

# ENC DUET

Dual Receiver VHF Wireless Microphone System



## OWNER'S MANUAL



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## INTRODUCTION

Thank you for choosing the Nady Enc-DUET dual receiver wireless microphone system, we know you will be very pleased with its performance and features. The Enc-DUET is loaded with top professional operating features and is the best performance and price value available in VHF dual receiver wireless systems.

## USING THIS MANUAL

This booklet provides information regarding the use of the Enc-DUET VHF wireless system and includes a description of features and a step-by-step guide to operation of the unit. This manual should answer any questions you may have about the operation and servicing of your Enc-DUET.

## SYSTEM FEATURES

- Dual channel system for simultaneous operation of two transmitters
- Available on two selected frequencies in the VHF high band (171-216 MHz) for interference-free, long-range performance
- Proprietary companding circuitry for an industry-best 120dB Dynamic Range, and the clearest, most natural sound available
- Operating Range: Up to 250 feet typical (depending on site conditions)—up to 500+ feet line-of-sight
- Noise-free transmitter ON/OFF operation
- Rugged, foam-padded traveling case provides easy, safe transport and storage

### ENC-DUET RECEIVER

- Half-rack dual receiver design (Channel A and Channel B) with retractable front panel dual antennas
- Dual RF and AF 5-LED displays for monitoring incoming signal strength and audio level on both channels
- Dual balanced XLR and unbalanced adjustable 1/4" jack outputs
- Dual mute (squellch) adjust controls
- Externally powered by AC/DC power adapter
- Unique snap-out panel locking tabs for single receiver or double receiver (side-by-side) optional rack mounting

### WHT HANDHELD MIC TRANSMITTER

- Features the Nady DM -10D unidirectional neodymium dynamic cartridge for optimum true sound, maximum feedback rejection and minimal handling noise
- OFF/STANDBY/ON switch allows convenient audio muting with the transmitter "ON"
- Low battery LED indicator flashes once for unit "ON"; lights steady for low battery alert

### WGT & WLT BODYPACK TRANSMITTERS

- Choice of instrument (WGT) or headworn/lavalier microphone (WLT) bodypack transmitter
- OFF/STANDBY/ON switch allows convenient audio muting with the transmitter "ON"
- Low battery LED indicator flashes once for unit "ON"; lights steady for low battery alert
- Locking 3.5mm mini-jack provides secure connection for removable microphone or instrument cable
- Easily accessible input level adjust control for optimum sound

# ENC DUET RECEIVER

## 1. Rackmounting the Receiver

There are two options available for rackmounting the Enc-DUET receiver: singly or side-by-side with another Enc Series receiver.

- a. **Single mounting:** Remove the receiver **SIDE MOUNT CLIP (1)** from each side of the receiver (as shown) and slide in the optional **ERM-12 RACK EARS (9)**.
- b. **Side-by-side double mounting:** After removing the **SIDE MOUNT CLIPS (1)** from both Enc receivers, join the two receivers with the **EJC-2 JOINING CLIP (10)** and attach the **ERM-22 RACK EARS (12)** as shown.

*(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 Enc-DUET. Always ensure adequate airflow and heat dissipation in any rack configuration.)*

## 2. Powering the Receiver

Plug the **12V AC/DC ADAPTER (15)** provided into the **DC INPUT JACK (11)** on the back of the receiver. Then plug the power supply into an AC outlet.

*(Note: Any 12V DC source with 400mA capability can also be used.)*

Press the **POWER SWITCH (8)** once to turn on the receiver. The **POWER ON LED (7)** will now light and the receiver is operational.

## 3. Antennas

The Enc-DUET receiver is supplied with **TELESCOPIC ANTENNAS (16)**, one each for Channel A and Channel B. These should be extended fully to obtain maximum range. Optimal antenna position is 45 degrees from the receiver (at 90 degrees 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.

## 4. Mute (Squelch) Adjustment

In normal operation, the **MUTE CONTROLS (2)** for each channel (A & B) should be set fully counterclockwise to the factory preset minimum RF level. However, in areas of high RF activity, the mutes (or squelches, as they are sometimes called) may need to be adjusted to compensate for the adverse conditions in a particular location. If, with the transmitter off, one or more LEDs of the receiver's **5 LED RF LEVEL DISPLAYS (4)** for that channel transmitter flicker or stay on, the squelch control for that channel should be turned clockwise until the LEDs extinguish. When the squelch is properly adjusted, the **RF LEVEL LED** displays will only light when that channel transmitter is turned on. Turning the squelch control too far clockwise will reduce the range, but yield a quieter mute (squelch) function. When the **5 LED RF LEVEL** display extinguishes, the transmitter for that channel is out of range for that given location, and the user should move closer to the receiver to re-establish the radio link.

