

OWNER'S MANUAL



UWS -100

100-Channel Select UHF Wireless System



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Introduction

Thank you for choosing the Nady UWS-100 wireless system, and congratulations on your choice. The UWS-100 has the best performance and price value in professional UHF wireless, offering clear-channel, frequency-agile operation on the UHF band for interference-free performance in any application or locale. The UWS-100 delivers 100 user-selectable channels, frequency synthesized in 00-99 channels in the US frequency band 667MHz-697MHz. The UWS-100 features proprietary companding and low-noise circuitry for an industry-best 120dB dynamic range, and the clearest, most natural sound available in wireless today.

Using This Manual

This booklet provides instructions for the operation of the UWS-100 and includes a description of features, a quick user controls guide, a step-by-step guide to operations for each unit, system specifications, a troubleshooting guide, miscellaneous tips, and servicing information.

One Year Limited Warranty

Nady Systems, Inc. warrants to the original consumer purchaser that the unit is free from any defects in material or workmanship for a period of one year from the date of original retail purchase. If any such defect is discovered within the warranty period, Nady Systems, Inc. will repair or replace the unit free of charge, subject to verification of the defect or malfunction upon return to Nady Systems. Please do not return your Nady product to the store where it was purchased as Nady Systems handles your warranty service directly. Communication with our Service Department is the most efficient means of servicing your unit and we are dedicated to keeping you a satisfied customer.

To the extent permitted by law, any applicable implied warranties, including warranties of merchantability and fitness are hereby limited to one year from the date of purchase. Consequential or incidental damages resulting from a breach of any applicable express or implied warranties are hereby excluded. This warranty is in lieu of all other agreements and warranties, general or special, express or implied and no representative or person including a Nady dealer, agent, or employee is authorized to assume for us any other liability in connection with the sale or use of this Nady Systems' product.

Whereas some states do not allow limitations on how long implied warranties last, and do not allow exclusion of incidental or consequential damages, the above limitations and exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which may vary from state to state.

This warranty is subject to the following conditions:

1) This system must have been purchased from an authorized Nady dealer and all warranty service must be performed by Nady's service department. Any service not performed by Nady will automatically void this warranty.

2) Items not covered: physical damage resulting from improper handling of the unit in transit from the factory by the shipper (Nady Systems is not responsible for such damage and all such claims must be made against the shipping company by the consignee); defects caused by normal wear of the product (expendable parts are typically connectors, cables, potentiometers, switches and similar components); damage or defects caused by abuse, neglect, accident, failure to connect or operate the unit in any way that does not comply with applicable technical or safety regulations, or improper repair, excessive heat or humidity, alteration or unreasonable use of the unit, causing cracks, broken cases/housings or parts; damage caused by leaking batteries; finish or appearance items; items damaged in shipment en route to Nady Systems, Inc. for repair. The warranty is null and void if any Nady serial number has been removed or defaced.

How To Obtain Service:

1) If factory service is required, you must contact our Service Department at (510) 652-2411 for a return authorization (RA) number. Make sure the RA number is clearly marked on the outside of your package. (Please note: if an RA number is not included, our shipping department cannot accept your package.)

2) Send the unit back to Nady Systems, 6701 Shellmound Street, Emeryville, CA, 94608, freight pre-paid. You must include proof of date and place of purchase (i.e., photocopy of your bill of sale) or Nady cannot be responsible for repair or replacement. Nady Systems, Inc. will not repair, nor be held responsible, for any units returned without proper identification, return address, and RA number clearly marked on the package.

3) Per the above, Nady will perform all warranty service and return the unit to you at no charge. Nady Systems will inform the buyer if product sent in does not meet the terms of this warranty and will provide a quote for fixing the unit and/or shipping it back exclusively at the buyer's expense.

System Features

UWS-100 System

- Unsurpassed state-of-the-art PLL UHF performance with 120dB dynamic range and operation, up to 500 ft. (line-of-sight)
- 100 user-switchable UHF frequencies per band, or automatic open channel selection with convenient auto-scan feature
- DigiTRU Diversity™ for maximum range and dropout protection
- ASC™ (Auto-Sync Channels) download feature sends selected Channel information to transmitter via IR sender for easy frequency synchronization
- Sophisticated IF filtering for optimal simultaneous operation of multiple systems in the same location
- Front panel touch control buttons for ease of channel selection and ASC™ operation
- Dual front panel permanently attached swivel antennas
- Full front panel LED indicators including A/B diversity, Channel selected, ASC™ transfer status, and bi-color (green/red) AF level
- Back panel On/Off switch, balanced XLR fixed Mic Level and adjustable unbalanced ¼" jack audio Line Level outputs; squelch (RF mute) adjust; DC input jack; volume control for ease of operation
- Externally powered with included DC adapter (15 VDC 400 mA)
- Rugged all-metal receiver for long-term durability
- Choice of transmitters: UHT-100 handheld mic or UBT-100 bodypack—lavalier (LT), Headmic™ (HM), or instrument (GT)

