SHURE®
LEGENDARY
PERFORMANCE™

MICROFLEX® ADVANCE™
THE INVISIBLE AUDIO SOLUTION FOR AV CONFERENCING

NEW

SOUND AFFECTS *by Julian Treasure*

Sound impacts on every aspect of our lives, from health and wellbeing to learning, working, sleeping and our relationships at home and in the workplace.

In many ways our sense of hearing is more sophisticated than our sense of sight. We see only what is in front of us, but we hear sounds coming from all around us. Hearing is our primary warning sense, so sound goes very deep, very fast.

Sound affects us in four key ways:

PHYSICALLY. Sudden noises trigger the release of brain chemicals that prepare us to fight or flee; peaceful sounds like surf or rain slow down our heart rate and breathing.
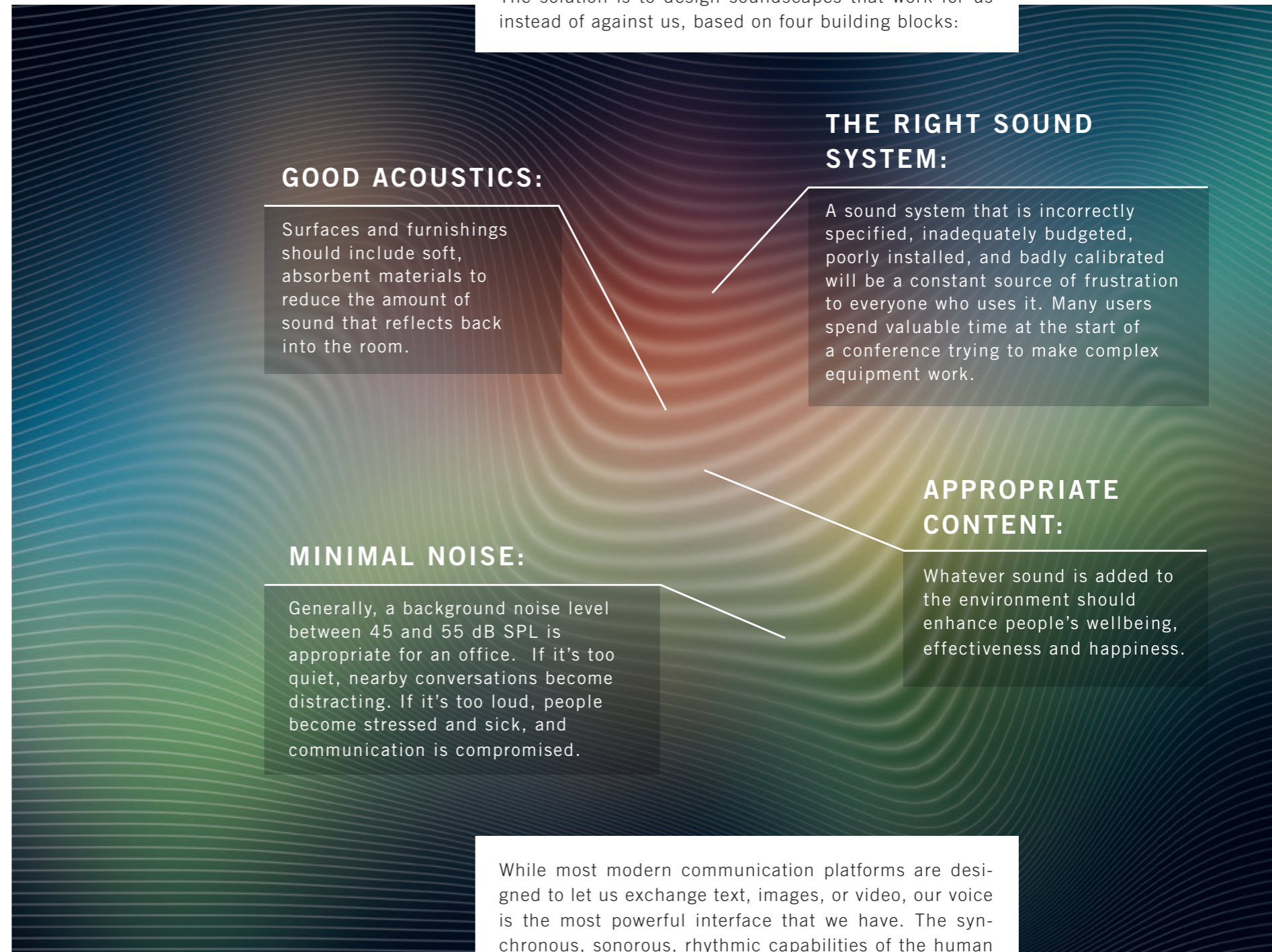
PSYCHOLOGICALLY. Music can change our mood; birdsong tends to make us feel secure.