## 5. Connecting the Audio Output

The Enc-DUET receiver provides both a fixed mic level **BALANCED AUDIO OUTPUT XLR (14)** for each channel and an adjustable line level **A + B UNBALANCED AUDIO OUTPUT 1/4" JACK (13)** which provides a mixed (summed) Ch A plus Ch B output signal. The mixed level from the **A + B UNBALANCED OUTPUT** is controlled by the rear panel **VOLUME CONTROLS (6)** for each channel.

*(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. Also make sure that the phantom power on the input of the mixer is turned OFF before making connection to the receiver.)*

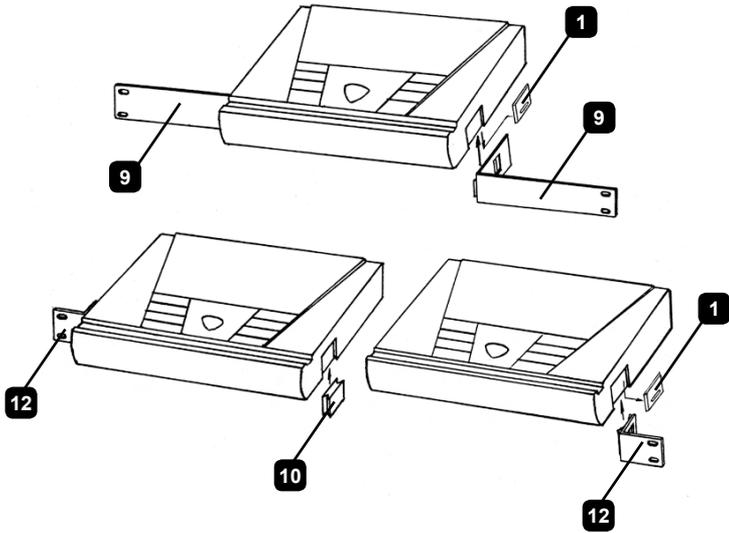
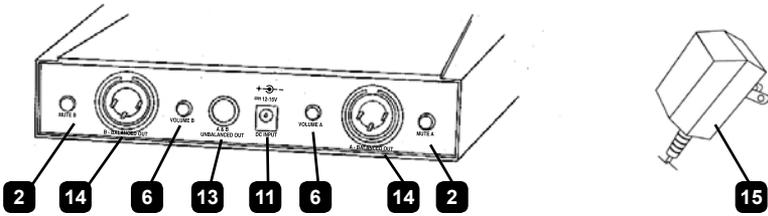
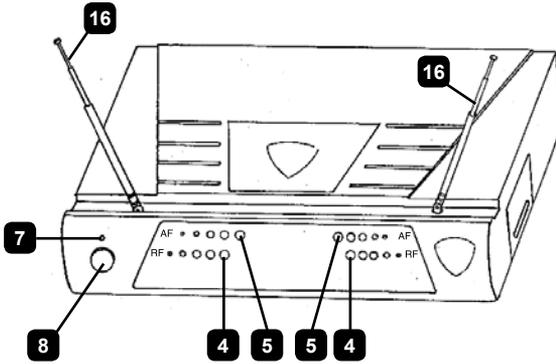
- a. **Instrument Connection** (using the WGT instrument transmitter)

Insert an audio cord with a 1/4" mono phone plug in the **A + B UNBALANCED OUTPUT JACK (13)** on the rear panel of the receiver. Plug the other end of the cord into an amplifier, effects, or mixing board. Adjust the appropriate **VOLUME CONTROL (6)** for the channel being used on the Enc-DUET 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. Turning the volume up to maximum will provide 4dB gain over a cord. *(Note: Since this a mixed output of Ch A & Ch B, both channels will be processed simultaneously by the amplifier and/or effects connected to, which may not be appropriate for your application.)*

- b. **Microphone Connection** (using the WLT transmitter with either a headset or lavalier microphone or the WHT handheld microphone transmitter)

For microphone use, either the **BALANCED MIC AUDIO OUTPUT XLRs (14)** or the **1/4" line level A + B UNBALANCED OUTPUT (13)** can be used. The XLR output is set at a non-adjustable microphone level, similar to hardwired mic levels. Plug an XLR connector into either or both of the **XLR OUTPUT JACKS** on the rear of the unit and plug the other end 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 1/4" **A + B UNBALANCED OUTPUT JACK (13)**, follow the instructions for the Instrument Connection (above), except start with the receiver volume at 1/2 MAX and adjust the volume control for each channel until the mixed Ch A and Ch B volume level is optimal. If the volume controls are set too high, you may overload your mixer or amp.

