SpectraLayers spectral editor software were purchased by the celebrated German company Magix, best known for its acclaimed Samplitude DAW. Under the new ownership, the first major update is version 3 of Sound Forge Pro Mac.

Sound Forge Pro Mac 3 is an au-

dio editor and processor that incorporates a highly customizable single-window architecture. While the look and feel of the application isn't necessarily bare-bones, it is still a no-fluff application that doesn't have a host of unnecessary options or excessive menus. This makes it a much easier program to learn and operate in a day-to-day workflow. It supports recording up to 24-bit, 192 kHz and can import virtually any audio file format.

The Sound Forge window is divided into four panes. Waveform displays are located in the top center of the window, where audio files can be arranged and displayed. Panels below and on either side of the waveform display can be toggled on and off. The Panes and Views options in the top right corner determine which sections are shown or hidden. Sections

can be arranged within the panes, making it easy to customize the layout based on the user's workflow and needs. The wave editor area can simultaneously display two files either vertically or horizontally. Both sections incorporate tabs that accommodate the managing multiple open documents.

Audio editing is where Sound Forge excels, and anyone with basic DAW editing familiarity will be up and running with Sound Forge in little to no time. The application makes it easy to edit down to the single-sample level using event-based or time-based editing modes, and it incorporates iZotope's 64-bit sample rate conversion and dithering. The application includes a lengthy list of Magix processing plug-ins, but it also supports third-party VST and AU plug-ins. Plug-ins can be viewed by

category, vendor (manufacturer) or type, and are searchable. They can be dragged from the list directly onto an audio clip for immediate processing (like Audiosuite in Pro Tools) or into the Plug-In Chain area. Each plug-in that is part of a chain can be individually edited, and chains can be saved and loaded.

The application also includes the option for iTunes auditioning, making it easy to preview what "mastered for iTunes" audio will sound like once it goes through Apple's encoding procedure. This process generates an M4A-format audio file that the user can compare to the master, allowing processing to be optimized for iTunes. With many of today's albums being digital release-only, this is a fantastic feature.

Engineers who routinely work with video will be glad to know that Sound Forge supports the extraction

*(continued on page 32)*

## Magix Sound

(continued from page 31)

of audio from a wide range of video file formats, including XAVC, XDCAM and AVCHD. Simply dragging and dropping a video file into the application window automatically extracts the audio and displays it in the waveform view. (Unfortunately, the app doesn't support video playback.)

After spending time with Sound Forge Pro, it quickly becomes clear that Magix prioritized the application to meeting the needs of engineers creating content required to meet today's broadcast standards. The application's Loudness Meter toggles between ATSC A85 (for North America) and EBU R128 (for Europe) standards and includes support for mono, stereo and surround sound formats. Scale ranges can be switched between +18 and +9 dB and low-level resolution can be varied by changing the base of the meters between -12 and -138 dB.

The loudness meters display momentary loudness with a 400 ms window, short-term loudness with a three-second window, integrated loudness across all of the channels. The "loudness range" helps estimate the perceived dynamics of a mix. The Loudness Log feature provides the ability to demonstrate loudness compliance.

One of the app's highlights is that it is bundled with iZotope's RX Elements and Ozone Elements. RX is a restoration and spectral repair tool that includes Ozone's De-click, De-clip, De-hum and Voice De-noise. Ozone is a mastering suite that includes Ozone's Imager, Maximizer and EQ. RX Elements and Ozone



Magix Sound Forge Pro Mac V3 is a refined audio editor that incorporates a smart, intuitive user interface.

In mid-2016, Sonic Foundry and SpectraLayers spectral editor software were purchased by the celebrated German company Magix, best known for their acclaimed Samplitude DAW. Under the new ownership, the first major update is version 3 of Sound Forge Pro Mac.

Elements cost \$129 each when purchased separately, so it's a pretty amazing deal with Sound Forge Pro Mac 3 costing only \$299. Also included with the application are dynamic rendering of project files, automatic loudness leveling, updated loudness metering and mastered for iTunes auditioning. A separate batch conversion app called Convrt is also included, useful for processing a large number of files in a single instance.

Mac users in need of a feature-packed audio editor should give top consideration to Sound Forge Pro Mac V3. This is a refined audio editor that incorporates a smart, intuitive user interface. It is simple enough for

the novice, yet it easily meets the requirements of complex audio editing and CD production, and the value added with the inclusion of iZotope's Ozone Elements and RX Elements makes the purchase a no-brainer.

## Audeze

(continued from page 31)

sive job powering the headphones.

I have incorporated the LCD-X into my regular mixing workflow, using them to check my mixes and reference other material, and I've been thrilled with the results. Their accuracy is mind-boggling. They instantly reveal weaknesses in my work, saving me substantial time during the mix process. Not only are they staggeringly accurate, they are a complete pleasure to listen to. Over the past several months, I've spent many hours enjoying some of my favorite recordings, including Daft Punk's *Random Access Memories*, The Beatles' *Sgt. Pepper*, The Beach Boys' *Pet Sounds*, Fleetwood Mac's *Rumours*, James Taylor's *JT* and *Hourglass*, Elton John's *Goodbye Yellow Brick Road* and, of course, Pink Floyd's *Dark Side of the Moon*—and it's been wonderful. The headphones have a trans-

parent and open soundstage with immaculate imaging, and they are neutral and smooth across the full frequency spectrum. The majority of my listening has been via the headphone amp in the Grace Design m905 monitor controller, but I've also spent considerable time listening through the Benchmark DAC 1 and the TEAC HA-P90SD. All three yielded fantastic results.

The Audeze LCD-X headphones are a sonic chef d'oeuvre. Their sound is unmatched in any under-\$2,000 headphone that I've encountered. While there are no perfect headphones (nor is there a perfect speaker, microphone or mic pre, for that matter), the Audeze LCD-X comes closer than anything I have encountered. They are amazingly comfortable while providing near-perfect sound and requiring minimal power. Whether you are listening to improve the quality of your work or to enjoy your music library more thoroughly, the Audeze LCD-X is an ideal headphone solution.

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## Grace Design

(continued from page 30)

table via two large and eight small illuminated buttons. A large button selects the primary speaker output, and two small buttons toggle between the secondary speaker pair outputs. The second large button activates the talkback function, and the remaining small buttons access the remaining functionality including speaker and subwoofer mute, Dim, Mono and Setup menu. Five of the small buttons provide secondary functions, which are accessed by holding the button. This includes cross-feed mode, stereo-difference mode, individual speaker solo and peak-SPL clear.

I'm quite impressed with the cross-feed circuit, which is something I haven't encountered previously. In a normal monitoring situation, the listener/s left ear hears sound primarily from the left speaker and the right ear from the right speaker. The left ear does hear some sound from the right speaker (and vice versa) although at a lower level, with a different frequency response and with a slight delay compared to the right ear. The brain uses this information to create an aural image of the sound field. When listening with headphones, the left ear hears only the left channel and the right ear only hears the right channel, so the brain does not receive the familiar psychoacoustic clues it typically uses to process audio information. This is why it is difficult to create a mix start to finish on headphones. The cross-feed circuit electronically simulates this natural phenomena, allowing accurate mixing to be accomplished with headphones. I've spent dozens of hours using the cross-feed function with both Audeze LCD-X headphones and Ultimate Ears UE 18+ Pro IEMs and have had fantastic results in both instances.

My review unit was equipped with the newly optional high-performance RIAA phono preamplifier, which performed wonderfully. My TEAC TN-570 turntable never sounded so good—and with the resurgence of vinyl, having the ability to evaluate that medium critically is more important than ever. Jumpers on the phono module configure cartridge loading, gain and subsonic filter, allowing the preamp to be optimized for a specific cartridge.

Also included on my unit was the Infrared Wireless Remote Option, which allows the m905 to be controlled using wireless infrared via the Grace Design Remote (which was included with my unit), a standard Apple Remote, or with iOS and An-

droid via the Logitech Harmony Remote. Wireless control is the perfect solution if you have a keyboard station or secondary listening position in your control room and need monitor control in that location.

After spending three months with the m905, I'm sold. The beautifully designed box looks spectacular, is ergonomically stunning and provides near-perfect sonic performance. As a longtime user of Grace preamps, the

m905 remote has a familiar look and feel and provides an intuitive navigation workflow. Besides making it easy to switch between speaker and headphone playback, the large, detented volume encoder knob has a smooth natural feel that I absolutely love. Being able to customize the source and speaker names simplifies operation, avoids the need of P-touch labeling and makes it easy for new studio clients to adapt to the space.

One might expect a positive reviewer to say the m905 sounds near perfect, but my tests proved that it fails to sound at all, as it provides a sonically transparent monitor path, regardless of source. I've never felt closer to the source material than I do with the m905. This is a simply superb device that provides virtually every imaginable monitor controller function, along with uncompromised audio performance.

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**NEUTRIK**

## SPL PASSEQ Model 1650/1654 Mastering Equalizer

The dual-channel PASSEQ (model 1650/1654) passive mastering equalizer is an update of SPL's 2595. The new model features the same number of boost and cut frequencies as its predecessor, though the choice of frequencies is altered and the Q-factor is said to be more musically adjusted for each selectable frequency. Based on user feedback, SPL engineered the new PASSEQ model with Air band, a stepped output control ranging from -10 dB to +10 dB, and a mid-cut band starting at 200 Hz. Other improvements include custom-made single capacitors in the filters and optimized bandwidth per frequency range.



## beyerdynamic FOX USB-C Microphone

beyerdynamic has introduced the FOX USB-C microphone, intended for podcasts, music recordings and the like. FOX combines a microphone, preamplifier, AD converter and headphone amplifier. The beyerdynamic FOX features a large-membrane condenser microphone; its cardioid polar pattern shields against rear-incident noise. An elastic suspension on the microphone capsule prevents structure-borne noise, such as footsteps and fret noises. The compact microphone and USB cable are all users need for recordings when on the go; FOX is also compatible with mobile devices on iOS and Android with the right adapter.



## Apogee Electronics Symphony 2x6 Special Edition I/O Module

Apogee Electronics has introduced the 2x6 Special Edition AD/DA module for its flagship Symphony I/O Mk II series. Designed specifically for mastering engineers, Symphony I/O Mk II 2x6 SE offers the highest quality AD/DA conversion of any Apogee converter. Symphony I/O Mk II 2x6 SE offers two line level inputs with 124 dB (A) of dynamic range, THD+N of -116 dB and six line level outputs with 131 dB (A) dynamic range and a THD+N of -118 dB. Symphony I/O Mk II 2x6 SE is available in Thunderbolt and Pro Tools HD configurations, or may be purchased separately to expand existing Symphony I/O Mk II configurations.



## Radial Engineering KL-8 Mix Station, SWB-USB Auto Switcher

Radial Engineering has debuted the KL-8 rackmount keyboard mixing station and SWB-USB Auto Switcher. The KL-8 rackmount keyboard mixing station provides control over a professional keyboard setup, both on stage and in the studio. Users can connect up to four analog keyboards in mono or stereo, each with an individual level control to adjust the balance between them. An aux send/receive is available to feed effects pedals or rackmount reverbs and delays, or it can be used as an additional stereo input for a fifth keyboard. MIDI and USB connections allow control of a laptop soft synth, using the KL-8's 24-bit/192 kHz digital audio converters. Dual USB connections provide the ability to employ redundant laptop systems.



