Cisco Aironet 1815w Access Point

With a sleek design and small form factor, the Cisco Aironet 1815w Access Point brings a full slate of Cisco high-performance functionality to multiple-dwelling-unit deployments.

Product Overview

The Cisco® Aironet® 1815w Access Point (Figure 1) offers a compact, wall plate–mountable access point, ideal for hospitality, cruise ships, residential halls, or other multiple-dwelling-unit deployments.

Packing 802.11ac Wave 2 wireless standards support and Gigabit Ethernet wired connectivity into a sleek device, the 1815w is built to take full advantage of existing cabling infrastructure while blending into the visual footprint. This combination provides best-in-class performance while reducing total cost of ownership.

Figure 1. Cisco Aironet 1815w Access Point

Features and Benefits

By adhering to the 802.11ac Wave 2 standard, the 1815w provides a data rate of up to 867 Mbps on its 5-GHz radio. This exceeds the data rates offered by access points that support the 802.11n standard. It also enables a total aggregate dual-radio data rate of up to 1 Gbps. This provides the necessary foundation for enterprise and service provider networks to stay ahead of the performance expectations and needs of their wireless users.

In recent years corporate users have increasingly preferred wireless access as their form of network connectivity, due to its convenience. With this shift, there is an expectation that wireless should not slow down users' day-to-day activities, but should enable a high-performance experience while allowing users to move about freely. The 1815w delivers industry-leading performance with highly secure and reliable wireless connections that provide a robust, mobile end-user experience.

Feature	Benefit
MU-MIMO	Multiuser (MU) multiple-input multiple-output (MU-MIMO) allows simultaneous data transmission to multiple 802.11ac Wave 2–capable clients to improve the client experience. Prior to MU-MIMO, 802.11n and 802.11ac Wave 1 access points could transmit data to only one client at a time. This was typically referred to as single-user MIMO (SU-MIMO).
Gigabit Ethernet ports	Three local Gigabit Ethernet ports are available to securely connect wired devices to the network. Traffic from wired devices can be tunneled back to a wireless LAN controller (for compatible controllers) or be locally switched by the access point. One of these Ethernet ports can also provide Power over Ethernet (PoE) out to power a device such as an IP phone or a security camera.
Cisco Mobility Express solution	Flexible deployment through the Cisco Mobility Express solution is ideal for small to medium-sized deployments that require 50 or fewer access points. Easy setup allows the 1815w to be deployed on networks without a physical controller.
Integrated Bluetooth 4.1	Integrated Bluetooth low-energy (BLE) 4.1 radio for location and asset tracking (future availability).

Increased Wireless Performance

The Aironet 1815w access point supports the latest 802.11ac Wave 2 standard for higher performance, greater access, and higher-density networks. With simultaneous dual radios and dual band with 802.11ac Wave 2 MU-MIMO functionality, this access point can handle the increasing number of high-bandwidth devices that will soon become a common part of the network.

Wired Access

The 1815w allows wired access via a single RJ-45 10/100/1000 auto detection port. It supports full operation modes using PoE 802.3af power. The 1815w comes with three local Gigabit Ethernet ports, one uplink Gigabit Ethernet port, and one passive pass-through RJ-45 port, allowing for a variety of connections.

Mounting

This sleek access point with a small form factor is designed with flexible mounting options in mind. You can mount it directly on the wall or to numerous global wall junction standards. The access point is also easy to install.

Product Specifications

Table 1 lists the specifications for the Cisco Aironet 1815w Access Point. Table 2 lists the RF specifications.

