

Cisco Aironet 3600 Series Access Point



Cisco Aironet® 3600i Access Point

- · Sleek design with internal antennas
- Ideal for office environments

Cisco Aironet 3600e Access Point

- Rugged metal housing and extended operating temperature
- Ideal for factories, warehouses, and other indoor industrial environments
- · Versatile RF coverage with external antennas
- UL 2043 plenum-rated for above-ceiling installation options or suspended from drop ceilings
- Classify over 20 different types of interference, including non-Wi-Fi interference within 5 to 30 seconds
- Automatic remedial action and less manual intervention

Investment Protection with Modular Architecture Design

- Flexible add-on Wireless Security Module
- IEEE 802.11ac Wave 1 Module
- Cisco Universal Small Cell 5310 (limited availability)

Troubleshooting Forensics for Faster Interference Resolution and Proactive Action

- Historic interference information for back-intime analysis and faster problem solving
- 24/7 monitoring with remote access reduces travel and speeds resolution
- Cisco® Spectrum Expert Connect provides real-time, raw spectrum data to help with difficult-to-diagnose interference problems
- The Air Quality Index in Cisco CleanAir[™] technology provides a snapshot of network performance and the impact of interference

Robust Security and Policy Enforcement

- Industry's first access point with non-Wi-Fi detection for off-channel rogues
- Supports rogue access point detection and detection of denial-of-service attacks
- Management frame protection detects malicious users and alerts network administrators
- Set policies to prohibit devices that interfere with the Wi-Fi network or jeopardize network security

Secure Interoperability

• Controller-based deployment only



Delivering up to three times more coverage versus competition for tablets, smartphones, and highperformance laptops, the industry's only 4x4 MIMO, three-spatial-stream access point delivers missioncritical reliability. Current solutions struggle to scale to meet demands on the wireless networks from the influx of diverse mobile devices and mobile applications. The Cisco Aironet® 3600 Series sustains reliable connections at higher speeds further from the access point than competing solutions, resulting in up to three times more availability of 450 Mbps rates, and optimizing the performance of more mobile devices. Cisco® Aironet 3600 Series is an innovative, modular platform that offers unparalleled investment protection with future module expansion to support incoming 802.11ac clients with 1.3 Gbps rates, or offer comprehensive security and spectrum monitoring and control.

Cisco Aironet 3600 Series includes Cisco ClientLink 2.0 to boost performance and range for clients and includes Cisco CleanAir spectrum intelligence for a self-healing, self-optimizing network.

RF Excellence

Building on the Cisco Aironet heritage of RF excellence, the 3600 Series is a flagship access point, delivering industry-leading performance for secure and reliable wireless connections.

Enterprise-class silicon and optimized radios deliver a robust mobility experience which includes:

- 802.11n with 4x4 multiple-input multiple-output (MIMO) technology with three spatial streams, which sustains 450-Mbps rates over a greater range for more capacity and reliability than competing access points.
- Cisco ClientLink 2.0 technology to improve downlink performance to all mobile devices including one-, two-, and three-spatial-stream devices on 802.11n while improving battery life on mobile devices such as smartphones and tablets.
- Cisco CleanAir[™] technology, which provides proactive, high-speed spectrum intelligence to combat performance problems due to wireless interference.
- Modular architecture design, enabling flexible add-on options in the form of a Wireless Security Module, an IEEE 802.11ac Module, or the Cisco Universal Small Cell 5310 Module that is tightly integrated with the Cisco Aironet 3600 Series Access Point platform, and is completely field-upgradable.
- MIMO equalization optimized uplink performance and reliability by minimizing the impact of signal fade.

All of these features help ensure the best possible end-user experience on the wireless network.

Cisco also offers the industry's broadest selection of <u>802.11n antennas</u> delivering optimal coverage for a variety of deployment scenarios.

