

An aerial night view of a city, likely Dubai, with a network of white lines and dots overlaid on the image, suggesting a digital or data network. The city lights are visible, and the network lines form a grid-like pattern across the scene.

Shure's Stem Ecosystem Runs the Analyst Gauntlet

About the Frost & Sullivan Analyst Gauntlet

Frost & Sullivan's Analyst Gauntlet is a structured program wherein participating vendors and service providers give industry analysts deep dives and demonstrations of their collaboration solution. The analyst then uses the collaboration solution over a period of time and provides candid feedback based on their administrator and user experiences.

Powering clients to a future shaped by growth

Introducing Stem Ecosystem

This month, the Frost & Sullivan research team evaluated the Stem Ecosystem conference room system from Shure, Inc. The Stem Ecosystem portfolio comprises a modular set of high-quality audio devices that can be mixed and matched to create integrated solutions for collaboration spaces of various sizes, configurations, and use cases. Stem Ecosystem Platform tools (Stem RoomDesign, RoomAdapt, RoomCheck, and Remote Management) assist with installation, calibration, and management in support of Stem Speaker, Wall, Table, Ceiling, Hub, and Control devices.

Solution Evaluated

The solution we assessed is comprised of:

- **Stem Wall**, a high-quality microphone array with built-in speakers and subwoofers in a sound bar form factor
- **Stem Table**, a tabletop speakerphone with 9 beamforming microphones and an innovative downward-facing speaker
- **Stem Control**, a dedicated touch controller that provides access to the Stem Ecosystem Platform and enables administrators to remotely manage their solutions and users to initiate push-to-start video conference meetings
- **Stem Hub Express** communication center, a device that plugs into the internet connection, networks all of the other components together, and connects to the room computer (in our setup, this was a Windows 10 PC); the Ecosystem offers two variations: Stem Hub, which supports Dante digital audio networking, and Hub Express, which does not have Dante capabilities

We placed Wall and Hub on a credenza connected to our broadband router. Wall, Hub, Control, and Table are all Power over Ethernet Plus (PoE+) powered and we connected each of them to a port on a single PoE+ switch. A 42-inch 4K monitor connected to the PC via HDMI cable was also on the credenza. Stem Ecosystem supports any standards-based conferencing camera, and we used several different room cameras—an AVer VB130, a Poly Studio and an EPOS Expand Vision 3—all of which are in bar form factors. We did not utilize the audio peripherals embedded in the cameras. Instead, we used the Stem Ecosystem components that are the focus of this evaluation.

The meeting table was approximately in the middle of a 13 × 9 foot room, 6 feet from the credenza. We used a variety of conferencing services, including Webex by Cisco, Microsoft Teams, Google Meet, GoToMeeting, and Zoom. We also configured the solution as a licensed Zoom Room. We used both the Wall and Table audio arrays independently as single devices in standalone mode.

Specifications for devices we evaluated include:

Stem Wall



- Unit dimensions (W x H x D): 48 x 3.25 x 3.5 inches (121.9 x 8.3 x 8.9 centimeters);
- Weight: 7.5 pounds (3.4 kilograms)
- Surface mounted or wall mounted
- 15 embedded beamforming microphones with 180-degree coverage
- 2 full-range speakers and subwoofers
- 15-foot (4.6-meter) CAT 6 Ethernet cable for PoE+ and network connectivity (required in both standalone and multi-device modes)
- 12-foot (3.7-meter) USB-A to USB-B cable for PC connection (in standalone Wall mode)
- Volume and mute control buttons
- Status indicator lights

Stem Table



- Unit dimensions (D x H): 7.75 x 3 inches (19.7 x 7.6 centimeters)
- Weight: 2.5 pounds (1.1 kilograms)
- 9 beamforming microphones with 360-degree voice pick-up
- Downward-facing speaker
- 15-foot (4.6-meter) CAT 6 Ethernet cable for PoE+ and network connectivity (required in both standalone and multi-device modes)
- 12-foot (3.7-meter) USB-A to USB-B cable for PC connection (in standalone Table mode)
- USB-B port
- LED indicator light ring
- Volume and mute control buttons

Stem Hub Express



- Dimensions (D x H): 7 x 1.5 inches (18.8 x 3.8 centimeters)
- Weight: 0.5 pounds (0.23 kilograms)
- 15-foot (4.6-meter) CAT 6 Ethernet cable for PoE+ and network connectivity
- 12-foot (3.7-meter) USB-A to USB-B cable (PC to Hub)
- Female terminal connector for analog device connection
- Wall mount kit

