

AT-100

Wideband Circularly Polarized
Antenna



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Profile

MIPRO AT-100 active antenna offers an optimum solution for both transmitting and receiving RF signals within 470 ~1,000MHz bandwidth. It has a 6~8 dBi antenna gain and the circular polarization design effectively reduces polarization loss and provides improved RF signal stability and decreases signal drop-outs when receiving/transmitting signals in vertically or horizontally. It is a paramount accessory for any complex live or fixed installations requiring directionality especially wireless microphones and wireless in-ear monitors systems applications.

AT-100 can be connected to any MIPRO transmitters or receivers directly. It has a built-in 12dB antenna gain booster and provides extended reception range and compensates for coaxial cable signal loss. Two connectors provide installation solutions based actual application needs. Booster power can be provided by a MIPRO AD-708/AD-707a antenna divider system or any MIPRO ACT-series analog or digital receivers. Ideal for both outdoor and indoor applications.

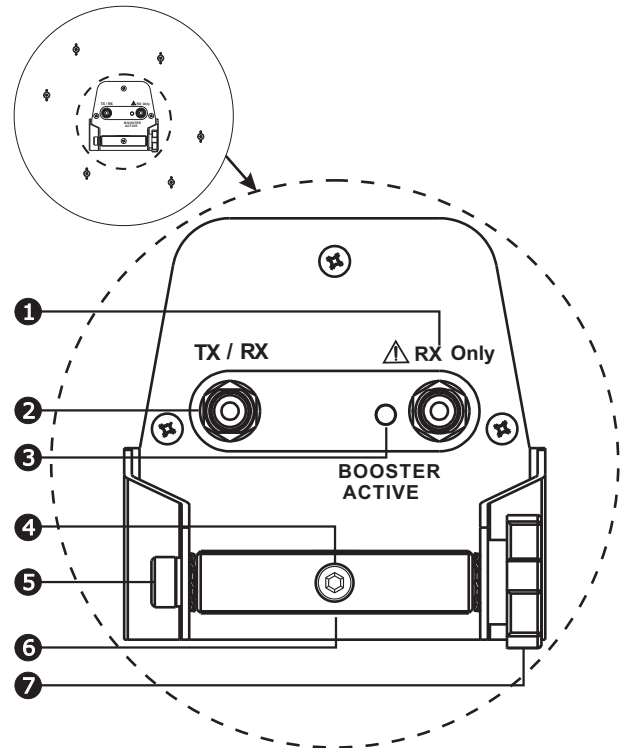
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Included Accessories:

1. Hexagonal Screw Nut × 1 
2. User Guide × 1

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Controls and Indicators



- 1 RX (receiver) Antenna Cable Connector:** The connector has a built-in 12 dB booster. It is needed to have at least 20m antenna cable and connected to the receivers or antenna dividers which offer 8V DC output power.
- 2 TX/RX (transmitter/receiver) Antenna Cable Connector:** Transmission output or antenna output connector, 0 dB gain, can be connected with maximum 20m antenna cable or antenna to transmitters or receivers.
- 3 Power LED Indicator:** LED indicator lits when 8V DC power input from receiver is interfaced to "RX only" connector and indicates booster is active.

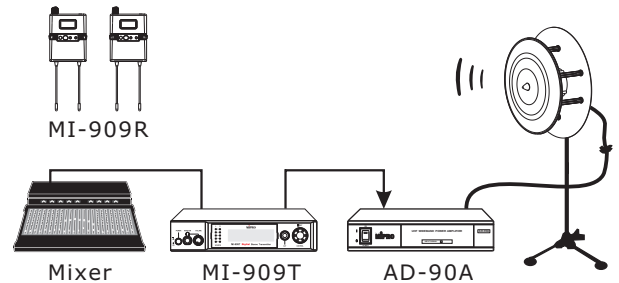
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- 4 **Hexagonal Screw Nut:** To stabilize and prevents Swivel Adapter Bracket from shaking right and left.
- 5 **Fixed Screw Nut:** To stabilize Swivel Adapter Bracket and the antenna.
- 6 **Swivel Adapter Bracket:** Setup on any 35mm tripod or mounted on to MIPRO's MS-90 wall-mounting kit.
- 7 **Fixed Knob:** To stabilize antenna's position vertically.

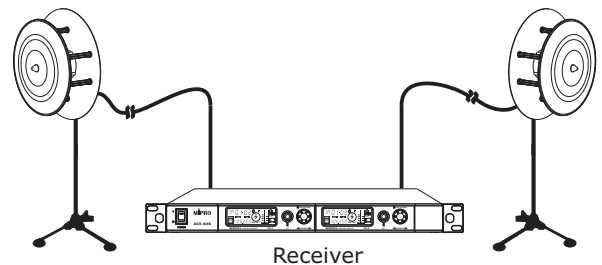
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Set-up Instructions

- (1) "TX/RX antenna cable connector ②" can be connected with a 20m antenna cable to MI-909T transmitter and/or AD-90a power amplifier. It connects to any ACT-Series receivers or AD-708 antenna divider.

