



### QUALITY, RELIABILITY, **EXCELLENCE.**

When the microphone is on, quality and performance matter most. Whether it's national leaders debating on the world stage, panel members conversing across a room, or an AV conference that requires pristine speech intelligibility, the expectation is flawless audio.

Since developing our first products in 1925, Shure has pursued audio perfection with an uncompromising commitment to continuously innovating and improving product performance. That has meant countless hours of engineering, testing, re-tooling, and re-testing to ensure that the most important audio moments are captured effortlessly - whatever the environment.





Audio simplicity, realized



**MICROFLEX® MICROPHONES** 

Unmatched flexibility and performance



MICROFLEX® **WIRELESS SYSTEMS** 

Vivid, lifelike audio for conferencing



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#### **MICROFLEX®** ADVANCE™ ARRAY **MICROPHONES**

Intelligent networked microphones

#### **PRESENTATION**



BLX-R™ WIRELESS SYSTEMS

Wireless freedom made



18 **SLX® WIRELESS** SYSTEMS

Smart, hard-working wireless



QLX-D<sup>®</sup> DIGITAL

**WIRELESS SYSTEMS** Secure digital wireless



20 **ULX-D™ DIGITAL WIRELESS SYSTEMS** 

Uncompromising digital wireless, Dante-enabled



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#### **AXIENT® DIGITAL WIRELESS SYSTEMS**

Accessible, scalable, powerful

#### NETWORKED



**SIGNAL PROCESSORS** 

Perfectly paired conferencing audio



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Simple connection, seamless integration



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#### CONFERENCE AND DISCUSSION **SYSTEMS**

State-of-the-art discussion and conferencing solutions

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#### SOFTWARE SOLUTIONS

Configuration, control, management

#### **TECHNOLOGIES**

INTELLIMIX®

DANTE | ENCRYPTION

#### SYSTEM SCHEMATICS

- **VIDEO CONFERENCING CEILING ARRAY | TABLE ARRAY**
- 49 PRESENTATION AND VIDEO CONFERENCING | AV CONFERENCING
- 50 CONFERENCE AND DISCUSSION





#### CENTRAVERSE™ INSTALLED SOUND MICROPHONES

Centraverse Installed Microphones deliver high-quality plug-and-play and reliable audio, regardless of the application.

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## MICROFLEX® MICROPHONES

The Microflex Series provides a wide range of flexible microphone solutions suited for a variety of conferencing applications.

Audio simplicity, realized.

#### **CENTRAVERSE INSTALLED SOUND MICROPHONES**

From meeting rooms to houses of worship, podiums to desktops, Centraverse microphones deliver plug-and-play, reliable audio, regardless of application.

Equipped with CommShield® technology to filter out unwanted RF interference from phones and other wireless devices, they are designed with everything needed to ensure a quick and efficient sound solution.



#### **CVB**

#### **Boundary Condenser Microphone**

- · For use in desktop installed sound reinforcement applications
- Low-profile design fits seamlessly within any design aesthetic
- Available in cardioid and omnidirectional polar patterns and black or white color options



90 70Hz-16kHz

#### **CVO**

#### **Overhead Condenser Microphones**

- Designed for overhead sound reinforcement applications
- Integrated wire aiming hanger for optimal placement above choirs and other ensembles with minimal effort



70Hz-16kHz |||||

#### CVD **Desktop Base**

- · Sleek desktop base compatible with all Centraverse 305 mm (12") and 457 mm (18") gooseneck microphones
- · Includes a 305 mm (12") attached cable



#### All Centraverse models equipped with CommShield® RF Filtering Technology

KEY:			
Polar Pattern			
Cardioid	Supercardioid	Omnidirectional	Bidirectional
Frequency Response	•		

#### CVG12/18 & CVG12D/18D

#### **Gooseneck Condenser Microphone**

- Dual-section gooseneck provides full articulation and easy placement options
- · Ideal for use in corporate facilities and government institutions
- CommShield® Technology guards against unwanted RF interference from portable wireless devices
- · Available in S (switch) and RS (light ring/switch) versions
- Each available in three configurations:
- · With inline preamp only
- · With inline preamp and mute switch/ LED indicator
- · With inline preamp, mute switch, and light ring
- · Available in 12- and 18-inch versions
- CVG models include snap-fit windscreen and flange mount (CVD desktop base available separately)
- CVGD models include snap-fit windscreen and integrated desktop base





70Hz-16kHz





70Hz-16kHz

CVG18D



#### Unmatched flexibility and performance

#### **MICROFLEX® MICROPHONES**

Combining sleek, low-profile aesthetics and superior sound quality, Microflex microphones deliver a high standard of quality and efficiency. Each condenser microphone is engineered to withstand high usage and is equipped with CommShield® Technology to guard against radio interference from phones and other wireless devices. They deliver total flexibility across a wide variety of installed audio applications.



#### **MX150**

#### **Subminiature Lavalier Microphone**

- Professional electret condenser microphone is ideal for applications requiring low-profile placement
- Uncompromising sound quality and high reliability for corporate lectures, AV teleconferencing, and sound reinforcement
- · Fully compatible with all Shure wireless systems





#### **MX153**

#### **Earset Headworn Microphone**

- · Professional subminiature earset microphone is ideal for applications in which improved gain-before-feedback over lavalier microphones is desired
- · Exceptional speech clarity makes it ideal for corporate presentations. AV conferencing, and live sound reinforcement



20Hz-20kHz

#### 

#### MX183/184/185 **Lavalier Microphone**

- · Natural sound in a convenient, low-profile form factor
- Attaches to a tie or lapel for freedom of movement in any situation involving voice reproduction
- Available in three polar patterns and compatible with all Shure wireless platforms:
  - · MX183 Omnidirectional
- MX184 Supercardioid
- · MX185 Cardioid



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50Hz-17kHz illii

#### **MX202**

#### Overhead Microphone

- · Capture sound conveniently and unobtrusively
- · Compact and flexible, with 4" (102 mm) goosenecks and versatile condenser cartridges for accurate sound reproduction in any setting
- · Preamp options available
- · Easy installation in ceilings or on microphone stands



#### MX391/392/393

#### **Boundary Microphone**

- · Slim design and superior sound reproduction for conference room solutions
- · Programmable, silent membrane switches, interchangeable cartridges, logic inputs and outputs, and LED indicators
- MX392BE with bottom exit option available



990 50Hz-17kHz

#### **MX395**

#### Low Profile Boundary Microphone

- Table microphone is ideal for environments where minimal presence is prioritized
- Delivers exceptional sound pickup while barely being noticed
- Choose from a selection of colors and pickup patterns for customized table installations



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#### **MX396**

#### Multi-Element Boundary Microphone

- · Unique and versatile microphone for conference room installations
- · Clean and simple appearance
- · Available in two or three element configurations, combining the coverage of multiple microphones into one compact package



50Hz-17kHz

#### MX405/410/415

#### Modular Gooseneck Microphone Unsurpassed style and performance for

- conference rooms and similar applications · Available in 5". 10", and 15" lengths
- · Available with desktop or mounted bases, wired or wireless options, single or dualflex options and interchangeable cartridges
- · All models are fully compatible with the MX890 and Microflex Wireless MXW8 and ULXD8 desktop bases
- · Available with surface mount preamp, less preamp with light ring, less preamp with bi-color status indicator



 $\varphi \varphi \Phi$ 50Hz-17kHz

50Hz-17kHz

#### MX412/418 **Gooseneck Microphone**

(127, 254, and 381 mm)

- Provide the added length and flexibility needed for environments such as lecterns, pulpits, and courtrooms
- · High sensitivity with balanced, transformerless output for maximum resistance to electromagnetic hum and RF interference, even over long cable runs



#### **MX690**

#### Wireless Boundary Microphone Offers total freedom of placement with no holes to drill or cables to

- run for installation · Ideal for conference and meeting
- spaces that require flexibility and high performance · Compatible with Shure SLX®
- wireless systems, including the SLX4L receiver with logic output for applications requiring logic functionality (see p. 18)



#### 50Hz-17kHz

#### **MX890**

#### Wireless Desktop Base

- · Designed for use with MX405, MX410, and MX415 Microflex® Gooseneck Microphones
- Fully compatible with SLX® wireless systems, including the SLX4L wireless receiver with logic output for applications requiring logic functionality (see p. 18)









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#### MICROFLEX® WIRELESS SYSTEMS

Microflex® Wireless is a system of advanced conferencing products that includes boundary, gooseneck, bodypack, and handheld microphone options, audio network interfaces with analog and digital connections, control software that enables the remote adjustment and monitoring of system settings, and intelligent rechargeable transmitters and charging stations.

p. 12



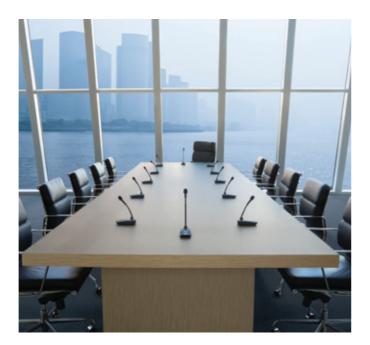
#### MICROFLEX® ADVANCE™ARRAY MICROPHONES

The networked array microphone system is a versatile and elegant AV conferencing solution that discreetly and precisely captures the richness of the human voice.

