

**SHURE**<sup>®</sup>  
LEGENDARY  
PERFORMANCE™

**ULX-D**<sup>®</sup>  
Digital Wireless Systems

# **ULX-D**<sup>®</sup> **DIGITAL WIRELESS**





## ULX-D® Digital Wireless Systems

# PROFESSIONAL INSTALLED WIRELESS SOUND

Shure ULX-D Digital Wireless offers uncompromising 24-bit audio clarity and extremely efficient RF performance with single, dual, and quad channel receivers for any size professional and installed sound reinforcement application. Scalable, intelligent hardware delivers the best performing digital wireless available, with a wide selection of trusted Shure microphones to choose from. And with the latest additions, the ULX-D boundary and gooseneck transmitters, two additional form factors – ideal for large meetings at conference and convention centers, or for AV conferencing where DECT spectrum is not an option – complement the range.

Unmatched spectrum efficiency enables a dramatic increase in the number of simultaneous active transmitters on one TV channel, with rock-solid signal over the entire range. Optional rechargeable accessories eliminate the need for disposable batteries while offering extended run time and metering accuracy in hours and minutes. For secure transmission, all ULX-D components include AES-256 encryption. Generations ahead of any other available system in its class, ULX-D brings a new level of performance to professional and installed sound reinforcement.

## NEW ULXD8 | ULXD6 GOOSENECK AND BOUNDARY MICROPHONES



The ULXD6 Boundary Microphone Transmitter and the ULXD8 Gooseneck Base Transmitter offer a low-profile form factor that is ideal for meetings and events where quick setup and battery replacement are important or low latency is required to avoid lip-sync issues with live sound reinforcement.

With long transmission range (up to 330 feet / 100 meters) and a wide selection of antenna distribution components, the ULXD6 and ULXD8 are easily and efficiently scalable for use in very large meetings at conference and convention centers, or for AV conferencing where DECT is not an option.

The SBC450 4-bay and SBC850 8-bay Networked Charging Stations conveniently charge any combination of 8 or 4 gooseneck or boundary transmitter bases, while also monitoring charge levels in hours and minutes over the network. (AA batteries optional).

**BREAKTHROUGH TECHNOLOGIES** ULX-D® Digital Wireless represents an incredible advancement in wireless performance. Shure innovation brings to market new features and technologies that dramatically increase spectrum efficiency, dependability, and signal routing convenience.



### Transparent 24-Bit Digital Audio

Signal stability with no audio artifacts extends over the entire 100 meter line-of-sight range using standard supplied dipole antennas.



### Networked Control

Ethernet networking enables streamlined setup across multiple receivers, Wireless Workbench integration, frequency coordination via Axient Spectrum Manager, AMX and Crestron control as well as Dante™ digital networked audio.



### Lithium Ion Rechargeability

Lithium Ion rechargeability provides up to 11 hours of use on a single charge, while displaying battery life in hours and minutes accurate to 15 minutes.



### High Density Mode

Allows operating up to 560 (five hundred sixty) channels in 72 MHz, respectively 63 channels in an 8 MHz TV channel over standard mode at 1mW transmit power in a working range up to 30 meters.



### Bodypack Frequency Diversity

*Dual/Quad only*

The signals from a common source via two bodypack transmitters with different frequencies are routed to receiver's audio outputs. In case of RF interference, switching between channels occurs in milliseconds, without interrupting the audio.



### Signal Stability

The 24-bit / 48 kHz digital audio delivers incredibly clear and accurate capturing of source material. It offers a wide frequency range with flat response for superb low range and transient response.



### Advanced Encryption

The 256-bit Advanced Encryption Standard guarantees unbreachable privacy – for all installations where secure transmission is key. A new, unique, randomized encryption key is generated every time encryption is enabled.



### Scalable Hardware

ULX-D receivers are available in single, dual and quad channel configurations, along with a wide selection of Shure microphones to accommodate any size installation.



