



UHF-24

*Dual Channel Receiver
UHF Wireless Microphone System*

SERVICE INFORMATION

(U.S.) If you are experiencing operation problem with your system, check out the support page on the Nady website: www.nady.com for help and for contacting the Nady Service Department. Should your wireless System require service, you must contact the Nady Service Department at (510) 652-2411 for a Return Authorization (R/A) Number and a service quote (if out of warranty). Make sure the R/A Number is clearly marked on the outside of the package. Cashier's check or money is enclosed (If not prepaid with credit card), and ship the unit prepaid to: Nady System Inc., Service Department, 6701 Shellmound Street, Emeryville, CA 94608. Include a brief description of the problem you are experiencing, for service of a unit under warranty follow the instruction of your Warranty Card regarding Warranty Service.

(International) For service, please contact the NADY distributors in your country through the dealer from whom you purchase this product.

DO NOT ATTEMPT TO SERVICE THIS UNIT YOURSELF, AS THAT WILL VOID YOUR WARRANTY.



NADY SYSTEMS, INC.

6701 Shellmound Street • Emeryville, CA 94608
Tel: 510.652.2411 • Fax: 510.652.5075 • www.nady.com



OWNER'S MANUAL

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INTRODUCTION

Thank you for choosing the Nady UHF-24 wireless system, and congratulations on your choice. The Nady UHF-24 wireless system is the best performance and price value in professional UHF wireless. It offers clear channel operation on the wide-open, uncluttered UHF band for interference-free performance in any application or locale. The UHF-24 delivers 2 discrete channels in the frequency range from 794.90MHz to 804.88MHz. The UHF-24 wireless system features Nady's proprietary companding and low noise circuit for an industry best 120dB dynamic range and the clearest, most natural sound available in wireless today. Please read the instructions for your system completely before operating the unit.

USING THIS MANUAL

This booklet gives instructions for the operation of the UHF-24 Wireless systems: The UHF-24 receiver; and transmitter models UH-4 Handheld Microphone, UB-4 bodypack Lavalier Microphone, and Link4 Snap-On microphone transmitters.

This manual will first explain the benefits of the UHF-24 Wireless System and then will take you step by step on how to operate your new system. Each section will give you detailed information. Also, included in this manual are the frequency chart, microphone-wiring guide, system specifications and servicing information.

SPECIFICATIONS

OVERALL SYSTEM SPECIFICATIONS

Frequency Response.....	20Hz-20kHz, -3dB
Dynamic Range.....	120dB
Harmonic Distortion.....	<0.5% THD, normal
RF Carrier Frequencies.....	Operates on select UHF frequencies within separate bands 902-928 and 944-952 MHz
Frequency stability.....	+/-0.005% Crystal Controlled
Modulation.....	FM +/-20kHz normal, +/-50kHz maximum
TSQ Frequency.....	32.768kHz
Operating Range.....	250 feet normal, 500+feet max line of sight

RECEIVER SPECIFICATIONS

Controls.....	Power ON/OFF buttons, Volume/Mute Controls
Audio Output Level.....	Unbalanced Sum output: 360mV variable level Balanced output; +/-24mV fixed level
Connectors.....	Balanced: XLR. Unbalanced: 1/4" TS DC in: 2.1mm barrel type
Indicators.....	Power On, TX and AF LED Bars + Peak
Mute Threshold.....	-65dBm to -95dBm (adjustable)
Image Rejection.....	-70dB, minimum
Power Requirement.....	15VDC/0.4A
Antennas.....	4.0" (10.2 cm) Dual telescopic antennas
Dimensions.....	8.2" x 5.5" x 1.75 [W / D / H] (20.83 cm x 14.0 cm x 4.45 cm) [W / D / H]
Weight.....	1.17 lbs (0.530 Kg)

TRANSMITTER SPECIFICATIONS

Models Available.....	UH-4 Handheld, UB-4 Bodypack, and LINK 4 SNAP-ON transmitters
RF Output Power.....	+14dBm (25mW normal), +17dBm (50mW maximum allowed by FCC)
Harmonic/spurious.....	-50dBc normal
Antenna Type.....	UH-4: Integral. UB-4: External permanent attached LINK 4: Integral into hardwire Mic
Controls.....	Transmitter ON/Mute/OFF switch, Audio Input level control (LT/HM), Phantom Power On/Off (LINK 4)
Audio Input Levels.....	UH-4: 24mV. LINK 4: 24mV, UB-4: 225mV (Instr.), 310mV (HM), 75mV (Lav.)
Impedance.....	UH-4: 3.3kΩ. LINK 4: 360Ω, UB-4: 500kΩ (Instr.), 2kΩ (HM/Lav.)
Connector.....	UB-4: 3.5mm locking jack, LINK 4: XLR with 9V Phantom power
Indicator.....	Low Battery LEDs
Battery Type.....	9V alkaline or rechargeable battery
Battery Life.....	8-10 Hours normal
Dimensions.....	UH-4: 9.5" x 2.0" [L / Dia.] (24.13 cm x 5.08 cm) UB-4: 2.5" x 4.25" x 1.0 [W / D / H] (6.35 cm x 10.80 cm x 2.45 cm) LINK-4: 1.5" x 4.5" x 1.5" [W / D / H] (3.81 cm x 11.43 cm x 3.81 cm)
Weight (w/o batteries).....	UH-4: 6.6 oz (187 g), UB-4: 3.1 oz (88 g), LINK 4: 2.6 oz (80 g)

Specifications and design subject to change for improvement purposes without prior notice.

