Data sheet

Cisco public



Cisco Catalyst 9124AX Series Access Points

Contents

Secure infrastructure	5
Cisco DNA Software support	5
Product specifications	6
Licensing	21
Warranty information	21
Cisco environmental sustainability	21
Cisco Services	21
Cisco Capital	21
Smart Account	22

The Cisco Catalyst 9124AX Series outdoor access points are next-generation Wi-Fi 6 access points encased in a rugged and robust design that service providers and enterprises can easily deploy.



Figure 1.Cisco Catalyst 9124AX Series Access points

With the emergence of high-density networks and the Internet of Things (IoT), we are more dependent on wireless networks than ever before. An increasing number of devices connect to the network every year, ranging from high-performance client devices to low-bandwidth IoT devices. The Cisco Catalyst 9124AX Series outdoor access points provide a seamless experience, with high scaling and unmatched performance in diverse network deployments. Going beyond the Wi-Fi 6 (802.11ax) standard, the Catalyst 9124AX Series provides integrated security, resiliency, and operational flexibility as well as increased network intelligence.

The Catalyst 9124AX Series offers flexible deployment options for service providers and enterprise networks that need the fastest links possible for mobile, outdoor clients (smartphones, tablets, and laptops), and wireless backhaul. With options for internal or external antennas, the 9124AX Series gives network operators the flexibility to balance their desired wireless coverage with their need for easy deployment.

The Catalyst 9124AX Series access points, paired with the Cisco Digital Network Architecture (Cisco DNA), are enterprise-class products that will address both your current and future needs. They are the first step in updating your network to take better advantage of all of the features and benefits that Wi-Fi 6 provides.

Table 1. Features and benefits

Feature	Benefits
Wi-Fi 6 (802.11ax)	The IEEE 802.11ax emerging standard, also known as High-Efficiency Wireless (HEW) or Wi-Fi 6, builds on 802.11ac. It delivers a better experience in typical environments with more predictable performance for advanced applications such as 4K or 8K video, high-density, high-definition collaboration apps, all-wireless offices, and IoT. Wi-Fi 6 is designed to use both the 2.4-GHz and 5-GHz bands, unlike the 802.11ac standard.
Uplink/downlink OFDMA	Orthogonal Frequency-Division Multiple Access (OFDMA)-based scheduling splits the bandwidth into smaller frequency allocations called Resource Units (RUs), which can be assigned to individual clients in both the downlink and uplink directions to reduce overhead and latency.
Uplink/downlink MU-MIMO technology	Supporting two spatial streams, multiuser multiple-input multiple-output (MU-MIMO) enables access points to split spatial streams between client devices to maximize throughput.
BSS coloring	Spatial reuse (also known as Basic Service Set [BSS] coloring) allows the access points and their clients to differentiate between BSSs, thus permitting more simultaneous transmissions.
Target Wake Time	A new power-saving 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 access point. This offers significant energy savings for battery-operated devices, up to 3 to 4 times the savings achieved by 802.11n and 802.11ac.
Cisco RF ASIC	Cisco RF ASIC is a fully integrated Software-Defined Radio (SDR) that can perform advanced RF spectrum analysis and delivers features such as Cisco CleanAir®, Wireless Intrusion Prevention System (wIPS), FastLocate, and Dynamic Frequency Selection (DFS).
Bluetooth® 5	Integrated Bluetooth Low Energy (BLE) 5 radio enables location-based use cases such as asset tracking, wayfinding, and analytics.
Multigigabit Ethernet support	Provides uplink speeds of 2.5G, 1G, and 100M. All speeds are supported on Category 5e cabling for an industry first, as well as 10GBASE-T (IEEE 802.3bz) cabling.

For more details about Wi-Fi 6, see <u>Cisco's technical white paper</u> on Wi-Fi 6.

For more details about Catalyst 9124AX Series feature support, see Cisco's Feature Matrix on Wi-Fi 6.

For product ordering instructions, see <u>The Wireless Ordering Guide with Cisco DNA Subscription Licenses</u> document.