Table 1. Specifications

Item	Specification
Authentication and security	• Advanced Encryption Standard (AES) for Wi-Fi Protected Access 2 (WPA2) • 802.1X, RADIUS authentication, authorization and accounting (AAA) • 802.11r • 802.11i
Software	• Cisco Unified Wireless Network Software with AireOS Wireless Controllers Release 8.4 or later • Cisco Mobility Express
Maximum clients	• Maximum number of associated wireless clients: 200 per Wi-Fi radio, in total 400 clients per access point
802.11ac	• 2x2 single-user/multiuser MIMO with two spatial streams • Maximal ratio combining (MRC) • 20-, 40-, and 80-MHz channels • PHY data rates up to 866.7 Mbps (80 MHz on 5 GHz) • Packet aggregation: A-MPDU (Tx/Rx), A-MSDU (Rx) • 802.11 Dynamic Frequency Selection (DFS) • Cyclic shift diversity (CSD) support

Item	Specification							
Ethernet ports	• Authentication with 802.1X or MAC filtered • Dynamic VLAN or per port • Traffic locally switched or tunneled back to wireless LAN controller							
Bluetooth (future Availability)	• Integrated Bluetooth 4.1 (including BLE) radio • Maximum transmit power: 4 dBm • Antenna gain: 2 dBi							
Data rates supported	**802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps**							
	802.11b/g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, 54 Mbps							
	802.11n data rates on 2.4 GHz:							
	MCS Index[1]		**GI[2] = 800 ns**			**GI = 400 ns**		
			20-MHz Rate (Mbps)			**20-MHz Rate (Mbps)**		
	0		6.5			7.2		
	1		13			14.4		
	2		19.5			21.7		
	3		26			28.9		
	4		39			43.3		
	5		52			57.8		
	6		58.5			65		
	7		65			72.2		
	8		13			14.4		
	9		26			28.9		
	10		39			43.3		
	11		52			57.8		
	12		78			86.7		
	13		104			115.6		
	14		117			130		
	15		130			144.4		
	802.11ac data rates on 5 GHz:							
	MCS Index	**Spatial Streams**	**GI = 800 ns**			**GI = 400 ns**		
			20-MHz Rate (Mbps)	**40-MHz Rate (Mbps)**	**80-MHz Rate (Mbps)**	**20-MHz Rate (Mbps)**	**40-MHz Rate (Mbps)**	**80-MHz Rate (Mbps)**
	0	1	6.5	13.5	29.3	7.2	15	32.5
	1	1	13	27	58.5	14.4	30	65
	2	1	19.5	40.5	87.8	21.7	45	97.5
	3	1	26	54	117	28.9	60	130
	4	1	39	81	175.5	43.3	90	195
	5	1	52	108	234	57.8	120	260
	6	1	58.5	121.5	263.3	65	135	292.5
	7	1	65	135	292.5	72.2	150	325
	8	1	78	162	351	86.7	180	390
	9	1	–	180	390	–	200	433.3
	0	2	13	27	58.5	14.4	30	65
	1	2	26	54	117	28.9	60	130

Item	Specification							
	2	2	39	81	175.5	43.3	90	195
	3	2	52	108	234	57.8	120	260
	4	2	78	162	351	86.7	180	390
	5	2	104	216	468	115.6	240	520
	6	2	117	243	526.5	130	270	585
	7	2	130	270	585	144.4	300	650
	8	2	156	324	702	173.3	360	780
	9	2	–	360	780	–	400	866.7
Maximum number of non-overlapping channels	**A (A regulatory domain):** • 2.412 to 2.462 GHz; 11 channels • 5.180 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 **B (B regulatory domain):** • 2.412 to 2.462 GHz; 11 channels • 5.180 to 5.320 GHz; 8 channels • 5.500 to 5.720 GHz; 12 channels • 5.745 to 5.825 GHz; 5 channels **C (C regulatory domain):** • 2.412 to 2.472 GHz; 13 channels • 5.745 to 5.825 GHz; 5 channels **D (D 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 **E (E regulatory domain):** • 2.412 to 2.472 GHz; 13 channels • 5.180 to 5.320 GHz; 8 channels • 5.500 to 5.700 GHz; 8 channels (excludes 5.600 to 5.640 GHz) **F (F regulatory domain):** • 2.412 to 2.472 GHz; 13 channels • 5.745 to 5.805 GHz; 4 channels **G (G regulatory domain):** • 2.412 to 2.472 GHz; 13 channels • 5.745 to 5.865 GHz; 7 channels **H (H 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 **I (I regulatory domain):** • 2.412 to 2.472 GHz; 13 channels • 5.180 to 5.320 GHz; 8 channels				**K (K regulatory domain):** • 2.412 to 2.472 GHz; 13 channels • 5.180 to 5.320 GHz; 8 channels • 5.500 to 5.620 GHz; 7 channels • 5.745 to 5.805 GHz; 4 channels **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 • 5.660 to 5.700 GHz; 3 channels • 5.745 to 5.805 GHz; 4 channels **S (S 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 • 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; 3 channels • 5.500 to 5.700 GHz; 8 channels (excludes 5.600 to 5.640 GHz) • 5.745 to 5.825 GHz; 5 channels **Z (Z regulatory domain):** • 2.412 to 2.462 GHz; 11 channels • 5.180 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: This varies by regulatory domain. Refer to the product documentation for specific details for each regulatory domain.								

