



IRW-220X

INFRARED WIRELESS MICROPHONE SYSTEM



NADY SYSTEMS, INC.

6701 Shellmound Street • Emeryville, CA 94608 USA
Tel: 510/652-2411 • Fax: 510/652-5075
www.nady.com

OWNERS MANUAL

CONTENTS

CONTENTS	2
INTRODUCTION	3
USING THIS MANUAL	3
SYSTEM CONTENTS	3
SYSTEM FEATURES	4
IRW-220X RECEIVER	5
IRW-1S INFRARED SENSORS	6
IRW-HT6X HANDHELD MICROPHONE TRANSMITTER	8
IRW-LT6X BODYPACK TRANSMITTER	9
OPTIONAL ACCESSORIES	10
SPECIFICATIONS	11
SERVICE	11

SPECIFICATIONS

IRW-220X Receiver

Mode	Infrared Frequency Modulated
Receiving channels	Dual channels A & B
Carrier frequency	(Ch A) 2.0MH; (Ch B) 2.6MH
Audio frequency response	60Hz~12KHz
S/N ratio	>90db
Audio Mix Output	700mv
Range (line of sight)	Up to 30 ft. (9M)
Controls	Power On/ Off (front panel); A and B Volume controls (rear panel)
Connectors	IR Sensor Coax jacks (rear panel); Ch A/B Audio Mix Output RCA jack
Power Requirements	AC110V 50/60Hz ±5%
Power consumption	8W
Dimension (L x W x H)	10.6" x 7.4" x 2" (270 x 188 x 51mm)
Weight	3.3 lbs. (1.5 kg)

IRW-HT6X Handheld Microphone Transmitter:

Carrier frequency	Ch A 2.0MHz, Ch B 2.6MHz
Controls	ON / OFF switch
Audio Input	DM-10D Unidirectional Dynamic Cartridge
Power Requirement	2xAA battery (2.4VDC)
Battery Life	Up to 5 hours
Dimensions	2.2" x 10.2" (56 x 260mm)
Weight	14.1 oz (400g)

IRW-LT6X Bodypack Transmitter:

Carrier frequency	Ch A 2.0MHz, Ch B 2.6MHz
Audio input	LM-14/O lavalier/lapel microphone
LM-14/O	omnidirectional condenser
Controls	ON / OFF switch, Volume Control, Ch A/B Select Switch
Connectors	3.5 mm locking jack
Power Requirement	2xAA battery (2.4VDC)
Battery Life	Up to 5 hours
Dimensions	3.9" x 1.2" x 2.6" (100 x 30 x 66mm)
Weight	3.6 oz (100g)

SERVICE

(U.S.) Should your NADY IRW-220X Infrared Wireless Microphone System require service, please contact the Nady Service Department via telephone at (510) 652-2411 or e-mail to service@nady.com 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 and enclose a cashier's check or money order (if not prepaid with a credit card). Ship the unit prepaid to: Nady Systems, Inc., Service Department, 6701 Shellmound Street, Emeryville, CA 94608. Include a brief description of the problems you are experiencing.

The warranty card enclosed with this system contains additional valuable warranty and service information. Keep it in a safe place for future possible reference. Do not attempt to service this unit yourself as it will void the warranty.

(International) For service, please contact the Nady distributor in your country through the dealer from whom you purchased this product.

IRW-LT6X BODYPACK TRANSMITTER

b. Adjust the IRW-LT6X **Volume Control(6)** to minimum and slide the **Power Switch (2)** to the ON position. The bi-color **Power ON/LOW Battery LED Indicator (1)** will light green, indicating that the transmitter is on. In the case of low battery strength, the indicator will light red, indicating that the batteries should be replaced with fresh ones or the NiMH batteries should be recharged. The optional IRRA-1 Recharging Adapter can be plugged directly into the IRW-LT6X **DC Input Jack(3)** from an AC power outlet for easy charging of NiMH batteries. When the recharging adapter is plugged in, the LED Indicator will light red. The LED indicator will light green when the batteries are fully charged.

c. The IRW-220X receiver IR LED Indicator of the corresponding channel should now be lit green. While speaking into the microphone, slowly increase the IRW-LT6X **Volume Control(6)** and adjust the volume control on the receiver, and also on the Mixer/P.A. to the desired level while taking care to avoid acoustic feedback. The microphone is now ready to use. For optimum performance and range, make sure that the **IR Emitter (4)** is not covered by the body or clothing and has an unobstructed line of sight with the IR Sensor.

