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**MIPRO®**

**ACT-101 / MT-101 ACT  
 WIRELESS IR REMOTE CONTROL SYSTEM**

**User Guide**

**MIPRO** MIPRO Electronics Co., Ltd.

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## **! IMPORTANT SAFETY INSTRUCTIONS !**


1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarised or ground plug: A polarised plug has two blades with one wider than the other. The wide blade is provided for your safety. When the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plug, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
16. Apparatus should not be exposed to dripping or splashing and no objects filled with liquids, should be placed on the apparatus.
17. Use only with the battery which specified by manufacturer.
18. The power supply cord set is to be the main disconnected device.




## **WARNING**

1. **FOR OUTDOOR USE:**  
To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
2. **UNDER WET LOCATION:**  
Apparatus should not be exposed to dripping or splashing and no objects filled with liquids, such as vases should be placed on the apparatus.
3. **SERVICE INSTRUCTIONS:**  
CAUTION - These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.



 This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.

 This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

## **FC & IC - ID**

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES AND RSS-123 ISSUE2 OF CANADA. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:

- (1) This device may not cause interference.
- (2) This device must accept any interference, including interference that may cause undesired operation of the device. This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment.

## **Disposal**

Dispose of any unusable devices or batteries responsibly and in accordance with any applicable regulations.

Disposing of used batteries with domestic waste is to be avoided!

Batteries / NiCad cells often contain heavy metals such as cadmium(Cd), mercury(Hg) and lead(Pb) that makes them unsuitable for disposal with domestic waste. You may return spent batteries/ accumulators free of charge to recycling centres or anywhere else batteries/accumulators are sold.

By doing so, you contribute to the conservation of our environment!



WIRELESS IR REMOTE CONTROL SYSTEM

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PRODUCT OVERVIEW

Thank you for choosing MIPRO wireless IR remote receiver system. Please read this user guide thoroughly to ensure the system is operated correctly to maintain optimal performance.

ACT-101 Included Accessories:

- ACT-101 Receiver × 1
- ACT-101 ACT Port Receiver × 1
- Phone Jack Cable × 1 [6.3mm / 1/4"]
- RJ-11 Network Cable × 1 [150cm / 5']
- Receiver Antenna × 2
- MT-101ACT Transmitter Microphone × 1
- MP-101ACT Battery Charger & DC Power Adapter × 1
- AC/DC Power Adapter × 1
- User Guide × 1

### KEY FEATURE AND BENEFITS (ACT-101 Receiver)

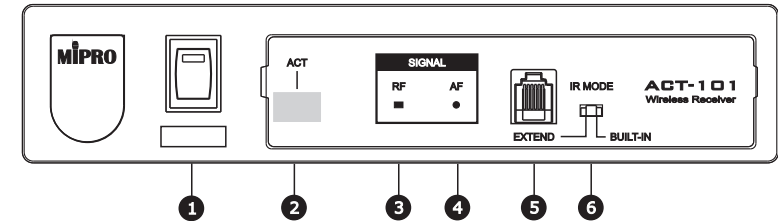
- EIA standard single-channel in 19" 1/2-rack unit size.
- 97 UHF channels. Can be programmed, installed and used in up to 97 different rooms.
- Diversity reception for extended and reliable transmission.
- ACT technology automatically synchronizes frequency between transmitter and receiver.
- Output level and dynamic range are accurately pre-adjusted to equal the microphone capsule's sensitivity, thus ensuring optimal performance of the system.
- Detachable 100~240V AC auto-switching power supply.
- Ideal for teaching professionals and presenters in multiple classrooms, lecture halls and similar environments.

### KEY FEATURE AND BENEFITS (MT-101ACT Wireless IR Remote-Control Transmitter)

- Featuring Industry's only all-in-one, versatile MT-101ACT transmitter microphone.
- Compact, ultra-lightweight design and powered via rechargeable or disposable alkaline batteries.
- Once programmed, Same MT-101ACT transmitter microphone can be used in up to 97 different rooms.
- Power on/off and volume loudness can be wirelessly remote controlled.
- MT-101ACT can be a handheld or worn as a neck lanyard for hands-free operation with an external headset microphone.
- Built-in 3.5mm(1/8") mini-jack line-input accepts other audio sources (CD/iPodMP3/tape/mini-disc/computer) for amplification.
- Amazing 24 operating hours per fast charge.