TIPS

- The receiver antennas should be kept away from any metal surface.
- If the Volume Control of the receiver is set too high, it may over-drive the input of the mixer, causing distortion. Conversely, if the output is set too low, the overall signal to noise ratio of the system may be reduced. Adjust the output level of the receiver such that highest sound pressure level going into the microphone causes no input overload in the mixer, and yet permits the mixer level control to operate in the normal range (not too high and not too low). This provides the optimum signal to noise for the entire system.
- Before inserting the batteries, please make sure that they are inserted according to the correct polarity.
- Use only brand new alkaline batteries. Do not use “general purpose” batteries. When batteries are weak, replace the batteries altogether at the same time.
- Position the receiver such that it has the least possible obstructions between it and the transmitter. Line of sight is best!
- The transmitter and the receiver should be as close as possible but not less than 1 meter.
- For the best operation, the receiver should be placed at least 1 meter above the ground and 1 meter away from a wall or metal surfaces. The transmitter should be also at least 1 meter from the receiver. Keep antenna away from noise source such as motors, automobiles, neon light, signal processor, computer, as well as large metal objects.
- A receiver cannot receive signal from two or more transmitters simultaneously. The UHF-24 has 2 receivers so can be operated with 2 transmitters only on the same frequencies.
- Turn the transmitter off when it is not in use. Remove the batteries if it is not to be used for a long period.

Note: Scratchy noises can sometime occurs when some electric guitars with dirty pots or connections are used with any wireless system. Therefore, the supplied capacitor provides first order filtering of the RF signal from the cord into the guitar and eliminates virtually all scratchy noises. Should your equipment still give you scratchy noises, we suggest these steps to eliminate them:

- a. Make sure all guitar volume and tone pots are clean and all contacts are solid-this is very important.*
- b. A 47pF capacitor soldered across the pot to ground terminal of the guitar's volume and tone pots will provide extra filtering.*

SYSTEM FEATURES

UHF-24 Receiver

- Two discrete UHF wireless receivers in one housing, for simultaneous operation of two transmitters
- Back panel Balanced XLR mic level outputs, unbalanced 1/4" jack line level sum output, and separate volume, and external adjustable mute controls for each channel
- Front panel LED display indicates TX signal received and 5-segment AF level displays for each channel.
- Front panel dual telescoping retractable antennas
- Exclusive patented companding circuitry and highest quality audio for an unsurpassed 120dB dynamic range
- Operates on select UHF frequencies within separate bands 902-928 and 944-952 MHz
- Tone Squelch circuitry eliminates On/Off pop and protection from RF interference
- Half-rack receiver and unique snap-out panel locking tabs design for single or dual receivers (side-by-side) optional rack mounting
- Externally powered with DC adapter (15VDC/0.4A) included

UH-4 Handheld Transmitter

- Nady DM-10D neodymium cartridge delivers transparent vocals, maximum feedback rejection and minimal handling noise
- OFF/MUTE/ON switch for ease of use
- Unique screw-on battery compartment for quick pop-in battery replacement- uses standard 9V alkaline battery
- Single LED indicator flashes once for unit on; lights steady for low battery alert
- Input level control for optimum sound adjustment
- Rugged ABS housing with integral antenna

UB-4 Bodypack Transmitter

- Compact bodypack with screw on jack for instrument or lavalier microphone input
- OFF/MUTE/ON switch for ease of use
- Unique sliding battery compartment for quick pop-in battery replacement- uses standard 9V alkaline battery
- Single LED indicator flashes once for unit on; lights steady for low battery alert
- Input level control for optimum sound adjustment (LT/HM)
- Rugged ABS housing with external antenna

LINK 4™ Plug-In Transmitter

- Compact microphone transmitter that converts any dynamic XLR hardwired microphone to wireless operation
- OFF/MUTE/ON switch for ease of use
- Unique sliding battery compartment for quick pop-in battery replacement- uses standard 9V alkaline battery
- Single LED indicator flashes once for unit on; lights steady for low battery alert
- Audio LO/MED/HI gain selection for optimum sound
- Selectable 9V DC phantom powering for lavalier condenser microphone operation
- Standard locking 3-pin connector with adjustable threaded ring to provide secure connection to any XLR handheld direct or to lavalier microphone cable
- Lightweight, ABS housing with integral antenna

Rack-mounting the Receiver

There are two options available for rackmounting the UHF-24 Dual Channel Receiver: single or side-by-side with another UHF-24 receiver.

