Cisco Catalyst 9117AX Series Access Points Datasheet

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OVERVIEW

The Cisco® Catalyst® 9117AX Series Access Points are the next generation of enterprise access points. They are resilient, secure, and intelligent.

Hyperconnectivity with steady performance in demanding environments. Exponential growth of Internet of Things (IoT) devices and next-generation applications. Advanced persistent security threats. All of these require a wireless network that provides resiliency and superior connectivity, integrated security with advanced classification and containment, and hardware and software innovations to automate, secure, and simplify networks. Updating your wireless infrastructure to one that will meet these needs is paramount for today' s digital business. The new generation of Cisco Catalyst 9100 Access Points, with high-performance Wi-Fi 6 (802.11ax) capabilities and innovations in RF performance, security, and analytics, enables end-to-end digitization and helps accelerate the rollout of business services by delivering beyond Wi-Fi.

The Cisco Catalyst 9117AX Series Access Points deliver several features of Wi-Fi 6 while offering high data rates.

Key features:

- Wi-Fi 6 compatible
- Three radios: 2.4 GHz (4x4), 5 GHz (8x8), and BLE
- OFDMA and MU-MIMO
- Multigigabit support
- Internal antenna
- Available with optional embedded wireless controller

APPEARANCE

Figure 1. Cisco Catalyst 9117AX Series

FEATURES AND BENEFITS

Table 1. Features and benefits of Cisco Catalyst 9117AX Series

Feature	Benefits
802.11ax (Wi-Fi 6)	The IEEE 802.11ax emerging standard, also known as High-Efficiency Wireless (HEW) or Wi-Fi 6, builds on 802.11ac. It will deliver a better experience in typical environments and more predictable performance for advanced applications such as 4K or 8K video, high-density, high-definition collaboration apps, all-wireless offices, and IoT. 802.11ax is designed to use both the 2.4-Ghz and 5-GHz bands, unlike the 802.11ac standard.
802.11ac Wave 2 support	Provides a connection rate of up to 3.5 Gbps—significantly higher than rates offered by today's high-end 802.11ac access points.
OFDMA	OFDMA-based scheduling splits the bandwidth into smaller chunks called Resource Units (RUs), which can be allocated to individual clients only in the downlink direction to reduce overhead and latency.
MU- MIMO technology	Supporting eight spatial streams, MU-MIMO enables access points to split spatial streams between client devices, to maximize throughput.
Target wake time	A new power savings mode called Target Wake Time (TWT) allows the client to stay asleep and to wake up only at prescheduled (target) times to exchange data with the AP. This offers significant energy savings for battery-operated devices, up to 3x to 4x compared to 802.11n and 802.11ac.
Embedded Catalyst 9800 Wireless Controller	The 9117AX Series Wi-Fi 6 access points are available with a built-in controller. The Cisco Embedded Wireless Controller on Catalyst 9100 Access Points provides an easy-to-deploy and manage option that does not require a physical appliance. The control resides on the access point, so there is no added footprint or

	complexity. And, because it uses Cisco Catalyst 9800 Series Wireless Controller code, it's easy to migrate your network as your needs grow.
Multigigabit Ethernet support	Provides uplink speeds of 5 Gbps, in addition to 100 Mbps and 1 Gbps. All speeds are supported on Category 5e cabling for an industry first, as well as 10GBASE-T (IEEE 802.3bz) cabling.
Bluetooth 5.0	Integrated Bluetooth Low Energy (BLE) 5.0 radio to enable IoT use cases such as location tracking and wayfinding.
Apple features	Apple and Cisco have partnered to create an optimal mobile experience for iOS devices on corporate networks based on Cisco technologies. Using new features in iOS 10, in combination with the latest software and hardware from Cisco, businesses can now more effectively use their network infrastructure to deliver an enhanced user experience across all business applications. At the center of the collaboration is a unique handshake between the Cisco WLAN and Apple devices. This handshake enables the Cisco WLAN to provide an optimal Wi-Fi roaming experience to Apple devices. Additionally, the Cisco WLAN trusts Apple devices and gives priority treatment for business-critical applications specified by the Apple device. This feature is also known as Fast Lane.

