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, headset 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.

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**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

**Audio Frequency Response**
45 to 15,000 Hz, ±2 dB.

**Gain Adjustment Range**
UC1: –6 to 34 dB
UC2: –6 to 26 dB

**Modulation**
±15 ±45kHz deviation, depending on RF range; compressor–expander system with pre–and de–emphasis

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**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)
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 50.8 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, UC2/BETA 58: 311.9 g (11 oz.) without battery
UC2/87, UC2/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 Input (Figure 1)
Connector: 4-Pin female miniature connector (TA4F) or LEMO connector (optional)
Input Configuration: Unbalanced, active
Actual Impedance: 18 kΩ with lavalier microphone
Pin Assignments: Pin 1: Tied to Ground
Pin 2: Tied to +5 V
Pin 3: Tied to Audio
Pin 4: Tied thru 20kΩ Resistor to Ground.
Voltage for Remote Power: +5 V supplied to microphone cartridge

UC1 Transmitter Output
Antenna: Flexible 1/4 wave wire
Actual Impedance: 50 Ω
Nominal Output Level: +10 dBm
Maximum Output Level: +10 dBm

UC2 Transmitter Input
Input Configuration: Unbalanced, active
Actual Impedance: 25 kΩ
Maximum Input Level: 9 Vp-p (10 dBV) for 1% THD at minimum gain setting using 1 kHz signal.

UC2 Transmitter Output
Antenna: Internal dipole
Actual Impedance: 50 Ω
Nominal Output Level: +10 dBm
Maximum Output Level: +10 dBm

UC4 Receiver Input
Connector: BNC
type: dc style
Actual Impedance: 50 Ω
Nominal Input Level: –95 to –30 dBm
Maximum Input Level: +6 dBm
Pin Assignments: Shell = Ground, Center = Signal

UC4 Receiver Output
Connector: High Z Audio Low Z Audio
Configuration: Unbalanced Balanced
Actual Impedance: 1 kΩ 44Ω
Nominal Input Level: 17 Vdc
Output Level: 5 dBu maximum 14 dBu maximum
Pin Assignments: Tip = Hot, Ring/ Sleeve = Gnd, 1 = Ground, 2 = Hot, 3 = Hot
**FURNISHED ACCESSORIES**

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

**OPTIONAL ACCESSORIES**

- Instrument Adapter Cable (UC1) WA302
- 4–Pin Female Miniature Connector, TA4F (UC1) WA330
- In-Line Audio Switch (UC1) WA360
- 1.8 Meter (6 ft) Receiver-Mixer Cable (1/4" phone to XLR) WA410
- 0.6 Meter (2 ft.) Antenna Extension Cable UA802
- 7.6 Meter (25 ft) Antenna Extension Cable UA825
- 15.2 (50 ft) Meter Antenna Extension Cable UA850
- 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
- Bulkhead Adapters for Front–Mounting Antennas 95A8647
- 15 Vdc Power Cord (230 VAC) PS40UK
- SM58 Cartridge with Grille (UC2/58) R158
- BETA 58A Cartridge with Grille (UC2/BETA 58) R179
- SM87 Cartridge with Grille (UC2/87) R165
- BETA 87A Cartridge with Grille (UC2/BETA 87A) R166
- BETA 87C Cartridge with Grille (UC2/BETA 87C) RPW100
- Matte Silver Grille (UC2/58) RK265G
- Matte Silver Grille (UC2/BETA 58) RK313G
- Matte Silver Grille (UC2/BETA 87A) RK214G
- Matte Silver Grille (UC2/BETA 87C) RK323G
- Black Grille (UC2/87C) RK232G
- Black Grille (UC2/BETA 87A) RK234G
- Black Grille (UC2/BETA 87C) RK324G
- Belt Clip (UC1) 44A8013
- Mounting Brackets, Long 53A8458
- Mounting Brackets, Short 53A8454
- 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 lavaliere 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.