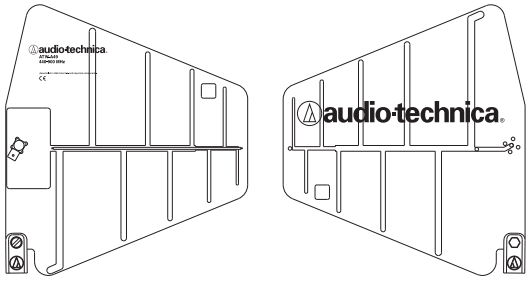
Professional UHF Wireless Systems

ATW-A49 UHF Wideband LPDA Antennas, 440-900 MHz

Installation and Operation



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CAUTION! For personal safety and reliable system operation, make certain that (1) the antennas are mounted clear of any physical contact with individuals, (2) any supporting structures used are stable, even if moved or bumped, and (3) the antennas are securely attached to the supporting structures.

In addition, to reduce the risk of electric shock, do not allow the antennas or their supporting structures to come in contact with any exposed wiring or other sources of electricity.

Introduction

Audio-Technica ATW-A49 UHF wideband LPDA (Log Periodic Dipole Array) antennas provide enhanced signal pickup for UHF wireless systems operating over 440–900 MHz, a remarkable 2-to-1 frequency range. This bandwidth includes all UHF TV channels (14–69, 470–806 MHz). Supplied in pairs, these directional antennas are ideal for extending the operating range and reliability of diversity UHF wireless systems. They also eliminate the need for multiple frequency-specific antennas.

The ATW-A49 is designed for applications requiring increased distance between the transmitter and the receiver—as in stadiums, concert tour venues, theater and large performance areas, or any area where line-of-sight may be obstructed. This ruggedly constructed paddle-style antenna is equally suited for installed and portable applications.

The antennas are compatible with virtually all UHF wireless receivers and provide a directional coverage pattern with a typical beamwidth of 90 degrees. They offer approximately 6 dB of RF gain improvement over standard receiver whip antennas. Antenna impedance is 50 ohms.

The antennas are constructed of industrial-grade copper-clad epoxy fiber-glass. This heavy-duty, durable construction is engineered to resist the effects of corrosion, UV degradation and vibration, providing long life and stable performance under difficult operating conditions. High-quality, low-loss BNC connectors are positioned to minimize RF cable strain. The antennas are supplied completely assembled.

Installation

Location

For best performance, the antennas should be mounted:

- Above head-height,
- In direct line-of-sight to the likely transmitter location(s),
- At least 3' (1 m) away from each other, and
- At least 3' (1 m) away from any large metal objects or sources of interference.

In addition, the length of RF cable run to the receiver should be minimized. Some experimentation with antenna positioning may be required to determine the best locations under typical conditions.

Important: While the antennas themselves are weather resistant, outdoor use should be temporary only and under dry conditions. Any moisture or corrosion in BNC cable connectors or associated cables can greatly affect RF performance at these frequencies.

Mounting

The ATW-A49 mounts to a 5/8"-27 threaded fitting. The antenna mount is designed to allow for vertical tilt adjustment through a 90° range. Horizontal adjustment is accomplished by rotating the antenna in the mounting fitting. For portable applications, the antenna may be installed on a standard 5/8"-27 thread microphone stand.

Connections

After the antennas have been installed, connect them to the antenna inputs of either a wireless receiver or an antenna distribution system. Use RG58-type cable for cable lengths of up to 25' (8 m). For cable lengths greater than 25', RG8-type low-loss RF cable is recommended. RG8-type cable lengths over 100' (30 m) may cause significant signal loss. Because cable requirements vary considerably from one installation to another, RF cables are not included. High-quality, pre-terminated RF cables available from Audio-Technica will be found listed on the back page under "Optional Accessories."

Specifications

ATW-A49

Antenna Type	Log Periodic Dipole Array (LPDA)
Operating Bandwidth	440 – 900 MHz
Gain	6 dB typical*
Impedance	50 ohms typical*
VSWR	≤ 1.7:1*
Polar Pattern	Elliptical, 90° acceptance, typical
Polarization	Vertical (when mounted vertically)
Number of Elements	9
Maximum Power Input	Not specified (intended as receive antenna only)
Termination Type	Fixed right-angle BNC female Connector is positioned to minimize cable strain
Weight	11.5 oz (326 g) each
Dimensions	10.55" (268 mm) L x 11.22" (285 mm) H x 0.98" (25 mm) D
Material	Copper-clad epoxy fiberglass
Finish	Black matte
Mounting	5/8"-27 thread; adaptor can swivel 90°

* Within specified bandwidth

This device is in compliance with applicable CE standards and regulations.

Optional Accessories

AC12 RG58-type antenna cable, 12' (3.65 m) long, terminated with BNC connectors.

AC25 RG8-type low-loss antenna cable, 25' (7.62 m) long, terminated with BNC connectors.

AC50 RG8-type low-loss antenna cable, 50' (15.24 m) long, terminated with BNC connectors.

AC100 RG8-type low-loss antenna cable, 100' (30.48 m) long, terminated with BNC connectors.

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CE

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