COGNITIVELY. Most humans have bandwidth for just 1.6 conversations, so our ability to think is greatly affected by other sounds that are present – especially other people's conversations.

BEHAVIORALLY. Sound affects our buying patterns: inappropriate retail soundscapes can reduce sales by up to 28%.

Office work involves collaboration, for which open plan offices are entirely suitable. But it also involves concentration, contemplation and communication, and sadly the typical office soundscape often compromises our ability to do these things. In communication, the signal (speech or other sounds that we want to hear) is often hard to extract from the noise (other people talking, phones ringing, and other unwanted sound).

The solution is to design soundscapes that work for us instead of against us, based on four building blocks:

GOOD ACOUSTICS:

Surfaces and furnishings should include soft, absorbent materials to reduce the amount of sound that reflects back into the room.

THE RIGHT SOUND SYSTEM:

A sound system that is incorrectly specified, inadequately budgeted, poorly installed, and badly calibrated will be a constant source of frustration to everyone who uses it. Many users spend valuable time at the start of a conference trying to make complex equipment work.

APPROPRIATE CONTENT:

Whatever sound is added to the environment should enhance people's wellbeing, effectiveness and happiness.

MINIMAL NOISE:

Generally, a background noise level between 45 and 55 dB SPL is appropriate for an office. If it's too quiet, nearby conversations become distracting. If it's too loud, people become stressed and sick, and communication is compromised.

While most modern communication platforms are designed to let us exchange text, images, or video, our voice is the most powerful interface that we have. The synchronous, sonorous, rhythmic capabilities of the human voice deliver information efficiently and naturally. Making a compelling video requires one to acquire significant technical skill; making a compelling speech is something that anyone can do.

IN A/V, THE 'A' COMES FIRST

Videoconferencing has become an essential tool for business communication. But it's easy to forget that the majority of the content is actually carried by the audio, not the video. If the camera fails during a video-conference, the meeting can go on virtually unimpeded. But if the audio fails, the meeting stops.

In business meetings, the voice does most of the work and we make decisions based on what we hear. Poor sound deprives us of valuable information and makes our brain work harder to compensate. After a while, we experience fatigue, and we struggle to pay attention.

Shure believes that good sound directly contributes to the well being, productivity, creativity, and connectedness of people in the workplace – and that room designers do not have to choose between sound and style.

Our mission is to develop audio tools that capture the voice naturally, fit harmoniously with the room's appearance, and make it effortless to connect people. Microflex Advance is a new series of audio products that uses advanced technology to provide outstanding sound quality, flexibility, and usability without compromising the appearance of the room.
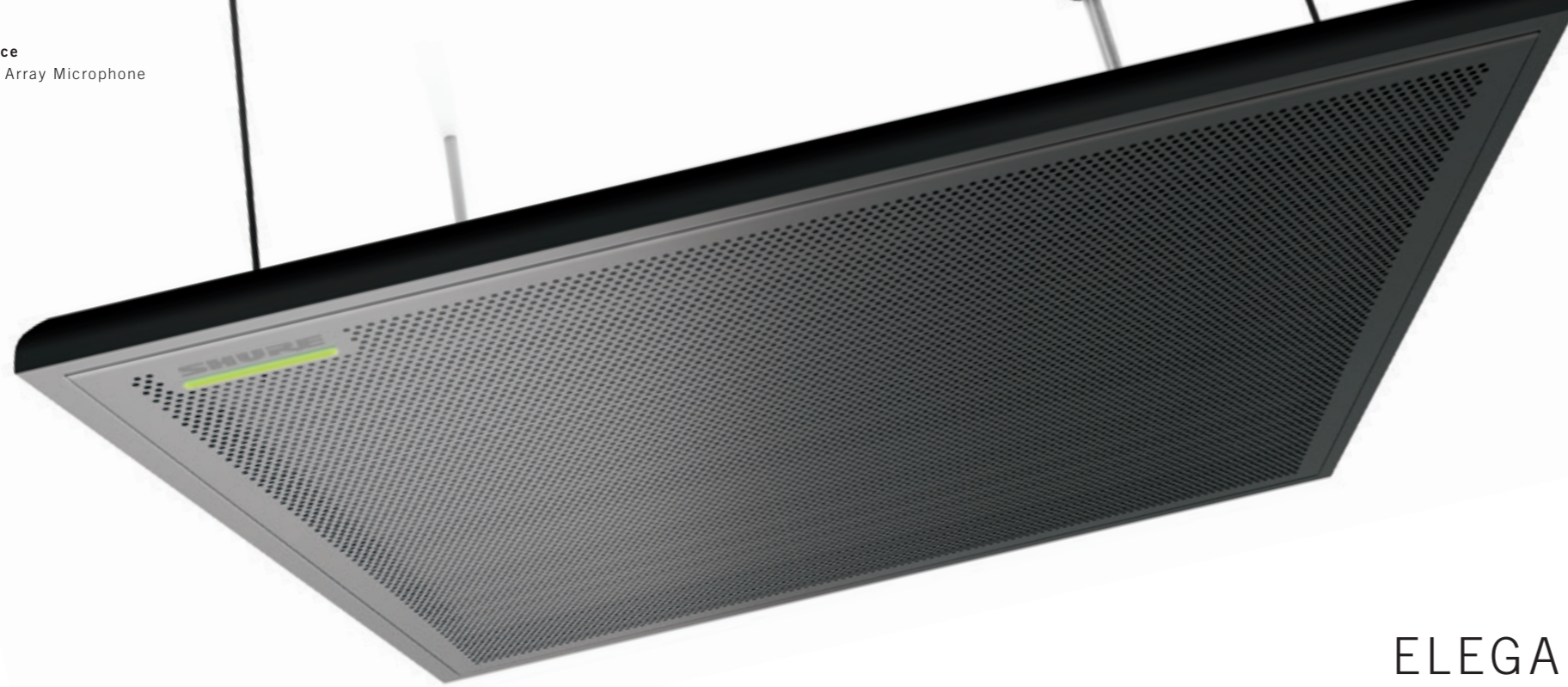
ELEGANT DESIGN.
ELOQUENT PERFORMANCE.