UHT-100 Handheld Mic Transmitter

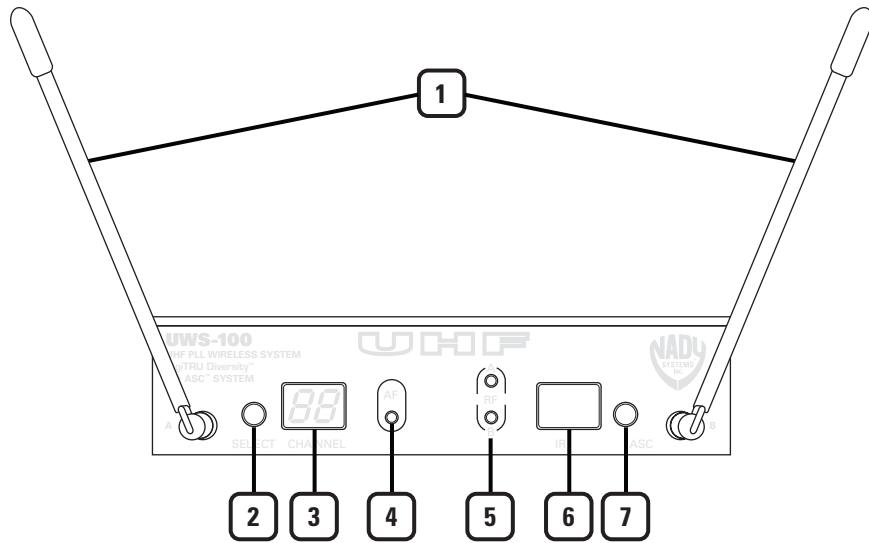
- Off/On/Mute power switch allows convenient audio muting with the transmitter on
- RF power HI/LO and TX power lock On/Off switches
- LCD display indicates Power/Battery Level status and Channel selected
- Convenient, economical operation with two AA alkaline or NiMH batteries
- Features the Nady DM-10D unidirectional neodymium dynamic cartridge for optimal true sound, maximum feedback rejection and minimal handling noise
- Sleek housing with internal antenna for durable long life and optimum aesthetics
- Rubber-feel finish for sure grip

UBT-100 Bodypack Transmitter

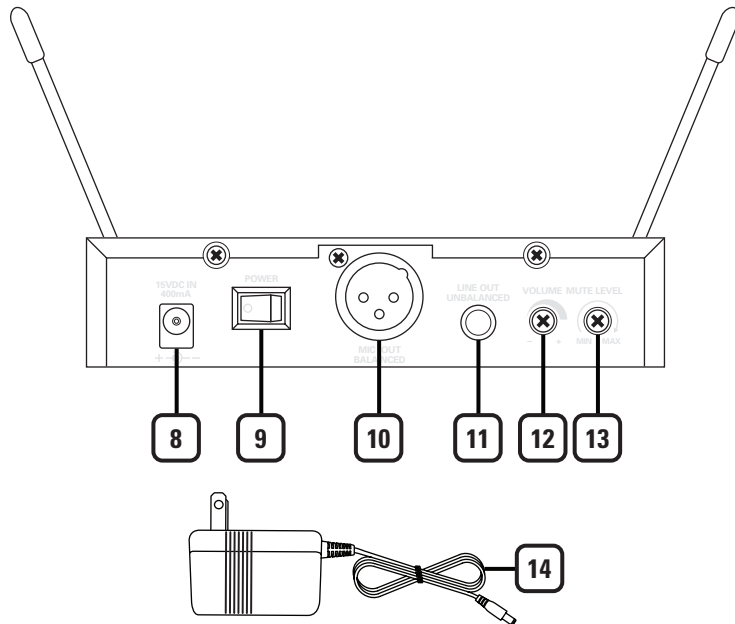
- Off/On/Mute power switch allows convenient audio muting with the transmitter on
- LCD display indicates Power/Battery Level status and Group/Channel selected
- Convenient, economical operation with two AA alkaline or NiMH batteries
- Easily accessible input level adjustment (HM/LT)
- Compact housing, durable removable antenna and unique locking 3.5mm mini plug connector for mic or instrument cable

Quick User Controls Guide

UWS-100 Receiver: Front View



UWS-100 Receiver: Back View



Frequency Plan

Band 1: 667.000-696.700MHz (U.S.)
100 Channels / 300 KHz per step

Channel	00	10	20	30	40	50	60	70	80	90
00	667.000	670.000	673.000	676.000	679.000	682.000	685.000	688.000	691.000	694.000
01	667.300	670.300	673.300	676.300	679.300	682.300	685.300	688.300	691.300	694.300
02	667.600	670.600	673.600	676.600	679.600	682.600	685.600	688.600	691.600	694.600
03	667.900	670.900	673.900	676.900	679.900	682.900	685.900	688.900	691.900	694.900
04	668.200	671.200	674.200	677.200	680.200	683.200	686.200	689.200	692.200	695.200
05	668.500	671.500	674.500	677.500	680.500	683.500	686.500	689.500	692.500	695.500
06	668.800	671.800	674.800	677.800	680.800	683.800	686.800	689.800	692.800	695.800
07	669.100	672.100	675.100	678.100	681.100	684.100	687.100	690.100	693.100	696.100
08	669.400	672.400	675.400	678.400	681.400	684.400	687.400	690.400	693.400	696.400
09	669.700	672.700	675.700	678.700	681.700	684.700	687.700	690.700	693.700	696.700

Service Information

In the U.S. If you are experiencing operational problems with your system, please refer to the Support page at www.nady.com for assistance. Should your wireless system require service, please contact the Nady Service Department at (510) 652-2411 for a Return Authorization (R/A) Number and service quote (if out of warranty). Make sure the R/A Number is clearly marked on the outside of the package that you are returning.

If your unit is out of warranty, please enclose a cashier's check or money order (or pay by credit card) per instructions by the Nady Service Department. Ship your unit prepaid to: Nady Systems, Service Dept, 6701 Shellmound Street, Emeryville, CA 94608. Include a brief description of the problem you are experiencing. For service of a unit under warranty, please follow the instructions in the following section.

Outside the U.S. For service or warranty matters please contact the Nady distributor in your country through the dealer/store from which you purchased this product.

Do not attempt to service this unit yourself as it can be dangerous and will also void the warranty.