The SW8-USB Auto Switcher eliminates the need for digital audio interfaces on each computer. Dual USB inputs with separate 24-bit/192 kHz digital-to-analog converter cards allow two computers to be connected in tandem. Both computers will see the SW8-USB as an available audio and MIDI interface, allowing for connection of both digital workstations.

## Studio Technologies IFB Firmware Update

Studio Technologies has released enhanced firmware for several of its AoIP products that supports the creation of IFB feeds for use in REMI or At-

**firstlook**

### JBL Professional 3 Series MkII Powered Studio Monitors



JBL Professional's 3 Series MkII powered studio monitors are available in three configurations: 305P MkII (5-inch woofer), 306P MkII (6.5-inch woofer) and 308P MkII (8-inch woofer). JBL 3 Series MkII monitors are equipped with the JBL Image Control Waveguide; originally developed for JBL's flagship M2 Master Reference Monitor, the patented Image Control Waveguide aims to provide a transition between the low- and high-frequency transducers.

The 3 Series MkII delivers bass via long-throw woofers and the patented JBL Slip Stream low-frequency port, while woven-composite 1-inch neodymium tweeters offer highs. The monitors are powered by dual integrated Class D power amplifiers. A new Boundary EQ setting can be used to attenuate low-end boost that can occur when monitors are positioned directly on the desktop or near walls, plus a three-position HF Trim switch allows users to adjust the high-frequency response.

Home remote broadcast productions. The new firmware is currently shipping with Model 5422 Dante Intercom Audio Engine, Model 216 Announcer's Console and Model 44D Audio Interface units. With the latest firmware release, the Model 5422 is capable of creating up to 32 unique IFB signals or feeds, or a mixture of PL intercom and IFB circuits. The Model 5422 offers two IFB modes: voice-operated (VOX) and tone-operated (TOX).



## Roland R-07 High-Resolution Audio Recorder

Roland's new R-07 High-Resolution Audio Recorder features multiple recording modes, plus dual recording and hybrid limiting functions to aid audio capture. It includes Bluetooth for remote operation and features Bluetooth-capable audio streaming via Qualcomm aptX audio technology.

The R-07 supports mono and stereo WAV recording at rates up to 24-bit/96 kHz and MP3 recording at rates up to 320 Kbps. The unit sports onboard stereo mics; scene setups configure all the critical recorder settings with one touch. The R-07 is powered via two AA batteries or USB bus power. It comes in a choice of black, white and red. Using the free R-07 remote control app on an iOS or Android mobile device, users can wirelessly manage various R-07 functions and also monitor status and levels while the R-07 is placed in a prime recording location that's out of reach. As accessories, Roland is offering an optional soft zippered pouch and a bag with a shoulder strap and pockets.



## ProCo Sound AoD Output Module

Intended to provide studio-quality, low-latency audio transport over any Dante network, ProCo Sound's AoD Output Module features a Dante audio input and two channels of analog output from a aluminum extrusion housing.

AoD Output Modules can connect with any Dante Network; the module comes equipped with hand-soldered, 3-foot analog audio tails and two analog audio outputs, including one RJ45 Dante input and using two Neutrik NC-3MXX series XLR analog outputs. The AoD Output Modules support a 44.1, 48 and 96 kHz sample rate, and up to 24-bit depths. The modules use Power over Ethernet (PoE), with power sourced through standard Ethernet cable via a PoE-capable network switch.



## RCF EVOX J Series Portable PA

RCF has updated its EVOX portable PA line with the debut of the EVOX J Series. The EVOX J8 features a line source satellite module with eight 2-inch full-range drivers, paired with a 12-inch woofer in a bass reflex enclosure, all powered by onboard, 1,400 W Class D amplification. The EVOX J Series maintains a similar footprint to the original EVOX systems but is encased in a portable composite enclosure.

The JMIX8 (pictured) adds an 8-input digital mixer to the system. Onboard Z.CORE DSP provides full mix functions as well as instrument effects and amp simulations. Additionally, an EVOX iOS/Android-compatible app allows the JMIX8 to receive streaming information via Bluetooth.



## Audix M62/M65 Install Mics

Audix has introduced the M62 boundary microphone and M65 desktop microphone. The M62 boundary mic is built around a Micros series technology hypercardioid condenser capsule within a patent-pending internal shock-mount suspension system. Features include logic remote or local programmable on-off switching; dual color LED status indicators; offset button for interference-free operation; and a tail out or tail down cable exit to accommodate a variety of installation or mounting requirements. The M65 (pictured) features a Micros hypercardioid condenser capsule with tube construction, swivel mount and black nickel plating.



## Sennheiser Digital 6000 System Update

Sennheiser has announced updates to its Digital 6000 wireless microphone system. A free firmware update for all EM 6000 receivers enables a Command function that lets users set up a talkback channel with suitable transmitters. In addition, the EM 6000 Dante has been upgraded with a secondary Dante port. To operate a talkback channel, users have a choice of several transmitter options: They are able to use the SKM 9000 COM handheld or make the SK 6000 or SK 9000 bodypack transmitters "COM-ready" by connecting the KA 9000 COM command cable. Any output of the receiver can be freely assigned as a talkback channel, and programmed to function either as "push to talk" or "push to mute." Dual Dante channels are supported on EM 6000 Dante receivers.



## Bose Professional S1 Pro Multi-Position PA System

Bose Professional has introduced the S1 Pro multi-position PA system. Weighing 15 lb. and with dimensions of 13 x 9.5 x 11.2 inches, the S1 Pro is engineered to be used in four different positions: tilt-back, elevated, mounted on a speaker stand, or placed on its side (as a floor monitor). Built-in sensors detect positional changes and trigger Auto EQ, which automatically recalibrates the system's internal settings for each placement/application. The S1 Pro comes with a three-channel mixer. Reverb and tone controls are featured on two channels with XLR/quarter-inch combo jacks, and a third channel is for either 3.5mm line-in or wireless Bluetooth connectivity. Additionally, a line-out jack offers expansion to other systems.



## Mackie MP Series Professional IEMs

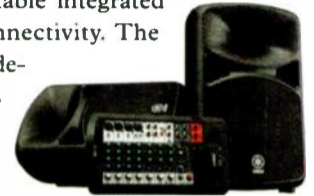
Mackie's new line of high-performance in-ear monitors includes the single dynamic driver MP-120, dual dynamic driver MP-220, and dual hybrid driver MP-240. All models feature ergonomically molded enclosures with three different types of ear tips. The detachable, audiophile-grade cables are

shielded and internally braided and are equipped with MMCX connectors. The MP-120 features a single large dynamic driver said to offer balanced sound with plenty of low-end and clarity. The MP-220 steps up the configuration to dual dynamic drivers, aiming for tighter bass response and enhanced detail in the mids and highs. The MP-240 offers a dynamic driver plus a balanced armature driver.



## Yamaha STAGEPAS 400BT/600BT PPAs

Yamaha's STAGEPAS 400BT and 600BT portable integrated PA systems add Bluetooth wireless audio connectivity. The systems feature two lightweight speakers and a detachable powered mixer, a pair of speaker cables and a power cord; the mixer can fit into one of the speaker enclosures for transportation. The systems include a one-knob Yamaha Master EQ. Channels 1 through 4 feature independent sends for four high-resolution reverb types.



The 400BT delivers 400 watts of power and the 600BT has 680 watts; the former includes a 2-band EQ on each channel, while the latter adds a mid-range band. Both systems feature four mic/line inputs with XLR jacks with phantom power on channels 1-2 and XLR-1/4" combo inputs on channels 3-4, along with channel 4 switchable to Hi-Z impedance for passive-pickup instruments.

## d&b audiotechnik Soundscape

d&b audiotechnik has introduced d&b Soundscape, a toolkit that combines the company's loudspeaker system with object-based mixing and room emulation in an effort to create acoustic environments in which sound sources can be placed and moved at will. Allowing engineers to place individual players' musical performances in the mix to match their locations on stage, the system is based around the DS100 Signal Engine, an audio processor with Audinate Dante networking and a 64x64 level and delay matrix with input and output processing.



Working within it are a pair of optional software modules: d&b En-Scene and d&b En-Space. The former is a sound object positioning tool that allows the individual placement and movement of up to 64 sound objects so that each sound object corresponds both visually and acoustically. Meanwhile, d&b En-Space is a room emulation tool that can add and modify reverberation signatures for a space based on a variety of emulations derived from acoustic measurements of six performance venues.

## firstlook

### Audio-Technica 3000 Series Wireless System Update

Audio-Technica has unveiled the next generation of its 3000 Series Frequency-Agile True Diversity UHF Wireless Systems. With a 60 MHz tuning range, the 3000 Series systems are available in two frequency bands: DE2 (470-530 MHz) and EE1 (530-590 MHz). Frequencies can be scanned and



selected on the receiver and then synched with the transmitter via IR sync functionality. The 3000 Series lets users set a backup frequency that can be swapped in the event of unexpected interference.

Available configurations feature an ATW-R3210 receiver along with an ATW-T3201 bodypack or ATW-T3202 handheld transmitter. The ATW-T3201 is equipped with Audio-Technica's new cH-style screw-down 4-pin connector for secure connection to A-T's cH-style lavalier and head-worn microphones, or cables. The ATW-T3202 comes with either an ATW-C510 dynamic or ATW-C710 condenser interchangeable cardioid capsule.

There's more information on all the products at [prosoundnetwork.com/archive/march2018](http://prosoundnetwork.com/archive/march2018).



# Tackling RF for the Super Bowl

BY JULIE CLARK

MINNEAPOLIS, MN—For the 21st year in a row, ATK Audiotek tapped Orlando-based Professional Wireless Systems (PWS) to manage wireless microphone and IEM systems deployed for the pre-game, halftime and post-game Super Bowl entertainment, along with the wireless microphones for the referees. And as they have done in previous years, PWS began its planning back in early October.

“Long before people start thinking about who will compete in the Super Bowl, we are planning for it,” explains Jim Van Winkle, general manager, PWS. “The ticket to our continued success is being prepared. We have contingency plans for every wireless system being used for the entertainment portions of the event. When you know that more than 100 million people will be watching the halftime show, you make sure it goes off without a hitch.”

This year, it all started with a site visit to U.S. Bank Stadium in Minneapolis, MN. Van Winkle and Gary Trenda, lead RF technician for PWS, made the trip along with ATK Versacom and ATK Audiotek team members Paul Liszewski, Brett Valasek, Kirk Powell, George Schwartz and Matt Campisi. The site visit allowed them to scope out the venue, providing the basic information Van Winkle and Trenda needed to design the game-day wireless system.

“At that time, we don’t have any specifics on the entertainment, but it’s an important part of the design process,” adds Van Winkle. “We like to see where ‘RF World’ will be located, scout out locations for antennas and cabling, and get a handle on the general layout of the site.”

Unlike previous years, PWS was told they would be setting up camp in the southwest corner of the end zone, a big difference from their traditional position around the 20-yard line. This put an entirely new spin on the system design, particularly from the standpoint of wireless coverage.

Van Winkle explains, “This new location meant that the cable runs to our helical antennas would be almost twice as long. It was clear we would have to do something different to ensure the wireless systems in use on the field and performance areas were covered effectively.”

After some consideration, Van Winkle and Trenda decided to deploy a Wisycom RF-over-fiber system along with a series of PWS



Tackling RF duties for Super Bowl LII was a combined team from PWS and ATK Audiotek

Helical Antennas, allowing for longer runs of fiber than traditional copper coax. The Wisycom units were used for both receive and transmit applications, which allowed for additional zones of receive antennas, along with additional IEM transmit locations. The Wisycom unit provides a wide-band optical link for up to four RF channels multiplexed on a single fiber.

