



Powering Considerations for Next-Generation Wireless

Power over Ethernet (PoE) simplifies and reduces the cost of wireless deployments by eliminating the need for AC power in the ceiling. As customers upgrade their wireless networks, they need to take into consideration whether an upgrade to 802.11n will require an infrastructure upgrade. This document explains Cisco® Next-Generation wireless and powering options for the Cisco Aironet® 1140 Series and 1250 Series Access Points.

Flexible Affordable Powering Options

The Cisco Aironet 1140 Series is a business-ready, 802.11n, indoor access point designed for simple deployment and energy efficiency. Since many enterprise WLANs rely on 802.3af switches, an infrastructure upgrade would not be required—powering the 1140 Series is as easy as plugging into any 802.3af Ethernet port to gain the full performance of 802.11n.

Cisco Aironet 1250 Series Power Options

Cisco Aironet 1250 Series access points are designed for rugged indoor environments. The modular platform supports 802.11n with external antennas for versatile RF coverage. The Cisco Aironet 1250 Series Access Point can be powered by any 802.3af switch, a Cisco Enhanced Power over Ethernet (PoE) switch, a power injector, or a local power supply.

Cisco Enhanced PoE

Cisco Enhanced PoE enables single-port support for the Aironet 1250 Series, bringing tight integration between wired and wireless platforms. Cisco Enhanced PoE is currently available on:

- **The Cisco Catalyst® 3750-E and 3560-E Series Switch platforms**—Single- and dual-radio operation with full 802.11n performance
- **Cisco Catalyst 4500-E Series Line Cards**—Single- and dual-radio operation with full 802.11n performance

- **Cisco Catalyst 6500 Series Line Cards**—Single-radio operation with full 802.11n performance. Dual-radio operation with performance optimized for the maximum amount of power that can be delivered from the port.

For more information on Cisco Enhanced PoE, visit: <http://www.cisco.com/en/US/prod/switches/epoe.html>

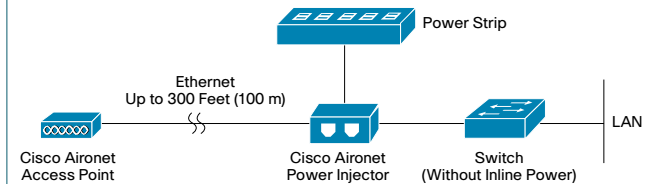
Standard 802.3af

The Cisco Aironet 1250 Series can fully power a single 802.11n radio with standard 802.3af power. This is ideal for businesses that chose to only deploy on a single frequency (2.4-GHz or 5-GHz). A single radio provides optimum performance with approximately 300 Mbps maximum PHY data rate. Customers who deploy dual-band 802.11n radios and power the 1250 Series using standard 802.3af will have more reliable and predictable coverage than traditional 802.11a/b/g networks; however, operation will be limited to a single transmitter per radio with maximum PHY data rates of 150.5 Mbps instead of 300 Mbps per radio. Customers with a significant investment in 802.11 a/b/g client devices that have low to medium bandwidth needs but high-reliability requirements will benefit the most from this type of deployment scenario:

Power Injector

The power injector AIR-PWRINJ4= can be used to power both Cisco Aironet 1250 Series and Cisco Aironet 1140 Series Access Points. This power injector contains an integrated power supply that converts 100 to 240 volts AC into 56 volts DC and then injects this power onto the Category 5 Ethernet cable to power the access point (Figure 1). This deployment option is ideal for customers who are interested in getting the full benefits of 802.11n with the dual-radio 1250 Series but do not have an enhanced PoE switch. A power injector extends the distance that an access point can be deployed away from a power strip.

Figure 1. Cisco Aironet Power Injector: Providing Inline Power to Cisco Aironet Access Points



Power Supply

The Cisco Aironet 1250 Series has a 100- to 240-VAC power supply that provides 56 VDC to locally power the access point. This deployment option is ideal for customers who are interested in getting the full benefits of 802.11n with dual-radio through the 1250 Series but do not have an enhanced PoE switch. A power supply is optimal in instances when a power strip is located close to the access point.

Cisco Aironet 1140 Series Power Options

The Cisco Aironet 1140 Series can be powered with an 802.3af switch, a power supply, or power injector. For additional information on part numbers for power options, visit the [1140 Series ordering guide](#).

Why Cisco?

Cisco offers a broad portfolio of powering options for Cisco Next-Generation Wireless products, including solutions focused on energy efficiency. The Cisco Aironet 1140 Series offers the deployment simplicity of full power from a single switch port over any 802.3af compliant switch. Cisco Enhanced PoE enables single-port support for the Cisco Aironet 1250 Series, bringing tight integration between wired and wireless platforms.