Stem Control



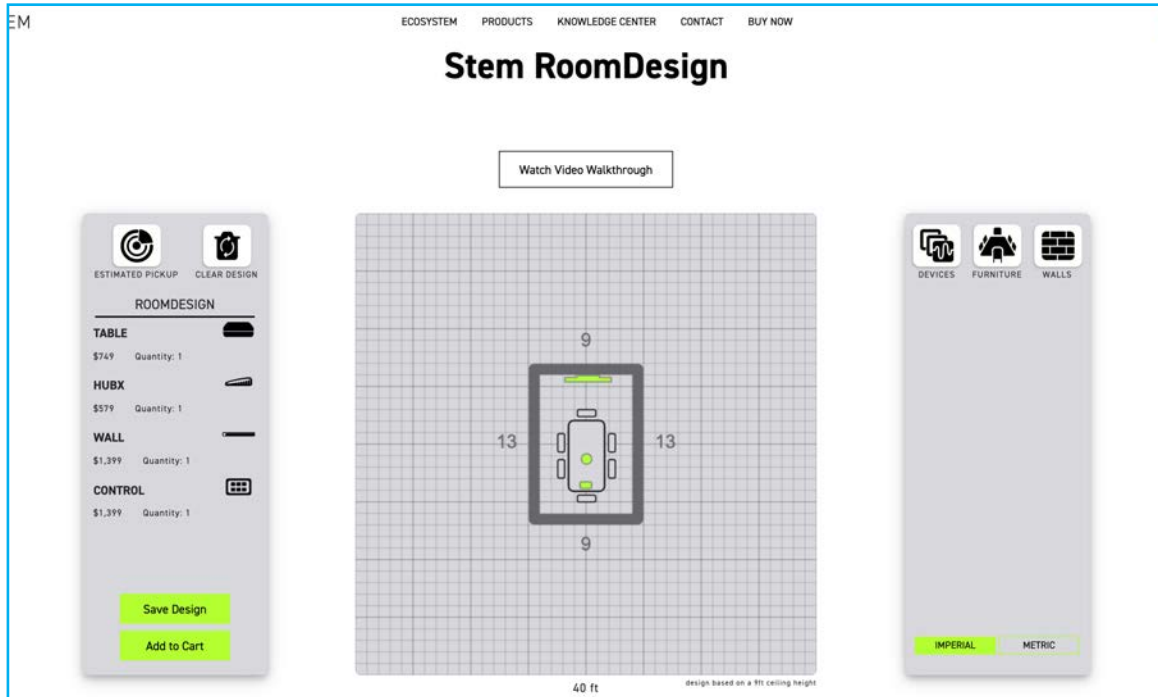
- Dimensions (W x H x D): 9.6 x 5.7 x 3.7 inches (24.4 x 14.5 x 9.4 centimeters)
- Weight is 1.7 pounds (0.77 kilograms)
- 10.1-inch touch display
- 15-foot (4.6-meter) CAT 6 Ethernet cable for PoE+ and network connectivity
- Pre-loaded Android Pie operating system

Administrator Experience

The Stem Ecosystem solution we evaluated arrived with each device in its own box and packaging. The solution included all components, clearly labeled, and user manuals. The Stem Customer Happiness team also sent links to informational videos and online instructions, all of which we found informative and useful. We would like to see QR codes on the box or manuals for faster access to online materials.

While not exactly plug-and-play, the setup was not complicated or time-consuming. Inventorying and connecting the Stem Ecosystem equipment took approximately 15 minutes. Walking through the setup with the Stem Customer Happiness team, Stem applications took approximately 25 minutes to get up and running, primarily because we asked a lot of questions. RoomDesign is a clever and engaging online tool that informs the Stem Platform about the room dimensions, furniture arrangement, and audio device placement. RoomAdapt uses the device speakers and microphones to calculate the acoustic signature of the room, while RoomCheck provides a heat map of audio coverage and quality based on a 5-second audio recording and information from RoomDesign and RoomAdapt. These capabilities virtually automate tasks and processes that would otherwise require professional audio-video (AV) installers. Overall, we found the installation and configuration of our solution fast and interesting—we have no complaints.

When changing or rearranging room furniture or moving Stem Ecosystem audio devices to different locations in the room, Shure recommends that administrators repeat the RoomDesign, RoomAdapt, and RoomCheck procedures to ensure the system properly adjusts. We found this process was also necessary during our standalone Table and Wall evaluations. In real-world deployments, it's unlikely that the number of devices in a room would be changed and therefore these procedures won't need to be repeated. Nevertheless, the process of changing the setup take longer than it would with alternative USB-based solutions.



Administrator Experience Analysis

PRO	CON
<p>Stem Control provides easy, one-touch access to the Stem Platform, including RoomDesign, RoomCheck, Remote Management, and advanced device settings.</p>	<p>Stem Control currently offers native capabilities to control Zoom, Lifesize, RingCentral, and TrueConf services. Microsoft Teams, Google Meet, Webex by Cisco, and other meetings must be controlled from those applications until forthcoming Control support for those platforms is available.</p>
<p>Also accessible online, the innovative Stem RoomDesign configuration tool enables administrators to visually design their rooms by defining the room dimensions and virtually placing furniture and Stem devices in it. This helps the Stem Platform to better understand specific spaces and enables RoomCheck and RoomAdapt to adjust the audio settings more precisely.</p>	<p>Stem Ecosystem is not yet certified for Microsoft Teams and Zoom Meetings—as it has yet to meet their quality and performance standards set for these cloud platforms. Shure has advised us of its intention to obtain these certifications in the future.</p>

