SHURE®

UT SERIES

uhf

WIRELESS SYSTEM

THE GUITARIST ***UHF***

THE PRESENTER ***UHF***

THE VOCAL ARTIST ***UHF***

THE HEADSET ***UHF***

THE TWO MINUTE USER'S GUIDE

The instructions on this page will help you get your UT Series system up and running in minutes. For more detailed instructions, read the section of this manual that applies to your system.

RECEIVER SETUP

1. Connect the supplied ac power adapter to the DC INPUT connector on the back of the receiver. Insert the adapter's cable into the power cable retainer on the bottom of the unit. Plug the adapter into a wall socket or other electrical outlet. The green POWER light on the receiver will glow.
2. If you are using The Guitarist-UHF™, connect the receiver output to a guitar amplifier using any standard guitar cable. If you are using The Vocal Artist-UHF™, The Headset-UHF™, or The Presenter-UHF™, connect the receiver output to an audio mixer using an XLR to XLR audio cable.
3. Raise the antennas and point away from each other at a 45° angle from vertical.

TRANSMITTER SETUP

1. Open the transmitter battery compartment and install a 9 V battery. Observe proper battery polarity ("+/–").
2. If you are using The Vocal Artist-UHF, no further transmitter setup is required.
3. If you are using a body-pack transmitter (The Presenter-UHF, The Headset-UHF or The Guitarist-UHF), plug the microphone cable or a WA302 instrument cable into the four-pin connector on the transmitter (if using The Headset-UHF, see tag on headset for assembly instructions). If using The Guitarist-UHF, plug the instrument cable into the guitar output and adjust the volume control of the guitar.

OPERATING THE SYSTEM

1. Slide the transmitter POWER/OFF switch to the POWER position. The transmitter's green POWER light and the receiver's yellow DIVERSITY A/B lights will glow.
2. Slide the MUTE/ON switch on the body-pack or hand-held transmitter to the ON position.
3. Talk or sing into the microphone, or play your guitar. The receiver's red AUDIO PEAK light should flicker when loud sounds are transmitted. If the AUDIO PEAK light does not flicker or stays on constantly, the transmitter gain may need adjustment. (Refer to the *Transmitter Audio Gain Adjustment* section). **NOTE:** This step is particularly important for The Guitarist system, since guitar outputs can vary widely.
4. Adjust the receiver VOLUME control until the receiver output level matches the level of your guitar or microphone through a cable. (The factory setting is in the full clockwise position.) If using The Guitarist-UHF system, see *Receiver Volume Adjustment for The Guitarist-UHF* to match the receiver volume level to the level of a wired system.

YOU ARE NOW READY TO PERFORM!

IMPORTANT: *Every* wireless performance is a unique situation, and can present a variety of problems. *Never* attempt a performance without first conducting a "walkthrough" test on the wireless system in the performing area. ***If you encounter a problem, refer to the Troubleshooting table.***

THANK YOU FOR CHOOSING SHURE

Congratulations! You have purchased the finest wireless system in its class. Your Shure wireless system is engineered to provide a low-noise, high-quality sound comparable to other systems costing much more. Built in the tradition of reliability that has made Shure a symbol of American quality for more than half a century, this wireless system should provide you with excellent performance for years.

To get the most out of your UT Series wireless system, please read the applicable section in this guide before you attempt to use the system. If you have any questions that are not answered in this booklet, please contact Shure Customer Service at (847) 866-2553, Monday through Friday, from 8:00 am to 4:30 pm, Central Standard Time. For technical data by fax, dial (800)488-3297 and follow the recorded instructions. Visit our website at **www.shure.com** for further information on this and other Shure products.

INTRODUCTION

Your new UT Series system is designed to give you the best of both sound reinforcement worlds: the freedom of a wireless system, and the reliability of world-famous Shure sound quality. This manual covers each of the UT Series systems: The Vocal Artist-UHF, The Presenter-UHF, The Headset-UHF, and The Guitarist-UHF.

SYSTEM FEATURES

All Shure UT Series systems offer a variety of of exceptional features, including:

- **Diversity Receivers with Exclusive Shure MARCAD Circuitry**: MARCAD (MAximum Ratio Combining Audio Diversity) circuitry continuously processes the rf signal from each antenna and combines the audio outputs to produce one signal of optimum quality. The result is improved reception and exceptional freedom from dropouts.
- **Low-Traffic UHF Transmission:** UT systems use a UHF (Ultra High Frequency) range between approximately 596 to 862 MHz (available frequencies depend on regulations in the country where the system is used). In urban areas, UHF frequencies are less congested than those in the VHF range, and are less susceptible to interference.
- **Multiple System Use:** Up to eight UT systems can be used in the same performance space. Each system must be set at a different frequency. If systems are set to the same frequency, contact an authorized Shure dealer. **NOTE**: In multiple use situations, each transmitter must have a dedicated receiver.
- **Simultaneous Output Use:** Unbalanced $^1/_4$" phone plug and balanced XLR output connectors may be used simultaneously to different external devices.
- **Stackable and Rack-Mountable Receivers:** If multiple systems are in use, receivers may either be stacked or rack-mounted, with two receivers fitting in the optional rack mount tray. In these situations, antennas should not touch or be crossed. (See *Stacking and Rack-mounting Receivers*.)
- **Range:** UT Series transmitters will work at a distance of up to 100 meters (about 300 ft.) from the receiver.
- **Noise Squelch:** The noise squelch circuit analyzes signal quality instead of signal strength, which allows the circuit to discriminate between noise and desired signal. This reduces the likelihood of noise burst due to environmental rf (radio frequency) noise.
- **Semi-Rigid Receiver Antennas:** Three-inch rubberized antennas offer performance equal to telescoping antennas with added durability.
- **Low Battery Warning Light:** A red light on the body-pack and hand-held transmitters warns the user that there is less than one hour of battery life left.

SYSTEM TYPES

The Vocal Artist-UHF is a hand-held system designed for singers who desire the high quality of Shure microphones and the freedom of wireless performance. Includes a Shure BG3.1 or SM58 dynamic microphone with a built-in transmitter.

