

### ULX STANDARD

ULX Standard UHF systems represent a breakthrough in performance and price for both working musicians and professional sound installers. Multiple system configurations provide limitless options, each with a choice of legendary Shure microphone transmitters. Over 1400 selectable, pre-programmed frequencies are available, and Automatic Frequency Selection provides a straight shot to a clear channel.

### ULX PROFESSIONAL

Step up to ULX Professional wireless, UHF systems for working musicians and professional sound installers. Multiple system configurations provide limitless options, each with a choice of legendary Shure microphones. Over 1400 selectable, pre-programmed frequencies are available, and Automatic Frequency Selection provides a straight shot to a clear channel. ULX Professional systems offer more advanced features and controls, including lockable settings and group scan function.

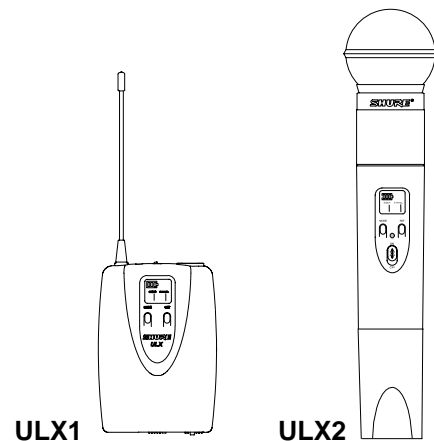
### ULXS4 DIVERSITY RECEIVER

- Automatic Frequency Selection
- Over 1400 selectable frequencies
- Predictive Diversity
- RF presence LED
- 5-segment audio meter
- 3-segment transmitter battery fuel gauge
- Multi-function LCD
- 1/2 rack design
- Detachable 1/4 wave antennas
- Durable plastic chassis
- Locking DC connector
- XLR and 1/4" outputs
- Mic/line switchable
- Advanced multi-function LCD
- 3-segment transmitter battery fuel gauge
- Squelch adjustment
- 1/2 rack design
- In-line power
- Remotable 1/2 wave antenna
- Frequency and volume lockout
- Rugged metal chassis
- Furnished rack hardware
- Locking DC connector
- XLR and 1/4" outputs

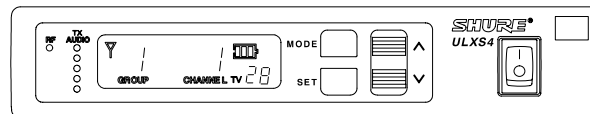
### ULXP4 DIVERSITY RECEIVER

- Automatic Frequency Selection with group scan function
- Over 1400 selectable frequencies
- Predictive Diversity
- 5-segment audio meter
- 5-segment RF meter
- 3-segment battery fuel gauge
- Backlit LCD shows group and channel
- Frequency and power settings
- Control lockout
- 8 hour battery life
- 300 ft (92m) operating range
- -20dB pad switch on ULX1

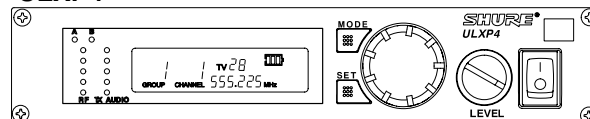
### ULX1 AND ULX2 TRANSMITTERS



ULXS4



ULXP4



## SPECIFICATIONS

**NOTE:** For a list of compatible frequencies that are usable in your area, refer to the supplied frequency supplement.

### RF Carrier Frequency Range

554.000 to 865.000 MHz (Available frequencies depend on the applicable regulations in the country where the system is used). Refer to the frequency supplement supplied with the system.

### Effective Range

100 m (300 ft.) under optimal conditions

**NOTE:** Actual working range depends on RF signal absorption, reflection, and interference

### Audio Frequency Response

25 to 15,000 Hz,  $\pm 2$  dB

**NOTE:** Overall system frequency response depends on the microphone element.

\*Output Level: Microphone Level = Line Level - 20 dB

### Transmitter Audio Polarity

Positive pressure on microphone diaphragm (or positive voltage applied to tip of WA302 phone plug) produces positive voltage on pin 2 (with respect to pin 3 of low impedance output) and the tip of the high impedance 1/4-inch output

### Transmitter Gain Adjustment Range

ULX1: 25 dB

ULX2: 25 dB

### Receiver Audio Output Level ( $\pm 38$ kHz deviation, 1 kHz tone)

XLR connector (into 600 ohm load): +3.9 dBV (line), -17 dBV (mic)

1/4 inch connector (into 3000 ohm load): -2 dBV

### Impedance

ULX1 (input): 1 Megohm

ULXS4, ULXP4 (output): 50 ohms at line level; 2000 ohms at mic level

### Modulation

$\pm 38$  kHz deviation compressor-expander system with pre- and de-emphasis.

