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## Super Bowl LVI:

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# STRAIGHT OUTTA COMPTON

# The Super Bowl Halftime Show salutes the birthplace of gangsta rap

By: David Barbour

**T**he Super Bowl Halftime Show has officially entered the age of audacity. Never a small production, it is typically at the forefront of technology, produced annually by a crack team of pros who take on one of the most nerve-wracking events in show business. Interestingly, in the last two years—when the temptation might have been to scale back—it has only grown more challenging and high-concept. Ambition will not be thwarted.

Readers will remember last year's show, starring The Weeknd, which featured a tiered set, in the stands at Tampa's Raymond James Stadium, that opened to reveal an interior filled with lights—and that was just for starters. This year's show, staged at the new SoFi Stadium in Inglewood, California, featured a parade of hip-hop stars in a tribute to Compton, California, the birthplace of gangsta rap. The city is especially known for the album *Straight Outta Compton* (by the foundational group N.W.A.) and the film of the same name, which charts the early years of the group's members, including Dr. Dre, Eazy-E, and Ice Cube.

Thus, Es Devlin's show featured an entire block of downtown Compton with performances taking place on the field, inside first-floor rooms, and on the roof. And what a lineup: Dr. Dre, rising to the top to deliver "The Next Episode," then joined by Snoop Dogg for "California Love." 50 Cent dropping into one of the rooms, hanging from the ceiling, to perform "In Da Club," followed by Mary J. Blige's show-stopping renditions of "Family Affair" and "No More Drama," and Kendrick Lamar offering "m.A.A.d City" and "Alright." Eminem, breaking through a roof and joining Dr. Dre and Lamar on "Forget About Dre" before soloing on "Lose Yourself." And, finally, everyone coming together on "Still D.R.E." At a running time of 14:40, it was one of the biggest, splashiest, starriest Super Bowl performances ever.

Once again, a top team was assembled to make it happen, including director Hamish Hamilton; producers Jesse Collins and Dionne Harmon; Desiree Perez, CEO of Roc Nation; and musical director Adam Blackstone. Bruce Rodgers, a longtime Super Bowl production designer, collaborated with Devlin and the rest of the team, facilitating the design and making sure the show unfolded seamlessly under the punishing conditions for which it is known.

## Celebrating Compton

Devlin, discussing her process in a written statement, notes that Dr. Dre and his business partner Jimmy Iovine

signaled a desire to take a different approach from previous halftime shows: "Dre has just had his portrait painted by Kehinde Wiley for the exhibition *Artists Inspired by Music: Interscope Reimagined* at [Los Angeles County Museum of Art] and he was interested in approaching the Super Bowl project as a narrative art installation as well as a celebratory performance."

Devlin adds that Dre was taken with her 2017 installation piece *Memory Palace*, which, according to the publication *Dezeen*, took "the form of an 18m-wide topographical model of a landscape made up of momentous historical events in chronological order." Devlin adds, "Dre was immediately interested in the idea of 'placeness.' He sensed that Compton would be another protagonist in the work and that we could etch a map of Compton on the global Super Bowl stage."

Early on, Dave Free, Kendrick Lamar's creative partner, arranged a tour of Compton for Devlin, during which, she says, "We began to get a sense of the complexity of the city." Indeed, she notes, Compton has long been a cauldron of creativity and politics, its history taking in the young George H. W. Bush, the pioneering Black mayors Douglas Dollarhide and Doris Davis, choreographer Charm La'Donna, and tennis stars Serena and Venus Williams.

The production's fidelity to detail began with the field cloth surrounding the set, which, Devlin says, was "printed from high-resolution aerial photographs of Compton, supplied by Google Earth, with more detailed photographs taken by a local helicopter pilot." The piece, which was decked out with LEDs, was created by Lititz, Pennsylvania-based Atomic. The designer adds that the buildings featured in her design were taken from a block on Rosecrans Avenue in Compton, although a replica of the Audio Achievements Recording Studio, on Cabrillo Avenue, was interpolated as it is the place where Dre and his colleagues in N.W.A. created much of their music.

