ULX-D® WIRELESS

Large conference and convention installations come with unique wireless challenges. ULX-D® Digital Wireless is the trusted and reliable partner for secure, scalable and durable performance, campus-wide. ULX-D features bodypack, handheld, boundary and gooseneck base transmitters for use with single, dual and quad receivers With expanded wide-tuning frequency bands and up to a 40% increase in rechargeable battery run-time, ULX-D Wireless provides intelligent solutions for installations and event requirements of all sizes.

ULX-D SYSTEM SPECIFICATIONS

RF Carrier Frequency Range	*470–932 MHz* *Varies by region (See Frequency Range and Output Power table)*
Working Range	100 m (330 ft) *Note: Actual range depends on RF signal absorption, reflection and interference.*
RF Tuning Step Size	25 kHz *Varies by region*
Image Rejection	>70 dB *Typical*
RF Sensitivity	–98 dBm at 10 BER

AUDIO

Latency	<2.9 ms
Audio Dynamic Range *A-weighted, typical, System Gain @ +10*	XLR Analog Output: >120 dB Dante Digital Output: 130 dB
Total Harmonic Distortion *–12 dBFS input, System Gain @ +10*	<0.1%
System Audio Polarity	Positive pressure on microphone diaphragm produces positive voltage on pin 2 (with respect to pin 3 of XLR output) and the tip of the 6.35 mm (1/4-inch) output.

TEMPERATURE RANGE Note: Battery characteristics may limit this range.

Operating Temperature Range	-18°C (0°F) to 50°C (122°F)
Storage Temperature Range	-29°C (-20°F) to 74°C (165°F)

RECEIVER OUTPUT LEVEL The following table describes the typical total system gain from the audio input to the receiver outputs.

Receiver Output Gain ***Output Jack System Gain (gain control = 0dB)***	1/4" TRS +18 dB XLR (line setting) +24 dB XLR (mic setting) -6 dB* **This setting matches a typical wired SM58 audio signal level.*

ULXD1 WIRELESS BODYPACK TRANSMITTER

OVERVIEW

The Shure ULXD1 Digital Wireless Bodypack Transmitter delivers uncompromising audio quality and RF performance, with AES 256-bit encryption for secure transmission. Now available with extended wide-tuning frequency range for more open channels, country-wide. Optional Shure SB900C Lithium-Ion Rechargeable Batteries provide up to 12 hours of transmitter run-time and precision metering in hours and minutes.

SPECIFICATIONS

Mic Offset Range	0 to 21 dB (in 3 dB steps)
Audio Frequency Response	20 – 20 kHz (±1 dB)
Battery Type	Shure SB900C Rechargeable Li-Ion or LR6 AA batteries 1.5 V
Battery Runtime ***@ 10 mW***	Shure SB900C: >12 hours Alkaline: 9 hours
Dimensions (H x W x D)	86 mm x 66 mm x 23 mm (3.4 in. x 2.6 in. x 0.9 in.)
Weight	142 g (5.0 oz.), without batteries
Housing	Cast aluminum

AUDIO INPUT

Connector	4-Pin male mini connector (TA4M) *See drawing for details*
Configuration	Unbalanced
Impedance	1 MΩ *See drawing for details*
Maximum Input Level ***1 kHz at 1% THD***	Pad Off: 8.5 dBV (7.5 Vpp) Pad On: 20.5 dBV (30 Vpp)
Preamplifier Equivalent Input Noise (EIN)	System Gain Setting » +20120 dBV A-weighted, typical

RF OUTPUT

Connector	SMA
Antenna Type	1/4 wave
Impedance	50 Ω
Occupied Bandwidth	<200 kHz
Modulation Type	Shure proprietary digital
Power	1 mW, 10 mW, 20 mW

See Frequency Range and Output Power table, varies by region

ULXD1
Wireless Bodaypack Transmitter

All specifications subject to change.
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ULXD2 WIRELESS HANDHELD TRANSMITTER WITH NEXADYNE 8/S MICROPHONE

OVERVIEW

The Shure ULXD2 Digital Wireless Handheld Transmitter delivers uncompromising audio quality and RF performance, with a wide variety of Shure interchangeable microphone capsule options, and AES 256-bit encryption for secure transmission. Now available with extended wide-tuning frequency range for more open channels, country-wide. Optional Shure SB900C Lithium-Ion Rechargeable Batteries provide up to 12 hours of transmitter run-time and precision metering in hours and minutes.