Introducing Microflex® Advance™ networked array microphones: versatile and elegant AV conferencing solutions that discreetly and precisely capture the richness of the human voice.

Shure Microflex Advance array microphones feature patent-pending new technologies that fundamentally change voice coverage and capture in AV conferencing environments.

Microflex Advance **Ceiling Arrays** provide configurable and invisible coverage from above for rooms of any size, shape or application.

Microflex Advance **Table Arrays** provide versatile and adjustable coverage areas in elegant, low-profile table-top solutions.

Both feature new Shure software tools that enable AV conference room designers to be more creative and conference managers to be more productive.

WHY SHOULD YOU LISTEN?

CEO

Your team members are more productive when communication with their co-workers and customers – down the hall or across the globe – is natural and effortless. With Microflex Advance, they spend more time working and less time making things work.

SYSTEM DESIGNER & INTEGRATOR

Microflex Advance leverages the power of Shure IntelliMix and Dante digital audio networking to make design, installation, and configuration simple and straightforward. Increased efficiency lets you deliver a great A/V system much faster.

USER

Microflex Advance allows users to focus on doing their best work. Hearing and being heard and understood clearly makes users more productive and creative.

ADMINISTRATOR & IT MANAGER

Microflex Advance digital audio signals seamlessly co-exist on the same network with typical office data and applications without impacting network speed or performance.

ARCHITECT & INTERIOR DESIGNER

Architects and Interior Designers are called on to create spaces that are visually stunning without sacrificing sound quality. With Microflex Advance, you can give clients the style that they want and the sound quality that they need.

CFO & FINANCE TEAM

Microflex Advance is a cost-effective audio solution. It covers multiple people in a variety of seating layouts, and eliminates the need for separate audio equipment for audio-only and videoconferencing applications.

ULTIMATE AV FLEXIBILITY.

Ceiling Arrays use Steerable Coverage™ technology to position pick-up areas throughout a room with coverage more precise than shotgun microphones.

Configurable Coverage

Configure up to eight pick-up patterns in three dimensions and adjust them for uniform acoustic performance throughout the room. Each Ceiling Array lobe can be steered toward a participant using the Auto Configuration mode in the control software for quick audio setup and capture.

Flexible Networking

Mix, route and manage the signals from up to eight coverage areas as discrete channels on a Dante network over a single Ethernet cable. An individual automix channel provides added flexibility.

Workflow Efficiency

The microphone includes nine templates to speed initial set-up and ten presets for importing or exporting array configurations between multiple arrays and/or PCs.

Digital Signal Processing

Microflex® Advance™ Ceiling arrays feature the new Shure IntelliMix® DSP Suite (see page 13) for precise coverage settings, automatic mixing and equalization, and echo reduction (page 13).

