Cisco Aironet 1815i Access Point

Ideal for small and medium-sized networks, the Cisco® Aironet® 1815i Access Point brings a full slate of Cisco high-performance functionality to the enterprise environment.

Product Overview

The Cisco Aironet 1815i delivers industry-leading wireless performance with support for the latest Wi-Fi standard, IEEE's 802.11ac Wave 2 (Figure 1). It also meets the growing requirements of wireless networks by delivering a better user experience.

The 1815i extends support to a new generation of Wi-Fi clients, such as smartphones, tablets, and high-performance laptops that have integrated 802.11ac Wave 1 or Wave 2 support.

Figure 1. Cisco Aironet 1815i Access Point

Features and Benefits

By adhering to the 802.11ac Wave 2 standard, the 1815i offers a data rate of up to 867 Mbps on the 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.

Due to its convenience, in recent years corporate users have increasingly preferred wireless access as the form of network connectivity. Along with this shift, there is an expectation that wireless should not slow down users' day-to-day work, but should enable a high-performance experience while allowing users to move freely. The 1815i delivers industry-leading performance for highly secure and reliable wireless connections and provides a robust mobility end-user experience. Table 1 lists the features and benefits of the 1815i.

Table 1. Features and Benefits

Feature	Benefit
MU-MIMO	Multiuser (MU) multiple-input multiple-output (MU-MIMO) allows transmission of data to multiple 802.11ac Wave 2–capable clients simultaneously 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, typically referred to as single-user MIMO (SU-MIMO). 802.11ac Wave 2 with 2x2:2 MIMO technology uses two spatial streams when operating in SU-MIMO or MU-MIMO mode, offering 867-Mbps rates for more capacity and reliability than competing access points.
Cisco Mobility Express solution	Flexible deployment through the Mobility Express solution is ideal for small to medium-sized deployments. Easy setup allows the 1815i 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).

Prominent Features

Increased wireless performance

The 1815i 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 1815i allows wired access via a single RJ-45 10/100/1000 auto-detection port. It supports full operation modes using PoE 802.3af power.

Mounting

These sleek access points with a small form factor are designed with flexible mounting options in mind. You can mount them directly on the ceiling or a wall. They are also easy to install.

Product Specifications

Table 2 lists the specifications for the Cisco Aironet 1815i Access Point. Table 3 provides the access point's RF specifications.

Table 2. 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 (future availability)
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 (0.78mW)
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 4 dBi	
Interfaces	• 1 x 10/100/1000BASE-T autosensing (RJ-45), Power over Ethernet (PoE) • Management console port (RJ-45)	
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): 6 x 6 x 1.3 in (150.8 x 150.8 x 33 mm)	
Weight	• Access point without mounting bracket or any other accessories: 14 oz (400 g)	
Environmental	• Operating ◦ Temperature: 32° to 104°F (0° to 40°C) ◦ Humidity: 10% to 90% (noncondensing) ◦ Max. altitude: 9843 ft (3000 m) @ 40°C • Nonoperating (storage and transportation) ◦ Temperature: -22° to 158°F (-30° to 70°C) ◦ Humidity: 10% to 90% (noncondensing) ◦ Max. altitude: 15,000 ft (4500 m) @ 25°C	
System	• 1 GB DRAM • 256 MB flash • 710 MHz quad core	
Input power requirements	• Power injector: AIR-PWRINJ5= or AIR-PWRINJ6=	
Powering options	• 802.3af/at Ethernet switch • Optional Cisco power injectors (AIR-PWRINJ5=, AIR-PWRINJ6=)	
Power draw	• 8.3W (maximum, on PoE)	
Physical security	• Torx security screw, included with the access point	
Mounting	• Included with the access point: mounting bracket AIR-AP-BRACKET8	
Accessories	• Mounting bracket: AIR-AP-BRACKET8= (available as spare) • Physical security kit: AIR-SEC-50= (sold separately), with 50 pcs. Security screws used to secure access point onto wall-mounting bracket, 50 pcs. RJ-45 caps and 2 pcs. unlock keys used to block physical access to Ethernet ports	
Warranty	Limited Lifetime Hardware Warranty	

Item	Specification
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 ◦ 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, the coding rate, and data rate values.

