ULX-D® Digital Wireless Systems

BREAKTHROUGH PERFORMANCE
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.
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.

**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.

**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.

**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 unbreakable 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.

**High Density Mode**
Optimizes the system by running at 1mW RF transmit power and reducing the modulation bandwidth. The result is nearly three times the number of useable frequencies, enabling up to 47 systems in an open 6MHz TV channel.

**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.

**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.

**Total Command of Shure Networked Audio Hardware**
Shure SystemOn Audio Asset Management Software was developed for managing mission critical or large-scale deployments of Shure audio hardware, including ULX-D®, across corporate and higher education networks from one central platform.

SystemOn tracks audio levels, battery life and RF/spectrum status in real time, enabling IT administrators and AV technicians to monitor and control Shure hardware devices remotely using a laptop, smartphone or tablet.

**Comprehensive Control for Shure Networked Wireless Systems**
Shure Wireless Workbench® 6 software offers comprehensive control for networked Shure wireless systems and provides a rich interface to manage every facet of a performance over the network.

- Perform real-time plotting of scan data from networked Shure scanning hardware in a rich graphical environment
- Monitor and make live remote adjustments to frequency, audio level, RF muting and other equipment settings
- Configurable interference and hardware alerts
- Assign compatible frequencies to networked Shure wireless devices
- Automatically calculate backup frequencies

**System Interaction**
Over WiFi via iOS Devices
Command and control your wireless on the go and roam the performance space while monitoring key Shure wireless system parameters in real time from any iOS device.

- Real-time, precision monitoring of critical device parameters, including:
  - RF level metering
  - Audio level metering
  - Transmitter battery level
  - Frequency Assignments with band, group and channel info
  - RF interference indicator
  - Encryption status
  - Frequency diversity status
ULX-D® Digital Wireless Receivers

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 64 MHz tuning range (region dependent)
- Up to 17 active transmitters in one 6 MHz TV channel
- High Density mode enables up to 47 active transmitters in one 6 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
- Comprehensive 3rd party control and monitoring across subnets
- Rugged metal housing
- Remoteable ½ wave antennas
- Furnished rack hardware

Dante™

Digital Audio Networking Over Ethernet

Dante is a total solution for transporting low latency uncompressed audio over standard IP Ethernet networks with sample accurate synchronization, automatic device discovery, and easy to use signal routing.

- Send multichannel audio from ULX-D receivers to Dante-equipped mixers over a single ethernet cable
- Auto-discovery and easy audio networking with Dante Controller
- Compatible with ULXD4D & ULXD4Q receivers
• 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 64 MHz overall tuning range (region dependent)
• Up to 17 active transmitters in one 6 MHz TV channel
• High Density mode enables up to 47 active transmitters in one 6 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
• Bodpack 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.
• Bodpack 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.
**ULX-D® Digital Wireless Transmitters**

### ULXD1 Bodypack 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 (300 feet) 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®
- 4-pin TQG or LEMO3 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)

### ULXD2 Handheld Transmitter

### ULXD6 Boundary Transmitter **NEW**
- Very low latency makes the ULXD6 ideal for meetings that require live sound reinforcement
- Long transmission range (up to 100 meters/ 300 feet) 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

- 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 100 meters/300 feet) 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/Creston) (SBC450/SBC850 only)

SB900A
Shure Rechargeable Battery

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

SBC450
NEW
4-bay Networked Charging Station

4-bay Networked Charging Station for ULXD6 & ULXD8 transmitters

SBC850
NEW
8-bay Networked Charging Station

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

(Refer to ULX-D Digital Wireless Transmitters and Receivers for complete specifications.)

ULX-D System

**RF Carrier Range**: 470 – 932 MHz, varies by region

**Image Rejection**: >70 dB, typical

**Latency**: <2.9 ms (2.2 ms in High Density Mode)

**RF Sensitivity**: >96 dBm at 10^-12 BER

**Working Range**: 100 ft line-of-sight. Note: Actual range depends on RF signal absorption, reflection, and interference.