Elegant Modern Design

Seamlessly integrate arrays within room designs via flush mounting (standard tile dimensions), pole or suspension mounts.
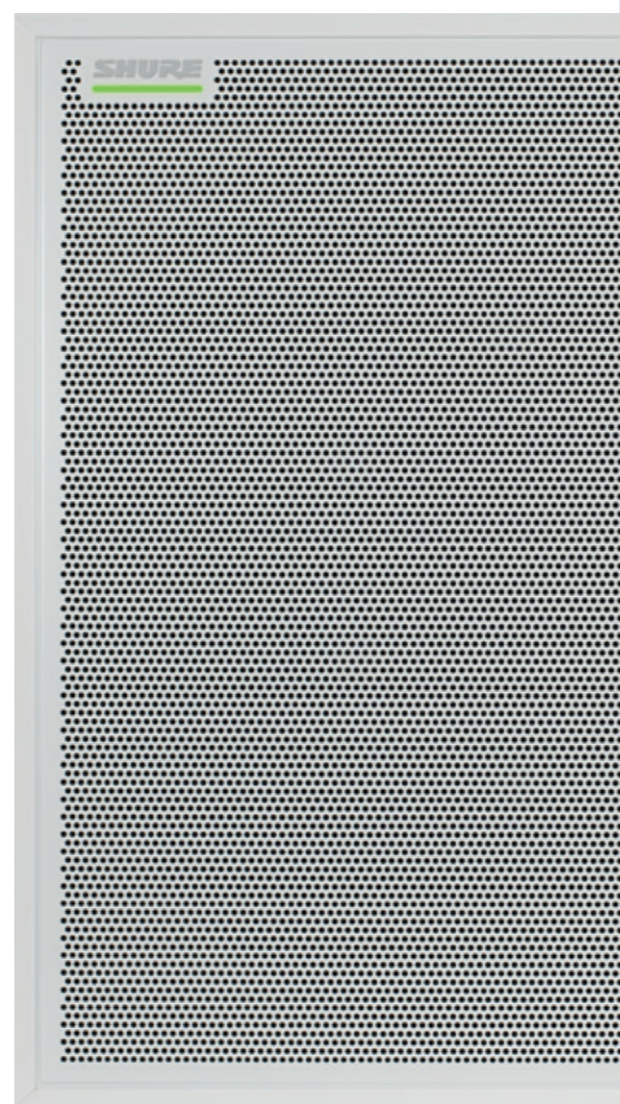
Microflex Advance
MXA910 Ceiling Array Microphone

Application Profile

A Ceiling Array is ideal for formal boardrooms where no visible microphones on the work surface is the preference. This microphone is configured to capture seven discrete listening areas with coverage for an 11-seat meeting. Under average room conditions, at a height of approx. 3 meters with seated talkers, the recommended coverage diameter is approx. 9 meters.
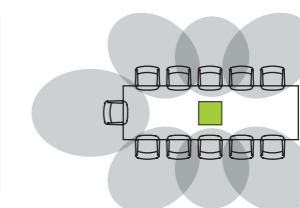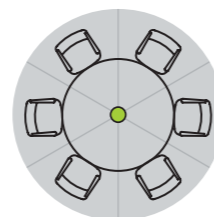
Coverage Map
11 Chairs
1 Rectangular Table
7 Coverage Areas

AGILE TABLETOP PERFORMANCE.

Table Array microphones use Steerable Coverage™ technology to capture pristine audio around conferencing tables of different sizes, shapes and uses.

Configurable Coverage

Set the coverage geometry for up to four areas in 15° increments, and specify the polar pattern for each configuration including cardioid, supercardioid, hypercardiod, omnidirectional, bi-directional and a unique patent pending toroid pattern.

Flexible Networking

Mix, route and manage the signals from up to four coverage areas as discrete channels on a Dante network over a single Ethernet cable. An individual automix channel provides added flexibility.

Mute Controls

Program the touch-sensitive mute button for toggle, push-to-mute, push-to-talk or disable settings to send controls to external devices.

LED Displays

The configurable multi-colored LED light ring shows the mute status of the microphone in use and displays lighted segments to confirm coverage areas and automix settings.

Exclusive Toroid Pattern
Optimizes the voices of seated or standing participants and rejects overhead noise from projectors or other sources.

Color LED Choices
Specify one of 8 LED colors to communicate microphone mute states, room security levels or other conditions.

Microflex Advance
MXA310 Table Array Microphone

Application Profile

Table Arrays are ideal for meeting rooms where the number of attendees varies and an uncluttered table is preferred.

This microphone captures six meeting participants in six discrete listening areas with three bi-directional microphone patterns.

Coverage Map
6 Chairs | 1 Round Table
3 Bi-Directional Patterns

SIMPLY SMARTER SOLUTIONS.

Both arrays include the Shure IntelliMix® DSP Suite, an expanded toolset of proprietary DSP tools that optimize voice quality by reducing room noise and improving speech intelligibility.

Shure IntelliMix® DSP Suite

Steerable Coverage™

Configure and control incredibly accurate polar patterns captured from participants in any location of a meeting space. Preconfigured templates in the control software simplify setup.

Echo Reduction *(Ceiling Array only)*

The advanced signal processing helps to reduce echo and is most beneficial for systems without distributed (per channel) AEC.

Automatic Mixing

Increases presence and reduces noise pickup and transmission. This yields improved clarity, intelligibility and seamless interaction between conference sites.

Parametric Equalization (PEQ)

Each Ceiling Array and ANI4 channel features a 4-band PEQ for the precise control of sound, while Table Arrays feature a 4-band PEQ that is assignable to any channel including the Automatic Mixer output channel.