The Presenter-UHF is a body-pack system designed for public speakers who prefer an inconspicuous, hands-free lavalier microphone. Features an omnidirectional Shure WL93, supercardioid WL184, or cardioid WL185 micro-miniature lavalier microphone.

The Headset-UHF is a body-pack system designed for users in physically active applications, who desire the freedom of hands-free microphone operation along with the performance of Shure wireless equipment. Features a WH20TQG headset microphone.

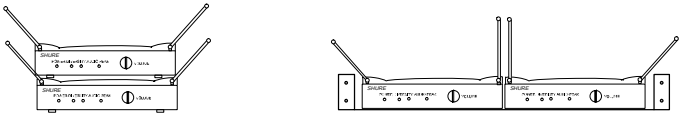
The Guitarist-UHF is a body-pack system designed for use with electric guitars, basses, and other electric instruments. May be used with brass or woodwind instruments, with optional WM98 instrument microphone and mount. The Guitarist provides the freedom of going wireless and the reliability of high quality Shure sound.

SYSTEM COMPONENTS

Component	***The Vocal Artist-UHF***	***The Presenter-UHF***	***The Headset-UHF***	***The Guitarist-UHF***
Transmitter	UT2 Hand-Held Microphone Transmitter	UT1 Body-Pack Transmitter		
Microphone*	BG 3.1 or SM58 Hand-Held Microphone	WL93, WL184 or WL185 Lavalier Microphone	WH20TQG Headset Microphone	—
Receiver	UT4 Diversity Receiver with MARCAD Circuitry			
Power Supply	PS20 (120 Vac, 60 Hz) or PS20E (230 Vac, 50 Hz)			
Supplied Accessories	Microphone Stand Adapter, Vinyl Transmitter Bag, Receiver Feet, Receiver VELCRO® Mounting Strips	Vinyl Transmitter Bag, Receiver Feet, Receiver VELCRO Mounting Strips	Vinyl Transmitter Bag, Receiver Feet, Receiver VELCRO Mounting Strips	Vinyl Transmitter Bag, Receiver Feet, Receiver VELCRO Mounting Strips

*Additional microphones may be available at later date

STACKING AND RACK-MOUNTING RECEIVERS



STACKED RECEIVERS

RACK-MOUNTED RECEIVERS

FIGURE 1

The UT4 receiver may be used in numerous applications, and is designed to be easily stacked or rack-mounted for multiple system use (see Figure 1).

- *To stack receivers*: The raised corners are designed to create stability when receivers are stacked, if placed on a flat surface with feet attached. It is important to position the antennas at a 45° angle from vertical so that the antennas do not touch.
- *To rack-mount receivers*: The UT4 receiver is a half-rack unit, and two receivers should fit into a standard rack space. Place the outer antennas at a 45° angle from vertical; place the inner antennas in a vertical position. ANTENNAS SHOULD NOT CROSS OR TOUCH. (See Optional Accessories for rack mount accessories.)

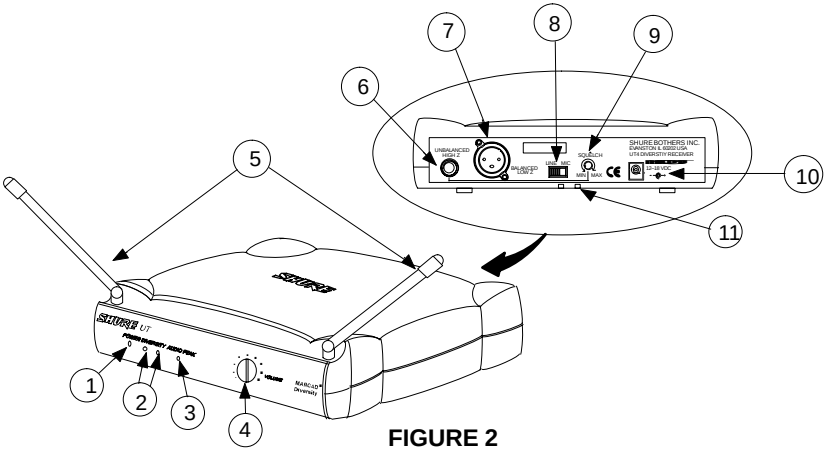


FIGURE 2

UT4 DIVERSITY RECEIVER FEATURES (FIGURE 2)

1. **Power On Indicator:** This green light glows when the receiver is plugged into an electrical outlet. It indicates that the receiver is on.
2. **Diversity Signal Indicators:** The yellow DIVERSITY A/B lights glow when rf (radio frequency) signals are received from the UT1 or UT2 transmitter. When only one light is glowing, the signal is being received on only one antenna. When both lights are glowing, the UT4 is receiving signals on both antennas.
3. **Audio Peak Indicator:** This red light flickers when the receiver input signal approaches the overload clipping level. It is affected by the transmitter gain control setting, and the level of the guitar or bass (*The Guitarist-UHF* systems) or the singer or the speaker (*The Vocal Artist-UHF, The Presenter-UHF,* and *The Headset-UHF* systems).
4. **Volume Control:** Rotate this knob to increase or decrease the volume of the receiver output. This control does not affect the AUDIO PEAK indicator.
5. **Semi-Rigid Receiver Antennas:** The semi-rigid receiver antennas should be pointed away from each other at 45° angle from vertical for best performance, and should not touch when stacked or rack-mounted.
6. **$^1/_4$" Phone Jack Audio Output Connector (Unbalanced High Z):** An unbalanced audio cable with a $^1/_4$" phone plug (such as a standard guitar cable) can be used between this connector and your amplifier input.
7. **XLR Audio Output Connector (Balanced Low Z)**: Plug an XLR audio cable from this connector to the input of your mixer.
8. **Mic/Line Slide Switch**: Switches output of XLR connector from microphone to line level. Use of line level is suggested when connecting receiver to a mixing or amplifying device without an available mic-level input, such as a power amplifier, signal processing device or VCR.
9. **Squelch Control:** Adjusts squelch control setting to emphasize either signal quality or system range. This control is factory pre-set, and normally does not need further adjustment. Refer to *Receiver Squelch Adjustment* section for more information.
10. **Power Input Connector:** Connect the ac adapter to this jack and then plug into an ac electrical outlet.
11. **Power Cable Retainer**: Secures the ac adapter cable to receiver.