SPECIFICATIONS

Mic Offset Range	0 to 21 dB (in 3 dB steps)
Audio Frequency Response	Dependent on microphone type
Battery Type	Shure SB900C Rechargeable Li-Ion or LR6 AA batteries 1.5 V
Battery Runtime ***@ 10 mW***	Shure SB900C: >12 hours Alkaline: 9 hours *See Battery Runtime Chart*
Dimensions (L x Dia.)	VHF V50 and V51: 278 mm x 51 mm (10.9 in. x 2.0 in.) Other frequency bands: 256 mm x 51 mm (10.1 in. x 2.0 in.)
Weight	VHF V50 and V51: 348 g (12.3 oz.), without batteries Other frequency bands: 340 g (12.0 oz.), without batteries
Housing	Machined aluminum

AUDIO INPUT

Configuration	Unbalanced
Impedance	1 MΩ *See drawing for details*
Maximum Input Level ***1 kHz at 1% THD***	145 dB SPL (SM58), typical *Note: Dependent on microphone type*

RF OUTPUT

Antenna Type	Integrated Single Band Helical
Occupied Bandwidth	<200 kHz
Modulation Type	Shure proprietary digital
Power	1 mW, 10 mW, 20 mW

See Frequency Range and Output Power table, varies by region

SKU VARIATIONS

ULXD2/SM58	ULXD2 transmitter with SM58® cardioid dynamic microphone head
ULXD2/B58	ULXD2 transmitter with Beta®58A supercardioid dynamic microphone head
ULXD2/B87A	ULXD2 transmitter with BETA®87A supercardioid condenser microphone head
ULXD2/N8CB	ULXD2 transmitter with Nexadyne® 8/C cardioid dynamic microphone head
ULXD2/N8SB	ULXD2 transmitter with Nexadyne® 8/S supercardioid dynamic microphone head
ULXD2/K8B	ULXD2 transmitter with KSM8 cardioid dynamic microphone head
ULXD2/K9	ULXD2 transmitter with KSM9 cardioid / supercardioid switchable condenser microphone head
ULXD2/K11B	ULXD2 transmitter with KSM11 supercardioid condenser microphone head

ULXD2
Wireless Handheld Transmitter
with Nexadyne 8/S microphone

All specifications subject to change.

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ULXD6 WIRELESS BOUNDARY MICROPHONE TRANSMITTER

OVERVIEW

The ULXD6 Boundary Microphone Transmitter offers a low-profile boundary form factor that is ideal for tabletop use at meetings and events where wired microphones are impractical. Paired with a ULX-D or QLX-D digital receiver, the ULXD6 delivers exceptional performance in large meeting venues where live sound reinforcement is required. Plus, choose the advanced rechargeability of SB900C lithium-ion batteries for up to 12 hours of transmitter run-time and precision metering in hours and minutes.

SPECIFICATIONS

Gain Adjustment Range	0 to 21 dB (in 3 dB steps)
Audio Frequency Response	Dependent on microphone type
Battery Type	Shure SB900C Rechargeable Li-Ion or AA batteries 1.5 V
Battery Runtime ***@ 10 mW***	Shure SB90C: Up to 9 hours 20 minutes Alkaline: Up to 8 hours 40 minutes
Dimensions (H x W x D)	113.94 mm x 61.83 mm x 34.28 mm (4.48 in. x 2.43 in. x 1.35 in.)
Weight	241 g with AA batteries
Operating Temperature Range	0°C (32°F) to 45°C (113°F)
Housing	Molded Plastic

RF OUTPUT

Antenna Type	Integrated PIFA
Impedance	50 Ω
Occupied Bandwidth	<200 kHz
Modulation Type	Shure proprietary digital
Power	1 mW, 10 mW, 20 mW

See Frequency Range and Output Power table, varies by region

SKU VARIATIONS

ULXD6	ULXD6 wireless boundary microphone transmitter (black)
ULX6DW	ULXD6 wireless boundary microphone transmitter (white)

ULXD6
Wireless Boundary Microphone Transmitter, Black

All specifications subject to change.