Note: Features available in a future releases: Cisco Mobility Express, Target Wake Time, BSS Coloring, Downlink OFDMA

CISCO DNA SUPPORT

Pairing the Cisco Catalyst 9117AX Series Access Points with the Cisco Digital Network Architecture (Cisco DNA) allows for a total network transformation. Cisco DNA allows you to truly understand your network with real-time analytics, quickly detect and contain security threats, and easily provide networkwide consistency through automation and virtualization.

Cisco DNA with Software-Defined Access (SD-Access) is the network fabric that powers business. It is an open and extensible, software-driven architecture that accelerates and simplifies your enterprise network operations. The programmable architecture frees your IT staff from time-consuming, repetitive network configuration tasks so they can focus instead on innovation that positively transforms your business. By decoupling network functions from the hardware, you can build and manage your entire wired and wireless network from a single user interface. SD-Access enables policy-based automation from edge to cloud with foundational capabilities. These include:

- Simplified device deployment
- Unified management of wired and wireless networks

- Network virtualization and segmentation
- Group-based policies
- Context-based analytics

The Cisco Catalyst 9117AX Series Access Points support Software-Defined Access, Cisco's leading enterprise architecture.

Working together, the Cisco Catalyst 9117AX Series and Cisco DNA offer such features as:

- Cisco DNA Spaces
- Cisco Identity Services Engine
- Cisco DNA Analytics and Assurance
- And much more

PRODUCT SPECIFICATIONS

Table 2. Specifications

Item	Specification
Part numbers	**Cisco Catalyst 9117AXI Access Point: Indoor environments, with internal antennas** ● C9117AXI-x: Cisco Catalyst 9117AX **Cisco Catalyst 9117AXI Access Point: Indoor environments, with internal antennas, with embedded wireless controller** ● C9117AXI-EWC-x: Cisco Catalyst 9117AX **Regulatory domains: (x = regulatory domain)** Customers are responsible for verifying approval for use in their individual countries. Not all regulatory domains have been approved. As they are approved, the part numbers will be available on the Global Price List. **Cisco Wireless LAN Services** ● AS-WLAN-CNSLT: Cisco Wireless LAN Network Planning and Design Service ● AS-WLAN-CNSLT: Cisco Wireless LAN 802.11n Migration Service ● AS-WLAN-CNSLT: Cisco Wireless LAN Performance and Security Assessment Service
Software	● Cisco Unified Wireless Network Software Release 8.9 or later

	● Cisco IOS ® XE Software Release 16.11 or later
Supported wireless LAN controllers	● Cisco Catalyst 9800 Series Wireless Controllers ● Cisco 3500, 5520, and 8540 Series Wireless Controllers, and Cisco Virtual Wireless Controller
802.11n version 2.0 (and related) capabilities	● 8x8 MIMO with four spatial streams for 5-GHz band ● 4x4 MIMO with four spatial streams for 2.4-GHz band ● Maximal Ratio Combining (MRC) ● 20- and 40-MHz channels ● PHY data rates up to 600 Mbps (40 MHz with 5 GHz) ● Packet aggregation: A-MPDU (transmit and receive), A-MSDU (transmit and receive) ● Cyclic Shift Diversity (CSD) support
802.11ac	● 8x8 downlink MU-MIMO with eight spatial streams ● MRC ● 802.11ac beamforming ● 20-, 40-, 80, and 160-MHz channels ● PHY data rates up to 3.5 Gbps at 5 GHz ● Packet aggregation: A-MPDU (transmit and receive), A-MSDU (transmit and receive) ● CSD support ● 160 MHz support only on 4-spatial stream
802.11ax	● 8x8 MIMO with eight spatial streams for 5-GHz band ● 4x4 MIMO with four spatial streams for 2.4-GHz band ● Downlink OFDMA ● TWT ● MRC ● 802.11ax beamforming ● 20-, 40-, 80, and 160-MHz channels ● PHY data rates up to 5 Gbps at 5 GHz ● Packet aggregation: A-MPDU (transmit and receive), A-MSDU (transmit and receive) ● CSD support
Integrated antenna	● 2.4 GHz, peak gain 4 dBi, internal antenna, omnidirectional in azimuth