- Single mounting: Remove the **SIDE MOUNT CLIPS (1)** from each side of the receiver and slide in the optional **ERM-3 RACK EARS (2)**.
- Side-by-side double mounting: After removing the **SIDE MOUNT CLIPS (1)** from each side of the receivers, join the two receivers with the **EJC-3 JOINING CLIPS (3)** and slide in the **ERM-33 EARS (4)**.

(Note: Do not mount the receiver in a rack directly above an amplifier or other source of high heat. This could degrade the performance of the UHF-24 receiver. Always ensure adequate airflow and heat dissipation in any rack configuration.)

Antennas

The UHF-24 receiver is equipped with **DUAL TELESCOPIC RETRACTABLE ANTENNAS (5)**. These should be extended fully to obtain maximum range. The optimal antenna positions are 45 degrees from the receiver and 90 degree from each other. For maximum range, it is always best to maintain a line of sight (no obstruction) between the receiver antennas and the transmitter at all time whenever possible.

Powering the Receiver

Powering the receiver by plugging the provided **DC ADAPTOR (15VDC/0.4A) PLUG (15)** into the **DC INPUT JACK (14)** on the back of the receiver. Then plug the adaptor into an AC outlet. *(Note: Any 15VDC/0.4A capacity AC/DC adapter can also be used.)* Turn **VOLUME CONTROLS (10)** of all channels to counter-clockwise for minimum setting. Once the receiver is connected to a power source, push the **POWER SWITCH (7)** to the ON position. The **POWER LED (6)** will light up. The received signal **CH. A OR B LEDs (8)** and **5-SEGMENT AF LED (9)** indicators on the front panel of the receivers will not light up at this time, until one or more of the two channels is receiving a signal from your system's transmitters.

Mute (Squelch) Adjusting

In normal operation of the UHF-24 receiver, the mute control for each channel A or B should be set fully clockwise to the factory preset of 1uV RF level for maximum sensitivity. Doing so sets each receiver for maximum range. However, in case of high RF activity, the mute levels should be readjusted to compensate for the adverse conditions in a particular location. If, with a transmitter turned off, one or more LEDs of the corresponding receiver for that transmitter flicker or stay on, the **MUTE (SQUELCH) CONTROL (12)** of the corresponding channel should be turned counterclockwise until the LEDs extinguish. For each of the two channels, when the mute (Squelch) is properly adjusted, the corresponding TX LED displays will light only when the system's transmitter is turned on. Turning the mute (Squelch) counter clockwise too far will result in reducing range, but yield a quieter mute function during dropout or at the end of the operating range.

*Note: If you turn on the transmitter of only one channel within 10 feet of the receiver, both CH. A or B LEDs may come on. This is normal and due to the receiver's high sensitivity. This does not indicate a problem and operation with both transmitters on will be unaffected. Proper operation of the **MUTE CONTROL (12)** (counterclockwise) will extinguish the LED that is affected by the transmitter of the other channel. This will also reduce range.*

Audio Level and Peak LED indicator

The UHF-24 receiver is equipped with a 5-segment **LED AF LEVEL (9)** display for each channel. The red LED on the right of these displays is the audio peak indicator. *Note: That the peak red LED will light with a strong audio signal from the transmitter. Occasional flickering of the peak LED on loud input signals to the transmitter is normal. However, if the peak LED lights continuously, the volume into the transmitter should be decreased or audio distortion may result.*

Feedback

Observe care in selecting P.A. volume, transmitter location and speaker placement so that the acoustic feedback (howling and screeching) will be avoided. Please also note the pickup pattern characteristics of the microphone selected. Omni directional mics pick up sound equally from all direction, and are prone to feedback if not used carefully. Unidirectional mics are more resistant to feedback. However, pick up sound source best that are directly in front of the mic. Also mics that are farther from the sound source, such as lavalier, required more acoustic gain and thus are also more prone to feed back than close-source mics such as handheld or headworn models that are used close to the mouth.

Microphone Damage

Headset and lavalier mic users, note that the microphone element can easily be destroyed by the buildup of salts and minerals from perspiration and saliva. It is good practice to put a windscreen on the mic at all time to protect it.

No Audio

If you not getting audio through the system, carefully recheck all setup procedures. The receiver and transmitter must be on the same RF channel (frequency).

RF Interference

If you encounter receiving interference (from other than an operating TV station), often it can be overcome by adjusting the receiver 's MUTE (squelch) control. Please note that wireless frequencies are shared with other radio services. According to FCC regulations, wireless microphone operations are unprotected from interference from other licensed operations in the band. If any interference is received by any Government or non-government operation, the wireless microphone must be cease operation or change frequencies. The above statement is valid only for use in the U.S.A.