Scalability

The Cisco Aironet 3600 Series is a component of the Cisco Unified Wireless Network, which can scale to up to 18,000 access points with full Layer 3 mobility across central or remote locations on the enterprise campus, in branch offices, and at remote sites. The Cisco Unified Wireless Network is the industry's most flexible, resilient, and scalable architecture, delivering secure access to mobility services and applications and offering the lowest total cost of ownership and investment protection by integrating seamlessly with the existing wired network.

Product Specifications

Table 1 lists the product specifications for Cisco Aironet 3600 Series Access Points.

Table 1. Product Specifications for Cisco Aironet 3600 Series Access Points

Item	Specification				
Part Numbers	The Cisco Aironet 3600i Access Point: Indoor environments, with internal antennas				
	AIR-CAP3602I-x-K9 - Dual-band controller-based 802.11a/g/n				
	AIR-CAP3602I-xK910 - Eco-pack (dual-band 802.11a/g/n) 10 quantity access points				
	The Cisco Aironet 3600e Access Point: Indoor, challenging environments, with external antennas				
	AIR-CAP3602E-x-K9 - Dual-band controller-based 802.11a/g/n				
	AIR-CAP3602E-xK910 - Eco-pack (dual-band 802.11a/g/n) 10 quantity access points				
	Cisco SMARTnet® Service for the Cisco Aironet 3600i Access Point with internal antennas CON-SNT-CAP362lx - SMARTnet 8x5xNBD 3600i access point (dual-band 802.11 a/g/n)				
	• Qty(10) CON-SNT-CAP362Ix - SMARTnet 8x5xNBD 10 quantity eco-pack 3600i access point (dual-band 802.11a/g/n)				
	Cisco SMARTnet Service for the Cisco Aironet 3600e Access Point with external antennas				
	• CON-SNT-CAP3602x - SMARTnet 8x5xNBD 3600e access point (dual-band 802.11 a/g/n)				
	Qty(10) CON-SNT-CAP3602x - SMARTnet 8x5xNBD 10 quantity eco-pack 3600e access point (dual-band 802.11a/g/n)				

