MICROFLEX® COMPLETE WIRELESS

Microflex® Complete Wireless offers full conference functionality with the added convenience of encrypted digital wireless transmission for up to 125 participants. It overcomes cable limitations at off-site meetings, in rooms with flexible seating, or in historic buildings where drilling holes in furniture is impractical. Proven Shure RF interference detection and avoidance technology delivers reliable transmission and limits signal dropouts even in the most congested RF environments. Robust wireless encryption keeps meeting content private. Each wireless conference unit is powered by a smart Lithium-Ion rechargeable battery whose remaining charge (in hours and minutes) can be checked remotely by a technician.

Efficient and Reliable RF transmission
Automatic frequency management utilizes proprietary technology to detect interference before it affects system performance.

Premium Audio
Best in class audio capture and reproduction ensures every word spoken is heard.

Powerfully Scalable
Up to 125 units can be used simultaneously with a single wireless access point, with rechargeable batteries that last up to 11 hours.

Quick and Easy Setup
Go from cart to conference in minutes, with little to no wireless coordination or system configuration.

APPLICATIONS

Boardrooms

Parliament/City Councils

Flexible Meeting Rooms

Training/Seminar Centers

Conference/Hospitality Venues

PRODUCT HIGHLIGHTS

Highly intelligible audio

All-in-one microphone + speaker design

Dante digital audio net-working

Shure Network Audio Encryption (AES-256)

AES-128 wireless encryption

CommShield®
Technology

SYSTEM SPECIFICATIONS

Features

RELIABLE WIRELESS PERFORMANCE

- Automatic Frequency Coordination for quick and easy setup
- Uses global 2.4/5 GHz spectrum including DFS channels to maximize available spectrum
- Built-in RF spectrum manager constantly monitors available channel quality
- Automatic Interference Detection and Avoidance resolves potential transmission problems in congested RF environments
- High spectral efficiency allows up to 125 units on one WLAN channel

EASY SETUP AND OPERATION

- MXCWAPT Access Point mounts on wall, ceiling, or stand, and connects with one cable for audio, power, and control
- Each conference unit can be configured as Chairman, Delegate, Listener, or Ambient role
- Smart Lithium-Ion rechargeable battery lasts over 11 hours, recharges in under 4 hours
- Embedded browser-based interface allows remote monitoring and control by chairman or technician
- Speak/request list can be projected on video display without additional software
- Integrated NFC card technology in each conference unit allows participants to be identified by name instead of seat number, regardless of where they sit

BEST-IN-CLASS AUDIO PERFORMANCE

- Proprietary Shure audio codec for natural, intelligible sound quality
- Automatic Gain Control for consistent speech levels for each talker
- Support for Automatic, FIFO (First-In/First-Off), and Manual microphone operating modes
- Gooseneck microphones include interchangeable Microflex cartridges and CommShield Technology for robust RF noise immunity
- Robust AES-128 wireless encryption for enhanced privacy