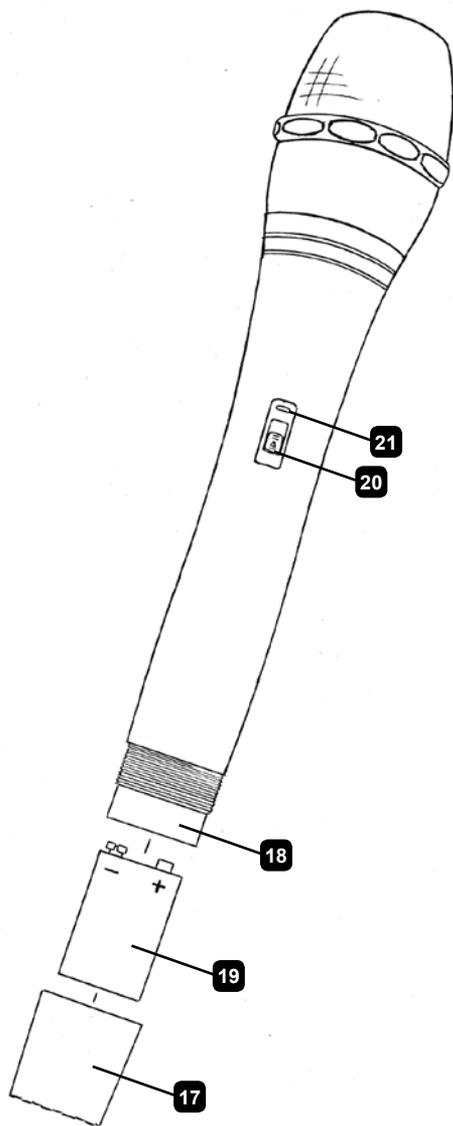


## WHT HANDHELD MICROPHONE TRANSMITTER

1. Unscrew the **BATTERY COMPARTMENT COVER (17)** and remove, exposing the **BATTERY HOLDER (18)**. Insert a fresh **9V ALKALINE BATTERY (19)**, observing the correct polarity as marked, and screw the cover back on to the microphone. Make sure the cover is screwed on completely. A fresh alkaline battery can last up to 16 hours in use, but in order to ensure optimum performance, it is recommended that you replace the battery after every 10 hours of use.
2. Turn on the WHT by sliding the **OFF/STANDBY/ON SWITCH (20)** to the STANDBY position (transmitter on, audio muted) or the ON position (transmitter and audio both on). The **BATTERY INDICATOR LED (21)** will give a single quick flash, indicating usable battery strength. In the case of a 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.
3. The microphone is now ready to use. Most or all of the **RF LEVEL DISPLAY LEDs (4)** on the Enc-DUET receiver should now be lit, indicating a received signal from the transmitter. When ready to speak, slide the transmitter switch to the ON position. Adjust the volume of the receiver as per the Audio Output Microphone Connection section of the above Enc-DUET receiver instructions. The **AF LEVEL LED DISPLAY (5)** on the Enc-DUET receiver will light up to 5 LEDs (4 green and 1 red) for all input signals. Occasional flickering on and off during use of the top red LED indicator in this display is normal, however if the red LED stays on continuously, it means the signal is too loud and there is the possibility of overload distortion. Back off from the microphone until the red LED indicator only flickers on peaks.