Other key elements included replicas of Tam's Burgers, the hangout cited in the Kendrick Lamar song "Element"; the Martin Luther King Memorial, designed by the pioneering Black architect Harold Williams; the Compton Courthouse, site of a scene in the film *Straight Outta Compton* in which Eazy-E provides bail for Dr. Dre; and Eve's After Dark, an after-hours club where Dr. Dre recorded Eazy-E performing "Boyz-N-the-Hood." Devlin says that Snoop Dogg's performance of "Next Episode" was delivered on the roof of a Compton house based on the 1992 video for "Nuthin' But a G Thang," starring him and





Previous spread: Dr. Dre. Above: Eminem burst through the Compton County Courthouse roof on a lift supplied by All Access.

Dr. Dre. She adds that she made sure the buildings were “unified by their tone: bone-colored shades of stone or pale gray, like neon-lit museum pieces, to be remembered as a series of forms and frames for the human story within them.”

After Blige’s performance, the focus shifted to the field and, Devlin says, “an army of men bent low in a grid of cardboard boxes.” It was an allusion in part to Los Angeles’ ongoing housing crisis but, the designer adds, the tone was “celebratory as these were branded, along with their inhabitants’ costume sashes, [with] ‘Dre Day.’ Here, Kendrick Lamar was a contemporary artist paying tribute to the generation that precedes him.”

Also featured on the field were several low-rider Chevrolet Impalas, which, among other things, served as stages for dancers. Devlin says that these cars date back to the postwar era, when “Mexican-American war veterans, using engineering skills from their war years, adapted their carts to differentiate them from the ‘hot-rod’ classic cars modified for speed.” They are, she adds, “a central part of Compton culture—the weekly Sunday Funday that,

until recently, took place at Rosecrans Avenue and Compton Boulevard, was a community celebration.” The halftime show, she says, aimed “to achieve this cohesive, celebratory *West Side Story* spirit during, ‘California Love,’” performed by Dr. Dre and Snoop Dogg.

### The eight-minute challenge

Devlin says, “Bruce Rodgers...masterminded the design to be able to appear within eight minutes and disappear within six minutes, an immense challenge requiring military precision and crew choreography. The setup is, in fact, a show in its own right: We noticed very few of the audience leaving their seats: All stayed to watch the intricately staged crew performance.”

She’s not kidding. The Super Bowl Halftime Show may be the most unforgiving production in the business. It is seen by more than 100 million viewers, a daunting figure for any event, never mind one staged on this scale, live, with relatively little rehearsal time. Since 2007, the year that Prince took the stage, Rodgers has designed 16 Super Bowl extravaganzas and he brings a cool eye and

steady hand to the process, ensuring that all the pieces come together, and time frames are maintained.

"For so many years, we had a 12-minute show but this year—like the show with Jennifer Lopez and Shakira—it went 14-and-a-half," Rodgers says. "That makes our eight minutes of getting in and six minutes of loading out really high-stress. We do a lot of work on paper and make estimations, but you don't know how it will go until the guys actually do it." It is, he notes, a labor-intensive process: "We're working with a crew of 1,000: That's 100 professional stagehands and the rest are volunteers that we train." Also, the stadium was booked for a game on Saturday, January 30, cutting off rehearsal time. "This year, we had the fewest rehearsals that we've ever had," he adds.

Rodgers cites Dave Meyers and his team at Diversified Production Services for providing the expertise that allowed the process to happen so seamlessly. "I'm very proud that we pulled off the whole vision, that we didn't try to make it easier," he adds. "We never said no. Dave Meyers is an amazing person; he never loses his cool."

Erik Eastland, of scenic fabricator All Access Staging and Productions, says "We rolled onto the field about 40 units that were, on average, 26' by 8' in size." The Compton block of buildings, he adds, "was made up of seven carts. Snoop's building had two 24' by 8' units that docked together. Tam's Burgers was a single 26' x 8' unit. The recording studio, which was two pieces, had one of the biggest lifts in the industry." The latter item was a notable challenge; as Eastland notes, hydraulics were out of the question because of their excessive weight. "We had to make a full elevator system that didn't push us over the field's weight limit and didn't cause any power problems. We took the design from one of four small 4'-by-4' elevators," typically used in concerts for star entrances. "We combined two of them to make a single lift. At the top of the show, Dre, seated at the sound mixing console, rose on the big lift. It also brought him back down and was reloaded two or three times with, for example, Eminem's band."