### PART NAMES AND FUNCTIONS

#### Front Display Panel



(Figure 1)

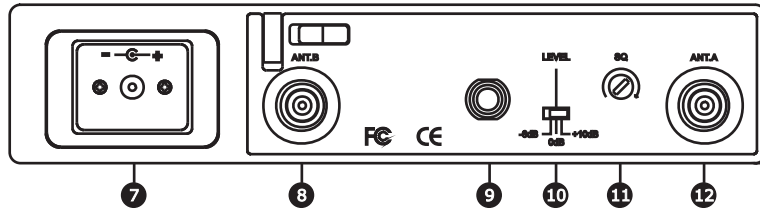
- 1 ACT Port Indicator Switch:** Red indicator does not illuminate when receiver is plugged-in and pressed. Red indicator illuminates only when IR signal is received successfully by the MT-101ACT remote transmitter microphone. Red indicator illuminates denote receiver is now turned on

Note: This is not a power on & off switch. Always leave switch pressed upward. ACT Port and MT-101ACT transmitter microphone cannot remote, function and use in pressed downward position.

- 2 ACT Port:** Receive signal to turn on (and off) receiver and sync frequency to transmitter.
- 3 RF Indicator:** Indicates RF signal strengths from transmitter.
- 4 AF Indicator:** Indicates audio signal strengths from transmitter.
- 5 EXTEND Socket:** RJ-11 network cable connection to an external receiver for an improved IR signal reception. Switch to EXTEND if connected.
- 6 IR MODE:** To improve IR signal reception for ACT port. Factory preset at BUILT-IN. Switch to EXTEND if connected externally.

## PART NAMES AND FUNCTIONS

## Rear Panel

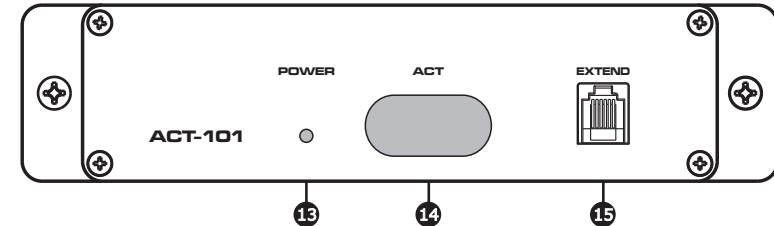


(Figure 2)

- ⑦ **DC Input Jack:** For 12V DC power input connection. Connects center pole to positive voltage.
- ⑧ **Antenna B Input Connector:** To install the antenna B.
- ⑨ **Unbalanced Output Socket:** Unbalanced 1/4" phone jack audio output. Three level switches: "-6dB", "0dB", "+10dB".
- ⑩ **Unbalanced Level Switch:** At "0dB" level output equals to cabled microphone. At "+10dB" level, it is AUX volume output. At "-6dB" level, the volume output is half of cabled microphone.
- ⑪ **SQ:** Squelch adjustment. Adjusts receiver sensitivity to mute audio output from the speaker when no microphone signals are present.
- ⑫ **Antenna A Input Connector:** To install the antenna A.

## PART NAMES AND FUNCTIONS

## Front Panel

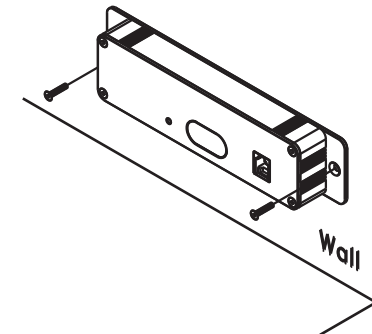


(Figure 3)

