



# Installation

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This chapter describes the setup of the bridge and includes the following sections:

- [Cautions and Warnings](#)
- [Installation Guidelines](#)
- [Unpacking the Bridge](#)
- [Connecting the Antenna Cable](#)
- [Connecting the Ethernet Cables](#)

# Cautions and Warnings

Translated versions of the following safety warnings are provided in Appendix A, “Translated Safety Warnings.”



## Note

The FCC, with its action in ET Docket 96-8, has adopted a safety standard for human exposure to radiated frequency (RF) electromagnetic energy emitted by FCC-certified equipment. Cisco Aironet products meet the uncontrolled environmental limits found in OET-65 and ANSI C95.1, 1991. Proper operation of this radio device according to the instructions in this publication will result in user exposure substantially below the FCC recommended limits.



## Caution

Cisco Aironet power injectors are designed for use with 350 series access points and bridges only. Using the power injector with other Ethernet-ready devices can damage the equipment.



## Caution

The operational voltage range for Cisco Aironet 350 series access points and bridges is 24 to 60 VDC. Higher voltage can damage the equipment.



## Warning

**Do not operate your wireless network device near unshielded blasting caps or in an explosive environment unless the device has been modified to be especially qualified for such use.**



## Warning

**Do not work on the system or connect or disconnect cables during periods of lightning activity.**



## Warning

**Read the installation instructions before you connect the system to its power source.**



## Warning

**This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that a fuse or circuit breaker no larger than 120 VAC, 15A U.S. (240 VAC, 10A international) is used on the phase conductors (all current-carrying conductors).**



## Warning

**Do not locate the antenna near overhead power lines or other electric light or power circuits, or where it can come into contact with such circuits. When installing the antenna, take extreme care not to come into contact with such circuits, as they may cause serious injury or death. For proper installation and grounding of the antenna, please refer to national and local codes (e.g. U.S.:NFPA 70, National Electrical Code, Article 810, in Canada: Canadian Electrical Code, Section 54).**

# Installation Guidelines

This section describes things to keep in mind when installing your bridge. Sections include:

- Basic Guidelines
- Antenna Options
- Site Surveys

## Basic Guidelines

Because the bridge is a radio device, it is susceptible to common causes of interference that can reduce throughput and range. Follow these basic guidelines to ensure the best possible performance:

- Install the bridge antenna in an area where trees, buildings, or large steel structures such as shelving units, bookcases, and filing cabinets do not obstruct radio signals to and from the antenna. The antennas must be located for direct line-of-sight operation.
- Minimize the distance between the bridge and the antenna to reduce signal loss.
- Install the bridge away from microwave ovens or other devices operating in the 2.4 GHz frequency range. Microwave ovens operate on the same frequency as the bridge and can cause signal interference.

## Antenna Options

The bridge supports external gain antennas with omni-directional or directional capabilities. Omni-directional antennas are best for systems requiring a signal distribution in more than one direction. High-gain directional antennas are best suited for covering longer distances in a fixed direction.

## Site Surveys

Because of differences in component configuration, placement, and physical environment, every network application is a unique installation. Before installing multiple bridges, you should perform a site survey to determine the optimum utilization of networking components and to maximize range, coverage, and network performance.

Consider the following operating and environmental conditions when performing a site survey:

- Data rates – Sensitivity and range are inversely proportional to data bit rates. The maximum radio range is achieved at the lowest workable data rate. A decrease in receiver threshold sensitivity occurs as the radio data increases.
- Antenna type and placement – Proper antenna configuration is a critical factor in maximizing radio range. As a general rule, range increases in proportion to antenna height and gain.
- Physical environment – Clear or open areas provide better radio range than closed or filled areas. Also, the less cluttered the work environment, the greater the range.
- Obstructions – A physical obstruction such as a building or a tree can block or hinder communication between bridges. Avoid locating the antennas in a location where there is an obstruction between the sending and receiving antennas.

- Building materials – Radio penetration is greatly influenced by the building material used in construction. For example, drywall construction allows greater range than concrete blocks. Metal or steel construction is a barrier to radio signals.

# Unpacking the Bridge

Follow these steps to unpack the bridge:

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- Step 1** Open the shipping container and carefully remove the contents.
  - Step 2** Return all packing materials to the shipping container and save it.
  - Step 3** Ensure that all items listed in the “Package Contents” section are included in the shipment. Check each item for damage.
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## Package Contents

Each bridge is shipped with the following items:

- Cisco Aironet 350 Series Bridge
- Nine-pin, male-to-female, straight-through serial cable
- *Quick Start Guide: Cisco Aironet 350 Series Bridge*
- Cisco Aironet Series Wireless Access Points and Bridges CD-ROM
- Cisco Information Packet, which contains warranty, safety, and support information
- Cisco Aironet 350 Series Power Injector and accessory kit
  - Power injector
  - Power cord
  - Straight-through, Category 5 Ethernet cable
  - Warning labels
  - Plastic tie wraps, wall anchor, and screw
- Cisco product registration card

