

# UHF-R<sup>®</sup> WIRELESS

## Premier Wireless Technology



Offering you more productivity, more reliability and more control, UHF-R is premier wireless technology that helps you master the complexities of large-scale wireless installations. UHF-R takes wireless to a completely new level.

### Robust, Reliable RF Performance

- 60 MHz bandwidth for up to 40 simultaneous compatible systems/band
- Track Tuning filtering technology
- Switchable transmitter output power

### Superior Wireless Sound Quality

- Shure's patented Audio Reference Companding

### Integrated Networking / Advanced Control

- Wireless Workbench software
- Ethernet and USB compatibility
- AMX/Crestron compatibility

### Fast Setup and Operation

- Networked Automatic Frequency Selection
- Group Scan
- Infrared Automatic Transmitter Setup

### Rugged & Durable Construction

- Sweat-resistant all-metal construction
- Low-profile, lightweight magnesium bodypack
- Shure's rigorous mechanical and performance standards

#### APPLICATIONS

- Live Touring Sound
- Installed Sound
- High-End Theater
- Broadcast

#### PRODUCT HIGHLIGHTS

- Crystal Clear Audio
- Audio Reference Companding
- Wide Variety of Legendary Shure Microphone Capsules
- Included Wireless Workbench Software

# System Specifications

System RF Carrier Frequency Range	470-952 MHz (available frequencies depend upon applicable country regulations)
Working Range	150 m (500 ft.) under typical conditions; 500 m (1600 ft.) line of sight (NOTE: Operating range depends on many variables, including RF signal absorption, reflection and interference)
Audio Frequency Response	40-18,000 Hz (+1 dB, -3 dB). (NOTE: Overall system frequency response depends on the microphone element)
Modulation	FM (45 kHz max. deviation), compander system with pre- and de-emphasis
System Distortion	<0.3% Total Harmonic Distortion typical (ref. $\pm$ 45 kHz deviation, 1 kHz modulation)
Dynamic Range	>105 dB, A-weighted
Ultimate Quieting	>100 dB A-weighted (ref. 45kHz deviation)
Operating Temperature Range	-18° to +57° C (0° to 135° F) (NOTE: Battery characteristics may limit this range)

## Frequency Range

Band	Range	Transmitter Output	
		Handheld	Bodypack
H4E	518-578 MHz	10 / 50	10 / 50
H4	518-578 MHz	10 / 50	10 / 100
J5E	578-638 MHz (578-608, 614-638)	10 / 50	10 / 50
J5	578-638 MHz (578-608, 614-638)	10 / 50	10 / 100
L3E	638-698 MHz	10 / 50	10 / 50
L3	638-698 MHz	10 / 50	10 / 50
Q5	740-814 MHz	10 / 50	10 / 50
R9	790-865 MHz	10 / 50	10 / 50
Q6	740-752 MHz	10	10
A24	779-788 / 797-806 MHz	10	10
JBX	806-810 MHz	10	10
Q10A	740-787 MHz	10 / 50	10 / 50
G1	470-530 MHz	10 / 50	10 / 100
X1	944-952 MHz	10 / 50	10 / 100

## System Architectural Specifications

The wireless system shall operate in the UHF band between 518 MHz and 865 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 108 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 2 AA batteries and shall have a power on/off switch. The bodypack will have an LED indicating that power is on. Available transmitters shall include: a body pack for use with electric guitars, basses, and other electric instruments, and a handheld microphone for vocals. The transmitters shall have a DC/DC converter to ensure consistent performance, even if battery voltages change.

The receiver shall have a user-programmable, menu-driven LCD showing group, channel, frequency, name, squelch level, and locked/unlocked status. 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 into the system to provide optimal sound quality and minimize unwanted noise. The receiver shall include dual RF meters (one for each antenna), an audio level meter, and a Networking Interface connector for computer control and monitoring. The receiver shall have a volume control and an adjustable noise squelch control. The system shall be the Shure UHF-R Wireless.