“It was something new, but we were confident this would provide the reliability that Super Bowl wireless systems require. Not only are there a lot of moving parts between pre-game, National Anthem, halftime and post-game entertainment, but we are responsible for the referees’ microphones as well. It’s extremely important that everything works as expected,” Van Winkle adds.

With the antenna situation resolved and the announcement of Justin Timberlake as the halftime entertainer, the real work of designing the system began.

“As the lead RF technician for PWS, one of my jobs is to work with NFL frequency coordinator Karl Voss and his team of game day frequency coordinators (GDCs) to request and then manage the RF frequencies we need for our production responsibilities,” adds Trenda. “During the

first site visit, we do a frequency scan to get a clear picture of the local RF environment, and I’ll check with the stadium A/V team to see what channels they’re using for in-house wireless systems so I know what to avoid. This year my prep also included research to see when Minneapolis was going to be impacted by the recent 600 MHz spectrum auction, which would have reduced the available RF spectrum significantly. Fortunately, those changes had not taken place yet.”

From there, Van Winkle and Trenda began to map out their plan, working closely with ATK Audiotek as specific wireless needs for pre-game, halftime and post-game entertainment came to light. As soon as they had a clear idea of their frequency needs, Trenda reached out to Voss and the GDC team to request and receive frequencies assigned for their use.

“Voss and his team have the truly difficult job of tracking and managing thousands of frequencies while accounting for interference from sources outside of the stadium as well,” Trenda adds. “They do a great job of preventing interference and handling any unexpected surprises.”

Once the full extent of the halftime show was unveiled—which included Justin Timberlake and his performers starting in the Delta Club off-field, performing on four stages on the field, and then ending in the opposite stands (also off-field)—it was clear that RF coverage would have to be rock-solid.

“Up until the truck leaves, Gary works diligently with Voss and his team to make sure we have the frequencies we need ahead of time, so we can tell ATK what equipment to put on the truck,” Van Winkle explains. “Anything can and sometimes

(continued on page 41)



RF War Games: On the Thursday before the Super Bowl telecast, every wireless system in the stadium was turned on simultaneously to troubleshoot problems.

## briefs

### Divens to Be Inducted

BALTIMORE, MD—Engineer/musician Brad Divens ([fixintotemix.com](http://fixintotemix.com)) will be inducted into the Maryland Entertainment Hall of Fame in November. Originally a guitarist and vocalist for Wrathchild America and Kix, among others, Divens has since mixed for the likes of Linkin Park, Kanye West, Cyndi Lauper, Garbage, HIM, Bob Seger and the Silver Bullet Band. Mötley Crüe, Jane’s Addiction and, currently, Enrique Iglesias.

### Sennheiser Goes Pink at Super Bowl LII

MINNEAPOLIS, MN—Despite reportedly having the flu, pop singer Pink belted “The Star-Spangled Banner” before this year’s Super Bowl. She was supported by a Sennheiser SKM 6000 handheld transmitter coupled with an MD 9235 capsule. The artist has used the mic recently while touring and for appearances on *Saturday Night Live*, the Grammy Awards, the Video Music Awards and other shows.

### Sound Works Pro Covers March

CHICAGO, IL—Mokena, IL-based Sound Works Productions ([soundworkspro.com](http://soundworkspro.com)) covered more than 300,000 marchers on January 20 at Chicago’s Women’s March for women’s rights and social justice. The stage PA included 16 Nexo ([yamahaca.com](http://yamahaca.com)) Geo S1210 line array speakers, six 4x4 NXAmps, and four Nexo P510s used for fills.

### FBT Outfits Nashville Palace

NASHVILLE, TN—Former Little Texas frontman Tim Rushlow recently brought his current big-band project to the Nashville Palace. For the residency, he had the venue outfitted with three FBT ([fbtusa.com](http://fbtusa.com)) Muse 210LAVs on either side of the stage, one HiMaxx40a on each side as side fill, and two large Subline 218sa’s on each side of the stage, totaling 12 FBT boxes all together.

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For Tori Amos' tour-closing shows at The Theatre at Ace Hotel, Sound Image provided L-Acoustics Kara arrays and SB18 subs.

## Tori Amos Endures On the Road

BY STEVE HARVEY

LOS ANGELES, CA—There ought to be a photo of Tori Amos in the dictionary next to the word “constancy.” She tours almost nonstop, releases a new album every other year or so that inevitably enters *Billboard*'s Top 10, and has retained essentially the same road crew, production team and sound company for decades.

In December, Amos wrapped up the North American leg of her tour with three sold-out nights at The Theatre at Ace Hotel in downtown Los Angeles, the latest dates on a world tour that began in Europe in September 2017, coincident with the release of her 15th studio album, *Native Invader*. But as front-of-house engineer Mark Hawley observes, to call this the “latest” tour is something of a misnomer. “We really started 23 years ago,” he says. “She enjoys touring.”

Hawley joined the Tori Amos roadshow in 1994, when she began using UK-based sound production company SSE Hire. Her tour manager, John Witherspoon, knew Hawley from their time together with World Party, another SSE account. Hawley brought along his friend Marcel van Limbeek to mix monitors.

Twenty-three years down the road, the relationships endure. Engineering not just on the road, Hawley and van Limbeek have also worked in the studio with Amos on every album since her third, in 1994. In 1997, Amos, Hawley and van Limbeek established a Neve VR-equipped recording studio, Martian

Engineering, on the south coast of England. And in 1998, Hawley and Amos were married.

Witherspoon is now Amos' manager and SSE Audio Group continues to supply the PA package. But whereas previously SSE would ship a container of gear to the U.S., a new partnership with Sound Image in Escondido, CA, dubbed UAC (United Audio Companies), meant that this time, an identical system was awaiting the tour party when it arrived from Europe.

SSE project manager Pete Russell's specification for the Native Invader tour included a pair of DiGiCo SD12 desks, running at 96k to minimize in-ear monitor latency, and an L-Acoustics speaker rig—K2 for the larger European halls, and Kara II and X12 available for fill, for the smaller venues and the U.S. excursion. SSE Hire provided two new SD12 consoles to support the European leg of the tour. The SSE road crew included system tech Miles



Monitor engineer Marcel van Limbeek, stageside at The Theatre at Ace Hotel.

Barton and monitor tech Andy Yates.

While a Tori Amos concert may feature the singer with just a piano or electronic keyboard, “It's really a rock and roll show,” says Hawley. “If it's not in your face and huge sounding, it makes it difficult for her to get the point across. So that's my first job. Then to make it sound as interesting as possible.”

To that end, Hawley relies on a rack of high-end outboard gear, largely duplicated at monitorworld, that wouldn't look out of place in the studio. “I'm using parallel compression on the vocal, with an 1176, an LA-2A and a [Manley] Massive Passive,” says Hawley.

The vocal chain starts with Heil Sound PR 30 dynamic mics at the opposite-facing keyboard positions. “The Heil has this lovely top-end,” he says. “We put it through a Neve preamp, which helps; it's a really clean sound.”

Reviewer Peter Larsen at the *Orange County Register* certainly took notice of the results. “Her microphones at the Ace on Friday were set to capture every whisper and wail, so closely tuned you could hear her breathe between chorus and verse,” he wrote.

To create different environments for each song, replicating the ambiances that van Limbeek feeds to Amos' in-ears, Hawley uses a variety of processors. “For her vocal, I have a lot of stereo effects—stereo chorus from the [Lexicon] 480, and I've got an Eventide Eclipse and loads of stereo delays and stereo reverbs—just to try and give some interest, some audio candy.”

The Bricasti reverb has been a revelation, he says. “It sounds amazing, but I also still like the old 480. Pete Russell said it wouldn't last two gigs, but I'm so old, I know how to tech them. I have to push the cards in every day, but it's been great,” he laughs.

A pair of Earthworks mics in an A-B pattern capture the piano. “In the studio, we have them in M-S, so it's fine in mono, but live, you need stereo,” he says.

Van Limbeek integrated the KLANG:technologies binaural system for the first time on this tour. “It's great; I'm really impressed,” he says. The controller enables him to position vocals and instruments in space and in perspective in Amos' IEMs.

“Initially I had the vocal in the middle, in mono, and then the main effects—the Eventide Eclipse—going to stereo. Everything else I had panned. The piano is a little bit in front and a little bit below her. Then

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# whirlwind



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## Tori Amos

(continued from page 38)

she has two keyboards behind her, one high and one low,” van Limbeek explains.

Although he created presets to switch perspectives when she changes keyboards, he says, initially he sometimes forgot: “But it didn’t matter. It’s less about the realism and more about the space, so I stopped doing it and she’s fine.”

Indicating the racks of equipment at the monitor position, van Limbeek comments, “Her vocal EQ and vocal sound are very important to her. That’s what all this gear is about.”

Amos is also very sensitive to latency, he reports, so her vocal is added to the mix after the KLANG box, which is fed via a MADI-to-Dante link. “Because of latency, I do all my processing in the analog domain and then, at the last minute, give it to the digital system, which is more of a distribution system.”

The two mics initially come into a Neve 1084 module. “The gain and EQ are shared between front-of-house and monitors; I never touch it,” he says.

The output feeds a Crane Song equalizer. “One really special thing is that, despite the fact that it’s essentially very clean, you can route any band or all the bands through an inductor circuit to add some harmonic distortion. I do that on band three, where I’m boosting around 1.5 kHz—it gives her a bit of a growl and adds pleasant harmonic distortion.”



Amos belts into Heil Sound PR 30 dynamic mics, while Earthworks mics in an A-B pattern capture the piano.

A third, spare mic goes through a Neve module but not a Crane Song. “I’ve EQ’d it a little bit so it sounds almost the same.”

The Crane Song output goes to two Y splits. “Two sides go to Mark for his vocal chain. The other sides go into API graphic EQs. These are a way for me to add some highs and mid-highs,” he says, noting that no one, or their hearing, is getting any younger.

The APIs feed a passive switch box. “There’s one output from the box which splits into two branches. One runs into the LA-2A, which is the main vocal compressor, and the other runs into an 1176. They sound completely different.

“The LA-2A is really good at a lot of gain reduction while sounding very open and beautiful. For all the high notes, when Tori goes loud, this is the main sound. However, if she goes low, she needs more definition,

more growl. Then I bring this 1176 compressor in more. I leave the LA-2A at unity gain, so that’s constant, and then I change the 1176 in relation to that. So I continuously change the balance depending on how she is singing,” he says.

Van Limbeek’s fader-riding performance includes the effects that he feeds to her ears. “Where the binaural really comes in big time is with all the add-on effects: delays, echoes. She’s using a lot of those, for various reasons. It helps her with her timing, but it also gets her excited. I typically use one in stereo mode, ping-ponging, and one in mono. During the show, I push them up and down. I route the delays to my Lexicon 480L, which has some nice choruses. You can have the delays coming from behind and the effects coming from the front,” he elaborates.

The two keyboards, piano, Leslie cabinet and ambient microphones are all mixed to the DiGiCo’s subgroups, he says. “There’s a stereo ambient subgroup, stereo keyboard one, keyboard two, Leslie, and some of the effects. These subgroups feed hardware outputs that feed the KLANG box. The inputs match the subgroups and the actual merging is being done in the box.” The KLANG outputs are on an insert return, allowing van Limbeek to deselect it in an emergency and instead feed Amos the desk’s stereo output.