Specifications

Latency	16ms	MXCW640 Microphone Input to MXCWAPT to MXCW640 Speaker/Headphone Output
	9.2ms	MXCW640 Microphone Input to MXCWAPT Analog Output
	7.7ms	MXCWAPT Analog Input to MXCW640 Speaker/Headphone Output
Frequency Response	100Hz - 20kHz (+0.5dB/-3dB)	MXCW640 Microphone Input to MXCWAPT to MXCW640 Headphone Output. -45dBFS input, Mic Gain = -30dB (AGC Disabled), Headphone Gain = 0dB. Microphone and headphone transducers not included in frequency response measurement.
	220Hz - 15kHz (±10dB)	MXCW640 Microphone Input to MXCWAPT to MXCW640 Speaker Output. -45dBFS input, Mic Gain = -30dB (AGC Disabled), Speaker Gain = 6dB. Microphone transducer not included in frequency response measurement. Speaker transducer was included in frequency response measurement.
Total Harmonic Distortion + Noise	0.06%, typical	MXCW640 Microphone Input to MXCWAPT to MXCW640 Headphone Output. -6dBFS input, 1kHz, Mic Gain = -30dB (AGC Disabled), Headphone Gain = 0dB, 22Hz - 22kHz BW. Microphone and headphone transducers not included in THD+N measurement.
	1%, typical	MXCW640 Microphone Input to MXCWAPT to MXCW640 Speaker Output. -6dBFS input, 1kHz, Mic Gain = -30dB (AGC Disabled), Speaker Gain = 6dB, 22Hz - 22kHz BW. Microphone transducer not included in THD+N measurement. Speaker transducer was included in THD+N measurement.
Dynamic Range	100dB (A-weighted), 97dB (unweighted), typical	MXCW640 Microphone Input to MXCWAPT to MXCW640 Headphone Output. Mic Gain = -30dB (AGC Disabled), Headphone Gain = 0dB, 22Hz - 22kHz BW. Microphone and headphone transducers not included in dynamic range measurement.
	94dB (A-weighted), 91dB (unweighted), typical	MXCW640 Microphone Input to MXCWAPT to MXCW640 Speaker Output. Mic Gain = -30dB (AGC Disabled), Speaker Gain = 6dB, 22Hz - 22kHz BW. Microphone transducer not included in dynamic range measurement. Speaker transducer was included in dynamic range measurement.
Digital Audio Processing	24bit/48kHz	
Digital Audio Networking	DANTE, AES67	
Audio Polarity	Positive pressure on MXCW640 microphone diaphragm produces diaphragm produces positive voltage on pin 2 (with respect to pin 3) of MXCWAPT XLR output.	
RF Working Range	8m (Low), 15m (Medium), 30m (High), 45m (Maximum)	Line-of-sight to the MXCWAPT. Actual range depends on RF signal absorption, reflection, and interference
Mean Time Between Failures (MTBF)	405,790 hours	

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MXCW640 Wireless Conference Unit

Overview

The MXCW640 Wireless Conference Unit combines a microphone, loudspeaker, and user controls in an integrated wireless unit that complements any meeting space. Wireless convenience eliminates the need to drill holes or route cables, and makes setup for temporary meetings or in rooms with flexible seating quick and easy. A smart rechargeable Li-Ion battery (included) lasts over 11 hours, and a choice of gooseneck microphones provides excellent voice capture.

Features

- 10-pin modular lockable connection for MXC-series gooseneck microphones
- 4.3 inch color touchscreen displays user controls, voting or meeting information
- Built-in loudspeaker remains on when microphone is activated
- Speak and mute/function buttons with LED status indicators
- NFC ID card slot for participant identification
- Dual 3.5mm headphone jacks with volume controls
- SB930 removable rechargeable Li-Ion battery (included) provides over 11 hours of runtime

Specifications

AUDIO INPUTS

Microphone Input

Nominal Input Level	-60dBV	Equivalent to 80dBSPL at the MXC416/420 capsule when speaking at a 30cm distance.
Maximum Input Level	-1.5dBV	1% THD+N measured at MXCWAPT Dante Output. Mic Gain = -30dB (AGC Disabled), MXCWAPT Dante Output Gain = 0dB. Microphone transducer not included in measurement.
Frequency Response	20Hz - 20kHz (+0.5dB/-3dB)	Measured at MXCWAPT Dante Output. -45dBFS input, Mic Gain = -30dB (AGC Disabled), MXCWAPT Dante Output Gain = 0dB. Microphone transducer not included in frequency response measurement.
Total Harmonic Distortion + Noise	0.04%, typical	Measured at MXCWAPT Dante Output. -6dBFS input, 1kHz, Mic Gain = -30dB (AGC Disabled), MXCWAPT Dante Output Gain = 0dB, 22Hz - 22kHz BW. Microphone transducer not included in THD+N measurement.
Dynamic Range	112dB (A-weighted), 110dB (unweighted), typical	Measured at MXCWAPT Dante Output. Mic Gain = -30dB (AGC Disabled), MXCWAPT Dante Output Gain = 0dB, 22Hz - 22kHz BW. Microphone transducer not included in dynamic range measurement.
Preamplifier Equivalent Input Noise	-117dBV (A-weighted), typical	22Hz - 22kHz BW
Input Impedance	26kΩ	
Configuration	Unbalanced	

AUDIO OUTPUTS

Speaker Output

Nominal Output Level	72dBSPL at 0.5m	Measured with an SPL meter using A-weighting and fast averaging
Maximum Output Level	89dBSPL at 0.5m	3% THD+N
Frequency Response	220Hz - 15kHz (±10dB)	Audio Injected at MXCWAPT Dante Input. -6dBFS input, MXCWAPT Dante Input Gain = 0dB, Speaker Gain = 6dB. Speaker transducer was included in frequency response measurement.
Total Harmonic Distortion + Noise	1%, typical	Audio Injected at MXCWAPT Dante Input. -6dBFS input, 1kHz, MXCWAPT Dante Input Gain = 0dB, Speaker Gain = 6dB, 22Hz - 22kHz BW. Speaker transducer was included in THD+N measurement.
Dynamic Range	94dB (A-weighted), 91dB (unweighted), typical	Audio Injected at MXCWAPT Dante Input. MXCWAPT Dante Input Gain = 0dB, Speaker Gain = 6dB, 22Hz - 22kHz BW. Speaker transducer was included in dynamic range measurement.