Specifications

OVERALL SYSTEM PERFORMANCE

Operating Frequency Range	667.0MHz-696.7MHz (U.S.)
Freq. Synthesized	(100 channels switchable) 300kHz/step
PLL system frequency stability	<0.005%
Frequency Response	50Hz-18kHz +/-3dB
Dynamic Range	120dB
Harmonic Distortion	<0.5%
Modulation	FM (F3E) +/-25kHz normal, +/-75kHz max
Operating Range	150-250 feet typical, 500+feet max line-of-sight

UWS-100 RECEIVER

Receiver System	Dual conversion Super Heterodyne with Digi-True Diversity (dual antennas with optimum reception selected)
Selectivity	60dB, normal +/-75kHz offset
Image Rejection	-70dB, minimum
Sensitivity	-107dBm, normal
Spurious Rejection	65dB, normal
Mute Threshold	Adjustable (-65dBm to -95dBm)
Controls	SELECT, ASC Sync buttons, Power ON/OFF Rocker Switch, MUTE level pot, VOLUME line level pot

LED Display Two Digits LED panel indicating selected Channel; RF A or B diversity

Audio Outputs

Output Impedance	LED indicator; AF/Peak audio bi-color LED indicator
Power Requirement	LINE OUT UNBALANCED: adjustable line audio output
Antennas	MIC OUT BALANCED: fixed mic level audio output
Dimensions	Unbalanced: 1k Ω and Balanced: for 600 Ω loads
Weight	15VDC/0.4A
Housing Construction	Dual permanently attached swivel antennas

UH-100 HANDHELD TRANSMITTER

RF Output Power	+14dBm (25mW typical)
Harmonic/Spurious Emission	-50dBc normal
Impedance	3.0 k Ω
Controls	Power OFF/STBY/ON, RF HI/LO and TX Lock switches
LCD Display	Channels/Battery Levels/TX Lock
Antenna Type	Integral
Battery Type	2 x AA alkaline batteries operation
Battery Life	8-10 hours typical
Dimensions	11" L x 2" D (28cm x 5.1 cm)
Weight (w/o batteries)	8.3 oz (235g)
Housing Construction	ABS Plastic

UB-100 BODYPACK TRANSMITTER

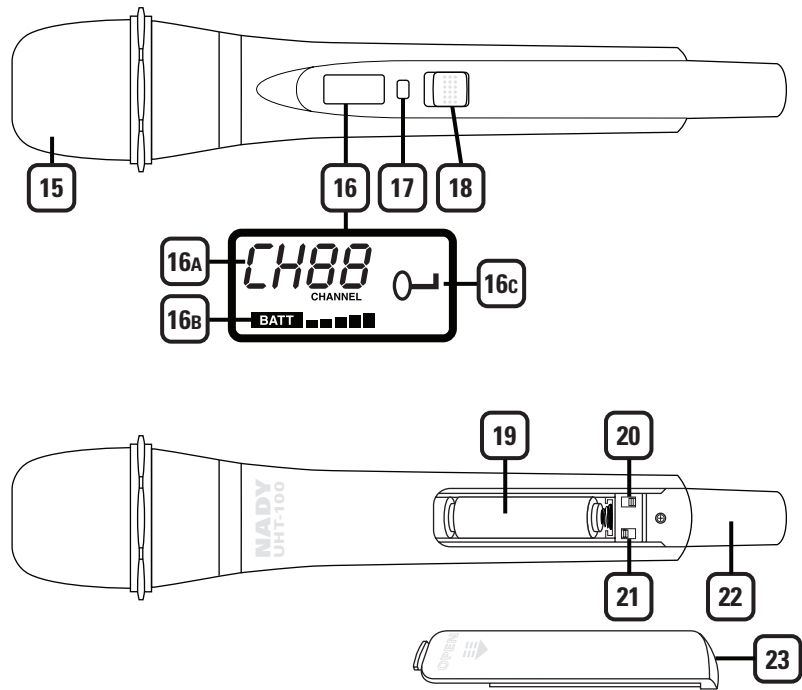
RF Output Power	+14dBm (25mW typical)
Harmonic/Spurious Emission	-50dBc normal
Input Impedance	5k Ω (Lavalier); 500 k Ω (Instrument)
Controls	Power OFF/STBY/ON
Input Connector	Locking 3.5mm mini-jack
LCD Display	Channels/Battery Levels
Antenna Type	External Removable
Battery Type	2 x AA alkaline or NiMH
Battery Life	8-10 Hours typical, alkaline
Dimensions	2.5"W x 1"H x 3.75"D (6.35cm x 2.54cm x 9.53cm)
Weight (w/o batteries)	3.1 oz (88g)
Housing Construction	ABS Plastic

Specifications subject to change at any time without prior notice for purposes of product improvement