## Furnished Accessories

WA371	Microphone Stand Adapter (UR2)
26A13	Zipper Bag (UR1)
26A14	Zipper Bag (UR2)
95A9023	Antenna Extension Cables (2)
WA340	Hardware Kit, Locking Connector
UA700	Bodypack Antenna, 470-530 MHz
UA710	Bodypack Antenna, 518-578 MHz
UA720	Bodypack Antenna, 578-698 MHz
UA730	Bodypack Antenna, 740-865 MHz
UA740	Bodypack Antenna, 944-952 MHz
UA820	Two Antennas (UR4), Band Dependent
95A9053	Bodypack Transmitter Carrying Case
95N2035	RF Distribution Cables (2)

## Optional Accessories

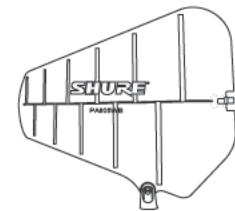
RPW112	SM58 Head with Grille
RPW114	SM86 Head with Grille
RPW118	BETA 58 Head with Grille
RPW120	BETA 87A Head with Grille
RPW122	BETA 87C Head with Grille
RPW116	SM87A Head with Grille
RPW180	KSM9/SL Head with Grille
RPW182	KSM9HS/SL Head with Grille
RPW184	KSM9/BK Head with Grille
RPW186	KSM9HS/BK Head with Grille
RK143G	Matte Silver Grille (SM58)
RPM266	Matte Silver Grille (SM86)
RK265G	Matte Silver Grille (BETA 58)
RK214G	Black Grille (SM87)

RK312	Matte Silver Grille (BETA 87C)
RK323G	Black Grille (BETA 58)
RK324G	Black Grille (BETA 87A/BETA 87C)
44A8031	Belt Clip
WA580B	Body-Pack Pouch (Black), UR1
WA580W	Body-Pack Pouch (White), UR1
WA581B	Body-Pack Pouch (Black), UR1M
WA581W	Body-Pack Pouch (White), UR1M
WA335	3-Pin mini Lemo conversion kit
WA336	3-Pin mini Lemo plug for Lavalier
WA337	Assembly tool for WA336
A85WS	Popper Stopper™ Windscreen

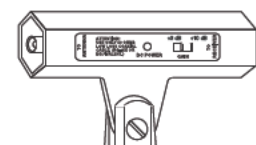
## Antenna Combiners and Accessories

- Antennas and receivers must be from the same frequency band. Please check with your local Shure distributor for compatibility information.
- The supplied 1/2 wave antennas can be remotely mounted or mounted directly to the UA845.
- Antennas and cables for use with the UA845 can also be used with stand-alone UHF-R receivers.

UA221	Passive Antenna/Splitter Combiner Kit (recommended for 2 receivers)
UA820	1/2 Wave Omnidirectional Receiver Antenna
UA825	25' Antenna Cable (RG-8/X)
UA830	In-Line RF Amplifier
UA845(US/E/UK)	UHF Antenna Power Distribution Amplifier (recommended for more than 10 receivers) (US, Europe, or UK models)
UA850	50' Antenna Cable (RG-8/X)
UA860	1/2 Wave, Omnidirectional Antenna
UA870	Active Directional Antenna
PA805	Passive Unidirectional Antenna
UA8100	100' Antenna Cable



PA805  
Unidirectional Antenna



UA830  
In-Line RF Amplifier

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# Component Specifications

## UR4S+ & UR4D+ Diversity Receiver

### Overview

The UR4S+ and UR4D+ receivers provide single and dual-channel options for the premium Shure UHF-R Wireless line. Using the latest in wireless technologies, UHF-R receivers provide advanced control and robust flexibility for a wide range of professional uses.

- Up to 2400 selectable frequencies across 60 MHz bandwidth
- Track Tuning Filtering technology
- Up to 40 preset compatible systems/band (160 w/multiple bands, region dependent)
- Networked automatic frequency selection
- Automatic transmitter setup (including custom group upload)
- Flash memory to store six 60-channel custom frequency groups
- Patented Audio Reference Companding
- Multi-function bit-mapped backlit LCD
- Built-in USB & ethernet network compatibility
- Wireless Workbench control/monitoring software
- Remoteable antennas
- RF distribution ports allow up to 10 receivers to share a single pair of antennas.
- Microprocessor-controlled diversity

### Product Specifications

Overall Dimensions	44 mm H x 483 mm W x 366 mm D (1.72 x 19.00 x 14.39 in.)
Net Weight	UR4S+: 10.9 lbs (5.0 kg) UR4D+: 11.2 pounds (5.1 kg)
Housing Galvanized Steel	Galvanized Steel
Audio Output Level	+ 24 dBu (-6 dBu mic)
Output Impedance	200 Ω active balanced (150 Ω mic)
RF Sensitivity	UR4S+: -110 dBm typical for 12 dB SINAD; -105 dBm typical for 30 dB SINAD UR4D+: -107 dBm typical for 12 dB SINAD; -102 dBm typical for 30 dB SINAD
Image Rejection	110 dB typical
Spurious Rejection	90 dB typical
Audio Polarity	Positive pressure on microphone diaphragm (or positive voltage applied to tip of WA302 phone plug) produces positive voltage on XLR output pin 2 with respect to XLR pin 3 and on the tip of the 1/4-inch output jack.
Power Requirements	90 to 230 Vac, 50/60 Hz
Power Consumption	UR4S+: 9.6 – 13.2 W; UR4D+: 12 – 16 W; UA845: 15 -16 W

