Shure MXA920 Runs the Analyst Gauntlet

FROST & SULLIVAN WHITEPAPER

CONTENTS

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 solutions. The analysts then use the collaboration solution over a specified time and provide candid feedback based on their user experience with the specified tool.

Introducing Shure MXA920

This month the Frost & Sullivan research team evaluated the new Shure MXA920 ceiling array microphone. Launched in 2022, the flagship MXA920 replaces the successful MXA910 ceiling array microphone in the Shure Microflex portfolio. Available in black, white, and aluminum colors and in various cable suspension, pole, or ceiling tile mount options, the new device offers upgrades over the MXA910, including low-frequency directional pickup enhancements, advanced talker localization, and speaker isolation technologies for natural, crystal-clear audio conference experiences. The technical advancements of the MXA920 make it well suited for voice lift, which amplifies a speaker's voice in one zone of a room just enough so people in other zones can hear them clearly, and sound reinforcement applications.

MXA920 is designed for use with other products in the Microflex Ecosystem, including the ANIUSB-MATRIX audio network interface, IntelliMix P300 audio conference processor and IntelliMix Room digital signal processing software (DSP), and MXN5C networked loudspeaker. Other audio capture solutions in the Microflex Ecosystem portfolio include the MXA310 table array microphone, MXA710 linear array microphone, and Microflex wireless microphone system.

The MXA920 is available as part of various bundles incorporating these products that are certified for small, medium, and large Microsoft Teams Rooms and Zoom Rooms.

Solution Evaluated

The solution that the research team evaluated comprises:

- MXA920 ceiling array microphone

- P300 digital signal processor

- MXN5C networked loudspeaker

- Windows 10 PC (bring your own device [BYOD] provided by end user)

- 4-port PoE network switch

We installed the system in a Frost & Sullivan training room. It is a front-of-room use case, with a speaker podium or lectern at the front of the room. The BYOD Windows PC is placed on the podium and connected to the Shure audio devices via Cat5 and USB cables. The MXA920 microphone is installed by replacing a tile in the drop ceiling approximately two ceiling tiles (4 feet or 48 inches) away from and above the podium toward the center of the room. The MXN5C loudspeaker is installed in the drop ceiling four ceiling tiles (8 feet or 96 inches) from the MXA920 farther toward the center of the room, six ceiling tiles (12 feet or 144 inches) from the podium. The P300 DSP device is deployed above the ceiling tiles between the microphone and MXN5C loudspeaker.

All devices are powered over Ethernet (PoE) and are connected to a four-port PoE switch, also located inside the drop ceiling. Category network and a power cable for the PoE switch run from the podium, up the wall inside cable track, and inside the drop ceiling to connect to the devices.

The Shure audio devices are configured via the downloadable Shure Designer software for Windows. In our installation, in which the AV devices are not connected to the corporate network, the PC must be directly connected to the devices—which we did at the speaker podium. When devices are network-connected, the Designer app can be used to configure the devices over the network. Designer provides a rich visual administrator to add and software-connect devices, set audio path routing between devices, and tune the devices to room acoustics.

Highlighted components of our evaluation included:

MXA920 ceiling array microphone
- Ceiling tile mount unit dimensions: 23.77 in (603.8 mm) long x 23.77 in (603.8 mm) wide x 2.15 in (54.69 mm) high; weight is 11.8 lbs. (5.8 kg)
- Cat5 or better cable for PoE and system connection
- Status indicator light is green when in use (adjustable colors)
- Default 30 ft x 30 ft (3 m x 3 m) pickup coverage

Intellimix P300 DSP
- Ten Dante audio inputs, eight Dante audio outputs, two analog inputs and outputs (block connectors), one USB in/out interface and one 3.5 mm mobile device interface
- Eight channels of microphone processing use Shure IntelliMix DSP algorithms, including featuring AEC, noise reduction, automatic gain control, IntelliMix automatic mixing, matrix mixing, delay, compressor, and PEQ
- Cat5 or higher PoE for power supply
- LED indicator lights (power, network, USB, encryption, network audio)
- Rack or surface mount