*[Note: Observe care in selecting P.A. volume, transmitter location and speaker placement so that acoustic feedback (howling or screeching) will be avoided.]*

*[Note: Microphone elements 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 element at all times to protect it.]*

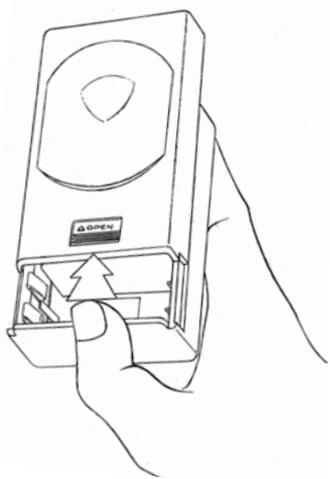
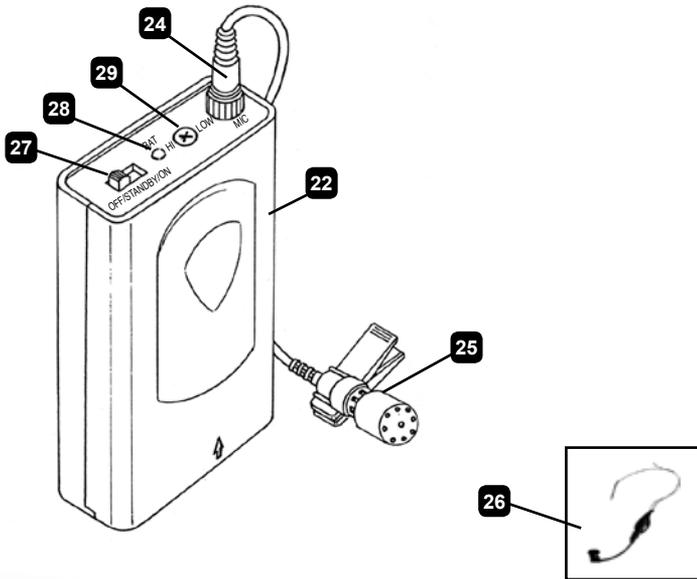


## WLT LAVALIER/LAPEL OR HEADWORN MICROPHONE BODYPACK TRANSMITTER

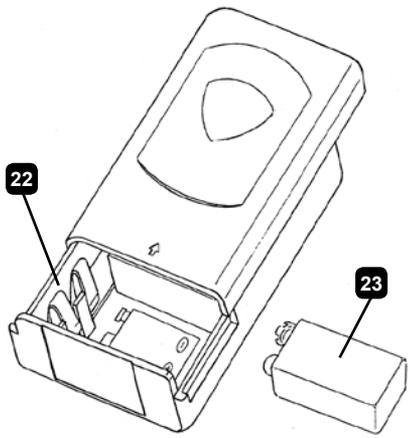
1. Snap open the **BATTERY COMPARTMENT (22)** and insert a fresh **9V BATTERY (23)**, observing the correct polarity. Close the compartment.
2. The WLT is provided with a **3.5 mm LOCKING JACK (24)** for connecting the microphone. Plug in either the **LAVALIER/LAPEL (25)** or the **HEADWORN MICROPHONE (26)**, as supplied. To secure the connection, turn the metal slip ring on the plug clockwise to thread it on to the jack. To unplug, reverse the process. Slip the transmitter into a pocket or clip on to your clothes. To use the lavalier mic, attach it at chest level. Do not place too close to the mouth—a distance of about six inches usually works best. To use the headworn mic, place it on the head and adjust the mic boom so that the mic is about one inch to the side of the front of the mouth. *(Note: The lavalier or headworn mic wire is also the transmit antenna, and rolling up or shortening the wire may reduce the effective operating range. Extend the wire fully during use, and keep it as straight as possible.)*
3. Turn on the WLT by sliding the **OFF/STANDBY/ON SWITCH (27)** to the STANDBY position (transmitter on, audio muted) or the ON position (transmitter and audio both on). The **BATTERY INDICATOR LED (28)** will give a single quick flash, indicating usable battery strength. In the case of a dead or low battery, the LED either will not go on at all or will stay on continuously, indicating that the battery should be replaced with a fresh one.
4. The microphone is now ready to use. Most or all of the **RF DISPLAY LEDs (4)** on the Enc-DUET receiver should now be lit, indicating a received signal from the transmitter. When ready to speak, slide the transmitter switch to the ON position and adjust the volume of the receiver as per the Audio Output Microphone Connection section of the above Enc-DUET receiver instructions. The **AF LEVEL LED DISPLAY (5)** on the Enc-DUET receiver will light up to 5 LEDs (4 green and 1 red) for all input signals. Occasional flickering on and off during use of the top red LED indicator in this display is normal, however if the red LED stays on continuously, it means the signal is too loud and there is the possibility of overload distortion. Re-position the microphone farther from the source or adjust the **AUDIO INPUT LEVEL CONTROL (29)** until the red LED indicator flickers only on the loudest inputs.