Headphone Outputs

Maximum Output Level	2.1dBV	1% THD+N. Audio Injected at MXCWAPT Dante Input. MXCWAPT Dante Input Gain = 0dB, Headphone Gain = 0dB. Headphone transducer not included in measurement.
Frequency Response	100Hz - 20kHz (+0.5dB/-3dB)	Audio Injected at MXCWAPT Dante Input. -6dBFS input, MXCWAPT Dante Input Gain = 0dB, Headphone Gain = 0dB. Headphone transducer not included in frequency response measurement.
Total Harmonic Distortion + Noise	0.04%, typical	Audio Injected at MXCWAPT Dante Input. -6dBFS input, 1kHz, MXCWAPT Dante Input Gain = 0dB, Headphone Gain = 0dB, 22Hz - 22kHz BW. Headphone transducer not included in THD+N measurement.
Dynamic Range	101dB (A-weighted), 99dB (unweighted), typical	Audio Injected at MXCWAPT Dante Input. MXCWAPT Dante Input Gain = 0dB, Headphone Gain = 0dB, 22Hz - 22kHz BW. Headphone transducer not included in dynamic range measurement.
Load Impedance	>8Ω, typical	Headphone outputs are protected against short circuits
Configuration	Dual mono	Will drive stereo and mono headphones
Type	TRRS 3.5mm Female Socket	

RF

WLAN Standard	IEEE 802.11a,g
RF Frequency Bands	2.4GHz ISM / 5GHz UNII
Sensitivity	-75dBm at 10%PER
Output Power	1mW (Low), 3mW (Medium), 6mW (High), 10mW (Maximum)
Antenna Type	Proprietary Internal Bi-level Dual-Band PIFA

POWER

Battery Type	Shure SB930
Battery Connector	Proprietary blade
Battery Chemistry	Lithium-Ion
Battery Voltage	3V - 4.2V
Battery Capacity	35Wh

USB

Input Voltage Range	4.5V - 5.25V
Power Consumption	10W max
Recommended Cable	28AWG/1P + 22AWG/2C, <1.5m

USER INTERFACE

Display Type	Color TFT LCD with Capacitive Touch Screen
Display Size	4.3" (109.2mm)
Display Resolution	480 x 272 (128ppi)

MECHANICAL

Dimensions	70.2mm x 148mm x 257.5mm (2.8" x 5.8" x 10.1")
Weight	1.21kg with battery, 1.025kg without battery
Color	Black
Material	Molded Plastic, Die Casted Aluminmum
Mounting Type	M4 hexagon bolt

ENVIRONMENTAL

Operating Temperature Range	0°C (32°F) to 35°C (95°F)
Charging Temperature Range	0°C (32°F) to 33°C (91.4°F)
Storage Temperature Range	-20°C (-4°F) to 50°C (122°F)
Relative Humidity	<95%

MXCWAPT Access Point Receiver

Overview

The MXCWAPT Access Point Transceiver manages audio routing, frequency coordination, and system control for up to 125 wireless conference units. The MXCWAPT automatically selects the clearest channel in the 2.4 GHz and 5 GHz frequency bands and switches channels to avoid potential interference. The access point provides both Dante™ and analog audio inputs and outputs, and uses a single Ethernet connection for power, audio, and control.