MXN5C networked loudspeaker
- Unit dimensions: 12 x 12 x 4 in (304.8 x 304.8 x 101.6 mm) H x W x D; weight 6.5 lbs. (2.95 kg)
- One 134 mm (5.25 in) low-frequency transducer and one 19 mm (0.75 in) high-frequency transducer
- Frequency range from 65 Hz to 22 kHz (-10 dB)
- Two-way driver system with 5.25-in woofer
- Integrated Shure DSP Utilities: EQ, delay, limiter, and signal/tone generator
- Two Dante inputs and one Dante output
- AES67 compatible
- UL 2043 plenum rated

Administrator Experience Analysis

The specific solution we evaluated is a popular choice from the Shure Microflex product line that technology investment decision makers are choosing to address common AV coverage requirements in large or challenging meeting rooms. The trial products sent to us from Shure were likely used previously for a trial in another location, which attests to durability in the shipping and handling processes. Upon installation, we found the USB-B cable for P300 connectivity was missing. It is a reminder to always conduct a complete and thorough inventory prior to attempting installation.

With a USB-B cable retrieved, our IT staff was able to install the hardware per the instructions as appropriate for our room layout. We encountered a small issue inserting the MXN5C loudspeaker into the drop ceiling to a flush-mount position— some additional manipulation of the screw adjustment in the mount mechanism was required. This ultimately did not have any impact on the performance of the system, which we elected not to cable-connect to the corporate network for this trial. The user PC was connected to cloud-based video conferencing services over Wi-Fi.

After a demonstration from Shure on the Designer tool, our IT staff had no trouble physically connecting a PC to the devices and using the Designer app to configure the software and integrate the devices as a cohesive system. Factory default AV coverage range (30 feet x 30 feet) was used in our demo as it was sufficient for our space. Designer automatically tunes the devices' acoustics to the space as part of the setup process.

Wired connections for the AV devices to the BYOD PC at the podium are similar to connecting web camera and audio devices for personal conferencing use. We trialed the solution with Cisco Webex, Microsoft Teams, and Zoom meetings user accounts. We did notice that each time a new PC or new cloud conferencing account is connected, the MXA microphone sensitivity and MXN5C loudspeaker volume must be manually adjusted from the conferencing client on the PC. But again, this process is the same as adjusting the settings for AV peripherals used with personal PC conferencing with a desktop client.

Certification with Microsoft Teams and Zoom ensures organizations that invest in MXA920 are part of certified bundles so that they can expect consistently high performance and reliability.

Administrator Experience Analysis

👍 Pros:

- ✔ Because we already had power and network connections in place and have a drop tile ceiling in our meeting room, the installation of the MXA920 and other hardware devices was a fairly straightforward process.

- ✔ Shure MXA920 delivers excellent audio to remote meeting participants. We extended the speaking person's range outside of the product's specifications of 30 feet diameter (9 m) with little to no audio quality degradation.

- ✔ MXA920 integrates with the Microflex Ecosystem portfolio of network-connected audio devices that can be mixed and matched to address differing room requirements.

- ✔ Shure Designer offers an intuitive visual tool to configure devices in the room as well as to adjust and optimize AV device coverage.

- ✔ Organizations can implement an MXA920 system on or off the corporate network, as well as optionally activate available Advanced Encryption Standard (AES-256) capabilities to align with their broader technology security posture.

- ✔ Using Designer, the MXA920 and MXN5C loudspeaker can be adjusted to focus audio pickup and delivery in specific areas of a room, including eight programmable dedicated areas for MXA920 audio pickup. Additional microphones and speakers may be networked to further expand and tailor coverage.

👎 Cons:

- ✖ More of a cautionary note rather than a technical issue specific to the Shure system is that failing to conduct a careful and complete inventory of components prior to installation could add time to or delay the deployment process.

- ✖ The MXA920 + P300 + MXN5C combination delivers a premium experience, but the purchase price of nearly $8,000 for the audio components alone may not fit some organizations' budgets or investment strategies.