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ULXD8 WIRELESS GOOSENECK BASE TRANSMITTER

OVERVIEW

The ULXD8 Gooseneck Base Transmitter offers a flexible gooseneck mic form factor that is ideal for use at meetings and events where wired microphones are impractical. When connected to an MX400 Series Gooseneck microphone (sold separately) and paired with a ULX-D or QLX-D digital receiver, the ULXD8 delivers exceptional performance in large meeting venues where live sound reinforcement is required. Plus, choose the advanced rechargeability of SB900C lithium-ion batteries

SPECIFICATIONS

Gain Adjustment Range	0 to 21 dB (in 3 dB steps)
Battery Type	Shure SB900C Rechargeable Li-Ion or AA batteries 1.5 V
Battery Runtime ***@ 10 mW***	Shure SB900C: Up to 9 hours Alkaline: Up to 8 hours 40 minutes
Dimensions (H x W x D)	136.94 mm x 78.27 mm x 40.77 mm (5.39 in. x 3.08 in. x 1.60 in.)
Weight	293 g with AA batteries
Operating Temperature Range	0°C (32°F) to 45°C (113°F)
Housing	Molded Plastic

AUDIO INPUT

Microphone Connector	6-pin connector for Shure MX405/10/15
Configuration	Unbalanced
Impedance	>20 kΩ

RF OUTPUT

Antenna Type	Integrated PIFA
Impedance	50 Ω
Occupied Bandwidth	<200 kHz
Modulation Type	Shure proprietary digital
Power	1 mW, 10 mW, 20 mW

See Frequency Range and Output Power table, varies by region

MX400 SERIES GOOSENECK MICROPHONE OPTIONS (available separately)

MX405LP/C	5-inch Cardioid Gooseneck Microphone
MX405LP/S	5-inch Supercardioid Gooseneck Microphone
MX410LP/C	10-inch Cardioid Gooseneck Microphone
MX410LP/S	10-inch Supercardioid Gooseneck Microphone
MX410LPDF/C	10-inch Cardioid Dualflex Gooseneck Microphone
MX410LPDF/S	10-inch Supercardioid Dualflex Gooseneck Microphone
MX410RLPDF/C	10-inch Cardioid Dualflex Gooseneck Microphone with Red Top LED
MX410RLPDF/S	10-inch Supercardioid Dualflex Gooseneck Microphone with Red Top LED
MX410RLPDF/N	10-inch Dualflex Gooseneck with Red Top LED (no cartridge)
MX415LP/C	15-inch Cardioid Gooseneck Microphone
MX415LP/S	15-inch Supercardioid Gooseneck Microphone
MX415LPDF/C	15-inch Cardioid Dualflex Gooseneck Microphone
MX415LPDF/S	15-inch Supercardioid Dualflex Gooseneck Microphone
MX415RLPDF/C	15-inch Cardioid Dualflex Gooseneck Microphone with Red Top LED
MX415RLPDF/S	15-inch Supercardioid Dualflex Gooseneck Microphone with Red Top LED
MX415RLPDF/N	15-inch Dualflex Gooseneck with Red Top LED (no cartridge)

ULXD8
Wireless Gooseneck Base Transmitter,
Black

SKU VARIATIONS

ULXD8	ULXD8 wireless gooseneck base transmitter (black)
ULX8DW	ULXD6 wireless gooseneck base transmitter (white)

All specifications subject to change.

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ULXD4 DIGITAL WIRELESS RECEIVER

OVERVIEW

The ULXD4 is an intelligent single-channel digital wireless receiver for use with ULX-D transmitters in demanding corporate, education, and performance environments. With an expansive set of professional features, including 24-bit / 48 kHz digital audio quality, efficient and intelligent RF performance, and AES 256-bit encryption, the ULXD4 provides a 64 MHz tuning range (region dependent), extensive antenna and spectrum options to provide uncompromising wireless tailored for professional sound reinforcement.