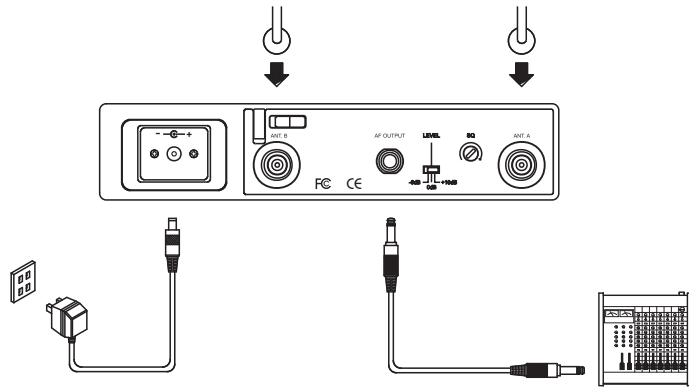
- ⑬ **POWER Indicator:** Indicates power status. An illuminated indicator denotes receiver has received IR signal and now turned on.
- ⑭ **ACT Port:** Receive signal to turn on (and off) receiver and sync frequency to transmitter.
- ⑮ **EXTEND Socket:** Connect enclosed RJ-11 network cable to same EXTEND ⑤ location of the main ACT-101 receiver.

**NOTE:** The purpose of installing an ACT-101 External ACT Port Receiver is to improve infrared transmitting & reception signal quality for powering on & off the receiver as its path maybe shielded or blocked. For example, if the main receiver is installed inside an enclosed rack case, room or similar environments. It can be wall mounted or stand alone.

## Wall Mount :



## RECEIVER INSTALLATION



(Figure 4)

1. **Antenna Installation:** Install two separate antennas on the antenna connectors 8 , 12 from the rear panel. Illustrated in Figure 4.
2. **Connecting the Power Supply:** Connect the AC/DC power supply to the VDC input jack 7 . Next plug the adapter into an appropriate AC outlet with caution to the correct voltage and rating. Illustrated in Figure 4.

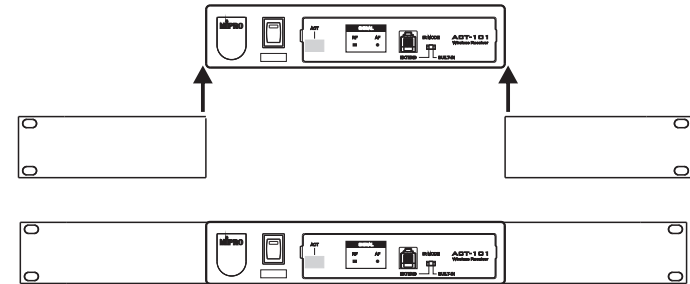
Note: Red indicator does not illuminate when receiver is plugged-in and pressed.

3. **Audio Output Connection:**

- **Unbalanced Output Connection:** Using audio cable attached with phone jack type plug, connect one end from the audio output jack 9 of the receiver, and the other end to the Line input jack of the amplifier or mixer. Illustrated in figure 4.
- **Unbalanced Level Switch 10 :** If unbalanced output socket of receiver connects to "AUX In" or "Electric Guitar" input socket of mixer and amplifier, the switch level 10 has to be "+10dB" . If the switch level is not correct, it will lead to low sensitivity of microphone or electronic guitar. If unbalanced output socket of 10 receiver connects to " MIC. " input socket of mixer and amplifier, the switch level has to be "0dB" . If not, it will lead to microphone distortion at the volume 10 slightly turning up and down. When using the electronic guitar, the switch level can not be placed at "0dB" or "-6dB" . Otherwise the volume will be too small. For some amplifiers which do not have the unified MIC In and are designed for Karaoke application, you can have the switch 10 in "6dB" when no distortion happening.
- **Electric Guitar Output:** Using audio cable attached with phone jack type plug, connect one end from the audio output jack 9 of the receiver, and the other end to the "Electric Guitar" input jack of the amplifier or mixer. Switch unbalanced level switch 10 to +10dB. Illustrated in Figure 4.