#### Vivid, lifelike audio for conferencing

## MICROFLEX® WIRELESS SYSTEMS

Developed with contemporary working and learning spaces in mind, the Microflex Wireless platform provides flexible, elegant solutions for capturing and managing clear, natural sound in AV conferencing environments. Simple to configure and completely scalable, multiple systems can be managed, monitored, and controlled on-site or remotely from a laptop or web browser. Microflex Wireless is an ideal choice for almost any environment, whether it's one room, several floors, or multiple buildings.



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#### MXW1

#### **Hybrid Bodypack Transmitter**

- Integrated omnidirectional microphone is perfect for picking up speech while the bodypack is on a lanyard or tucked into a shirt pocket
- Encrypted transmission offers security
- Input jack connects an ear-worn or lavalier-style microphone
- Belt clip easily attaches to clothing

#### MXW2

#### **Handheld Transmitter**

- Vivid, lifelike sound and intelligent, wireless performance for presentation and conferencing applications
- Encrypted transmission offers security
- Advanced rechargeability provides convenience
- Lightweight, durable construction and integrated antenna for effortless use
- Available with trusted Shure microphone capsules, including the legendary SM58®, SM86, Beta 58A, and VP68

#### MXW6

#### **Boundary Transmitter**

- Low-profile design allows flexible placement on any surface in front of one or multiple speakers
- Cardioid or omnidirectional polar pattern options deliver pristine audio quality
- · Encrypted transmission provides security
- Advanced rechargeability for convenience
- Earphone output for return channel audio



#### **Gooseneck Base Transmitter**

- Stylish, contoured design with minimal footprint plus LED options
- Encrypted transmission for security
- Accepts Microflex gooseneck microphones available in multiple lengths and polar patterns



#### MXWAPT2/APT4/APT8

#### **Access Point Transceiver**

- 2-, 4- or 8-channel wireless access point is ideal for environments where low visibility is preferred
- Up to 80 (region-dependent) compatible channels (up to 160 audio channels in High Density mode)
- Automated frequency coordination assigns clean frequencies to wireless microphones and manages two-way wireless transmission of encrypted audio and control signals
- Power to the unit and Dante™ digital networked audio are both supplied over a single Ethernet cable to simplify installation

#### MXWNCS2/NCS4/NCS8 Networked Charging Station

- 2-, 4- or 8-port networked charging station designed to complement boardroom aesthetics
- Easily connects between conference room credenzas and AV rack closets over Ethernet via a single Cat5e cable
- Front panel LEDs display battery charge while remaining runtime and charge levels can be monitored from any networked computer via the control software
- MXWNCS2 attaches to wall or podium with included mounting bracket
- MXWNCS2 for MXW1/2/6 only



#### MICROFLEX™

#### **Wireless Control Software**

- Makes managing even the most complex conferencing environments simpler than ever
- Browser-based application enables comprehensive, real-time remote monitoring and control of all Microflex® Wireless devices
- Monitor and adjust microphone levels, view real-time battery charge status, alter muting preferences, and pair a spare backup microphone and more, without any extra software to install
- Allows for custom integration with Crestron®, AMX®, and other programmable touchscreen controllers, and readily interconnects with teleconferencing audio and other sound processors
- Password protectable and accessible from any networked PC or Mac



#### SystemOn

#### **Audio Asset Management Software**

- Centralized monitoring and control
- Instantly notifies the AV/IT administrator of low battery and missing devices
- Offers remote muting, device identification, and single-view audio gain adjustment
- Allows remote Microflex® Wireless transmitter linking (coming soon)
- Provides real-time room status for help desk
- Delivers offline system status notifications via email and SMS text

More information on p. 40







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New intelligent, networked microphones

#### **MICROFLEX® ADVANCE™ARRAY MICROPHONES**

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 and Microflex Advance Table Arrays feature new Shure software tools that enable AV conference room designers to be more creative and conference managers to be more productive.





#### **MXA910**

#### **Ceiling Array Microphone**

- The Microflex Advance Ceiling Array is a premium networked array microphone for AV conferencing that provides configurable and invisible coverage from above for rooms of any size, shape, or application
- Revolutionary technology includes Steerable Coverage™, which utilizes up to eight independent lobes to capture high-quality participant audio from overhead
- · Browser-based control software provides an intuitive user interface that allows for simple configuration of presets, templates, and polar patterns
- · Designed for suspension, pole (Vesa connectivity), and flush mounting (standard ceiling tile dimensions)
- · Black, white, aluminum and paintable finishes deliver seamless aesthetic integration

#### **MXA310**

#### **Table Array Microphone**

- The Microflex Advance Table Array is a premium networked array microphone that provides versatile and adjustable coverage areas in elegant, low-profile tabletop solutions
- Within the onboard IntelliMix® DSP Suite, Shure's proprietary Steerable Coverage™ technology deploys up to four discrete simultaneous coverage zones around a table and utilizes the innovative new "toroid" pattern (see picture p. 15) to reject unwanted artifacts, such as overhead noise from projectors, air conditioning, or other sources. The array features cardioid, supercardioid, hypercardiod, omnidirectional, bi-directional, and toroid polar patterns
- Browser-based, graphical user interface provides a quick set-up and configuration of microphone parameters
- Touch-sensitive mute button is configurable for toggle, push-to-mute, push-to-talk, or disable settings, or to send controls to external devices

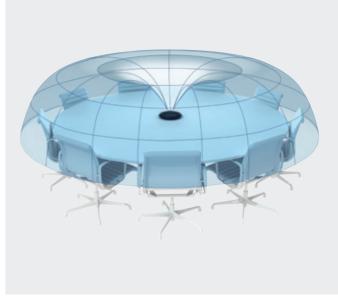


#### **Both arrays feature:**

- Shure Intellimix® DSP Suite (see grey box on p. 15)
- Single Ethernet cable connectivity for audio, control, and PoE
- Dante<sup>™</sup> Digital Audio Networking
- Software-based configuration templates
- 10 configuration presets

- Browser-based remote control
- Third-party control string APIs, including Crestron and AMX
- CommShield® RF immunity
- Configurable LED indication (color, brightness, and more)
- · Black, white, and aluminum finishes





#### A310

#### Flush Mount for MXA310

- Reduces height and improves appearance
- Offers paintable black and silver finishes



#### A910

#### Hard Ceiling Mount for MXA910

- Provides a more finished appearance
- · Offers paintable white surface



#### IntelliMix DSP Suite®

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.

Steerable Coverage™

Configure and control incredibly accurate polar patterns

• Echo Reduction (Ceiling Array only)

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

• Parametric Equalization (PEQ)

Table Array:

Ceiling Array: 4 Band C/S PEQ per channel 4 Band C/S PEQ, assignable to

any one channel at a time



#### Designer

#### **System Configuration Software**

- · Allows system integrators, designers, and sales support staff to create system configurations off-line and then import those settings to the hardware on-site
- Enables multiple "virtual" MXA910's to be arranged on top of an imported image, such as a room layout diagram
- Provides a convenient way to organize MXA910 installations for multiple clients, buildings, and rooms
- Enables the sending of device preset files to someone on-site for import into the device user interface



MICROFLEX ADVANCE | 15 14 | MICROFLEX ADVANCE





#### **BLX-R**<sup>®</sup>

BLX-R Wireless Systems are cost-efficient and combine easy installation, set-up, and operation in a rack-mountable, durable construction.