### Available Models

UR4S+	Single Channel Wireless Receiver
UR4D+	Dual Channel Wireless Receiver

### Architectural Specifications

The wireless microphone system shall operate in the UHF band and provide a tone key (32,768 kHz) to increase reliability and to minimize unwanted noise. The system shall allow to change the operating frequency in 25 kHz steps in order to avoid RF interference, enabling up to 47 systems to operate simultaneously in one frequency band. Preconfigured group, channel and frequency setups shall be available to ensure that multiple systems in use do not interfere with one another. Additionally multiple free programmable frequency groups shall allow to create customized setups. An IR synchronization between receiver and transmitter for fast setup shall be implemented.

The receiver shall have a user programmable menu-driven LC display showing group, channel, frequency, name, output level, squelch level, and lock status as well as the most important transmitter settings. It shall use technology such as MARCAD® signal combining circuitry for improved reception, minimized signal dropouts, and the best possible signal-to-noise ratio. Tone key squelch, and noise squelch circuitry shall be implemented to provide optimal sound quality and minimize unwanted noise. The receiver shall include an RF meter for each antenna, an audio level meter, and networking interface connectors for PC control and monitoring. The receiver shall have a volume control and an adjustable noise squelch control.



RF distribution ports allow up to 10 receivers to share a single pair of antennas.



UR4S+ Diversity Receiver Front



UR4D+ Diversity Receiver Front



UR4S+ Diversity Receiver Back



UR4D+ Diversity Receiver Back

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# Component Specifications

## UR2 Handheld Transmitter

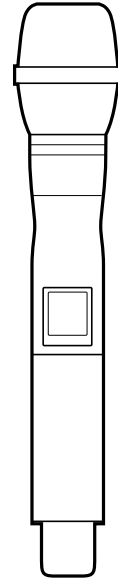
### Overview

UHF-R handheld transmitters boast a rugged, lightweight construction and an antenna design which advances RF transmission reliability. The transmitter design allows for interchangeable microphone cartridges. The UR2 is offered with SM58®, SM86, SM87A, Beta 58A®, Beta 87A™, Beta 87C™, and KSM9. UHF-R Wireless Systems feature KSM9 as the premier choice in handheld vocal microphones.

- Switchable RF power
- Frequency and power lockout
- Bit-mapped backlit LCD
- Powered by 2 AA batteries
- Infrared automatic transmitter sync
- All metal die-cast construction
- Interchangeable cartridges

### Product Specifications

Gain Adjustment Range	-10 to +20 dB
Maximum Input Level	+4.8 dBu
Input Impedance	> 1 MΩ
Output Impedance	50 Ω
RF Power Output	10 mW or 10/50 mW (region dependent)
Housing	Aluminum die-cast handle and aluminum machined battery cup
Power Requirements	2 AA alkaline
Battery Life (Typical)	6 hours (high power), 9.5 hours (low power)
Overall Dimensions	UR2/SM58: 261 mm L x 51 mm Dia. (10.27 x 2 in.) UR2/SM86: 261 mm L x 51 mm Dia. (10.27 x 2 in.) UR2/SM87A: 254 mm x 51 mm Dia. (10 x 2 in.) UR2/KSM9/BK, UR2/KSM9/SL: 250 mm x 49 mm Dia. (9 7/8 x 1 15/16 in.) UR2/BETA 58: 258 mm L x 51 mm Dia. (10.15 x 2 in.) UR2/BETA 87A, UR2/BETA 87C: 254 mm x 51 mm Dia. (10 x 2 in.) UR2/K9HS/SL, UR2/K9HS/BK: 191mm L x 49 mm Dia. (7 1/2 x 1 15/16 in.)
Net Weight	UR2/SM58: 356 g (12.6 oz.) without battery UR2/BETA 58: 314 g (11.1oz.) without battery UR2/SM86: 317 g (11.2 oz.) without battery UR2/SM87A: 298 g (10.5 oz.) without battery UR2/KSM9/BK, UR2/KSM9/SL: 410 g (14.5 oz.) without battery UR2/BETA 87A, U2/BETA 87C: 325 g (11.5 oz) without battery