## RACK-MOUNT RECEIVER INSTALLATION

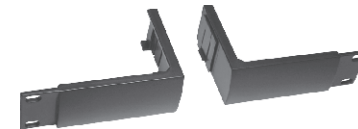
An optional MIPRO FB-11 rack-mount brackets needs to be installed to be fitted into an EIA standard 19" rack case. Illustrated in Figure 5.



(Figure 5)

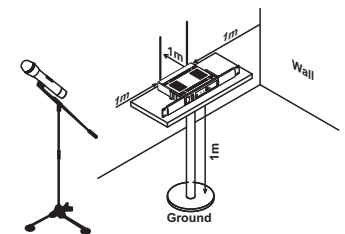
## Optional Accessory:

FB-11 Rack-mount Brackets



Rack mount brackets fits a single half-rack receiver

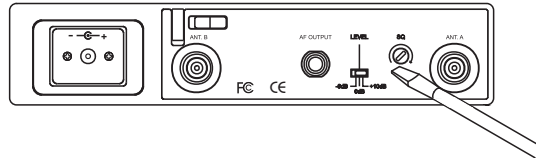
For ideal reception and performance, install the receiver at least 1 meter (3 feet) above the ground and away from EMI/RFI noise sources. In addition, place the transmitter microphone at least 1 meter (3 feet) away from the receiving antenna as illustrated in Figure 7.



(Figure 7)

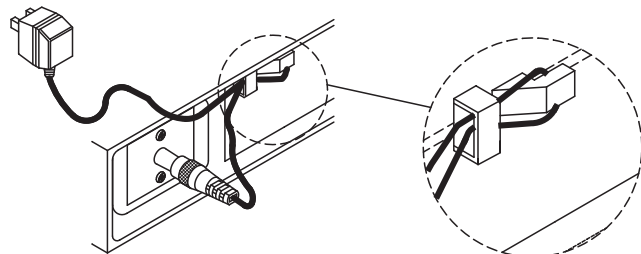
## OPERATION

- Make sure the transmitter is OFF position and minimal volume setting on amplifier/mixer before powering on the receiver.



(Figure 8)

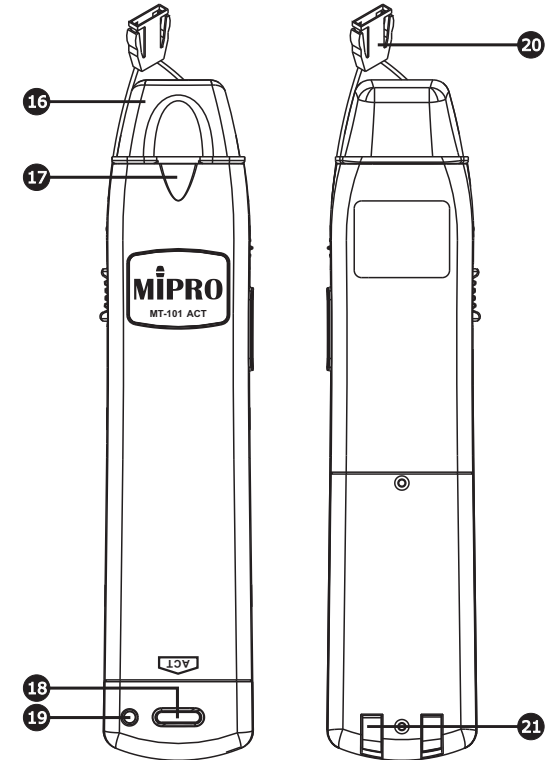
- There is a presence of interference if SIGNAL indicator ③ on the receiver panel is lit, however, without turning on the transmitter. The built-in Pilotone & NoiseLock squelch circuitry mutes the audio when experiencing external interferences. At times, interference can occur with multiple systems being used simultaneously at the same venue. Adjust the SQ ⑪ with a screwdriver to mute the interference. However, adjusting the SQ to maximum will reduce the sensitivity level, therefore, reduces the operating distance.
- Normal Status: RF indicator will be lit once transmitter is turned on. When feeding audio into the transmitter, the AF (Audio) indicator will also be lit.
- Abnormal Status: No RF and/or AF (Audio) indicator is lit when the transmitter is turned on and feeding audio into the transmitter.
- **Adjusting receiver/amplifier volumes during operation of wireless microphones:**
  - **Unbalanced Output Level:** Volume level ⑩ switched to "MIC" position. Adjusts the volume control on amplifier or mixer to obtain ideal volume level in microphone.
  - **Mixer/amplifier with over two microphone input sockets:** For ideal wireless microphone sensitivity level, first adjust it in mixer or amplifier using a wired microphone. Once turned, connect the audio output socket of the receiver. Make sure switch Unbalanced Level Switch ⑩ on rear of the receiver to "MIC" level.
  - Distortion occurs if receiver volume level is set improperly in addition to excessive microphone volume over amplifier/mixer threshold.
  - For proper secured wiring without loose wires follow illustration in Figure 9.