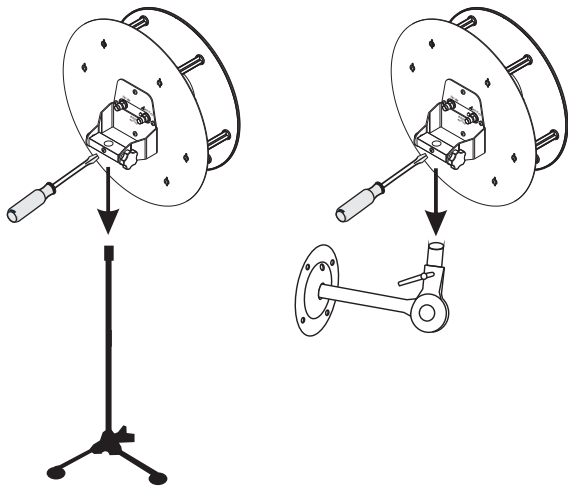


- (2) "RX only connector ①" has to use a minimum 20cm antenna cable when connected to a ACT receiver and AD-708. When receiver or AD-708 is powered on, the Power LED Indicator of AT-100 will be lit to indicate booster is active. Booster is inactive when Power LED Indicator is not lit when powered on.



Antenna Installation

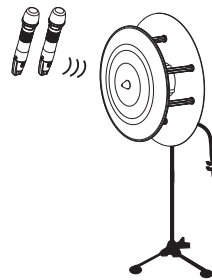
- (1) Mount the Swivel Adapter Bracket on to a 35mm tripod or MIPRO's MS-90 wall-mounting kit. Screw on the Hexagonal Screw Nut tightly to fix the Swivel Adapter Bracket firmly as shown in Figure 1 & Figure 2. Ascertain operate the transmitters in front and face the AT-100 for optimum performance.



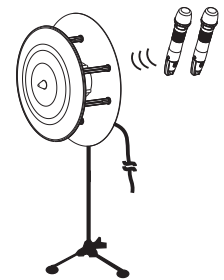
(Figure 1:
Installed with a 35mm
tripod)

(Figure 2:
Installed with a MS-90
wall-mounting kit)

- (2) Screw on the Fixed Screw Nut tightly and loosen the Fixed Knob, adjust antenna's directional angles for proper positions and then revolve the Fixed Knob tightly for best performance result (see illustrations below). Ascertain operate the transmitters in front and face the AT-100 for optimum performance.



(Figure 3:
Correct Operation)



(Figure 4:
Incorrect Operation)

Installation Venues

(1) Indoor Installation:

Stage Performance: MS-30 mic stand is recommended.

Ceiling Mounting-vertical Position: MS-90 ceiling rack-mount is recommended.

Wall Mounting-horizontal Position: MS-90 wall rack-mount is recommended.

(2) Outdoor Installation:

MS-90 rack-mounted to walls, pillars or proper stands is recommended.

Cautions

(1) RX (receiver) Antenna Cable Connector:

- When "RX only" connector is used, ascertain inside wire of antenna cable is not in touch with the case itself to avoid short circuits as connection socket is equipped with 8V DC power.
- "RX only" connector is designed only for receiver connection. Do not connect to transmitters as it will damage the equipment.
- Optimized coaxial cable length should be minimum 20m to avoid anti-interference characteristic deterioration from signal saturation due to over-gain from the booster. This connection improves the receiving sensitivity, however, ascertain anti-interference characteristic is not deteriorated.

(2) TX/RX (transmitter/receiver) Antenna Cable Connector:

Optimized coaxial cable length should be maximum 20m to compensate cable loss.

Built-in Booster Usage

- Optimal signal quality through proper booster usage
Coaxial cable loss reduces signal reception distance and stability. Booster must be connected to improve antenna gain to compensate for signal loss. However, too much antenna gain in booster causes unnecessary interference from intermodulation distortion resulting in deterioration of received signal quality.
- Following chart illustrates specifications of cable, suitable antenna and booster needed based on transmitting distance and tolerance range of signal loss.

Distance Combination	< 10m/32.8ft	< 20m/65.6ft
< 2dB	Use of 3D-2V cable and booster will not be required	Use of 5D-2V cable and booster will not be required

Distance Combination	< 50m/164ft	< 100m/328ft
< 2dB	Use of 5D-2V cable and booster will be required	Use of 5D-SFA cable and booster will be required

Below is an example of calculating gain of antenna system when connecting to a 50meters of 5D-2V coaxial cable to the RX connector of AT-100 with built-in booster.

- Antenna gain for AT-100 is 6dBi (a).
- Built-in booster gain for AT-100 RX connector is 12dB (b).
- From Chart B, loss of 5D-2V cable = 3.8db / 10m @ 1GHz. Hence, total lost of 50 meter cable = 3.8dB×5 = 19dB (c).
- Put (a), (b), (c), into Gain of antenna system formula. Total gain of antenna system = 6dB (Antenna) +12dB(Booster) -19dB(Coaxial cable) = -1dB.



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



2005-08-13

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!