Secure infrastructure

Trustworthy systems built with Cisco Trust Anchor Technologies provide a highly secure foundation for Cisco products. With the Cisco Catalyst 9100 Access Points, these technologies enable assurance of hardware and software authenticity for supply chain trust and strong defense against man-in-the-middle attacks that compromise software and firmware. Trust Anchor capabilities include:

- Image signing
- Secure Boot
- Cisco Trust Anchor module

Cisco DNA Software support

Pairing the Catalyst 9124AX Series Access Points with Cisco DNA Software allows for a total network transformation. Cisco DNA Software 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. The Catalyst 9124AX Series supports SD-Access, Cisco's leading enterprise architecture.

Working together, the Catalyst 9124AX Series and Cisco DNA Software offer such features as:

- Cisco DNA Spaces
- · Cisco Identity Services Engine
- · Cisco DNA Analytics and Assurance

The result? Your network stays relevant, becomes digital ready, and is the lifeblood of your organization.

Note: For information about Cisco DNA Software, refer to Cisco DNA Software for Wireless.

Product specifications

 Table 2.
 Specifications

Item	Specification
Part numbers	Cisco Catalyst 9124AX Series Access Points: Outdoor environments
	• C9124AXI-x: Cisco Catalyst 9124AX Series (internal omnidirectional antenna)
	 C9124AXI-EWC-X: Cisco Catalyst 9124AX Series Access point with Embedded wireless controller (internal omnidirectional antenna)
	C9124AXD-x: Cisco Catalyst 9124AX Series (internal directional antenna)
	 C9124AXD-EWC-X: Cisco Catalyst 9124AX Series Access point with Embedded wireless controller (internal directional antenna)
	C9124AXE-x: Cisco Catalyst 9124AX Series (External antenna)
	 C9124AXE-EWC-X: Cisco Catalyst 9124AX Series Access point with Embedded wireless controller (External Antenna)
	Regulatory domains: (x = regulatory domain)
	Customers are responsible for verifying approval for use in their individual countries. To verify approval and to identify the regulatory domain that corresponds to a particular country, visit https://www.cisco.com/go/aironet/compliance .
	Not all regulatory domains have been approved. As they are approved, the part numbers will be available on the Global Price List and/or regional price lists.
	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: <u>Cisco Wireless LAN Performance and Security Assessment Service</u>
Software	Catalyst 9124AXI, 9124AXD
	• Cisco IOS® XE Software Release 17.5.1/17.3.4 (B Domain) or later
	Cisco IOS® XE Software Release 17.6.2 or later (For all Regulatory Domains)
	Catalyst C9124AXE
	Cisco IOS® XE Software Release 17.6.2 or later
	Catalyst C9124AXI/C9124AXD Embedded wireless Controller • Cisco IOS® XE Software Release 17.6.2 or later
Supported WLAN controllers	Cisco Catalyst 9800 Series Wireless Controllers

Item	Specification
802.11n version 2.0 (and related) capabilities	 C9124AXI,C9124AXD 4x4:4 in both 2.4GHz and 5 GHz uplink/downlink MU-MIMO with four spatial streams C9124AXE 4x4:4 in 2.4GHz + two 2x2:2 radios in 5 GHz uplink/downlink MU-MIMO Maximal Ratio Combining (MRC) 802.11n and 802.11a/g 20- and 40-MHz channels PHY data rates up to 890 Mbps (40 MHz with 5 GHz and 20 MHz with 2.4 GHz) Packet aggregation: Aggregate MAC Protocol Data Unit (A-MPDU) (transmit and receive), Aggregate MAC Service Data Unit (A-MSDU) (transmit and receive) 802.11 Dynamic Frequency Selection (DFS) Cyclic Shift Diversity (CSD) support
802.11ac	C9124AXI,C9124AXD • 4x4:4 in both 2.4GHz and 5 GHz uplink/downlink MU-MIMO with four spatial streams C9124AXE • 4x4:4 in 2.4GHz + two 2x2:2 radios in 5 GHz uplink/downlink MU-MIMO • MRC • 802.11ac beamforming • 20-, 40-, 80- and 80+80-MHz channels • PHY data rates up to 3.47 Gbps (160 MHz with 5 GHz) • Packet aggregation: A-MPDU (transmit and receive), A-MSDU (transmit and receive) • 802.11 DFS • CSD support • WPA3 support
802.11ax	C9124AXI,C9124AXD • 4x4:4 in both 2.4GHz and 5 GHz uplink/downlink MU-MIMO with four spatial streams C9124AXE • 4x4:4 in 2.4GHz + two 2x2:2 radios in 5 GHz uplink/downlink MU-MIMO Uplink/downlink OFDMA • TWT • BSS coloring • MRC • 802.11ax beamforming • 20-, 40-, 80-, and 80+80-MHz channels • PHY data rates up to 5.38 Gbps (160 MHz with 5 GHz and 20 MHz with 2.4 GHz) • Packet aggregation: A-MPDU (transmit and receive), A-MSDU (transmit and receive) • 802.11 DFS • CSD support • WPA3 support

