Cisco Aironet 1560 Series Outdoor Access Points

Cisco Aironet® 1560 Series Outdoor Access Points offer the latest 802.11ac Wave 2 functions in a rugged, low-profile housing that service providers and enterprises can deploy easily.

Ideal for applications requiring rugged outdoor Wi-Fi coverage, the Cisco Aironet 1560 Series Access Points offer the latest IEEE 802.11ac Wave 2 radio standard in a compact, aesthetically pleasing, easy-to-deploy package. The 1560 Series offers flexible deployment options for service providers, enterprise networks, and public safety 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 1560 Series Access Points give network operators the flexibility to balance their desired wireless coverage with their need for easy deployment. The Cisco Aironet 1560 Series is built on the strong base of Cisco® wireless innovations such as:

- Cisco CleanAir® technology for spectrum intelligence
- Cisco ClientLink technology for beamforming
- Radio Resource Management (RRM) for dynamic transmitter channel and power control

Whether deployed as a traditional access point or wireless mesh access point, the Cisco Aironet 1560 Series provides the throughput capacity needed for today's bandwidth-hungry devices.

Features and Benefits

Table 1 lists the features and benefits of the Cisco Aironet 1560 Series.

Table 1. Features and Benefits of Cisco Aironet 1560 Series

Feature	Benefit
802.11ac Wave 2 radio	Provides up to 1.3-Gbps data rates with 3 x 3 multiple input, multiple output (MIMO) and up to three spatial streams
Multiuser MIMO (MU-MIMO)	Allows transmission of data to multiple 802.11ac Wave 2-capable clients simultaneously to improve client experience; prior to 802.11ac Wave 2, access points could transmit data to only one client at a time, typically referred to as single-user MIMO
Flexible deployment modes	Allows f or deployment of the 1560 in a variety of ways including point -to-point and mesh networks; it can also be deployed with the Cisco Mobility Express Solution, which is ideal f or small to medium -sized deployments that that require 25 or fewer access points without a physical controller; all deployment modes are easy to set up and configure
Small Form-Factor Pluggable (SFP) port	Supports optical fiber-based network connectivity for remote locations

Prominent Feature/Differentiator/Capability

The Cisco Aironet 1560 Series offers the following features:

- Improved performance for multiple client devices: The 802.11ac Wave 2 access points use MU-MIMO technology, which allows different data streams to all flow at once from the access point to multiple 802.11ac Wave 2-supported devices. Now, multiple 802.11ac Wave 2 devices can connect at the same time, getting the information they need quicker.
- 5-GHz support: The Cisco Aironet 1560 Series doubles the scale of 5 -GHz mobile devices and raises the performance of high-density environments.
- Cisco Flexible Antenna Port technology uses software configurable for either single- or dual-band antennas. It allows you to use the same antenna ports for either dual-band antennas to reduce footprint or single-band antennas to optimize radio coverage.
- Cisco Mobility Express: This solution is designed to bring enterprise-class wireless access to small and
- medium-sized networks. Easy to set up with low maintenance, Mobility Express includes advanced features from Cisco and does not require a physical controller appliance.
- Cisco High Density Experience (HDX): Cisco HDX comes standard on the 1560, giving this access point top-of-the-line network efficiency over a large number of wireless clients. HDX uses customized chipsets to target the needs of high-density networks. It is built with best-in-class RF architecture and gives a better user experience for high-performance applications.

Product Specifications

Table 2 lists the specifications of the 1560 access point.

Table 2. Specifications of Cisco Aironet 1560 Series

Item	Specification			
802.11ac Wave 1 and 2 capabilities	• 1562I: 3 x 3 MIMO with three spatial streams • 1562E/D 2 x 2 MIMO with two spatial streams • Multi- and single-user MIMO • Maximal ratio combining (MRC) • 802.11ac beamforming (transmit beamforming) • 20-, 40-, and 80-MHz channels • PHY data rates up to 1.3 Gbps (80 MHz in 5 GHz) • Packet aggregation: A-MPDU (Tx/Rx) and A-MSDU (Tx/Rx) • 802.11 dynamic frequency selection (DFS) • Cyclic-shift-diversity (CSD) support			
802.11n (and related) capabilities	• 1562I: 3 x 3 MIMO with three spatial streams • 1562E/D/PS: 2 x 2 MIMO with two spatial streams • MRC • 20- and 40-MHz channels • PHY data rates up to 450 Mbps • Packet aggregation: A-MPDU (Tx/Rx) and A-MSDU (Tx/Rx) • • 802.11 DFS • CSD support			
Data rates supported	802.11a: 6, 9, 12, 18, 24, 36, 48, and 54 Mbps 802.11b/g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps			
	802.11n data rates on 2.4 and 5 GHz:			
	MCS Index	GI4 = 800 ns		GI = 400 ns	
		20-MHz Rates (Mbps)	**40-MHz Rates (Mbps)**	**20-MHz Rates (Mbps)**	**40-MHz Rates (Mbps)**
	0	6.5	13.5	7.2	15
	1	13	27	14.4	30
	2	19.5	40.5	21.7	45
	3	26	54	28.9	60
	4	39	81	43.3	90
	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

