



UA874

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 using the integrated swivel adapter.

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.

Installation

- Connect the antenna to the receiver or distribution system using Shure antenna cables (or any 50 ohm, low-loss coaxial cable, such as RG-8U).
- 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

- Direct the antenna toward the intended coverage area.
- Do not use this antenna for transmitting (such as with PSM transmitters)

Cable Maintenance

To maintain top performance for antenna cables:

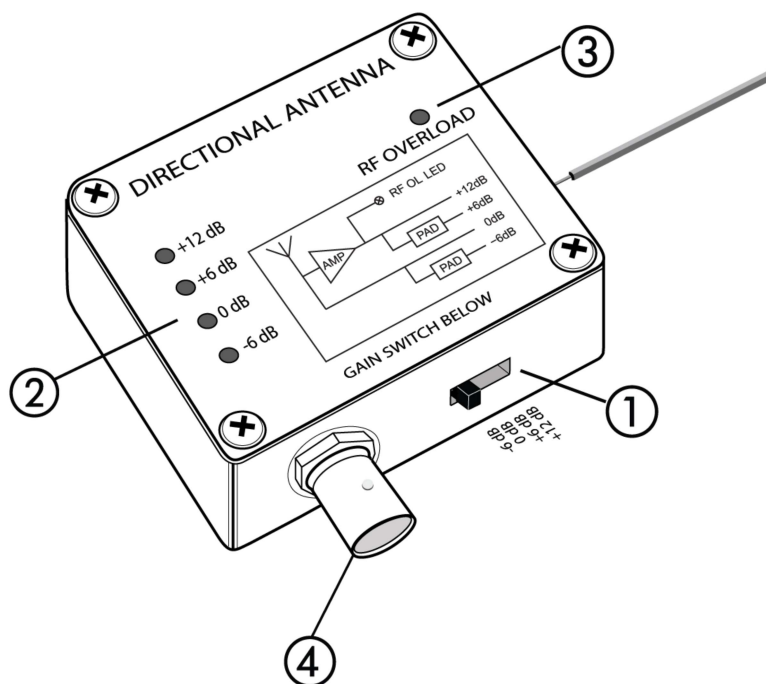
- Avoid sharp bends or kinks in the cables.
- Do not deform cables with makeshift clamps, such as bending a nail over the cable.
- Do not use in permanent outdoor installations.
- Do not expose to extreme moisture.

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.

NOTE: When ordering cables from Shure, select the low-loss "Z" models (available for longer cables) when using frequency bands above 1000 MHz.

Interface



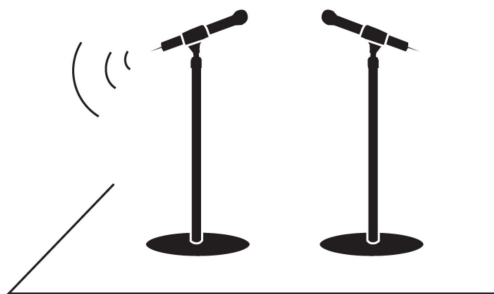
① Gain Switch

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.	

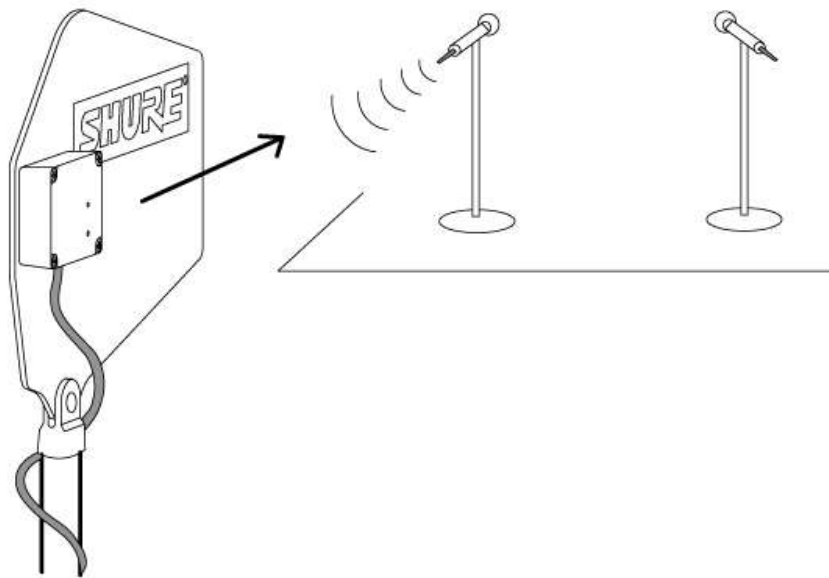
Antenna Placement

Use the following guidelines when mounting antennas:

- Antennas and receivers must be from the same band.
- Mount antennas at least one wavelength (two feet) apart.
- Position antennas so there is nothing obstructing a line of sight to the transmitter (including the audience).
- Keep antennas away from metal objects.



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.



Setting Gain

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.

Calculating Gain Settings

To calculate the required gain setting, obtain the cable manufacturer's specification for signal loss. The rated loss usually varies with RF frequency in addition to cable length.

of -12dB per 100 ft. would calculate as $(-12\text{dB}/100) * 50 = -6\text{dB}$ and require +6dB of gain for a sum total of 0 dB loss.

Find More Information Online

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

Specifications

Connector Type

BNC, Female

Impedance

50 Ω

Power Requirements

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

RF Frequency Range

UA874US
470–698 MHz
UA874E
470–790 MHz
UA874WB
470–900 MHz
UA874Z16
1240–1260 MHz
UA874Z17



UA874Z10
1785–1805 MHz
UA874X
925–952 MHz
UA874XA
902–960 MHz

Reception Pattern

3 dB Beam Width

70 degrees

Third-order Overload Intercept Point (OIP3)

>30 dBm

Antenna Gain

On Axis

7.5dBi

Signal Gain

±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

UA874
316 x 359 x 36 mm (H x W x D)
UA874X
224 x 234 x 36 mm (H x W x D)



224 x 234 x 36 mm (H x W x D)
UA874Z
224 x 234 x 36 mm (H x W x D)

Weight

UA874
317 g (11.2 oz.)
UA874X
213 g (7.5 oz.)
UA874XA
213 g (7.5 oz.)
UA874Z
213 g (7.5 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)

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

Authorized European representative:



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Optional Accessories

Protective zipper pouch
WA874ZP