### RF Power Output

ULX1, ULX2: 30 mW maximum

### Dynamic Range

>100 dB, A-weighted

### RF Sensitivity

1.26  $\mu$ V for 12 dB SINAD (typical)

### Image Rejection

80 dB typical

### Spurious Rejection

75 dB typical

### Ultimate Quieting (reference $\pm 38$ kHz deviation)

>105 dB, A-weighted

### System Distortion (reference $\pm 38$ kHz deviation, 1 kHz modulation)

0.3% total harmonic distortion, typical

### Power Requirements

ULX1, ULX2: 9V alkaline battery (Duracell MN1604 recommended); 8.4V Nicad optional

ULXS4, ULXP4: 14 - 18 Vdc (negative ground), 550 mA

### Battery Life

8 to 9 hours (with 9V Duracell MN1604 alkaline battery)

### Operating Temperature Range

-20° to 49° C (-4° to 120° F)

**NOTE:** Battery characteristics may limit this range.

### Overall Dimensions

ULX1: 96.5 mm H x 67 mm W x 26.7 mm D (3.86 x 2.68 x 1.10 in.)

ULX2/58, ULX2/BETA 58: 241 mm L x 51 mm Dia. (9.5 x 2 in.)

ULX2/87, ULX2/BETA 87: 216 mm L x 51 mm Dia. (8.5 x 2 in.)

ULX4S: 43 mm H x 214 mm W x 163 mm D (1.72 in. x 8.56 in. x 6.52 in.)

ULX4P: 43 mm H x 214 mm W x 172 mm D (1.72 in. x 8.56 in. x 6.88 in.)

### Net Weight

ULX1: 79 g (2.8 oz.) without battery

ULX2/58, ULX2/BETA 58: 295 g (10.4 oz.) without battery

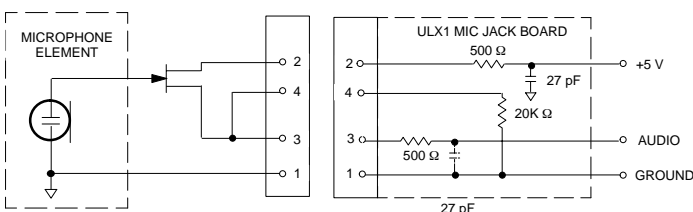
ULX2/87, ULX2/BETA 87: 193 g (6.8 oz.) without battery

ULXS4: 1049 g (2 lbs, 5 oz.)

ULXP4: 1105 g (2 lbs, 7 oz.)

## ULX1 Transmitter Input (Figure 1)

<b>Connector:</b>	TA4F
<b>Input Configuration:</b>	Unbalanced, active
<b>Actual Impedance:</b>	18 k $\Omega$ with lavalier microphone 1 M $\Omega$ with instrument cable
<b>Maximum Input Level:</b>	10 Vp-p (12 dBV) for 1% THD at minimum gain setting using 1 kHz signal.
<b>TA4F Connector Pin Assignments:</b>	Pin 1: Tied to Ground Pin 2: Tied to +5 V Pin 3: Tied to Audio Pin 4: Tied thru 20k $\Omega$ Resistor to Ground. (On instrument adapter cable, Pin 4 floats)
<b>Voltage for Remote Power:</b>	+5 V supplied to microphone cartridge



**NOTE:** LAVALIER MIC TIES PINS 3 AND 4 TOGETHER; THE GUITAR CABLE DOES NOT.

**FIGURE 1**

## ULX1 Transmitter Output

<b>Actual Impedance:</b>	50 $\Omega$
<b>Nominal Output Level:</b>	20 mW
<b>Maximum Output Level:</b>	30 mW
<b>Pin Assignments:</b>	Shell = Ground Center = Signal