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

Table 3. RF Specifications

Transmit Power and Receive Sensitivity (1815i)					
			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

Transmit Power and Receive Sensitivity (1815i)					
			2.4-GHz Radio	5-GHz Radio	
	Spatial Streams	Total TX Power (dBm)	RX Sensitivity (dBm)	Total TX Power (dBm)	RX Sensitivity (dBm)
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
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

Transmit Power and Receive Sensitivity (1815i)					
			2.4-GHz Radio	5-GHz Radio	
	Spatial Streams	Total TX Power (dBm)	RX Sensitivity (dBm)	Total TX Power (dBm)	RX Sensitivity (dBm)
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 4 provides ordering information for the Cisco Aironet 1815i Access Point. To place an order, visit the Cisco Ordering homepage. To download software, visit the Cisco Software Center.

Table 4. Ordering Information

Product Name	Part Number
Cisco Aironet 1815i	• AIR-AP1815i-x-K9: Dual-band, controller-based 802.11a/g/n/ac, Wave 2 • AIR-AP1815i-x-K9C: Dual-band 802.11a/g/n/ac Wave 2 with default software Mobility Express (future availability) ◦ Regulatory domains: (x = regulatory domain) ◦ For Mobility Express, part number AIR-AP1815i-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.

Cisco Wireless LAN Services

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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

Warranty Information

The Cisco Aironet 1815i 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.

Find warranty information on Cisco.com at the Product Warranties page.

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For More Information

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

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Cisco Aironet 1815m Series Access Points

Ideal for networks in dense buildings, the Cisco Aironet® 1815m Access Points bring a higher power option and full slate of Cisco® high-performance functions to the enterprise environment.

Product Overview

With more transmit power than the other access points in its family, the Cisco Aironet 1815m Series supports a larger coverage area with fewer access points. In addition, the 1815m delivers industry-leading wireless performance with support for the latest Wi-Fi standard, the IEEE's new 802.11ac Wave 2 standard. The 1815m Series extends support to a new generation of Wi-Fi clients, such as: smartphones, tablets, and high-performance laptops that have integrated 802.11ac Wave 1 or Wave 2 support.

With the increased coverage area, 802.11ac Wave 2 support, and the functions and features of an enterprise-level access point, the 1815m fully meets the growing requirements of wireless networks by delivering a better user experience (Figure 1).

Figure 1. Cisco Aironet 1815m

Features and Benefits

By adhering to the 802.11ac Wave 2 standard, the 1815m Series provides a data rate of up to 867 Mbps on the 5-GHz radio. This rate 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, allowing for 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 the form of network connectivity because of its convenience. With this shift, there is an expectation that wireless should not slow down users' day-to-day work, but should enable a high-performance experience. The 1815m Series delivers industry-leading performance with highly secure and reliable wireless connections, providing a robust mobility end-user experience.

Table 1 lists the features and benefits of the Cisco Aironet 1815m.

Table 1. Cisco Aironet 1815m

Feature	Benefit
Higher Tx power	With more than 3 dB (twice the transmit power) than the 1815i, the 1815m can penetrate walls and doors, making it ideal for deployment in hotels, dorm rooms, or other dense building locations.
MU-MIMO	Multiuser (MU) multiple-input, multiple-output (MU-MIMO) allows simultaneous data transmission of data 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 transmission was typically referred to as single-user MIMO (SU-MIMO).
Cisco Mobility Express Solution	Flexible deployment mode through the Mobility Express Solution is ideal for small to medium-sized deployments that require 50 or fewer access points. Easy setup allows deployment of the 1815m Series on networks without a physical controller.
Integrated Bluetooth 4.1	Integrated Bluetooth low-energy (BLE) 4.1 radio will be used for location and asset tracking (future availability).

Prominent Feature, Differentiator, and Capability

- Increased wireless performance: The Aironet® 1815m Series Access Points support 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 functions, 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 1815m Series allows wired access through a single RJ-45 10/100/1000 autodetection port. It supports full operation modes using Power over Ethernet (PoE) 802.3af power.
- Mounting: These sleek access points with a small form factor are designed with flexible mounting options in mind, with support for placement on either ceilings or walls.