Item	Specification	
Available transmit power settings	**2.4 GHz** 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)	**5 GHz** 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)
Note: The maximum power setting will vary by channel and according to individual country regulations. Refer to the product documentation for specific details.		
Integrated antennas	• 2.4 GHz, gain 2 dBi • 5 GHz, gain 3 dBi	
Interfaces	• 1 x 10/100/1000BASE-T autosensing (RJ-45), Power over Ethernet (PoE) • Management console port (4-pin connector) • Three 10/100/1000BASE-T ports (local Ethernet ports), including one PoE out port: ◦ PoE out provides 802.3af (class 0) when access point is powered by 802.3at, or no output when powered by 802.3af • One passive pass-through port RJ-45 (back to bottom)	
Indicators	• Status LED indicates boot loader status, association status, operating status, boot loader warnings, boot loader errors	
Dimensions (W x L x H)	• Access point (without mounting bracket): 3.5 x 5.5 x 1.25 in (89 x 140 x 31.5 mm)	
Weight	• Access point without mounting bracket or any other accessories: 10 oz (280 g)	
Environmental	• Operating ◦ Temperature: 32° to 104°F (0° to 40°C) ◦ Humidity: 10% to 90% (non-condensing) ◦ Max. altitude: 9843 ft (3,000 m) @ 40°C • Non-operating (storage and transportation) ◦ Temperature: -22° to 158°F (-30° to 70°C) ◦ Humidity: 10% to 90% (non-condensing) ◦ Max. altitude: 15,000 ft (4,500 m) @ 25°C	
System	• 1 GB DRAM • 256 MB flash • 710 MHz quad-core	
Powering options	• 802.3af/at Ethernet switch • Optional Cisco power injectors (AIR-PWRINJ5=, AIR-PWRINJ6=)	
Power draw	• 8.5W (maximum, without PoE out)	
Physical security	• Torx security screw, included with the access point • Kensington lock slot to lock device to mounting bracket.	
Mounting	• Included with the access point: mounting bracket AIR-AP-BRACKET-W3	
Accessories	• Mounting bracket: AIR-AP-BRACKET-W3= (available as spare) • Spacer kit: AIR-AP1815W-KIT= (sold separately), includes spacer and RJ-45 jumper cable	
Warranty	Limited Lifetime Hardware Warranty	
Compliance	• Safety: ◦ UL 60950-1 ◦ CAN/CSA-C22.2 No. 60950-1 ◦ UL 2043 ◦ IEC 60950-1 ◦ EN 60950-1 • Radio approvals: ◦ FCC Part 15.247, 15.407	