Browser-Based Tools
Both array microphones and the ANI4s feature browser-based tools that make it easy to remotely monitor and control microphones, configure capture areas using convenient templates, set polar pattern preferences and specify mixing and routing preferences.

Rich Third-Party Controls

Both microphones work seamlessly with audio conferencing processors, video conferencing codecs, and PC-based conferencing.

They also offer an extensive API (Application Programming Interface) for versatile integration and control of muting, presets, LED states and other settings via third-party control systems.
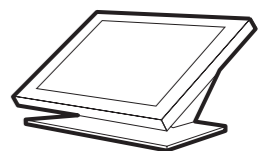
APPLICATION FLEXIBILITY.

Match single or multiple arrays to the AV conferencing needs of rooms of any size, configuration or activity: formal presentations, intimate discussions, distance learning or collaborative work.
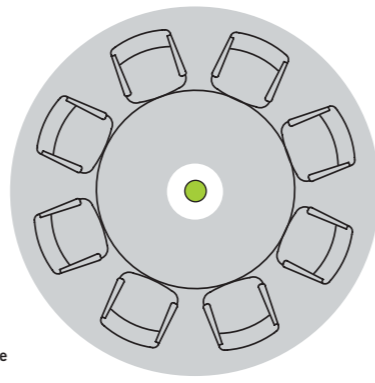
Table Array Coverage Maps
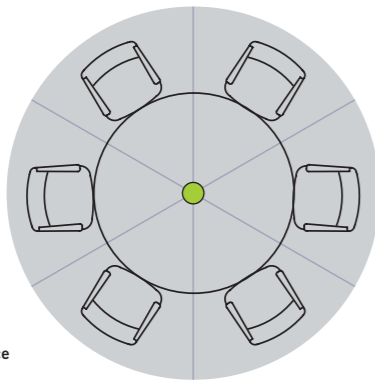
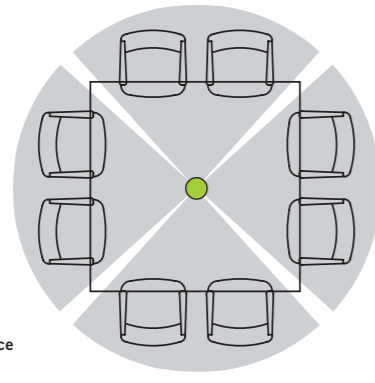**Round Work Surface**
1 Table Array