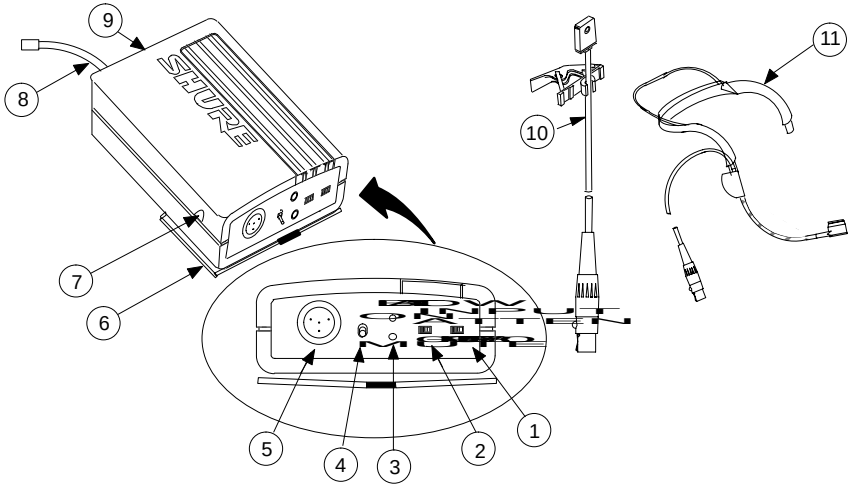


FIGURE 3

UT1 BODY-PACK TRANSMITTER FEATURES (FIGURE 3)

1. **Power/Off Switch:** Turns transmitter power on and off.
2. **Input Attenuation Switch:** Allows choice between 0 dB and –20 dB attenuation, for greater range of audio gain control.
3. **Power/Battery Fuel Gauge:** The green light indicates the unit is on. The red light indicates less than one hour of battery life remains.
4. **On/Mute Switch**: Mutes the transmitter to prevent unwanted sounds from being picked up by the receiver *without* turning the transmitter off.
5. **Input Connector**:Tini Q-G connector allows connection to a variety of lavalier and headset microphone cables and the Shure WA302 instrument adapter cable.
6. **Belt Clip:** Secures the transmitter to a belt, waistband or guitar strap.
7. **Audio Gain Control:** Provides audio level adjustment to accommodate various input signal strengths (e.g., speaking into a microphone or playing an instrument). The factory setting is at mid-point. A small screwdriver is supplied to make adjustments.
8. **Antenna:** A flexible wire antenna is permanently attached to the bottom of the UT1 body-pack transmitter. *For best operation, the antenna **must** hang vertically, and should <u>not</u> be coiled or bundled.*
9. **Battery Compartment:** Holds one 9 V battery. Hinged cover opens to provide access to the battery.
10. **Lavalier Microphone (WL93 shown):** Omnidirectional (WL93), supercardioid (WL184) or cardioid (WL185) condenser lavalier microphone, featuring a mount that clips onto a tie, lapel, or acoustic instrument and an attached TQG connector (supplied with The Presenter system)
11. **Headset Microphone (WH20TQG shown)**: Headset microphone features a headset frame, headband, and an attached TQG connector. See tag attached to headset for assembly instructions (supplied with The Headset System).

ATTACHING THE UT1 BODY-PACK TRANSMITTER TO BELT OR GUITAR STRAP

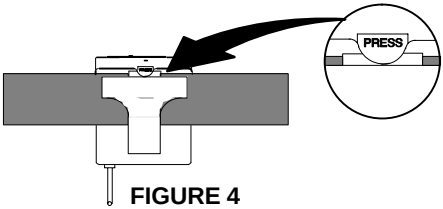


FIGURE 4

1. Depress the tab marked PRESS and slip your belt, waist band or guitar strap between the transmitter body and the belt clip (Figure 4).
2. The clip holds tighter if the material is drawn to the clip's top wire, especially when using thinner guitar straps.

UT2 MICROPHONE-TRANSMITTER FEATURES (FIGURE 5)

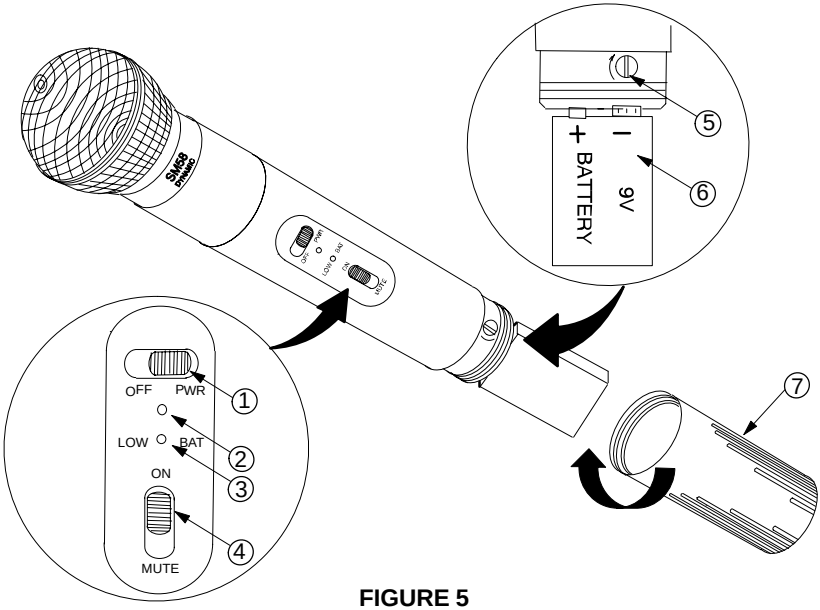


FIGURE 5

1. **Power/Off Switch:** Turns the transmitter on and off. It is recessed to prevent it from being accidentally turned off.
2. **Power On Indicator:** Green light glows when the POWER/OFF switch is in the POWER position, as a reminder to turn the transmitter off when it is not in use.
3. **Low Battery Indicator:** A red light glows when there is one hour or less of useful operating time, allowing battery to be changed before power is depleted.
4. **On/Mute Switch:** Allows muting of the microphone audio, avoiding the "thump" noise that can occur when turning the transmitter on and off.
5. **Audio Gain Control:** Allows the level of vocals to be matched with the transmitter for better performance.
6. **9 V Battery (shown installed):** Provides power to the microphone-transmitter.
7. **Battery Cover:** Unscrews for access to the 9 V battery and gain control.