Receiver Volume Controls Adjust

The volume controls work only for the 1/4" sum output. Turn Volume controls on the UHF-24 receiver clockwise to near full gain. Adjust Volume up or down so that no audio distortion is present when amplifier or mixer is set at their usual levels. At full gain, the system gain is approximately +20dB higher than a direct line-to-amp connection.

If the fixed level **XLR OUTPUTS (11)** are used, the volume level of each receiver should be adjusted by the mixer to which the UHF-24 receiver is connected.

Level Trim Adjust

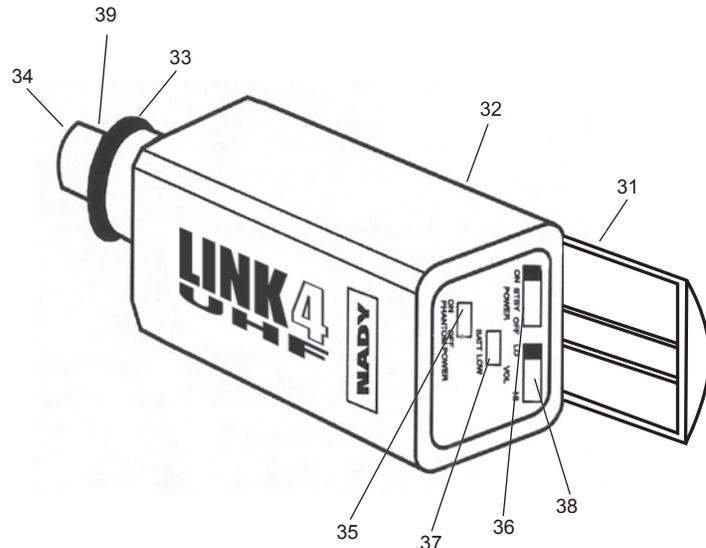
For optimum performance, an **INPUT SELECT SWITCH (38)** is provided. You could select the switch to LO, MED or HI gain setting depending to your microphone use. Depending on the average distance between vocalist's mouth and microphone, you can adjust the level for your application. Factory setting is MED for hardwire dynamic microphone. This is a setting to be used in most typical close microphone applications. Set for maximum possible gain and headroom without noticeable distortion of the high level peaks. Experiment and set for maximum possible gain without audible distortion on the high level peaks.

(Note: Selecting LOW gain setting can compromise the signal-to-noise and it is not recommended.)

The microphone is now ready to use. The CH. A or B LED indicator on corresponding receiver should now be on, indicating a received signal from the transmitter. When ready to speak, slide the **OFF/STANDBY/ON SWITCH (36)** to the ON position and hardwire mute switch if it was off. Adjust the volume of the receiver as per in the receiver operating instruction.

Notes:

- The microphone ball on your hardwire microphone functions as an integral antenna. For proper operation, it should not be cover or touch during operation.
- Observe care in selecting P.A. volume, transmitter location and speaker placement so that acoustic feedback (howling or screeching) will be avoided.



Connecting Audio Outputs

The UHF-24 receiver provides both a fixed mic level balanced audio output XLR for each channel and an adjustable line level A+B unbalanced audio output 1/4" jack which sums the CH-A plus CH-B audio signals.

- The balanced **XLR OUTPUTS (11)** are preset at the factory and are not adjustable with the receiver volume controls. For each channel you wish to use, insert an audio cord with a (female) XLR plug into its audio jack on the back of the receiver. Plug the other end of this cord into your amplifier, effects or mixing board. The volume level of each receiver should be adjusted by the mixing board. The fixed level balanced XLR outputs are for mic level connections.
- The **A+B UNBALANCED SUM (13)** audio output is controlled by the rear panel volume control for each channel. To use the A+B unbalanced sum audio output, just plug an audio cable with a 1/4" mono plug (TS) into the 1/4" jack and plug the other end to your amplifier or mixing board. Turn the volume controls on the UHF-24 receiver clockwise to near full gain. Adjust each volume up or down so that no audio distortion is present when the amplifier or mixer is set at their usual levels. The adjustable level unbalanced sum output is for line level connections.

a. Microphone Connection (Using the UH-4, UB-4 and the LINK-4 transmitters)

For microphone use, either the XLR balanced mic audio output or the 1/4" line level A+B unbalanced output can be used. The XLR balanced output is non-adjustable microphone level, similar to hardwire mic levels. Plug an XLR connector into one or both of the XLR output jacks on the rear of the unit and plug the other end(s) into your amplifier or mixing board. *(Note: Make sure the phantom power on your mixing board is turned off and the volume is turned down when making connections.)* For your convenience, the XLR output levels are preset at the factory and are not adjustable with the receiver volume controls. To use the A+B unbalanced output 1/4" jack, follow the instructions for the Instrument Connection (below), except start with the receiver volume at 1/2 maximum and adjust the volume control for each channel until the mixed CH A or CH B volume levels are optimal. If the volume controls are set too high, you may overload your mixer or amplifier.

b. Instrument Connection (Using the UB-4 instrument transmitter)