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#### SLX

SLX, the out-of-the-box wireless solution for installed applications, allows for fast set-up and worry-free operation at the touch of a button.

p. 18



#### $\mathbf{QLX}\text{-}\mathbf{D}^{^{\text{TM}}}$

Combining professional features with simplified set-up and operation, QLX-D Digital Wireless offers outstanding wireless functionality for installations and live sound events.

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#### **ULX-D**™

ULX-D Digital Wireless offers an expansive set of professional features for demanding installed applications.

p. 20



#### **AXIENT DIGITAL®**

Axient Digital Wireless delivers an unprecedented level of signal stability and audio clarity, plus flexible hardware options, advanced connectivity, and comprehensive control.

Wireless freedom made simple

#### **BLX-R™ WIRELESS SYSTEMS**

Easy, accessible, and reliable Shure BLX-R™ wireless systems combine professional-quality sound with simple set-up and an intuitive interface for performance you can trust right out of the box. Precision-built and available in a variety of handheld, lavalier, and headset configurations, it's the ideal solution for smaller installed audio applications requiring all the essentials of wireless audio.

Smart, hard-working wireless

#### **SLX® WIRELESS SYSTEMS**

Sound installations require powerful wireless tools that can be configured quickly and used confidently. SLX® wireless systems exceed these demands with automatic set-up features and wireless fidelity. Supporting up to 20 compatible systems across multiple UHF frequency bands, SLX features patented AudioReference Companding for crystal-clear sound that integrates seamlessly in almost any installation environment.

#### BLX1

#### **Bodypack Transmitter**

- Rugged, yet lightweight construction
- · Tactile on/off switch, adjustable gain control, easy frequency matching, and LED-display power and battery status
- · TQG connection for use with Shure lavalier, headset, and earset



#### BI X2

#### **Handheld Transmitter**

- · Lightweight, rugged construction
- Quick and easy frequency matching and LED power and battery status
- · Available with PG58, SM58®, and BETA 58A® microphone capsules



#### BLX4R

#### **Single Channel Receiver**

- · Rugged, metal construction
- · Detailed audio and RF status LCD metering
- Removable antennas and microprocessor-controlled antenna diversity
- · One-touch QuickScan frequency selection
- · Includes rack mount hardware kit



#### **Bodypack Transmitter**

- · Backlit LCD screen with sturdy belt clip
- For use with a variety of SLX Wireless systems, including lavalier and headworn



#### SLX2

#### Handheld Transmitter

- · Features a timed, backlit LCD display, frequency and power lockout, and mute functionality
- · Interchangeable microphone capsules, including BETA 87A, BETA 87C, BETA 58A®, SM86, and the legendary SM58®



#### SLX4/SLX4L

#### **Diversity Receiver**

- Delivers unprecedented ease of use
- · Automatic frequency selection and automatic transmitter set-up
- · Rack hardware and detachable antennas included for immediate installation right out of the box
- · Available with logic output (model SLX4L) for use with echo cancellation software and remote battery life monitoring
- · Compatible with MX690 Boundary transmitter and MX890 Desktop transmitter (see p. 9)



#### Secure digital wireless

#### **QLX-D™ DIGITAL WIRELESS SYSTEMS**

Shure QLX-D™ Digital Wireless is the clear choice for exceptionally detailed wireless audio in widely diverse and demanding environments. A highly flexible system featuring streamlined set-up and operation, QLX-D™ boasts impressive RF efficiency to get more channels on air using less spectrum, while the rugged, metal construction withstands the rigors of constant use. From corporate seminars to music clubs, classroom lectures to houses of worship, Shure QLX-D™ Digital Wireless has it covered, delivering confident performance, no matter the venue.



#### QLXD1

#### **Bodypack Transmitter**

- · Rugged, metal construction
- · Uncompromising audio quality and RF performance
- AES-256 encryption for secure transmission
- Advanced rechargeability options



#### QLXD2

#### Handheld Transmitter

- Integrated antenna
- · Rugged, metal construction
- · Uncompromising audio quality and RF performance
- AES-256 encryption for secure transmission
- Advanced rechargeability options
- · Interchangeable microphone capsules, including BETA 87A, BETA 87C. BETA 58A®, SM86, SM87A, KSM8, KSM9, KSM9HS, and the legendary SM58®



#### QLXD4 **Digital Receiver**

- · Transparent, 24-bit digital audio
- 20 Hz 20 kHz frequency range\*
- 120 dB dynamic range
- · No transmitter gain adjustment needed
- Up to 72 MHz overall tuning bandwidth\*\*
- •22 compatible channels per 8 MHz TV channel
- More than 60 preset compatible channels per frequency band\*\*
- AES-256 encryption
- · Ethernet networkable receivers
- · Automatic channel scan
- · Clean frequencies found with Network Scan
- · AMX/Crestron® control system-ready
- Compatible with ShurePlus™ Channels mobile app and Wireless Workbench® control software
- Remaining battery life displayed in hours and minutes when Shure SB900A is used
- · Compatible with ULXD6 Boundary Transmitter and ULXD8 Gooseneck Transmitter (see p. 21)



18 | BLX / SLX WIRELESS SYSTEMS QLX-D WIRELESS SYSTEMS | 19

#### Uncompromising digital wireless, Dante-enabled

## ULX-D<sup>™</sup> DIGITAL WIRELESS SYSTEMS

A breakthrough in wireless performance, ULX-D™ Digital Wireless incorporates a collection of technological innovations into one easy-to-use wireless system. Specifically designed for high-channel-count applications, ULX-D™ features Dante™ Digital Audio Networking\* and enables up to 160 channels in a 72 MHz band. By offering an unparalleled mix of sound quality, RF performance, scalable hardware solutions, and intelligent battery technology, these systems define the next generation of digital wireless excellence.





#### ULXD1

#### **Bodypack Transmitter**

- · Durable, lightweight aluminum case
- Uncompromising audio quality and RF performance
- AES-256 encryption for secure transmission
- Advanced rechargeability options
- · Lemo3 version available



#### Handheld Transmitter

- Integrated antenna and durable, lightweight aluminum body
- Uncompromising audio quality and RF performance
- AES-256 encryption for secure transmission
- Advanced rechargeability options
- Interchangeable microphone capsules, including BETA 87A, BETA 87C, BETA 58A®, SM86, SM87A, KSM8, KSM9, KSM9HS, and the legendary SM58®



#### ULXD4/4D/4Q

#### **Digital Receiver**

- Uncompromising wireless tailored for professional sound reinforcement
- Single, dual, and quad channel receiver options easily scale to any size installation
- 24-bit/48 kHz digital audio quality, efficient and intelligent RF performance, and AES-256 encryption



ULXD4 Digital Wireless Receiver



ULXD4D Dual Channel Digital Wireless Receiver



ULXD4Q Quad Channel Digital Wireless Receiver

\* Dante™ available with ULXD4D and ULXD4Q models only

#### ULXD6

#### **Boundary Transmitter**

- AES-256 encryption for secure transmission
- Very low latency (<3 msec)</li>
- Advanced rechargeability options
- Configurable Mute button and Mute LED behavior
- Low-profile design for flexible placement on any surface in front of one or multiple speakers
- · Cardioid or omnidirectional polar pattern options

#### ULXD8

#### Gooseneck Base Transmitter

- Use with MX405, MX410 and MX415 gooseneck microphones (see p. 9)
- AES-256 encryption for secure transmission
- Very low latency (<3 msec)</li>
- Advanced rechargeability options
- · Configurable Mute button and Mute LED behavior

#### SBC**450**

#### 4-Bay Networked Charging Station

Compatible with ULXD6 and ULXD8 transmitters



#### SBC850 8-Bay Networked

Charging Station

 Compatible with ULXD6 and ULXD8 transmitters



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#### Accessible, scalable, powerful

#### **AXIENT® DIGITAL**

Axient® Digital ensures maximum stability, range, and clarity for uncompromising audio with outstanding signal quality in even the most complex, congested environments. With two transmitter series to choose from - both compatible with a shared receiver platform - Axient® Digital is a scalable wireless system that provides incomparable sound for a wide range of applications and settings.