**REPLACEMENT PARTS**

AC Adapter (120 VAC, 60 Hz)	PS40	Matte Silver Grille (ULX2/BETA 58)	RK265G
AC Adapter (230 VAC, 50/60 Hz, Europlug)	PS40E	Matte Silver Grille (ULX2/BETA 87A)	RK313
AC Adapter (230 VAC, 50/60 Hz, UK)	PS40UK	Matte Silver Grille (ULX2/BETA 87C)	RK312
AC Adapter (90 VAC, 50/60 Hz)	PS40J	Black Grille (ULX2/87)	RK214G
SM58 Cartridge with Grille (ULX2/58)	R158	Black Grille (ULX2/BETA 58)	RK323G
BETA 58 Cartridge with Grille (ULX2/BETA 58)	R178	Black Grille (ULX2/BETA 87A)	RK324G
SM87A Cartridge with Grille (ULX2/87)	R165	Belt Clip	44A8013A
BETA 87A Cartridge with Grille (ULX2/BETA 87A)	R166	1/4-Wave Antenna (554 - 698 MHz)	95A8699
BETA 87C Cartridge with Grille (ULX2/BETA 87C)	RPW100	1/4-Wave Antenna (748 - 865 MHz)	95B8699
Matte Silver Grille (ULX2/58)	RK143G	1/2-Wave Antenna (748 - 865 MHz)	95A8783
		1/2-Wave Antenna (662 - 698 MHz)	95C8783
		1/2-Wave Antenna (554 - 590 MHz)	95D8783

**FURNISHED ACCESSORIES**

Microphone Stand Adapter (ULX2)	WA371	Zipper Bag (ULX2)	26A14
Grip/Switch Cover (ULX2)	WA555	Screwdriver	80A498
Zipper Bag (ULX1)	26A13		

**OPTIONAL ACCESSORIES**

UHF Line Amplifier	UA830WB	1/2 Wave Antenna (554–590 MHz)	UA820C
UHF Powered Directional Antenna	UA870WB	1/2 Wave Antenna (662–698 MHz)	UA820D
UHF Antenna Power Distribution Amplifier (U.S.A.)	UA844US	1/2 Wave Antenna (746–784 MHz)	UA820E
UHF Antenna Power Distribution Amplifier (Europe)	UA844E	33 m (100 ft.) BNC–BNC cable	UA8100
UHF Antenna Power Distribution Amplifier (UK)	UA844UK	1.8 m (6 ft.) BNC–BNC cable	UA806
1/4 Wave Antenna (748–865 MHz)	UA400	Antenna Rack Panel Kit	UA440
1/4 Wave antenna (554–698 MHz)	UA400B	Rack Mount Kit for Two Receivers	UA507
1/2 Wave Antenna (774–865 MHz)	UA820A	Carrying Case	WA610
1/2 Wave Antenna (690–746 MHz)	UA820B	Remote Antenna Bracket with BNC Bulkhead Adapter	UA505
		Rack Mount Kit for Single Receiver	UA506

## **Architects' and Engineers' Specifications**

The wireless system shall operate in the UHF band between 554 MHz and 865 MHz, with the specific available frequency range being dependent on the user's locale. Effective range of the system, receiver to transmitter, shall be 100 meters (300 ft.), under optimal conditions. The system shall allow selection of over 1400 operating frequencies across 36 MHz of bandwidth in order to avoid RF interference. Optimal frequencies shall be selected automatically, ensuring that individual systems run at their highest level of performance, and that multiple systems in simultaneous use do not interfere with one another.

Each transmitter shall be powered by a single 9V battery. Transmitters shall have a power on/off switch, as well as a backlit LCD showing group and channel, peak indication, and battery strength. Available transmitters shall include a body pack for use with electric guitars, basses, and other electric instruments, as well as lavalier or headset microphones, and a handheld microphone for vocals. The body pack shall include a -20dB pad switch to compensate for higher- or lower-gain devices.

The receiver shall have a multi-function display showing group, channel, frequency, squelch level, transmitter battery strength, and locked/unlocked status. The system shall use diversity technology to improve reception, minimize signal dropouts, and achieve the best possible signal-to-noise ratio. Tone key squelch, and noise squelch circuitry shall be built in to the system to provide optimal sound quality and minimize unwanted noise. The receiver shall include an RF meter, an audio level meter, and a volume control.

The system shall be the Shure ULX Wireless.