### Form Factors

ULX-D bodypack and handheld transmitters provide complete mobility for presenters, while boundary and gooseneck base transmitters accommodate meeting rooms with flexible seating layouts.



### Audio Summing

*Dual/Quad only*

Combining of selected audio channels to be routed to all selected outputs and allows the receiver to function as a 2 or 4 channel mixer. All XLR outputs of the selected channels provide the summed audio.





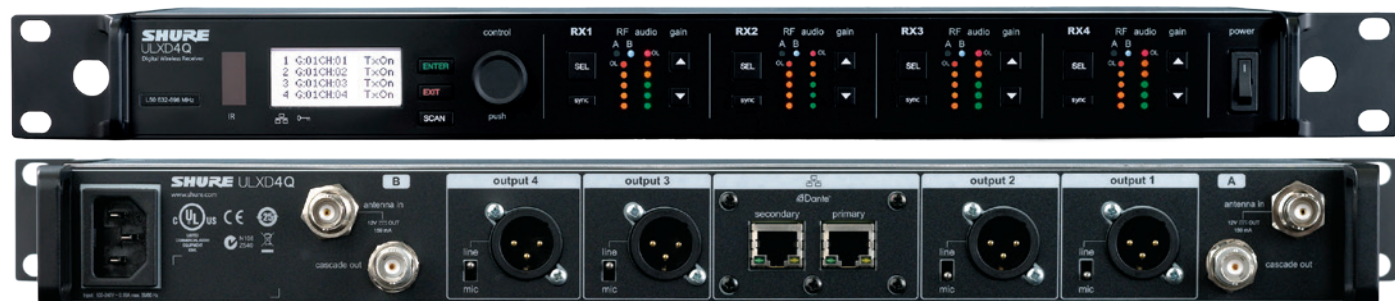
## Receiver



ULXD4 Digital Wireless Receiver



ULXD4D Dual Channel Digital Wireless Receiver



ULXD4Q Quad Channel Digital Wireless Receiver

## ULXD4 Digital Wireless Receiver

- 20 Hz – 20 kHz frequency range with flat response
- Greater than 120 dB dynamic range
- 60 dB of adjustable system gain per channel
- Digital predictive switching diversity
- Up to 72 MHz tuning range (region dependent)
- Up to 22 active transmitters in one 8 MHz TV channel
- High Density mode enables up to 63 active transmitters in one 8 MHz TV channel (firmware upgrade)
- Rock-solid signal stability with no audio artifacts over the entire range
- Optimized scanning automatically prioritizes and delivers the cleanest frequencies
- AES 256-bit encryption equipped for secure wireless transmission
- Ethernet networking for streamlined setup across multiple receivers
- Wireless Workbench® 6 Software for advanced coordination and control
- AXT600 Axient™ Spectrum Manager compatibility
- Comprehensive 3rd party control and monitoring across subnets
- Rugged metal housing
- Remoteable ½ wave antennas
- Furnished rack hardware

## ULXD4D | ULXD4Q Dual Channel Digital Wireless Receiver | Quad Channel Digital Wireless Receiver

- 20 Hz – 20 kHz frequency range with flat response
- Greater than 120 / 130 dB (analog / digital) dynamic range
- 60 dB of adjustable system gain per channel
- Digital predictive switching diversity
- Up to 72 MHz overall tuning range (region dependent)
- Up to 22 active transmitters in one 8 MHz TV channel
- High Density mode enables up to 63 active transmitters in one 8 MHz TV channel
- Rock-solid signal stability with no audio artifacts over the entire range
- Optimized scanning automatically prioritizes and delivers the cleanest frequencies
- AES 256-bit encryption equipped for secure wireless transmission
- Ethernet networking for streamlined setup across multiple receivers
- Wireless Workbench 6 Software for advanced coordination and control
- AXT600 Axient™ Spectrum Manager compatibility
- AMX and Crestron control
- Rugged metal housing
- Remoteable ½ wave antennas
- Furnished rack hardware
- The 1RU metal chassis houses two, respectively four independent receivers, each with their own audio and RF meters, gain control and XLR outputs.
- Internal power supply
- RF cascade ports
- Bodypack Frequency Diversity safeguards against loss of audio signal caused by RF interference or by power loss in a transmitter.
- Yamaha device ID allows simplified channel patching on CL consoles
- Audio Summing - Combining of selected audio channels to be routed to all selected outputs and allows the receiver to function as a 2 or 4 channel mixer.
- Bodypack Frequency Diversity and Audio Summing are complimentary features and can be simultaneously active.
- Dante™: Digital audio is carried over standard Ethernet using shielded Cat5e (or higher) cables.