*(Note: Observe care in selecting P.A. volume, transmitter location and speaker placement so that acoustic feedback (howling and screeching) will be avoided. Please also observe the pickup patterns of the microphone selected: omnidirectional mics pick up sound equally from all directions and are prone to feedback if not used carefully. Unidirectional mics are more resistant to feedback, but pick up sound sources best that are directly in front of the mic. Also, mics that are farther from the sound source, such as lavaliers, require more acoustic gain and thus are also more prone to feedback than close-source mics such as handheld or headworn mics that are used close to the mouth.)*

*(Note: Microphone elements 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 element at all times to protect it.)*



Opening Battery Compartment



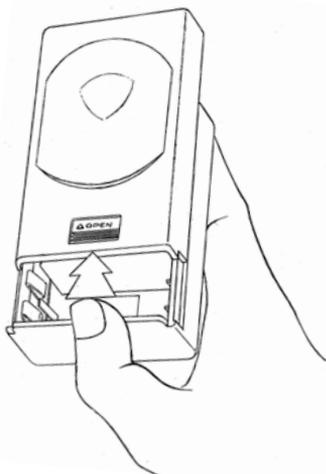
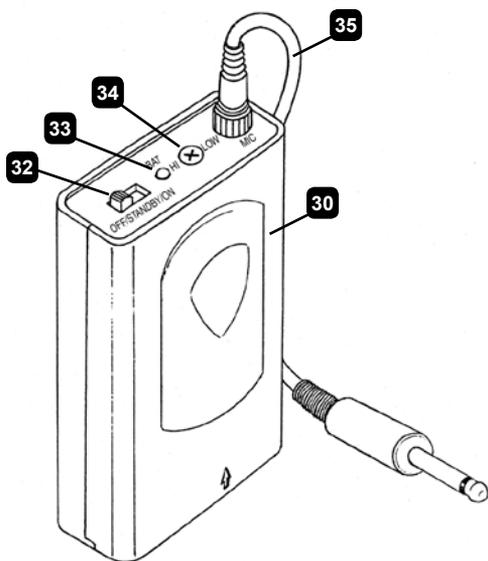
## WGT INSTRUMENT BODYPACK TRANSMITTER

1. Snap open the **BATTERY COMPARTMENT (30)** and insert a fresh **9V BATTERY (31)**, observing the correct polarity. Close the compartment. The WGT is provided with a 3.5 mm **LOCKING JACK (32)** for connecting the **INSTRUMENT CABLE (35)**. To secure the connection, turn the metal slip ring on the plug clockwise to thread it on to the jack. To unplug, reverse the process. Slip the transmitter into a pocket or clip on to your clothes or instrument strap. *(Note: As the cord to the instrument also serves as the antenna, be sure to extend it fully for maximum range. Rolling up or shortening the cord may reduce the effective operating range.)*
2. Turn on the WGT by sliding the **OFF/STANDBY/ON SWITCH (32)** to the STANDBY position (transmitter on, audio muted) or the ON position (transmitter and audio both on). The **BATTERY INDICATOR LED (33)** will give a single quick flash, indicating usable battery strength. In the case of a dead or low battery, the LED either will not go on at all or will stay on continuously, indicating that the battery should be replaced with a fresh one.
3. The WGT transmitter is now ready to use. Most or all of the **RF DISPLAY LEDs (4)** on the Enc-DUET receiver should now be lit, indicating a received signal from the transmitter. Adjust the volume of the receiver as per the Audio Output Instrument Connections section of the above Enc-DUET receiver instructions. For optimum performance, an **INPUT LEVEL CONTROL (34)** is provided on the top panel of the WGT. Adjust the gain by turning the control with a small slot head screwdriver. It is recommended that this control be turned to maximum gain. However, for ultra high-gain instrument sources such as active bass pickups or even extra hot guitar pickups, turning the level down slightly will create a cleaner sound. *(Note: Turning down the input gain too much can compromise the signal-to-noise ratio and is not recommended. Set for the maximum possible gain and headroom without noticeable distortion on the high level peaks).*

