



CISCO Catalyst Wireless 9162I Series WiFi 6E Access Point Installation Guide

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Cisco Catalyst Wireless 9162I Series Wi-Fi 6E Access Point Hardware Installation Guide



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Catalyst Wireless 9162I Series WiFi 6E Access Point

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- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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Preface

This preface describes this guide and provides information about the conventions used in this guide, and related documentation.

It includes the following sections:

- About this Guide, on page vii
- Conventions, on page vii
- Related Documentation, on page viii
- Communications, Services, and Additional Information, on page viii

About this Guide

This guide provides instructions to install your Cisco Access Point and provides links to resources that can help you configure it. This guide also provides mounting instructions and troubleshooting information.

Note that the Cisco CW9162I access point is referred to as access point or AP in this document.

Conventions

This document uses the following conventions for notes, cautions, and safety warnings. Notes and cautions contain important information that you should know.



Note Means reader take note. Notes contain helpful suggestions or references to material not covered in the manual.



Caution

Means reader be careful. Cautions contain information about something you might do that could result in equipment damage or loss of data.



Warning

Safety warnings appear throughout this guide in procedures that, if performed incorrectly, can cause physical injuries. A warning symbol precedes each warning statement.

Related Documentation

All user documentation for the Cisco Catalyst 9162I Series Wi-Fi 6E Access Point is available at:

For detailed information and guidelines about configuring and deploying your access point in a wireless network, see the following documentation:

Cisco 9800 Wireless Controller Configuration Guide

Communications, Services, and Additional Information

- To receive timely, relevant information from Cisco, sign up at Cisco Profile Manager.
- To get the business impact you're looking for with the technologies that matter, visit Cisco Services.
- To submit a service request, visit Cisco Support.
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About Cisco Catalyst 9162I Series Wi-Fi 6E Access Point

- Introduction to Cisco Catalyst 9162I Series Wi-Fi 6E Access Point, on page 1
- Cisco Catalyst 9162I Series Wi-Fi 6E Access Point Features, on page 1
- AP Model Numbers and Regulatory Domains, on page 3
- Antennas and Radios, on page 3

Introduction to Cisco Catalyst 9162I Series Wi-Fi 6E Access Point

The Cisco Catalyst 9162I Series Wi-Fi 6E Access Point is an enterprise-class tri-band (2.4-GHz, 5-GHz, 6-GHz) access point. The AP supports full interoperability with leading 802.11ax and 802.11ac clients and a hybrid deployment with other APs and controllers.


A full listing of the AP's features and specifications is provided in the Cisco Catalyst 9162I Series Wi-Fi 6E Access Point Data Sheet, at:

Cisco Catalyst 9162I Series Wi-Fi 6E Access Point Features

The CW9162I AP is a tri-band Wi-Fi 6E enterprise indoor access point designed to work with the Cisco 9800 wireless controller. The AP includes the following hardware and supporting features:

- Five radios:
 - A 2×2:2 6-GHz radio
 - A 2×2:2 5-GHz radio
 - A 2×2:2 2.4-GHz radio
 - A tri-band scanning radio for Cisco CleanAir Pro
 - A 2.4-GHz Bluetooth Low Energy (BLE) radio
- Integrated internal antennas that are omnidirectional in azimuth for the 2.4-GHz, 5-GHz, and 6-GHz bands.

- Scanning radio utilizes one 2.4-GHz, 5-GHz, and 6-GHz antenna. The BLE uses one 2.4GHz antenna
- Multiuser Multiple-Input Multiple-Output (MU-MIMO) technology for downlink.

