

Figure 1. Cisco 1550 Series Models



The Challenge: Staying Connected to Critical Applications Indoors and Outdoors

Demand for mobility access in the enterprise is continuously increasing. Indoor wireless networks have proven results when it comes to increasing productivity, improving customer intimacy, and helping your organization adapt flexibly in real time. Extending this high-performance wireless coverage seamlessly to the outdoors is a critical requirement.

With the proliferation of mobile devices and mobile workers demanding to stay connected whether they are moving inside a building or across campus, enterprises are looking for an outdoor wireless network that provides the throughput and performance that users have become accustomed to at their offices. With RF interference from mobile devices such as sensors, cameras, handhelds, bluetooth devices, and gas meter readers, the outdoor wireless network needs to be able to mitigate RF issues and adjust automatically to a changing environment. Limited IT resources demand an outdoor wireless solution that is tightly integrated with the wired and indoor wireless network to support seamless end-to-end roaming and security while keeping OpEx low.

The Solution: Cisco Outdoor Wireless Extending Mobility Seamlessly to the Outdoors

The Cisco® next-generation, outdoor wireless solution complements its comprehensive, award-winning 802.11n indoor wireless solution with the first and only integrated, silicon-level spectrum intelligence to detect, classify, and mitigate RF interference. Cisco [CleanAir technology](#) supports mission-critical indoor wireless networks and it is now available on the Cisco Aironet® 1550 Series Outdoor Access Points so that users can experience high-quality, mobile broadband inside a building or walking across a campus. The outdoor wireless network is designed for seamless mobility across wired and wireless networks. It delivers scalable and reliable multidevice and multinetwork application delivery such as video surveillance, real-time data, and public and private Wi-Fi access.

Industry-Leading Performance with CleanAir Technology

The Cisco Aironet 1550 Series Outdoor Access points create a spectrum-aware, self-healing, and wireless network that mitigates the impact of outdoor wireless interference and offers new levels of security, performance protection, troubleshooting, and policy enforcement. High-bandwidth applications such as video surveillance can be seamlessly experienced without the high cost of installing cables over long distances. Centralized configuration and management, as well as the high power of the Cisco Aironet 1550 Series platform, reduce the complexity and cost of managing and deploying the wireless network. This next-generation Cisco outdoor wireless platform provides a multipurpose, highperformance network that minimizes deployment and management nodes for an overall lower total cost of ownership.

Cisco CleanAir Technology

Outdoor wireless environments such as college or enterprise campuses, industrial sites, and metropolitan areas present significant challenges for RF communications. These

environments require more reliable RF coverage to combat interference and the dynamic RF environment outdoors. More than ever, IT managers need to have visibility into their outdoor wireless spectrum to manage RF interference and prevent unexpected downtime.

As part of the Cisco 1550 Series platform, Cisco CleanAir technology provides silicon-level intelligence for full visibility into the performance and security of the outdoor wireless spectrum, with an easy-to-read Air Quality Index. Cisco CleanAir technology is an integrated solution, with patented chips and software that has been specifically designed to analyze and classify RF activity, overcoming the limitations of standard Wi-Fi chipsets. The system remembers intermittent interference from a meter reader, unauthorized video camera, or outdoor wireless bridge and avoids the channels where these devices operate to prevent future interference.

Optimized for High-Bandwidth Applications

The Cisco outdoor wireless solution has been designed to provide high-performance access to rich media applications such as video conferencing over Wi-Fi, and video surveillance, saving on the high cost of installing cables over long distances. It enables low-density deployments that lower CapEx, installation, and maintenance costs. It improves the reliability and coverage for legacy clients with Cisco [ClientLink technology](#).

Highly Flexible and Secure Infrastructure

The next-generation outdoor wireless solution addresses wireless network security on the highest level, which helps ensure that data remains private and secure and that the network is protected from unauthorized access. By analyzing all devices that are present in an outdoor wireless spectrum, RF denial-of-service (DoS) attacks can be successfully detected and mitigated.