Item	Specification							
	19	78	162	86.7	180			
	20	117	243	130	270			
	21	156	324	173.3	360			
	22	175.5	364.5	195	405			
	23	195	405	216.7	450			
	802.11ac Data Rates (5 GHz)							
	Spatial Streams	**MCS**	**GI = 800 ns**			**GI = 400 ns**		
			20 MHz	**40 MHz**	**80 MHz**	**20 MHz**	**40 MHz**	**80 MHz**
	1	0	6.5	13.5	29.3	7.2	15	32.5
	1	1	13	27	58.5	14.4	30	65
	1	2	19.5	40.5	87.8	21.7	45	97.5
	1	3	26	54	117	28.9	60	130
	1	4	39	81	175.5	43.3	90	195
	1	5	52	108	234	57.8	120	260
	1	6	58.5	121.5	263.3	65	135	292.5
	1	7	65	135	292.5	72.2	150	325
	1	8	78	162	351	86.7	180	390
	1	9	–	180	390	–	200	433.3
	2	0	13	27	58.5	14.4	30	65
	2	1	26	54	117	28.9	60	130
	2	2	39	81	175.5	43.3	90	195
	2	3	52	108	234	57.8	120	260
	2	4	78	162	351	86.7	180	390
	2	5	104	216	468	115.6	240	520
	2	6	117	243	526.5	130	270	585
	2	7	130	270	585	144.4	300	650
	2	8	156	324	702	173.3	360	780
	2	9	–	360	780	–	400	866.7
	3	0	19.5	40.5	87.8	21.7	45	97.5
	3	1	39	81	175.5	43.3	90	195
	3	2	58.5	121.5	263.3	65	135	292.5
	3	3	78	162	351	86.7	180	390
	3	4	117	243	526.5	130	270	585
	3	5	156	324	702	173.3	360	780
	3	6	175.5	364.5	–	195	405	–
	3	7	195	405	877.5	216.7	450	975
	3	8	234	486	1053	260	540	1170
	3	9	260	540	1170	288.9	600	1300

Item	Specification
Frequency band and 20- MHz operating channels (regulatory domains)	**A:** 2.412 to 2.462 GHz, 11 channels 5.280 to 5.320 GHz, 3 channels 5.500 to 5.580 GHz, 5 channels 5.660 to 5.700 GHz, 3 channels 5.745 to 5.825 GHz, 5 channels **B:** 2.412 to 2.462 GHz, 11 channels 5.180 to 5.240 GHz, 4 channels 5.260 to 5.320 GHz, 4 channels 5.500 to 5.720 GHz, 12 channels 5.745 to 5.825 GHz, 5 channels **C:** 2.412 to 2.472 GHz, 13 channels 5.745 to 5.825 GHz, 5 channels **D:** 2.412 to 2.462 GHz, 11 channels 5.745 to 5.865 GHz, 7 channels **E:** 2.412 to 2.472 GHz, 13 channels 5.500 to 5.580 GHz, 5 channels 5.660 to 5.700 GHz, 3 channels **F:** 2.412 to 2.472 GHz, 13 channels 5.745 to 5.805 GHz, 4 channels **G:** 2.412 to 2.472 GHz, 13 channels 5.745 to 5.825 GHz, 5 channels **-H:** 2.412 to 2.472 GHz, 13 channels 5.745 to 5.825 GHz, 5 channels **-I:** 2.412 to 2.472 GHz, 13 channels **-K:** 2.412 to 2.462 GHz, 11 channels 5.280 to 5.320 GHz, 3 channels 5.500 to 5.620 GHz, 7 channels 5.745 to 5.805 GHz, 4 channels **-L:** 2.412 to 2.472 GHz, 13 channels 5.500 to 5.620 GHz, 7 channels 5.745 to 5.865 GHz, 7 channels **-M:** 2.412 to 2.472 GHz, 13 channels 5.500 to 5.580 GHz, 5 channels 5.660 to 5.700 GHz, 3 channels 5.745 to 5.805 GHz, 4 channels **-N:** 2.412 to 2.462 GHz, 11 channels 5.745 to 5.825 GHz, 5 channels **-Q:** 2.412 to 2.472 GHz, 13 channels 5.500 to 5.700 GHz, 11 channels **-R:** 2.412 to 2.472 GHz, 13 channels 5.260 to 5.320 GHz, 4 channels 5.660 to 5.700 GHz, 3 channels 5.745 to 5.825 GHz, 5 channels