Features

- Controls up to 125 MXCW640 wireless conference units
- Bi-directional wireless connection provides audio to and from conference units and
- enables real-time control of all settings
- Operates in 2.4 GHz / 5 GHz frequency bands, including DFS spectrum
- Automatic frequency coordination, interference detection and avoidance
- Dante digital audio (10 inputs/10 outputs)
- Analog audio input and output (XLR)
- One Ethernet cable for audio, control, and PoE power
- AES-128 wireless encryption for enhanced privacy
- Display for basic system configuration without a laptop
- LEDs indicate power, wireless connection, and network status
- Includes wall / ceiling mounting plate

Specifications

AUDIO INPUTS

Analog Input

Maximum Input Level	24.9dBV	1% THD+N. Measured at Dante Output. Line Level, Analog Input Gain = 0dB, Dante Output Gain = 0dB
	10.3dBV	1% THD+N. Measured at Dante Output. Aux Level, Analog Input Gain = 0dB, Dante Output Gain = 0dB
Frequency Response	22Hz - 20kHz (+0.5dB/-3dB)	Measured at Dante Output. -6dBFS input, Line Level, Analog Input Gain = 0dB, Dante Output Gain = 0dB
	22Hz - 20kHz (+0.5dB/-3dB)	Measured at Dante Output. -6dBFS input, Aux Level, Analog Input Gain = 0dB, Dante Output Gain = 0dB
Total Harmonic Distortion + Noise	0.03%, typical	Measured at Dante Output. -6dBFS input, 1kHz, Line Level, Analog Input Gain = 0dB, Dante Output Gain = 0dB, 22Hz - 22kHz BW
	0.02%, typical	Measured at Dante Output. -6dBFS input, 1kHz, Aux Level, Analog Input Gain = 0dB, Dante Output Gain = 0dB, 22Hz - 22kHz BW
Dynamic Range	115dB (A-weighted), 113dB (unweighted), typical	Measured at Dante Output. Line Level, Analog Input Gain = 0dB, Dante Output Gain = 0dB, 22Hz - 22kHz BW
	112dB (A-weighted), 110dB (unweighted), typical	Measured at Dante Output. Aux Level, Analog Input Gain = 0dB, Dante Output Gain = 0dB, 22Hz - 22kHz BW
Preamplifier Equivalent Input Noise	-92dBV (A-weighted), typical	Line Level, Analog Input Gain = 0dB, 22Hz - 22kHz BW
	-104dBV (A-weighted), typical	Aux Level, Analog Input Gain = 0dB, 22Hz - 22kHz BW
Connector Type	XLR-3-pin female	Pin 1 = ground, Pin 2 = Audio +, Pin 3 = Audio -

AUDIO OUPUTS

Analog Output

Maximum Output Level	4.3dBV	1% THD+N. Audio Injected at Dante Input. Dante Input Gain = 0dB, Analog Output Gain = 0dB
Frequency Response	1Hz - 20kHz (+0.5dB/-3dB)	Audio Injected at Dante Input. -6dBFS input, Dante Input Gain = 0dB, Analog Output Gain = 0dB
Total Harmonic Distortion + Noise	0.01%, typical	Audio Injected at Dante Input. -6dBFS input, 1kHz, Dante Input Gain = 0dB, Analog Output Gain = 0dB, 22Hz - 22kHz BW
Dynamic Range	100dB (A-weighted), 97dB (unweighted), typical	Audio Injected at Dante Input. Dante Input Gain = 0dB, Analog Output Gain = 0dB, 22Hz - 22kHz BW
Load Impedance	>600Ω, typical	
Type	Three-pin Male XLR	
Pinout	Standard XLR Pinout (Pin 1 = Ground, Pin 2 = Audio +, Pin 3 = Audio -)	
XLR GND Lift Switch Position	"Left (Pin 1-GND connected) Right (Pin1-GND disconnected)"	
	-104dBV (A-weighted), typical	Aux Level, Analog Input Gain = 0dB, 22Hz - 22kHz BW
Input Impedance	10kΩ	Line Level
	12kΩ	Aux Level
Configuration	Balanced	

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RF

WLAN Standard	IEEE 802.11a,g
RF Frequency Bands	2.4GHz ISM / 5GHz UNII
Sensitivity	-80dBm at 10%PER
Output Power	1mW (Low), 5mW (Medium), 13mW (High), 25mW (Maximum)
Antenna Type	Proprietary Internal Bi-level Dual-Band PIFA

POWER

Supply Type	Power Over Ethernet, 802.3af, Class 0 PD
Supply Voltage (at MXCWAPT)	
Power Consumption	12.95W (max), 6.5W (typ)

NETWORK

Interface	Gigabit Ethernet, Dante digital audio
Link Speed	10/100/1000Mbps
Networking Addressing Capability	DHCP or Manual IP address
Cable Length	100m (max)
Cable Type	> Cat5e (shielded/unshielded)
Connector Type	1 x RJ45
Connector LED	Status (Green) / Link Speed (Amber)