Item	Specification								
	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								
	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: http://www.cisco.com/go/aironet/compliance.								
	Not all regulatory domain Price List.	ns have been approved.	have been approved. As they are approved, the part numbers will be available on the Global						
Software	Cisco Unified Wireless N	letwork Software Releas	e with AireOS Wireless C	ontrollers:					
	7.2 or later for the Cit	sco Aironet 3600 Series	Access Point						
	• 7.4 or later for suppo	rt of the Wireless Securit	y Module for the 3600 Se	eries Access Point					
	• 7.5 or later for suppo	rt of the 802.11ac Wave	1 Module for the 3600 Se	eries Access Point					
	Cisco IOS XE Software I	Release:							
	3.2.0SE or later for the second	ne Cisco Aironet 3600 Se	eries Access Point						
	3.3.0SE or later for the second	ne Cisco 802.11ac Wave	1 Module for the 3600 S	eries Access Point					
	Wireless Security Mo	dule for the 3600 Series	Access Point support - ta	arget 1HCY15					
Supported Wireless	AireOS Wireless Contro	ollers							
LAN Controllers			Wireless Controller Moo	fule for ISR G2 Cisco Wi	reless Services Module				
	Cisco 2500 Series Wireless Controllers, Cisco Wireless Controller Module for ISR G2, Cisco Wireless Services Module 2 (WiSM2) for Catalyst® 6500 Series Switches, Cisco 5500 Series Wireless Controllers, Cisco Flex® 7500 Series								
	Wireless Controllers, Cisco 8500 Series Wireless Controllers, Cisco Virtual Wireless Controller								
	Cisco IOS Wireless Controllers								
	Cisco 5760 Wireless	LAN Controller, Cisco C	atalyst 3850 Series Switc	hes, Cisco Catalyst 3650	Series Switches				
Module Options	Cisco Aironet Wireless Security Module								
	Provides full-spectrum scanning for, wIPS for comprehensive detection and mitigation of over the wire network attacks,								
	Cisco CleanAir technology detecting devices causing network interference, rogue device detection, context (location) awareness, and radio resource management (RRM) solutions								
	 Provides full scanning of all 2.4- and 5-GHz channels while the Access Point is serving data clients on the integrated radios 								
	Cisco Aironet IEEE 802.11ac Wave 1 Module								
	Supports the IEEE 802.11ac specification and the features defined by the Wi-Fi Alliance for the first wave of Wi-Fi CERTIFIED 11ac								
	• 3x3:3SS (spatial streams), 80-MHz wide channels, 256 quadrature amplitude modulation (QAM), and data rates up to 1.3 Gbps								
	Wi-Fi Alliance certified - http://www.wi-fi.org/certified-products-advanced-search								
	Cisco Universal Small Cell 5310 (limited availability)								
• 3GPP band 1 (2100 MHz), 16 users, voice (R99), packet data (HSPA/HSDPA+)									
	3GPP band 2/5 (band all all all all all all all all all al	d 2 – 1930 and band 5 -	869), 16 users, voice (R9	9), packet data (HSPA/H	SDPA+)				
802.11n Version 2.0	• 4x4 multiple-input multiple-output (MIMO) with three spatial streams								
(and Related) Capabilities	Maximal ratio combining (MRC)								
Capabilities	• 802.11n and 802.11a/g beamforming								
	20- and 40-MHz channels								
	PHY data rates up to 450 Mbps (40-MHz with 5 Ghz)								
	Packet aggregation: A-MPDU (Tx/Rx), A-MSDU (Tx/Rx)								
	802.11 dynamic frequency	uency selection (DFS)							
	Cyclic shift diversity (Cyclic shift diversity (CSD) support							
Data Rates	802.11a: 6, 9, 12, 18, 24, 36, 48, and 54 Mbps								
Supported	802.11g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps								
	802.11n data rates (2.4 GHz and 5 GHz):								
	MCS Index ¹	Gl ² = 800ns		GI = 400ns					
		20-MHz Rate (Mbps)	40-MHz Rate (Mbps)	20-MHz Rate (Mbps)	40-MHz Rate (Mbps)				
	0	6.5	13.5	7.2	15				
	<u> </u>		. 5.0	ı · · -	. •				

¹ MCS Index: The Modulation and Coding Scheme (MCS) index determines the number of spatial streams, the modulation, the coding rate, and data rate values.
² GI: A guard interval (GI) between symbols helps receivers overcome the effects of multipath delays.

Item	Specification					
	1	13	27		14.4	30
	2	19.5	40.5		21.7	45
	3	26	54		28.9	60
					43.3	90
	4	39	81			
	5	52	108		57.8	120
	6	58.5	121.5		65	135
	7	65	135		72.2	150
	8	13	27		14.4	30
	9	26	54		28.9	60
	10	39	81		43.3	90
	11	52	108		57.8	120
	12	78	162		86.7	180
	13	104	216		115.6	240
	14	117	243		130	270
	15	130	270		144.4	300
	16	19.5	40.5		21.7	45
	17	39	81		43.3	90
	18	58.5	121.5		65	135
	19	78	162		86.7	180
	20	117	243		130	270
	21	156	324		173.3	360
					195	405
	23	195	405		216.7	450
Frequency Band and 20-MHz Operating Channels	22		N (N regulatory domain): • 2.412 to 2.462 GHz; 11 channels • 5.180 to 5.320 GHz; 8 channels • 5.745 to 5.825 GHz; 5 channels Q (Q regulatory domain): • 2.412 to 2.472 GHz; 13 channels • 5.180 to 5.320 GHz; 8 channels • 5.500 to 5.700 GHz; 11 channels R (R regulatory domain): • 2.412 to 2.472 GHz; 13 channels • 5.180 to 5.320 GHz; 8 channels • 5.180 to 5.320 GHz; 8 channels • 5.180 to 5.320 GHz; 8 channels • 5,660 to 5,805 GHz, 7 channels S (S regulatory domain): • 2.412 to 2.472 GHz; 13 channels • 5.180 to 5.320 GHz; 8 channels • 5.745 to 5.825 GHz; 5 channels T (T regulatory domain): • 2.412 to 2.462 GHz; 11 channels • 5.280 to 5.320 GHz; 8 channels • 5.500 to 5.700 GHz, 8 channels (excludes 5.600 to 5.640 GHz) • 5.745 to 5.825 GHz; 5 channels			

Note: 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: http://www.cisco.com/go/aironet/compliance.