Item	Specification
Integrated antenna	 Catalyst 9124AXI 2.4 GHz: Peak gain 7 dBi, internal antenna, Vertical Polarization, omnidirectional 5 GHz: Peak gain 7 dBi, internal antenna, Vertical Polarization, omnidirectional BLE Antenna Gain: 5 dBi, internal antenna, Vertical Polarization, omnidirectional Catalyst 9124AXD 2.4 GHz: Peak gain 9 dBi, internal antenna, Dual Polarization, directional, Azimuth beamwidth 70 deg, elevation beamwidth 65 deg 5 GHz: Peak gain 9 dBi, internal antenna, Dual Polarization, directional, Azimuth beamwidth 55 deg, elevation beamwidth 50 deg BLE Antenna Gain: 4 dBi, internal antenna, Vertical Polarization, omnidirectional
External antenna	 For more details, see Catalyst 9124AX Series Getting Started Guide. Catalyst 9124AXE The Catalyst 9124AXE Access Point is certified for use with antenna gains up to 13 dBi (2.4 GHz and 5GHz) Cisco offers the industry's broadest selection of antennas, delivering optimal coverage for a variety of deployment scenarios. Supports Self-Identifiable Antennas (SIA) For more details, see Catalyst 9124AX Series Getting Started Guide.
Interfaces	Catalyst 9124AXI, 9124AXD, 9124AXE 1x 100/1000/2500 BASE-T (Ethernet) uplink interface 1x Gigabit Ethernet SFP Supports PoE output (802.3af compliant PSE) on the 1x 10/100/1000 BASE-T (Ethernet) downlink interface if C9124AX powered from one of the following: UPOE or 802.3bt inline power source (Switch or Power Injector) DC input (with external power supply rated ≥ 60W) Management console port (RJ-45)
Indicators	Status LED indicates boot loader status, association status, operating status, boot loader warnings
Dimensions (W x L x H)	 Access point (without mounting brackets): 9124AXI, 9124AXD, 9124AXE: 10.2 x 9.2 x 3.2 in. (25.9 x 23.3 x 8.1 cm)
Weight	9124AXI, 9124AXD • 6.5 lb. (2.9 kg) 9124AXE • 7 lb. (3.1 kg)

Item	Specification												
Input power requirements	Cisco power injCisco power inj	 802.3af Power over Ethernet (PoE), 802.3at PoE+, 802.3bt PoE++, Cisco Universal PoE (Cisco UPOE*) Cisco power injector, AIR-PWRINJ-60RGD1= and AIR-PWRINJ-60RGD2= Cisco power injector, AIR-PWRINJ6= (Note: This injector supports 802.3at) DC power source: Auxiliary DC input, 24V to 56V 											
	РоЕ	Radio 0 SS	Radio 1 SS	Radio 2 SS (C9124AXE)	MGIG	SFP	1G	POE O/P					
	.3af	Disabled	Disabled	n/a	1G	N	N	N					
	.3at	2x2	2x2	n/a	1G	N	Υ	N					
	.3bt/UPOE/ DC	4x4	4x4 or 2X2	2x2	2.5G	Υ	Υ	Υ					
	 Nonoperating a Operating tempsolar loading Operating altitute Operating huming IEC 60529 Ingress Wind resistance Icing protection Corrosion: NEW Solar radiation: 	storage) temperature lititude test: 17,000 ft perature: -40° to 149 de test: 17,000 ft (51 dity: 0% to 100% (coless Rating: IP66/IP67 e up to 100 mph (161 i: MIL-STD-810F,13r IA 250-2008 (600 hr. EN 60068-2-5 (1126 STD-810, Method 51	t (5182 m) or F (-40° to 65° C) l82 m) ondensing) or l km/h) sustained or mm 13mm (0.5 in.) s. salt, 1200 hrs. m) with no solar lo		·	to 55° C	e) with					
Available Tx power settings (max/min)	2.4 GHz • 30 dBm (1W) • -4 dBm (0.4 m)	N)			5 GHz • 30 dBm (1W) • -4 dBm(0.4 mW)								
Regulatory domains	approval and to https://www.cis	s are responsible identify the reguleco.com/qo/airone	atory domain the the transfer domain the trans	at correspond	ds to a particular o	ountry	, visit						