TRANSMITTER BATTERY INSTALLATION

1. Slide the transmitter POWER/OFF switch to the OFF position.
2. *Body-Pack*: Press down on the OPEN side of the battery compartment cover, slide it back and flip it open, as shown in Figure 6A.
3. *Hand-Held:* Unscrew the transmitter battery cover to expose the battery terminals, as shown in Figure 6B.

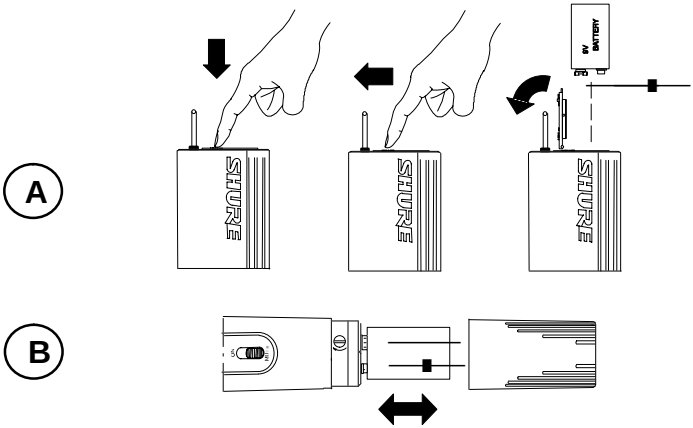


FIGURE 6

4. Insert a fresh 9 V battery into the battery compartment as shown in Figure 6.
5. Replace battery cover.
6. When the transmitter's red LOW BATTERY light glows, you have 1 hour or less of useful battery life remaining; change the battery at your first opportunity.

IMPORTANT: 9 V Alkaline batteries are recommended. 9 V lithium batteries are optional. Carbon-zinc and zinc-chloride batteries will not provide adequate power and are not recommended. 8.4 V rechargeable NiCd batteries may be used, but are not recommended due to minimal lifespan. See *Battery Life* in Specifications for further details on battery selection.

INSTALLING AC ADAPTOR CORD INTO POWER CABLE RETAINER

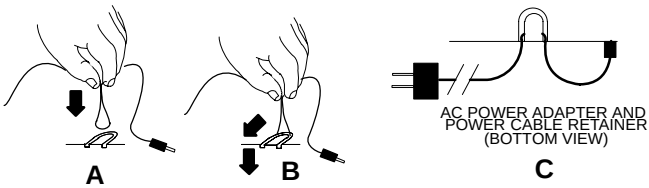


FIGURE 7

1. Refer to Figure 7. Turn the receiver over and locate the power cable retainer. Pinch the ac adaptor cord approximately 6 inches from the dc plug, forming a small loop (A). Hold the cord vertical to the retainer and lower the tip of loop into the curved portion of retainer.
2. Keeping the cord vertical to the receiver, pull the cord under the tab towards front of the receiver (B), then pull down, locking the cord into the retainer (C).

OPERATING THE VOCAL ARTIST-UHF SYSTEM

1. Refer to Figure 8. Connect the supplied ac power adapter into the DC INPUT connector in back of the receiver. Insert the adapter's cable into the power cable retainer. Plug the adapter into a wall socket or other ac power source (use PS20 for 120 Vac, 60 Hz power; use PS20E for 230 Vac, 50 Hz power). The green POWER light on the receiver will glow.
2. Connect the receiver's XLR AUDIO OUTPUT connector to the mixer input using an XLR to XLR audio cable. If no XLR cable is available, a $^1/_4$" to $^1/_4$" phone plug cable may be substituted, but this connection will not be balanced. Set the receiver's MIC/LINE SWITCH to match the sound system's input.
3. Slide the transmitter's POWER/OFF switch to the POWER position. The transmitter's green POWER ON light and the receiver's DIVERSITY A/B lights will glow.
4. Slide the microphone's ON/MUTE switch to the ON position to turn the microphone on.
5. Talk or sing into the microphone. Normal operation is indicated by:
   - *Steady glow of the receiver's yellow DIVERSITY A/B lights.*
   - *Flickering of the receiver's AUDIO PEAK light when loud sounds are transmitted.*

   NOTE: If the receiver's red AUDIO PEAK light does not flicker occasionally or is constantly on, the transmitter gain may need to be adjusted. Refer to the *Transmitter Audio Gain Adjustment* section. Then, If the system is still not operating properly, consult the *Troubleshooting* table.
6. When the performance is over, turn off the sound system and slide the transmitter's POWER/OFF switch to the OFF position to conserve battery power.