As for the piano, the mics input via a Chandler TG2 Abbey Road preamp. “That runs into a GML EQ, where we boost the high end,” he says.

The live show is not an attempt to re-create the studio versions of the songs, according to Hawley. “It’s

a different thing,” he says, not least because she changes the songs—and the running order—in the moment on tour. She has a catalog of 200 songs; for the Native Invader tour, the mixers had 154 snapshots programmed into the DiGiCo consoles.

He and van Limbeek spend a lot of time engineering the live show’s vocal chain and making sure that everything is the best it can be, Hawley reports. “We record all the shows on Pro Tools. We’ve done that for ages; the reason, apart from archiving, is that it’s really useful for me to listen back on a pair of nearfields in a controlled environment during the day and work on my snapshots.”

Hawley has been touring since long before line arrays came along. “Before that, it was a lottery,” he recalls. “I found that frustrating. The whole live thing has changed dramatically since line arrays came along. There are still huge issues with line arrays, but they’re so much more consistent.”

Now that he spends so much time in the studio, Hawley has little opportunity to learn the intricacies of new speaker systems. “Miles, who looks after the system, is a great system tech. He is really great at setting it up; I love the sound of the system,” he says.

Don’t get Hawley started on subwoofers: “I’m not a huge fan of cardioid bass. Because, in its nature, the wavelengths are so long that they’re never going to be cardioid.”

He comments, “The thing I have against most systems these days, especially the bigger K1 and K2, is that there’s so much energy in the low end. When you’re mixing in the studio, that’s not there. I like the Kara because it’s more like a studio monitor. But when we’ve used the K2, like we did at the Royal Albert Hall, Miles understands what I want and tames it down so it’s more linear.”

For the show at the Ace, he says, “We have four SB18s a side, in a column. But I also love when we get the chance to put a couple above the hang. It seems to change the sound of the hang for the better.”

DiGiCo  
www.digico.biz

Heil Sound  
heilsound.com

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SSE Hire system tech Miles Barton (left) and engineer Mark Hawley pause with the tour’s DiGiCo SD12 at FOH.

“It’s really a rock and roll show. If it’s not in your face and huge sounding, it makes it difficult for her to get the point across. So that’s my first job. Then to make it sound as interesting as possible.”

Mark Hawley, FOH engineer



## Super Bowl

(continued from page 36)

does change until that truck pulls out of the parking lot. Once it does? Then our system components are finalized.”

This year they deployed 12 channels of Shure Axient digital microphones, four channels of Axient analog microphones, two channels of Sennheiser Digital microphones, and 12 Shure PSM 1000 in-ear mixes to more than 50 in-ear packs.

“The Axient Digital microphone systems provide the audio clarity necessary while also being extremely flexible, which is imperative in an RF environment as crowded as the Super Bowl,” explains Trenda. “The Quadversity feature allows placement of two pairs of antennas in different zones or doubling antennas in one zone, improving RF signal-to-noise in challenging environments—which this most definitely is.”

In addition, the Axient Digital system’s frequency diversity capability ensures that a secondary frequency is immediately available as a backup if the primary frequency degrades. Both the Axient and PSM 1000 systems are compatible with Shure’s Wireless Workbench control software with RF spectrum and timeline plotting, along with live monitoring, which also comes in handy during game day.

“One of PWS RF technician Cameron Stuckey’s main roles during halftime is operating Wireless Workbench and monitoring alerts,” adds Van Winkle. “We have a plan for every alert possible—if Cameron sees even a hint of a problem, we have a plan ready to resolve it.”

With as many moving parts as the planning process has, when does planning stop and implementation begin? The PWS crew showed up more than a week before game day to set up all of the gear, making sure it operated on the assigned frequencies. Then a real RF showdown happened the Thursday before the Super Bowl broadcast.

“The main unknown is the other wireless operators on site,” says Trenda. “In theory, they have also been working with Voss and the GDCs, which should mean that when everyone turns on their RF systems, it will be smooth sailing. So the Thursday prior to game day, we try to get everyone in the stadium to turn on all their wireless systems and see what happens. We fondly refer to this process as RF War Games.”

This is an opportunity for the PWS team to make adjustments, modify gear placement and rework

anything else that needs to be corrected prior to the game.

With the amount of planning and testing that’s done prior to the game, along with all the contingency plans in place, one might think that the Super Bowl itself is a letdown, but far from it.

“This is where the rubber meets the road. We’re not on eggshells, but there is a definite sigh of relief when we strike the system after the Lom-

bardi Trophy ceremony,” adds Van Winkle. “So far, wireless systems can’t be completely locked down—there is always an unknown out there that can ruin the best-laid plans. Fortunately, it rarely happens. This Super Bowl was one of our best ever. Gary did a terrific job and I knew he was happy with the results when he finally smiled when Timberlake ended up in the stands at the end of his performance. Gary was backed

by Cameron and our other RF tech, Deb Munini, who was responsible for deploying gear to talent. I’m looking forward to continuing our partnership with ATK Audiotek for next year’s game at Mercedes-Benz Stadium in Atlanta.”

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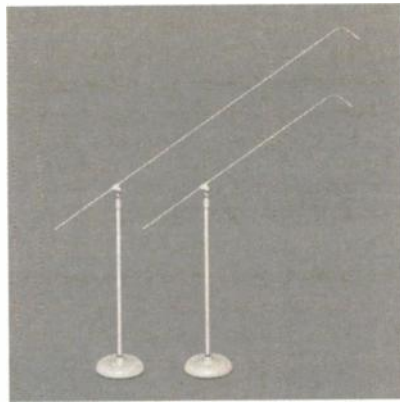
## Reaching to the Choir

BY AL FERNALD

Choir microphones don't automatically grab your attention—if anything, they're meant to blend into the scenery—but they're crucial for bringing a group of voices to worshipers. Not only do they help capture choirs for the house PA system, recordings and broadcasts, but a good mic can help shape that choral group's sound as well. With that in mind, here's a look at choir mics—some relatively recent, others time-tested and all presented in no particular order. These are by no means all the options out there—numerous manufacturers make choir mics, and most make more than one—so think of this as a representative sample.

### AUDIO-TECHNICA U853R CARDIOID CONDENSER HANGING MICS

Around since the mid-2000s, the U853R offers notable off-axis rejection for maximum gain before feedback; has interchangeable elements to permit various angles of acceptance from 90° to 360°; and sports Uni-Guard RFI-shielding to help reject radio frequency interference. The mic comes in black and white, and offers a low-reflection finish for minimum visibility.



### AUDIX WHITE MICROBOOM PORTABLE CHOIR MICS

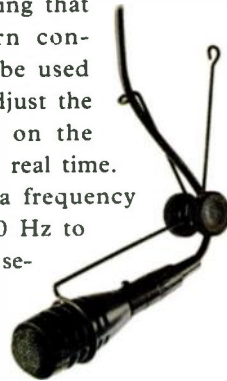
While Audix's MicroBoom system debuted in 2005, the white edition was introduced in January 2018 at the NAMM Show. Intended for choir applications where a portable miking solution is required, the MicroBoom system is compatible with Audix's The Micros miniature condenser microphone series with integrated preamps and detachable cables. There are three models of Micros (M1250B, M1255B and M1280), each of which is available with cardioid, hypercardioid, omni or supercardioid capsules. Available in 50" and 84" boom arm lengths, the white MicroBooms attach to a standard microphone stand or 5/8" thread mount.

### CAD AUDIO 1600VP HANGING CONDENSER MICROPHONE

CAD Audio's 1600VP is a continuously variable pattern condenser microphone system with remote polar

control, meaning that CAD's pattern control box may be used to remotely adjust the polar pattern on the microphone in real time.

The mic has a frequency response of 40 Hz to 20 kHz with a selectable 80 Hz, 12 dB/octave high-pass filter. It sports an anti-rotation-al mount, 30 feet of cable, an XLR-F wall plate and counter poise string.



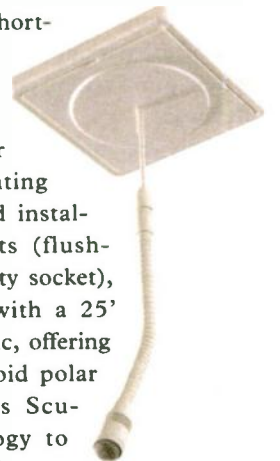
### COUNTRYMAN ISOMAX 2 CHOIR MIC

According to Countryman, the ISOMAX 2 microphone is the smallest hanging condenser microphone on the market. Available in three polar patterns and two colors, the mic comes with an integrated stiffener on a 50' aramid-reinforced cable with braided RF shielding, along with an integrated phantom-powered preamp and a cable spool.



### BEYERDYNAMIC CLASSIS OM 304 MIC

This white, short-gooseneck microphone is designed for ceiling mounting into standard installation sockets (flush-mounted/cavity socket), and comes with a 25' cable. The mic, offering a supercardioid polar pattern, uses Studio technology to prevent interference from wireless communication devices.



### SHURE MX202 MICRO-FLEX OVERHEAD CONDENSER MICS

Each model in Shure's MX202 series features a choice of interchangeable cardioid or supercardioid condenser microphone cartridges, which can be attached to a flexible 4" gooseneck with a 30' cable. The mics are available in black or off-white finishes, and with in-line or plate mount preamps. The MX202B/C shown here is a mini-condenser cardioid mic with cable, in-line preamp and stand adapter.

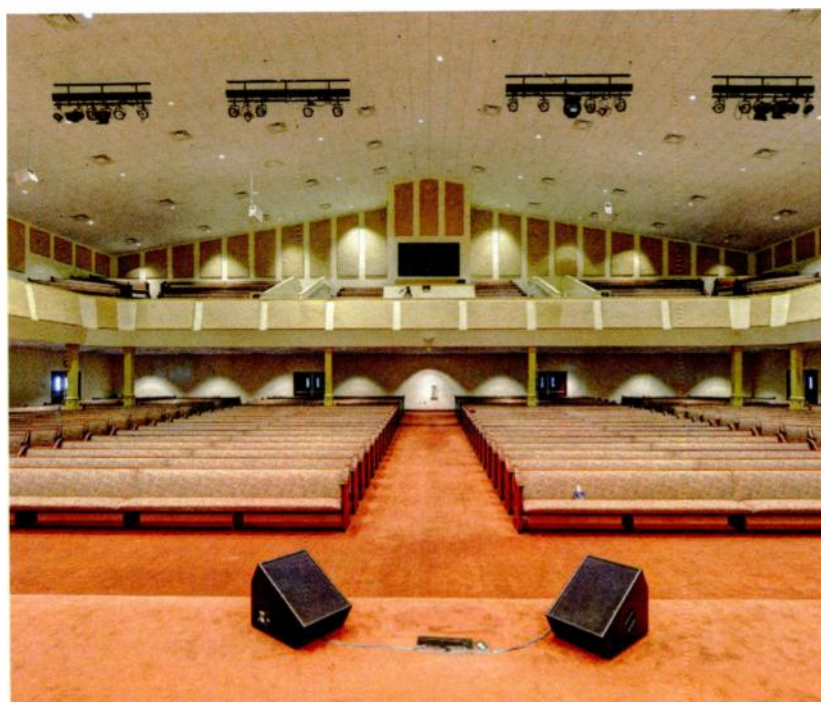


## Church Combats Reverb and Slap Echo with GIK Acoustic

LITHONIA, GA—Antioch-Lithonia Missionary Baptist Church recently upgraded its acoustic configuration to counter persistent reverb and slap echo from the side walls in its sanctuary. The acoustic retrofit involved installation of 25 large (custom size 48 x 78 inches) 242 Acoustic Panels from GIK Acoustics in Guilford of Maine fabric FR701 Straw color. The acoustic panels were placed both walls evenly, left and right, to provide a balanced sound field.