\*YAMAHA\* is a registered trademark of Yamaha Corporation.



# Transmitter



## ULXD1 | ULXD2

Bodypack Transmitter | Handheld Transmitter

- 24-bit/48 kHz digital audio
- Flat frequency response (actual response is microphone dependent)
- >120 dB dynamic range
- AES 256-bit encryption-enabled for applications where secure transmission is needed
- No transmitter gain adjustments needed - optimized for any input source
- High Density mode enabled via IR sync
- Shure SB900A lithium-ion rechargeable battery provides over 11 hours of battery life, precision metering, and zero memory effect
- External charging contacts for docked charging (with the SBC200 Dual Docking Charger)
- Up to 11 hours continuous use with 2 x AA alkaline batteries
- Backlit LCD with easy to navigate menu and controls
- 100 meter line-of-sight operating range (at medium RF power setting)
- Rugged metal construction
- Frequency and / or power lockout
- Interchangeable Shure microphone cartridges, including the legendary SM58® (ULXD2)
- 4-pin TQG connector (ULXD1)
- Transmitter Mute Mode repurposes the on/off switch into a mute switch, enabling audio muting while preserving RF channel presence
- Detachable ¼ wave antenna (ULXD1)

## ULXD6

Boundary Transmitter **NEW**

- Very low latency makes the ULXD6 ideal for meetings that require live sound reinforcement
- Long transmission range (up to 330 feet/100 meters) for reliable performance in very large meetings at conference and convention centers
- Compatible with the full line of Shure antennas and distribution components, allowing up to 200 ULXD6 boundary microphone transmitters to be used with just one pair of receiving antennas for efficient setup
- Compatible with ULX-D® and QLX-D® digital receivers
- Optional SB900A rechargeable batteries provide up to 9 hours of runtime
- Compatible with standard AA alkaline batteries
- Optional SBC450 (4-bay) and SBC850 (8-bay) Networked Charging Stations allow convenient docking and charging when transmitters are not in use
- Configurable Mute button (Toggle, Push-to-Mute, Push-to-Talk, disabled) and Mute LED behavior
- Adjustable RF power, high-pass filter, and power lock settings

- Available Options**
- ULXD6/C Cardioid Boundary Microphone Transmitter
  - ULXD6/O Omnidirectional Boundary Microphone Transmitter

## ULXD8

Gooseneck Base Transmitter **NEW**



- Designed for use with Shure Microflex MX405, MX410, and MX415 gooseneck microphones
- Very low latency makes the ULXD8 ideal for meetings that require live sound reinforcement
- Long transmission range (up to 330 feet/100 meters) for reliable performance in very large meetings at conference and convention centers
- Compatible with the full line of Shure antennas and distribution components, allowing up to 200 ULXD8 gooseneck base transmitters to be used with just one pair of receiving antennas for efficient setup
- Compatible with ULX-D® and QLX-D® digital receivers
- Optional SB900A rechargeable batteries provide up to 9 hours of runtime
- Compatible with standard AA alkaline batteries
- Optional SBC450 (4-bay) and SBC850 (8-bay) Networked Charging Stations allow convenient docking and charging when transmitters are not in use
- Configurable Mute button (Toggle, Push-to-Mute, Push-to-Talk, disabled) and Mute LED behavior
- Adjustable RF power, high-pass filter, power lock settings and Mute LED brightness

