

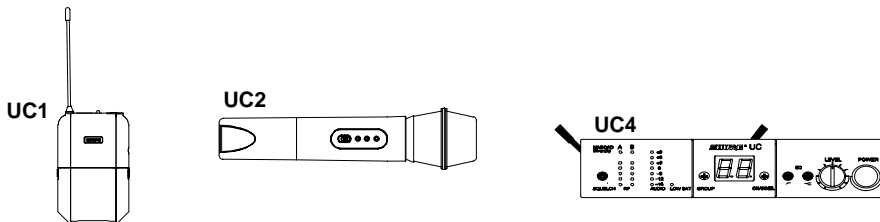
### UC Wireless Systems

The flexibility and performance of professional-quality UHF wireless, specifically designed for houses of worship, trade shows, schools, businesses and club installations. Available at a moderate price, UC systems can be configured with handheld, lavalier, head-

set and instrument cable options. Each UC system features more than 100 fully selectable frequencies and the ability to operate up to 16 systems simultaneously.

#### SYSTEM FEATURES

- **UHF Band Operation.** The Shure UC System operates within the UHF frequency band, which is less congested than the VHF band. Typically, UHF systems encounter less interference than VHF systems.
- **Frequency Agility.** The UC transmitter and receiver frequencies can be changed to avoid RF interference. This ensures interference-free operation, even in the most congested RF environments.
- **1/2 Rack Receiver Design.** The UC4 receiver interfaces with the HR (half-rack) format to save rack space. The UC4 receiver is supplied with hardware for single and dual rack mounting.
- **MARCAD Diversity.** Exclusive Shure MARCAD (MAXimum Ratio Combining Audio Diversity) circuitry monitors signals from both receiver sections and combines them into a single output signal. MARCAD provides superior reception and exceptional freedom from dropouts.
- **Built-in Equalizer (On Receiver).** Lets you tailor frequency response to match other devices in the system.
- **Tone Key Squelch Circuitry.** Prevents unwanted noise from entering the system, including the "pop" noise that occurs when the transmitter is turned on or off.
- **Noise Squelch Circuitry.** Analyzes signal quality rather than signal strength, virtually eliminating the possibility of annoying noise bursts.
- **Dual RF Meters (On Receiver).** Indicate received signal strength at each antenna, making it easier to identify "dead spots" in the performing area.
- **Audio Meter (On Receiver).** Lets you monitor received audio level and helps you optimize the transmitter gain setting.
- **Logic In/Out Terminal (On Receiver).** Provides logic interface with external devices.
- **Preconfigured Group/Channel and Frequency Setup.** Ensures frequency compatibility and simplifies installation of multiple UC systems. A "Group" is a preconfigured set of frequencies or channels that do not interfere with one another.
- **Optional Remote Mute feature on body-pack.** Lets you externally mute body pack transmitter during performance.
- **Frequency Selection** Up to 16 Shure UHF Wireless Systems can be operated simultaneously in a single installation.



UC WIRELESS SYSTEM COMPONENTS

### Specifications

#### RF Carrier Frequency Range

692–862 MHz, depending on locale

#### Working Range

152.4 m (500 ft), minimum, under typical conditions; 487.6 m (1600 ft) line of sight

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

#### Audio Frequency Response

45 to 15,000 Hz,  $\pm 2$  dB.

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

#### Gain Adjustment Range

UC1: -6 to 34 dB

UC2: -6 to 26 dB

#### Modulation

$\pm 15 \pm 45$  kHz deviation, depending on RF range; compressor-expander system with pre-and de-emphasis

#### RF Power Output

10 mW – 50 mW typical, depending on RF range

#### Dynamic Range

>85 dB or >100 dB, depending on RF range; A-weighted

#### Receiver Audio Output Level (Maximum)

+5 dBu typical, unbalanced output

+14 dBu typical, balanced output

#### RF Sensitivity

UC4: -108 dBm at 12 dB SINAD

#### Image Rejection

90 dB typical

#### Spurious Rejection

70 dB typical

#### Ultimate Quieting (ref. 40 kHz deviation)

>100 dB, A-weighted

**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

**System Distortion**

(ref. ±40 kHz deviation, 1 kHz modulation)

0.4% Total Harmonic Distortion typical

**Power Requirements**

UC1, UC2: 9V alkaline battery (Duracell MN1604 recommended); Nicad optional

UC4: 15 Vdc , 600 mA 50/60 Hz

Power Consumption: 600 mA x 15 V, maximum

**Transmitter Battery Life (Typical)**

8 hours (with Duracell MN1604 9V alkaline battery)

**Operating Temperature Range**

-7° to 49° C (20° to 120° F) **NOTE:** Battery characteristics may limit this range.