**UR2**  
Handheld Transmitter (shown with mic capsule)

### Microphone Options

UR2/SM58	UR2 Handheld Transmitter with SM58 Cardioid Microphone
UR2/SM86	UR2 Handheld Transmitter with SM86 Cardioid Microphone
UR2/SM87A	UR2 Handheld Transmitter with SM87A Supercardioid Microphone
UR2/BETA 58	UR2 Handheld Transmitter with Beta 58A Supercardioid Microphone
UR2/BETA 87A	UR2 Handheld Transmitter with Beta 87A Supercardioid Microphone
UR2/BETA 87C	UR2 Handheld Transmitter with Beta 87C Cardioid Microphone
UR2/KSM9/BK	UR2 Handheld Transmitter with KSM9 Dual-Diaphragm Condenser Microphone, Black
UR2/KSM9/SL	UR2 Handheld Transmitter with KSM9 Dual-Diaphragm Condenser Microphone, Champagne
UR2/K9HS/SL	UR2 Handheld Transmitter with KSM9HS Dual-Diaphragm Condenser Microphone, Champagne
UR2/K9HS/BK	UR2 Handheld Transmitter with KSM9HS Dual-Diaphragm Condenser Microphone, Black

### Architectural Specifications

The wireless handheld transmitter shall operate in the UHF band and shall provide a tone key (32,768 kHz) to increase reliability and to minimize unwanted noise. The system shall allow to change the operating frequency in 25 kHz steps in order to avoid RF interference, enabling up to 47 systems to operate simultaneously in one frequency band. Preconfigured group, channel and frequency set-ups shall be available to ensure that multiple systems in use do not interfere with one another.

The transmitter shall be programmable through a menu as well as infrared synchronization (including the sync of free programmable custom groups). The transmitter shall provide exchangeable micro-phone capsules as well as a backlit LC display showing name, battery gauge, carrier frequency, gain and lock settings. LCD menu controls should cover adjustable audio gain, tunable carrier frequency, switchable RF power, and frequency and power lock settings as well as the access to the RF Safety Mode (transmitter operation with muted RF carrier).

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# Component Specifications

## UR1 Bodypack Transmitter

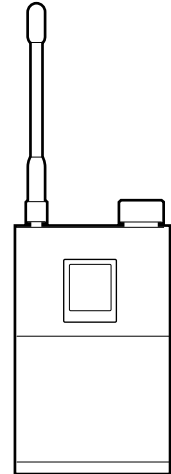
### Overview

The UR1 Bodypack Transmitter is constructed of lightweight and rugged magnesium to be exceptionally unobtrusive and abuse-resistant. Choose from a wide variety of lavalier and headworn microphones to tailor to your application.

- Switchable RF Power (10/50mW or 10/100mW, Region Dependent)
- Low Profile, Compact Design
- Frequency and Power Lockout
- Bit-mapped Backlit LCD Display
- 2 AA Batteries - Up to 8 hours Continuous Use
- Automatic Transmitter Setup
- Durable, Light-weight Magnesium Construction
- Removable Bodypack Antenna

### Product Specifications

Gain Adjustment Range	-20 dB to +35 dB
Maximum Input Level	+10 dBu (sensitivity 0 dB), +20 dBu (sensitivity -10 dB)
Input Impedance	18 k $\Omega$ with lavalier microphone; 1 M $\Omega$ with instrument cable
Output Impedance	50 $\Omega$
RF Power Output	10 mW, 10/50 mW, or 10/100 mW (region dependent)
Housing	Cast magnesium
Power Requirements	2 AA alkaline or rechargeable batteries
Battery Life	8 hours typical
Current Drain	180 mA max. (normal RF power setting), 240 mA max. (high RF power setting)
Overall Dimensions	97.5 mm L x 60 mm W x 17 mm D (3.84 x 2.38 x 0.66 in.)
Net Weight	97 g (3.4 oz.) without batteries



**UR1**  
Bodypack Transmitter

### Microphone Options

WL93	WL93 condenser capsule, omnidirectional lavalier mic
WL183	WL183 condenser capsule, omnidirectional lavalier mic
WL184	WL184 condenser capsule, supercardioid lavalier mic
WL185	WL185 condenser capsule, cardioid lavalier mic
WL50	WL50 condenser capsule, omnidirectional lavalier mic
WL51	WL51 condenser capsule, cardioid lavalier mic
WH30	WH30 condenser capsule, cardioid headworn mic
WCM16	WCM16 condenser capsule, hypercardioid headworn mic
WBH53	WBH53 condenser capsule, omnidirectional headworn mic
WBH54	WBH54 condenser capsule, supercardioid headworn mic
WB98H/C	WB98H/C condenser capsule, cardioid instrument clip mic

### Architectural Specifications

The wireless bodypack transmitter shall operate in the UHF band and shall provide a tone key (32,768 kHz) to increase reliability and to minimize unwanted noise. The system shall allow to change the operating frequency in 25 kHz steps in order to avoid RF interference, enabling up to 47 systems to operate simultaneously in one frequency band. Preconfigured group, channel and frequency setups shall be available to ensure that multiple systems in use do not interfere with one another.