[Note: Observe care in selecting 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 microphone. Also, mics that are farther from the sound source, such as lapel mics, require more acoustic gain and thus are also more prone to feedback than close-source mics such as handheld mics that are used close to the mouth.]

OPTIONAL ACCESSORIES

IRDR-2	Dual recharger for two IRW-HT6X
IRRA-1	LT bodypack recharging adapter
IR-HBP	Battery pack for IRW-HT6X
IR-BBP	Battery pack for IRW-LT6X
IRW-1S	Infrared sensor
IRW-SA	Multiple sensor adapter

If your dealer can't supply you with the available accessories for your IRW-220X, you can order direct from Nady Systems, Inc. by calling our Nady Service Department at (510) 652-2411.

INTRODUCTION

Thank you for purchasing the NADY IRW-220X infrared wireless microphone system and congratulations on your choice. The IRW-220X is loaded with top professional operating features and is the best performance and price value available in infrared wireless systems.

USING THIS MANUAL

This booklet gives instructions for the operation of the IRW-220X wireless system, including handheld and lavalier systems. Please read the instructions for your system completely before operating unit.

This manual will first list the features of the IRW-220X and then will take you step by step to show you how to operate your new system. After reading the receiver instructions, turn to the section of the booklet that covers the type of transmitter used with your new system. Each section will give you detailed operating instructions. Also included in this manual are system specifications and servicing information.

IRW-220X SYSTEM CONTENTS

- IRW-220X dual channel infrared receiver
- (2x) Infrared transmitters - either IRW-HT6 handheld microphone or IRW-LT6 body-pack with clip-on lavalier microphone
- (2x) IRW-1S Infrared Sensor w/ 20 ft. and 35 ft. Cables
- 3 ft. RCA to 1/4" plug Audio Cable
- Bodypack lanyard
- (4x) AA Alkaline Batteries
- Users Manual
- Warranty Card

SYSTEM FEATURES

IRW-220X DUAL-IR WIRELESS MICROPHONE RECEIVER

- Dual receiver allows 2 channel simultaneous operation of 2 transmitters (Ch A, Ch B)
- IR signal reception LED indicators
- Channel A/B mix audio output RCA phono jack
- Separate Channel A and Channel B volume controls
- 2 IR Sensor coaxial inputs
- 2 IR Sensors supplied, with 20 ft. and 35 ft. connecting cables and wall mounts; each sensor with a Multiple Array of Wide-Angle Infrared Sensitive LEDs

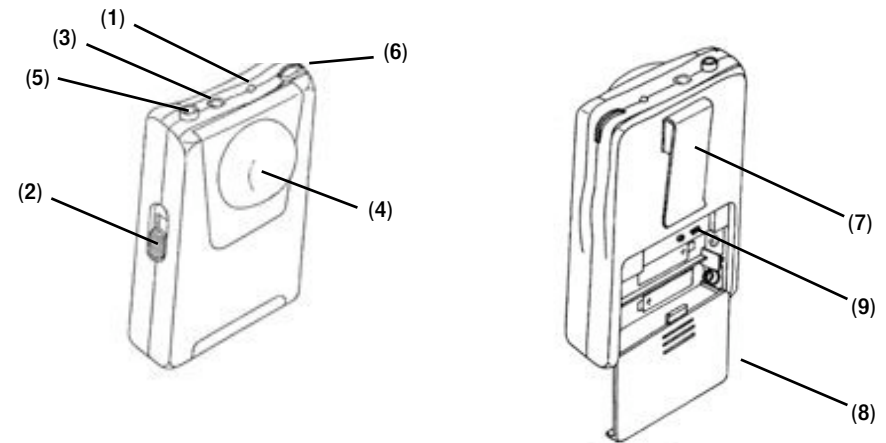
IRW-HT6X HANDHELD MICROPHONE TRANSMITTER