Item	Specification					
Maximum Number						
of Nonoverlapping	• 802.11b/g:		• 802.11a:			
Channels	。 20 MHz: 3		。 20 MHz: 21			
	• 802.11n:		• 802.11n:			
	。 20 MHz: 3		∘ 20 MHz: 21			
			∘ 40 MHz: 9			
Note: This varios by r	ogulatory domain. Pofor to the n	raduat documentation for enaci		lomain		
-	egulatory domain. Refer to the p	1	1	omam.		
Receive Sensitivity	• 802.11b (CCK)	• 802.11g (non HT20)	• 802.11a (non HT20)			
	• -101 dBm @ 1 Mb/s	∘ -91 dBm @ 6 Mb/s	∘ -90 dBm @ 6 Mb/s			
	∘ -98 dBm @ 2 Mb/s	∘ -91 dBm @ 9 Mb/s	∘ -90 dBm @ 9 Mb/s			
	∘ -92 dBm @ 5.5 Mb/s	∘ -91 dBm @ 12 Mb/s	∘ -90 dBm @ 12 Mb/s			
	∘ -89 dBm @ 11 Mb/s	∘ -90 dBm @ 18 Mb/s	∘ -89 dBm @ 18 Mb/s			
		 -87 dBm @ 24 Mb/s 	 -86 dBm @ 24 Mb/s 			
		 -85 dBm @ 36 Mb/s 	 -83 dBm @ 36 Mb/s 			
		 -80 dBm @ 48 Mb/s 	 -78 dBm @ 48 Mb/s 			
		∘ -79 dBm @ 54 Mb/s	 -77 dBm @ 54 Mb/s 			
	2.4-GHz		5-GHz	5-GHz		
	• 802.11n (HT20)		• 802.11n (HT20)	• 802.11n (HT40)		
	∘ -90 dBm @ MCS0		∘ -91 dBm @ MCS0	∘ -88 dBm @ MCS0		
	∘ -90 dBm @ MCS1		· -90 dBm @ MCS1	∘ -87 dBm @ MCS1		
	∘ -90 dBm @ MCS2		∘ -89 dBm @ MCS2	∘ -86 dBm @ MCS2		
	· -88 dBm @ MCS3		· -86 dBm @ MCS3	∘ -82 dBm @ MCS3		
	· -85 dBm @ MCS4		∘ -83 dBm @ MCS4	∘ -80 dBm @ MCS4		
	∘ -80 dBm @ MCS5		∘ -78 dBm @ MCS5	· -75 dBm @ MCS5		
	∘ -78 dBm @ MCS6		∘ -77 dBm @ MCS6	∘ -73 dBm @ MCS6		
	∘ -77 dBm @ MCS7		∘ -75 dBm @ MCS7	∘ -72 dBm @ MCS7		
	∘ -90 dBm @ MCS8		∘ -91 dBm @ MCS8	∘ -88 dBm @ MCS8		
	∘ -90 dBm @ MCS9		∘ -89 dBm @ MCS9	∘ -86 dBm @ MCS9		
	∘ -89 dBm @ MCS10		∘ -87 dBm @ MCS10	∘ -84 dBm @ MCS10		
	∘ -86 dBm @ MCS11		∘ -84 dBm @ MCS11	∘ -80 dBm @ MCS11		
	∘ -82 dBm @ MCS12		∘ -80 dBm @ MCS12	∘ -77 dBm @ MCS12		
	• -78 dBm @ MCS13		∘ -76 dBm @ MCS13	∘ -73 dBm @ MCS13		
	∘ -77 dBm @ MCS14			∘ -71 dBm @ MCS14		
	∘ -75 dBm @ MCS15		• -73 dBm @ MCS15	∘ -70 dBm @ MCS15		
	• -90 dBm @ MCS16		• -90 dBm @ MCS16	• -87 dBm @ MCS16		
	• -89 dBm @ MCS17		• -88 dBm @ MCS17	• -84 dBm @ MCS17		
	• -87 dBm @ MCS18		∘ -85 dBm @ MCS18	• -82 dBm @ MCS18		
	• -84 dBm @ MCS19		• -82 dBm @ MCS19	• -78 dBm @ MCS19		
	• -81 dBm @ MCS20		• -79 dBm @ MCS20	• -75 dBm @ MCS20		
	∘ -76 dBm @ MCS21		∘ -74 dBm @ MCS21	• -71 dBm @ MCS21		
	∘ -75 dBm @ MCS22		∘ -73 dBm @ MCS22	∘ -69 dBm @ MCS22		
	∘ -74 dBm @ MCS23		∘ -72 dBm @ MCS23	∘ -68 dBm @ MCS23		
Maximum Transmit	2.4 GHz		5 GHz			
Power	• 802.11b		• 802.11a			
	 23 dBm: 4 antennas 		 23 dBm: 4 antennas 			
	• 802.11g		• 802.11n (HT20)			
	 23 dBm: 4 antennas 		 23 dBm: 4 antennas 			
	• 802.11n (HT20)		• 802.11n (HT40)			
			 23 dBm: 4 antennas 			