SPECIFICATIONS

Weight	913 g (2.0 lbs), without antennas
Power Requirement	15 V DC @ 0.6 A, supplied by external power supply (tip positive)
Dimensions (H x W x D)	42 mm x 197 mm x 171 mm (1.65 in. x 7.75 in. x 6.75 in.)
Housing	Steel

RF INPUT

Spurious Rejection	>80 dB, typical
Connector Type	BNC
Impedance	50 Ω
Bias Voltage	12 - 13 V DC; 170 mA maximum, per antenna

AUDIO OUTPUT

Gain Adjustment Range	−18 to +42 dB in 1 dB steps (plus Mute setting)
Configuration	1/4" (6.35 mm): Impedance balanced (Tip = audio, Ring = no audio, Sleeve = ground) XLR: Balanced (1=ground, 2=audio +, 3=audio −)
Impedance	1/4" (6.35 mm): 100 Ω (50 Ω Unbalanced) XLR: 100 Ω
Full Scale Output	1/4" (6.35 mm): +12 dBV XLR: LINE setting = +18 dBV, MIC setting = -12 dBV
Mic/Line Switch	30 dB pad
Phantom Power Protection	1/4" (6.35 mm): Yes XLR: Yes

NETWORKING

Power Over Ethernet (PoE)	No, protected
Network Interface	Single Port Ethernet 10/100 Mbps
Network Addressing Capability	DHCP or Manual IP address
Maximum Cable Length	100 m (328 ft)

ULXD4
Digital Wireless Receiver,
Front

ULXD4
Digital Wireless Receiver,
Back

All specifications subject to change.

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ULXD4D DUAL CHANNEL DIGITAL WIRELESS RECEIVER

OVERVIEW

The Shure ULXD4D Dual Channel Digital Wireless Receiver offers two channels of uncompromising audio quality, RF signal stability and efficiency, and advanced setup features in a single rack unit. Now featuring wide-tuning frequency bands, offering an expanded range of up to 166 MHz, (region dependent). The all-metal chassis houses two independent receivers, each with its own audio and RF meters, gain control, and receiver outputs that can be either direct or summed for flexible signal routing. Includes Dante Audio for networked audio applications, AES-256 encryption to protect confidential content, extensive antenna and spectrum options to provide uncompromising wireless tailored for professional sound reinforcement.

SPECIFICATIONS

Weight	3.36 kg (7.4 lbs), without antennas
Power Requirement	100 to 240 V AC, 5060 Hz, 0.26 A max.
Dimensions (H x W x D)	44 x 482 x 274 mm (1,73 in. x 18.98 in. x 10.79 in.)
Housing	Steel; Extruded Aluminum

AUDIO OUTPUT

Gain Adjustment Range	−18 to +42 dB in 1 dB steps (plus Mute setting)
Configuration	XLR balanced (1=ground, 2=audio +, 3=audio −)
Impedance	100 Ω
Full Scale Output	LINE setting: +18 dBV MIC setting: −12 dBV
Mic/Line Switch	30 dB pad
Phantom Power Protection	Yes

CASCADE OUTPUT

Connector Type	BNC *Note: For connection of one additional receiver in the same band*
Configuration	Unbalanced, passive
Impedance	50 Ω
Insertion Loss	0 dB

NETWORKING

Network Interface	Dual Port Ethernet 10/100 Mbps, 1Gbps, Dante Digital Audio
Network Addressing Capability	DHCP or Manual IP address
Maximum Cable Length	100 m (328 ft)

RF INPUT

Spurious Rejection	>80 dB, typical
Connector Type	BNC
Impedance	50 Ω
Bias Voltage	12 to 13 V DC, 150 mA maximum, per antenna switchable on-off

ULXD4D
Dual Channel Digital Wireless Receiver,
Front

ULXD4D
Dual Channel Digital Wireless Receiver,
Back

All specifications subject to change.

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ULXD4Q QUAD CHANNEL DIGITAL WIRELESS RECEIVER

OVERVIEW

The Shure ULXD4Q Quad Channel Digital Wireless Receiver offers four channels of uncompromising audio quality, RF signal stability and efficiency, and advanced setup features in a single rack unit. Now featuring wide-tuning frequency bands, offering an expanded range of up to 166 MHz, (region dependent). The all-metal chassis houses four independent receivers, each with its own audio and RF meters, gain control, and receiver outputs that can be either direct or summed for flexible signal routing. Includes Dante Audio for networked audio applications, AES-256 encryption to protect confidential content, extensive antenna and spectrum options to provide uncompromising wireless tailored for professional sound reinforcement.