- Multiple emitter array of high efficiency infrared emission LEDs for optimum IR transmission
- Power On LED
- Powerful uni-directional dynamic cartridge for optimum audio, minimal handling noise, and maximum feedback rejection; rugged steel mesh ballscreen with anti-roll ring
- Operates up to 5 hours on 2 alkaline AA batteries or NiMH rechargeable batteries

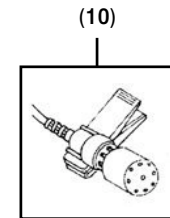
IRW-LT6X BODY-PACK TRANSMITTER

- Multiple emitter array of high efficiency infrared emission LEDs for optimum IR transmission
- Power ON LED
- Channel A/B selector switch
- 3.5mm mini-jack for connection of lapel microphone
- Audio input volume control
- Belt Clip and neck worn lanyard
- Operates up to 5 hours on 2 alkaline AA batteries or 2 NiMH AA rechargeable batteries

IRW-LT6X BODYPACK TRANSMITTER



- (1) Power LED Indicator
- (2) Power Switch
- (3) Battery Charging DC Input Jack
- (4) IR Emitter
- (5) Microphone Input Jack
- (6) Volume Control
- (7) Belt Clip
- (8) Battery Compartment Cover
- (9) Channel Selector Switch
- (10) LM-14/O Lavalier/Lapel Microphone



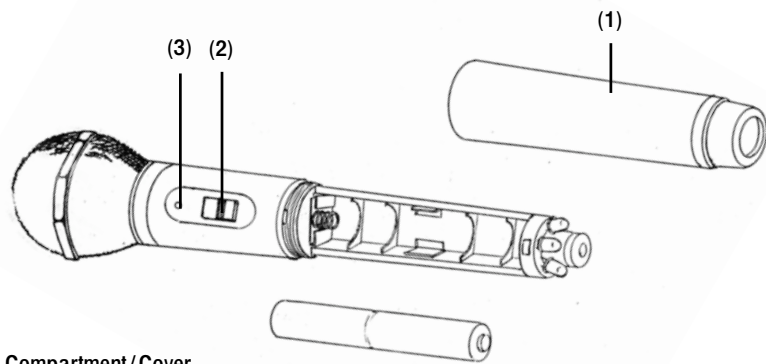
1. Transmitter Set-up

Slide down the **Battery Compartment Cover (8)**, as shown, exposing the battery compartment. Insert 2 fresh AA alkaline batteries, NiMH rechargeable batteries, or the optional IR-BBP battery pack while observing the correct polarity as marked. Set the Channel Selector Switch (9) to the desired channel of operation and slide the cover back into position on the unit. (*Note: Make sure the transmitter is off when changing the batteries.*)

2. Operation

- a. The IRW-LT6 is provided with a 3.5mm **Locking Jack (5)** for connecting the microphone. Plug in either the **LM-14/O Lavalier/Lapel Mic (10)** as supplied. To secure the connection, turn the metal slip ring on the plug clockwise to thread it on the jack. To unplug, reverse the process. Clip the transmitter to your clothes/belt, or hang the transmitter on your chest using the supplied neck worn lanyard. Make sure the IRW-LT6X **Emitter (4)** has a clear line of sight with the IR Sensor. To use the lavalier mic, attach it at upper chest level. Do not place the mic too close to the mouth — a distance of about 6" usually works best.