#### AD1

#### **Bodypack Transmitter**

- Two transmission modes: Standard for optimal coverage and High Density for maximum system channel count and robust coverage
- Encryption-enabled, secure transmission
- External contacts for docked charging
- Rechargeable battery



#### AD2

#### **Handheld Transmitter**

- Two transmission modes: Standard for optimal coverage and High Density for maximum system channel count and robust coverage
- Encryption-enabled, secure transmission
- · External contacts for docked charging
- Interchangeable microphone capsules

#### · Frequency and power lockout

#### ADX1

#### **Bodypack Transmitter**

- · Advanced control menu, removable antenna, and fully concealed buttons and switch
- · External contacts for docked charging
- · Diversity ShowLink-enabled for remote transmitter control and automatic interference avoidance
- Rechargeable battery

#### ADX2

#### **Handheld Transmitter**

- · External contacts for docked charging, with optional fully-covered radome
- Diversity ShowLink-enabled for remote transmitter control and automatic interference avoidance
- Rechargeable battery
- Interchangeable microphone capsules

- compatible frequencies
- in approximately one minute
- frequencies in real-time



#### Diversity ShowLink® Access Point

- · Delivers wireless network connectivity between all linked transmitters and receivers
- remote control of up to 16 transmitters per access point
- · Offers ability to adjust gain, change frequencies, mute signals, and more

#### AD4D/AD4Q

#### Two-Channel Receiver/Four-Channel Receiver

- Compatible with all AD and ADX transmitters
- · Wide tuning range up to 184MHz
- True digital diversity reception per channel for drop-out resistance
- · Optional DC module available to support redundant power



#### **SBC200**

2-Bay Dock Charger

SB900A batteries (AD1 and AD2)



#### **SBC240**

#### 2-Bay Dock Charger

- SB910 batteries (ADX1)
- SB920 batteries (ADX2 and ADX2FD)
- Remote monitoring via Shure Wireless Workbench®



#### SBRC

#### **Rackmount Charging Station**

- Eight Li-ion batteries accommodated in a single rack space
- Front-panel display for battery parameters including time-to-full in hours and minutes and percent-of-capacity



#### SBC**800**

8-Bay Charger

· SB900A batteries (AD1 and AD2)



#### **SBC840**

#### 8-Bay Charger

- SB910 batteries (ADX1)
- ·SB920 batteries (ADX2 and ADX2FD)
- Remote monitoring via Shure Wireless Workbench®

#### SBC840M 8-Bay Charger

- · SB910M batteries (ADX1M micro-bodypack)
- · Remote monitoring via Shure Wireless Workbench®



#### ADX1M

#### Micro-Bodypack Transmitter

- · Internal adaptive antenna optimizes signal when ADX1M is worn against the body
- · Detachable belt clip for comfort
- Membrane-style buttons and LEMO connection protect against sweat and moisture ingress
- Rechargeable battery for convenience
- Diversity ShowLink-enabled for remote transmitter control and automatic interference avoidance



#### ADX2FD

#### Frequency Diversity Handheld Transmitter

- · Able to transmit RF signal on two discrete carriers
- Optional 50mW high-power mode drives a single frequency with increased power
- External contacts for docked charging, with optional fully-covered radome
- Diversity ShowLink-enabled for remote transmitter control and automatic interference avoidance
- Rechargeable battery for convenience
- Interchangeable microphone capsules for all applications



#### Spectrum Manager

- · Scans and analyzes wide-band UHF spectrum and coordinates
- Scans and analyzes the global UHF spectrum (470-952 MHz)
- · Continuously monitors, evaluates, and displays backup



AXIENT DIGITAL WIRELESS SYSTEMS | 25

#### AD**610**

Enables real-time wireless









## SIGNAL PROCESSORS

Signal processors offer DSP algorithms optimized for AV conferencing applications with Microflex® Advance™ and Microflex® Wireless microphones for a complete, high-quality audio experience.

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#### AUDIO NETWORK INTERFACES

Audio network interfaces provide simple connection of Dante and analog microphones for seamless integration with existing AV/IT infrastructures.

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#### AUTOMATIC MIXER

Automatic mixers offer easy operation of many microphone channels simultaneously.

#### Perfectly paired conferencing audio

#### **SIGNAL PROCESSORS**

The IntelliMix® P300 Audio Conferencing Processor can be seamlessly integrated with the Shure MXA910 Ceiling Array and the MXA310 Table Array Microphones. The USB Audio Network Interface with Matrix Mixing is compatible with MXA310 Table Array Microphones.

Working in perfect synergy with Microflex Advance Microphones, the P300 and ANIUSB-MATRIX deliver a hassle-free, cost-effective conferencing audio system. They offer pre-defined templates that enable set-up in seconds and an unobtrusive form factor for discreet installations. Versatile features and connectivity options provide freedom of choice when joining a room video system or soft codec, or when connecting laptops and mobile devices.



#### P300

#### IntelliMix® Audio Conferencing Processor

- Facilitates communication and collaboration through echo- and noise-free conference room audio
- Supports up to 8 Dante microphone channels, connected over a single network cable
- Improve speech intelligibility and enable full duplex communication with proprietary Shure IntelliMix DSP algorithms by providing:
  - · Per-channel Acoustic Echo Cancellation
  - Noise Reduction
- · Automatic Gain Control
- Parametric Equalization
- IntelliMix® Automatic Mixing and Matrix Mixing
- Allows soft codec audio/video conferencing with BYOD support for USB and mobile devices
- Simplifies programming and reduces set-up time with browser-based user interface with pre-defined templates
- Eliminates need for outboard power supply through Power-over-Ethernet (PoE+)
- Offers a compact form factor, making it easy to mount under tables or in credenzas, without the need for equipment racks and long cable runs



#### ANIUSB-MATRIX

#### USB Audio Network Interface with Matrix Mixing

- This budget-friendly companion to premium microphone solutions leverages the integrated processing functionality of existing video codecs in the room
- Connects 4 Dante audio inputs and 1 analog input to a room audio/ video conferencing system or PC-based AV conferencing app
- USB connectivity allows the use of soft codec AV conferencing applications like BlueJeans, Skype for Business, and others
- Matrix Mixer provides flexible signal routing, while PEQ (Parametric Equalization) and Limiter allow precise control of meeting audio
- Browser-based user interface enables remote control of device functionality
- Power-over-Ethernet (PoE) eliminates the outboard power supply with single network cable connectivity
- Included mounting tray installs easily and allows secure placement of the device under a table



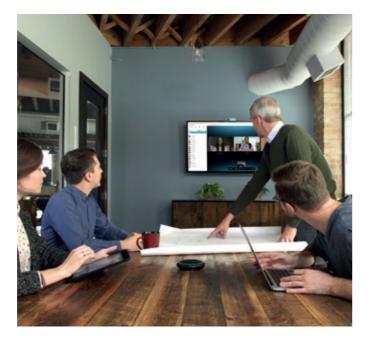




#### Simple connection, seamless integration

## AUDIO NETWORK INTERFACES

A selection of Audio Network Interfaces enables you to customize any size sound reinforcement installation with the right combination of features. They offer the ideal performance, connectivity, and affordability for audio/video conferencing installations when a premium microphone solution is desired, and acoustic echo cancellation of an AV conferencing codec will be used.



#### ANI22 | ANI4IN | ANI4OUT

#### **Audio Network Interfaces**

- ANI22: Connects up to 2 mic/line analog signals to a Dante Network and 2 Dante digital audio signals to mic/line analog signals
- ANI4IN: Connects up to 4 mic/line analog signals to a Dante Network
- ANI4OUT: Converts up to 4 Dante digital audio signals to mic/line analog signals
- Available with block and XLR connectors
- Summing Modes mix multiple sources down to a single channel for easier installation
- Browser-based user interface allows remote control of hardware settings
- Third-party control system compatible
- Power-over-Ethernet (PoE) eliminates need for outboard power supply
- Compact form factor is easy to mount under table or in credenza
- · LEDs on the front panel indicate hardware status





#### MXWANI4 & MXWANI8

#### **Audio Network Interfaces**

- Converts Dante Microphone systems to analog for connection to downstream devices
- · With 4 or 8 block connector channel outputs
- · Versatile 4 port gigabit Ethernet switch
- · Browser-based user interface
- Rack-mountable, with front panel controls for easy adjustment of input and output levels
- Provides Power-over-Ethernet (PoE) to Microflex Advance and Microflex Wireless systems
- $\bullet$  MXWANI4 converts 1 analog signal to Dante / MXWANI8 converts 2 analog signals to Dante



#### Seamless mixing, advanced control

## DIGITAL AUDIO MIXER

The Shure SCM820 Mixer is the the quickest, simplest, and most effective way to set-up a multiple-microphone room. Without clipping a syllable, it silently activates only the microphones being addressed and automatically adjusts each microphone's threshold to changes in background noise. It's technology that's networkable, configurable, and as simple to operate as opening the box, plugging it in, and connecting the microphones.