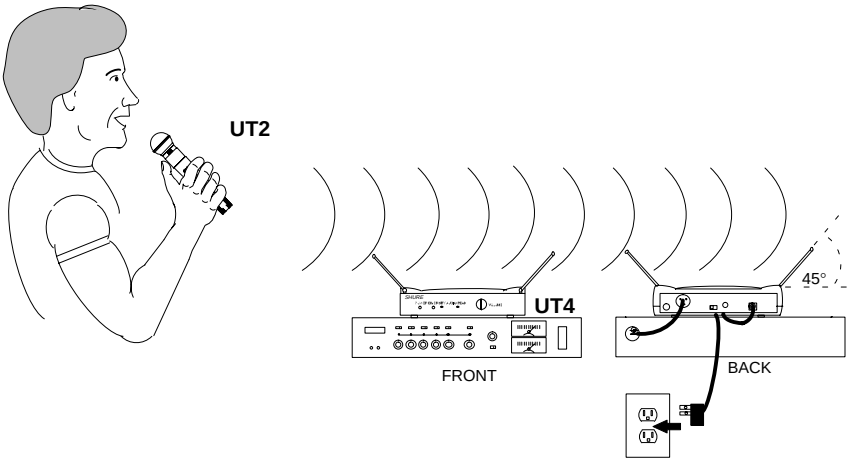


FIGURE 8

OPERATING THE PRESENTER-UHF SYSTEM

1. Refer to Figure 9. Connect the supplied ac power adapter to the DC INPUT connector on the back of the receiver. Insert the adapter's cable into the power cable retainer. Plug the adapter into a wall socket or other ac power source (use PS20 for 120 Vac, 60 Hz power; use PS20E for 230 Vac, 50 Hz power). The green POWER light on the receiver will glow.
2. Connect the receiver's XLR AUDIO OUT connector to the mixer input using an XLR to XLR audio cable. If no XLR cable is available, a $^1/_4$" to $^1/_4$" phone plug cable may be substituted, but this connection will not be balanced. Set the receiver's MIC/LINE SWITCH to match the sound system's input.
3. Press the WL93, WL184 or WL185 lavalier microphone into the mounting clip and attach it to your garment. Do not cover the microphone with your clothing, and keep it approximately 8 to12 inches below your chin. See Figure 9.
4. Slide the recessed transmitter POWER/OFF switch to the POWER position. The transmitter's green POWER ON light and the receiver's yellow DIVERSITY A/B lights will glow.
5. Slide the transmitter's MUTE/ON switch to the ON position.
6. Speak in your normal conversational voice. Proper operation is indicated by:
   - *Steady glow of the receiver's yellow DIVERSITY A/B lights.*
   - *Flickering of the receiver's AUDIO PEAK light when you speak in a loud voice.*

   NOTE: If the receiver's red AUDIO PEAK light does not flicker occasionally or is constantly on, the transmitter gain may need to be adjusted. Refer to the *Transmitter Audio Gain Adjustment* section. If the system is still not operating properly, consult the *Troubleshooting* table.
7. When the presentation is over, turn off the sound system and slide the recessed transmitter POWER/OFF switch to the OFF position to conserve battery power.

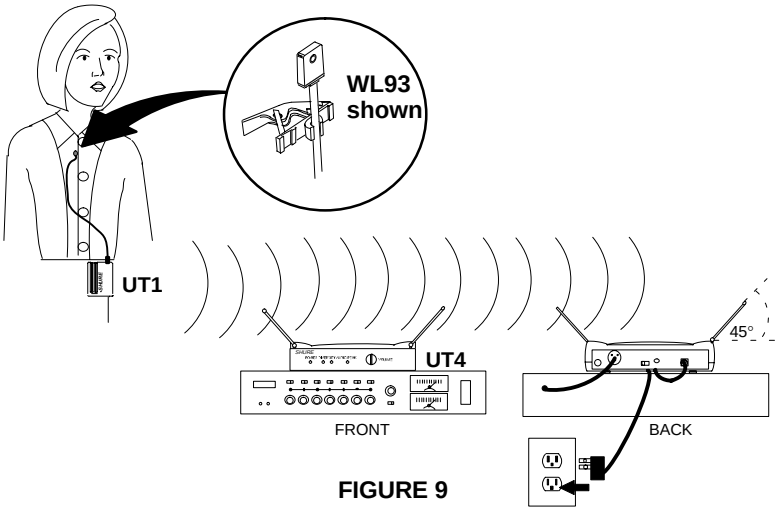


FIGURE 9

OPERATING THE HEADSET-UHF SYSTEM

1. Refer to Figure 10. Connect the supplied ac power adapter to the DC INPUT connector on the back of the receiver. Insert the adapter's cable into the power cable retainer. Plug the adapter into a wall socket or other ac power source (use PS20 for 120 Vac, 60 Hz power; use PS20E for 230 Vac, 50 Hz power). The green POWER light on the receiver will glow.
2. Connect the receiver's XLR AUDIO OUT connector to the mixer input using an XLR to XLR audio cable. If no XLR cable is available, a $^1/_4$" to $^1/_4$" phone plug cable may be substituted, but this connection will not be balanced. Set the receiver's MIC/LINE SWITCH to match the sound system's input.
3. If using the headset for the first time, refer to the tag attached to the headset for assembly instructions. Adjust headband and place on head, as shown on tag. For best results, microphone should be placed $^1/_2$" from side of mouth.
4. Slide the recessed transmitter's POWER/OFF switch to the POWER position. The transmitter's green POWER ON light and the receiver's yellow DIVERSITY A/B lights will glow.
5. Slide the transmitter's MUTE/ON switch to the ON position.
6. Speak in your normal conversational voice. Proper operation is indicated by:
   - *Steady glow of the receiver's yellow DIVERSITY A/B lights.*
   - *Flickering of the receiver's AUDIO PEAK light when you speak in a loud voice.*

   NOTE: If the receiver's red AUDIO PEAK light does not flicker occasionally or is constantly on, the transmitter gain may need to be adjusted. Refer to the *Transmitter Audio Gain Adjustment* section. If the system is still not operating properly, consult the *Troubleshooting* table.
7. When headset is not in use, turn off sound system and slide the recessed transmitter POWER/OFF switch to the OFF position to conserve battery power.

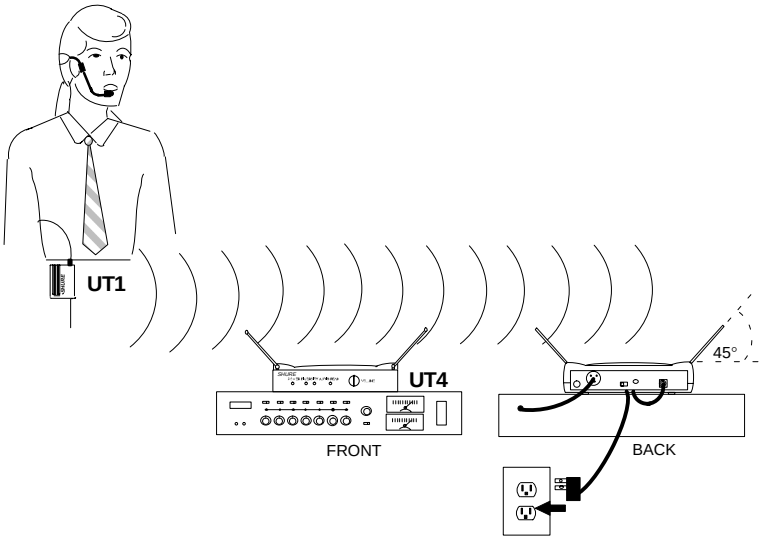


FIGURE 10

OPERATING THE GUITARIST-UHF SYSTEM

1. Refer to Figure 11. Connect the supplied ac power adapter to the DC INPUT connector in back of the receiver. Insert the adapter's cable into the power cable retainer. Plug the adapter into a wall socket or other ac power source (use PS20 for 120 Vac, 60 Hz power; use PS20E for 230 Vac, 50 Hz power). The green POWER light on the receiver will glow.