## RECHARGEABILITY

- Advanced, intelligent Lithium-Ion chemistry
- Transmitters and receivers display remaining battery life in hours and minutes accurate to within 15 minutes
- Full charge within three hours and 50% charge in one hour – charge status LEDs for each battery
- Compatible with ULX-D transmitters, PSM 900 and PSM 1000 bodypack receivers, and the UHF-R UR5 portable receiver

- Monitor battery charging status (SBC450/SBC850 only)
- Configure the mute button and LED behavior (SBC450/SBC850 only)
- Update boundary/gooseneck Firmware (SBC450/SBC850 only)
- Compatible with 3rd party control devices (AMX/Crestron) (SBC450/SBC850 only)

### SB900A

Shure Rechargeable Battery

Rechargeable Lithium-Ion Battery for use with Shure wireless systems.



### SBC450

4-bay Networked Charging Station **NEW**

4-bay Networked Charging Station for ULXD6 & ULXD8 transmitters



### SBC850

8-bay Networked Charging Station **NEW**

8-bay Networked Charging Station for ULXD6 & ULXD8 transmitters



### SBC200

Dual Docking Charging Station

Compact and portable two-bay charger holds two SB900A batteries, and ULXD1 & ULXD2 transmitters



### SBC800

Eight Battery Charging Station

8-Up battery charger charges eight SB900A batteries.



# ULX-D Digital Wireless Specifications (Note: All specifications are subject to change.)

<b>ULX-D</b> System	<b>RF Carrier Range</b>	470 – 932 MHz, varies by region
	<b>Image Rejection</b>	>70 dB, typical
	<b>Latency</b>	<2,9 ms (3,2 ms in High Density Mode)
	<b>RF Sensitivity</b>	-98 dBm at 10 <sup>-5</sup> BER
	<b>Working Range</b>	100 m line-of-sight <i>Note: Actual range depends on RF signal absorption, reflection and interference.</i>
	<b>Audio Frequency Range</b>	20 Hz to 20 kHz <i>Note: Dependent on microphone type</i>
	<b>Audio Dynamic Range</b>	Analog Output: >120 dB, A-weighted (System Gain @ +10) Dante™ Digital Output: 130 dB (typical), A-weighted
	<b>Total Harmonic Distortion</b>	<0,1% (-12 dBFS input, System Gain @ +10)
	<b>Operating Temperature Range</b>	-18°C to 50°C <i>Note: Battery characteristics may limit this range.</i>

## ULXD4 Digital Wireless Receiver



<b>Dimensions</b>	ULXD4:	171 x 197 x 42 mm, W x D x H
	ULXD4D, ULXD4Q:	482 x 274 x 44 mm, W x D x H
<b>Weight</b>	ULXD4:	0,9 kg, without antennas
	ULXD4D:	3,36 kg, without antennas
	ULXD4Q:	3,45 kg, without antennas
<b>Power Requirements</b>	ULXD4:	15 V DC @ 0,6 A, supplied by external power supply (tip positive)
	ULXD4D:	100 to 240 V AC, 50-60 Hz, 0,26 A max.
	ULXD4Q:	100 to 240 V AC, 50-60 Hz, 0,32 A max.
<b>Gain Adjustment Range</b>	-18 to +42 dB in 1 dB steps (plus Mute setting)	
<b>Full Scale Output</b>	6,35 mm:	+12 dBV
	XLR:	LINE setting= +18 dBV, MIC setting= -12 dBV
<b>Network Interface</b>	ULXD4:	Single Port Ethernet 10/100 Mbps
	ULXD4D, ULXD4Q:	Dual Port Ethernet 1 Gbps
<b>Network Addressing Capability</b>	DHCP or Manual IP address, with or without gateway	
<b>Housing</b>	ULXD4:	Galvanized steel
	ULXD4D, ULXD4Q:	Steel; Extruded Aluminum