#### SCM820

#### Digital IntelliMix® Automatic Mixer

- Multiple I/O configurations and networking options provide analog and digital connectivity between devices
- Two independent mixers provide flexibility and enable use in advanced and complex applications
- Smart, simple controls with intuitive hardware interface and informative LED metering
- · Patented Shure Digital Feedback Reduction (two channels)
- · Convenient browser-based remote control



#### ήψή

#### IntelliMix® Technology

eamless, powerful auto-mixing



#### Dante<sup>™</sup> Digital Audio

Multi-channel audio over Ethernet



Digital Feedback Reduction



#### IntelliMix® Modes

Preset, manual, and custom mode



#### Remote Control

Browser-based software



#### **Dual Mixer Operation**

One or two independent mixes



#### Model Variations

Multiple I/O configurations

30 | AUDIO NETWORK INTERFACES

DIGITAL AUDIO MIXER | 31



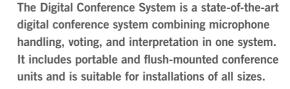


#### **DDS 5900**

The Digital Discussion System provides all you need for a small- or medium-sized meeting. Elegant design, multiple control options, and plug-and-play simplicity allow users to fully focus on the event.

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#### **DCS 6000**





#### **Digital Discussion System**

#### **DDS 5900**

The Digital Discussion System provides all you need for a small- or medium-sized meeting. Elegant design, multiple control options, and plug-and-play simplicity allow users to fully focus on the event. The system consists of a central unit and single programmable multi-user unit - portable or flush mount. DDS features include 2-channel interpretation, grouping, voice activation, and encryption to make DDS 5900 a flexible, cost-effective option.



#### DIS-CCU **Central Control Unit**

- · Compatible with both DDS 5900 and DCS 6000
- Firmware is preconfigured to operate with DDS 5900 effortlessly
- Powers up to 60 conference units and controls up to 250 units
- · Offers 4 selectable operation modes
- Provides TCP/IP for external control and web browser interface
- Features 2 interpretation channels and 4 group outputs
- · Includes an analog emergency input



#### Web Browser Microphone Control and System Set-up

- Enables configuration of central unit and control of the microphone and inputs and outputs
- Facilitates large meetings with delegate set-up and name and seat assignment capabilities



#### DC **5980 P Portable Discussion Unit**

#### · Compact, attractive table top design

- with soft-touch button technology
- · Configurable chairman, delegate, and interpreter stations
- Exchangeable button overlay
- Lockable XLR socket for gooseneck compatibility
- · Offers a stereo headphone socket
- Includes a rack mount hardware kit and high-quality loudspeaker

#### DC 5900 F Flush Mount Base Unit

#### · Small form factor

- · Easy installation and out-of-the-box set-up and operation
- · Works with both DIS and Shure Microflex microphones



#### FP 5921/5981 F and Overlays **Front Plates**

 2 front plate options can be attached to the base unit, and touch overlays are then affixed to the front plates to enable the desired functionality

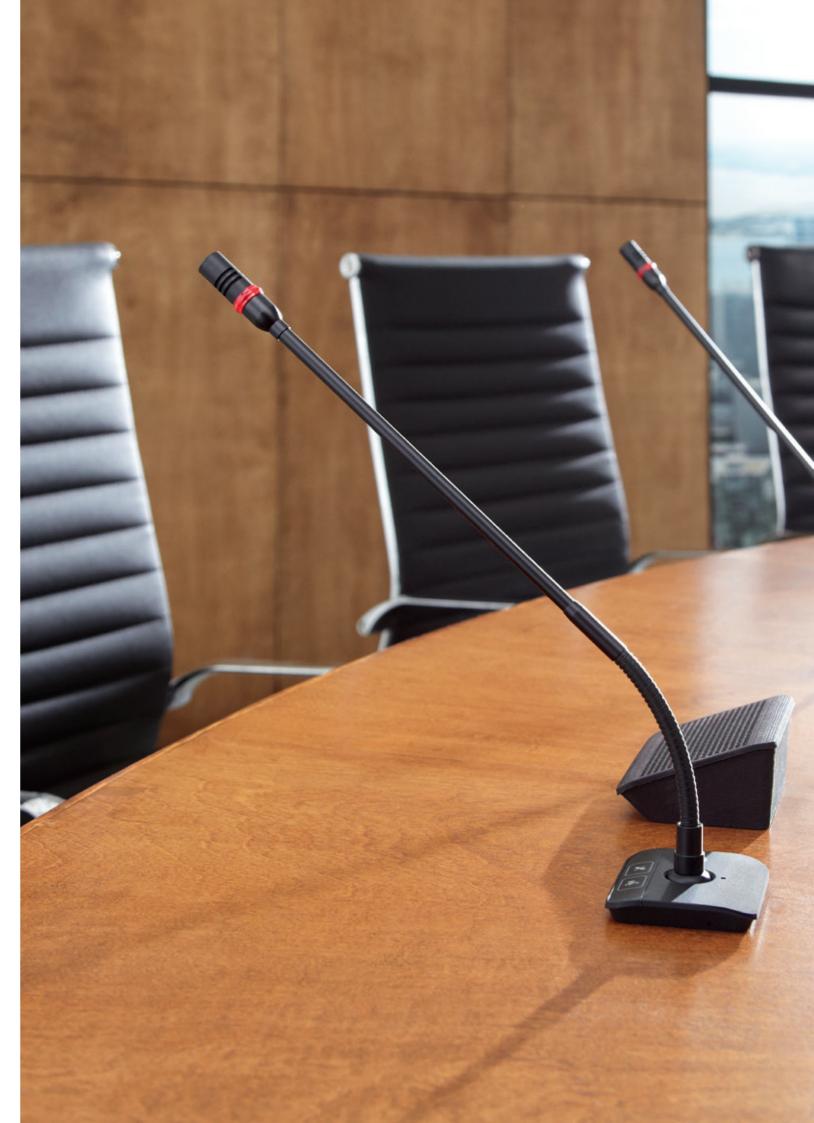
- · Various touch overlay options
- · Loudspeaker in separate unit available



#### Microphones and Speakers Audio and Vocal Accessories

- DIS gooseneck GM 592x
- · Microflex Gooseneck MX4xx LP/RLP by using adaptor AC5901(only flush mount)
- · Optional LS 5900 F speaker can be connected to DC 5900 F base unit





#### **Digital Conference System**

#### **DCS 6000**

Clarity, precision, and reliability are absolutely essential in today's world, with important information being shared and decisions being made in conferences and meetings. The DCS 6000 Digital Conference System's innovative technology provides crystal-clear audio. Beyond a web browser interface, DCS 6000 can be controlled and managed via an extensive modular software package.



#### DIS-CCU + FL6000

#### **Central Control Unit**

- Requires a feature license FL6000 upgrade to operate with DCS 6000
- · Controls up to 3800 conference units
- Offers microphone control, voting, and up to 31 interpretation channels
- · Basic set-up from CU via front buttons and display
- · Web browser interface & optional SW 6000
- Facilitates basic set-up from conference units via front buttons and display
- Provides web browser interface and optional SW 6000



#### DC 6190 P

#### **Conference Units without Voting Functionality**

- $\hbox{$\, \bullet$ Delegate/Chairman Unit with built-in speaker}\\$
- Lockable XLR socket to attach DIS gooseneck or shotgun microphone
- Configurable as chairman or delegate unit
- 2 channel selectors with 2 stereo headphone sockets



#### DM 6680 P/DC 6990 P

#### **Conference Units with Voting Functionality**

- 3- or 5-button voting, secret mode, and a chip card reader
- · Channel selector and stereo headphone socket
- DC 6990 P includes a 3.5" touch screen, second channel selector and headphone socket, multi-language screen, and chairman, delegate, or dual delegate unit type configuration



#### Flush Mount Units and Customization

#### **Conference Units for fixed Installations**

- Chairman or delegate conference units available with integrated or separate electronics
- · Voting, channel selection, and chip card functionality
- · Various microphone options available
- Specific customized solutions upon request



#### DIR **6000**

#### **Digital Wireless Infrared System**

- · Language distribution of up to 32 channels
- Digital infrared receivers for 4, 8, or 32 channels available
- $\bullet$  Digital transmitter for 8 or 32 channels
- · Digital radiator with 13 or 25 outputs
- · Various headphone options available