(Figure 9)

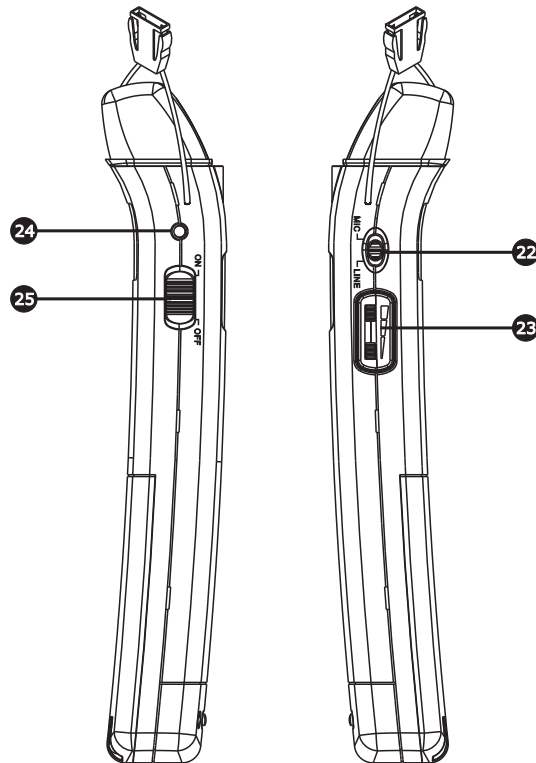
## PART NAMES AND FUNCTIONS

### Front & Rear View



- ①⑥ **Microphone:** Harden grill protects mic capsule and eliminates pop and wind noises.
- ①⑦ **3.5mm Mini-Jack Input (mono):** Accepts external audio sources (CD/iPod/MP3/tape/computer/DVD) for amplification.
- ①⑧ **ACT Button:** To turn on & off ACT-101 receiver. It also syncs the transmitter and receiver frequency automatically.
- ①⑨ **ACT Power Indicator:** Red indicator lits and dims when ACT button ①⑧ is pressed. This action denotes IR signal is sent.
- ②⑦ **Lanyard Hanger:** Secure the transmitter microphone in place with a lanyard in order to be worn around the neck for hands-free operation.
- ②① **Contact Points:** Ensure metal contact points are properly touched inside the battery charger for re-recharging.

## Side View



### 22 MIC/LINE Switch: Microphone/Line Switch.

LINE- For electric guitar.

MIC- For general condenser lavalier/headworn microphone or wired microphone.

### 23 Volume Control: Volume level adjustment.

### 24 Transmitter Power Indicator: Determines current battery power level.

- Normal Battery: Indicator illuminates and dims when turned on.
- Low Battery: Indicator stays illuminate when turned on. Recharge immediately.
- Drained Battery: Indicator does not illuminate when turned on. Recharge immediately.
- No Battery or Installed Incorrectly: Indicator does not illuminate when turned on.
- Different Frequency Band: Indicator flashes 4~5 times.

### 25 Transmitter Power Switch: Power ON to speak or amplification. The RF indicator on the receiver illuminates to denote it has received signals. Make sure transmitter is OFF position when not in use or during charging.