Insert an audio cord with a 1/4" mono phone plug in the A+B unbalanced output jack on the rear panel of the receiver. Plug the other end of the cord into an amplifier, effect, or mixing board. Adjust the appropriate volume control for the channel being used on the UHF-24 receiver clockwise to about 3/4 rotation, until the mixed volume level is comfortable for your application. This setting is roughly equivalent to a direct instrument cord connection. Tuning the volume up to maximum will provide 4dB gain over a cord. *(Note: Since this is a mixed output of both channels CH-A and CH-B, both channels will be processed simultaneously by the amplifier and/or effects connected to, which may not be appropriate for your application.)*

Your UHF-24 receiver is now operational and ready to use. Now that you have completed the above step, proceed to instructions for the actual transmitter, UH-4, UB-4 or LINK 4, that is included with your system.

Tone Squelch™ and Additional Operating Notes

The UHF-24 receiver and transmitters feature Nady's Tone Squelch™ circuit. Nady now offers Tone Squelch™ for professional uses and anyone who needs advanced protection against RF interference during a recording, performance, or presentation. This feature is strongly recommended for situations where the transmitter is turned on or off during use. With Tone Squelch™ an unwanted signal on the same operating which may enter your inactive receiver will not be amplified by your connected equipment even if the receiver is left on with the transmitter(s) off. Thus Tone Squelch™ prevents a pop or disruptive noise from your sound system.

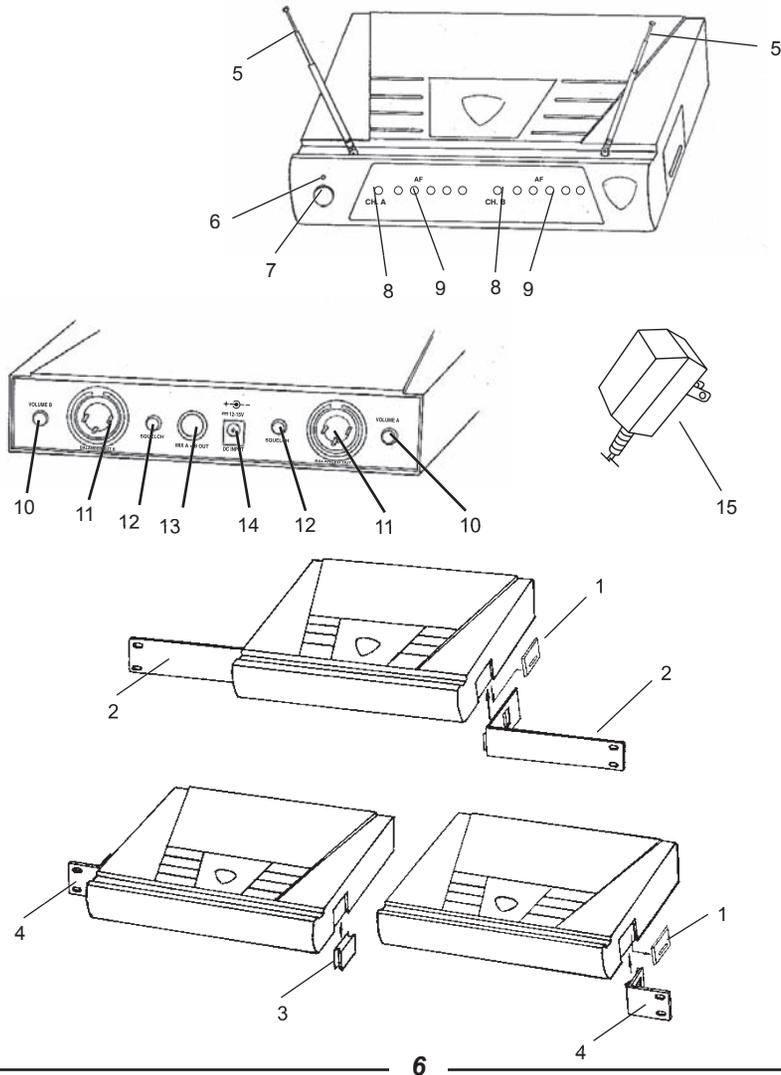
The receiver detects a specific tone code signal from your transmitter, which unlocks your receiver's audio. In this manner only your own modulated signal can then be heard. (The receiver has an

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internal Tone Squelch defeat feature. Contact your Nady dealer or Nady Systems Customer Service for details.)

Note:

- Even though your system has Tone Squelch™, it's always best to keep the volume controls of unused channels, (with corresponding transmitter off) turned off in the amplifier or the mixer. The audio should only be "live" if the transmitter is on.
- As when making any connection, make sure the connected amplifier or mixing board volume is at the minimum level before plugging in the receiver to avoid possible sound system damage.
- Only one transmitter can be used with one receiver channel. It is not possible to use two transmitters on the same frequency and mix the output of these transmitters into one wireless receiver channel. The dual receiver UHF-24 can thus be only used with two transmitters on the same frequencies as the two receiver channels.