#### IH 6500 Interpreter Headset

- · Lightweight, dual-sided design
- · Removable ear pads
- Included adapter cables
- Meets ISO requirements
- Flexible gooseneck microphone boom pivots 270 degrees, allowing microphone to be worn on left or right side of the head
- · Cardioid condenser microphone for clear intelligible speech





#### MXCIC Interpretation Console

#### Absolute clarity and accuracy for interpretation in international conferences

- •8 relay buttons and 3 outgoing languages
- Clear, logical control layout and large color information display
- Integrated loudspeaker on rear of unit
- Two 3.5 mm TRRS headset ports
- · 3.5 mm TRS headphone jack
- NFC card reader and USB port for saving or recalling interpreter's personalized settings
- Braille labels and audible cues for visually-impaired interpreters
- Compliant with new ISO 20109 standards
- Integrates seamlessly with the existing DCS 6000 Digital Conference System

## E-Ink Sign Dual-Sided E-Ink Information Display





- Default templates display one or two lines of participant information from the SW 6000 Conference Management Software database, such as name, title, organization, and country
- Stand-alone name sign can be used with Shure MX, MXW, ULX-D, or other microphone solutions
- Can be placed on tables for temporary events or flush-mounted in permanent installations with included hardware
- · Dual-delegate capable
- Programmable via SW 6000 Conference Management Software (CAA) when connected to DCS-LAN or from Micro-USB input when used alone or via connection to DCS-LAN (loop-through)

## SMACKS SMACKS

#### SW6000 Conference Management Software

- Enables configuration, control, management, and customization of every conference and meeting
- Facilitates a comprehensive range of applications

(see p. 42)

36 | DCS 6000 DIGITAL CONFERENCE SYSTEM | 37



#### **SYSTEM ON**

o. 40

#### **DESIGNER**

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#### WIRELESS WORKBENCH 6®

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## SHURE PLUS CHANNELS

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## SHURE UPDATE UTILITY

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## SHURE WEB DEVICE

p. 41

#### SW6000 SOFTWARE

#### Configuration, control, management

#### **SOFTWARE SOLUTIONS**

Offering advanced control and monitoring features, Shure software applications give AV and IT personnel remote control of an entire campus or enterprise from one central location. Rich feature sets are provided in real-time with intuitive user interfaces that help manage every facet of a meeting or presentation over the network. Predefined templates and presets simplify installation and set-up and optimize microphone performance.







#### SystemOn

#### **Audio Asset Management Software**

- · Manages mission-critical or large-scale deployments of Shure audio hardware across corporate and higher education networks from one central platform
- Tracks battery life, audio levels, and RF/spectrum status in real-time
- · Enables IT administrators and AV technicians to monitor and control Shure Microflex® Wireless, ULX-D, and SCM820 devices remotely
- · Automatically discovers Shure devices on the same subnet, and devices on other subnets can be manually added
- Provides summarized status of wireless system and device attributes and captures event history
- · Enables remote control and monitoring of audio gain, muting, device identification, and remote Microflex Wireless transmitter linking
- · Available through a subscription model; each IP-addressable device requires one license



#### **Centralized Monitoring**

- · Identifies Shure devices across
- Provides real-time status of system and device attributes
- · Remotely controls audio gain, muting, and RF channel assignments



· Instant notification of low battery and missing devices to AV/IT administrator

Remote Response

**Troubleshooting** 

- Remote muting, device identification, single-view audio gain adjustment, and remote Microflex® Wireless transmitter
- Pre-link microphones to network destination
- Real-time room status for help desk
- · Provides offline system status notifications via email and SMS text



#### Simple Configuration

- Streamline login by selecting users from existing enterprise directories
- · Customize user access and permissions based on user role or
- · Direct link between Shure hardware and software requires zero additional programming
- Seamless availability of new features and updates
- · Software language options may be customized and applied to individual account settings

#### Designer

#### **System Configuration Software**

- · Allows system to be designed offline and from anywhere, reducing configuratin time on-site
- · Create projects with multiple MXA910 Ceiling Arrays on top of an imported image, such as a room layout diagram
- Pickup lobes and other settings for each MXA910 can be configured and saved on the user's computer, without being connected to any MXA910 hardware
- · Settings can be exported as device preset files, which can be imported into each physical MXA910 through its user interface
- Requires Windows 7 or higher



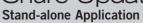
#### Wireless Workbench® 6 **System Control Software**

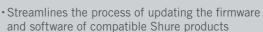
- Comprehensive control for networked Shure Wireless Systems, Axient®, UHF-R, ULX-D and QLX-D
- Features an advanced graphic user interface, comprehensive frequency coordination, and real-time monitoring
- Provides a rich interface to manage every facet of a performance over the network, before and during an event

#### ShurePlus Channels Mobile App for iOS

- · Remote, real-time, precision monitoring and control of Shure Wireless Systems
- Delivers time-saving convenience to roam the performance space while monitoring key Shure wireless system parameters from an iOS device

#### Shure Update Utility





• Offers a simplified interface to download the latest updates from Shure and configure Shure hardware to receive those

#### Shure Web Device Discovery Application Web-based User Interfaces



- · Discovers and launches web-based user interfaces for Microflex® Wireless, Microflex® Advance, SCM820, and ANIs
- Displays Shure devices featuring embedded web servers on the same subnet as the computer

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#### SW6000 Software

#### **CONFERENCE MANAGEMENT**



#### SW6000 CONFERENCE MANAGEMENT SOFTWARE

#### **MEETING AND AGENDA MANAGEMENT**

#### **MEETING CREATION**

Create meetings including setting of meeting modes and meeting options

#### **MULTIPLE MEETING** MODES

Configure seat assignments, ID cards or PIN codes. participant lists, etc.

#### **AGENDA HANDLING**

Create multi-level agenda to be displayed at meeting

#### REPORTS

Print out meeting details in a choice of report formats

#### **SPEAKING MANAGEMENT**

#### MICROPHONE CONTROL

Control conference a PC used by a chairman, administrator, or technician

#### MIMIC/SYNOPTIC

and display voting results on a room layout diagram on a PC

#### BASIC SPEECH TIME CONTROL

Control speech time for

#### NAME HANDLING

Assign microphones to participants by name

#### PARTICIPANTS INFORMATION AND ROLES

#### **PARTICIPANTS** TABLE

Create a table with a

#### MEETING ROLES

Assign roles, permissions, or privileges to different participants or types of participants

#### LANGUAGE **SUPPORT**

in multiple languages that appear in CUA on participants' PCs

#### CHIP CARD LOGIN

Enable meeting participants to log in by inserting an ID card into the conference unit

#### MESSAGING

Send messages between PCs used by technicians, or

#### **CONTROLS AND INTERFACES**

#### INTERPRETATION CONTROL

Allows technician to set-up interpretation parameters and monitor interpreter booths during meetings

#### NULTIPLE ROOM CONTROL

Allows technician to set-up and supervise meetings in multiple rooms from one PC

#### MPORT/EXPORT

Import/export of participant data and agenda

#### RS232 APPLICATION

Connect Central Control Unit to third-party room control systems via RS232

#### CS6000 UNITS SET-UP

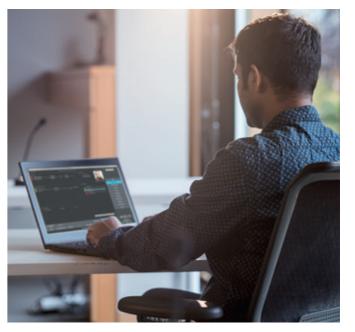
Connect to Central Control Unit and configure conference

#### APPLICATIONS USED BY THE ADMIN. CHAIR OR DELEGATES

#### CAA

Set-up conferences, enter delegate and agenda information, and configure components before the event

Used by chairman or delegates to control microphones, view agenda, vote, etc. on PC instead of conference unit



The SW6000 software suite unlocks the full power of the you can recognize the unique roles and privileges of different DCS6000 Digital Conference System. It provides the structure participants, create an agenda that keeps your meeting on that allows large meetings with hundreds of participants to be track, take votes electronically, and document the outcome as effortless and efficient as small gatherings. With SW6000, with a searchable electronic archive.

#### OPTIONAL APPLICATIONS

Additional CAA or CUA applications are only needed if more than one CUA or CAA application shall run simultaneously on the system.