Eminem made his entrance on a similar, if smaller, lift, literally busting out of the Compton courthouse roof. To create the explosive effect, Eastland says, "We played with the materials that would be falling onto the field. For example, if we used plywood, there might be trouble with hurting the field or dancers getting hit in the head. [The number-one rule of all Super Bowl shows is that the field must be always left pristine, for fear of affecting the game's outcome.] We went with a type of foam rubber that came in white [to match the rest of the structure]. We also used standard Kabuki solenoids. We had to be very Stone Age in our engineering; again, we couldn't use hydraulics. Also, we didn't want to run a computerized system; all our stuff was manual. The solenoids that held the foam rubber

pieces were painted gray and white to look like concrete and were loaded with compressed springs that pushed them out. We also had four pyro cans that exploded and CO2 jets."

The approach to constructing the set was, Eastland says, "the big change this year. We try to use existing trussing that has been engineered to work with our special approved turf wheels. On this show, being so weight-conscious, we had to manufacture everything from scratch, using a fixed-based platform that could receive the wood decking, which contained the electronics for sound, video, and motors. Then we worked our way up, using metal farming. One of our guys, Brett Walker, got with Es' people and went through exterior textures." He adds that with Compton only 20 minutes away by car from All Access' Torrance, California, location, "We could go right down the street and check out everything." The solution to creating many surfaces was vacuform, especially for scenic items like shingles and ceramic roofs. Verisimilitude was the key: "The siding on Snoop's house was authentic vinyl," he adds.

To keep the interiors and exteriors well-matched, Eastland says that Devlin "gave us different shades of white to be used when painting everything. We had white carpeting. We painted the couches with furniture paint. One big deal was 50 Cent's entrance. We created a system in the ceiling using gymnasium equipment. We had to also reconfigure the design somewhat to give speedy access to the roof and for everyone to get up on top for the finale."

The Compton block was lined in LED tape that All Access engineered into aluminum channels with heat sinks; a silicone diffusion filter softened the look. "Our guys, including Talus Jarvis, did a superb job with that," Eastland says. "There were miles of tape. We used a tunable RGBAW tape that allowed us to get the right shade of white."

The field cloth, with the overhead view of Compton, "went down after the set went in," Eastland says. "We also had a couple of runners that didn't have lights in them along the length of the set. A very well-orchestrated group of volunteers grabbed the runners out of the lighting carts," applying them to the field as a finishing touch. It had to happen in a high-precision way, so that everything was covered, and the electronics were in the right places. Eastland adds his thanks "to IATSE for getting the set on and off and the field so well."

## Video

The production had a new and challenging video component: Each room in the Compton block had a "window"—a video screen showing animations of street activity, including the Compton Cowboys, a local phenomenon featured in several books and the documentary *Fire on the Hill*. "They have been riding horses in the agricultural Richland



farms area of Compton since the 1980s—often riding bareback—and finding in the connection to the animals a positive influence on the youth within the community,” Devlin says.

Screens producer Drew Findley says, “Once Es settled on the locations, Dan Efros [his associate] and I went to each and took photos. The concept was to show Compton, not to pretty it up but to celebrate it in its uniqueness.”

The process involved a series of design programs. Basically, Findley and his team took photos of actual Compton locations, then started building modified street scenes in Cinema 4D, also modeling them in Blender. “Then,” he says “we would texture them, adding in signs, and load all of that into Substance Painter. Next, it all went into Unreal Engine, where we added wind dynamics, clouds, and lighting. Then we brought it into After Effects for GIFs of moving cars, cowboys, and things like that; we layered that stuff in, to give a less polished feel. This approach required a large set of varied skill sets and we had a great team, including Dan Efros, Kevan Loney, Chris Werner, and Peter Kelly [animators and 3D artists] who worked across multiple specialties.

“All the rooms were done this way, except for the 50 Cent room, which had no GIFs but did have digital strobes and ceiling lights. It was completely an Unreal Engine scene. We did some modeling in Cinema 4D and textured it in Unreal, then hooked up to an ETCNomad and DMX to program the movement of the ‘lights.’ We sent our work to [the production’s lighting designer] Al Gurdon, who gave us notes about what he was doing in the room. After that, it went to Es for notes, and then back to Al one more time. It was recorded using Art-Net, added to a timeline in Unreal, and played back.”