2. Connect the receiver's $^1/_4$" PHONE JACK AUDIO OUTPUT connector to the amplifier input, using a standard guitar cable.

3. Connect your guitar or bass to the transmitter input jack with a WA302 Instrument Adaptor. **NOTE**: The Guitarist-UHF system may also be used with woodwind and brass instruments with use of an optional WM98 miniature instrument microphone and a horn mount. See *Optional Accessories* for additional information.

4. Adjust the volume control on your guitar to desired level. To match wireless output to that of a wired system, see *Receiver Volume Adjustment for the Guitarist.*

5. Slide the transmitter's POWER/OFF switch to the POWER position. The transmitter's POWER ON light and the receiver's DIVERSITY A/B lights will glow.

6. Slide the transmitter MUTE/ON switch to the ON position.

7. Play your guitar or bass. Normal operation is indicated by:

   - *Steady glow of receiver's yellow DIVERSITY A/B lights.*
   - *Flickering of the receiver's AUDIO PEAK light when loud sounds are transmitted.*

   NOTE: If the red AUDIO PEAK light does not flicker occasionally or is on constantly, the transmitter may need to be adjusted. Refer to the *Transmitter Audio Gain Adjustment* section. If the system is still not operating properly, consult the *Troubleshooting* table.

8. When the performance is over, turn off the amplifier and slide the recessed transmitter POWER/OFF switch to the OFF position to conserve battery power.

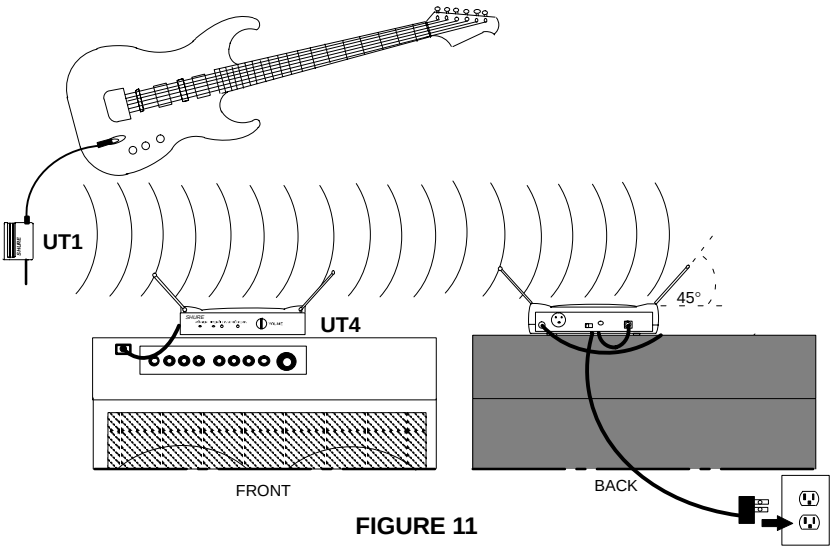


FIGURE 11

RECEIVER VOLUME ADJUSTMENT FOR THE GUITARIST-UHF

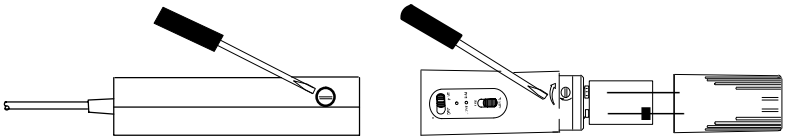
Follow these directions to adjust the volume control of the UT4 receiver, so that the wireless output of an instrument is equivalent to the output of a cabled instrument.

1. Plug instrument directly into guitar/bass amp. Set volume and tone controls on both the instrument and amplifier for a clean signal with desired tonal quality and volume. DO NOT change these settings for the rest of volume adjustment.
2. Unplug instrument from the amplifier input and plug into the transmitter. Plug the receiver into amplifier input.
3. Set VOLUME control of receiver at $^1/_4$ on (9:00). Play instrument, with enough force to cause maximum output.
4. If there is distortion present, the transmitter may be clipping. See the *Transmitter Audio Gain Adjustment* section.
5. Adjust receiver volume control until sound quality matches that achieved in step 1.

TRANSMITTER AUDIO GAIN ADJUSTMENT

The audio gain control on both the UT1 body-pack and UT2 hand-held transmitters has been factory-preset at the mid-range position for best performance in most applications. If the red AUDIO PEAK light on the receiver *does not* flicker, the preset gain level may be too low and the audio gain may need to be increased until a proper signal-to-noise ratio is reached. This may be necessary for soft singers or talkers, or guitar or basses with low outputs.

For loud singers or talkers, or instruments with high outputs, the preset gain level may be too high, causing unwanted distortion. This condition is indicated by the continuous glow of the red PEAK light on the receiver during usage.