Profile
6 Chairs
1 Round Table

3 Bi-Directional Patterns

Round Work Surface
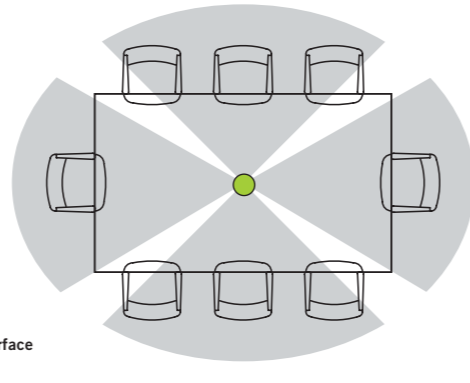1 Table Array

Profile
8 Chairs
1 Round Table

1 Toroid Pattern

Square Work Surface
1 Table Array

Profile
8 Chairs
1 Square Table

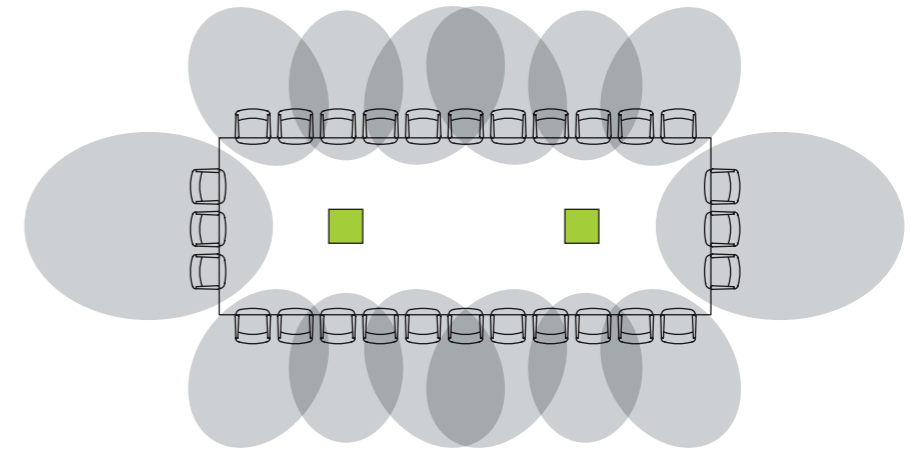**4 Supercardioid Patterns**

Rectangle Work Surface
1 Table Array

Profile
8 Chairs
1 Rectangular Table

1 Bi-Directional Pattern
2 Cardioid Patterns

Ceiling Array Coverage Maps*

Large Conference Room
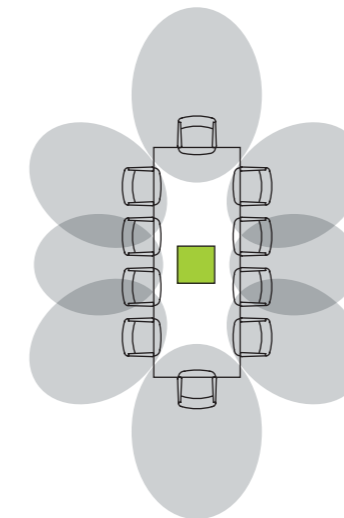2 Ceiling Arrays

Profile
28 Chairs
1 Rectangular Table

14 Coverage Areas

Medium Conference Room
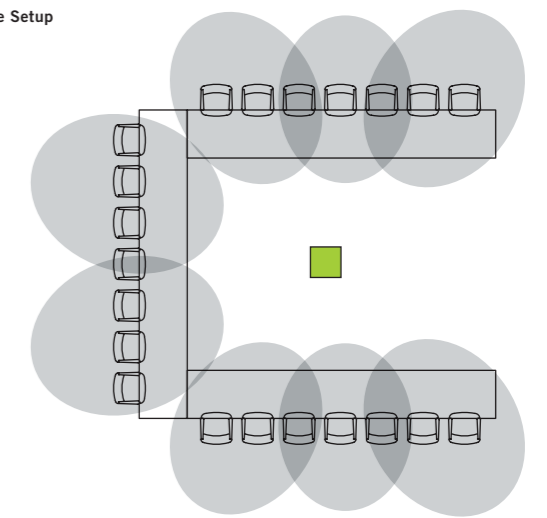1 Ceiling Array

Profile
10 Chairs
1 Rectangular Table

8 Coverage Areas

Multi-Purpose Room | Conference Setup
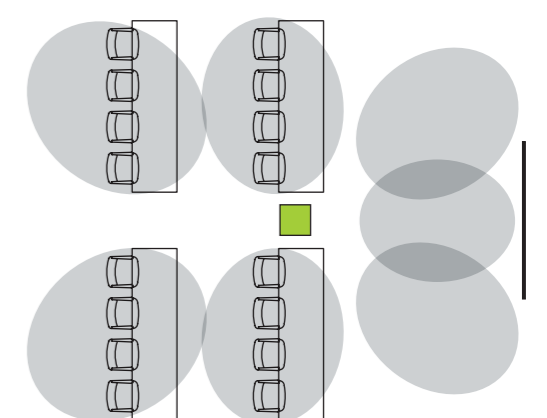1 Ceiling Array

Profile
21 Chairs
3 Rectangular Tables

8 Coverage Areas

Multi-Purpose Room | Classroom Setup
1 Ceiling Array

Profile
16 Chairs
4 Rectangular Tables

7 Coverage Areas

** **Coverage Capabilities**
Installed at a height of 3 meters (ten feet),
Ceiling Arrays capture audio from seated partici-
pants to a recommended area of 9 meters
(30 feet) in diameter, meeting the STIPA "A"
intelligibility rating.**
Note: Ceiling Arrays are capable of picking up
participants beyond 9 meters (30 feet).*

***Room conditions: RT60 (reverb time)
= 500 ms @ 1kHz, weighted room noise
= 40dBSPL(A). IEC-602682-16.*

SHURE NETWORK SYSTEMS

Microflex® Advance™
MXA

Both new Microflex Advance array microphones are fully digital for networked set-up, management and control on Dante™ networks.

Both Arrays Feature
– Shure Intellimix® DSP Suite
– Single Ethernet Cable Connectivity
– Dante Audio Networking
– Software-based ConfigurationTemplates
– 10 Configuration Presets
– Browser-based Remote Control
– Third-party Control String APIs
– Commshield® RF Immunity
– Black, White & Aluminum Finishes

Networkable Microphones
Ceiling Array Microphone | **MXA910**
Table Array Microphone | **MXA310**

Dante Audio Networking enables delivery of low-latency, multi-channel, uncompressed digital audio over a standard Ethernet network.

Connectivity
Dante™ PoE

CommShield®
Technology

Audio Network Interfaces

New ANI4IN and ANI4OUT devices can bring up to four wired microphones onto or from a Dante network for easy audio routing and browser-based connectivity.

Features
– Browser-based Remote Control
– Logic Pin State Settings (ANI4IN-BLOCK)
– Hardware Status LEDs
– Third-party Control System Compatible
– XLR and Block Connectivity
– Power over Ethernet (PoE)
– Audio Summing
– Per Channel 4-Band Parametric Equalization

Front Panels
Common LED signals for ANI Input & Output devices

ANI: Inputs
4-Channel Dante™ Mic/Line Audio Network Interface with XLR or Block Inputs

ANI: Outputs
4-Channel Dante™ Mic/Line Audio Network Interface with XLR or Block Outputs

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Dante Enabled & Compatible Microphones

Microflex® Wireless
MXW

Microflex Wireless systems include digital network compatible transceivers and charging stations.