According to Carolyn Leggett, Antioch-Lithonia Worship Technology department head, she and her team were introduced to GIK Acoustics by Worship Technology sound tech Vaughn Geathers. GIK personnel visited the sanctuary and provided feedback about how Antioch-Lithonia could accomplish its goals in an acoustic remodel.

Leggett says, "After speaking with



The GIK 242 Acoustic Panels were placed between both walls evenly to provide a balanced sound field.

GIK Acoustics [Shelly Williams Kuras and Glenn Kuras] about what we were looking for and our needs, they were instructional in recommending what was needed, the look that would enrich our edifice, and recommending what was not needed.

"We followed their recommendations," Leggett continues. "We can definitely say that the overall sound quality is good. My sound techs have noted a 'before and after' difference. Some audience response has also been positive."

GIK Acoustics 242 Acoustic Panels are designed for use in environments like sanctuaries and houses of worship. The panels' absorption is broadband, which allows for clarity especially in the frequency range of a voice. Their rigid two-frame system allows the panels to be hung flush against a wall with a built-in air gap.

GIK Acoustics  
www.gikacoustics.com

## Woodstock Stocks Up

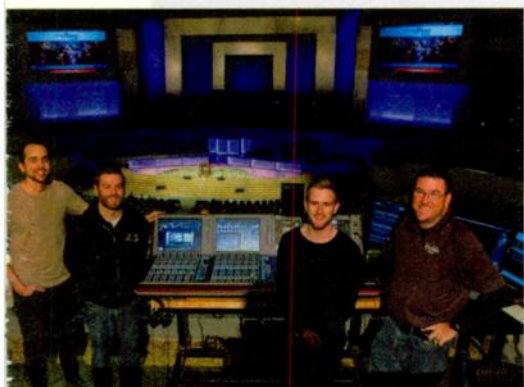
WOODSTOCK, GA—First Baptist Church Woodstock is not small in any sense of the word. Its sanctuary can host a 60-piece orchestra and 150-voice choir while seating 7,200 people—and filling it with sound requires a sizable audio system. An early adopter of digital consoles, the church purchased a pair of Yamaha PM1Ds in 2003, and recently replaced them with RIVAGE PM10 desks.

“When you deal with volunteer operators, you want to have the ability to keep things familiar,” said Jamie Karnes, director of audio, First Baptist Church Woodstock.

“We are using Dante for a digital split off from the RPIO I/O frames to our broadcast room and the HY144-D for virtual sound check. All is working very well. Our Dante network is being transmitted over fiber lines we had pulled during our prep for the PM10 install. The infrastructure changeover was one of the most important pieces for the RIVAGE and Dante installation. We had it pulled, terminated and certified by Hamilton Audio/Visual Services, which made it very turnkey for us. Everything worked well the first time we tried it.”

The church also houses Yamaha DM2000 digital consoles in its broadcast suite that are being installed with MY16-Dante cards in order to receive the RPIO digital split. A Yamaha M7CL will be upgraded to Yamaha CL5 digital consoles for their 2,400-seat contemporary worship facility, where there are six to ten musicians on stage each week.

Yamaha Corporation of America  
yamahaca.com

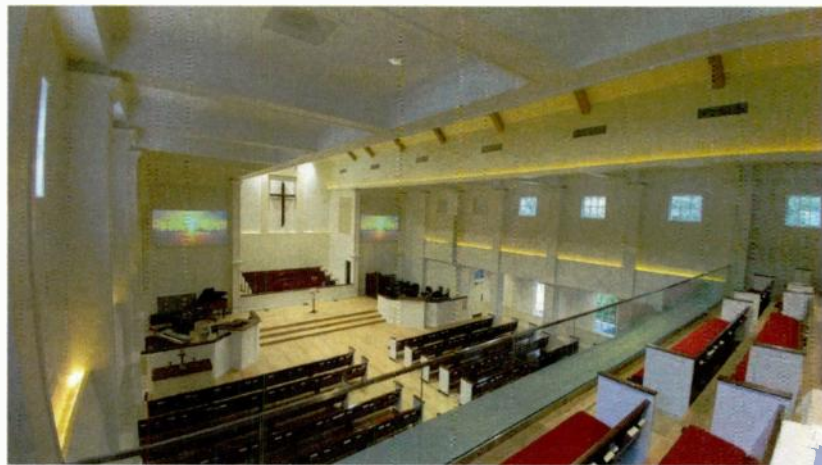


The First Baptist Church Woodstock audio team includes (l-r) Brent Cole, Steve Davenport, Josh Wright and Jamie Karnes, seen here at the FOH RIVAGE PM10 console.

## ICONYX Lands in Ocean Springs

OCEAN SPRINGS, LA—First Presbyterian Church in Ocean Springs, LA, recently completed a major remodeling and expansion, gaining a new balcony and additional seating. As a part of the renovation, the worship facility added an audio and video system centered around a Midas Pro 1 console at FOH, Biamp Nexia DSP handling system processing, and a pair of Renkus-Heinz Iconyx IC24-RN digitally steered array loudspeakers.

“It’s an acoustically challenging space to begin with: hardwood floors, flat walls, high ceilings, and a balcony with a glass front,” said Magnolia Music’s Rain Jaudon, who designed and installed the system with partner Tony Strong. Brought in during the planning phase, the Magnolia Music team previewed architectural renderings and designed AV systems for the space, which included a balcony above the existing foyer to host audio, video and lighting control, and an



As part of a major expansion, First Presbyterian Church in Ocean Springs, LA, upgraded its audio system with Renkus-Heinz.

additional 100 seats under the new balcony.

A pair of Iconyx IC24-RN arrays is mounted on either side of the stage, albeit 10 feet above the platform, “several feet higher than we would have liked,” admitted Jaudon. Nonetheless, he reported, “the IC24s

were able to create nice levels of intelligibility. We were able to use the variable acoustic centers to cover the main floor from the bottom of the array and the balcony from the top of the array.”

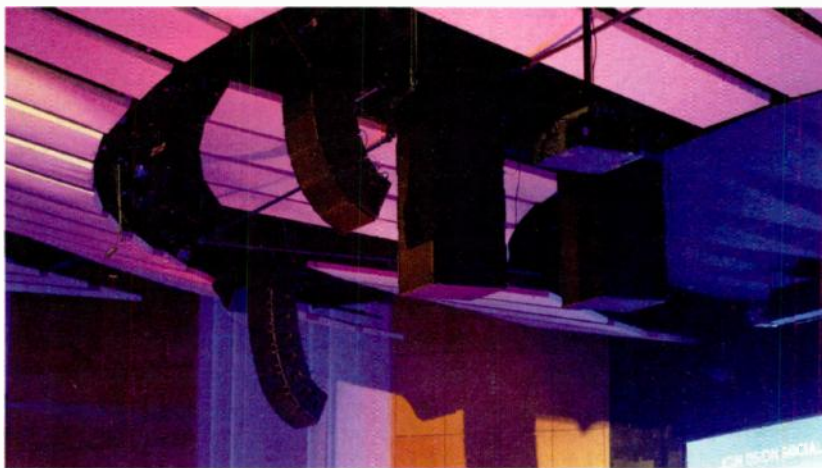
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renkus-heinz.com

## When The Met Church Met ShowMatch

HOUSTON, TX—Houston’s The Met Church recently updated the 20-plus-year-old audio system at its Jones Road campus. Atlanta, GA-based Scott Clark, a design engineer from integration firm Diversified Engineering Sciences, worked with Bose Professional to create a system that would meet the church’s modern-day needs, including a praise band and video production.

Clark worked with Josh Cash, the new tech director at The Met Church, on the project. “The worship center is the standard Baptist church: a fan-shaped room with raked pews that go up side loges all the way to the balcony,” explained Clark. “The stage is more contemporary, but the seating is more traditional. It’s a fairly tall seating shape with a reasonably short back wall—from the edge of the stage to the back wall is about 120 feet. Like most churches, you’re not really doing an extremely long throw; you’re doing what I would call a medium throw.”

The Met Church system includes 21 ShowMatch modules, eight ShowMatch SMS118 subwoofers, two Bose Panaray LT 9702 WR loudspeakers as side-fills and four RoomMatch Utility RMU208 modules. Each of the two main arrays (arranged in left/right configuration and flown above the stage) consists of five Bose ShowMatch SM5s, one SM10 and two SM20s (equipped



A smaller center localization array is flown in between the main left/right arrays. Two flown subwoofer arrays are placed behind the center array, facing each other to create a cardioid pattern.

with SM20WG12 waveguides). The center array, installed to satisfy Cash’s design criteria for center localization, consists of one SM5, two SM10s and two SM20s (equipped with SM20WG12 waveguides).

“The Panarays are located just to the outside of the left and right main arrays,” said Clark. “They are used as side-fill speakers for a very narrow slice of the front corner of the space that is not being covered in the high frequencies by the left and right arrays. So we rotated these speakers to be 90 degrees in the vertical and 70 degrees in the horizontal, and they’re filling in just the front corners of the space.”

Clark installed two subwoofer arrays, flown one behind the other.

Each array consists of four SMS118 subwoofers. “Both of those arrays are behind the center localization array, and they’re spaced apart 68 inches face to face,” he explained. “That provides a nice cardioid pattern to minimize energy behind the speakers going up into [the space] behind the stage wall and into the ceiling.”

A total of 12 Bose PowerMatch PM8500Ns power the speakers. “The 8500Ns are eight-channel amps that you can bridge and also group into four channels per output,” said Clark. A Bose ControlSpace ESP-880 with a Dante expansion card handles digital signal processing.