- 1. DUAL ANTENNAS** Permanently mounted. Rotate to 45° as shown for optimal reception
- 2. SELECT BUTTON** Press once quickly to start the Auto Scan function to search for an interference-free channel. Press and hold for ~2 seconds to manually select one of 100 channels
- 3. CHANNEL DISPLAY** LED indicator displays the selected channel from 00-99 in numerical format
- 4. AF LED INDICATOR** Bi-color LED (green/orange) displays received audio level (orange indicates maximum allowable audio level)
- 5. RF A/B LED INDICATORS** Indicate diversity A or B antenna reception when transmitter is on
- 6. IR WINDOW** Transmits LED Infrared signal for linking the receiver to the transmitter for frequency downloads, with blinking IR LED status indicator
- 7. ASC™ SYNC BUTTON** Starts the IR link download of the receiver's selected channel to the transmitter. Position the transmitter IR receptor window 6-12" away from the receiver IR window, press the ASC button once and wait one second for the receiver to respond. The red LED inside the IR window will flash twice within two seconds. If the IR data download is successful, the transmitter LCD display's backlight will light and the receiver's RF A/B LED will also light, indicating reception of the receiver signal from the transmitter
- 8. DC INPUT JACK** For connecting external AC/DC adapter to power receiver (DC15VDC/400mA)
- 9. POWER ROCKER SWITCH** Press right side to turn On or press left side to turn Off receiver. The Channel Display (3) is lit when the unit is on
- 10. BALANCED MIC OUT XLR JACK** Audio output at fixed MIC level
- 11. UNBALANCED LINE OUT ¼" JACK** Line level audio output, adjustable with Volume control
- 12. VOLUME CONTROL** Selects desired output volume level for the Unbalanced Line Out
- 13. MUTE LEVEL (RF SQUELCH)** Controls the mute level for the receiver. Turn clockwise for maximum range or turn counterclockwise, if needed, to minimize noises from outside RF interference upon muting
- 14. DC POWER SUPPLY ADAPTER** DC15VDC/400mA

Quick User Controls Guide

UHT-100 Handheld Transmitter: Front and Back



15. MIC BALL Windscreen

16a. LCD DISPLAY: CHANNEL Indicates channel (00-99)

16b. LCD DISPLAY: BATTERY Indicates battery status from one (weakest) to five (strongest) bars. Flashing "BATT" indicates low battery

16c. LCD DISPLAY: TX LOCK KEY Indicates Power On/Off switch is locked (see #20)

17. IR RECEPTOR SENSOR/WINDOW Infrared LED sensor for linking the transmitter microphone to the receiver during IR frequency downloads

18. OFF/STBY/ON Slide power switch to ON or OFF to turn mic on/off, or to STBY to turn on power with audio muted

19. BATTERY COMPARTMENT Holds two AA alkaline or NiMH batteries—observe correct polarity

20. TRANSMITTER LOCK SWITCH Slide the switch to ON to lock the TX, or OFF to unlock the TX. (IR channel programming still functions normally)

21. RF POWER HI/LO Slide the switch to HI for more RF output, or LOW for less RF output—consumes less battery power in this setting and also better for simultaneous multichannel operation applications

22. INTERNAL ANTENNA For best operating range, do not handle this antenna during use

23. BATTERY COVER Slide open battery slot to insert batteries

Miscellaneous Tips

- The receiver antennas should be kept away from any metal surfaces whenever possible as they can reflect away or shield the incoming RF signal.
- If the receiver's volume control is set too high, it may overdrive the input of the attached audio mixer, causing distortion. Conversely, if the output is set too low, the overall signal-to-noise ratio of the system may be reduced, causing noticeable hiss. If such noise occurs, adjust the output level of the receiver so that highest sound pressure level going into the microphone transmitter causes no input overload in the mixer, but permits the mixer level control to operate in the normal range (not too high and not too low). This provides the optimal signal-to-noise for the entire system.
- Before inserting the batteries, ensure that they are inserted with the correct polarity.
- Before operation, confirm that the receiver and associated transmitter are tuned to the same frequency group and channel number.
- After making a receiver channel change, ensure that the corresponding change is also made on the matching transmitter.
- Use only new alkaline or fully recharged NiMH batteries. Do not use "general purpose" carbon batteries. When batteries are weak, replace all the batteries at the same time. Do not mix new and old batteries.
- Position the receiver so that it has the least possible obstructions between it and the transmitter. Line-of-sight is best!
- During operation, the transmitter and the receiver should be as close as possible for optimum results but never closer than 3 ft. (1 m) as that may overload the receiver's input circuitry and cause noises.
- For the best operation, the receiver should be placed at least 3 ft. (1 m) above the ground and 3 ft. (1 m) away from a wall or metal surface. The transmitter should also be at least 3 ft. (1 m) from the receiver. Keep antennas away from noise sources such as motors, automobiles, neon lights, signal processors, computers, as well as large metal objects.
- A receiver cannot receive signals from two or more transmitters simultaneously.
- Turn the transmitter off when it is not in use. For longest life, remove the batteries if the unit is not to be used for a long period as the transmitters draw a tiny residual current to maintain the programmed settings, even when turned off. Also, since batteries installed for a long time can sometimes corrode and/or leak, causing damage, it is generally recommended that batteries be removed whenever the transmitters are not being used.
- When using the bodypack for instrument use: Scratchy noises can sometimes occur when an electric guitar with dirty pots or connections is used with a 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 produce scratchy noise, we suggest these steps to eliminate problems:
 - 1) Make sure all guitar volume and tone pots are clean and all contacts are solid. This is very important.
 - 2) Solder a 47pF capacitor across the pot to ground terminal of the guitar's volume and tone pots to provide extra filtering.

Cautions and Troubleshooting

Feedback

Avoid acoustic feedback (howling or screeching) by taking care in selecting PA volume, transmitter location and speaker placement.

Please also note the pickup pattern characteristics of the microphone selected. Unidirectional microphones are more resistant to feedback. However, they pick up sound sources best that are directly in front of the microphone. Also, mics that are farther from the sound source (such as a handheld) require more acoustic gain and

thus are also more prone to feedback than close-source mics.

No or Low Audio

If you are not getting audio through the system, carefully re-check all setups. Especially note that the receiver and transmitter must be set to operate on the same RF channel. Also confirm that the transmitter's **POWER OFF/STBY/ON SWITCH (18, 25)** is not in the STBY position. The receiver's **UNBALANCED LINE OUT (11)** is adjustable so make sure the **VOLUME CONTROL (12)** is set properly.