Note: The maximum power setting will vary by channel and according to individual country regulations. Refer to the product documentation for specific details.

Item	Specification					
Available Transmit Power Settings Note: The maximum p	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)	according to individual co	5 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) untry regulations. Refe	/) /)	luct docum	entation for
Integrated Antenna	 2.4 GHz, Gain 2 dBi, internal omn 5 GHz, Gain 4 dBi, internal omni, 					
External Antenna (Sold Separately)	Certified for use with antenna gain Cisco offers the industry's broaded deployment scenarios	ns up to 6 dBi (2.4 GHz a	nd 5 GHz)	mal coverag	e for a vari	ety of
Interfaces	10/100/1000BASE-T autosensing Management console port (RJ-45)	,				
Indicators	Status LED indicates boot loader s	status, association status	, operating status, boo	t loader war	nings, boo	t loader errors
Dimensions (W x L x H)	Access point (without mounting br	acket): 8.7 x 8.7 x 2.11 ir	n. (22.1 x 22.1 x 5.4 cm	n)		
Weight	• 2.5 lbs (1.13 kg)					
Environmental	Cisco Aironet 3600i Nonoperating (storage) temperature: -22 to 158°F (-30 to 70°C) Nonoperating (storage) Altitude Test -25°C, 15,000 ft. Operating temperature: 32 to 104°F (0 to 40°C) Operating humidity: 10 to 90% percent (noncondensing) Operating Altitude Test -40°C, 9843 ft. Cisco Aironet 3600e Nonoperating (storage) temperature: -22 to 158°F (-30 to 70°C) Nonoperating (storage) Altitude Test - 25°C, 15,000 ft. Operating temperature: -4 to 131°F (-20 to 55°C) Operating humidity: 10 to 90 percent (noncondensing) Operating Altitude Test -40°C, 9843 ft.					
System Memory	256-MB DRAM32-MB flash					
Input Power Requirements	 AP3600: 44 to 57 VDC Power Supply and Power Injector: 100 to 240 VAC; 50 to 60 Hz 					
Power draw	* This is the power required at the PSI	E, which is a switch or inj	ector.			
	Description	AP Functionality	PoE Budget (Watts)	802.3af	E-PoE	802.3at PoE+ PWRINJ4
PoE+	3600 - No external module installed	4x4:3 on 2.4/5 GHz	15.4	✓	✓	✓
802.3at	3600 - 2.4GHz radio disabled + Wireless Security Module	4x4:3 on 5 GHz + WSN	1 15.4	✓	n/a	n/a
	3600 - 2.4GHz radio disabled + 802.11ac Module	4x4:3 on 5 GHz only +	11ac 15.4	✓	n/a	n/a
PoE	3600 + Wireless Security Module	4x4:3 on 2.4/5 GHz + V	VSM 18.4	×	✓	✓
802.3af	3600 + 802.11ac Module	4x4:3 on 2.4/5 GHz + 1	1ac 19.6	×	✓	✓
	3600 + Universal Small Cell Module (USC5310)	4x4:3 on 2.4/5 GHz + USC5310	22	×	×	✓