**Overall Dimensions**

UC1: 99.06 mm L x 63.50 mm W x 22.86 mm D (3–29/32 L x 2–1/2 W x 29/32 in. D)

**UC1 Transmitter Input (Figure 1)**

<b>Connector:</b>	4-Pin female miniature connector (TA4F) or LEMO connector (optional)
<b>Input Configuration:</b>	Unbalanced, active
<b>Actual Impedance:</b>	18 kΩ with lavalier microphone 1 MΩ with instrument cable
<b>Maximum Input Level:</b>	9 Vp-p (10 dBV) for 1% THD at minimum gain setting using 1 kHz signal.
<b>Miniature connector (TA4F) Pin Assignments:</b>	Pin 1: Tied to Ground Pin 2: Tied to +5 V Pin 3: Tied to Audio Pin 4: Tied thru 20kΩ Resistor to Ground. (On instrument adapter cable, Pin 4 floats)
<b>LEMO Connector Pin Assignments:</b>	Pin 1: Tied to Pin 3 and 10 kW to Ground Pin 2: +5V Pin 3: Tied to Pin 1 Pin 4: Tied to Shield (Ground for Positive Bias)
<b>Voltage for Remote Power:</b>	+5 V supplied to microphone cartridge

**UC4 Receiver Input**

Connector:	Antenna	Power Input
<b>Connector Type:</b>	BNC	dc style
<b>Actual Impedance:</b>	50 Ω	—
<b>Nominal Input Level:</b>	-95 to -30 dBm	15 Vdc
<b>Maximum Input Level:</b>	+6 dBm (-20 dBm recommended)	17 Vdc
<b>Pin Assignments:</b>	Shell = Ground Center = Signal	Center pin positive

UC2/58:241.30 mm L x 50.8 mm Dia. (9–1/2 L x 2 in. Dia.)

UC2/BETA 58: 241.30 mm L x 50.80 mm Dia. (9–1/2 L x 2 in. Dia.)

UC2/87:215.90 mm x 50.80 mm Dia. (8–1/2 L x 2 in. Dia.)

UC2/BETA 87: 215.90 mm L x 50.8 mm Dia. (8–1/2 L x 2 in. Dia.)

UC4: 44.50 mm H x 197.40 mm W x 214.30 mm D (1–3/4 L x 7.77 W x 8.44 in. D)

**Net Weight**

UC1: 73.50 g (2.59 oz.) without battery

UC2/58, U2/BETA 58: 311.9 g (11 oz.) without battery

UC2/87, U2/BETA 87: 198.5 g (7 oz.) without battery

UC4: 1.22 kg (2 lbs, 11 oz.)

**Certification**

UC1, UC2: RA Type Approved to ETS 300 445; meets requirements of MPT 1350.

UC4: RA Type Approved to ETS 300 445; meets requirements of MPT 1350. Approved to ETS 300 445. Meets Low Voltage Directive.

UC Type Approved and EMC Approved systems are eligible to carry the CE marking.

**UC1 Transmitter Output**

<b>Antenna:</b>	Flexible 1/4 wave wire
<b>Actual Impedance:</b>	50 Ω
<b>Nominal Output Level:</b>	+10 dBm
<b>Maximum Output Level:</b>	+10 dBm

**UC2 Transmitter Input**

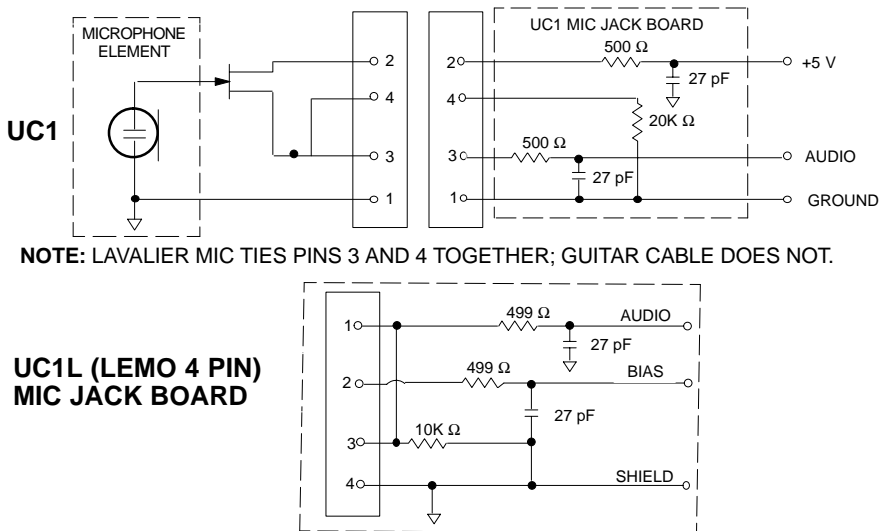
<b>Input Configuration:</b>	Unbalanced, active
<b>Actual Impedance:</b>	25 kΩ
<b>Maximum Input Level:</b>	9 Vp-p (10 dBV) for 1% THD at minimum gain setting using 1 kHz signal.