Item	Specifica	tion											
Transmit power and receive sensitivity													
		2.4-0	GHz rad	io		5-GHz	z radio	1		5-GHz ra	dio		
	Spatial streams	Total powe (dBm	er	RX sensitivity (dBm)		Total TX power (dBm)		RX sensitivity (dBm)		Total TX power (dBm)		ity (dBm)	
802.11/11b													
		AXI/ AXD	AXE	AXI/ AXD	AXE	AXI/ AXD	AXE	AXI/ AXD	AXE		AXE	AXE	
1 Mbps	1	30	29	- 102	-100	-	_	-		-	-	-	
11 Mbps	1	30	29	-94	-92	-	-	_		-	-	_	
802.11a/g													
6 Mbps	1	30	29	-97	-94	30	29	-99	-97	2	25	-94	
24 Mbps	1	30	26	-89	-86	30	25	-90	-88	2	22	-86	
54 Mbps	1	30	24	-81	-78	30	24	-83	-80	2	20	-78	
802.11n HT20													
MCS0	1	30	29	-97	-95	30	29	-99	-97	2	25	-94	
MCS7	1	29	27	-79	-83	29	26	-80	-78	2	23	-75	
MCS8	2	30	29	-95	-94	30	29	-97	-96	2	25	-92	
MCS15	2	29	27	-77	-75	29	26	-78	-77	2	23	-73	
MCS16	3	30	29	-93	-93	30	29	-95	-95	-	_	_	
MCS23	3	29	27	-75	-74	29	26	-76	-75	-	-	_	
MCS24	4	30	29	-92	-91	30	29	-94	-93	-	_	_	
MCS31	4	29	27	-74	-72	29	26	-75	-74	-	-	-	

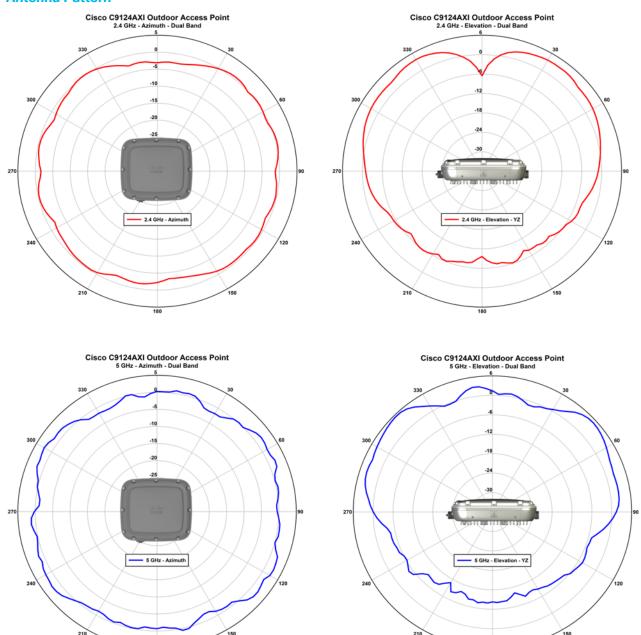
Item	Specificat	ion									
802.11n HT40											
MCS0	1	-	-	30	29	-97	-94	2	25	-91	
MCS7	1	-	_	30	26	-79	-75	2	23	-72	
MCS8	2	-	_	30	29	-95	-93	2	25	-89	
MCS15	2	-	-	30	26	-77	-74	2	23	-70	
MCS16	3	-	_	30	29	-93	-92	-	-	-	
MCS23	3	-	_	30	26	-75	-73	-	-	-	
MCS24	4	-	_	30	29	-92	-90	-	-	_	
MCS31	4	-	_	30	26	-74	-71	-	-	_	
802.11ac VHT	20										
MCS0	1	_	_	30	29	-99	-97	2	25	-94	
MCS8	1	-	_	28	25	-76	-74	2	22	-71	
MCS0	2	-	_	30	29	-97	-96	2	25	-92	
MCS8	2	-	_	28	25	-74	-73	2	22	-69	
MCS9	2	-	_	-		-		-	-		
MCS0	3	-	-	30	29	-	-	-	-	-	
MCS8	3	-	-	28	25	-72	-72	-	-	_	
MCS9	3	-	-	-		-		-	-		
MCS0	4	-	-	30	29	-94	-93	-	-	-	
MCS8	4	-	-	28	25	-71	-70	-	-	-	
MCS9	4	-	-	-		-		-	-		