Item	Specification
	-S: 2.412 to 2.472 GHz, 13 channels 5.500 to 5.700 GHz, 11 channels 5.745 to 5.825 GHz, 5 channels **-T:** 2.412 to 2.462 GHz, 11 channels 5.500 to 5.580 GHz, 5 channels 5.660 to 5.700 GHz, 3 channels 5.745 to 5.825 GHz, 5 channels **-Z:** 2.412 to 2.462 GHz, 11 channels 5.500 to 5.580 GHz, 5 channels 5.660 to 5.700 GHz, 3 channels 5.745 to 5.825 GHz, 5 channels
Note: Customers are responsible f or verifying approval f or use in their individual countries. To verify approval that corresponds t o a particular country, please visit http://www.cisco.com/go/aironet/compliance.	
Maximum number of nonoverlapping channels	**2.4 GHz** ● 802.11b/g: ◦ 20 MHz: 3 ● 802.11n: ◦ 20 MHz: 3 ◦ 40 MHz: 1 (hardware capable) **5 GHz** ● 802.11a: ◦ 20 MHz: 27 ● 802.11n: ◦ 20 MHz: 27 ◦ 40 MHz: 13 ● 802.11ac: ◦ 20 MHz: 27 ◦ 40 MHz: 13 ◦ 80 MHz: 6
Note: This number varies by regulatory domain. Refer to the product documentation f or specific details f or each regulatory domain.	

Receive Sensitivity

		2.4 GHz Radio		5 GHz Radio	
	Spatial Streams	**1562I**	**1562D/E**	**1562I**	**1562D/E**
802.11/11b					
1 Mbps	1	-100	-98	NA	NA
11 Mbps	1	-88	-87	NA	NA
802.11a/g					
6 Mbps	1	**-92**	**-90**	**-94**	**-93**
24 Mbps	1	**-86**	**-83**	**-89**	**-88**
54 Mbps	1	**-76**	**-74**	**-80**	**-79**
802.11n HT20					
MSC0	1	**-90**	**-89**	**-91**	**-90**
MSC4	1	**-84**	**-82**	**-88**	**-86**
MSC7	1	**-77**	**-75**	**-80**	**-78**
MSC8	2	**-89**	**-88**	**-90**	**-89**
MSC12	2	**-82**	**-80**	**-85**	**-83**
MSC15	2	**-75**	**-72**	**-78**	**-76**
MSC16	3	**-89**		**-90**	
MSC20	3	**-81**		**-84**	
MSC23	3	**-73**		**-76**	

Item	Specification				
802.11n HT40					
MSC0	1	**-88**	**-86**	**-90**	**-90**
MSC4	1	**-82**	**-80**	**-85**	**-83**
MSC7	1	**-75**	**-74**	**-78**	**-76**
MSC8	2	**-87**	**-86**	**-90**	**-90**
MSC12	2	**-80**	**-78**	**-82**	**-81**
MSC15	2	**-72**	**-70**	**-75**	**-73**
MSC16	3	**-87**		**-90**	
MSC20	3	**-78**		**-81**	
MSC23	3	**-71**		**-74**	
802.11ac VHT20					
MSC0	1			**-95**	**-94**
MSC4	1			**-88**	**-86**
MSC7	1			**-81**	**-79**
MSC8	1			**-77**	**-75**
MSC0	2			**-94**	**-93**
MSC4	2			**-86**	**-84**
MSC7	2			**-78**	**-76**
MSC8	2			**-74**	**-72**
MSC0	3			**-93**	
MSC4	3			**-85**	
MSC7	3			**-78**	
MSC8	3			**-72**	
MSC9	3			**-69**	
802.11ac VHT40					
MSC0	1			**-91**	**-90**
MSC4	1			**-85**	**-84**
MSC7	1			**-79**	**-77**
MSC8	1			**-75**	**-73**
MSC9	1			**-73**	**-71**
MSC0	2			**-91**	**-90**
MSC4	2			**-83**	**-82**
MSC7	2			**-76**	**-74**
MSC8	2			**-73**	**-70**
MSC9	2			**-71**	**-68**
MSC0	3			**-91**	
MSC4	3			**-82**	
MSC7	3			**-74**	
MSC8	3			**-69**	
MSC9	3			**-68**	