Item	Specification
Warranty	Limited Lifetime Hardware Warranty
Warranty Compliance Standards	Limited Lifetime Hardware Warranty UL 60950-1 CAN/CSA-C22.2 No. 60950-1 UL 2043 IEC 60950-1 EN 60950-1 EN 50155 Radio approvals: FCC Part 15.247, 15.407 RSS-210 (Canada) EN 300.328, EN 301.893 (Europe) ARIB-STD 66 (Japan) ARIB-STD 66 (Japan) ARIB-STD 717 (Japan) EMI and susceptibility (Class B) FCC Part 15.107 and 15.109 ICES-003 (Canada) VCCI (Japan) EN 301.489-1 and -17 (Europe) EN 60601-1-2 EMC requirements for the Medical Directive 93/42/EEC IEEE 802.11a/b/g, IEEE 802.11n, IEEE 802.11h, IEEE 802.11d Security: 802.11i, Wi-Fi Protected Access 2 (WPA2), WPA 802.11; Advanced Encryption Standards (AES), Temporal Key Integrity Protocol (TKIP) EAP Type(s): EXTENSIBLE Authentication Protocol-Transport Layer Security (EAP-TLS) EAP-Tunneled TLS (TTLS) or Microsoft Challenge Handshake Authentication Protocol Version 2 (MSCHAPv2) Protected EAP (PEAP) v0 or EAP-MSCHAPv2 Extensible Authentication Protocol-Flexible Authentication via Secure Tunneling (EAP-FAST) PEAP-Type (S): Extensible Authentication Protocol-Flexible Authentication via Secure Tunneling (EAP-FAST) PEAP-Type (S): Extensible Authentication Protocol-Flexible Authentication via Secure Tunneling (EAP-FAST) PEAP-Type (S): Extensible Authentication Protocol-Flexible Authentication via Secure Tunneling (EAP-FAST) PEAP-Type (S): Extensible Authentication Protocol-Flexible Authentication via Secure Tunneling (EAP-FAST) PEAP-Type (S): Extensible Authentication Protocol-Flexible Authentication via Secure Tunneling (EAP-FAST) PEAP-Type (S): Extensible Authentication Protocol-Flexible Authentication via Secure Tunneling (EAP-FAST) PEAP-Type (S): EXTENSIBLE AUTHENTICATION Module (SIM) Multimedia: Wi-Fi Multimedia: Wi-Fi Multimedia (WMM)*) Other: FCC Bulletin OET-65C RSS-102

Limited Lifetime Hardware Warranty

The Cisco Aironet 3600 Series Access Point comes 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 is defect-free for 90 days. For more details, visit: http://www.cisco.com/go/warranty.

Cisco Wireless LAN Services

Realize the full business value of your technology investments faster with intelligent, customized services from Cisco and our partners. Backed by deep networking expertise and a broad ecosystem of partners, Cisco Wireless LAN Services enable you to deploy a sound, scalable mobility network that enables rich media collaboration while improving the operational efficiency gained from a converged wired and wireless network infrastructure based on the Cisco Unified Wireless Network. Together with partners, we offer expert plan, build, and run services to accelerate your transition to advanced mobility services while continuously optimizing the performance, reliability, and security of that architecture after it is deployed. For more details, visit: http://www.cisco.com/go/wirelesslanservices.

For More Information

For more information about the Cisco Aironet 3600 Series, visit http://www.cisco.com/go/wireless or contact your local account representative.



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