RF Interference and Finding Open Channels

The FCC mandates the following information be provided to all end users of this equipment:

Consumer Alert

Most users do not need a license to operate this wireless microphone system. Nevertheless, operating this microphone system without a license is subject to certain restrictions: the system may not cause harmful interference; it must operate at a low power level (not in excess of 50mW); and it has no protection from interference received from any other device. Purchasers should also be aware that the FCC is currently evaluating use of wireless microphone systems, and these rules are subject to change.

For more information, call the FCC at 1-888-CALL-FCC (TTY: 1-888-TELL-FCC) or visit www.fcc.gov/cgb/consumerfacts/wirelessmic_factsheet.html.

If you encounter slight receiving interference when the transmitter is far from the receiver (from other than an operating TV station on the same frequency), it can often be overcome by adjusting the receiver's **MUTE LEVEL/SQUELCH (16)**—see *Adjusting the Squelch*. If receiving interference on a selected channel with the transmitter off, you must reprogram the receiver and transmitter to a different channel.

To reprogram, you must first find an open channel. To do this, follow the procedure outlined in *Selecting the UWS-100 Receiver Channel*. With the associated transmitter off, scroll through the channels to find one that shows no received signal (not lit) on the receiver's **RF A/B LEDs (5)**. Also, neither of these LEDs should be lit on each of the three immediately adjacent channels both above and below the selected channel for optimal interference-free operation

(i.e. in a field of seven total adjacent channels—with the channel used in the middle). If operating multiple UWS-100 Series systems simultaneously, repeat this procedure with every new channel being selected, with previously tuned systems all on, both transmitters and receivers.

Also see:

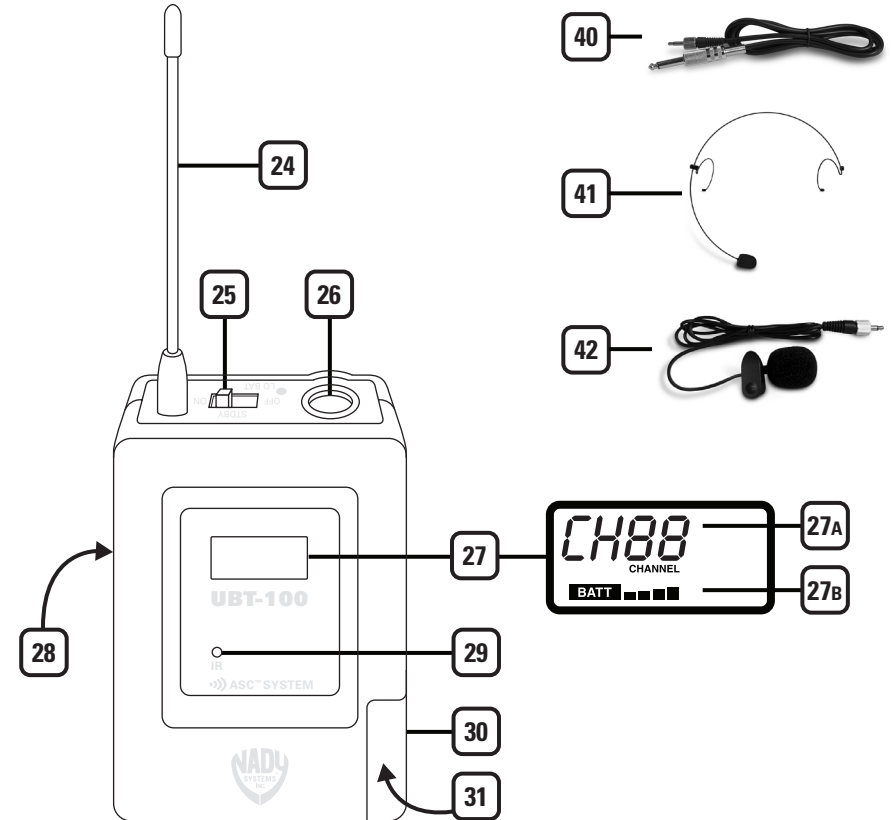
Selecting the UWS-100 Receiver Channel
Programming the UH-100 to the Selected Channel

Programming the UB-100 to the Selected Channel

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 cease operation or change frequencies. The above statement is valid only for use in the U.S.A.

Quick User Controls Guide

UB-100 Bodypack Transmitter



- 24. ANTENNA** Removable antenna—should be attached during operation
- 25. OFF/STDBY/ON SWITCH** Slide power switch to ON or OFF to turn on/off. Set to STDBY to turn power on with audio muted
- 26. INPUT JACK** Locking 3.5mm mini-jack for connecting audio input cord from lapel mic (LT), Headmic™ (LT/HM), or instrument (GT) cable
- 27a. LCD DISPLAY: CHANNEL** Indicates channel (00-99)
- 27b. LCD DISPLAY: BATTERY** Indicates battery status from one (weakest) to five (strongest) bars and flashing "BATT" for low battery
- 28. BELT CLIP** On back of unit

- 29. IR RECEPTOR SENSOR** Infrared LED sensor for linking the transmitter to the receiver during IR frequency download
- 30. LATCHING BATTERY COMPARTMENT DOOR** Slide open to insert batteries
- 31. BATTERY COMPARTMENT** Holds two AA alkaline or NiMH batteries
- 37. INPUT VOLUME LEVEL** (On back of unit) Adjusts input (LT/HM) audio level for optimal sound
- 40. INSTRUMENT CORD** GT cable—connects Instrument's audio output to TX input jack
- 41. HEADMIC™** Headworn microphone—connects to transmitter input jack
- 42. LAVALIER MIC** Lavalier (lapel) microphone—connects to transmitter input jack

System Operation

UWS-100 Receiver

Powering the Receiver

To power the receiver, plug the provided **DC POWER SUPPLY UNIT (14)** adapter into the **DC INPUT JACK (8)** on the back of the receiver, then plug the adapter into a 120VAC outlet.