LINK 4™ PLUG-IN TRANSMITTER

Transmitters Set Up

The LINK-4 transmitter requires a single 9V battery to operate. To open the battery compartment, slide **BATTERY DOOR (31)** downward to open the cover, exposing the **BATTERY HOLDER (32)**. Insert a fresh 9V battery according to the correct polarity as indicated on the transmitter body. Slide back the door onto the original position. Make sure the cover is secured completely. Fresh Alkaline batteries can last up to 10 hour of operation, but in order to ensure optimum performance, it is recommended that the batteries should be replaced after 6-8 hours of use.

Handheld Microphone Installation

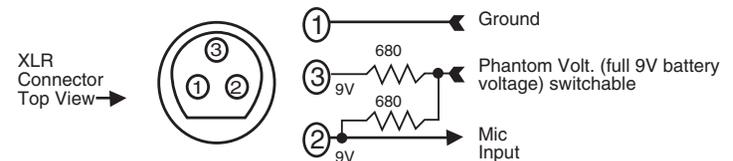
- Step 1 Rotate the transmitter's threaded **LOCKING RING (33)** counter-clockwise inward the transmitter body until it stops.
- Step 2 Hold your mic in one hand and the LINK 4 in other.
- Step 3 Place your mic into the **XLR CONNECTOR (34)** and push your mic all the way down until a click sound.
- Step 4 Lock the mic into place with the adjustable threaded **LOCKING RING (33)** by rotating the ring clockwise, to the top of the transmitter
- Step 5 To release the **XLR CONNECTOR (34)**, turn the treaded **LOCKING RING (33)** counter-clockwise and press the **RELEASE BUTTON (39)**.

Lavalier Microphone Installation

You will need a male XLR to mini male XLR adaptor (Switch-Craft TA-4 or equivalent) to use a lavalier microphone per the installation instructions. Then plug the lavalier microphone's mini male XLR into the adaptor. The **PHANTOM POWER SWITCH (35)** should be turned ON for use with a condenser lavalier mic which requires external phantom powering.

Note: The lavalier microphone you are using must terminate with a mini XLR or full XLR connector and confirm to the pin assignments shown below. If they do not, the lavalier mic may not work with the LINK 4. If you have any questions, please contact your Nady dealer or Nady Systems Service Department.

The pin assignments on the LINK 4 XLR connector are as shown:

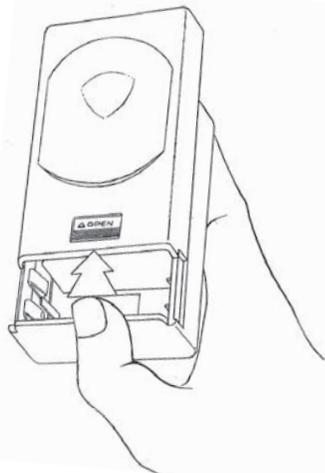
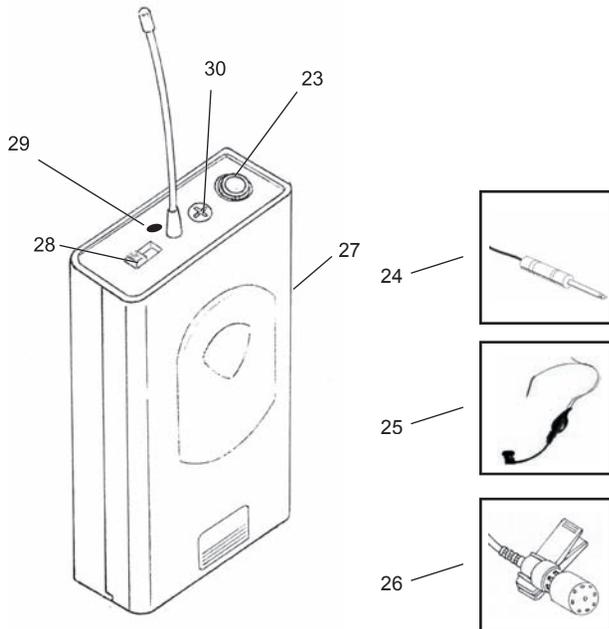


Microphone Operation

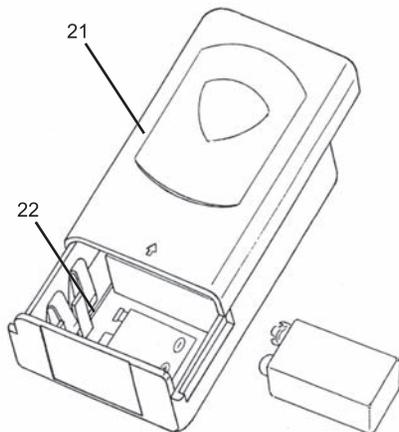
To turn it on, slide the **OFF/STANDBY/ON SWITCH (36)** to the STANDBY position first (transmitter on, audio muted) or the ON position (transmitter and audio both on). You could also use your hardware microphone audio mute switch afterward. The **BATT LOW INDICATOR LED (37)** will give a single flash in red, indicating usable battery strength. In case of dead or low battery, the LED will either not go on at all or will stay on continuously, indicating that the battery should be replaced with a fresh one. To preserve battery life, turn the transmitter off when not in use. To turn off, slide the **OFF/STANDBY/ON SWITCH (36)** to OFF position. No LEDs will light up. The unit is now off.