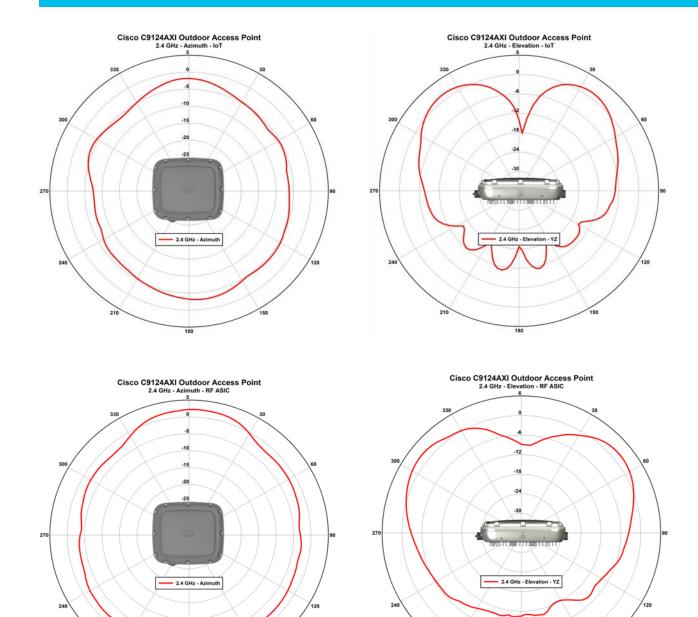
Item	Specificat	ion								
802.11ac VHT	40									
MCS0	1	-	-	30	29	-96	-94	2	25	-91
MCS8	1	-	-	29	25	-74	-71	2	22	-68
MCS0	2	_	_	30	29	-94	-93	2	25	-89
MCS8	2	-	-	29	25	-72	-70	2	22	-66
MCS9	2	_	-	28	25	-70	-68	_	-	_
MCS0	3	_	-	30	29	-92	-92	-	-	-
MCS8	3	_	-	29	25	-70	-69	_	-	_
MCS9	3	_	-	28	25	-68	-67	-	-	-
MCS0	4	_	_	30	29	-91	-90	_	-	_
MCS8	4	-	-	29	25	-69	-67	-	-	-
MCS9	4	-	-	28	25	-67	-65	_	-	-
802.11ac VHT	80									
MCS0	1	-	-	30	29	-94	-91	2	25	-88
MCS8	1	-	-	29	25	-72	-67	2	23	-65
MCS0	2	-	-	30	29	-92	-90	2	25	-86
MCS8	2	-	-	29	25	-70	-66	2	22	-63
MCS9	2	-	-	28	25	-69	-65	-	-	-
MCS0	3	-	-	30	29	-90	-89	-	-	-
MCS8	3	-	-	29	25	-68	-65	_	-	-
MCS9	3	-	-	28	25	-67	-64	-	-	-
MCS0	4	-	-	30	29	-89	-87	_	-	-
MCS8	4	-	-	29	25	-67	-63	-	-	-
MCS9	4	_	-	28	25	-66	-62	_	-	_