Findley stresses the role played by Unreal Engine in the video design. “We didn’t know the right camera angle for each window, how it would work, perspectively, until Hamish knew how he was going to shoot them. With Unreal, you have flexibility. We could set up a scene and when Hamish said, ‘The camera angle looking out the window is a little high,’ we could adjust that angle.”

Video was delivered to the windows in the set and to SoFi Stadium’s Oculus screen and video ribbons via two disguise gx 2c and four vx 4 servers connected to two Christie Spyder X80 image processors. The Oculus screen and five levels of stadium ribbons were especially important this year; because of the set’s configuration, half of the live audience couldn’t see some of the performances.

Also, Findley says, “We wanted to deliver HDR to the carts, Oculus, and ribbons.” The ROE Visual CB3 panels built into the set were calibrated for HDR, provided by Brompton Technology SX40 processing. Video gear was supplied by Fuse TG; the playback system was designed and provided by Mobius Productions, programmed by

Jason Rudolph, and engineered by Tim Nauss.

In addition, Findley and his team created imagery that, he says, was pixel-mapped by Rudolph to the Compton field cloth “to create the look of cars moving on the streets. Atomic wired the streets with RGB lights, which were controlled by Art-Net. We created video that was used to drive the lighting embedded in the drop.” It was a risky proposition, he acknowledges: “We never got to play with it until we were in the stadium. We didn’t know what it would look like until we turned it on. These effects were handled by a pair of Green Hippo Karst servers,” which, he adds, “have nice pixel-mapping features.”

Also part of the video chain were AJA Fido fiber extenders. Imagery was controlled via a MA Lighting grandMA3 lite console. The entire video system was on double fiber connections as a fail-safe measure. “I still don’t understand how they get it all out there,” says Findley, who was working on the Super Bowl for a second time. “There are so many cable ramps, and it is so massive.”

## Lighting

Lighting designer Al Gurdon, a Super Bowl veteran, says, “The challenges are pretty similar, year on year, the biggest being the need to build a set, a lighting system, and video product in eight-and-a-half minutes. This tends to push us toward tried-and-tested solutions, namely a number of field carts rolled on by an army of volunteers under the supervision of the technical crew. The danger here is that, with similar solutions, the show might begin to feel a bit too familiar. The biggest challenge is to use these solutions but bring a fresh look.”

In addition, Gurdon says, “This show was absolutely on the cusp between day and night. Depending on how long the first half ran, we could have ended up with a show in full day, full night, or anything in between. This means one had to have a very clear understanding of how different ambient light conditions would affect pictures, including colors, and to have a strategy for how to deal with that at very short notice. As it turned out, we were doing exactly that in the last five minutes of the first half, because it was running very quickly, and we were having to adjust for more daylight than we had seen in rehearsals. This was something we knew we might have to deal with.”

Interestingly, he notes, “The lighting of people inside the buildings was not as complex as it might have been. We used a lot of LED edging in the sets and that was almost enough. We just pushed in a bit of help from followspots in the front and hid a few lights in ceiling cavities. In 50 Cent’s club, we were able to create a ceiling void and rig a grid of [TMB] Solaris Flare Jrs in there. We also had a few other lights hidden away under steps and at the sides.”

Ben Green, lighting director along with Harry Forster, notes that each of the lighting carts lined along the perimeter of the field contained Vari-Lite VL2600s and



For 50 Cent's entrance, hanging upside down, says All Access' Erik Eastland, "We created a system in the ceiling using gymnasium equipment." Behind him are some of the ROE Visual CB3 panels built into each room of the set.

Elation Professional Proteus Excaliburs, with Solaris Flare panels arrayed across the front: "The carts were originally conceived as an opportunity to bring the ground cloth onto the field, and then they were made into a lighting position. That ended up being a huge blessing." Gurdon notes that the Excaliburs "provided searchlight effects and strong backlight from the field carts." He adds that the VL2600s provided "shuttering keys from the field carts where the [Proteus Maximus] would have been too heavy."