<table>
<tr><td></td><td>● 5 GHz, peak gain 6 dBi, internal antenna, omnidirectional in azimuth</td></tr>
<tr><td>Interfaces</td><td>● 1x 100, 1000, 2500, 5000 Multigigabit Ethernet (RJ-45) – IEEE 802.3bz
● Management console port (RJ-45)
● USB 2.0 with up to 4.5W (enabled via future software)</td></tr>
<tr><td>Indicators</td><td>● Status LED indicates boot loader status, association status, operating status, boot loader warnings, and boot loader errors</td></tr>
<tr><td>Dimensions (W x L x H)</td><td>● Access point (without mounting bracket and mounting features): 8.70 x 8.70 x 1.94 in. (22 x 22 x 4.93 cm)
● Access point (without mounting bracket): 8.70 x 8.70 x 2.19 in. (22 x 22 x 5.56 cm)</td></tr>
<tr><td>Weight</td><td>● 3.02 lb (1.4 kg)</td></tr>
<tr><td>Input power requirements</td><td>● 802.3at Power over Ethernet Plus (PoE+), 802.3bt Cisco Universal PoE (Cisco UPOE+, Cisco UPOE ®)
● Cisco power injector, AIR-PWRINJ6=
● 802.3af PoE
● Cisco power injector, AIR-PWRINJ5= (Note: This injector supports only 802.3af)
Note: When 802.3af PoE is the source of power, both 2.4-GHz and 5-GHz radios will be reduced to 2x2 and Ethernet downgraded to 2.5 Gbps; in addition, the USB port will be off.</td></tr>
<tr><td>Power draw</td><td>802.3bt Cisco UPOE+ Cisco UPOE Full Feature
<table>
<tr><th>Power source</th><th>Power type</th><th>2.4-GHz radio</th><th>5-GHz radio</th><th>Link speed</th><th>USB</th><th>LLDP</th></tr>
<tr><td>802.3bt Cisco UPOE+, Cisco UPOE</td><td>PoE</td><td>4x4</td><td>8x8</td><td>5 Gbps</td><td>Y</td><td>28.9W</td></tr>
<tr><td colspan="7">802.3at Full Feature*</td></tr>
<tr><th>Power source</th><th>Power type</th><th>2.4-GHz radio</th><th>5-GHz radio</th><th>Link speed</th><th>USB</th><th>LLDP</th></tr>
<tr><td>802.3at</td><td>PoE</td><td>4x4</td><td>8x8</td><td>5 Gbps</td><td>N</td><td>25.4W</td></tr>
<tr><td colspan="7">802.3af reduced feature</td></tr>
<tr><th>Power source</th><th>Power type</th><th>2.4-GHz radio</th><th>5-GHz radio</th><th>Link speed</th><th>USB</th><th>LLDP</th></tr>
</table></td></tr>
</table>

	802.3af	PoE	2x2	2x2	2.5 Gbps	N	13.5W
	* USB port can be enabled, but the 5-GHz radio will be reduced to 4x4.						
Environmental	• Nonoperating (storage) temperature: -22° to 158°F (-30° to 70°C) • Nonoperating (storage) altitude test: 25°C, 15,000 ft. • Operating temperature: 32° to 122°F (0° to 50°C) • Operating humidity: 10% to 90% (noncondensing) • Operating altitude test: 40°C, 9843 ft.						
System memory	• 2048 MB DRAM • 1024 MB flash						
DFS	• 802.11 Dynamic Frequency Selection (DFS)						
Warranty	Limited lifetime hardware warranty						
Available transmit power settings	**2.4 GHz** • 23 dBm (200 mW) • 20 dBm (100 mW) • 17 dBm (50 mW) • 14 dBm (25 mW) • 11 dBm (12.5 mW) • 8 dBm (6.25 mW) • 5 dBm (3.13 mW) • 2 dBm (1.56 mW) • -1 dBm (0.78 mW) • -4 dBm (0.4 mW) • -6 dBm (0.25 mW) **5 GHz** • 26 dBm (400 mW) • 23 dBm (200 mW) • 20 dBm (100 mW) • 17 dBm (50 mW) • 14 dBm (25 mW) • 11 dBm (12.5 mW) • 8 dBm (6.25 mW)						