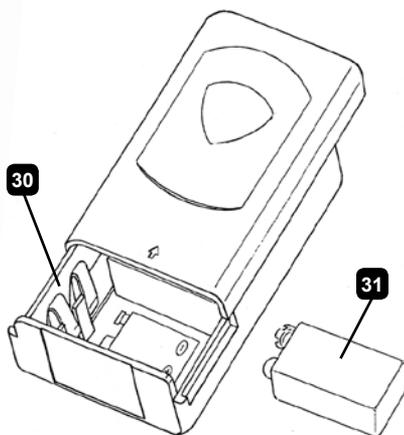
The **AF LEVEL LED DISPLAY (5)** on the Enc-DUET receiver will light up to 5 LEDs (4 green and 1 red) for all input signals. Occasional flickering on and off during use of the top red LED indicator in this display is normal, however if the red LED stays on continuously, turn down the instrument volume or adjust the **INPUT LEVEL CONTROL (34)** on the WGT transmitter, or noticeable distortion may result.

*(Note: Scratchy noises can sometimes occur when some electric guitars/basses with dirty pots or connections are used with any wireless system. For this reason, the supplied **INSTRUMENT CORD (35)** has a factory installed capacitor inside the 1/4" plug. This 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:*

- 1) *Make sure all guitar volume and tone pots are clean and all contacts are solid—this is very important.*
- 2) *Provide extra filtering with a 220 pF capacitor soldered across the hot to ground terminals of the guitar's volume and tone pots.)*



Opening Battery Compartment



## SPECIFICATIONS

### ENC-DUET OVERALL SYSTEM PERFORMANCE

<b>Frequency Response</b>	
<b>Dynamic Range</b>	120dB
<b>Total Harmonic Distortion</b>	< 0.3%
<b>RF Carrier Frequency Range</b>	2 channels between 169-216 MHz
<b>Frequency Stability</b>	+/- 0.005%, crystal controlled
<b>Modulation</b>	FM (F3E), +/-20KHz max.
<b>Operating Range</b>	Up to 250 ft. typical (depending on site conditions); up to 500+ feet optimum line-of-sight

### ENC-DUET RECEIVER

<b>Reception Mode</b>	Dual receivers (Channel A and Channel B)
<b>Controls</b>	Power ON/OFF, dual volume and mute controls (one each, Ch A/B)
<b>Connectors</b>	Dual balanced XLR and unbalanced adjustable 1/4" audio out jacks (Ch A & B mixed), 2.1mm barrel-type DC input jack
<b>LED Indicators</b>	Power ON, Dual 5-LED RF & AF level displays (Ch A/B)
<b>Dimensions (Max.)</b>	1.75" x 7.5" x 8.1" (4.4 x 19 x 20.7 cm)
<b>Weight</b>	1.6 lbs (.73 kg)
<b>Power Requirements</b>	12V @ 400mA, nominal, AC/DC adapter supplied
<b>Antenna</b>	11.2" (28.5 cm), dual telescopic

### TRANSMITTERS

<b>Audio Inputs</b>	
• WHT	Nady DM-10D neodymium dynamic cartridge
• WLT/WGT	3.5mm mono locking jack for connecting to omni or unidirectional lavalier mic or unidirectional head worn mic, with phantom power (WLT); or connecting to instrument cable (WGT)
<b>Controls</b>	
• WHT	OFF/STANDBY/ON switch
• WLT/WGT	OFF/STANDBY/ON switch, input level adjust
<b>LED Indicator</b>	Unit "ON" (single flash), Low Battery Alert (steady)
<b>RF Power Out</b>	50mW (Max. allowed by FCC)
<b>Harmonic &amp; Spurious Emissions</b>	> -40dB
<b>Battery</b>	9V Alkaline
Battery Life	Up to 15 hours
<b>Dimensions</b>	
• WHT	9.5" X 1.4" Diam. (24.1 X 3.5 cm)
• WLT/WGT	4.1" X 2.4" X 0.8" (10.4 X 6.1 X 2.0 cm)
<b>Weight (w/o battery)</b>	
• WHT	6.9 oz (193 g)
• WLT/WGT	3.6 oz (101 g)

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

## 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](http://www.nady.com) for assistance. Should your wireless system require service, please contact the Nady Service Department at (510) 652-2411 to obtain 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 Department, 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, 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.**

## 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, please contact our Service Department at (510) 652-2411 for a return authorization (R/A) number. Make sure the R/A number is clearly marked on the outside of your package. (Please note: if an R/A 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 R/A 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.

Nady Wireless Systems are type accepted under FCC rules parts 90, 74 and 15. The device complies with RSS-210 of Industry & Science Canada. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