Many of the main lighting units, Green says, were hung on custom brackets on level eight, running from end zone to end zone on either side: "Because it was the Super Bowl, we had the ability to go in and engineer something that they might not normally let you do. But it had to look presentable. We went through two versions of that."

Up on this level, as part of Gurdon's tried-and-tested approach, the design brought back two workhorses from last year. "The [Elation] Proteus Maximus is super-bright, even when shooting 450'," Green says. ("I was very impressed with the levels that we could achieve at significant throw distances," Gurdon adds.) "The [Robe] Robin 1200s are punchy wash lights with great color-mixing, for covering the field," Green continues. "We had Elation Protron 3K Color strobes as well." Gurdon describes the Proton as a "powerful, retro-looking" unit.

Inside the rooms of the Compton block, Green adds, "We had Solaris Flares, Flare Jrs, and Protrons. We also had Astera Titan Tubes fitted into Tam's Burgers. But most of the horsepower inside the rooms came from LED tape. Talus Jarvis, from All Access, was a total trouper at installing it. At the last rehearsals, he was still adding tape."

As was true last year, some of the stadium's lights were called into play. But, Gurdon notes, "They were used only to add color to the bowl." Green adds, "Kyle Arnold, the LD there, helped implement a great way for us to feed into the stadium system while retaining isolation across multiple networks, giving us DMX control of everything we wanted."

Eric Marchwinski, of Earlybird, who programmed the show alongside Mark Humphrey, says that, because of various unique constraints on the show, "We saw about 75% of the lighting rig for eight to ten hours total." (Among other things, Green notes, there was that home game "that nobody anticipated, that halted Super Bowl construction for a week.") Therefore, Marchwinski says, "We had to be super-calculated and do a lot of homework so we could be efficient with the on-field time we had." He and Humphrey previsualized the design in Depence2, which, he says, "has added a module that lets you populate





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crowds en masse. With a cast of up to 400, including 90 professional dancers, part of our process has been trying to understand where people would be, and how best to light them. The most important thing is lighting the people and making sure we can see the scenery, action, and costumes. This year was less of a lighting show and more about supporting the scenery and other elements of the overall design. Lighting a lot of people, at the distances we were at, is always a challenge. The Sony Venice cameras we were using were sensitive to low levels of light, allowing us to key all the way down to 25–35fc, extending the range of the lighting rig hung high up in the stadium. Being able to populate the scene in Depence2 with the dancers, field cast, and artists in their appropriate locations and arrangements allowed us to accurately analyze how we wanted to light them without needing to do it at full scale during the limited rehearsal time."

Describing his process with Humphrey, Marchwinski says, "On awards shows, we typically divide the labor between handling musicality and people or key light. On this type of show, this division isn't required as much. The

action and story we are telling is more calculated and we have more time on the front end to prepare for rehearsals. We worked together on the programming, with AI and I taking a first pass in previz and understanding how we needed to light people. Once on-site, Mark joined in helping manage focuses and editing cuing from the rig hung in the stadium at the front of house, while I spent time looking at focuses from the sideline carts from a lower field position. This allowed us to tackle the system from two unique vantage points and work simultaneously while the set was on the field."

Running the numbers, the rig included 94 Elation Proteus Maximus, 84 Proteus Excaliburs, 70 Robe Robin 1200s, 64 Vari-Lite VL2600s, six GLP impression FR-1s, six GLP impression X4 Bar 20s, 106 Elation Protron 3K Colors, 158 TMB Solaris Flares, 14 Solaris Flare Jrs, 14 Astera Titan Tubes, seven Strong Gladiator IV followspots, six Brite Box Flame LT3000 followspots, four PRG GroundControl LongThrow remote followspot operating systems, four MDG theONE atmosphere generators, 16 Reel-EFX Diffusion DF-50 hazers, and 20 Reel-EFX fans.



The lighting order included six MA Lighting grandMA2 consoles distributed on-site, with the entire system integrated with SoFi's internal single-mode fiber network; the show was run on time code. Gear was supplied by PRG, with power by Aggreko. PRG also sent six lighting technicians, a rigger, a fiber networking engineer, and an on-site project manager. That notorious eight-minute-long show setup was achieved using PRG Series 400 power and data distribution to rapidly connect power and data to the field carts, which housed eight full racks and eight half-racks for a total of 144 breakout boxes, the overall system including more than 30 PRG Super Nodes.