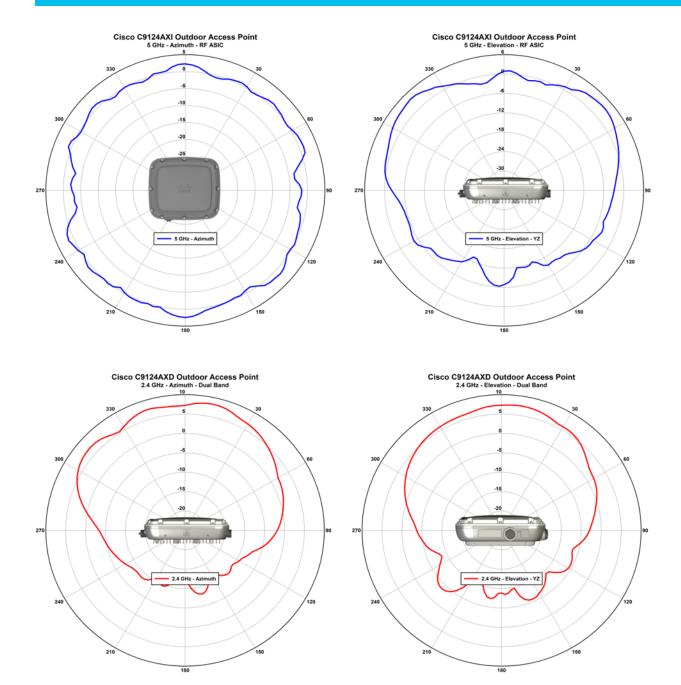
Item	Specificat	ion										
802.11ac VHT	160											
MCS0	1	-		-		30	19	-91	-78	1	21	-80
MCS8	1	-		-		26	19	-69	-65	1	19	-61
MCS9	1	-		-		_	_	-	-	1	17	-55
MCS0	2	-		-		30	-	-89	-	-	-	-
MCS8	2	-		_		26	_	-67	_	_	-	-
MCS9	2	-		-		25	_	-66	_	_	-	-
802.11ax HE2	0											
MCS0	1	30	29	-97	-95	30	29	-98	-97	2	25	-94
MCS11	1	26	24	-69	-66	27	24	-70	-68	2	20	-65
MCS0	2	30	29	-95	-94	30	29	-96	-96	2	25	-92
MCS11	2	26	24	-67	-65	27	24	-68	-67	2	20	-63
MCS0	3	30	29	-93	-93	30	29	-94	-95	_	-	-
MCS11	3	26	24	-65	-64	27	24	-66	-66	-	-	-
MCS0	4	30	29	-92	-91	30	29	-93	-93	_	-	-
MCS11	4	26	24	-64	-62	27	24	-65	-64	_	-	-
802.11ax HE4	0											
MCS0	1	-		-		30	29	-95	-94	2	25	-92
MCS11	1	-		-		26	24	-67	-65	2	20	-63
MCS0	2	-		_		30	29	-93	-93	2	25	-90
MCS11	2	-		_		26	24	-65	-64	2	20	-61
MCS0	3	-		_		30	29	-91	-92	_	_	-
MCS11	3	-		_		26	24	-63	-63	_	-	-
MCS0	4	-		-		30	29	-90	-90	_	-	_
MCS11	4	-		-		26	24	-62	-61	-	-	-

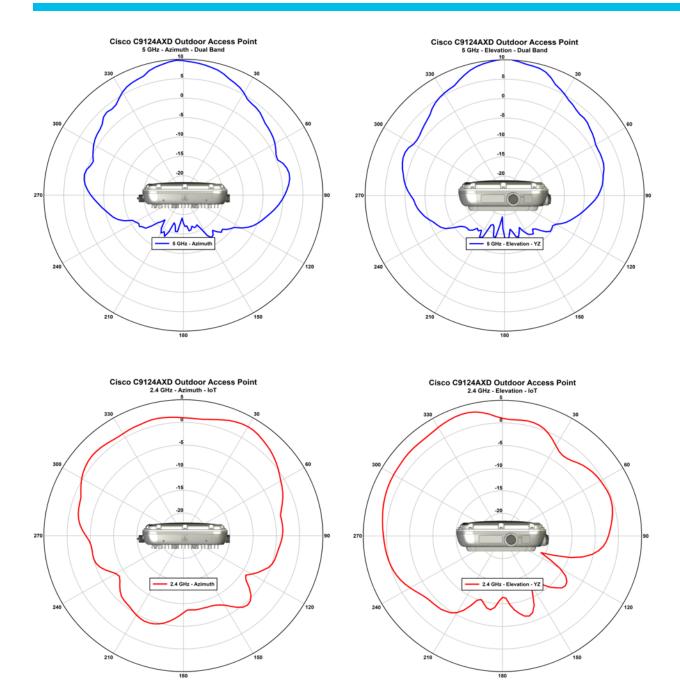
Item	Specificat	ion									
802.11ax HE80											
MCS0	1	_	_	30	29	-92	-92	2	25	-89	
MCS11	1	-	-	26	24	-64	-63	2	20	-60	
MCS0	2	-	-	30	29	-90	-91	2	25	-87	
MCS11	2	-	-	26	24	-62	-62	2	20	-58	
MCS0	3	-	-	30	29	-88	-90	_	_	-	
MCS11	3	-	-	26	24	-60	-61	_	_	-	
MCS0	4	_	-	30	29	-87	-88	_	_	-	
MCS11	4	-	-	26	24	-59	-59	_	_	-	
802.11ax HE1	60										
MCS0	1	_	-	30	19	-89	-78	1	21	-81	
MCS11	1	-	-	25	19	-61	-68	1	16	-52	
MCS0	2	-	_	30	_	-87	_	-	_	-	
MCS11	2	-	_	25	-	-59	-	-	_	-	

