

# UNCOMPROMISING DIGITAL WIRELESS





# BREAKTHROUGH TECHNOLOGIES

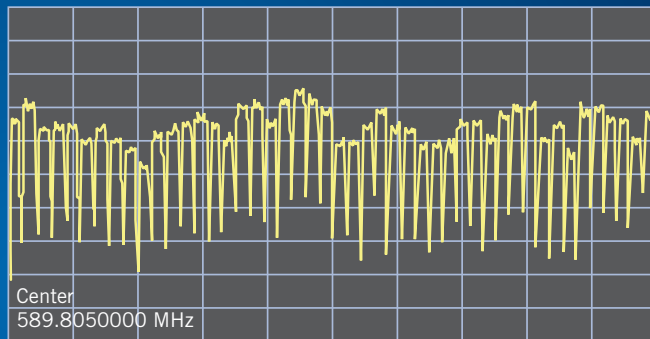
ULX-D™ Digital Wireless represents an incredible advancement in wireless performance. Shure innovation brings to market new features and technologies that dramatically increase spectrum efficiency, dependability, and signal routing convenience.



## High Density Mode

Specifically designed for high channel count applications, 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.

- Enables up to 47 ULX-D systems in an open 6MHz TV channel
- Channels can be tuned directly adjacent to each other in 125 kHz steps
- Operates with a range of up to 30 meters (100 ft) with line of sight



Actual spectrum scan of 47 channels over 6 MHz



## 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



## Bodypack Frequency Diversity

Frequency Diversity enhances the value of "double-packing" - sending the same audio from two transmitters with different radio frequencies. If problems occur with the reception of one frequency, ULX-D dual and quad receivers continue to provide flawless audio by automatically switching to the clean frequency.

- Safeguards against loss of audio signal caused by RF interference or by power loss in a transmitter
- Switching between channels occurs in milliseconds, without interruption to the audio signal
- Selectable option in ULXD4D & ULXD4Q receivers



# GENERATIONS AHEAD

With ULX-D™, Shure has created a breakthrough digital wireless system that incorporates a collection of technological innovations into one easy-to-use professional wireless system. Offering an unparalleled mix of audio quality, RF performance, scalable hardware solutions, and intelligent battery technology, ULX-D defines the next generation of digital wireless excellence.



## Transparent 24-Bit Digital Audio

A breakthrough in wireless audio quality, Shure digital processing enables ULX-D to deliver the purest reproduction of source material ever available in a wireless system.



## Spectral Efficiency & Signal Stability

An incredible advancement in wireless performance, ULX-D enables rock-solid signal stability and a dramatically increased number of simultaneous active transmitters on one TV channel.



## Optional Lithium Ion Rechargeability

Lithium Ion rechargeability provides up to 12 hours of use on a single charge, while displaying battery life in hours and minutes accurate to 15 minutes.



## Advanced Encryption

ULX-D offers Advanced Encryption Standard (AES) 256-bit encrypted signal for unbreachable privacy.



## Networked Audio and Control

Ethernet networking enables streamlined setup across multiple receivers, Wireless Workbench® 6 software integration, and Dante™ digital networked audio.



## 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.



## ULX-D™ Receivers:

### ULXD4 Digital Wireless Receiver



### ULXD4D Dual Channel Digital Wireless Receiver



### ULXD4Q Quad Channel Digital Wireless Receiver



#### RECEIVER FEATURES

- 24-bit/48 kHz digital audio
- 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 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
- Comprehensive 3rd party control and monitoring across subnets
- Rugged metal housing
- Remoteable ½ wave antennas
- Furnished rack hardware

#### DUAL AND QUAD RECEIVER FEATURES

- Two or four receivers in a rugged 1RU metal chassis
- Internal power supply
- RF cascade ports
- Bodypack Frequency Diversity to ensure uninterrupted audio
- Yamaha® device ID allows simplified channel patching on CL consoles
- Audio summing - routes two or more audio channels to combinations of receiver outputs. Use each channel's gain adjustment to reach the desired mix.
- Dante™ digital networked audio over Ethernet for easy digital connectivity to Dante-enabled mixers

## ULX-D™ Transmitters:

### ULXD1 Wireless Bodypack Transmitter



### ULXD2 Wireless Handheld Transmitter



## Rechargeable Components:

### SB900

Shure Rechargeable Battery



### SBC200

Dual Docking Charging Station



### SBC800

Eight Battery Charging Station



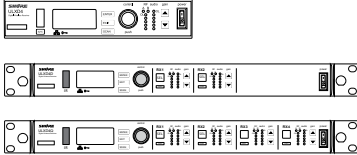
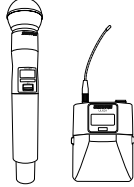
### TRANSMITTER FEATURES

- 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 SB900 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
- Rugged metal construction
- Frequency and power lockout
- Interchangeable Shure microphone cartridges, including the legendary SM58® (ULXD2)
- 3-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)

### RECHARGEABLE FEATURES

- 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

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

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
	<b>RF Sensitivity</b>	-98 dBm at 10 <sup>-5</sup> BER
	<b>Working Range</b>	100 m (328 ft) 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> (System Gain @ +10)	Analog Output: >120 dB, A-weighted Dante™ Digital Output: 130 dB (typical), A-weighted
	<b>Total Harmonic Distortion</b> (-12 dBFS input, System Gain @ +10)	<0.1%
	<b>Operating Temperature Range</b>	-18°C (0°F) to 50°C (122°F) <i>Note: Battery characteristics may limit this range.</i>
Receivers	<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 (2.0 lbs), without antennas ULXD4D: 3.36 Kg (7.4 lbs), without antennas ULXD4Q: 3.45 Kg (7.6 lbs), 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>	¼" (6.35 mm): +12 dBV (ULXD4 only) XLR: LINE setting= +18 dBV, MIC setting= -12 dBV (all models)
	<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
Transmitters	<b>Dimensions</b>	ULXD1: 86 mm x 66 mm x 23 mm (3.4 in. x 2.6 in. x 0.9 in.) H x W x D ULXD2: 256 mm x 51 mm (10.1 in. x 2.0 in.) L x Dia.
	<b>Weight</b>	ULXD1: 142 g (5.0 oz.), without batteries ULXD2: 340 g (12.0 oz.), without batteries
	<b>Battery Runtime @ 10 mW</b>	Shure SB900 Rechargeable Li-Ion: >11 hours 2 x AA Alkaline: <11 hours
	<b>Power</b>	1 mW, 10 mW, 20 mW <i>See Frequency Range and Output Power table, varies by region</i>
	<b>Housing</b>	ULXD1: Cast Aluminum ULXD2: Machined Aluminum
	<b>Antenna Type</b>	ULXD1: ¼ wave detachable ULXD2: Integrated single band helical



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