UT1 BODY-PACK TRANSMITTER **UT2 HAND-HELD TRANSMITTER**

FIGURE 12

- *To Increase Gain:* Rotate the transmitter gain control clockwise with the supplied screwdriver until the red AUDIO PEAK light on the receiver flickers when the guitar is played loudly or when you sing or speak in a loud voice. **NOTE**: In some applications, the red AUDIO PEAK light will not flicker even with the gain control turned fully clockwise. *For body-pack systems only:* If gain control is rotated fully clockwise and the AUDIO PEAK light still does not flicker, check to see if the input attenuation switch on the transmitter is set to the –20 dB position. If it is, fully rotate the gain control counterclockwise, and move the switch to the 0 dB position. Then rotate the gain control clockwise until the AUDIO PEAK light flickers during high output or the gain control is turned fully clockwise.
- *To Reduce Gain:* Rotate the transmitter gain control counterclockwise with the supplied screwdriver. Continue rotating the gain control until the red AUDIO PEAK light on the receiver only flickers when guitar is played loudly, or when you sing or speak in a loud voice. *For body-pack systems only*: If gain control is rotated fully counterclockwise and the AUDIO PEAK light still glows continuously, check to see if the input attenuation switch on the transmitter is set to the 0 dB position. If it is, move the switch to the –20 dB position, and fully rotate the gain control clockwise. Then rotate the gain control counterclockwise until the AUDIO PEAK light flickers during high output.

To return audio gain to the factory setting, rotate the transmitter audio gain control to the mid position and, on the body-pack only, slide the input attenuation switch to the 0 dB position.

BODY-PACK AUDIO GAIN AND ATTENUATION SETTINGS

The attenuation switch and the gain control on the UT1 body-pack are designed to be used in conjunction to provide a wide spectrum of gain control choices. The following ranges are starting points; actual output levels may vary.

OUTPUT DEVICE	ATTENUATION SWITCH SETTING	AUDIO GAIN CONTROL SETTING
LAVALIER MICROPHONE, CONVERSATIONAL VOICE	0 dB	HIGH (clockwise)
LAVALIER MICROPHONE, PROJECTED VOICE HEADSET, CONVERSATIONAL VOICE	0 dB	MID–RANGE
HEADSET, PROJECTED VOICE ELECTRIC GUITAR/BASS, PASSIVE ELECTRONICS	0 dB	LOW (counterclockwise)
ELECTRIC GUITAR/BASS, PASSIVE ELECTRONICS	–20 dB	HIGH (clockwise)
ELECTRIC GUITAR/BASS, ACTIVE ELECTRONICS	–20 dB	MID–RANGE
ELECTRIC GUITAR/BASS, ACTIVE ELECTRONICS	–20 dB	LOW (counterclockwise)

RECEIVER SQUELCH ADJUSTMENT

The squelch control on the UT4 receivers (see figure 1) is factory preset for optimum performance. No further adjustment is normally required. It is possible to adjust the squelch control setting to emphasize either signal quality or system range:

- *Turning the squelch control clockwise causes the receiver to demand a higher quality signal (less noise before muting), but* decreases *operating range.*
- *Turning the squelch control counterclockwise allows a lower quality signal through (more noise before muting), but* increases *operating range.*

To return the receiver squelch control to the factory setting, rotate it to the mid-range position (so the slot is vertical).

TIPS FOR ACHIEVING MAXIMUM PERFORMANCE

- *Make sure you can always see a receiver antenna from the transmitter position.*
- *Keep the distance from transmitter to receiver antenna as short as possible.*
- *Point receiver antennas away from each other at a 45° angle from vertical.*
- *Avoid placing the receiver antennas near metal surfaces and obstructions.*
- *To mount the receiver on a flat surface, attach the four adhesive rubber feet or the VELCRO mounting strips to the bottom of the receiver.*
- *Monitor battery fuel gauge and replace battery as soon as red light is on.*
- *Let body-pack transmitter antenna hang freely; do not coil or keep in pocket.*
- *If stacking or rack mounting receivers in a multiple-system use situation, do not allow antennas to touch or cross.*
- *Perform a walk-through before performance or presentation. If dead spots are found, adjust location of receiver. If dead spots remain, mark spots and avoid.*

TROUBLESHOOTING

PROBLEM	INDICATOR STATUS	SOLUTION
No sound.	Green transmitter POWER light off.	Slide transmitter POWER ON/OFF switch to ON position. Make sure battery is inserted properly, observing battery polarity (“+/–”). If battery is inserted properly, replace with fresh battery.
No sound.	Green transmitter POWER light glowing.	Slide transmitter MUTE/ON switch to ON position.
No sound.	Green receiver POWER light off.	Make sure ac adapter is securely plugged into electrical outlet and into dc input connector. Make sure ac electrical outlet works and supplies proper voltage.
No sound.	Receiver DIVERSITY A/B lights glowing. PEAK light flickers during loud sounds.	Turn up receiver volume control. Confirm that the output connections from the receiver to the external equipment are secure.

No sound.	Receiver DIVERSITY A/B lights off. Transmitter and receiver POWER lights glowing.	Confirm transmitter's and receiver's frequencies match. Point receiver antennas away from each other at a 45° angle from vertical. Move receiver antennas away from any metal objects. Remove obstructions between transmitter and receiver. Make sure you can see receiver antennas. Move transmitter closer to receiver.
Sound level differs from level of a cabled instrument.	Receiver DIVERSITY A/B lights glowing.	Adjust transmitter gain as necessary. Adjust receiver volume as necessary.
Sound level differs with different guitars.	Receiver DIVERSITY A/B lights glowing.	Readjust transmitter gain level to compensate for differences in guitar outputs.
Distortion level increases gradually.	Receiver DIVERSITY A/B lights and transmitter LOW BATTERY light glowing.	Replace transmitter battery.
Bursts of noise or other audible radio signals present.	DIVERSITY A/B lights on.	Identify potential sources of interference (other rf sources) and turn off, remove or use a wireless system operating on a different frequency.
Momentary loss of sound as transmitter is moved around performing area.	Receiver DIVERSITY A/B lights off when sound is lost.	Reposition receiver and perform walk-through test again. If audio dropouts persist, mark "dead" spots and avoid them during performance.

SYSTEM SPECIFICATIONS

RF Carrier Frequency Range

Approximately 596 to 862 MHz (Available frequencies depend on applicable regulations in country where system is used).