## TIPS IN OPERATING INFRARED REMOTE CONTROL

### Power On & Off Operation:



- The infrared (IR) has an approx. 15-degree trajectory angle for optimal reception.
- The optimal operating range of the infrared remote control is approx. 3-meter/10-feet.
- Press and hold the ACT button 18 towards the ACT Port (2 or 14) of the receiver for at least 1 second. Ascertain ACT Port Indicator Switch 1 or Power Indicator 13 illuminates before moving away.
- If ACT Port Indicator Switch 1 or Power Indicator 13 illuminates and dims it denotes IR reception was not received successfully. Repeat above steps until indicator illuminates.



## OPERATING INSTRUCTIONS

### To Power ON ACT-101/ACT-101i Receiver:

- Ensure it is plugged into an AC outlet.
- Ensure MT-101ACT transmitter microphone is fully charged.
- Aim the bottom of transmitter towards the ACT Port (2 or 14) .
- Press and hold the ACT button 18 on the transmitter for at least 1 second to power on.
- Still red ACT Port Indicator Switch 1 or Power Indicator 13 denotes the power is on.
- ACT Port Indicator Switch 1 or Power Indicator 13 illuminates and dims denotes the power is not turned on successfully. Repeat above steps until still red indicator illuminates.
- Flashing ACT Port Indicator Switch 1 or Power Indicator 13 4~5 times denotes incorrect receiver and transmitter frequency band used.

### To Power ON MT-101ACT Transmitter Microphone:

- Once ACT Port Indicator Switch 1 or Power Indicator 13 illuminates red, transmitter microphone is now ready to be turned on.
- Ensure MT-101ACT transmitter microphone is fully-charged.
- Turn on the Transmitter Power Switch 25 .
- Speak into the microphone directly for amplification.

### MT-101ACT Transmitter Microphone Battery Status:

#### • Normal or Fully Charged Battery:

Red indicator illuminates and dims when Transmitter Power Switch 25 is turned on.

#### • Low Power Battery:

Red indicator stays illuminate when Transmitter Power Switch 25 is turned on.

#### • Drained Battery:

Red indicator does not illuminate when Transmitter Power Switch 25 is turned on.

#### No Battery Inside or Battery Installed Incorrectly:

Red indicator does not illuminate when Transmitter Power Switch 25 is turned on.

### To Power OFF ACT-101/ACT-101i Receiver:

- Aim the bottom of transmitter towards the ACT Port (2 or 14).
- Press and hold the ACT button 18 on the transmitter for at least 1 second to power off.
- A dim ACT Port Indicator Switch 1 or Power Indicator 13 denotes the power is off.
- DO NOT touch the ACT Port Indicator Switch 1 once is powered off.

### Different Transmitter and Receivers Frequency Bands:

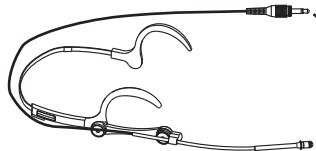
- Each receiver and transmitter has an attached coded frequency label.
- Ensure that both the transmitter and receiver are operating on the same frequency band in order to power on & off both receiver and transmitter.
- A flashing 4~5 indicator denote incorrect receiver and transmitter frequency band was used.
- MIPRO's innovative design allows the versatile transmitter to sync any receiver frequency within the same frequency band.

### Accepts an External Microphone:

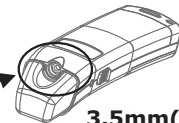
- A headworn or lavalier microphone with a 3.5mm mini-jack connector can be connected to the transmitter, worn by a neck lanyard and use as a bodypack transmitter.



