

# SHURE®

LEGENDARY  
PERFORMANCE™

# UA874V



**Active Directional Antenna**  
**Antenne directionnelle active**  
**Aktive Richtantenne**  
**Antena direccional activa**  
**Antenna direttiva attiva**  
**Actieve richtantenne**  
**Активная направленная антенна**  
**Antena Direccional Ativa**

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# Active Directional Antenna

## General Description

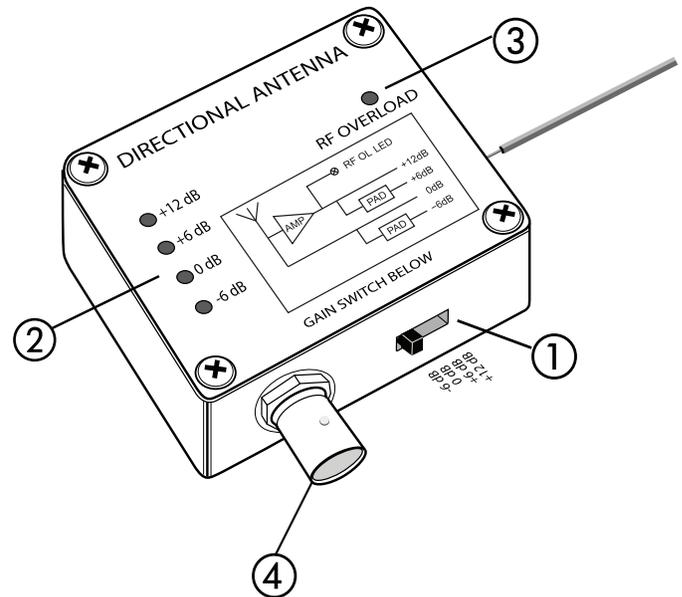
The Shure UA874 uses a log periodic dipole array to offer enhanced reception when directed toward the desired coverage area. An integrated amplifier and four gain settings compensate for varying degrees of coaxial cable signal loss. The UA874 can be mounted on a microphone stand, suspended from the ceiling, or mounted to a wall.

## Features

- Low-noise signal amplifier compensates for insertion loss in coaxial cable
- Compatible with Shure wireless receivers and antenna distribution systems that provide 10–15 V DC bias
- Integrated threaded adapter mounts easily to microphone stands
- Four-position gain selector switch
- Shure quality, ruggedness, and reliability

**Note:** The antenna **will not operate** without 10-15 V DC bias. This is required even at -6 dB and 0 dB ("passive") gain settings.

## Interface



### ① Gain Switch

Adjust the four-position gain switch to compensate for the calculated cable loss, based on the length and type of cable.

**Caution:** There may be a small RF dropout when changing the gain setting.

### ② Gain Mode LED

Indicates the current gain switch setting.

### ③ RF Overload LED

Indicates a strong RF signal that is overloading the antenna amplifier, which results in distortion or poor performance. Increase the distance between the antenna and transmitter, or lower the antenna gain setting.

**NOTE:** RF Overload LED does not operate for passive gain settings (-6 dB or 0 dB).

### ④ BNC Connector

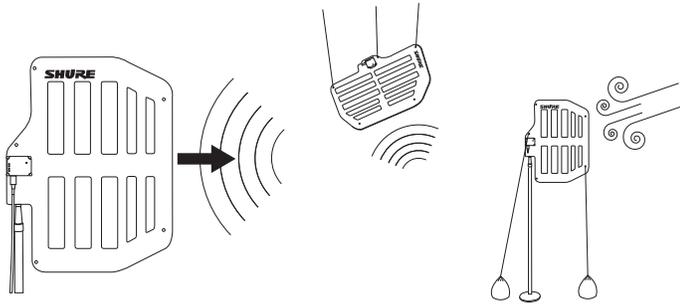
Connect to a receiver or antenna combiner with RF inputs that supply 10–15 V DC bias.

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## Installation Instructions

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1. Choose a location for installing the antenna that follows the proper guidelines for cabling and antenna placement.
2. Mount the antenna to a microphone stand, or use the mounting holes to suspend it from the ceiling.
3. For outdoor installations, use the mounting holes to secure the antenna against wind.
4. Point the antenna toward the intended coverage area.
5. Use antenna cable to connect it to a wireless receiver or antenna distribution system.