**Audio Frequency Range**: 20 Hz to 20 kHz. Note: Dependent on microphone type

**Audio Dynamic Range**: Analog Output: >120 dB, A-weighted

**Total Harmonic Distortion**: (<0.1%)

**Operating Temperature Range**: -18°C to 50°C. Note: Battery characteristics may limit this range.

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ULX-D Digital Wireless Receiver

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>ULXD4:</th>
<th>171 x 197 x 42 mm, W x D x H</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ULXD4D, ULXD4Q:</td>
<td>482 x 274 x 44 mm, W x D x H</td>
</tr>
<tr>
<td>Weight</td>
<td>ULXD4:</td>
<td>0.9 kg, without antennas</td>
</tr>
<tr>
<td></td>
<td>ULXD4D:</td>
<td>3.36 kg, without antennas</td>
</tr>
<tr>
<td></td>
<td>ULXD4Q:</td>
<td>3.43 kg, without antennas</td>
</tr>
<tr>
<td>Power Requirements</td>
<td>ULXD4:</td>
<td>15 V DC @ 0.6 A, supplied by external power supply (tip positive)</td>
</tr>
<tr>
<td></td>
<td>ULXD4D:</td>
<td>100 to 240 V AC, 50-60 Hz, 0.26 A max.</td>
</tr>
<tr>
<td></td>
<td>ULXD4Q:</td>
<td>100 to 240 V AC, 50-60 Hz, 0.32 A max.</td>
</tr>
</tbody>
</table>

**Gain Adjustment Range**: -18 to +42 dB in 1 dB steps (plus Mute setting)

**Full Scale Output**: 6.35 mm XLR:

- +12 dBV
- LINE setting: +18 dBV, MIC setting: -12 dBV

**Network Interface**: ULXD4: Single Port Ethernet 10/100 Mbps

**Network Addressing Capability**: ULXD4D, ULXD4Q: Dual Port Ethernet 1 Gbps

**Housing**: ULXD4: Galvanized Steel

**Antenna Type**: Shure Cast aluminum

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ULX-D1 Bodypack Transmitter

**Audio Frequency Range**: 20 Hz – 20 kHz

**Gain Offset Range**: 0 – 24 dB (in 3 dB steps)

**Battery Runtime @ 10 mW**: Shure SB900A Rechargeable Li-Ion:

- <12 hours
- 2 x AA Alkaline: <11 hours

**Dimensions**: 86 x 66 x 23 mm (3.4 x 2.6 x 0.9 in), H x W x D

**Weight**: 142 g, without batteries

**Housing**: Cast aluminum

**Power**: 1 mW, 10 mW, 20 mW

**Antenna Type**: ¼ wave detachable

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ULX-D2 Handheld Transmitter

**Audio Frequency Range**: 30 Hz – 20 kHz

**Gain Offset Range**: 0 – 24 dB (in 3 dB steps)

**Battery Runtime @ 10 mW**: Shure SB900A Rechargeable Li-Ion:

- <12 hours
- 2 x AA Alkaline: <11 hours

**Dimensions**: 256 x 51 mm, L x Dia. (with SM58®)

**Weight**: 340 g, without batteries (with SM58®)

**Housing**: Machined aluminum

**Power**: 1 mW, 10 mW, 20 mW

**Antenna Type**: Integrated single band helical

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ULX-D6 Boundary Transmitter

**Audio Frequency Range**: 50 Hz – 17 kHz

**Gain Offset Range**: 0 – 24 dB (in 3 dB steps)

**Battery Runtime @ 10 mW**: Shure SB900A Rechargeable Li-Ion:

- <9 hours 20 minutes
- 2 x AA Alkaline: <8 hours 40 minutes

**Dimensions**: 113.94 x 61.83 x 34.28 mm (4.48 x 2.43 x 1.35 in), H x W x D

**Weight**: 243 g with AA batteries

**Housing**: Molded Plastic

**Power**: 1 mW, 10 mW, 20 mW

**Antenna Type**: Integrated PIFA

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ULX-D8 Gooseneck Transmitter

**Audio Frequency Range**: 50 Hz – 17 kHz

**Gain Offset Range**: 0 – 24 dB (in 3 dB steps)

**Battery Runtime @ 10 mW**: Shure SB900A Rechargeable Li-Ion:

- <9 hours
- 2 x AA Alkaline: <8 hours 20 minutes

**Dimensions**: 136.94 x 78.27 x 40.77 mm (5.39 x 3.08 x 1.60 in), H x W x D

**Weight**: 293 g with AA batteries

**Housing**: Molded Plastic

**Power**: 1 mW, 10 mW, 20 mW

**Antenna Type**: Integrated PIFA

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