

# SHURE®

LEGENDARY  
PERFORMANCE™

Wireless Accessory  
UA864



User Guide

Le Guide de l'Utilisateur

Bedienungsanleitung

Manuale d'uso

Guia del Usuario

Guida dell'Utente

Gebruikershandleiding

Руководство пользователя

Pengguna Panduan

取扱説明書

사용자 안내서

用戶指南



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## General Description

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The UA864 antenna provides wideband RF coverage in an easy to install, low-profile enclosure that can be mounted on a wall, ceiling, and even on metal surfaces with improved reception. The paintable, neutral white housing allows the antenna to blend into corporate or classroom settings. The 4-position selectable gain switch provides attenuation and boost settings to match the antenna to the environment.

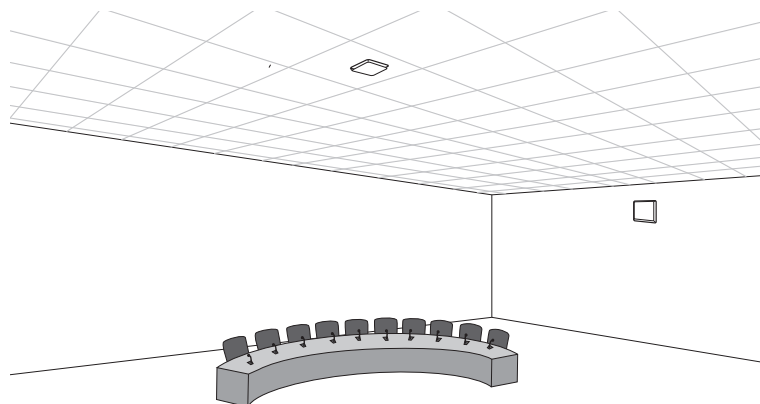
### Model Variations

**UA864US:** 470-698 MHz

**UA864LO:** 470-698 MHz

**UA864HI:** 530-790 MHz

**UA864A:** 650-952 MHz



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## Features

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- Wideband performance
- Low-profile design
- Wall or ceiling mounting options
- Four-position gain switch
- Metal surface mounting capability
- LED indicators for gain settings
- Neutral white, paintable housing

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## Antenna Placement

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Use the following guidelines when mounting antennas:

- Antennas and receivers must cover the same frequency range.
- Mount antennas at least four feet apart for optimal diversity.
- Position antennas so there is nothing obstructing a line of sight to the transmitter (including the audience).

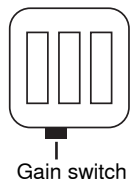
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## Positioning Antennas for Diversity Reception

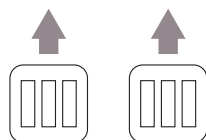
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The UA864 is a polarized antenna and must be oriented correctly to optimize reception for each transmitter type. Position the antennas using the following guidelines:

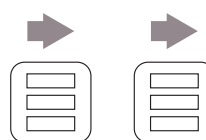
**Note:** Use the gain switch as an indicator of the antenna orientation.



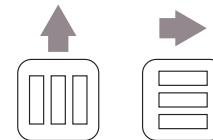
Handheld and Bodypack Transmitters (vertical)



Boundary Microphones (horizontal)



Mixed Transmitter Types (vertical and horizontal)



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## Find More Information Online

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For setup tips and more information on wireless accessories, visit <http://www.shure.com/WirelessAccessoryWizard>

# Installation

## Mounting on a Wall or Ceiling

The mounting plate installs directly to a wall, ceiling, or a standard junction box.

### Required Equipment

- #8 or #6 screws
- Flat washers
- Lock washers
- Drill
- Screwdriver

### Installation Steps

1. Align the mounting plate:

**Junction box mounting:** Align the mounting plate with the junction box so that at least two screws can be used.

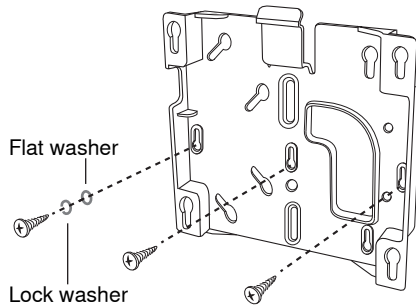
**Wall mounting:** Use the mounting plate as a template to mark the location for the holes on the mounting surface. Drill the holes accordingly.

2. Secure the mounting plate to the surface with the washers as shown (CAUTION: Do not over-tighten screws).

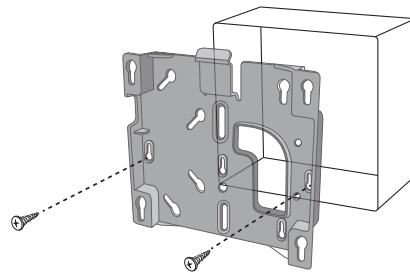
3. If running RF cable from inside the wall, guide it through the opening in the mounting plate and connect the cable to the antenna output.

4. Position the antenna mounting posts over the keyhole slots in the mounting plate and slide it into the locked position.

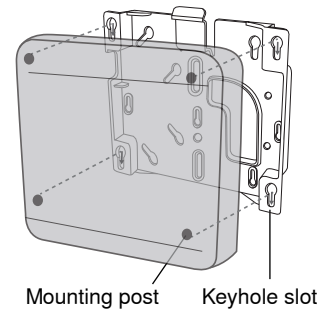
Mounting to a wall or ceiling



Mounting to an electrical junction box

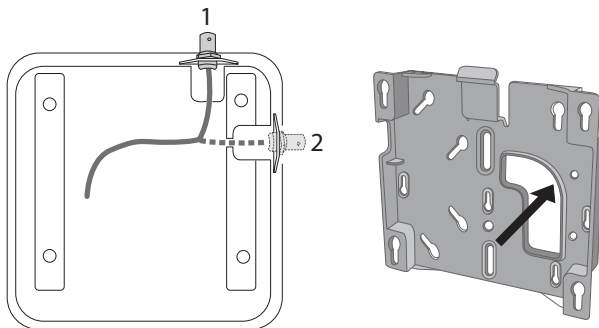


Securing the antenna to the mounting plate



## Routing the Cable

The output connector can be routed through ports 1 or 2 on the antenna. When connecting to an RF cable in the wall, run the cable through the opening in the mounting plate.



