

The Sky's the Limit for In-Ceiling Speakers

BY STEVE HARVEY

"The in-ceiling speaker is the bread and butter of the corporate AV and commercial verticals. I don't think any manufacturer would argue that we sell twice as many in-ceiling speakers as we do pendants and surface-mount speakers," said Michael Bridwell, director of commercial sales for Dana Innovations.

In-ceiling speakers have been around for decades, of course. But as with all things AV, technological innovations have given the category something of a boost in recent years. Smart devices and streaming media especially have brought about such significant changes in corporate and commercial environments—everywhere, really—that we are rarely out of earshot of an installed speaker system nowadays, whether at work or just going about our daily lives. For their part, speaker manufacturers have responded with an array of innovative products that offer better coverage, higher fidelity, and other efficiencies.

Bridwell joined Dana Innovations in late 2017 to help shepherd Sonance, the company's line of distributed audio products, into the commercial space; the brand was already well known in the residential market.

Coming late to the commercial

category had its advantages, said Bridwell.

"We got a chance to work with consultants and dealers who could tell us everything that was broken about 70V audio." The top two issues were aesthetics and performance, he added.

Sonance responded with its Professional Series of in-ceiling speakers, which includes 4-, 6.5- and 8-inch models, plus an 8-inch subwoofer. Dana Innovations has long lived up to its name, claiming to be first to market with architectural and invisible speakers as categories.

"Our goal for all of our speakers is that we want the AV hardware in any design space to disappear or blend," said Bridwell. With this new line, "we were the first company to do a bezel-less grille, as well as a logo that you can easily remove."

Plus, Bridwell continued, "Why put a round grille alongside square lighting fixtures? We sell a seamless square adapter in both black and white so that the grilles emulate the lighting in the ceiling." Not only do Sonance speakers blend invisibly into spaces, he said, "But our 4-inch, for instance, sounds better and performs at a higher performance rate than most people's 6-inch speakers."

Sonance in-ceiling, surface and pendant speakers share a sonic signature, Bridwell explained, allowing them to be integrated seamlessly together. The low-profile backcan versions of the ceiling speakers vary less than 3 dB from the standard models, offering interchangeability. "The ear can't tell the difference," he added.

A recent entry into the invisible speaker category that Sonance pioneered, a solution whereby transducers are mounted behind a surface such as a ceiling or wall, is Revolution Acoustics' SSP6 Multiducer. The product uses DML (Distributed Mode Loudspeaker) planar wave physics to create uniform sound waves with a constant SPL and offer a full-range response. According to Revolution Acoustics, a single SSP6 Multiducer can deliver 85 dB SPL with constant coverage



Dana Innovations' Sonance has expanded its architectural speaker offerings in the commercial space with a Professional Series of in-ceiling products, which include 4-, 6.5-, and 8-inch models, plus an 8-inch subwoofer.

across 1,000 square feet, or 105 dB SPL in a 250-square-foot space.

The transducer has an advantage over many of its conventional loudspeaker competitors in additionally offering an IP66 rating that enables installation in watergoing vessels, swimming pools, theme parks, and so on. Earlier this year, Argosy Cruises, based in the Seattle area, unveiled its newest tour boat, Salish Explorer, which features Revolution Acoustics SSP6 Multiducers throughout.

"Tour boats haven't been known for consistent audio quality; audio has typically been way too loud or extremely muddy depending on where you're standing or sitting," commented Michael Combs, director of technology for system integrator OpenSquare. Working with Revolution Acoustics, he said, "We were very surprised when they told us we would need less than half the number of traditional loudspeakers that had originally been specified for the project."

Another product representing innovation in the category is EdgeMax, a line of



Revolution Acoustics' SSP6 Multiducers use rigid panel structures to bring invisible, uniform, constant-SPL, high-fidelity audio to every part of a listening space using DML (Distributed Mode Loudspeaker) planar wave physics.

Electro-Voice recently added the EVID-C4.2LP 4-inch (left) and EVID-C6.2 6.5-inch (right) two-way in-ceiling models to its 18-year-old EVID distributed audio products line, along with a new pendant speaker.



in-ceiling premium loudspeakers from Bose Professional. A general rule of thumb for commercial installed sound system designers and integrators has long been to position in-ceiling speakers roughly twice the floor-to-ceiling distance apart to achieve ideal coverage. EdgeMax flouts any such rule.

EdgeMax loudspeakers, featuring an 8-inch woofer and a 1.3-inch compression driver, incorporate proprietary Bose PhaseGuide technology and are designed for mounting near wall boundaries. The design and location enable the speaker to project high-frequency sound throughout rooms up to 65 feet wide—a space that would more usually require four ceiling speakers with conventional conical coverage patterns. Vertical dispersion is asymmetrical, and provides 75 degrees of effective coverage, aimed generally at ear height.

"Picture the coverage pattern of a larger, bigger 8-inch surface-mount speaker, mounted diagonally in the ceiling," said Andy Kyte, product manager, professional

loudspeakers, Bose. "That's the kind of performance you're going to get." Frequency range extends to 54 Hz, he added, and is assisted by boundary loading.

EdgeMax is offered in a 90-degree version (EM90) for positioning in corners and a 180-degree version (EM180) for mounting along walls. That was an advantage for one client, a Nissan dealership, which was able to leave its cars in place while the speakers were installed close to the walls around the showroom floor. "They also only needed three," said Kyte, versus the alternative design that required 10 conventional ceiling speakers. EdgeMax is gaining traction in corporate conferencing applications, he said, where one EM180 above the screen plus another two over the table can replace up to eight conventional in-ceiling speakers.

Bose offers several lines of distributed audio ceiling speakers in addition to EdgeMax, Kyte reported, including FreeSpace 3 and FreeSpace DS models. The latter offers three levels of performance, he said. "And we have

the EN54-24 voice alarm models available in Europe."

At ISE 2019, he added, Bose introduced DesignMax, another premium line, offering five levels of performance, and intended for business music systems, corporate conferencing, and other commercial audio applications. It boasts a new minimum bezel magnetic grille, he said, plus a QuickHold mounting system that eliminates the need for the installer to support the weight of the speaker while securing it in place.

Electro-Voice has been shipping its EVID distributed audio products line since 2001. Already a very complete family of products that includes pendants and surface models, the EVID range grew with the addition of two ceiling models at the end of 2018.

According to a company statement, the new models combine "unique timesaving features to simplify installation with best-in-class audio performance, excellent value, low-profile looks, and robust reliability." The two new ceiling models utilize the current EVID ceiling speaker accessories and share the diameter of the existing EVID 8-inch ceiling speakers to present a consistent appearance across multi-model installations. Innovative mounting mechanisms reportedly enable fast, flexible, and secure placement.

The new EVID-C4.2LP coax two-way loudspeaker houses a 4-inch woofer with a 0.75-inch waveguide-coupled titanium-coated dome tweeter. Its low-profile design—hence the LP designation—offers a mounting depth of 3.75 inches, which the manufacturer says is the shortest in its class, and ideal for tighter spaces. The new EVID-C6.2 is a two-way full-range ceiling speaker with a 6.5-inch woofer and a 1-inch HF driver.

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Bose Professional's EdgeMax in-ceiling loudspeakers feature an 8-inch woofer and a 1.4-inch compression driver, incorporate proprietary Bose PhaseGuide technology offering nominal 90- (left) or 180-degree (right) horizontal coverage, and are designed for mounting near wall boundaries.