	● 5 dBm (3.13 mW) ● 2 dBm (1.56 mW) ● -1 dBm (0.78 mW) ● -4 dBm (0.4 mW)
Maximum number of nonoverlapping channels	**2.4 GHz** ● 802.11b/g: - 20 MHz: 3 ● 802.11n: - 20 MHz: 3 ● 802.11ac/ax: - 20 MHz: 3 **5 GHz** ● 802.11a: - 20 MHz: 26 FCC, 16 EU ● 802.11n: - 20 MHz: 26 FCC, 16 EU - 40 MHz: 12 FCC, 7 EU ● 802.11ac/ax: - 20 MHz: 26 FCC, 16 EU - 40 MHz: 12 FCC, 7 EU - 80 MHz: 5 FCC, 3 EU - 160 MHz 2 FCC, 1 EU
Note: This varies by regulatory domain. Refer to the product documentation for specific details for each regulatory domain.	
Compliance standards	● **Safety:** - IEC 60950-1 - EN 60950-1 - AS/NZS 60950.1 - UL 60950-1 - CAN/CSA-C22.2 No. 60950-1 - UL 2043

	- Class III equipment ● **Emissions:** - CISPR 32 (rev. 2015) - EN 55032 (rev. 2012/AC:2013) - EN 55032 (rev. 2015) - EN61000-3-2 (rev. 2014) - EN61000-3-3 (rev. 2013) - KN61000-3-2 - KN61000-3-3 - AS/NZS CISPR 32 Class B (rev. 2015) - 47 CFR FCC Part 15B - ICES-003 (rev. 2016 Issue 6, Class B) - VCCI (V3) - CNS (rev. 13438) - KN-32 - TCVN 7189 (rev. 2009) ● **Immunity:** - CISPR 24 (rev. 2010) - EN 55024/EN 55035 (rev. 2010) ● **Emissions and immunity:** - EN 301 489-1 (v2.1.1 2017-02) - EN 301 489-17 (v3.1.1 2017-02) - QCVN (18:2014) - KN 489-1 - KN 489-17 - EN 60601 (1-1:2015) ● **Radio:** - EN 300 328 (v2.1.1) - EN 301 893 (v2.1.1) - AS/NZS 4268 (rev. 2017)

	- 47 CFR FCC Part 15C, 15.247, 15.407 - RSP-100 - RSS-GEN - RSS-247 - China regulations SRRC - LP0002 (rev 2018.1.10) - Japan Std. 33a, Std. 66, and Std. 71 - EMI and susceptibility (Class B) ● **RF safety:** - EN 50385 (rev. Aug 2002) - ARPANSA - AS/NZS 2772 (rev. 2016) - EN 62209-1 (rev. 2016) - EN 62209-2 (rev. 2010) - 47 CFR Part 1.1310 and 2.1091 - RSS-102 ● **IEEE standards:** - IEEE 802.3 - IEEE 802.3ab - IEEE 802.3af/at/bt - IEEE 802.11 a/b/g/n/ac/ax - IEEE 802.11h, 802.11d ● **Security:** - 802.11i, Wi-Fi Protected Access 3 (WPA3), WPA2, WPA - 802.1X - Advanced Encryption Standard (AES) ● **Extensible Authentication Protocol (EAP) types:** - EAP-Transport Layer Security (TLS) - EAP-Tunneled TLS (TTLS) or Microsoft Challenge Handshake Authentication Protocol Version 2 (MSCHAPv2) - Protected EAP (PEAP) v0 or EAP-MSCHAPv2

	- EAP-Flexible Authentication via Secure Tunneling (EAP-FAST) - PEAP v1 or EAP-Generic Token Card (GTC) - EAP-Subscriber Identity Module (SIM)
Data rates supported	802.11a: 6, 9, 12, 18, 24, 36, 48, and 54 Mbps
	802.11g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps
	802.11n data rates on 2.4 GHz (only 20 MHz) and 5 GHz

ORDERING INFORMATION

Table 4. Ordering information

Product number	Product description
C9117AXI-A	Cisco Catalyst 9117AX Access Point, Internal antenna; Wi-Fi 6; 8x8:8 MIMO, A Domain
C9117AXI-B	Cisco Catalyst 9117AX Access Point, Internal antenna; Wi-Fi 6; 8x8:8 MIMO, B Domain
C9117AXI-B-EDU	Cisco Catalyst 9117AX Access Point, Internal antenna; Wi-Fi 6; 8x8:8 MIMO, B Domain
C9117AXI-D	Cisco Catalyst 9117AX Access Point, Internal antenna; Wi-Fi 6; 8x8:8 MIMO, D Domain
C9117AXI-E	Cisco Catalyst 9117AX Access Point, Internal antenna; Wi-Fi 6; 8x8:8 MIMO, E Domain
C9117AXI-E1	Cisco Catalyst 9117AX Series
C9117AXI-G	Cisco Catalyst 9117AX Access Point, Internal antenna; Wi-Fi 6; 8x8:8 MIMO, G Domain
C9117AXI-H	Cisco Catalyst 9117AX Access Point, Internal antenna; Wi-Fi 6; 8x8:8 MIMO, H Domain
C9117AXI-I	Cisco Catalyst 9117AX Access Point, Internal antenna; Wi-Fi 6; 8x8:8 MIMO, I Domain
C9117AXI-K	Cisco Catalyst 9117AX Access Point, Internal antenna; Wi-Fi 6; 8x8:8 MIMO, K Domain
C9117AXI-Q	Cisco Catalyst 9117AX Access Point, Internal antenna; Wi-Fi 6; 8x8:8 MIMO, Q Domain