## Rotating the Cover

The cover can be detached and rotated in any direction for a matched appearance when using multiple antennas.

1. Remove the screws holding the cover in place from the back of the antenna
2. Remove the cover and rotate to the desired position
3. Replace the screws to secure the cover

## Painting the Antenna

The cover of the antenna can be painted to match the installation environment. Use the following guidelines when painting the antenna cover:

- Remove the antenna cover before painting
- Only use non-metallic paint, as any metallic content may interfere with RF reception
- Allow the paint to dry completely before reinstalling the cover
- Avoid painting in the screw holes

Warning: Do not touch the internal components of the antenna when the cover is removed.

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## Connecting to a Receiver

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This antenna is compatible with any receivers, distribution systems, and splitters that operate within the antenna's frequency range. For receivers with multiple antenna ports, connect each antenna being used to a separate port.

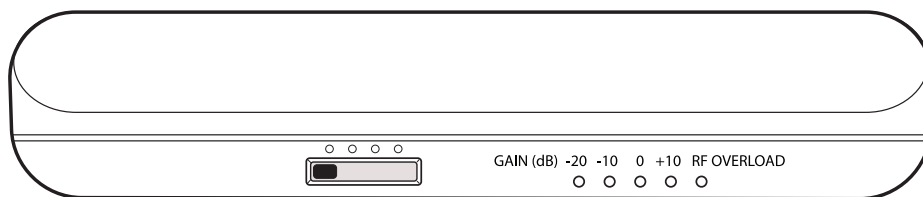
**Note:** The antenna requires bias voltage from the receiver or distribution system to operate on the +10 dB setting and for LED functionality. If these devices do not supply bias voltage, the Shure UABIAS inline power supply can be used. The antenna still operates with all other gain settings if bias voltage is not supplied.

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## Setting the Gain Switch

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Use the gain switch to optimize antenna performance for the RF characteristics of the room or location. Monitor the RF signal from the receiver to ensure optimal signal strength.



| RF Gain Setting (dB) | Use Scenario  |
|----------------------|---|
| <b>Pad:</b> -10, -20 | Provides increased isolation from other RF sources when the desired wireless microphone signal strength is strong. If the <b>RF OVERLOAD</b> LED illuminates when using a higher gain setting, the pad should be used to attenuate the signal, but only after verifying that the transmitter is an appropriate distance from the antenna. |
| 0 (Default)          | Suitable for typical room installations and provides enough RF gain in most cases when cable runs are between 10 and 50 feet.   |
| <b>Boost:</b> +10    | Provides an extra 10 dB of RF gain to compensate for signal loss if using long cable runs (50 feet or more).  |

**Note:** Bias power supplied by receiver antenna ports or an external power source is required for the +10 dB boost setting and for illuminating the LEDs. For un-powered applications, the -20, -10, and 0 dB settings are still functional; however, the LEDs will not illuminate.

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## Cable Maintenance

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To maintain top performance for UA825, UA850 or UA8100 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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## Specifications

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### Connector Type

BNC, Female

### Impedance

50  $\Omega$

### Power Requirements<sup>(1)</sup>

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

### RF Frequency Range

|                |             |
|----------------|-------------|
| <b>UA864US</b> | 470–698 MHz |
| <b>UA864LO</b> | 470–698 MHz |
| <b>UA864HI</b> | 530–790 MHz |
| <b>UA864A</b>  | 650–952 MHz |

### Reception Pattern

3 dB Beam Width at center frequency

|                |             |
|----------------|-------------|
| <b>UA864US</b> | 100 degrees |
| <b>UA864LO</b> | 100 degrees |
| <b>UA864HI</b> | 95 degrees  |
| <b>UA864A</b>  | 90 degrees  |

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

>30 dBm

### Antenna Gain

On Axis, 0 dB Gain Setting at center frequency

|                |         |
|----------------|---------|
| <b>UA864US</b> | 2.5 dBi |
| <b>UA864LO</b> | 2.5 dBi |
| <b>UA864HI</b> | 3.0 dBi |
| <b>UA864A</b>  | 5.5 dBi |

### Signal Gain

$\pm 1$  dB, Switchable

+10 dB

0 dB

-10 dB

-20 dB

### RF Overload LED Threshold

-15 dBm

### Dimensions

176 x 176 x 51 mm (H x W x D)

### Weight

487 g (17.2 oz.)

### Operating Temperature Range

-7°C (20°F) to 49°C (120°F)

### Storage Temperature Range

-29°C (-20°F) to 74°C (165°F)

<sup>(1)</sup>-20, -10, 0 dB settings do not require power

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## Antenna Cables from Shure

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Shure offers the following pre-terminated antenna cables:

| Length   | Type  | Model No. |
|----------|-------|-----------|
| 6 foot   | RG58  | UA806     |
| 10 foot  | RG58  | PA725     |
| 25 foot  | RG8X  | UA825     |
| 50 foot  | RG8X  | UA850     |
| 100 foot | RG213 | UA8100    |

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## Certifications

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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)

Authorized European representative:

Shure Europe GmbH

Headquarters Europe, Middle East & Africa

Department: EMEA Approval

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