Centralized Management

Functioning as part of the Cisco Unified Wireless Network, the Cisco Aironet 1550 Series Access Points are managed



and monitored by wireless LAN controllers. Working in conjunction with the wireless LAN controllers, the Cisco Wireless Control System (WCS) is the industry-leading platform for wireless LAN planning, configuration, and management. Automated wireless configuration and management functions give IT managers more visibility and control, resulting in significant reduction of day-to-day support costs. The integrated Cisco CleanAir technology protects 802.11n performance and delivers centralized security policies, wireless intrusion prevention system (IPS) capabilities, RF management, and quality of service (QoS).

Complementary Solutions

Cisco provides a strong set of complementary solutions to meet the needs of enterprises. We provide highperformance point-to-point and point-to-multipoint wireless bridging to extend network connectivity indoors and outdoors from the Cisco Unified Wireless Network over long distances.

Multiple Applications

The Cisco Aironet 1550 series as a new high performance outdoor 802.11n wireless access point also supports mobile operators to address mobile network congestion using Wi-Fi data offload. The Cisco enterprise outdoor wireless solution brings tremendous value to wide range of enterprise environments that have struggled to provide widespread mobile coverage to facilities with areas that are too difficult or impossible to wire. The primary applications of the Cisco outdoor wireless solution include campus networks, public safety, and industrial environments.

Campus Networks

Whether it's a typical college campus or corporate offices with multiple buildings, IT professionals are faced with interconnecting LANs in each of the buildings, as well as delivering a seamless, mobile client experience between indoors and outdoors. Here the Cisco outdoor wireless network is a cost-effective, high-bandwidth solution with the flexibility and control often not available with leased lines or cable installations that require trenching.

Public Safety

Public safety agencies deploy the Cisco outdoor wireless network to provide access to personnel and vehicles, and provide backhaul for video surveillance cameras. The Cisco outdoor wireless solution offers the option of setting up a secure public safety network, and at the same time providing public access on a separate tunnel that does not interfere with public safety data.

Industrial Environments

In industrial environments and for hazardous location applications, the Cisco Aironet 1550 Series Access Points have been designed with a rugged enclosure that allow reliable operation in extreme conditions and accommodate backhaul traffic for pressure, thermal, and fault monitoring sensors, as well as Wi-Fi access to employees and contractors.

Table 1 describes Cisco's comprehensive outdoor wireless portfolio.

Table 1. The Cisco Outdoor Wireless Portfolio

Outdoor Wireless Portfolio	
Product	Description
Cisco Aironet 1550 Series	Next-generation outdoor wireless platform based on 802.11n and Cisco CleanAir technology
Cisco Aironet 1520 Series	Highly secure outdoor wireless platform
Cisco Wireless LAN Controller	Designed to improve management of nextgeneration wireless solutions
Cisco Wireless Control System	Comprehensive lifecycle management platform for the Cisco Unified Wireless Network
Exalt ExtendAir r5005	High-performance, point-to-point wireless bridging from this Cisco SolutionsPlus partner
Cisco Aironet 1300 Series	Flexible platform providing access point, bridge, and workgroup bridge functionality
Cisco Aironet 1400 Series	High-performance and feature-rich solution for bridging multiple LANs in a metropolitan area

The Cisco Advantage

Cisco is the industry's only technology provider to offer a high-performance, outdoor wireless 802.11n network with centralized management to reduce the complexity and cost of managing and deploying the wireless network, integrated with the wired and indoor wireless networks. This next-generation Cisco outdoor wireless network, along with Cisco CleanAir technology, controllers, and bridges, provides a multipurpose, high-performance network that minimizes deployment and management nodes for an overall lower CapEx and OpEx. The result is optimized mobile connectivity and transformed business operations. Customers can take advantage of professional services from Cisco and Cisco Advanced Wireless LAN Specialized Partners to facilitate a smooth deployment while tightly integrating it with the wired and indoor wireless networks.

The benefits of deploying Cisco Aironet 802.11n outdoor access points with the Cisco Unified Wireless Network extend from investment protection and future-proofing to better scalability and reliability of the enterprise network.

For details, visit: <http://www.cisco.com/en/US/netsol/ns621/index.html>.