Note: Any 15-18VDC source with minimum 400mA capacity can also be used.

The **POWER ROCKER SWITCH (9)** is used to turn the receiver on or off. To turn on, press down the right side of the switch (“1”). The **LED DISPLAY (3)** will light, showing Channel 00-99. The **AF LED (4)** and **RF A/B LEDs (5)** remain dark. They will display the received RF A/B and audio level when the transmitter is activated and audio transmitted. To turn off, press down the left side of the switch (“0”). The receiver will turn off. All the LEDs will be turned off, indicating the receiver is off. At power off the UWS-100 receiver will store the last selected channel and re-display them at power on. It can be reprogrammed to any new channel. The default factory setting is Channel 14.

Adjusting Antennas

The UWS-100 has two permanently attached, flexible elbow **ANTENNAS (1)** for diversity reception. Unfold and rotate these antennas to operate the receiver. The optimal positions of the antennas are flared 45° out from the receiver sides and 90° from each other. For maximum range, it is always best to maintain a line-of-sight (no obstructions) between the receiver antennas and the transmitter at all times whenever possible.

Adjusting the Squelch

The **MUTE LEVEL/RF SQUELCH (13)** controls the mute circuits in the receiver. The control should be adjusted clockwise to the minimum RF squelch setting at which the **RF A/B LED (5)** will remain on while your transmitter is in normal use, up to the maximum operating range anticipated in use for your application. However, in areas of high RF activity, the squelch control may need to be adjusted counterclockwise. If the transmitter is off and the receiver signal diversity A or B LED indicator flickers or stays on continuously, the squelch should be adjusted counterclockwise to a higher level to stop the flickering. Be careful not to select too high a counterclockwise setting as this may reduce the operating range to below what is needed. A range walk test will help in selecting the proper level. If the range is not critical, note that a counterclockwise (maximum squelch) setting will also yield a quieter mute function, which might be desired in certain applications. The squelch level is factory preset at maximum sensitivity and operating range (i.e. clockwise for minimum squelch level—maximum usable range).

Note: For easier intuitive operation, the MIN and MAX indications for this control refer to the minimum and maximum operating range settings, not to the actual mute levels selected, which are the opposite as per above.

Selecting the UWS-100 Receiver Channel

See *RF Interference and Finding Open Channels* in the **Cautions and Troubleshooting** section. This section will also aid in finding desired channel(s) of operation when setting up your system(s).

The **SELECT BUTTON (2)** has two functions. A short press (~1 second) scans for a clear channel and a long press (> 2 seconds) manually programs a desired channel.

IR link is completed. The **LCD DISPLAY (27)** will show the matching channel as receiver. If no action is taken during the two seconds of active IR data transfer, the receiver and the transmitter units do not link and the transmitter’s previous program channel remains unchanged.

For normal operation, the transmitter should have the same channel as displayed on the receiver. The transmitter is now ready for use.

Note: The IR link is infrared light and thus works best when this data transfer is accomplished in a light-shielded or darker environment. It may not be successful in a brightly lit area. If the transfer fails, repeat the procedure in a darker location or somehow shield the link from outside light to successfully program the transmitter with the pre-programmed group and channel info from the receiver.

Connecting Input Audio Source

Lapel/Head Mic Uses (UBT-100 LT/HM)

The mini 3.5mm locking **INPUT JACK (26)** is for connecting the audio input from a lavalier/lapel mic (LT), a Headmic™ (HM), or an instrument (GT) cable, depending on which transmitter version is being used. Secure the connection to the cable by tightening the cable mini plug’s outer ring counterclockwise.

Instrument Use (UBT-100 GT)

Secure the connection of the GT (instrument) cable by tightening the mini-plug outer ring counterclockwise onto the 3.5mm locking **INPUT JACK (26)**. When ready to play, slide the **OFF/STBY/ON POWER SWITCH (25)** to the ON position to un-mute the audio. Adjust the volume on the receiver for one-to-one unity gain with a hardwired cord or select up to an added 4-5dB boost by adjusting the receiver volume to maximum for normal use with guitars and bass guitars.

Note: The audio level should be adjusted on the instrument as when using a hard-wired cord.

Operating the UBT-100 Bodypack Transmitter

The **OFF/STBY/ON POWER SWITCH (25)** has three positions and functions both as a power On/Off and as an audio mute On/Standby switch. During normal operation with the unit set to Standby, slide the switch to the ON position. The receiver’s **RF A/B LED (5)** diversity indicators should now be on, indicating a received signal from the transmitter.

After the unit is powered on, slide the power switch to the ON position to un-mute the audio or to STBY to mute the audio. Set the power switch accordingly and the transmitter is now ready to use. The receiver’s RF A/B LED indicator should now be on, indicating a received signal from the transmitter.

When ready to transmit audio, slide the power switch to ON to un-mute. To mute, slide the power switch to STBY again. Adjust the volume of the receiver per the previous section, *Connecting the Audio Output*.

Note: Avoid acoustic feedback (howling or screeching) by taking care in selecting PA volume, transmitter location and speaker placement.