Item	Specification				
802.11ac VHT80					
MSC0	1			**-88**	**-88**
MSC4	1			**-83**	**-81**
MSC7	1			**-75**	**-73**
MSC8	1			**-71**	**-69**
MSC9	1			**-69**	**-67**
MSC0	2			**-88**	**-88**
MSC4	2			**-80**	**-78**
MSC7	2			**-73**	**-71**
MSC8	2			**-69**	**-67**
MSC9	2			**-67**	**-65**
MSC0	3			**-88**	
MSC4	3			**-78**	
MSC7	3			**-71**	
MSC8	3			**-67**	
MSC9	3			**-65**	
Maximum conducted transmit power	**1562I** • 2.4 GHz: 29 dBm with 3 antennas • 5 GHz: 29 dBm with 3 antennas	**1562D** • 2.4 GHz: 27 dBm with 2 antennas • 5 GHz: 27 dBm with 2 antennas	**1562E** • 2.4 GHz: 27 dBm with 2 antennas • 5 GHz: 27 dBm with 2 antennas	**1562PS** • 2.4 GHz: 27 dBm with 2 antennas • 4.9 GHz: 27 dBm with 2 antennas	
Note: The maximum power setting will vary by channel and according to individual country regulations. Refer to the product documentation f or specific details.					
Interfaces	• WAN port 10/100/1000BASE-T Ethernet, autosensing (RJ-45), PoE in • SFP port (fiber or electrical) • Management console port (RJ-45) • Multicolor LED • DC power input • Reset button				
Uplink options	Ethernet, SFP, and wireless mesh				
Dimensions (L x W x D)	1562I: 9.0 x 6.8 x 3.9 in. (22.9 x 17.1 x 9.8 cm) 1562D: 9.0 x 6.8 x 4.3 in. (22.9 x 17.1 x 10.9 cm) 1562E/PS:: 9.0 x 6.8 x 3.9 in. (22.9 x 17.1 x 9.8 cm)				
Weight	1562I: 5.6 lb (2.5 kg) 1562D: 5.7 lb (2.6 kg) 1562E/PS: 5.6 lb (2.5 kg)				
Environmental	Operating temperature: • –40 to 65°C (–40 to 149°F) ambient air with no solar loading • –40 to 55°C (–40 to 131°F) ambient air with solar loading Storage temperature: –40 to 85°C (–40 to 185°F) Wind resistance: • Up to 100-mph sustained winds • Up to 165-mph wind gusts				
Environmental ratings	• IEC 60529 IP67 • NEMA Type 4X • Icing protection NEMA 250-2008 • Corrosion NEMA 250-2008 (600 hours) • Solar radiation EN 60068-2-5 (1200 W/ m2) • Vibration MIL-STD-810				