IRW-HT6X HANDHELD MICROPHONE TRANSMITTER



- (1) Battery Compartment/Cover
- (2) Power Switch
- (3) Power LED Indicator

1. Transmitter Set-up

Unscrew and remove the **Battery Compartment Cover (1)** by sliding it down off the microphone to expose the battery holders. Insert 2 fresh AA alkaline batteries, NiMH rechargeable batteries, or the optional IR-HBP battery pack while observing the correct polarity as marked, and screw the cover back on the battery compartment. *(Note: Make sure the transmitter is off when changing the batteries.)*

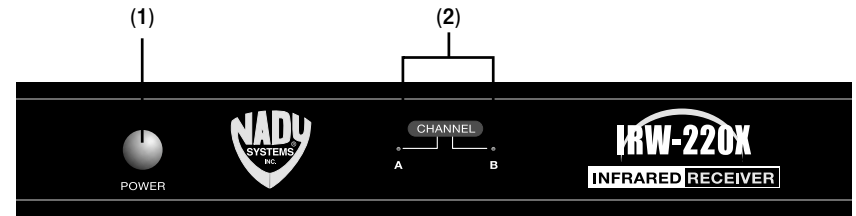
2. Operation

Slide the **Power Switch (2)** to the ON position. The **Power LED Indicator (1)** will light green, indicating that the transmitter is on. In the case of low batteries, the indicator will be off, indicating that the batteries should be replaced with fresh ones or the batteries should be recharged. The optional IRDR-2 Dual Microphone Recharger can be used to recharge two IRW-HT6X simultaneously by placing the handheld microphones directly into the mic holders without removing the rechargeable batteries. When the microphone is placed in the recharging adapter, the LED Indicator will light brightly red. The LED indicator will light green when the batteries are fully charged.

The microphone is now ready to use. The IRW-220X receiver IR LED Indicator of the corresponding channel should now be lit green. While speaking into the microphone, adjust the corresponding Volume Control on the receiver and also on your Mixer/P.A. to the desired level. For optimum performance and range, make sure that the IR emitter at the base of the transmitter is not covered by the hand and has an unobstructed line of sight with the IR sensor.

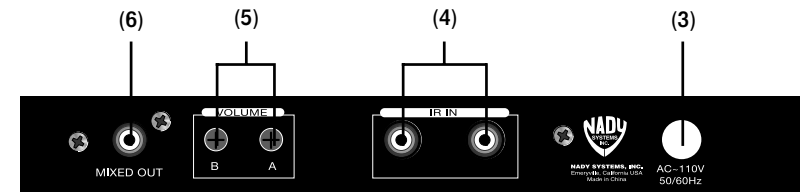
[Note: Observe care in selecting volume, transmitter location and speaker placement so that acoustic feedback (howling and screeching) will be avoided.]

IRW-220X RECEIVER



FRONT

- (1) Power Switch
- (2) Channel A & B IR LED Indicator



BACK

- (3) Power Cord
- (4) Infrared Sensor RCA Input
- (5) Volume Controls
- (6) Mixed Output RCA Jack

1. Powering the Receiver

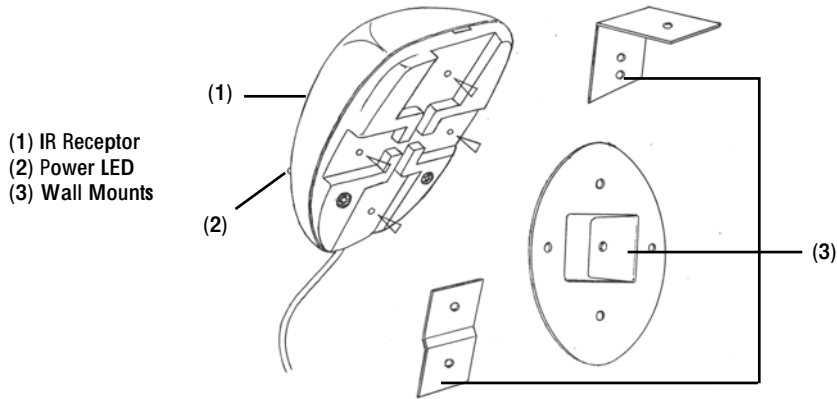
Plug the **Power cord (3)** into an AC outlet (110-120 VAC). Turn on the IRW-220X using the **Power Switch (1)**. The Ch A and Ch B **IR Reception LED Indicators (2)** will light green when the corresponding transmitter is on and red when the transmitter is off. Turn off the IRW-220X when not in use.