UB-4 BODYPACK TRANSMITTER

INPUT SELECTOR SWITCHES	
Instrument	HL G G H L
Headworn	HL G G H L
Lavalier	HL G G H L



Opening Battery Compartment



UH-4 HANDHELD TRANSMITTER

Transmitters set up

The UH-4 transmitter requires a single 9V battery to operate. To open the battery compartment, unscrew the **BATTERY COVER (16)** with a counter-clockwise turn and remove the cover, exposing the **BATTERY HOLDER (17)**. Insert a fresh 9V battery according to the correct polarity as indicated on the transmitter body. Screw cover back onto the microphone. Make sure the cover is screwed on completely. Fresh alkaline batteries can last for up to 10 hours of operation, but in order to ensure optimum performance, it is recommended that the batteries should be replaced after 6-8 hours of use.

Transmitter Operation

To turn transmitter on, slide the **OFF/STANDBY/ON SWITCH (18)** to the STANDBY position first (transmitter on, audio muted) or the ON position (transmitter and audio both on). The **LOW BAT LED (19)** will give a single flash, indicating usable battery strength. In case of dead or low battery, the LOW BAT LED will either not go on at all or will stay on continuously. During use, if the LOW BAT LED stays on continuously, it is indicating that the battery should be replaced with a fresh one. To preserve battery life, turn the transmitter off when not in use.

Receiver Volume Controls Adjust

The Volume Controls adjust only the 1/4" sum output level. Turn the **VOLUME CONTROLS (10)** on the UHF-24 receiver clockwise to near full gain. Adjust Volume up or down so that no audio distortion is present when amplifier or mixer is set at their usual levels. At full gain, the system gain is approximately +20dB higher than direct line to amp connection. If the **XLR OUTPUTS (11)** are used, the volume level of each receiver should be adjusted by the mixer to which the UHF-24 receiver is connected.

Level Trim Adjust

For optimum performance, an **INPUT LEVEL CONTROL (20)** is provided for the transmitter. Adjust the microphone gain by inserting a small slot-headed screwdriver through the adjustment hole, located on the topside of the battery compartment, under the compartment cover. Factory setting is 1/2 full. This is a setting to be used in most typical close microphone applications. Depending on the average distance between vocalist's mouth and microphone, you can adjust the level for your application. Set for maximum possible gain and headroom without noticeable distortion of the high level peaks. It is recommended that the level be set at about 1/2 maximum. Experiment and set for maximum possible gain without audible distortion on the high level peaks.

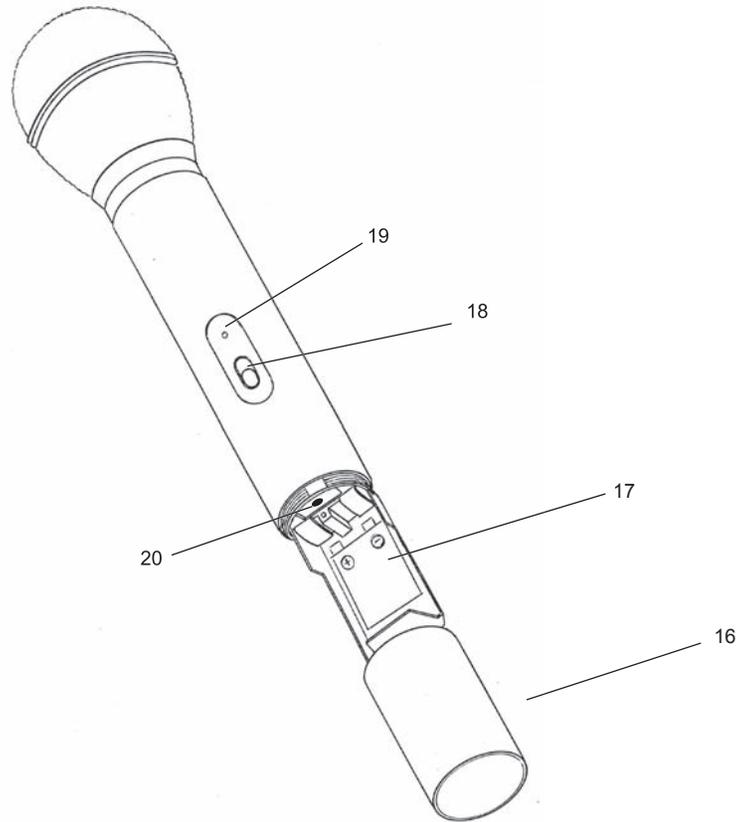
(Note: Turning down the gain too much can compromise the signal-to-noise and it is not recommended.)