**UC2 Transmitter Output**

<b>Antenna:</b>	Internal dipole
<b>Actual Impedance:</b>	50 Ω
<b>Nominal Output Level:</b>	+10 dBm
<b>Maximum Output Level:</b>	+10 dBm

**UC4 Receiver Output**

Connector:	High Z Audio	Low Z Audio
<b>Output Configuration:</b>	Unbalanced	Balanced
<b>Actual Impedance:</b>	1 kΩ	44Ω
<b>Nominal Input Level:</b>	—	—
<b>Output Level:</b>	5 dBu maximum	14 dBu maximum
<b>Pin Assignments:</b>	Tip = Hot Ring/ Sleeve = Gnd	1 = Ground 2 = Hot 3 = Hot



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

**Figure 1**

**FURNISHED ACCESSORIES**

Microphone Stand Adapter (UC2)	WA370A	Screwdriver	80A498
Zipper Bag (UC1)	26A13	1/4 Wave Antenna	UA400
Zipper Bag (UC2)	26A14		

**OPTIONAL ACCESSORIES**

Instrument Adapter Cable (UC1)	WA302	Antenna/Power Distribution System, 230 Vac	UA845-KK
4-Pin Female Miniature Connector, TA4F (UC1)	WA330	Directional Antenna for UC4 Receiver (If using the UA845-KK Antenna/Power Distribution System)	UA870KK
In-Line Audio Switch (UC1)	WA360	Remote Mute Switch for UC1	UA101
1.8 Meter (6 ft) Receiver-Mixer Cable (1/4" phone to XLR)	WA410	Passive Antenna Splitter/Combiner	UA220
0.6 Meter (2 ft.) Antenna Extension Cable	UA802	1/2 Wave Omnidirectional Antenna for UC4 Receiver	UA820A
7.6 Meter (25 ft) Antenna Extension Cable	UA825	Remote Mount Antenna Kit	UA500
15.2 (50 ft) Meter Antenna Extension Cable	UA850	Front Mount Antenna Kit	UA600
In-Line Active Remote Antenna Kit (838 – 862 MHz) (If using the UA845-KK Antenna/Power Distribution System)	UA830KK		

**REPLACEMENT PARTS**

Hardware Kit (screwdriver, mounting feet, cable clamps)	90VX1371	Matte Silver Grille (UC2/BETA 58)	RK265G
Bulkhead Adapters for Front-Mounting Antennas	95A8647	Matte Silver Grille (UC2/BETA 87A)	RK313G
15 Vdc Power Cord (230 VAC)	PS40UK	Black Grille (UC2/87C)	RK214G
SM58 Cartridge with Grille (UC2/58)	R158	Black Grille (UC2/BETA 58)	RK323G
BETA 58A Cartridge with Grille (UC2/BETA 58)	R179	Black Grille (UC2/BETA 87A)	RK324G
SM87 Cartridge with Grille (UC2/87)	R165	Belt Clip (UC1)	44A8013
BETA 87A Cartridge with Grille (UC2/BETA 87A)	R166	Mounting Brackets, Long	53A8458
BETA 87C Cartridge with Grille (UC2/BETA 87C)	RPW100	Mounting Brackets, Short	53A8454
Matte Silver Grille (UC2/58)	RK143G	Mounting Brackets, Link	31A8138
		UC4 Logic Connector (Phoenix)	95A8580

**Architects' and Engineers' Specifications**

The wireless system shall operate in the UHF band between 692 MHz and 862 MHz, with the specific range being dependent on the user's locale. The system shall include the option of changing the operating frequency in order to avoid RF interference, enabling up to 16 systems to operate simultaneously in the same location. Preconfigured group, channel and frequency setups shall be available to ensure that multiple systems in use do not interfere with one another.

All transmitters shall be powered by a single 9V battery and shall have a power on/off switch, an optional mute switch, an LED indicating that power is on, and an LED indicating low battery power. Available transmitters shall include: a body pack for use with electric guitars, basses, and other electric instruments, as well as lavalier or headworn microphones; and a handheld microphone for vocals.

The receiver shall be a half-rack (HR) design. Mounting hardware for single or dual rack mounting shall be supplied. The system shall use technology such as MARCAD signal combining circuitry to improve reception, minimize signal dropouts, and achieve the best possible signal-to-noise ratio. An equalizer, 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 dual RF meters, an audio level meter, and a logic in/out terminal for interfacing with external devices. The receiver shall have a volume control and an adjustable noise squelch control.

The system shall be the Shure UC Wireless.