Networkable Wireless Systems
Networked Charging Stations | **MXWNCS2 / MXWNCS4 / MXWNCS8**
2-, 4- and 8-Channel Access Point Transceivers
MXWAPT2 / MXWAPT4 / MXWAPT8

Connectivity
Dante™ PoE

Microflex®
MX

New ANI converters configure MX wired microphones for Dante digital networking.

Network Compatible Microphones
Low Profile Boundary Microphone | **MX395**
Multi-Element Boundary Microphone | **MX396**
Boundary Microphone | **MX392B/E**

Connectivity
XLR / Block

Via
ANI

Networking Devices

Existing Shure Dante-compatible interface devices can provide network connectivity for any Microflex Advance conferencing solution.

Microflex Wireless
4- and 8-Channel Audio Network Interfaces
MXWANI4 / MXWANI8

SCM820
8-Channel Digital Intellimix® Automatic Mixer
SCM820 provides Dante connectivity and versatile configuration options.

Architectural Details

Ceiling Array microphones are designed for suspension, pole and flush mounting in metric or imperial formats.

Integrated Vibration Isolation
Prevents transmission of mechanical noise through the microphone.

Light Bar
Multi-color LED indicates microphone status.

Plenum-Rated
Certified compliant with the UL 2043 standard.

Available Ceiling Adapters
A910-25MM
Configures a 600 mm Ceiling Array for a 625 mm grid.