**Note**

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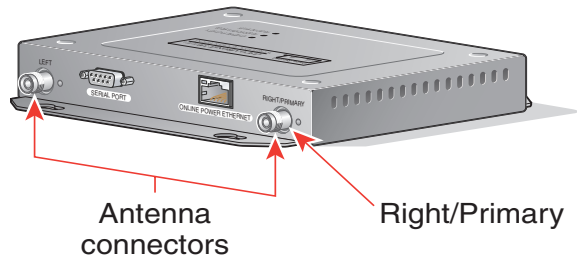
If any item is damaged or missing, notify your authorized Cisco sales representative.

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## Connecting the Antenna Cable

The bridge provides two reverse TNC antenna connectors on the rear of the unit (see [Figure 2-1](#)) for diversity configurations with two antennas. When you are using a single antenna, you should connect the antenna to the Right/Primary connector.

**Figure 2-1**



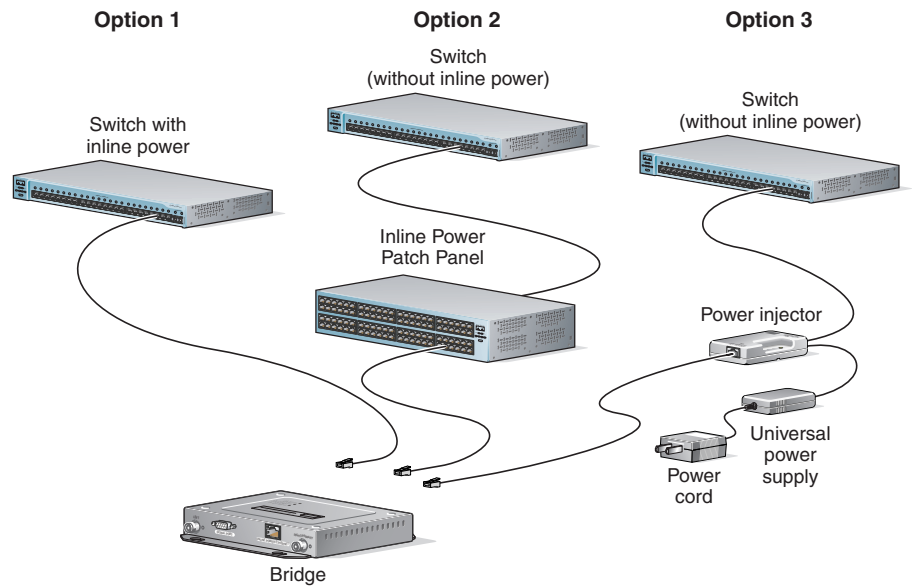
## Connecting the Ethernet Cables

Follow these steps to connect the straight-through Category 5 Ethernet cable and power supply to the bridge:

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- Step 1** Plug the RJ-45 Ethernet connector into the Ethernet port on the back of the bridge.
- Step 2** Choose a power option for the bridge. The 350 series bridge receives power through the Ethernet cable. The 350 series bridge power options include:
- A switch with inline power, such as a Cisco Catalyst 3524-PWR-XL
  - An inline power patch panel, such as a Cisco Catalyst Inline Power Patch Panel
  - A Cisco Aironet power injector

Figure 2-2 shows the three power options for the bridge.

**Figure 2-2 350 Series Bridge Power Options**



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**Caution**

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**Step 3** Connect the other end of the Ethernet cable to the device that will supply power.

If you are using a power injector, follow these additional steps:

- a. Plug the straight-through, Category 5 Ethernet cable from the bridge into the port on the power injector labeled *To AP/Bridge*.



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**Note** Attach the provided warning labels to the powered Ethernet cable or the wall jack to warn other users that the Ethernet connection carries inline power.

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- b. Plug a straight-through, Category 5 Ethernet cable into the port on the power injector labeled *To Network*.
- c. Plug the other end of the Ethernet cable into your 10/100 Ethernet switch, hub, or network.
- d. Plug the female end of the power cord into the universal power supply.
- e. Plug the male end of the power cord into a wall outlet or power strip.
- f. Secure the power injector in place with the tie-wraps. Insert the tie-wraps through the slots on the bottom of the power injector and fasten the tie-wraps around a pole or a bundle of wires, or use the wall anchor and screw to secure the power injector to a wall.

At start-up, all three LEDs on the top of the bridge slowly blink amber, red, and green in sequence; the power-up sequence takes a few minutes to complete. During normal operation, the LEDs blink green. Refer to [Chapter 4, “Troubleshooting,”](#) for LED descriptions.

**Step 4** Follow the steps in [Chapter 3, “Basic Configuration,”](#) to assign basic settings to the bridge.

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