About Cisco Catalyst Wireless 9163E Access Point

Introduction to Cisco Catalyst Wireless 9163E Access Point

Cisco Catalyst Wireless 9163E Access Point is a Wi-Fi 6E technology-based 2x2 tri-band outdoor enterprise-class 802.11ax access point. The AP supports full interoperability with leading 802.11ax and 802.11ac clients and a hybrid deployment with other APs and controllers.

The AP hardware is supported on the following platforms:

• Cisco Catalyst Center (formerly Cisco DNA Center) on-premises

• Cisco Catalyst stack

• Meraki cloud-based stack

The Cisco Catalyst Wireless 9163E Access Point data sheet provides a full listing of the AP's features and specifications at:

https://www.cisco.com/c/en/us/products/collateral/wireless/catalyst-9163e-access-point/nb-06-cat-9163e-series-access-ds-cte-en.html

Supported Wireless Controller Platforms

The following Cisco Catalyst 9800 Wireless Controllers with Cisco IOS XE 17.12.3 or a later release software supports Cisco Catalyst Wireless 9163E Access Points:

• Cisco Catalyst 9800-80

• Cisco Catalyst 9800-40

• Cisco Catalyst 9800-L

• Cisco Catalyst 9800-CL

Note This AP model does not support the Cisco Embedded Wireless Controller as an active EWC or a subordinate AP.

Cisco Catalyst Wireless 9163E Access Point Features

Cisco Catalyst 9800 wireless controller-based products support Cisco Catalyst Wireless 9163E Access Points. The following are the key features of the AP:

Hardware:

- 2x2 Triple–Band Triple–Concurrent radio—2.4-GHz, 5-GHz, and 6-GHz radios

- 1x1 Tri-Band scanning radio

- Integrated GNSS receiver

- External GNSS port

- Integrated Bluetooth Low Energy (BLE) radio enables IoT use cases like location tracking and wayfinding.

- The AP has the following external interfaces:

    - 1x100/1000/2500 Multigigabit Ethernet (PoE-IN)

    - Recovery push button

    - One multicolor LED status indicator. For information about the colors of the LED status indicator, see Checking the Access Point LEDs.

Software:

- The scanning radio can perform advanced radio frequency (RF) spectrum analysis, and deliver features such as next-generation CleanAirPro, Wireless Intrusion Prevention System (WIPS), and Dynamic Frequency Selection (DFS) detection.

- Cisco CleanAir Pro technology enhanced with 160-MHz channel support. CleanAir Pro delivers proactive, high-speed spectrum intelligence across 20, 40, 80, and 160-MHz-wide channels to combat performance issues from wireless interference.

- MU-MIMO technology for uplink and downlink.

- OFDMA-based scheduling for both uplink and downlink.

- A new power savings mode called Target Wake Time (TWT) allows clients to stay asleep and wake up only at prescheduled (target) times to exchange data with the AP. This mode provides significant energy savings for battery-operated devices.

- Cisco Catalyst Center support enables Cisco Spaces, Apple FastLane, Cisco Identity Services Engine (ISE), and Meraki Health intelligent optimization and assurance.

- Optimized AP Roaming to ensure client devices associate with the AP in their coverage range, offering the fastest data rate available.

- Spatial Reuse (also known as Basic Service Set [BSS] coloring) allows the AP and their clients to differentiate between BSS, thus permitting simultaneous transmissions.

- Intelligent Capture probes the network and gives Cisco Catalyst Center in-depth analysis.

The AP supports the following operational modes:

Table 1: Access Point Supported Operational Modes

Mode	Information
Local mode	This is the default mode for the AP. In this mode, the AP serves clients. In local mode, the AP creates two CAPWAP tunnels for 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.
Cisco FlexConnect mode	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 continues to function even if the connection to the controller is lost.
Monitor mode	In the monitor mode, the AP is excluded from handling data traffic between clients and infrastructure. The AP acts as a dedicated sensor for location-based services (LBS), rogue AP detection, and Intrusion Detection System (IDS). When the AP is in monitor mode, it actively monitors the airwaves and typically does not serve clients.
Sniffer mode	In the wireless sniffer mode, the AP starts sniffing the air on a given channel. It captures and forwards all the clients' packets on that channel to a remote machine that runs Airopeek or Wireshark (packet analyzers for IEEE 802.11 wireless LANs). This includes information about the time stamp, signal strength, packet size, and so on. **Note** In the sniffer mode, the server where the data is sent and the controller management VLAN must reside on the same VLAN. Otherwise, an error is displayed.

AP Model Numbers and Regulatory Domains

Table 2: AP Model Numbers and Regulatory Domains

AP Type	Model Number	Details
AP for outdoor environments, with external antennas	CW9163E-A CW9163E-B CW9163E-E CW9163E-F CW9163E-I CW9163E-Q CW9163E-R CW9163E-Z CW9163E-ROW CW9163E-MR	The AP has four external antenna ports, an external GNSS port and an internal GNSS antenna. This is a stand-alone unit that can be wall or pole mounted.

Note Using the AP's 6 GHz spectrum outdoors requires the Automatic Frequency Coordination (AFC) feature. The AFC feature provides permitted power levels and frequencies for outdoor Wi-Fi 6E APs at the installed location.

You must 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 http://www.cisco.com/go/aironet/compliance. Not all regulatory domains have been approved. As and when they are approved, the compliance list is updated.

Antennas and Radios

The CW9163E-x AP model has four N-type antenna ports supporting self-identifying antennas (SIA), and a GNSS antenna supporting SubMiniature version A (SMA) male port.

- CW-ANT-O1-NS-00: These are omnidirectional antennas recommended for 360-degree radio coverage.

- CW-ANT-D1-NS-00: This is a wide-beam directional antenna.

- CW-ANT-GPS2-S-00: An L1/L5 band GNSS optimizing antenna to enhance location precision for Standard Power AFC requirements.

For more information about the supported antennas and the radio bands they operate at, see the Supported External Antennas section.