Bose Professional  
pro.bose.com

ACT / STATISTICS

CREW

EQUIPMENT

<b>1 LADY GAGA   EIGHTH DAY SOUND</b>	Paul Ramsey (he); Simon Higgs (me); Wayne Hall (cc/se); Chris Fischer (m tech); Clinton Reynolds (rf tech); Greg Horning, Andy Dudash, Chris Smith (tech)	HC: DiGiCo SD7; MC: DiGiCo SD7; HS: d&b audiotechnik J8, J12, J Sub, B22, V8, V12; MS: d&b audiotechnik M4, B6; IEM: Shure; HA: d&b audiotechnik; MA: d&b audiotechnik; HARDWIRED MICS: Shure; Sennheiser; Radial JCR Reamp, SW8; WIRELESS MICS: Sennheiser; Shure; FOH EQUIPMENT: Bricasti; TC Electronic System 6000; Tubetech; MONITOR EQUIPMENT: TC Electronic System 6000
<b>2 GUNS N' ROSES   CLAIR GLOBAL</b>	Caram Costanzo (be); Jeremy Bolton, Steve Carter (me); Tyson Clark (cc); Simon Bauer (se); Taylor Holden, Emmett Tubritt, Jon Brook, Leon Fink (techs); Dale "Opie" Skjerseth (pm)	HC: Avid Venue S6L; MC: Avid Venue Profiles; HS: Clair Cohesion CO-12, CP-218, CO-8; MS: Clair CM-22; IEM: Shure PSM 1000; HA: Lab gruppen; MA: Lab.gruppen; MICS: Shure wireless; Radial JX44, DM1, Key Largo, ProD8, JDI, J48
<b>3 MARC ANTHONY   VER TOUR SOUND</b>	Jose Rivera (he); Eric "Pyle" Ramey (me); Jimmy Ibañez (se); Michael Mordente (cc); Colin Harty (m tech); Caleb Landmark (tech); Danny Badorine, James Butera, Alex Martinez (360 tech); Nick Bechard (VER pm)	HC: DiGiCo SD7; MC: DiGiCo SD10; HS: Meyer Sound LEO, LYON, LEOPARD, MINA, 1100-LFC; MS: Meyer Sound MJF-210, LEOPARD; IEM: Shure PSM 1000, P6HW; HARDWIRED MICS: Shure; Sennheiser; DPA; WIRELESS MICS: Shure Axient, KSM9 HS
<b>4 BILLY JOEL   CLAIR GLOBAL</b>	Brian Ruggles (he); Josh Weibel (me); Rich Schoenadel (cc/se); Jay Yochem (m tech); Tom Ford, Bryan Darling (tech)	HC: DiGiCo SD5; MC: DiGiCo SD10; HS: Clair Cohesion CO-12, i-3, P-2, R4, CP-218; MS: Clair CM-22, SRM, ML-18; IEM: Sennheiser 2050; HA: Clair StakRak (Lab.gruppen); MA: Lab.gruppen; HARDWIRED MICS: Shure; AKG; Sennheiser; Audio-Technica; Radial J48, JDI, SW8, Firefly; WIRELESS MICS: Shure UR Series; FOH EQUIPMENT: Waves
<b>5 PHISH   CLAIR GLOBAL</b>	Garry Brown (be); Mark "Bruno" Bradley (me); Paul Jump (se); Chris Holland (m tech); Bill Whitney, Tim Banas (techs)	HC: Yamaha Rivage PM10; MC: SSL Live L500, SSL Live L300; HS: Clair CO-12, Cohesion CP-218, i-3; MS: Clair 12am, MD-18; HA: Clair StakRak with Lab.gruppen PLM 20000Q; MA: Clair Lab.gruppen 8-mix monitor racks; Other: Radial J48, JDI
<b>6 GEORGE STRAIT   VER TOUR SOUND</b>	George Olson (be); Josh Kaylor (me); Joe Casanova (cc); Mo Eddie Harbin (se); Clinton Hermann (mse); Alfonso "Fonzle" Torres, Nikki Berna (tech)	HC: Avid Venue Profile with Pro Tools HD2; MC: Allen & Heath dLive S5000 with Allen & Heath IP-8 8x Motorized Fader Controller; HS: JBL VTX V25-II, S28 Sub, VT4887A; MS: d&b audiotechnik M2; L-Acoustics 108P; IEM: Shure PSM 1000; Shure P9HW; HA: Crown I-Tech 12000HD, 4x3500HD; MA: d&b audiotechnik D12; HARDWIRED MICS: Shure KSM9HS, SM58, VP88; Audix D6, D2; Sennheiser MD 441-U; Royer R-122, R-121, R-101; AKG C 451; Beyerdynamic M-201TG; Radial J48, JDI; Optogate; Neve RNDI; Avalon U5; WIRELESS MICS: Shure UHF-R; Lectrosonics R400A; FOH EQUIPMENT: Lake LM44; Apogee Big Ben; Focusrite ISA828; Sound Devices USBPre 2; Denon DN500R; Waves 9; McDSP; Crane Song; SPL TwinTube, EQ Ranger
<b>7 ANDREA BOCELLI   PRG</b>	Andrea Taglia (he/me/se); Francesco La Camera (orch e); Alan Henig (cc); Nicola Marozzi (se); Andre Roy, Tomasz Gajewski, Robert Alumbaugh, Paolo Mangones, Armando Montalvo, Justin Willmon (tech)	HC: Midas Heritage 4000, XL-4; HS: L-Acoustics (88) K2, (4) K1-SB, (14) KS28, (24) Kara, (8) X12, (12) MTD108A; MS: (10) Meyer Sound UM-1P; IEM: Shure PSM 1000; HA: L-Acoustics LA12X (L/C/R/SUB), LA8 (rest of the system); HARDWIRED MICS: (10) Schoeps CMC 6/ MK 21, (38) CMC 6/MK 4; Shure KSM32, SM57, VP88; AKG C414; DPA 4061; Schertler DYN-B; Electro-Voice RE20; various DIs; WIRELESS MICS: Shure UR2/KSM9+SM58, UR1 with DPA 4061; FOH EQUIPMENT: Meyer Sound Galileo; L-Acoustics LA Network; Lexicon 960L; TC Electronic 6000; dbx 162SL, 160A; Drawmer DL241; Tascam SS-CDR200; Denon DN-C640; MONITOR EQUIPMENT: XTA DP448
<b>8 DEAD &amp; COMPANY   PROMEDIA/ULTRASOUND</b>	Derek Featherstone (be/se); Matt Haasch, Ryan Cornelious (me); Lonnie Quinn (mse); Michal Kacunel (cc/se); Sean McAdam (se); Michael Bollella, Cody Scott (techs)	HC: Gamble EX56; Avid S6L (96 Ch. drums) with Pro Tools 12.7; MC: Avid Venue D-Show (96 Ch.), Venue Profile (96 Ch.); HS: (36) Meyer Sound Leo, (22) 1100-LFC, (16) 700-HP, (32) Milo, (16) Mica, (6) Leopard; MS: Meyer Sound MJF-212, MJF-210, 1100-LFC; IEM: Sensaphonics; JH Audio; Future Sonics; HARDWIRED MICS: Milab LC-28, LSR3000; Shure KSM8, KSM9, Beta91, Beta2, SM57; Sennheiser 421, 409, 904, 935; Neumann KMS104; Helpinstill model 280 piano pick-up system; AKG 414, 460; Telefunken M-80; FOH EQUIPMENT: Summit DCL-200, TLA-100; Empirical Labs Distressor; TC Electronic M5000, D-Two; Aphex 622 gates; KNAS Das Ekdahl Quad Massager; UltraSound DRSE Quad Panners; Metric Halo UNL2; TubeTech LCA-2B; UREI 1176; MONITOR EQUIPMENT: Sennheiser EW300G3
<b>9 JAY-Z   CLAIR GLOBAL</b>	Ken "Pooch" Van Druen (be); Jimmy Nicholsen (me); Phil Kriz (cc); Adam Stuart (se); Rich Burke (m tech); Elliott Wiley (rf tech); Rich Thompson, Rachel Rozzi, Tim Baness (tech)	HC: DiGiCo SD7; MC: DiGiCo SD7; HS: Clair Cohesion CO-12, CO-8I, CP-218; MS: Clair CM22, CP-118; IEM: Shure PSM 1000s, Albatros Audio PH9B; JH Audio Roxanne (Jay-Z), assorted JH products (band); HA: Lab.gruppen; MA: Lab.gruppen; HARDWIRED MICS: Sennheiser 901, 902, MKH-416; Shure SM57, SM58, SM91, KSM32; AKG C414; DPA d:vote 4099; Neumann KM184; Royer 121; Telefunken M81, M82 Audix OM7; Audio-Technica AT4050; Radial JDI, J48; WIRELESS MICS: Shure Axient, Axient Digital; Sennheiser 6000; FOH EQUIPMENT: Waves; Neve Master Buss Processor, 5059; Bricasti M7; TC Electronic M3000; MONITOR EQUIPMENT: TC Electronic System 6000
<b>10 TRANS-SIBERIAN ORCHESTRA   CLAIR GLOBAL</b>	Dave Whitman, Michihiro Tanikawa (he); Scott Fraser, Earl McCoy (me); Jim Ragus, Dean Mizzi (cc/se); Erik Rodstol, Ken McDowell (mse); Nicole Wakefield, Thomas Birkhead, Mike Gamble, Rachael Stuemke (techs)	HC: DiGiCo SD7; MC: DiGiCo SD7; HS: Clair CO-12/ i-5 CP218; MS: Clair CM-22; IEM: Sennheiser 2000; HA: Lab.gruppen; MA: Lab.gruppen HARDWIRED MICS: Shure; Sennheiser; Radial; WIRELESS MICS: Shure AD-2

**LEGEND:** (he) house engineer. (ahe) ass't house engineer. (be) band's house engineer. (me) monitor engineer. (ame) ass't monitoring engineer. (bme) band's monitor engineer. (se) systems engineer. (ae) ass't engineer. (tech) technician. (cc) crew chief. HC: house console. MC: monitor console. HS: house speakers. PMS: personal monitor systems. MS: monitor speakers. HA: house amplifiers. MA: monitor amplifiers.

Top 10 grossing tours according to *Billboard*. Some tours did not report grosses for all shows; rankings may be affected as a result. Equipment and crew information are provided by the respective sound reinforcement companies.

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Lin Buck

Adamson Systems Engineering has named **Lin Buck** as its director of sales for the United States. Buck will collaborate closely with Adamson's partner network and rep firms to continue driving sales and grow the brand's profile in the U.S. A 30-year veteran of the industry, Buck most recently served as senior manager of live entertainment sales for Harman Professional, and previously worked for Bosch Security Systems' communications division and Kansas City, MO-based manufacturer's rep firm Tremain Marketing Group.



Chris Pagella



Gene Houck



Todd Brushwyler

Audix has made a number of promotions, upping **Chris Pagella** to director of operations, **Gene Houck** to director of sales, and **Todd Brushwyler** to national sales manager. Pagella will oversee the engineering department, as well as the management of manufacturing and supply chain; he joined Audix in 2014 as control and purchasing manager. Houck will be responsible for the development and support of the sales and marketing efforts in North America, while focusing on long-term growth and increased revenue opportunities for Audix globally. Brushwyler, who joined Audix in 2013, will oversee both retail and install markets, reporting directly to Houck.



Chris Calzone

GIK Acoustics has named **Chris Calzone** as its new marketing manager and designer. In the new role, Calzone will be responsible for graphic design, website development, product announcements, public relations, and promotional campaigns and outreach for GIK

Acoustics U.S. and GIK Acoustics Europe. Calzone's experience includes time with graphic design agencies and, as the founder/designer of his own company, building brands, handling graphic design for print and web, and leading marketing campaigns for national clientele.



John Krivit

Pro Audio Design has appointed **John Krivit** to lead its new education division. Krivit is a past president of the Audio Engineering Society (AES) and served from 2010 to 2015 as the chair of the AES Education Committee. A connector of students, educators, artists and professionals, he has taught at Emerson College, Bay State College and the New England Institute of Art, and has given lectures around the world.



Andrew Perneti



James Putland

Powersoft has appointed **Andrew Perneti** as eastern sales manager and **James Putland** as office manager. Perneti comes to Powersoft from Audio-Technica, where he served as sales manager, professional markets, for seven years. Perneti will be responsible for Eastern Canada and the United States, interfacing with Powersoft's customers, including dealers, integrators, distributors and end users.

Putland joins Powersoft from Pine Bush School District, where he served as technical services manager. Prior to his position at Pine Bush School District, Putland held several technical support roles, including support lead at Apple, where he served for five years.



Graham Murray

Astro Spatial Audio has appointed industry veteran **Graham Murray** to the position of global business development manager; he is charged with raising Astro Spatial Audio's profile on a worldwide level. Most recently, Murray held the position

60SECONDS



**ASH LEVITT**  
*Heil Sound*

**Q: What is your new position, and what does it entail?**

**A:** My position is head of research and business development. This includes leading and developing all company research endeavors, such as user experience research, product and sales analytics, and A/B testing of sales and marketing initiatives. I use this

information to improve business development for both our end users and our dealers.