 **Note** Only 6-GHz antenna supports Uplink MU-MIMO.

- Orthogonal Frequency Division Multiple Access-based (OFDMA-based) scheduling for both uplink and downlink.
- The following hardware external interfaces:
 - 1×100/1000/2500 Multigigabit Ethernet (RJ-45)
 - RS-232 Console Interface through RJ-45
 - Recovery push button (enables partial or full system configuration recovery)
 - USB 2.0 port, type-A connector
 - DC 12V power jack
 - One multicolor LED
- Integrated Bluetooth Low Energy (BLE) radio to enable IoT use cases such as location tracking and wayfinding.
- Intelligent Capture probes the network and provides Cisco DNA Center with deep analysis.
- Spatial Reuse (also known as Basic Service Set [BSS] coloring) that allows APs and their clients to differentiate between multiple BSS, thus permitting more simultaneous transmissions.
- Power savings mode called Target Wake Time (TWT), which allows a client to stay asleep and wake up only at prescheduled (target) times to exchange data with the AP. This provides significant energy savings for battery-operated devices.
- Cisco Digital Network Architecture Center (DNA Center) support to enable Cisco DNA Spaces, Apple FastLane, and Cisco Identity Services Engine.
- Optimized AP Roaming to ensure that client devices associate with the AP in the coverage range that offers the fastest data rate available.
- Cisco CleanAir Pro technology supports 2.4-GHz, 5-GHz and 6-GHz bands. CleanAir Pro delivers proactive, high-speed spectrum intelligence across 20, 40, and 80, and 160-MHz-wide channels to combat performance problems arising from wireless interference.
- The CW9162I AP is supported in a Cisco SDA deployment.

The AP supports lightweight deployments (using Cisco Wireless Controllers). The AP also supports the following operating modes:

- Local mode: This is the default mode for the AP. In this mode, the AP serves clients. The AP creates two CAPWAP tunnels to the controller, one for management and the other for data traffic. This is known as central switching because the data traffic is switched (bridged) from the AP to the controller where it is then routed.
- FlexConnect: In FlexConnect mode the data traffic is switched locally and is not sent to the controller. In this mode, the AP behaves like an autonomous AP, but is managed by the controller. Here, the AP can continue to function even if connection to the controller is lost.
- Fabric Mode
- Monitor mode: In this mode, specified Cisco APs can exclude themselves from handling data traffic between clients and the infrastructure. These APs act as dedicated sensors for location-based services (LBS), rogue AP detection, and intrusion detection system (IDS). When APs are in monitor mode, they actively monitor the

airwaves and typically, do not serve clients.

- Sniffer mode: In this mode, the AP starts sniffing the air on a given channel. It captures and forwards all the packets from the clients on that channel to a remote machine that runs AiroPeek NX or Wireshark (packet analyzers for IEEE 802.11 wireless LANs). This includes information on time stamp, signal strength, packet size, and so on.

Note

In the sniffer mode, the server to which the data is sent should be on the same VLAN as the wireless controller management VLAN. Otherwise an error is displayed.

- Office Extended mode:
- Site Survey mode: The AP GUI is enabled and is used for configuring the RF parameters for site survey investigation. For information, see the Access Points Survey Mode section in the Cisco Catalyst 9800 Series Wireless Controller Software Configuration Guide.

AP Model Numbers and Regulatory Domains

AP Type	Product ID	Details
Access Point for indoor environments, with internal antennas	CW9162I-x	Wi-Fi 6E AP, Tri-band, controller-based 802.11ax with internal antennas

Verify whether the AP model you have is approved for use in your country. To verify approval and to identify the regulatory domain that corresponds to a particular country, see <https://www.cisco.com/c/dam/assets/prod/wireless/wireless-compliance-tool/index.html>. Not all regulatory domains have been approved. As and when they are approved, this compliance list is updated.

Note The x in the model numbers represents the regulatory domain.

Antennas and Radios

The CW9162I access point configurations is: • CW9162I-x

Internal Antennas

The Cisco Catalyst 9162I AP (CW9162I-x) has the following list of internal antennas:

- Two internal dual-band antennas with a dedicated 2.4-GHz radio and a 5-GHz radio
- Two internal single-band antennas with a dedicated 6-GHz radio
- One tri-band antenna with a dedicated 2.4 GHz, 5-GHz, and 6-GHz Aux radio
- One internal single-band antenna with a dedicated 2.4-GHz IoT radio

Operating Frequency and Maximum Output Power

Table1: Cisco CW9162I AP Values for European Union (CE) Region

Radio	Frequency Bands	Maximum Total EIRP Power Level (dBm)
Wi-Fi	2400-2483.5 MHz	20 (2×2)
	5150-5250 MHz	23 (2×2)
	5250-5350 MHz	23 (2×2)
	5470-5725 MHz	30 (2×2)
	5945-6425 MHz	23 (2×2)
Bluetooth Low Energy (BLE)	2400-2483.5 MHz	9.92