UBT-100 Bodypack Transmitter (LT, HM or GT)

Setting up the Transmitter

The UBT-100 bodypack requires two alkaline or NiMH AA batteries to operate (do not mix types). To install the batteries into the battery compartment, press at the arrow end and slide down and remove the **LATCHING BATTERY COMPARTMENT DOOR (30)**, exposing the **BATTERY COMPARTMENT (31)**. Insert two fresh AA batteries according to the correct polarity as indicated on the transmitter body. Slide the battery compartment door back onto the transmitter, making sure it is secure. Fresh alkaline batteries can provide up to 8-10 hours of operation, but in order to ensure optimal performance it is recommended that the batteries be replaced after 6-8 hours of use or as indicated to be necessary by the flashing “BATT” icon. The transmitter has a removable **ANTENNA (24)** but it should be attached (screwed on tightly counterclockwise). For best transmitting power during use, make sure it is not blocked. A walk test before use will determine the operating range in your application.

Powering the Transmitter On/Off

To turn on the transmitter, slide the **OFF/STBY/ON POWER SWITCH (32)** to the standby position. The LCD backlight will light up, indicating the unit is now on. After five seconds the backlight will automatically turn off to conserve battery life. The **LCD DISPLAY (27)** indicator icons stay on for normal operation.

As many of the five LCD display **BATTERY LEVEL BARS (27B)** should stay lit as possible, indicating usable battery strength. As the batteries weaken, fewer of the level indicators will stay lit until only one bar

shows, which will then flash “BATT” to warn that the batteries are now too low and should be replaced as soon as possible with fresh ones.

To preserve battery life, turn the transmitter off when not in use. To turn the transmitter off, slide the power On/Off switch to the off position. No LCD or backlight is lit up and the unit will be off.

At power off the transmitter will store the last settings entered and re-display them at the next power on. The default factory setting is Channel 14.

Programming the UBT-100 to the Selected Channel

The transmitter must be programmed to the same frequency as selected for the receiver via automatic synchronization using the IR Sync function. It cannot be programmed on the transmitter itself.

IR Sync Programming:

Use the wireless **IR RECEPTOR SENSOR WINDOW (29)** infrared LED to download pre-programmed channels from the receiver.

Start programming by holding the IR receptor sensor/window about 6-12” in front of the receiver, then press the **ASC SYNC BUTTON (7)** briefly on the receiver. The red LED inside the receiver **IR WINDOW (6)** will flash twice quickly within two seconds. This LED indicates IR transmission is in progress. If necessary, the ASC transfer can be repeated by pressing the ASC Sync button again. When the synchronization is completed successfully, either the **RF A or B LED (5)** on the receiver will light up. Upon successful data transfer (usually in less than two seconds) the transmitter’s backlight will light up and the transmitter will transmit a radio signal on the same channel as the receiver. The diversity RF A or B LED indicator on the receiver will then light up, indicating that the

Press the Select button for one second to start the 100 channel (00-99) auto scan. A running bar in a clockwise direction shows the scanning process which normally takes ten seconds. When it finds an interference-free channel, it will stop and store the channel for use.

If manual channel selection is preferred, press and hold the Select button for at least two seconds to start programming to a desired channel. The right digit will flash for five seconds. Select the desired digit by briefly pressing the Select button to scroll through choices 0-9 until the desired number is displayed. Then, to switch between the right and left digits, press and hold the Select button for two seconds. As with the right digit, briefly pressing the Select button again will advance the left digit displayed to the next higher number 0 to 9. This completes the manual channel programming.

Note: If the Select button is not pressed within the five seconds flashing period during either the right or left digit selection, the program is terminated and the process needs to be repeated.

The **ASC SYNC BUTTON (7)** is used to transfer the selected channel info from the receiver to the transmitter for easy synchronization prior to use. Briefly press the ASC Sync button to start the transfer. A red LED inside the **IR LED (6)** window will flash twice quickly within two seconds. This LED indicates IR transmission is in progress. If needed, press the ASC Sync button again, to restart synchronization. When the synchronization is completed successfully, either the diversity **RF A or B LED (5)** on the receiver will light up.

To program the preselected channel into the transmitter, place the transmitter’s **IR RECEPTOR SENSOR WINDOW (17, 29)** 6-12” away from the receiver’s **IR WINDOW (6)**. Press the **ASC SYNC BUTTON (7)** once to start programming. (See *Programming the UHT/UBT-100 Transmitters to the Selected Channel* in the following section.)

Audio Level and Peak LED Indicator

The UWS-100 receiver has a bi-color **AF LED (4)** that lights up green indicating normal level audio signal from the transmitter. Occasional flickering of the AF LED as orange (peak level) on loud inputs to the transmitter is normal. If the LED lights orange continuously, decrease the input audio level to the transmitter or overload distortion may result.

Connecting the Audio Output

The UWS-100 audio output is set up for either adjustable level **¼” UNBALANCED LINE OUT (11)** or fixed level XLR **BALANCED MIC OUT (10)**. The **¼” unbalanced line out** is controlled by the **VOLUME CONTROL (12)**.

For unbalanced line output connection, plug an audio cable with a **¼” mono (Tip/Sleeve)** plug into the Unbalanced Line Out jack and plug the other end into your mixing board or amplifier. Adjusting the Volume control will increase or decrease the audio level at the **¼” Unbalanced Line Out** only. When using the UBT-100 instrument transmitter system, connect the Unbalanced Line Out directly to your instrument amp or preamp. At maximum receiver volume setting, the system output is approximately +4dB higher than a direct cord-to-amp connection.

For XLR Balanced Mic Output connection, plug an audio cable with an XLR connector into the XLR **BALANCED MIC OUT (10)** socket and plug the other end into your mixing board or amplifier and control the audio levels from there.

Both the **¼” Unbalanced Line Out** and the XLR Balanced Mic Out can be used at the same time to connect to your mixing board, effect, or amplifier.

Note: As when making any connection, make sure the amplifier or mixing board volume is at the minimum level before plugging in the receiver to avoid possible sound system damage.