**Q: How has your background prepared you for your new role?**

**A:** My work for Heil Sound is a blend of two distinct background areas. On the one hand, my background is in academic research and statistical analysis in the field of social psychology. I studied why people are motivated to do what they do, which translates perfectly to understanding user expectations, motivations and behavior, and to predicting product and sales trends over time. On the other hand, I also have a background in music and the music industry. I actually went to college on a jazz scholarship for guitar, and have since played in a range of groups from jazz to metal.

I've also worked for Heil Sound behind the scenes for over a decade, consulting on various projects and helping with artist relations. Knowing all of the employees for years, as well as all of the FOH, studio and artist contacts I've made over the years, has made the transition to Heil Sound full-time easy and effortless. The work I'm doing now for Heil Sound is just a natural extension and blend of my two background areas. It's very similar to the work and research I've done before, just with a different set of variables, and in a field that I know and love.

**Q: What new marketing initiatives are we likely to see from the company?**

**A:** Heil Sound has always had a very loyal user base, and its growth has always been very organic. Our research shows that one of the most important factors in gaining new users is just getting our mics in their hands to try. Once they A/B our mics with whatever they had been using previously, nine times out of ten they make the switch to Heil Sound. We are currently working on multiple marketing initiatives to help extend this organic growth, particularly for live music venues in our home area of St. Louis, our touring artists, FOH and studio engineers, as well as in the burgeoning areas of podcasting and streaming.

**Q: What are your short- and long-term goals?**

**A:** Related to what I mentioned previously, for both short- and long-term, our goals are to increase the growth of our user base and to reach the people who were either previously unaware of Heil Sound, or who were aware but didn't have the opportunity to hear the mics for themselves. Longer-term goals also include the development of new products in response to user requests that will further extend our great line of mics and help the company grow.

**Q: What is the greatest challenge you face?**

**A:** The greatest challenge I face right now is to manage my expectations and keep them based in reality. I tend to think big, and I expect great things for Heil Sound and from the people I work with. I'm excited by the potential of Heil Sound, and sometimes I get carried away with my vision for how Heil Sound can grow and what it can be. But Rome wasn't built in a day. I have to remind myself to focus on the task at hand and take things one step at a time.

of sales director, EMEA, for Studer, while in the past he served in leadership positions for numerous brands, including Calrec, Fairlight and AMS Neve.



Pepe Reveles

Focusrite has named **Pepe Reveles** to the position of vice president, sales and marketing, for Latin America. Reveles has nearly 25 years of industry experience, having most recently been part of the team at Avid, where he was in charge of the audio division for Latin America. Reveles will be responsible for ex-

tending the brand's reach to the customer base in Latin America. He will work to expand Focusrite Novation's Latin American presence in all market verticals, from home and project studio interfaces, up to professionals in commercial studios and the appropriate RedNet interfaces.



James Horton

an emphasis in physics.

Auralex Acoustics has hired **James Horton** as its new western regional manager. Horton received a B.A. from Ball State University in Music Engineer Technology with

# Fulcrum Acoustic: Forward Focused

STEPHEN SIEGEL, PRESIDENT, FULCRUM ACOUSTIC

BY CLIVE YOUNG

Over the last decade, Fulcrum Acoustic has made its way in the pro audio world, developing a reputation for its loudspeakers, approach to design and customer service. When company president Stephen Siegel teamed with David Gunness (industry legend/VP, R&D) and Chris Alfiero to found the company in 2008, it was another step in Siegel's lifelong journey through pro audio. It also was incredibly bad timing, as the Great Recession kicked in almost immediately. That's the kind of unexpected calamity that will test the mettle of any fledgling company, but for Siegel, the answer was to keep moving forward.

"My interest in audio dates back to my high school days, when I toyed with PA gear owned by the various bands I was playing in," he recalled. (In fact, he's still a keyboard player for several bands around Rochester, NY.) Nonetheless, Siegel's real introduction to pro audio came in the early 1980s through the Recording Institute, a program offered by the University of Rochester's Eastman School of Music.

"I was an electrical engineering student at the University of Rochester, studying saxophone at Eastman, and the Recording Institutes were summer programs taught by industry luminaries," he said. "There, I learned about many aspects of recording, room acoustics, disc production/mastering, audio electronics and sound reinforcement. This opened my eyes to a number of audio-related fields, each with its own career possibilities. I found the topics related to live performance to be the most interesting; this is what sparked my interests in acoustical design and sound reinforcement system design."

For the rest of his college career, Siegel worked at the Eastman studios during the school years and summers, handling recording, mixdowns, editing and sound reinforcement duties. That real-world experience laid the groundwork for the next 14 years as he became an acoustics and audio system design consultant. In time, he joined the engineering team at EAW, where he worked to innovate and deliver creative solutions for a variety of applications.

That, in turn, paved the way for co-founding Fulcrum Acoustic. "Today, at Fulcrum Acoustic, we have tremendously talented and experienced teams in all aspects of the business," he said. "My role as president of the company is to work with each team to plan and guide our growth. I manage the sales, marketing, admin and manufacturing teams; that's not as daunting a task as it may seem, as we have experienced staff in place in each department."

Those departments aren't necessarily under one roof, however, as

some Fulcrum Acoustic personnel are spread out across the country, though the main office is in Rochester, NY. Case in point, Todd Foster, director of North American sales, works in Memphis, TN, while Jon Sager, the western regional sales manager, is based in Southern California. "It's remarkably easy to stay in close communication through IM, VoIP and other similar tools," said Siegel. "While we do have enough of a corporate structure to provide the necessary framework for the company, we strive to let everybody do what they do best without excessive oversight. Overall, it's a pretty informal and creative atmosphere; it's the way we enjoy working."

Some of the company's most creative efforts can be found in the realm of R&D, based in Massachusetts, albeit only a mile away from Fulcrum Acoustic's separate manufacturing facility. "David Gunness manages the R&D and product development efforts," said Siegel. "He

receives input from the sales team and customer base, and merges those requests with technologies that he's working on to deliver innovative solutions. He's an amazing innovator and has assembled a design team that is always working on interesting products and technologies."

When the company was founded, those solutions were sometimes pretty varied, but that's changed with time. "David Gunness, Chris Alfiero and I started Fulcrum in February of 2008—and six months later, the world economy collapsed," said Siegel. "That forced us to shift gears a bit. In those early days, we ping-ponged between strategic product design/planning and grabbing opportunities that presented themselves."

Since then, the company has

found firm footing and has developed a substantial product line in the intervening years. "Now that we are larger and have a technology base under our belt, we can better balance strategic and opportunistic efforts with a bit less frenzy," he said. "Presently, Fulcrum's product line is installation-focused, with a few portable products to help round out the line. We have been fortunate to have success in a number of important markets; our most typical projects are worship, theme park, sports facilities, performing arts and club/hospitality. Lately we have been experiencing a surge of interest in our reference monitors for production and post-production facilities. Additionally, our subwoofers and full-range systems incorporating the Passive Cardioid feature are becoming quite popular."

Key to Fulcrum Acoustic making its way in the marketplace has

"As a technology-driven company, we are always experimenting with better ways to solve sound reinforcement challenges."

Stephen Siegel

been the company's effort to ensure its product line is "inherently differentiated from the competition. Our broad selection of coaxial products allows designers to develop solutions based on ultra-compact loudspeaker systems. Our AH series of high-output, high-sensitivity systems allows for reduced amplifier size and channel count, thereby reducing costs associated with amplifiers and wiring. One of newest developments, Passive Cardioid, provides for extended LF pattern control without additional cancellation drivers and their associated electronics and wiring. All of these technologies—plus others—help us provide a unique set of tools in a competitive industry."

Another focal point for the company has been its dedication to provid-



Stephen Siegel, president, Fulcrum Acoustic

ing customer support. Stating that it is "an important part of the Fulcrum culture," Siegel pointed out that most members of the company's sales and engineering teams are also called on to provide support in one form or another. "We are fortunate to have exceedingly experienced staff," he said. "Collectively, we have probably worked on almost every conceivable project type at one time or another. We draw on this experience often when supporting our customers and their projects."

Siegel further broke down the support into two specific areas: design and after-sale. "Design support includes product selection and suggestions for ancillary gear like amplifiers and DSP. We pride ourselves in supporting as many third-party electronics products as possible to give our customers maximum flexibility. Then, after-sale support might include tuning suggestions, warranty support, troubleshooting guidance and so on."

While the loudspeaker manufacturer has evolved considerably over the last decade, Siegel doesn't see its evolution as complete, and that forward-focused mindset is shared throughout Fulcrum Acoustic. "As a technology-driven company, we are always experimenting with better ways to solve sound reinforcement challenges," he shared. "We continue to evolve our Passive Cardioid tools, as these provide compelling performance benefits; you will see future Fulcrum products that incorporate this feature. Beyond that, we'll just wait and see."

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## ACC North

(continued from page 1)

cellent traffic, and it hasn't been just other manufacturers and exhibitors; it's been quality pro audio people and we've been busy all day," said Margie Kirby, head of marketing at Allied Professional Technologies, which was presenting Linea Research amplifiers and Luminex network switches inside ACC North.

David Claringbold, CMO of d&b audiotechnik, concurred, noting, "We have been pleased with the success of the pro audio addition to the show. It's been an excellent opportunity to get our upcoming release, the d&b Soundscape, in front of customers. The important word here is 'customer'—we are moving ever-closer to a world where our audience is at the center of our sound-experience thinking, not at the end, so NAMM is the perfect setting to share the d&b Soundscape and that new way of thinking."

By creating a new space specifically for pro audio, NAMM was looking to not merely cater to its existing exhibitors but attract new ones. That worked in the case of audio networking giant Audinate, which was a first-time exhibitor. Josh Rush, VP of marketing for the company, opined, "So far we have been really impressed—it's been packed. At first we weren't quite sure what to make of it being split out, but, certainly in our booth, we've been happy with it."

For longtime exhibitor Electro-Voice, moving to a pro audio-centric space provided an opportunity for the company to strut its stuff yet also be a better neighbor to fellow exhibitors. The loudspeaker manufacturer had a



STEVE HARVEY

ACC North, the new 200,000-square-foot wing of the Anaheim Convention Center, housed solely pro audio manufacturers at this year's NAMM Show.

considerable demo room at the back of the upper level, inside which was a massive video screen, concert lighting and more than 100 loudspeakers.

"This accommodates us in very positive way, because we're a loudspeaker manufacturer," said Guy Low, E-V's content and creative manager. "In order to communicate value and quality, being able to turn it up makes a big difference for us! We don't have to be concerned with noise level ordinances on the main floor now."

Some exhibitors on the lower level initially reserved judgment, perhaps less impressed by the traffic they were getting than their counterparts on the upper level, but they were won over by the end of the show. "We weren't quite sure about being upstairs versus downstairs, but I think the fact that we have the Skybridge here on the second level brings a lot of traffic here," offered Rush of Audinate, which highlighted its new Dante AVIO adaptors at the show.

"People are going to become familiar with the layout of the new wing, and that will take a little bit of time, but we're optimistic that this will be a positive change with NAMM accommodating pro audio manufacturers," said E-V's Low. "We make sound, so actually having enough space to do that—not only our new products, the Evolve 50 and the ELX 200 lines, but also our whole portfolio—is very positive. People can experience the scope of our products properly now."