**Headworn Microphone**



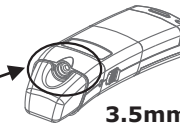
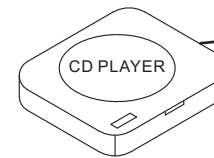
**Lavalier Microphone**



**3.5mm(1/8") Mini-Jack Input**

### Accepts an External Portable Audio Player:

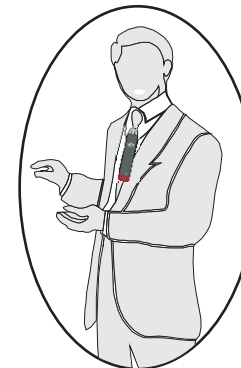
- CD, iPod, MP3, cassette or other audio signals can be connected to the transmitter via its 3.5mm(1/8") mini-jack connector to amplified sound. Make sure to switch to "LINE" when playing



**3.5mm(1/8") Mini-Jack Input**

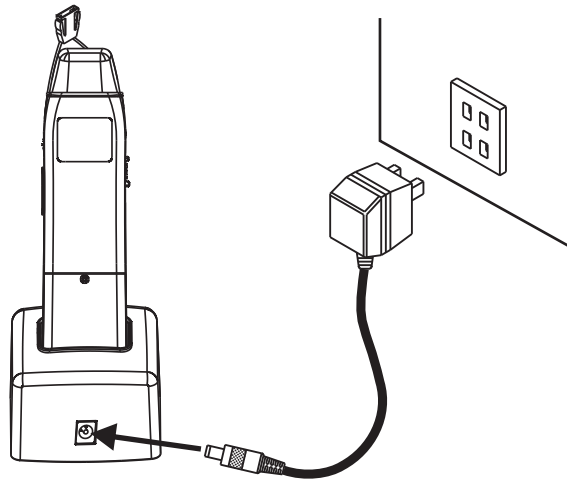
### Wearing a Neck Lanyard:

- Wearing a lanyard frees your hands during presentation or performance. Adjustable strap for ideal length and minimizes the distance needed for optimal sound quality between the microphone and speaker's mouth. Minimize the volume to reduce chances of feedback.



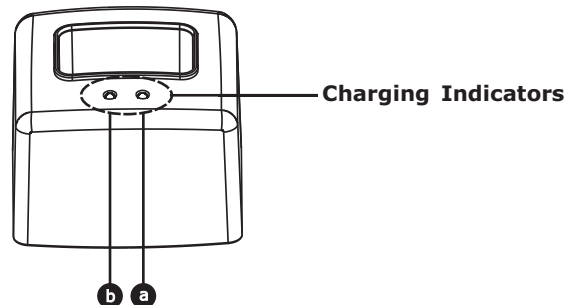
### Charging the Transmitter Microphone:

- Plug into an AC power outlet and the end into the charger itself.
- Insert the transmitter into the battery charger. There are built-in contact points on both sides of the battery charger. Therefore, either front or back side insertion will charge the transmitter accordingly.



### Battery Charger Indicators:

- a Red Indicator (illuminate):** Charging in progress.
- b Green Indicator (illuminate):** Fully charged. A fast charge takes approx. 3 hours then continuous trickle charges.



### Battery Charger Troubleshooting:

- Use the attached MIPRO 12V/500mA DC power adapter to avoid insufficient current, voltage irregularity or damaging the equipment.
- Ensure the transmitter is fully charged before and after use.
- Ensure the transmitter is turned off before placing into the battery charger.
- Check the battery contacts for corrosion or wear. Clean the contacts with dry cloth only. Water or chemicals can damage the contacts.
- For potential risks and dangers always use the attached MIPRO battery charger only for charging. Do not place the transmitter in any other unauthorized battery chargers.
- The battery has a limited life. The amount of play time will decrease as the battery ages or after many recharge cycles. The battery needs to be replaced when play time becomes too short or when it can no longer be charged.
- Do not place the transmitter into the charger if there is visible battery leakage. Replace with a new transmitter.

### When to Replace the Rechargeable Batteries:

- Only a few hours of operation after a fully-charged.
- No longer holding a charge. (no battery voltage).
- Short operating distance after a fully-charged.
- Power indicator does not illuminate when pressed.
- After 1 or 2 years depending how often it is used. Battery life is determined by temperature, depth and rate of discharge, and the number of charges and discharges (called cycles).
- Excessive wear and tear.
- Extreme weather conditions.

### How to Change a Battery:

If a new battery replacement is needed, open the battery compartment by removing the two screws. Insert two rechargeable batteries or disposable alkaline batteries into the battery compartment with correct polarity placement.