### Important

- The antenna only operates with receivers or distribution systems that provide 10–15 V DC bias.
- Lower the gain setting for short cable runs, or increase gain for longer runs. Note that the quality of the cable, not just the length, contributes to signal loss. A lighter-grade 50 foot cable may require more gain than a 100 foot, low-loss cable. Contact the cable manufacturer for cable loss specifications.
- Do not use this antenna for transmitting (such as with PSM transmitters)

## Selecting Antenna Cables

Use 50 ohm low-loss coaxial cable, such as RG-8U. Shure offers pre-terminated antenna cables ranging from 6 to 100 feet.

## Cable Maintenance

To maintain top performance for antenna cables:

- Avoid sharp bends or kinks in the cables.
- Do not deform cables with makeshift clamps, such as bending a nail over the cable.
- Do not use in permanent outdoor installations.
- Do not expose to extreme moisture.

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## Antenna Placement

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Use the following guidelines when mounting antennas:

- Receivers, amplifiers, and other accessories must be rated for use within the same frequency range as the antenna.
- Mount antennas at least one wavelength (1.75 m) apart.
- Keep antennas away from metal objects.
- Position antennas so there is nothing obstructing a line of sight to the transmitter (including the audience).
- Place antennas as close as possible to transmitter, such as to the side of the stage (instead of a front of house location).
- For cable runs exceeding 25 feet (7.6 meters), an in-line amplifier (Shure UA834) might be necessary to compensate for signal loss.

**Important:** Always perform a "walk around" test to verify coverage before using a wireless system during a speech or performance. Experiment with antenna placement to find the optimum location. If necessary, mark "trouble spots" and ask presenters or performers to avoid those areas.

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## Setting Gain

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The gain setting should only be used to compensate for the calculated cable signal loss. Additional signal gain does not mean better RF performance. Too much gain actually reduces reception range and the number of available channels. This is because Shure receivers are optimized to deliver the best performance when the sum of signal gain and cable loss equals 0 dB. Additional gain just amplifies everything in the RF range—including interference and ambient RF noise. It cannot selectively increase the signal from the transmitter.

- Use the lowest gain setting necessary to achieve good reception of the transmitter RF signal, as indicated on the receiver's RF LED or meter.
- Only increase the gain setting to compensate for the calculated cable loss.
- The –6 dB gain setting can be useful for applications with short cable runs (25 feet or less) and where the distance between the transmitter and antenna is less than 100 feet.
- Reduce gain if the antenna RF Overload LED illuminates—the signal is strong enough, so gain is not needed.

## Recommend Gain Settings

Use the following chart as a guideline for setting gain based on cable type where the distance from the antenna to the transmitter is greater than 100 feet.

**NOTE:** For installations where the antenna is less than 75 feet from the transmitter, lower the gain setting one step.

Cable Length	Gain Setting (based on cable type)			
	RG58*	RG8X	RG213/ RG8	Low-loss RG8/ RG213**
10' (3 m)	0	0	0	0
25' (8 m)	+6*	0	0	0
50' (15 m)	*	+6	+6	0
100' (30 m)	*	+12	+6	+6

\* RG58 cable has high signal loss and is not recommended for cable runs greater than 10 feet  
\*\* Low-loss RG8/RG213 cables include Times Microwave Systems LMR400 and Belden 9913 or 7810A

## Find More Information Online

For more information, visit <http://www.shure.com>

## Certifications

This product meets the Essential Requirements of all relevant European directives and is eligible for CE marking.

The CE Declaration of Conformity can be obtained from: [www.shure.com/europe/compliance](http://www.shure.com/europe/compliance)

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## Specifications

### Connector Type

BNC, Female

### Impedance

50  $\Omega$

### Power Requirements

10 to 15 V DC bias from coaxial connection, 75 mA

### RF Frequency Range

174–216 MHz

### Reception Pattern

3 dB Beam Width

120 degrees

### Third-order Overload Intercept Point (OIP3)

>30 dBm

### Antenna Gain

On Axis

3 dBi

### Signal Gain

$\pm 1$  dB, Switchable

+12 dB +6 dB 0 dB –6 dB

### RF Overload LED Threshold

–5 dBm

RF overload LED does not operate for passive gain settings

### Dimensions

559 x 435 x 68 mm (H x W x D)

### Net Weight

765 g (27.0 oz.)

### Operating Temperature Range

–18°C (0°F) to 63°C (145°F)

### Storage Temperature Range

–29°C (–20°F) to 74°C (165°F)

**SHURE**<sup>®</sup>  
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