Antenna Pattern









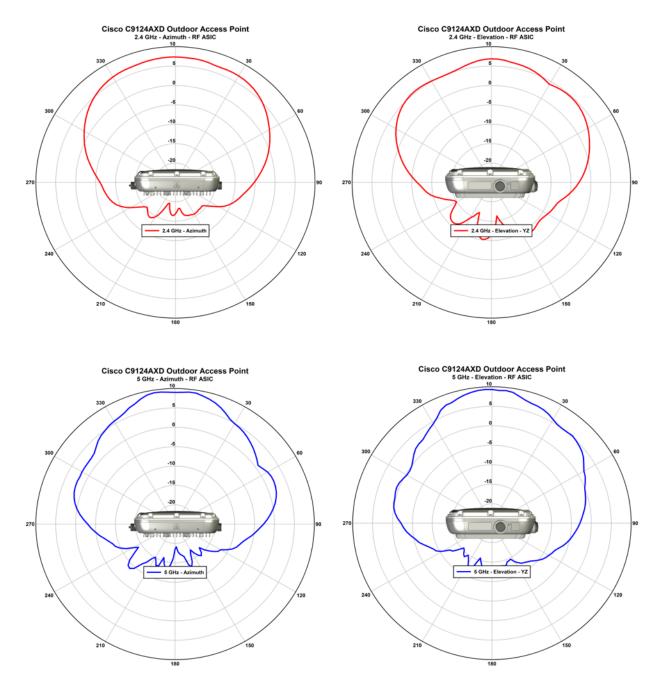


Figure 2. Antenna profiles

Note: For information about feature support, refer to the Cisco Catalyst 9100 Release Notes.

Licensing

For information about licensing, refer to Cisco DNA Software for Wireless.

Warranty information

The Cisco Catalyst 9124AX Series Access Points come with a limited lifetime warranty that provides full warranty coverage of the hardware for as long as the original end user continues to own or use the product. The warranty includes 10-day advance hardware replacement and ensures that software media are defect-free for 90 days. For more details, visit https://www.cisco.com/go/warranty.

Cisco environmental sustainability

Information about Cisco's environmental sustainability policies and initiatives for our products, solutions, operations, and extended operations or supply chain is provided in the "Environmental Sustainability" section of Cisco's <u>Corporate Social Responsibility</u> (CSR) Report. Reference links to information are below.

Information on product material content laws and regulations: Materials

Information on electronic waste laws and regulations, including products, batteries, and packaging: WEEE compliance

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Cisco Services

With Cisco Services, you can achieve infrastructure excellence faster with less risk. From an initial WLAN readiness assessment to implementation, full solution support, and in-depth training, our services for the Cisco Catalyst 9124AX Series provide expert guidance to help you successfully plan, deploy, manage, and support your new access points. With unmatched networking expertise, best practices, and innovative tools, Cisco Services can help you reduce overall upgrade, refresh, and migration costs as you introduce new hardware, software, and protocols into the network. With a comprehensive lifecycle of services, Cisco experts will help you minimize disruption and improve operational efficiency to extract maximum value from your Cisco DNA-ready infrastructure.

Cisco Capital

Flexible payment solutions to help you achieve your objectives

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