PixMob provided 70,000 NOVA LED laminates, also programmed by the lighting team, to all live audience members as well as the halftime show field cast. The laminates, designed in Montréal, are, reportedly, ten times the brightness of the company's previous products; they employ the same technology now used in the permanent installation built into the seats of the SAP Center, home of the hockey team the San Jose Sharks, in San Jose, California.

"When we saw the stadium with its clear roof for the first time, we thought this might be tough," says Vincent Leclerc, PixMob's chief technology officer. "With our engineers, we got to work and did some electronic alchemy to take an existing circuit and supercharge it."

Gurdon has nothing but praise for Green, Marchwinski, and Humphrey, also citing "an amazing veteran crew led by Alen Sisul overall, Jason Uchita on the field, and Harry Forster, commanding a crew of 17 followspot operators." By way of conclusion, he adds, "Everything we do should support the viewer's experience of the overall show. I chose the brightest shuttering fixtures for keying, strobes for punctuation, and Elation Excaliburs for a searchlight effect." He adds that the Super Bowl "is always a challenge and, unquestionably, an adrenaline rush, as everything is being put together in those eight minutes, during which time I rely on the expertise of my team in making everything run smoothly and as rehearsed."

## Sound

The set design also had implications for the sound department. Kirk Powell, engineer-in-charge from ATK/Clair, the production's audio gear supplier, says, "We had to push the audio carts farther off the field, which changed the way we cover the stadium seating area. It was a concern at the beginning. We also added more gear this year because of the artists involved. We had the normal 14 carts of [JBL] A12s plus two [JBL] S28 subs on each of them, plus four carts with S28s and four more carts with [Powersoft] M-Force subs on each. It was a hip-hop show, so having the extra bass was important." The production also made use of JBL601i and 901i loudspeakers and VLA subs, part of the house system located in the Oculus, to cover audi-

ences in the upper deck. "This is definitely one of the best house systems that we've been in," Powell says. "We're also the house guys for the stadium, which allowed us to understand the system."

The show—indeed, the entire broadcast—had an all-digital audio signal path thanks to an extensive Dante networked audio infrastructure featuring components from Focusrite's RedNet range of Dante-networked audio converters and interfaces.

"For the past seven Super Bowls, we've employed RedNet with our Dante Audio-over IP network," Powell says. "This year was just over the top because we had to feed signal to so many different entities throughout the stadium, not to mention that we were being fed signal as well, so we've got to have connectivity back and forth. It's all about having strategically placed nodes so you can jump into and out of the RedNet system. We have a huge fiber backbone. We used mostly the SoFi Stadium's fiber, which is one of the big advantages of this venue. This new facility has tons and tons of dark fiber, so we're able to utilize the building infrastructure as opposed to running our own fiber. And RedNet is the key component that gives us that interconnectivity and flexibility."

The Focusrite system included 16 RedNet D16R 16-channel AES3 I/Os, 25 RedNet A16R 16-channel analog I/O interfaces, 17 RedNet D64R 64-channel MADI bridges, eight RedNet MP8R remote-controlled mic preamps, and six RedNet AM2 stereo audio monitoring units.

"The flexibility we had with RedNet was a game-changer," Powell says. "We were able to send any signal anywhere in the building; so, for example, if we needed a microphone at a particular location, we just plugged it into the network, and through RedNet it was there."

RedNet A16R and D16R interfaces were used to connect digital and analog sources and feeds to and from the network. RedNet D64R MADI bridges were deployed for connecting signals to and from the various digital audio consoles in the system and for connections between production groups. The RedNet MP8Rs' remote-controlled mic preamps were employed for audience reaction microphones, while RedNet AM2s were used throughout the venue by various engineers to monitor their audio signals.

Clock management was important for audio production. Focusrite says the RedNet D64R blends a high channel count with the ability to convert sample rates between disparate audio systems on a multitrack scale, providing glitch-free intersystem audio transfer and sharing without a common master reference clock. While the front-of-house and stage monitors could share a clock, Powell explains, "The production tracks were on a different clock, because they're not used all day long. The D64R allowed me to break the clock between my system and the production tracks because they were done after halftime. They started to pack up, and I didn't want to be on their clock and have

them shut down.”