## ULXD1 Bodypack Transmitter



<b>Audio Frequency Range</b>	20 Hz – 20 kHz
<b>Gain Offset Range</b>	0 – 21 dB (in 3 dB steps)
<b>Battery Runtime @ 10 mW</b>	Shure SB900A Rechargeable Li-Ion: <12 hours 2 x AA Alkaline: <11 hours
<b>Dimensions</b>	86 x 66 x 23 mm (3.4 x 2.6 x 0.9 in.), H x W x D
<b>Weight</b>	142 g, without batteries
<b>Housing</b>	Cast aluminum
<b>Power</b>	1 mW, 10 mW, 20 mW <i>See Frequency Range and Output Power table, varies by region.</i>
<b>Antenna Type</b>	¼ wave detachable

## ULXD2 Handheld Transmitter



<b>Audio Frequency Range</b>	30 Hz – 20 kHz
<b>Gain Offset Range</b>	0 – 21 dB (in 3 dB steps)
<b>Battery Runtime @ 10 mW</b>	Shure SB900A Rechargeable Li-Ion: <12 hours 2 x AA Alkaline: <11 hours
<b>Dimensions</b>	256 x 51 mm, L x Dia. (with SM58®)
<b>Weight</b>	340 g, without batteries (with SM58®)
<b>Housing</b>	Machined aluminum
<b>Power</b>	1 mW, 10 mW, 20 mW <i>See Frequency Range and Output Power table, varies by region</i>
<b>Antenna Type</b>	Integrated single band helical

## ULXD6 Boundary Transmitter



<b>Audio Frequency Range</b>	50 Hz – 17 kHz
<b>Gain Offset Range</b>	0 – 21 dB (in 3 dB steps)
<b>Battery Runtime @ 10 mW</b>	Shure SB900A Rechargeable Li-Ion: <9 hours 20 minutes 2 x AA Alkaline: <8 hours 40 minutes
<b>Dimensions</b>	113.94 x 61.83 x 34.28 mm (4.48 x 2.43 x 1.35 in.) H x W x D
<b>Weight</b>	241 g with AA batteries
<b>Housing</b>	Molded Plastic
<b>Power</b>	1 mW, 10 mW, 20 mW <i>See Frequency Range and Output Power table, varies by region</i>
<b>Antenna Type</b>	Integrated PIFA

## ULXD8 Gooseneck Transmitter



<b>Audio Frequency Range</b>	50 Hz – 17 kHz
<b>Gain Offset Range</b>	0 – 21 dB (in 3 dB steps)
<b>Battery Runtime @ 10 mW</b>	Shure SB900A Rechargeable Li-Ion: <9 hours 2 x AA Alkaline: <8 hours 20 minutes
<b>Dimensions</b>	136.94 x 78.27 x 40.77 mm (5.39 x 3.08 x 1.60 in.) H x W x D
<b>Weight</b>	293 g with AA batteries
<b>Housing</b>	Molded Plastic
<b>Power</b>	1 mW, 10 mW, 20 mW <i>See Frequency Range and Output Power table, varies by region</i>
<b>Antenna Type</b>	Integrated PIFA

## Frequency Bands

ULXD products are now also available in different frequency bands such as:

<b>V51:</b> 174 – 216 MHz, for EMEA countries	<b>Z17:</b> 1492 – 1525 MHz, for EMEA countries	<b>Z18:</b> 1785 – 1805 MHz, for EMEA countries
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In addition to several frequency ranges in the UHF-TV band 470 – 694 MHz.

Please check with your national frequency authority: Frequency bands might be license free/license required and/or might be limited to indoor use only.

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LEGENDARY  
PERFORMANCE™

**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

**United States, Canada,  
Latin America, Caribbean:**  
Shure Incorporated  
5800 West Touhy Avenue  
Niles, IL 60714-4608 USA

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

**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