C9117AXI-S	Cisco Catalyst 9117AX Access Point, Internal antenna; Wi-Fi 6; 8x8:8 MIMO, S Domain
C9117AXI-T	Cisco Catalyst 9117AX Access Point, Internal antenna; Wi-Fi 6; 8x8:8 MIMO, T Domain
C9117AXI-Z	Cisco Catalyst 9117AX Access Point, Internal antenna; Wi-Fi 6; 8x8:8 MIMO, Z Domain
C9117AXI-EWC-A	Cisco Embedded Wireless Controller on Catalyst Access Points: Indoor environments, with internal antennas, A Domain.
C9117AXI-EWC-B	Cisco Embedded Wireless Controller on Catalyst Access Points: Indoor environments, with internal antennas, B Domain.
C9117AXI-EWC-D	Cisco Embedded Wireless Controller on Catalyst Access Points: Indoor environments, with internal antennas, D Domain.
C9117AXI-EWC-E	Cisco Embedded Wireless Controller on Catalyst Access Points: Indoor environments, with internal antennas, E Domain.
C9117AXI-EWC-F	Cisco Embedded Wireless Controller on Catalyst Access Points: Indoor environments, with internal antennas, F Domain.
C9117AXI-EWC-G	Cisco Embedded Wireless Controller on Catalyst Access Points: Indoor environments, with internal antennas, G Domain.
C9117AXI-EWC-H	Cisco Embedded Wireless Controller on Catalyst Access Points: Indoor environments, with internal antennas, H Domain.
C9117AXI-EWC-I	Cisco Embedded Wireless Controller on Catalyst Access Points: Indoor environments, with internal antennas, I Domain.
C9117AXI-EWC-K	Cisco Embedded Wireless Controller on Catalyst Access Points: Indoor environments, with internal antennas, K Domain.
C9117AXI-EWC-N	Cisco Embedded Wireless Controller on Catalyst Access Points: Indoor environments, with internal antennas, N Domain.
C9117AXI-EWC-Q	Cisco Embedded Wireless Controller on Catalyst Access Points: Indoor environments, with internal antennas, Q Domain.
C9117AXI-EWC-S	Cisco Embedded Wireless Controller on Catalyst Access Points: Indoor environments, with internal antennas, S Domain.
C9117AXI-EWC-T	Cisco Embedded Wireless Controller on Catalyst Access Points: Indoor environments, with internal antennas, T Domain.
C9117AXI-EWC-Z	Cisco Embedded Wireless Controller on Catalyst Access Points: Indoor environments, with internal antennas, Z Domain.

WHERE TO BUY

Want to buy this series of products? please contact:

- Tel: +1-626-239-8066 (USA) +852-3050-1066 / +852-3174-6166
- Fax: +852-3050-1066 (Hong Kong)
- Email: cisco@router-switch.com (Sales Inquiries)

Or visit: Cisco Catalyst 9117AX Series Access Points

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Router-switch.com (HongKong Yejian Technologies Co., Ltd), founded in 2002, is one of the biggest Global Network Hardware Supplier. We are a leading provider of network products with 18,000+ customers in over 200 countries. We provide original new and used network equipments (Cisco, Huawei, HPE, Dell, Juniper, EMC, etc.), including Routers, Switches, Servers, Storage, Telepresence and Videoconferencing, IP Phones, Firewalls, Wireless APs & Controllers, EHWIC/HWIC/VWIC Cards, SFPs, Memory & Flash, Hard Disk, Cables, and all kinds of network solutions related products.

SOURCES

https://www.cisco.com/c/en/us/products/collateral/wireless/catalyst-9100ax-access-points/datasheet-c78-741989.html