- ✖ Although we used an aluminum Tile Bridge to mount the MXN5C in the drop ceiling, we needed extra attention and time to fix the loudspeaker to a flush-mount position.

- ✖ Although not an issue specific to MXA920, we evaluated our setup with Cisco Webex, Microsoft Teams, and Zoom meetings user accounts accessed from a BYOD PC. All ultimately worked well, but sound settings require manual adjustment each time a new computer accesses the AV devices as there is no way to ensure that the levels remain fixed without using a room control system or dedicated in-room computer.

User Experience Analysis

Ease of use is a critical factor in collaboration technology adoption, usage, and return on investment. Our setup leveraging BYOD user computers offers familiarity that instills confidence.

Using one's own computer enables users to access familiar menus, tools, and workflows in comparison to the unfamiliar experience of using a meeting room control system or dedicated in-room computer to access meeting controls, device settings, and more. When utilizing BYOD computing, we found only one other issue in our evaluation: when first connecting to the MXA920 and MXN5C, the fixed, out-of-the-box speaker volume may be startlingly loud and microphone sensitivity too low to adequately pick up audio at the outer edges of its coverage range. Device audio settings must be adjusted each time a new computer is connected to the AV peripherals as well as when users connect them to a meeting platform for the first time.

Connecting the devices to a BYOD PC is similar to desktop conferencing. With easy AV device connection to user computers, Shure MXA920 empowers an intuitive, natural audio experience. Meeting participants can speak at normal volume and clearly be heard by others in the room and by those joining remotely.

User Experience Analysis

👍 Pros:
✔ Shure MXA920 delivers an excellent audio experience for in-room participants with clear audio throughout its coverage range. Remote participants likewise receive clear, high-quality audio from participants in the room.
✔ For users, P300 is listed in conferencing soft clients (e.g., Teams, Webex, Zoom) as the microphone-in and speaker-out options in the audio device settings menu, similar to desktop conferencing, which creates a familiar experience that instills user confidence.
✔ The MXA920 performed well, even outside of the set audio range of 30 feet x 30 feet. We moved 360 degrees around the microphone in gradually expanding distances to the far perimeter and door thresholds of our room with audio quality still clear throughout the room and for remote participants.
✔ Through certification with Microsoft Teams and Zoom meetings, MXA920 supports features such as mute sync, which also is supported in our Webex calls. This capability allows users to mute the room microphone quickly and easily from their computer conferencing client as needed.

👎 Cons:
✕ Although not an issue with the Shure products themselves, it must be noted that our choice not to deploy the solution as a licensed AV meeting solution brings the compromise of the inability to fix microphone pickup sensitivity or speaker volume. These must be adjusted from the user's conferencing clients each time a user connects a new PC or starts a meeting for the first time using MXA920 and MXN5C as audio peripherals.
✕ While a minor issue, user behavior has conditioned many meeting participants to expect audio to be delivered from the front of a meeting room rather from the center, as is the case in our installation.

Conclusion

Shure MXA920 has successfully navigated the Frost & Sullivan Analyst Gauntlet. We installed and configured the system we evaluated with a Designer demonstration from Shure and without a pro AV integrator. This is possible because of the easy-to-use Designer tool with automation capabilities for device software connection and data routing flows. A similar experience can be had when combining a variety of Microflex Ecosystem products to address differing room requirements. However, for warranty, certification, and other purposes, it is recommended that installation is performed by a professional AV integrator or, at minimum, by specialized in-house AV staff. From a user perspective, the system is intuitive and significantly enhances the conferencing experience for in-room and remote participants. Overall, the attributes of the MXA920 solution we evaluated will help to lower the bar to more rooms to become appropriately equipped to support modern conferencing and will drive better collaboration experiences for meetings with distributed participants.

GROWTH IS A JOURNEY. WE ARE YOUR GUIDE.

For over six decades, Frost & Sullivan has provided actionable insights to corporations, governments and investors, resulting in a stream of innovative growth opportunities that allow them to maximize their economic potential, navigate emerging Mega Trends and shape a future based on sustainable growth.

Contact us: Start the discussion ➜

FROST & SULLIVAN