SPECIFICATIONS

Weight	3.45 kg (7.6 lbs), without antennas
Power Requirement	100 to 240 V AC, 5060 Hz, 0.32 A max.
Dimensions (H x W x D)	44 x 482 x 274 mm (1,73 in. x 18.98 in. x 10.79 in.)
Housing	Steel; Extruded Aluminum

AUDIO OUTPUT

Gain Adjustment Range	−18 to +42 dB in 1 dB steps (plus Mute setting)
Configuration	XLR balanced (1=ground, 2=audio +, 3=audio −)
Impedance	100 Ω
Full Scale Output	LINE setting: +18 dBV MIC setting: −12 dBV
Mic/Line Switch	30 dB pad
Phantom Power Protection	Yes

CASCADE OUTPUT

Connector Type	BNC *Note: For connection of one additional receiver in the same band*
Configuration	Unbalanced, passive
Impedance	50 Ω
Insertion Loss	0 dB

NETWORKING

Network Interface	Dual Port Ethernet 10/100 Mbps, 1Gbps, Dante Digital Audio
Network Addressing Capability	DHCP or Manual IP address
Maximum Cable Length	100 m (328 ft)

RF INPUT

Spurious Rejection	>80 dB, typical
Connector Type	BNC
Impedance	50 Ω
Bias Voltage	12 to 13 V DC, 150 mA maximum, per antenna switchable on-off

ULXD4Q
Quad Channel Digital Wireless Receiver,
Front

ULXD4
Quad Channel Digital Wireless Receiver,
Back

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FREQUENCY RANGE & TRANSMITTER OUTPUT POWER

BAND	FREQUENCY RANGE (MHz)	POWER DELIVERED TO ANTENNA PORT (mW RMS) (Lo/Nm/Hi)
G50	470 to 534	1/10/20
G51	470 to 534	1/10/20
G52	479 to 534	1/10
G53	470 to 510	1/10/20
G54*	479 to 565	1/10/20
G55*†	470 to 636	1/10/20
G56*	470 to 636	1/10/20
G57*	470 to 608	1/10/20
G62	510 to 530	1/10/20
G65*	470 to 606	1/10/20
G66*	487 to 606	1/10
H50	534 to 598	1/10/20
H51	534 to 598	1/10/20
H52	534 to 565	1/10
H54*	520 to 636	1/10/20
J50	572 to 636	1/10/20
J50A△	572 to 616	1/10/20
J51	572 to 636	1/10/20
K51	606 to 670	1/10
L50	632 to 696	1/10/20
L51	632 to 696	1/10/20
L53	632 to 714	1/10/20
M19	694 to 703	1/10/20
JB (Tx only)	806 to 810	1/10
Q12	748 to 758	1/10/20
V50	174 to 216	1/10/20
V51	174 to 216	1/10/20
V52	174 to 210	10
X51	925 to 937.5	10
X52	902 to 928	0.25/10/20
X54	915 to 928	0.25/10/20
Z16	1240 to 1260	1/10/20
Z17	1492 to 1525	1/10/20
Z18	1785 to 1805	1/10/20

* Supported by ULXD1, ULXD2, ULXD4D, and ULXD4Q only.
** To use legacy ULX-D transmitters with wide-tuning ULX-D receivers (and vice-versa), please refer to the Mixed-Band Operation section of ULX-D User Guides.
† Operation mode varies according to region. The maximum power level for Peru is 10 mW.
△ Output power limited to 10 mW above 608 MHz.

Note: Frequency bands might not be available for sale or authorized for use in all countries or regions.
The band Z17 (1492-1525 MHz) must be used indoors only.

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ULX-D BATTERY LIFE

MHz	HOURS			
	SBC900C		ALKALINE	
	1/10 mW	20 mW	1/10 mW	20 mW
470 to 810	>11:30	>7:40	>8	>5:30
902 to 928	>10:10	>6:20	>7	>4
174 to 216	>11:30	>8:55	8	>5
1240 to 1800	>10:45	>8:15	>6	>4:30

Note: SB900-series batteries use SBC200, SBC800 and SBC220 chargers.
The values in this table are typical of fresh, high quality batteries. Battery runtime varies depending on the manufacturer and age of the battery.

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