Administrator Experience Analysis

PRO	CON
<p>All Stem Ecosystem devices utilize PoE+, which is prevalent in meeting spaces and minimizes the cabling needed to connect the devices, creating a less cluttered install.</p>	<p>At 48 inches (1.22 meters), Stem Wall may be too large as a front-of-room solution that needs to share wall space with displays and room cameras in small meeting spaces, such as phone booths, jump spaces, and huddle rooms.</p>
<p>Stem Ecosystem is a portfolio of network-connected audio devices that can be mixed and matched to address differing room requirements. Further, Stem Hub supports up to 10 audio devices, enabling the solution to expand as needed.</p>	<p>Stem Table can be implemented as a standalone tabletop solution with its in-built audio microphone and downward-facing speaker with effective coverage in small rooms however, the device may not be adequate on its own in midsize and larger rooms.</p>
<p>As networked devices, Stem Ecosystem components can be fully managed remotely through the Stem Ecosystem Platform, with additional Zoom Room management capabilities through the Zoom Administrator Portal when the solution is configured as a licensed Zoom Room.</p>	<p>n/a</p>
<p>Stem Wall and Table can be used as standalone USB conferencing audio devices without the need for Hub or Control which allows right-fitting for certain room sizes and smaller budgets.</p>	<p>n/a</p>
<p>The Stem Customer Happiness team walked us through the initial setup, patiently and thoroughly explaining the steps and answering all questions. This same customer success team is available for every customer's first install and for follow-up support throughout the solution life cycle.</p>	<p>n/a</p>

User Experience Analysis

Stem Ecosystem delivers an outstanding audio experience. We moved to every corner of the room, and far-end meeting participants could easily hear us speaking at a normal volume. Similarly, we had little trouble hearing people who joined meetings from outside the room. The system blocked out ambient noise well, such as street traffic, dogs barking outside, and audio from outside the room. Users do not need to manually adjust the audio settings beyond intuitive volume adjustments directly from Table, Wall, or Control.

Stem Control offers easy sign-in and access to popular room conferencing services from Zoom, RingCentral, Lifesize, and TrueConf, and the SIP dial pad in the Control user interface (UI) makes it simple to join SIP-based conference calls. However, support for Microsoft Teams, Google Meet, and Webex by Cisco would add to the solution's appeal. Shure intends to obtain these certifications in the future.

Overall, users simply want to collaborate on high-quality, easy to use, reliable AV systems, all of which Stem Ecosystem delivers.



User Experience Analysis

PRO	CON
When Stem Ecosystem is correctly deployed, it automatically calibrates the audio—users do not need to make adjustments beyond simple volume control and muting.	Pairing Stem Control with in-room computing potentially creates challenges shared by all room solutions, locking users into a controller with in-room computing. Users will be less familiar with navigating a controller's menus or navigating an in-room computer rather than their own.

User Experience Analysis

PRO	CON
<p>Stem Ecosystem delivers outstanding audio quality as a system and with Wall or Table alone. The beamforming microphones and speaker arrays ensure full room coverage, while noise cancellation and other features keep background noise at bay.</p>	<p>Stem Ecosystem does not yet support mute sync between Table and conferencing software interfaces (UIs or clients). When a user presses the mute button on Table, the system mutes their microphone and reflects this on Table's indication lights; however, the PC software client will not be aware of the muted microphone.</p>
<p>Status indicator lights in Wall pulse blue when the device is active and red when the microphone is muted. Similarly, the LED light ring on the Table device pulses red when muted, and blue lights follow the ring in the speaker's direction (other lighting sequences indicate device boot up, restart, ping, and error). This functionality enables in-room users and administrators to see the audio activities in the room.</p>	<p>n/a</p>
<p>Control offers a SIP-enabled dial pad and integrates with Zoom, Lifesize, RingCentral, and TrueConf to enable users to intuitively launch audio or video calls from the controller, access functions such as mute and volume controls, lock outside user access to conference room configuration settings, and more.</p>	<p>n/a</p>
<p>Stem Ecosystem allows users to control meetings through their own devices (e.g., BYOD), in-room computers, or Stem Control, giving support teams and users the flexibility to deploy according to their preferences, policies, and budgets.</p>	<p>n/a</p>

Analysis Conclusion

Stem Ecosystem successfully navigated the Frost & Sullivan Analyst Gauntlet. Although we are conferencing platform power users who use various software and hardware products daily, we are not AV professionals. Stem Ecosystem enables even moderately tech-savvy individuals to easily implement full systems with sophisticated capabilities that significantly enhance the conferencing user experience for meeting participants inside and outside of the room.

While more straightforward plug-and-play options are available to outfit meeting rooms, and Stem Ecosystem has a premium price, the difference is clear to anyone who experiences the comparison. The small amount of time needed to integrate Stem components on the Stem Platform and ensure they all work seamlessly together is well worth it.



Forthcoming updates to the Stem Ecosystem portfolio include certifications and deeper integrations with cloud video conferencing services. The Stem Platform will automatically upgrade the room devices with new capabilities, making it even clearer that decision-makers should not hesitate to experience the Stem Ecosystem today. [Click here to get started.](#)

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