Table2: Cisco CW9162I AP Values for United Kingdom Region

Radio	Frequency Bands	Maximum Total EIRP Power Level (dBm)
Wi-Fi	2400-2483.5 MHz	20 (2×2)
	5150-5250 MHz	23 (2×2)
	5250-5350 MHz	23 (2×2)
	5470-5725 MHz	30 (2×2)
	5725-5850 MHz	23 (2×2)
	5925-6425 MHz	23 (2×2)
Bluetooth Low Energy (BLE)	2400-2483.5 MHz	9.92

Hardware Features

This chapter describes the hardware features of Cisco Catalyst 9162I Series Wi-Fi 6E Access Point and contains the following sections:

- Access Point Views, Ports, and Connectors, on page 5
- CW9162I (Internal Antenna) Radiation Patterns, on page 7

Access Point Views, Ports, and Connectors

Cisco Catalyst 9162I Series Wi-Fi 6E Access Point has multiple options that you can use to power the AP. For information about connectors and ports for the AP models, see Connectors and Ports on the AP, on page 5.

Connectors and Ports on the AP

The following figures show the available ports on the AP:

CW9162I Face View

Figure 1: CW9162I Face View



1	Location of the ports and connectors on the head of the AP.
2	USB 2.0 port
3	Status LED For information on the LEDs status, see Table 5: LED Status Indications section.

CW9162I Top View
Figure2:CW9162ITopViewwithConnectorsandPorts



1	Security hasp for padlocking AP to mounting bracket
2	Mode button For information on how to use the Mode button, see Using the Mode Button section
3	RJ-45 console port
4	2.5GbE port
5	DC 12V power input port
6	Kensington lock slot
7	USB 2.0 port

CW9162I (Internal Antenna) Radiation Patterns

The following illustrations show the CW9162I model with internal antenna radiation patterns:

Table3: Cisco Catalyst CW9162I AP Radiation Patterns

Figure 3: CW9162I - Client Serving Normalized Radiation Pattern (2.4-GHz Azimuth)

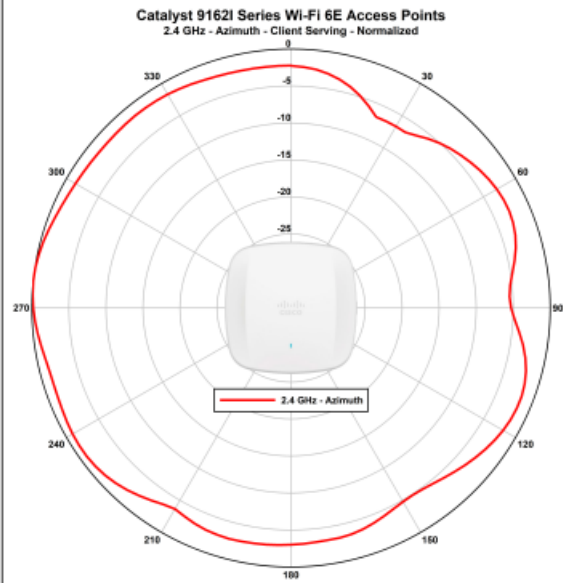


Figure 4: CW9162I - Client Serving Normalized Radiation Pattern (2.4-GHz Elevation)

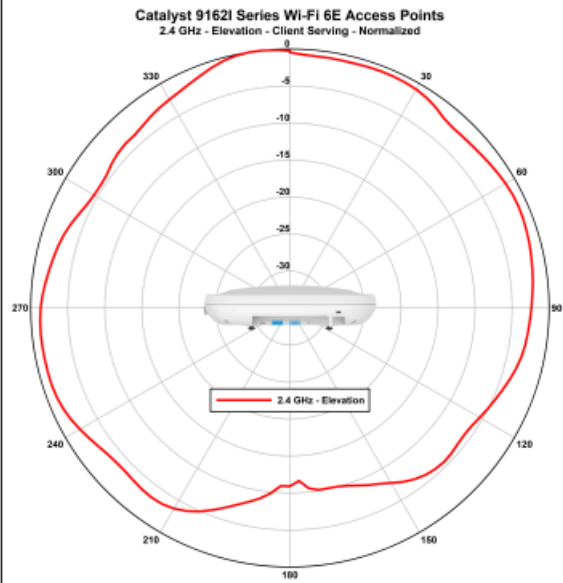


Figure 5: CW9162I - Client Serving Normalized Radiation Pattern (5-GHz Azimuth)