Item	Specification
	◦ RSS-247 (Canada) ◦ EN 300.328, EN 301.893 (Europe) ◦ ARIB-STD 66 (Japan) ◦ ARIB-STD T71 (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 50385 • IEEE standards: ◦ IEEE 802.11a/b/g, 802.11n, 802.11h, 802.11d ◦ IEEE 802.11ac • Security: ◦ 802.11i, WPA2, WPA ◦ 802.1X ◦ 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 (FAST) ◦ PEAP v1 or EAP-Generic Token Card (GTC) ◦ EAP-Subscriber Identity Module (SIM) • Multimedia: ◦ Wi-Fi Multimedia (WMM) • Other: ◦ FCC Bulletin OET-65C ◦ RSS-102

[1] MCS Index: The Modulation and Coding Scheme (MCS) index determines the number of spatial streams, the modulation, and the coding rate and data rate values.

[2] A guard interval (GI) between symbols helps receivers overcome the effects of multipath delay spreads.

Table 2. RF Specifications

Transmit Power and Receive Sensitivity (1815w)					
		2.4-GHz Radio		5-GHz Radio	
	Spatial Streams	Total TX Power (dBm)	RX Sensitivity (dBm)	Total TX Power (dBm)	RX Sensitivity (dBm)
802.11/11b					
1 Mbps	1	17	-98	NA	NA
11 Mbps	1	17	-89	NA	NA
802.11a/g					
6 Mbps	1	20	-94	17	-94
24 Mbps	1	20	-87	20	-87
54 Mbps	1	20	-78	18	-78
802.11n HT20					
MSC0	1	20	-93	20	-93
MSC4	1	20	-83	18	-82
MSC7	1	20	-75	16	-75
MSC8	2	20	-90	20	-90

Transmit Power and Receive Sensitivity (1815w)					
MSC12	2	20	-80	18	-79
MSC15	2	20	-72	16	-72
802.11n HT40					
MSC0	1			20	-90
MSC4	1			18	-79
MSC7	1			16	-72
MSC8	2			20	-87
MSC12	2			18	-76
MSC15	2			16	-69
802.11ac VHT20					
MSC0	1			20	-93
MSC4	1			18	-82
MSC7	1			16	-75
MSC8	1			15	-71
MSC0	2			20	-90
MSC4	2			18	-79
MSC7	2			16	-72
MSC8	2			15	-68
802.11ac VHT40					
MSC0	1			20	-90
MSC4	1			18	-79
MSC7	1			16	-72
MSC8	1			15	-68
MSC9	1			15	-66
MSC0	2			20	-87
MSC4	2			18	-76
MSC7	2			16	-69
MSC8	2			15	-65
MSC9	2			15	-63
802.11ac VHT80					
MSC0	1			20	-87
MSC4	1			18	-77
MSC7	1			16	-69
MSC8	1			15	-65
MSC9	1			15	-63
MSC0	2			20	-84
MSC4	2			18	-74
MSC7	2			16	-66
MSC8	2			15	-62
MSC9	2			15	-60
Note: The maximum power setting will vary by channel and according to individual country regulations. Refer to the product documentation for specific details.					

Ordering Information

Table 3 provides ordering information for the Cisco Aironet 1815w Access Point. To place an order, visit the Cisco Ordering Home Page. To download software, visit the Cisco Software Center.

Table 3. Ordering Information

Product Name	Part Number
Cisco Aironet 1815w	• AIR-AP1815w-x-K9: Dual-band, controller-based 802.11a/g/n/ac, Wave 2 • AIR-AP1815w-x-K9C: Dual-band 802.11a/g/n/ac Wave 2 with default software Mobility Express ◦ Regulatory domains: (x = regulatory domain) ◦ For Mobility Express, part number AIR-AP1815w-x-K9C offers default software option Mobility Express Customers are responsible for verifying approval for 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.

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For more details, visit: http://www.cisco.com/c/en/us/products/wireless/service-listing.html.

Warranty Information

The Cisco Aironet 1815w 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.

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For More Information

For more information about the Cisco Aironet 1815w Access Point, visit http://www.cisco.com/c/en/us/products/wireless/aironet-1815w-series-access-points/index.html.

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