#### SW6000-CDA

CONFERENCE DISPLAY APPLICATION

Used to present information created in a meeting on large displays or large screen projectors.

Up to 16 CDA applications can run simultaneously

CONFERENCE ADMINISTRATOR APPLICATION

Used to set-up the system, including configuring seats, equipment, mimic, participants list, meeting, voting parameters, etc.

Up to 16 CAA applications can run simultaneously

#### SW6000-CUA CONFERENCE USER APPLICATION

The main user interface on a PC used during meetings.

Up to 200 CUA applications can run simultaneously with separate participant login.

#### OPTIONAL MODULES

#### SW6000-ADV

Used where more advanced controls are needed including:

- Advanced Microphone Control
- · Advanced Agenda Control including the ability to attach participants to subjects in the agenda and to use a web browser in the CUA
- Advanced Speech Control including meeting Role dependent timers, manual speech times, group speech time and combined speech time

#### SW6000-ADV-50

Same functionality as SW6000-ADV but for maximum of 50 seats

Provides an interface to third-party systems

- Control of streaming applications
- Web service interface
- Advanced import/export of meetings

#### SW6000-VOTE

Enables the voting facility in SW6000:

- Control and configuration of voting sessions
- Extensive voting control management
- Unlimited number of voting configurations Advanced options for calculation of
- results or passed/quorum options · Casting vote from a conference unit or
- from the CUA Option for manual inserting of total voting results
- Attendance & registration check options Option for controlling visibility of the
- voting result for participants Proxy voting option
- Voting weight option

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## **TECHNOLOGIES**

Shure products feature a variety of cutting-edge technologies that provide integrated, powerful, reliable, and user-friendly solutions for demanding installed applications.

#### **INTELLIMIX®**



#### **Automixing Functionality**

- Features a unique collection of algorithms that deliver clear, intelligible sound for productive conferences
- Operates automatically, with no user interaction required for perfect operation
- Provides audio quality in any application where multiple microphones are required
- Implemented in Microflex® Advance™, P300, and SCM820



Automatically makes adjustments to the activation threshold when the room becomes noisier or people become more active

#### Number of Open Microphones Attenuation (NOMA)

Attenuates system gain as additional channels are opened, providing consistent output levels and better gain-before-feedback

#### Last Mic Lock-On (LMLO)

Keeps the most recently activated microphone open until another microphone is activated

#### MaxBus

Ensures that only one channel is open per sound source, while picking up multiple talkers simultaneously.

IntelliMix® Modes offer Gating, Gain Sharing, or Manual Mixing modes, along with modes specifically designed for Microflex® Advance<sup>TM</sup> microphones with Steerable Coverage<sup>TM</sup>



#### **DSP Functionality**

 Increase clarity and improve speech intelligibility by optimizing voice quality and reducing room noise

#### Acoustic Echo Cancellation

Eliminates echo in conference rooms to make conversations more natural and interactive

#### Noise Reduction

Prevents unwanted background noise from interfering with your meeting

#### **Automatic Gain Control**

Makes real-time adjustments to microphone levels to accommodate loud and soft talkers

#### Matrix Mixin

Allows any input to be sent to any or all outputs for ultimate installation flexibility

#### Parametric Equalization

Customizes the sound signature by adjusting the frequency response, including attenuation or signals boost within a customizable frequency range

#### Limiter/Compressor

Prevents distortion during loud program peaks without affecting normal program levels and prevents overloading the devices connected to the mixer outputs

#### **DIGITAL AUDIO NETWORKING**



SCM820-DAN, ULX-D, Microflex<sup>®</sup> Wireless, Microflex<sup>®</sup> Advance<sup>™</sup>, P300, and ANIs can be connected through Dante<sup>™</sup> Digital Audio Network. Dante<sup>™</sup> offers a total solution for transporting audio over standard IP Ethernet networks.

Audinate's patented media networking technology, Dante, is a proven standard used in thousands of installations. Dante is more than just a collection of technical specifications for time synchronization, quality of service (QoS), and transport packet formats. Dante is built on existing IT standards, plus Audinate has developed several feature-rich improvements to deliver a complete networking solution.

Dante offers features and benefits including:

- Auto-discovery of devices
- One-click signal routing
- · Sample-accurate timing
- Multiple sample rates

- · High-quality, low-jitter audio clocks
- · Latency as low as 150µs
- · Support for different latencies at the same time
- · Glitch-free redundancy
- Network status and monitoring
- Compatibility with existing switches or AVB switches

Dante is a complete, high performance digital media networking standard which allows true plug-and-play with label-based routing. The Dante controller SCM820 with Dante card, ULX-D, and MXW can easily be connected and controlled together.

#### **ENCRYPTION**



Wireless audio transmission in Microflex® Wireless and ULX-D is protected by AES-256 encryption, the same security standard used in international government applications.

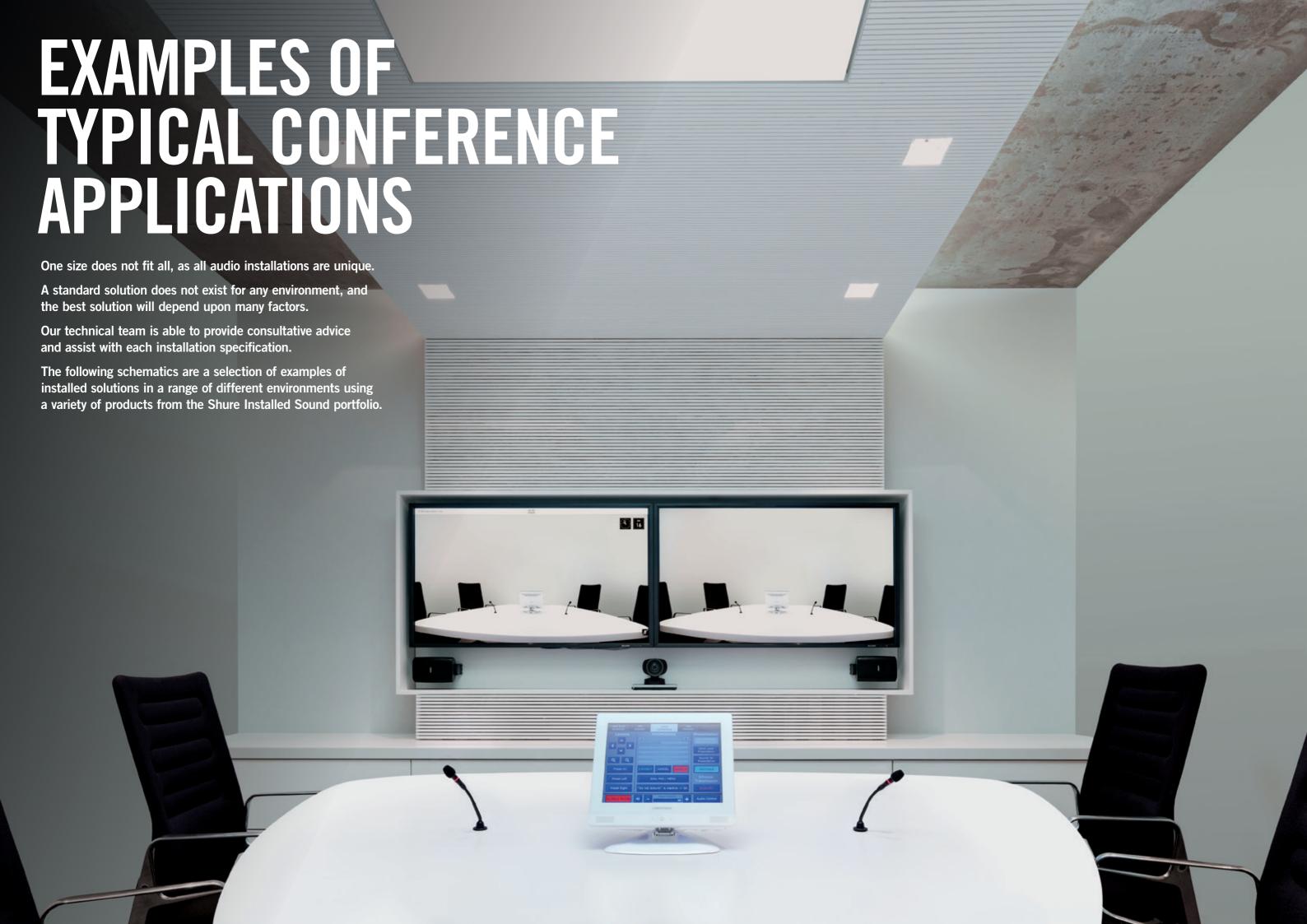
The AES-256 Advanced Encryption Standard is a license-free algorithm for hardware and software implementation. It codes audio data in blocks of 128-bit length with an encryption key of 256-bit length.