USER INTERFACE

Display Type	Monochrome FFSTN LCD
Display Size	1.84 x 0.74" (46.7x18.8mm)
Display Resolution	152 x 78 (78 ppi)
LED Status Indication	Power, Network Audio, Wireless (Red/Green/Amber)
Reset	Pushbutton for Network/Factory Reset

MECHANICAL

Dimensions	47.8mm x 242.5mm x 241.8mm (1.88" x 9.55" x 9.52")
Weight	1.15 kg
Color	White / Gray
Material	Molded Plastic, Die-casted Aluminum
Mounting Type	Wall or ceiling bracket

ENVIRONMENTAL

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Operating Temperature Range	-7°C (19.4°F) to 49°C (120.2°F)
Storage Temperature Range	-29°C (-20.2°F) to 60°C (140°F)
Relative Humidity	<95%

MXCWNCS Networked Charging Station

Overview

The MXCWNCS Networked Charging Station charges 10 SB930 batteries in 4 hours. LED indicators display charge status, and a RJ45 Ethernet connection enables battery levels to be monitored remotely. Includes IEC power cable and mounting hardware for wall or rack mounting.

Features

- Accommodates up to 10 SB930 rechargeable batteries
- 5-segment LEDs on the unit display charge status individually for every battery
- RJ45 Ethernet connection enables remote monitoring of battery charge status in hours and minutes via Microflex Complete Wireless graphical user interface
- Charges 10 batteries to 50% charge in 1.5 hours, 100% charge in 4 hours
- Selectable storage mode partially discharges batteries for long-term storage or shipment
- Includes hardware for wall and rack mounting
- Includes IEC power cable
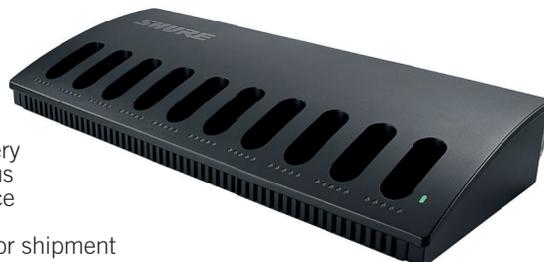
Specifications

NETWORK

Interface	Ethernet
Link Speed	10/100Mbps
Networking Addressing Capability	DHCP or Manual IP address
Cable Length	100m (max)
Cable Type	> Cat5e (shielded/unshielded)
Connector Type	1 x RJ45
Connector LED	Status (Green) / Link Speed (Amber)

USER INTERFACE

Display Type	5 LEDs per bay for charging indication
	1 status LED
	2 Ethernet LEDs

MECHANICAL

Dimensions	72.4mm x 438.9mm x 193.5mm (2.9" x 17.3" x 7.6")
Weight	2825 g
Color	Black
Material	Molded Plastic, Steel
Mounting Type	Tabletop, wall mount or rack (4U rackspace required)

ENVIRONMENTAL

Operating/Discharging Temperature Range	-20°C (-4°F) to 35°C (95°F)	Discharging may occur when storage mode is enabled
Charging Temperature Range	0°C (32°F) to 35°C (95°F)	
Storage Temperature Range	-29°C (-20.2°F) to 60°C (140°F)	
Relative Humidity	<95%	

SB930 Rechargeable Battery

Overview

The SB930 Rechargeable Battery powers the MXCW640 Wireless Conference Unit for over 11 hours. LED indicators on the battery display charge status quickly and easily. Charging in the MXCWNCS Networked Charging Station takes just 1.5 hours for a 50% charge, and 4 hours for a 100% charge.

Features

- INCLUDED WITH MXCW640
- Powers MXCW640 wireless conference unit for over 11 hours
- Integrated test button and 5-segment LED to display charge level
- With MXCWNCS Networked Charging Station, charges to 50% in 1.5 hours, 100% in 4 hours
- 3-cell battery with Shure Smart Li-Ion Technology
- Remote monitoring of battery life remaining in hours and minutes

Specifications

USER INTERFACE

Display Type	5 status LEDs and push button to indicate state of charge

MECHANICAL

Dimensions	31mm x 65mm x 101.5mm (1.22in. x 2.56in. x 4.00in.) H x W x D
Weight	184 g
Color	Black
Material	Molded Plastic

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