A910-JB
Allows the Ethernet cable connected to the array to be installed inside flex conduit.
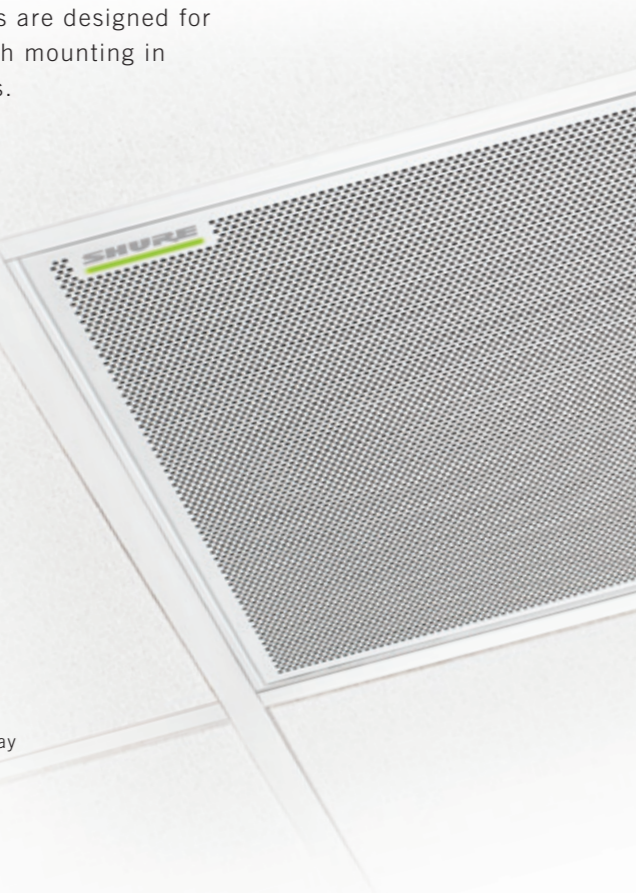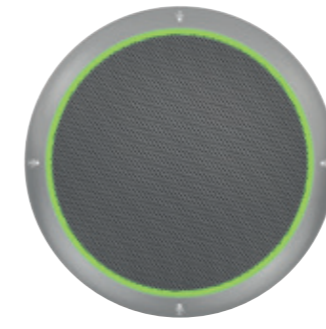
Suspension mount
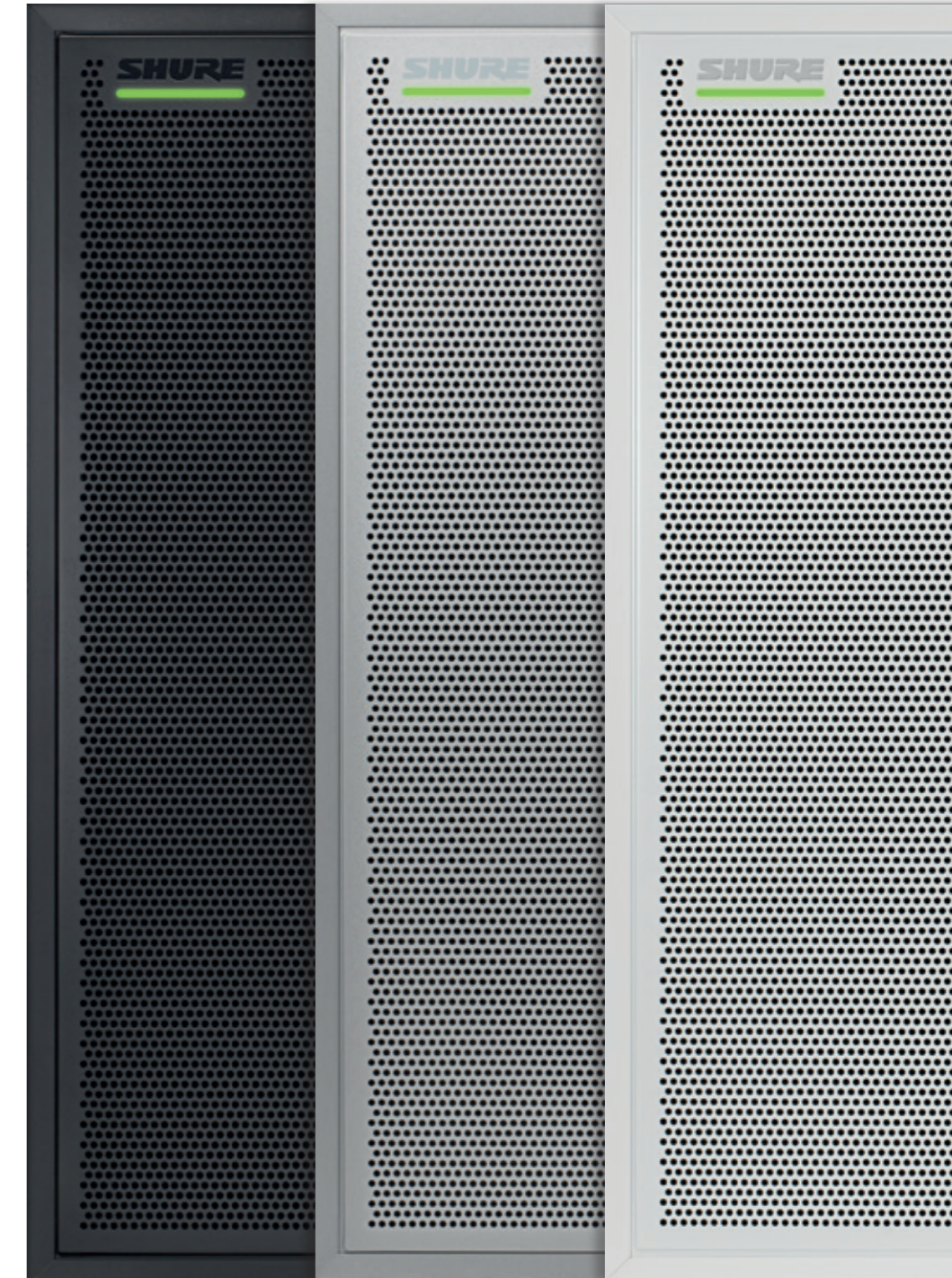
VESA-format pole mount

Flush mount installation

Installation Solutions

Audio Network Interface units are 1/3 rack mountable and can also be mounted under-the-table or on a wall. Table Array microphones also feature through-the-table mounting kits.

ANI Bracket
Mounts a single Mic/Line ANI under a table or on a wall (included).

Available ANI Bracket
CRT1 | Mounts up to 3 ANIs under a table, on a wall, or in a rack.

Table Array Mounting
Table Arrays include cable management solutions for on-the-table or through-the-table applications.

Expressive Finishes

Ceiling and Table Array microphones are available in black, white and aluminum finishes to match room aesthetics or the finishes of other AV system components. Ceiling Array mics can also be painted.

Black

Aluminium

White

Shure Around The World

Global & Regional Headquarters

United States, Canada, Latin America, Caribbean:

Shure Incorporated
5800 West Touhy Avenue
Niles, IL 60714-4608 USA

Phone: +1 847-600-2000
Fax: +1 847-600-1212 (USA)
Fax: +1 847-600-6446
Email: info@shure.com

www.shure.com

Europe, Middle East, Africa:

Shure Europe GmbH
Jakob-Dieffenbacher-Str. 12,
75031 Eppingen, Germany

Phone: +49-7262-92490
Fax: +49-7262-9249114
Email: info@shure.de

www.shure.eu

Asia, Pacific:

Shure Asia Limited
22/F, 625 King's Road
North Point, Island East, Hong Kong

Phone: +852-2893-4290
Fax: +852-2893-4055
Email: info@shure.com.hk

www.shure.com/asia

Branch Office Locations

United States, Canada, Latin America, Caribbean:

Mexico, Juarez
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United States, IL, Wheeling

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