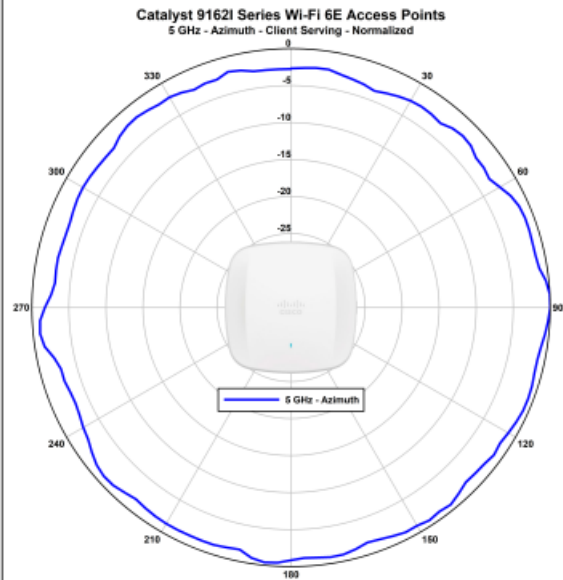


Figure 6: CW9162I - Client Serving Normalized Radiation Pattern (5-GHz Elevation)

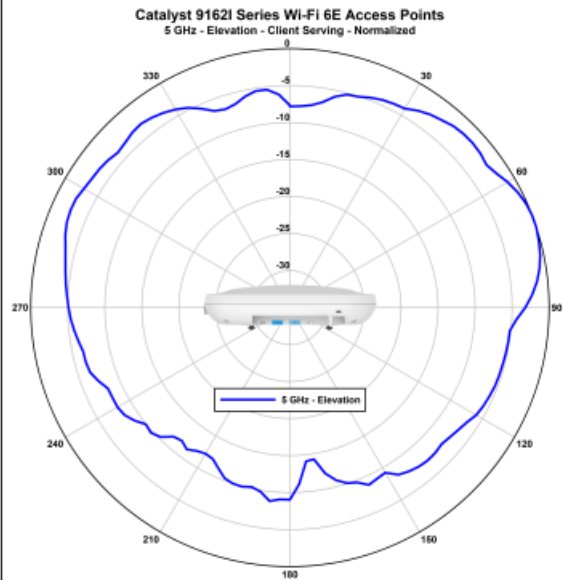


Figure 7: CW9162I - Client Serving Normalized Radiation Pattern (6-GHz Azimuth)

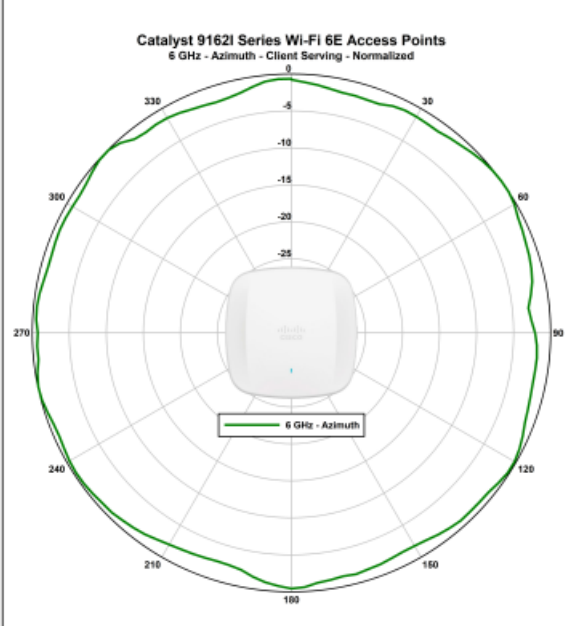


Figure 8: CW9162I - Client Serving Normalized Radiation Pattern (6-GHz Elevation)