Note: Only one transmitter can be used with one receiver. It is not possible to use two transmitters on the same frequency and mix the output of these transmitters into one wireless receiver.

Your UWS-100 receiver is now operational and ready to use. Proceed to the following instructions for the UHT-100 handheld microphone transmitter or UBT-100 bodypack transmitter included with your system.

UHT-100 Handheld Microphone Transmitter

Setting up the Transmitter

The UHT-100 requires two AA alkaline or NiMH batteries to operate (do not mix types). To install the batteries, press at the “Open” end of the **BATTERY COVER (23)** and slide down per the arrow indicator, exposing the **BATTERY COMPARTMENT (19)**. Insert two fresh AA batteries according to the polarity indicated on the transmitter body. Slide the battery cover back onto the microphone, making sure it is secure. Fresh alkaline batteries can provide up to 8-10 hours of operation, but in order to ensure optimal performance it is recommended that the batteries be replaced after 6-8 hours of use or as indicated necessary by the flashing **BATT ICON (16B)**. The transmitter has a built-in **INTERNAL ANTENNA (22)**. For best operating range, do not handle this antenna during use.

The UHT-100 handheld transmitter has two small switches under the battery cover; the **TRANSMITTER LOCK SWITCH (20)** and the **RF HI/LO POWER SWITCH (21)**. To access these two switches, slide down and remove the cover. These switches have ON and OFF positions and function as follows:

When the transmitter lock switch is in the OFF position, the **KEY ICON (16C)** does not appear on the **LCD DISPLAY (16)**. To prevent

the possibility of accidentally turning off the transmitter during use, switch it to the ON position. The key icon will appear on the LCD display and the transmitter OFF/STBY/ON switch will be disabled. The standby and IR channel programming will still function normally.

The RF HI/LO power switch can be set either in HI (more RF output) or in LO (less RF output). The LO setting will prolong battery life and is also recommended for simultaneous multichannel operation. Select the level for your application accordingly. A range walk test will determine if the LO setting is adequate.

Powering the Transmitter On/Off

To turn on the transmitter, slide the **OFF/STBY/ON POWER SWITCH (18)** to the middle standby position. The **LCD BACKLIGHT (16)** will light up, indicating the unit is now on. After five seconds the backlight will automatically turn off to conserve battery life. The **LCD DISPLAY (16)** indicator icons stay on for normal operation.

As many of the five LCD display **BATTERY LEVEL BARS (16B)** should stay lit as possible, indicating usable battery strength. As the batteries weaken, fewer of the level indicators will stay lit until only one bar shows, which will then flash “BATT” to warn that the batteries are now too low and should be replaced as soon as possible with fresh ones.

To preserve battery life, turn the transmitter off when not in use. To turn the transmitter off, check that the **TRANSMITTER LOCK SWITCH (20)** is in OFF position with the **KEY ICON (16C)** not showing on the **LCD DISPLAY (16)**. Then slide the power On/Off switch to the OFF position. The LCD or backlight are not lit up, indicating the unit is off.

At power off the transmitter will store the last settings entered and re-display them at the next power on. The default factory setting is Channel 14.

Programming the UHT-100 to the Selected Channel

The transmitter must be programmed to the same frequency as selected for the receiver via automatic synchronization using the IR ASC™ Sync function. It can not be programmed on the transmitter itself.

IR Sync Programming

Use the wireless **IR RECEPTOR SENSOR WINDOW (17)** infrared LED to download pre-programmed channels from the receiver.

Start programming by holding the IR receptor sensor/window about 6-12” from the front of the receiver, then press the **ASC SYNC BUTTON (7)** briefly on the receiver. The red LED inside the receiver’s **IR WINDOW (6)** will flash twice quickly within two seconds. This LED indicates IR transmission is in progress. If necessary, the ASC transfer can be repeated by pressing the ASC Sync button again. When the synchronization is completed successfully, either the **RF A OR B LED (5)** on the receiver will light up. Upon successful data transfer (usually in less than two seconds) the transmitter’s backlight will light up and the transmitter will transmit a radio signal on the same channel as the receiver. The diversity RF A/B LED indicator on the receiver will then light up, indicating that the IR linking is completed. The **LCD DISPLAY (16)** will show the matching channel as receiver. If no action is taken during the two seconds of active IR data transfer, the receiver and the transmitter units do not link and the transmitter’s previous program channel remains unchanged.

For normal operation, the transmitter should have the same channel as displayed on the receiver. The transmitter is now ready for use.

Note: The IR link is infrared light and thus works best when this data transfer is accomplished in a light-shielded or darker environment. It may not be successful in a brightly lit area. If the transfer fails, repeat the procedure in a darker location or somehow shield the link from outside light to successfully program the transmitter with the pre-programmed group and channel info from the receiver.

Operating the UHT-100 Handheld Transmitter

The **OFF/STBY/ON POWER SWITCH (18)** has three positions and functions both as a power On/Off and as an audio mute On/Standby switch. During normal operation with the unit powered on standby, slide the OFF/STBY/ON power switch to the ON position. You will feel a slight click indicating the ON position is selected. The receiver’s **RF A/B LED (5)** diversity indicators should now be on, indicating a received signal from the transmitter.

After the unit is powered on, slide the power switch to the ON position to un-mute the audio or to STBY to mute the audio. Set the power switch accordingly and the microphone is now ready to use. The receiver’s diversity RF A or B LED indicator should now be on, indicating a received signal from the transmitter.

When ready to transmit audio, slide the power switch to ON to un-mute. To mute, slide the power switch to STBY again. Adjust the volume of the receiver per the previous section, *Connecting the Audio Output*.

Note: Avoid acoustic feedback (howling or screeching) by taking care in selecting PA volume, transmitter location and speaker placement.