Operating Range:100 m (approximately 300 ft) under typical conditions

Audio Frequency Response: 20 to 16,000 Hz, ±3 dB

Image Rejection: 75 dB typical

Spurious Rejection: 75 dB typical

System Distortion (ref. ± 45 kHz deviation, 1 kHz modulation): 0.1% THD typical

Signal/Noise Ratio: 90 dB

Sensitivity: –110 dBm for 12 dB SINAD typical

Maximum Recommended Input Level, UT1 (attenuation switch at –20 dB, gain at minimum): +32 dBV

Minimum Recommended Input Level, UT1 (attenuation switch at 0 dB, gain at maximum): –80 dBV

Operating Temperature Range

–29° to 74° C (–20° to 165° F) **NOTE:** Battery characteristics may limit this range.

Battery Life

UT1, UT2: 12 hours with 9 V alkaline battery (Duracell MN1604 recommended).

UT1 BODY-PACK TRANSMITTER SPECIFICATIONS

RF Output	15 mW Typical
Input Configuration	Unbalanced
Connector Type	4-pin Tini QG (male)
Actual Impedance	1 MΩ
Connector Pin Assignments	Pin 1:Tied to Ground Pin 2:Tied to +5 V Pin 3:Tied to Audio Pin 4:Tied to 20kΩ Resistor and Audio Ground
Dimensions	82.6 mm H x 63.5 mm W x 26.2 mm D (3.25" H x 2.50" W x 1.03" D)
Net Weight	125g (4.4 oz.) including battery
Power Requirements	9 V alkaline battery (Duracell MN1604 recommended); 9 V lithium ULTRALIFE battery optional.
Nominal Current Drain	40 mA

UT2 HAND-HELD TRANSMITTER SPECIFICATIONS

	UT2/58 (SM58)	**UT2/31**(BG3.1)
RF Output	15 mW Typical	
Dimensions	241 mm H x 51 mm D (9.49” H x 2.01” D)	225 mm H x 56 mm D (8.86” H x 2.20” D)
Net Weight	296g (10.4 oz.)	218g (7.7 oz.)
Power Requirement	9 V alkaline battery (Duracell MN1604 recommended); 9 V lithium ULTRALIFE battery optional.	
Nominal Current Drain	40 mA	

UT4 RECEIVER SPECIFICATIONS

Connector	**3-Pin XLR** (male)	**1/4” phone plug** (female)
Maximum Output Levels	Line Level: +10 dBV Mic Level: –22 dBV	+4 dBV
Nominal Output Levels	Line Level: –26 dBV Mic Level: –62 dBV	–32 dBV
Output Configuration	Active Balanced	Unbalanced
Actual Impedance	Line Level: 138 kΩ Mic Level: 500 Ω	1 kΩ
Connector Pin Assignments	Pin 1: ground Pin 2: hot Pin 3: cold	Tip: hot Sleeve: ground
Dimensions	41 mm H x 197 mm W x 138 mm D (1.625” H x 7.77” W x 5.42” D)	
Net Weight	419.6g (14.8 oz.)	
Power Requirements	12–18 Vdc nominal, 200mA	
Power Supply	120 V or 230V ac adaptor with 2.1 mm female plug	
Voltage/Current/Phantom Power Protection	Yes	Yes

CERTIFICATION

UT1: Type Accepted under FCC Part 74. Certified by IC in Canada under RSS–123. Conforms to European Union directives, eligible to bear CE marking; meets European Union Requirements. ETSI Type Approval: pr I–ETS 300 422, EMC Immunity: ETS 300 445.

UT2/31, UT2/58: Type Accepted under FCC Part 74. Certified by IC in Canada under RSS–123. Conforms to European Union directives, eligible to bear CE marking; meets European Union Requirements. ETSI Type Approval: pr I–ETS 300 442, EMC Immunity: ETS 300 445.

UT4: Approved under the Notification provision of FCC Part 15. Certified by IC in Canada under RSS–123. Conforms to European Union directives, eligible to bear CE marking; meets European Union Requirements. EMC Immunity: ETS 300 445. Power supply meets Low Voltage Directive: 73/23/EEC.

FURNISHED ACCESSORIES

Screwdriver 65A1659
Mounting Block (The Presenter Systems Only) RK329MB*
Single-Mount Tie Bar (The Presenter Systems Only) RK240SB*
Windscreen (The Presenter Systems Only) RK242WS*
Receiver AC Adapter PS20 (120V), PS20E (230V)
Vinyl Transmitter Bag (Body-Pack Systems Only) 26A13
Vinyl Transmitter Bag (The Vocal Artist Systems Only) 26A14
Swivel Adapter (The Vocal Artist Systems Only) WA370A

* Replacements furnished in multiples of 4.

OPTIONAL ACCESSORIES

1/4” to 1/4” Cable (The Guitarist-UHF only)	WA303
1/4” to Tini QG Cable	WA302
1.8 Meter (6 ft.) Receiver-Mixer Cable	WA410
Rack Mount Tray	URT
Nylon Carrying Case	WA590
Dual Tie Clip (The Presenter-UHF w/WL184, WL185 only)	RK183T2
Double Tie Clip (The Presenter-UHF w/WL93 only)	RK307DB
Miniature Instrument Microphone (Body-Pack Systems only)	WM98
Universal Horn Clamp (Body-Pack Systems only)	A98KCS
Miniature Instrument Microphone w/ Universal Horn Clamp	WM98KCS
Rubber Receiver Feet (4)	66A8053
VELCRO Fastener, Hook (2)	80A8118
VELCRO Fastener, Loop (2)	80A8119
Amp/Powered Mixer Stand for UT4 Receiver	WA595
Inline Audio Switch for UT1 Transmitter	WA360

For additional service or parts information, contact Shure’s Service department at 1–800–516–2525. Outside the U.S., contact an Authorized Shure Service Center.

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Shure Incorporated (“Shure”) hereby warrants that these products are free from defects in material and workmanship for a period of two years from the date of purchase for all microphone cartridge and housing assembly parts and, for a period of one year from date of purchase, all transmitter and receiver parts. At its option, Shure will repair or replace the defective product and promptly return it to you. You should retain proof of purchase to validate the purchase date and return it with any warranty claim. If you believe this product is defective within the warranty period, carefully repack the unit, insure it, and return it postpaid to:

Shure Incorporated
Attention: Service Department
222 Hartrey Avenue
Evanston, IL 60202-5730 U.S.A.

Customers outside the U.S.A. should ship the product to the authorized Shure Distribution Center in their region.

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