One plus factor was ATK’s home base located less than 40 miles away from SoFi Stadium. “We did a lot of the programming at the shop this year,” Powell says, “which really helped us out when the Rams had that championship game at home. That really threw a wrench in everybody’s workflow, because we weren’t allowed to start our normal production schedule until after that game. We set the entire system up in the shop. All the racks were next to each other, and we did probably 90% -95% of the programming at ATK. Then when we were on-site, it was a matter of getting the nodes up and then doing whatever changes were needed. Since this event was in our own backyard, the cool thing was all these union guys we’ve worked with on all the other TV shows were at SoFi, so we knew them all. It made things even more seamless.”

Five of the six musical stars used Sennheiser Digital 6000 wireless mics. Gary Trenda, lead RF technician for Professional Wireless Systems, says he tries to accommodate performers with their equipment preferences. “As the artists request different microphone systems, we say, ‘Okay, if you bring in a Sennheiser Digital 6000 microphone, we have a specific frequency range available for it;’ this year, we had Sennheiser allocated in the 600MHz range. Dr. Dre, Mary J. Blige, Eminem, Kendrick Lamar, and 50 Cent were all on the Sennheiser Digital 6000, using SKM 6000 transmitters coupled with MD 9235 capsules.” Snoop Dogg used a custom gold-plated Shure ADX2 transmitter with KSM9 microphone capsule and wore Shure SE215 Sound-Isolating in-ears. Everyone used Shure PSM 1000 in-ear personal monitoring systems; also used were 41 Shure P10R diversity wireless body-pack receivers.

With hundreds of frequencies routinely in use at such a high-profile event, Trenda and his team must make split-second decisions. “Very often,” he says, “you will see a fluctuation in the RF level and, with various systems turning on and off throughout the stadium, you see a change in background noise levels. In these cases, the Digital 6000 gives us excellent reliability in a congested environment.”

For control, Powell says, “We had a pair of [DiGiCo] SD5s at front-of-house and monitors. That’s the preferred choice. We’ve been doing it for years. The artists have all been happy with it. Why change a winning formula?” Interestingly, Tom Holmes, A1 for the broadcast music segments, mixed the music from one of the five audio control rooms at NFL Los Angeles, a new 450,000-sq.-ft. building that serves as the home for NFL Network,



Snoop Dogg used a custom gold-plated Shure ADX2 transmitter with KSM9 microphone capsule. The other stars used Sennheiser’s Digital 6000 system, using SKM 6000 transmitters coupled with MD 9235 capsules.

NFL.com, NFL RedZone, the NFL app, and other departments involved in the league’s media and business operations. Each of the five audio control rooms is equipped with two SSL System T surfaces, an S500 and an S300, and supports Dolby Atmos, 5.1, and other formats. The building is connected over fiber to SoFi Stadium.

Holmes had access to 256 bidirectional lines between his control room and ATK Audiotek in the stadium. “There were also 192 lines back and forth between a router front end that allowed us access to transmission and videotape records,” he says. “We had 16 RF microphones and 12 crowd mics. I had a 5.1 stem that we got from NBC that we got to use for our halftime show that was coming from the stadium.” There was also a fail-safe backup path, he adds: “If my room caught fire, they could take a front-of-house feed from the stadium and send that to the router.”

Pro Tools mixer Pablo Munguia was in the audio control room with Holmes rather than a separate mobile unit. “We had 192 lines back and forth between me and the Pro Tools rig in the booth,” Holmes says. “The studios are nice and spacious; there was lots of room for Pablo. It was nice having him right there. I didn’t have to get on the intercom. I could just turn around and ask him to play it again.”

Again, Powell says the challenge was time. “The home game was a hand grenade thrown in everybody’s world. It was the first in the 20 Super Bowls I’ve worked. That made it very interesting. We were only a couple days behind with audio. But stuff like power put us behind. Every entity worked their tails off to make it happen. And we had a successful year. There are certain groups that were under the gun much more than others, but everybody buckled down and gritted their teeth. It was amazing to watch.”

The big question, of course, is: Where does the Super Bowl go from here? Tune in next year to find out. 📶