Item	Specification
Antennas	• Integrated dual-band semi-omnidirectional antenna radome, vertically polarized (1562I) 7 dBi (2.4 GHz), 4 dBi (5 GHz) • Integrated dual-band directional antenna radome, dual polarized (1562D) 9 dBi (2.4 GHz), 10 dBi (5 GHz) • **Dual Band** ◦ AIR-ANT2568VG-N 6 dBi (2.4 GHz), 8 dBi (5 GHz) Omni ◦ AIR-ANT2547VG-N 4 dBi (2.4 GHz), 7 dBi (5 GHz) Omni ◦ AIR-ANT2547V-N 4 dBi (2.4 GHz), 7 dBi (5 GHz) Omni ◦ AIR-ANT2588P3M-N= 8 dBi (2.4 GHz), 8 dBi (5 GHz) Directional ◦ AIR-ANT2513P4M-N= 13 dBi (2.4 GHz), 13 dBi (5 GHz) Directional • **Single Band** **2.4 GHz** ◦ AIR-ANT2450V-N= 5 dBi (2.4 GHz), Omni ◦ AIR-ANT2450VG-N= 5 dBi (2.4 GHz), Omni, vertical polarized ◦ AIR-ANT2450HG-N= 5 dBi (2.4 GHz), Omni, horizontal polarized ◦ AIR-ANT2480V-N= 8 dBi (2.4 GHz), Omni ◦ AIR-ANT2413P2M-N= 13 dBi (2.4 GHz), Directional, dual polarized **5 GHz** ◦ AIR-ANT5150VG-N= 5 dBi (5GHz), Omni, vertical polarized ◦ AIR-ANT5150HG-N= 5 dBi (5GHz), Omni, horizontal polarized ◦ AIR-ANT5180V-N= 8 dBi (5GHz), Omni ◦ AIR-ANT5114P2M-N= 14 dBi (5GHz), Directional, dual polarized For antenna details, please refer to the antenna webpage: http://www.cisco.com/go/antennas
Powering options	• AC (with AIR-PWRADPT-RGD1=, AC/DC outdoor power adapter) • 44–57 VDC input • Universal Power of Ethernet (UPoE), 802.3at • Cisco power injectors: AIR-PWRINJ-60RGD1= (outdoor rated, 60W, with NEMA 5-15 AC plug) AIR-PWRINJ-60RGD2= (outdoor rated, 60W, unterminated AC cable) AIR-PWRINJ6= (indoor, 802.3at) **Note:** If 802.3at Power over Ethernet (PoE) is the source of power, the 1562I radios will shift from 3 x 3 to 2 x 2.
Power consumption	1562I 32 W (3x3:3, full power) 1562D/E/PS 25 W
Compliance	**Safety** • UL60950, 2nd Edition • CAN/CSA-C22.2 No. 60950, 2nd Edition • IEC 60950, 2nd Edition • EN 60950, 2nd Edition **Immunity** • <= 5 mJ for 6kV/3kA @ 8/20 ms waveform • ANSI/IEEE C62.41 • EN61000-4-5 Level 4 AC Surge Immunity • EN61000-4-4 Level 4 Electrical Fast Transient Burst Immunity • EN61000-4-3 Level 4 EMC Field Immunity • EN61000-4-2 Level 2 ESD Immunity • EN60950 Overvoltage Category IV **Radio Approvals** • FCC Part 15.247, 15.407 FCC Bulletin OET-65C • RSS-210 • RSS-102 • AS/NZS 4268.2003 • ARIB-STD 66 (Japan) • ARIB-STD T71 (Japan) • EN 300 328 • EN 301 893

Item	Specification
	EMI and Susceptibility ● FCC part 15.107, 15.109 ● ICES-003 ● EN 301 489-1, -17 **Security** ● Wireless bridging/mesh ● X.509 digital certificates ● MAC address authentication ● Advanced Encryption Standard (AES) **Wireless Access** ● 802.11i, Wi-Fi Protected Access 2 (WPA2), and WPA ● 802.1X authentication, including Extensible Authentication Protocol (EAP) and Protected EAP (EAP-PEAP), EAP Transport Layer Security (EAP-TLS), EAP-Tunneled TLS (EAP-TTLS), EAP-Subscriber Identity Module - (EAP-SIM), and Cisco LEAP ● VPN pass-through ● IP Security (IPsec) ● Layer 2 Tunneling Protocol (L2TP) ● MAC address filtering
Warranty	1-year limited hardware warranty

Ordering Information

Table 3 gives ordering information for the Cisco Aironet 1560 Series.

Table 3. Ordering Information for Cisco Aironet 1560 Series

Part Number	Product Description
Aironet 1560 Series	● AIR-AP1562I-x-K9: Dual-band 802.11a/g/n/ac, Wave 2, internal semi-omni antennas ● AIR-AP1562E-x-K9: Dual-band 802.11a/g/n/ac, Wave 2, external antennas ● AIR-AP1562D-x-K9: Dual-band 802.11a/g/n/ac, Wave 2, internal directional antennas ● AIR-AP1562PS-x-K9: Dual-band 802.11a/g/n 4.9 GHz Public Safety band support Regulatory domains: (x = regulatory domain) Customers are responsible f or verifying approval f or use in their individual countries. To verify approval that corresponds to a particular country or the regulatory domain used in a specific country, visit http://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. **Cisco SMARTnet™ Service for the Cisco Aironet 1560 Series Access Points** Refer to the Service part numbers available on Cisco Commerce Workspace f or available service offerings.

Warranty Information

The Cisco Aironet 1560 Series Outdoor Access Points come with a 1 -year limited warranty that provides full warranty coverage of the hardware. The warranty includes 10 –day advance hardware replacement and helps ensure that software media are defect-free for 90 days. For more details, visit http://www.cisco.com/go/warranty.

Cisco and Partner 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 help you 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.

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Cisco Wireless LAN Services include:

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- AS-WLAN-CNSLT: Cisco Wireless LAN 802.11n Migration Service
- AS-WLAN-CNSLT: Cisco Wireless LAN Performance and Security Assessment Service

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For More Information

For more information about the Cisco Aironet 1560 Series, visit http://www.cisco.com/go/wireless or contact your local Cisco account representative.

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