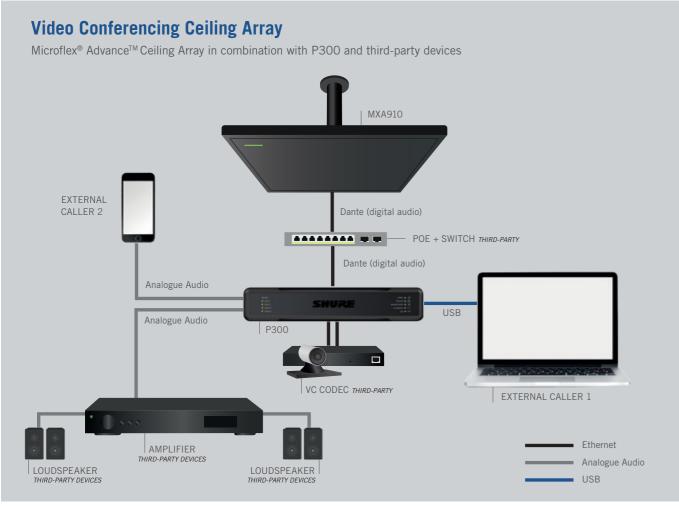
The standard is specified as a number of repetitions of transformation rounds converting the input plaintext into the final output of ciphertext.

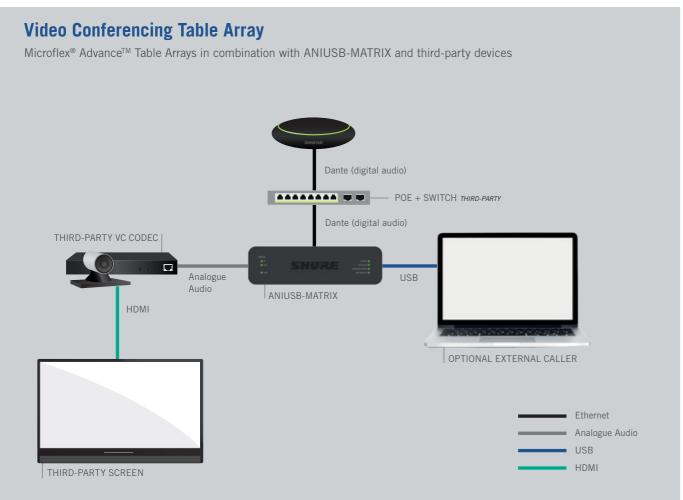
AES-256 is a symmetric-key algorithm which uses the same key for both encrypting and decrypting data.

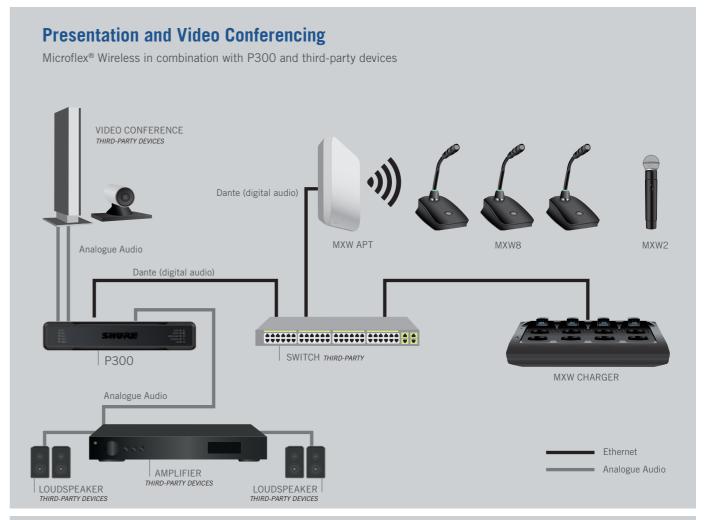
Advanced Encryption guarantees unbreachable privacy for all installations in which secure transmission is key. A new, unique, random encryption key is generated every time encryption is

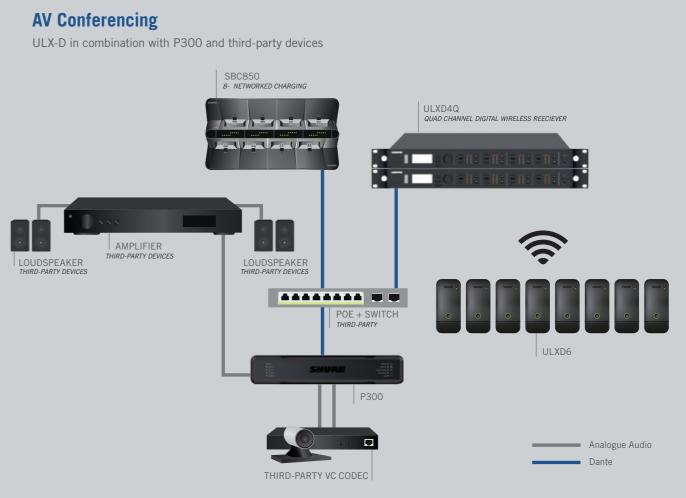
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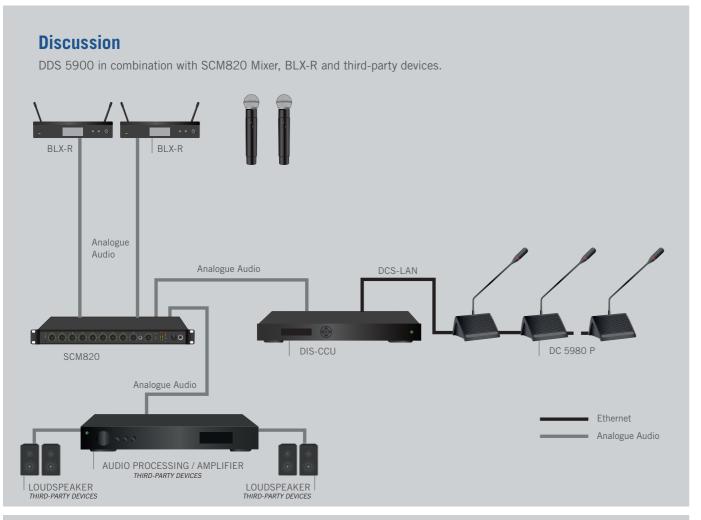


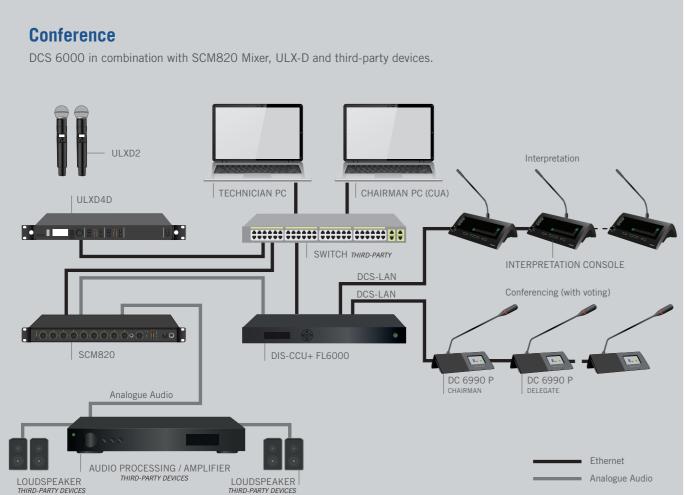




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#### **System Schematics**







#### **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

#### **Branch Office Locations**

#### United States, Canada, Latin America, Caribbean:

Mexico, Juarez United States, FL, Miami United States, IL, Wheeling

#### 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

#### Europe, Middle East, Africa:

Austria, Weer Belgium, Diegem Denmark, Copenhagen Netherlands, Culemborg Russia, Moscow Switzerland, Wettingen United Arab Emirates, Dubai United Kingdom, Waltham Abbey

#### Asia, Pacific:

China, Beijing - Shanghai - Suzhou Japan, Tokyo Singapore Thailand, Bangkok