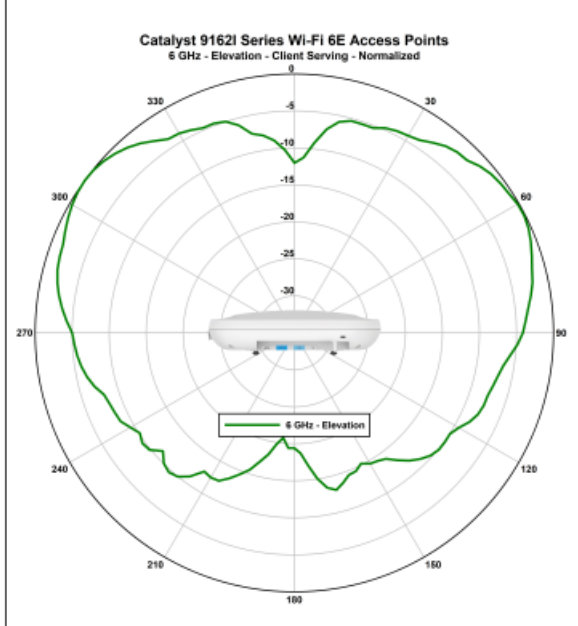


Figure 9: CW9162I - Scanning Radio Normalized Radiation Pattern (2.4-GHz Azimuth)

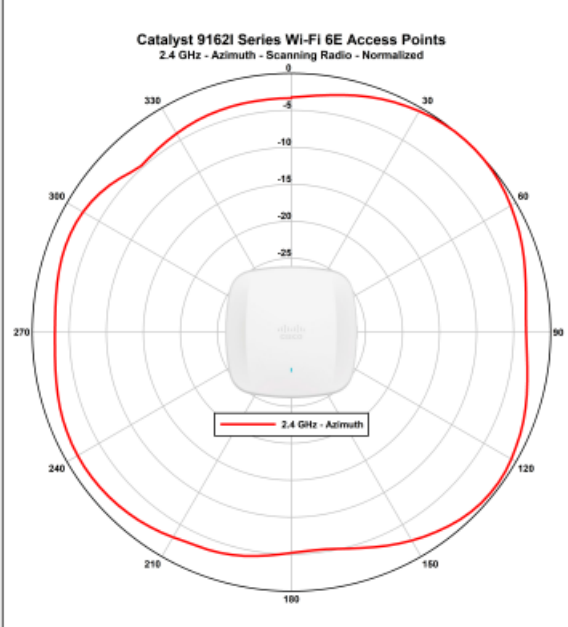
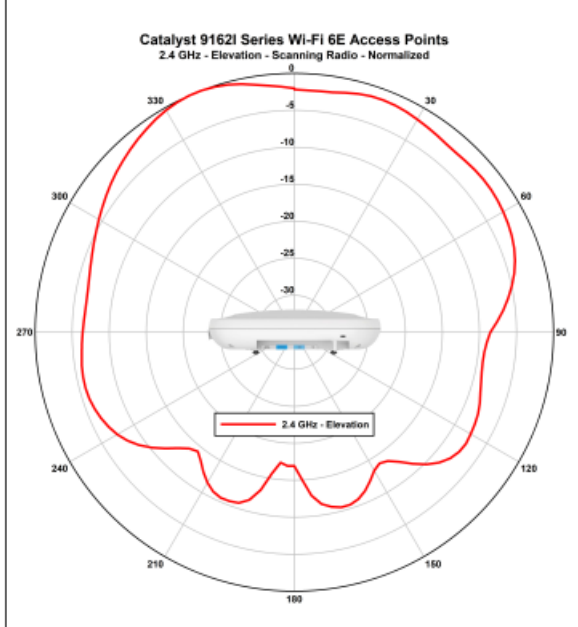


Figure 10: CW9162I - Scanning Radio Normalized Radiation Pattern (2.4-GHz Elevation)



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