2. Connecting the Audio Output

The IRW-220X receiver provides a low line level Mixed Output to the unbalanced **RCA Jack (6)**. This can be connected to a mixer or a P.A. System using the supplied RCA to 1/4" audio cable or any RCA phono plug cable (not included). The audio of both Channels A and B are mixed together at this output. The Channel A and B mix is dependent on the separate Channel A and Channel B **Volume Control (5)** settings located on the back panel of the receiver. Always make sure the mixer/P.A. volume is turned to minimum before plugging the audio cable into the receiver or before turning the receiver on/off (if the audio cable is already connected) to avoid possible sound system damage.

3. Connecting the IRW-1S IR Sensors

Connect the IRW-1S IR Sensors to the IRW-220X receiver by plugging both sensor coaxial cable plugs into the **Infrared Sensor Inputs (4)**. Each Sensor input will receive both channels A and B signals.



1. Operation

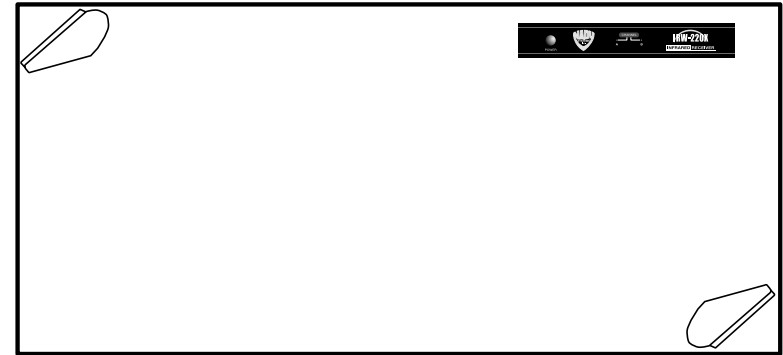
The IR Sensors act as “antenna” for your infrared wireless microphone system. A multiple array of wide angle IR-sensitive LED’s, behind the front panel receptors, receives the infrared signal emitted by your IR transmitter. The **Sensor Power LED (2)** will light to indicate the sensor is properly connected to the IRW-220X Receiver. The Channel A and B IR LED indicators, located on the front panel of the receiver, will light green when an infrared signal on the corresponding channel is detected.

2. Installation

The IRW-1S sensors can be mounted on walls using any of the **Wall Mounts (3)** included. To ensure proper optimum operation, observe the following installation rules:

- a. Position the IR Sensors with their front panel receptors facing the entire area of transmitter operation. If this is a wide area, angle the receptors to cover the maximum area range. The diagram on the opposite page shows a suggested positioning for the IR Sensors.

Note: The IR sensors will need to be positioned differently for each environment. During installation, power up the IRW-220X and have one person walk around the desired location, with the transmitters on, while another person positions the IR Sensors for greatest range of mobility.



- b. Since the unit utilizes infrared light reflected off of room surfaces, do not mount the sensors near a black ceiling, wall, or heavy curtains as they may limit the range by eliminating such reflection. Mounting the sensors in an uncluttered area near a light colored wall will provide the best operation.

- c. Although the unit can be used in most brightly lit rooms, it works best if bright lights are not shined directly on the sensors. *(Note: Never operate the unit outdoors in daylight as it will not operate properly under such conditions)*

- d. Never cover the IR Sensors as this will disrupt normal operation. If they become dirty, clean with a soft cloth. Make sure the sensors are not obstructed and always have a clear line-of-sight with the transmitters.

- 3. Additional external IR sensors can be added using the IRW-SA Multiple Sensor Adapter which allows multiple sensors to be connected to each input.