The transmitter shall be programmable through a menu as well as infrared synchronisation. The transmitter shall provide a threaded connector to securely lock microphones or instrument cables. The backlit LC display shall show name, battery gauge, carrier frequency, as well as gain and sensitivity settings. The LCD menu controls should cover separately adjustable gain (-10 to +20 dB) and input sensitivity (attenuation pad: +15, 0, -10 dB), tunable carrier frequency, switchable RF power, frequency and power lock as well as the access to the RF Safety Mode (transmitter operation with muted RF carrier).

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# Component Specifications

## UR1M Micro-Bodypack Transmitter

### Overview

Operating on the premium Shure UHF-R® Wireless platform, the UR1M Micro-Bodypack Transmitter offers superior wireless audio and an industry-leading tuning range – all in a durable, ultra-compact and lightweight form factor.

- Half the size of standard bodypacks
- Optimized instrument input
- User selectable RF power, 10mW and 50mW
- Up to 9 hours battery life (output-power and battery type dependant)
- Selectable alkaline, lithium primary, or NiMH battery curves for accurate power metering
- Audio level metering on body pack
- Backlit LCD
- TQG or Lemo-3 connector types available
- Extended sweat resistance
- Remote monitoring with Wireless Workbench® 5

### Product Specifications

Gain Adjustment Range	20 dB to +35 dB
Maximum Input Level	+5 dBu (sensitivity 0 dB), +15 dBu (sensitivity -10 dB)
Input Impedance	200 kΩ TQG, 8.2 kΩ LEMO3
Output Impedance	50 Ω
RF Power Output	10 mW or 10/50 mW (region dependent)
Housing	Cast magnesium
Connector Types	LEMO 3, TQG
Power Requirements	2 AAA alkaline, lithium primary, or NiMH batteries
Battery Life	Alkaline: 6 hours (normal RF power), 4 hours (high RF power) Lithium primary: 9 hours (normal RF power), 7 hours (high RF power) NiMH 1000 mAh: 6 hours (normal RF power), 4 hours (high RF power)
Overall Dimensions	49 mm L x 60 mm W x 17 mm D (1.92 x 2.38 x 0.66 in.)
Net Weight	62 g (2.2 oz.) without batteries

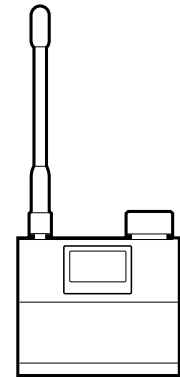
### Microphone Options

WL93	WL93 condenser capsule, omnidirectional lavalier mic
WL183	WL183 condenser capsule, omnidirectional lavalier mic
WL184	WL184 condenser capsule, supercardioid lavalier mic
WL185	WL185 condenser capsule, cardioid lavalier mic
WL50	WL50 condenser capsule, omnidirectional lavalier mic
WL51	WL51 condenser capsule, cardioid lavalier mic
WH30	WH30 condenser capsule, cardioid headworn mic
WCM16	WCM16 condenser capsule, hypercardioid headworn mic
WBH53	WBH53 condenser capsule, omnidirectional headworn mic
WBH54	WBH54 condenser capsule, supercardioid headworn mic
WB98H/C	WB98H/C condenser capsule, cardioid instrument clip mic

### Architectural Specifications

The wireless bodypack transmitter shall operate in the UHF band and shall provide a tone key (32,768 kHz) to increase reliability and to minimize unwanted noise. The system shall allow to change the operating frequency in 25 kHz steps in order to avoid RF interference, enabling up to 47 systems to operate simultaneously in one frequency band. Preconfigured group, channel and frequency setups shall be available to ensure that multiple systems in use do not interfere with one another.

The transmitter shall be programmable through a menu as well as infrared synchronisation. The transmitter shall provide a threaded connector to securely lock microphones or instrument cables. The backlit LC display shall show name, battery gauge, carrier frequency, as well as gain and sensitivity settings. The LCD menu controls should cover separately adjustable gain (-10 to +20 dB) and input sensitivity (attenuation pad: +15, 0, -10 dB), tunable carrier frequency, switchable RF power, frequency and power lock as well as the access to the RF Safety Mode (transmitter operation with muted RF carrier).



**UR1M**  
Micro-Bodypack Transmitter

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