The transmitter is now ready to use. The CH.A or B LED indicator on the corresponding receiver should now be on, indicating a received signal from the transmitter. When ready to speak, slide the switch to the ON position. Adjust the volume of the receiver as outlined in the *Receiver Operating Instructions* section: *Connecting Audio Outputs*.

Notes:

- The battery compartment on the UH-4 functions as a built-in antenna. For proper operation, it should not be covered by the hand or touched during operation.
- Observe care in selecting P.A. volume, transmitter location and speaker placement so that acoustic feedback (howling or screeching) will be avoided.

UH-4 HANDHELD TRANSMITTER



UB-4 BODYPACK TRANSMITTER

Transmitters set up

The UB-4 transmitter requires a single 9V battery to operate. To open the battery compartment, snap open the **BATTERY DOOR COVER (21)**, exposing the **BATTERY HOLDER (22)**. Insert a fresh 9V battery according to the correct polarity as indicated on the transmitter body. Snap the cover back onto the bodypack. Make sure the cover is secured completely. Fresh alkaline batteries can last up to 10 hour of operation, but in order to ensure optimum performance, it is recommended that the batteries should be replaced after 6-8 hours of use.

Input Connection and Input Selector Switches

The UB-4 is provided with a **3.5MM LOCKING JACK (23)** for connecting the audio input selected. Connect either the **INSTRUMENT CORD (24)**, or the **HEADWORN MIC (25)**, or **LAVALIER MIC (26)** as desired, according to the input selected. (Note: Use only the input audio source as per the input selected with the input audio Input Selector Switch or the audio will not be optimal- a muddy or distorted sound may result.) To secure the connection, turn the slip ring on the plug clockwise to thread it on the jack. To unplug, reverse the process. Slip the transmitter into a pocket or clip it onto you cloth or instrument strap (if using the UB-4 as an instrument transmitter.)

UB-4 BODYPACK TRANSMITTER

The UB-4 is equipped with two **INPUT SELECTOR SWITCHES (27)** located under the cover on the circuit board for selecting the type of audio input you will be supplying to the transmitter. Select from the choice of three positions: **INSTRUMENT** (for guitar, bass, etc.)/ **HEADWORN MIC/ LAVALIER MIC. (G/H/L)**.

There are two switches, one with selectable position G, H, L and the other with G, HL.

To select inputs: (see chart on page 10)

A. Instrument — both switches to "G"

B. Headworn Mic — set one switch to "HL" and the other to "H"

C. Lavalier Mic — set one switch to "HL" and the other to "L"

Transmitter Operation

To turn transmitter on, slide the **OFF/STANDBY/ON SWITCH (28)** to the **STANDBY** position first (transmitter on, audio muted) or the **ON** position (transmitter and audio both on). The **LOW BAT LED (29)** will give a single flash, indicating usable battery strength. In case of dead or low battery, the **LOW BAT LED** will either not go on at all or will stay on continuously. During use, if the **LOW BAT LED** stays on continuously, it is indicating that the battery should be replaced with a fresh one. To preserve battery life, turn the transmitter off when not in use.

Receiver Volume Controls Adjust

The volume controls adjust only the 1/4" sum output. Turn **VOLUME CONTROLS (10)** on the UHF-24 receiver clockwise to near full gain. Adjust Volume up or down so that no audio distortion is present when amplifier or mixer is set at their usual levels. At full gain, the system gain is approximately +20dB (+4dB for GT) higher than a direct line-to-amp connection. If the fixed level **XLR OUTPUTS (11)** are used, the volume level of each receiver should be adjusted by the mixer to which the UHF-24 receiver is connected.

Level Trim Adjust

For optimum performance, an **INPUT LEVEL CONTROL (30)** for LT/HM is provided. Adjust the microphone gain by inserting a small slot-headed screwdriver to the adjustment knob, located on the topside of the transmitter unit, next to the mic input jack. Factory setting is 1/2 full. This is a setting to be used in most typical close microphone applications. Depending on the average distance between vocalist's mouth and microphone, you can adjust the level for your application. Set for maximum possible gain and headroom without noticeable distortion of the high level peaks. It is recommended that the level be set at about 1/2 maximum. Experiment and set for maximum possible gain without audible distortion on the high level peaks.

(Note: Turning down the gain too much can compromise the signal-to-noise and it is not recommended.)

The transmitter is now ready to use. The CH. A or B LED indicator on corresponding receiver should now be on, indicating a received signal from the transmitter. When ready to speak, slide the switch to the **ON** position. Adjust the volume of the receiver as per in the receiver operating instruction section.

Notes:

- The transmitter has an external flexible wire antenna. For proper operation, it should not be cover or touch during operation.
- Observe care in selecting P.A. volume, transmitter location and speaker placement so that acoustic feedback (howling or screeching) will be avoided.