Doubtless there will be tweaks made for the 2019 NAMM Show—common exhibitor complaints in ACC North included the lines to get in, a paucity of concession stands and less robust foot traffic at the back of the lower level—but most exhibitors were pleased even as the first day of the show came to a close. As Allied Pro's Kirby summed up, "It's been a phenomenal day, really."

**NAMM Show**  
[thenammshow.com](http://thenammshow.com)

## Craig Anderton

(continued from page 21)

ments. It's become a leading company because of instruments like Kontakt, which has become the "go-to" sampler due to extensive third-party support, and Reaktor, which lets people build their own instruments and effects as well as sell the results. At NAMM, NI took the idea of "platforming" further by extending its NKS (Native Kontrol Standard) to encompass effects as well as virtual instruments. When you load a plug-in, NKS maps parameters transparently to NI's hardware control surfaces; Waves, Softube, Eventide and others have already signed up. Although so far only NI hardware has been NKS-friendly, there was a refer-

ence to hardware from other companies possibly joining in eventually; that would take NKS beyond being a platform to being a much-needed industry standard.

NI's other platform announcement was the sounds.com marketplace, which is intended to become the place for people to download sounds and samples. It's not just a way to sell NI's products; the company expects its contributions will be far outpaced by those from third parties. The introductory pricing is aggressive—under \$10 a month—but whether it will be able to maintain that is anyone's guess given that marketplace participants will need to derive income to make it worthwhile. It's hard to imagine someone buying a sample library for \$49.95, no matter how good it is, when they could get five months of download-

ing all the samples they want for the same price. You'll hear the Spotify pro-and-con arguments all over again.

Regardless, the world is changing, and platforms are becoming places for the tribes to gather. The benefits are clear: less obsolescence, more stability, and marketplaces that give more people creative outlets and expand variety. However, they could also make life tough for the "little guys" and force conformity if the platform ends up being rigid. Probably the future lies somewhere in between, where the brilliant platforms will thrive, while anything that falls below those standards of brilliance won't have a chance.

Author/musician Craig Anderton updates [craiganderton.com](http://craiganderton.com) every Friday with news and tips. His latest album, *Simplicity*, is now available on Spotify and cdbaby.





PreSonus EarMix 16M

## HOW IEM Mixing

(continued from page 1)

personal monitor systems that place control of each individual mix at musicians' fingertips. At the 2018 Winter NAMM Show, for example, PreSonus introduced its first personal monitor product, EarMix 16M, which accepts 16 mono input channels over an AVB network, plus a local aux input. The system is designed to integrate with the company's StudioLive Series III mixer family but is compatible with other AVB-enabled systems. It is expected to be available in the first quarter of 2018, according to the company.

The EarMix 16M's mixer interface allows individuals to create custom mixes with channel grouping and stereo channel linking and apply limiting and EQ to any channel in addition to the overall stereo mix. Up to 16 mix scenes can be stored for later recall.

Network connections on the rear of the box allow daisy-chaining multiple EarMix 16M units from a StudioLive Series III mixer. The system may alternately be set up using free PreSonus UC Surface control software for Mac, Windows, iPad and Android. In applications where it's not convenient to power a network of monitor mixers using the external power supplies, the EarMix 16M system can instead be interconnected using PoE (power over Ethernet).

Allen & Heath entered the networked personal mixer market with the ME-1 back in 2013. That system operates with the company's dLive, SQ, GLD and Qu series digital mixers, but may alternatively be driven from other digital mixers supporting Dante, EtherSound or MADI by interfacing via Allen &

Heath's ME-U hub, which also offers compatibility with Aviom Pro16 personal mixing systems.

According to Ben Morgan, Allen & Heath's live sound product manager, "Our established ME-1 Personal Mixer allows a user to craft the perfect mix from up to 40 sources, but many customers have been asking for a more accessible alternative for volunteers and first-time users. That's exactly what we achieved with the ME-500."

The new ME-500, which offers the same interoperability as the ME-1, allows musicians to create custom mixes from 16 inputs, with limiting and EQ, and store and recall eight user presets for different mixes, users or shows, and save them to a USB drive. The ME-500 ships with an external power supply but also supports PoE. Stereo headphone outs are via 3.5mm and quarter-inch jacks, with a quarter-inch mono balanced line out additionally enabling the mixer to drive an external speaker or wireless IEM transmitter. According to the manufacturer, any number of ME-500 and ME-1 personal mixers can be added to a system.

The myMix system pushes the capabilities of the personal monitor mixer a little further than most available systems, allowing up to 250 devices to be on a network. Any user can select from all available audio channels on the network and create a custom stereo mix for his or



Audio Fusion Systems' Audiofusion system

her headphones, in-ear monitors or external powered speakers. The myMix can also record up to 16 channels as 24-bit WAV files onto optional SDHC cards.

The myMix system will interface with any analog or digital mixing console, via D-Sub connections on the input expander boxes or over MADI using RME interfaces. (Both brands are distributed by Synthax.) PoE is also supported.

Each myMix user can create a stereo mix, selecting up to 16 from as many as 500 network channels and applying stereo effects, EQ and panning. The stereo mix can be sent back to the network for other musicians to listen to or as a submix within myMix.

Andy Finseth, lead audio engineer at First Baptist Church of Everett, WA, offers the example of his setup: "We have a total of 12 myMix, two IEX16L input expanders and myMix Control. One myMix is used at the FOH console. The drummer is creating an eight-mic drum sub mix and sending that to the network for all to use as their drums. He is then using the second myMix for his own IEM."

The drummer's two-myMix rig replaced a second mixing console and splitter snake. "This is so much cleaner, using two myMix units," says Finseth, noting that the system carries 34 channels, including the drum sub mix.

Introduced at the

2017 Summer NAMM Show, Audiofusion is a software-based system—currently in beta testing, according to the company, and in use by various houses of worship, musicians and venues—that turns any smartphone into a wireless IEM bodypack. A product from Austin-based startup Audio Fusion Systems, the software uses patent-pending audio and networking technology to pass digital audio from the mixing console or an audio interface and broadcast it in real time over Wi-Fi, allowing musicians to receive a custom monitor mix on personal mobile devices. Kevin Slick, inventor and creator of the Audiofusion technology, is a former senior software engineer for Dell and AMD, and is also a musician and sound technician.

While Audiofusion is a software product, offering an alternative to hardware-based personal monitor systems, it does require some hardware. The output from a mixing console or audio interface is sent to a laptop running the company's SoundCaster software, which converts the audio source to multiple Wi-Fi streams for each of the musicians on stage. A Wi-Fi router—at the venue or carried by the musicians—then distributes those signals.

A tablet running the Director app passes the channel labels, icons and levels, which can be set up ahead of time, to the individual smartphones. The tablet also enables the musicians

or the engineer to pan the sources according to their locations on the stage, and to tweak settings during the performance. The software allows presets to be saved—say, for different regular venues, or for different band line-ups. The musicians launch the Performer app on their phones or tablets and the setup is automatically loaded.



Allen & Heath ME-500



myMix Personal Monitor Mixer

[50] MUSIC etc. ||||  
 Slowdive Returns

BY JACQUES SONYIEUX

After blazing their own trail in the early 1990s in what would become known as the shoegaze genre, Slowdive disbanded more than 20 years ago after being dropped by their label, Creation Records. In 2014, the band got back together to play a handful of gigs, which quickly turned to sold-out festivals and then a self-titled brand new album that has since won critical acclaim all around the world. *Pro Sound News* spoke with drummer Simon Scott about new life in the band's instruments and songs.

**ON RE-EMERGING:**

I think initially the conversation went something like, "Do you fancy doing the Primavera Sound festival and a handful of gigs with Slowdive in Barcelona?" It just so happened that I had recently finished a project and the other guys fancied doing it as well. So we did a few warm-up shows and they sold out very quickly. At that point, we thought, "Well, this is demand for Slowdive." We were very baffled, very surprised and very flattered. I think "astonished" was more the word when we walked out and realized there were 25,000 people who came to see us. So then we thought that maybe there are some people who have never heard of us who might like to come see us on the road to find out what we're all about.

**ON IGNITING OLD FLAMES:**

We walked into the rehearsal room again and we hadn't been all together

for 20 years. It was kind of surreal—we chatted about our families, since we've all got children now. Then we sat down with drums, bass and guitar, set up the vocal mics, switched on the amps and said, "Let's just

try Slowdive," and we went straight into it. And it felt almost as if we'd been in the same room together the day before. It didn't seem like 20 years had passed at all, and there was something really quite magical about it. Of course we were really rusty with some of the parts. Nick Chaplin, our bass player, hadn't been in a band after Slowdive split in '95,

"We wanted the recording to sound like the band does live and have that kind of really big impact—like we've never really been away."

Simon Scott



Nineties shoegaze stalwarts Slowdive are back with their self-titled fourth album.

and he hadn't picked up a bass in 24 years or something. So he went out and got a bass guitar and relearned how to play that. Christian [Savill] and Neil [Halstead] needed to work out a few of the chords by watching YouTube videos of Slowdive at some point.

**ON CUTTING WAX:**

The conversations about making an album happened at the initial stages. We said, "Let's do a handful of gigs, but let's try and make a record." We figured if we were awful live and if we couldn't pull it together, we'd just play a few gigs and call it a day. But at some point we decided to go into the studio to see if we could write a bunch of songs together. What happened was that a community formed and it was a big success—five gigs turned into 50, 60 gigs. By the time we got offered a record deal, we had a bunch of record companies saying, "Look, you've got to get a new album out. Can we sign you? Here's a check if you want it." By the time that happened, though, we'd already been spending time in a bunch of little studios around England, just jamming out songs and recording them to find out if we could add anything to what we'd already released. We'd done three very strong albums in our past and weren't sure if we could do something at that level.

**ON SONIC TEMPLATES:**

For a while, it took a little bit of time just to figure out what we wanted the album to sound like. I think it was one of those conscious decisions that we didn't want it to be too crazy or experimental and that it had to work within the framework of Slowdive. We wanted the recording to sound like the band does live and have that kind of really big impact—like we've

never really been away. The shows were such a success that we wanted to take that momentum and bring it straight into the studio. In that sense, it is kind of like a rock album because there is this sort of dynamic, really powerful live sound on this record. Towards the end of the album, I was bringing in things like signal processing software to create loops and ambient textures—I think you can hear it on that opening track, "Slomo," which has a slightly odd kind of texture in the background.

**ON BUILDING OFF OF DIFFERENCES:**

We spend a whole lot of time listening to how we sound, and one thing I can say this go 'round is that we've all become much better listeners. The chemistry this time was even better than it was back in the really early days. There was a lot more support from one another, and there was a lot more listening. Neil [Halstead] is the principal songwriter, but he considers everyone's ideas important. I think we co-wrote two of the tracks as a band, and I co-wrote the final track on the album. So even though Neil can hear the song coming into its own as it's being recorded, it is very collaborative and it was good fun. It's got a really good vibe on it, and I think you can hear this on the record.

**ON REFLECTION:**

I'm kind of here pinching myself, to be honest with you. If someone told me a decade ago that in 10 years time, I'd be getting on a plane to do sold-out shows in Australia, going on after all these successful bands even high up on the bill, and that tickets would be hard to come by, I would have laughed. And I think everyone in the band would have laughed, too. It is pretty astonishing to think, "Wow, to be able to do that again." To have done that back in the day, and to be able to do it again is a real privilege. Jacques Sonyieux is a devout explorer of recording studios and the artists who occasionally inhabit them. Please send any tips or feedback to Jacques at jacquessonyieux@gmail.com.

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