Product Specifications

Table 1 lists the general specifications for the Cisco Aironet 1815m Series Access Points, and Table 2 lists the RF specifications.

Table 2. 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 8.5 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	• 2 x 2 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
Ethernet ports	• Authentication with 802.1X or MAC filtered • Dynamic VLAN or per port • Traffic locally switched or tunneled back to wireless LAN controller

Item	Specification							
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, 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 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
	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

Item	Specification							
	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.								
Available transmit power settings	**2.4 GHz** 27 dBm (500 mW) 24 dBm (250 mW) 21 dBm (125 mW) 18 dBm (63 mW) 15 dBm (32 mW) 12 dBm (16 mW) 9 dBm (8 mW) 6 dBm (4 mW)				**5 GHz** 24 dBm (250 mW) 21 dBm (125 mW) 18 dBm (63 mW) 15 dBm (32 mW) 12 dBm (16 mW) 9 dBm (8 mW) 6 dBm (4 mW) 3 dBm (2 mW)			
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
Integrated antennas	• 2.4 GHz, gain 2 dBi • 5 GHz, gain 4 dBi
Interfaces	• 1 x 10/100/1000BASE-T autosensing (RJ-45), Power over Ethernet (PoE) • Management console port (RJ-45)
Indicators	• Status LED indicates boot loader status, association status, operating status, boot loader warnings, and boot loader errors
Dimensions (W x L x H)	• Access point (without mounting bracket): 6 x 6 x 1.3 in. (150.8 x 150.8 x 33mm)
Weight	• Access point without mounting bracket or any other accessories: 1.01 lb (460 grams)
Environmental	• Operating ◦ Temperature: 32° to 104°F (0° to 40°C) ◦ Humidity: 10% to 90% (noncondensing) ◦ Max. altitude: 9,843 ft (3,000m) @ 40'C • Nonoperating (storage and transportation) ◦ Temperature: –22° to 158°F (–30° to 70°C) ◦ Humidity: 10% to 90% (noncondensing) ◦ Max. altitude: 15,000 ft (4,500m) @ 25'C
System	• 1-GB DRAM • 256-MB flash memory • 710-MHz quad-core
Input power requirements	• 802.3af or 802.3at power
Powering options	• 802.3af/at Ethernet switch • Optional Cisco power injectors (AIR-PWRINJ5=, AIR-PWRINJ6=)
Power draw	• 12.5W (maximum, on PoE)
Physical security	• Torx security screw, included with the access point
Mounting	• Included with the access point: mounting bracket AIR-AP-BRACKET-8
Accessories	• Mounting bracket: AIR-AP-BRACKET-8= (available as spare) • Physical security kit: AIR-SEC-50= (sold separately), with 50 pcs. security screws used to secure the access point onto wall-mounting bracket, 50 pcs. RJ-45 caps and 2 pcs. unlock keys used to block physical access to Ethernet ports
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 ◦ 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

Item	Specification
	• 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 (EAP-GTC) ◦ EAP-Subscriber Identity Module (EAP-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, modulation, coding rate, and data rate values.

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

Table 3. RF Specifications

Transmit Power and Receive Sensitivity (1815m)					
	Spatial Streams	2.4-GHz Radio		5-GHz Radio	
		Total TX Power (dBm)	RX Sensitivity (dBm)	Total TX Power (dBm)	RX Sensitivity (dBm)
802.11/11b					
1 Mbps	1	27	–100	–	–
11 Mbps	1	27	–91	–	–
802.11a/g					
6 Mbps	1	27	–95	24	–93
24 Mbps	1	27	–89	24	–86
54 Mbps	1	25	–79	24	–77
802.11n HT20					
MSC0	1	27	–94	24	–92
MSC4	1	27	–84	24	–81
MSC7	1	25	–76	23	–74
MSC8	2	27	–93	24	–91
MSC12	2	27	–82	24	–79
MSC15	2	25	–74	23	–72
802.11n HT40					
MCS0	1			24	–89
MCS4	1			24	–78
MCS7	1			23	–71
MCS8	2			24	–88
MCS12	2			24	–76
MCS15	2			23	–69

Transmit Power and Receive Sensitivity (1815m)					
	Spatial Streams	2.4-GHz Radio		5-GHz Radio	
		Total TX Power (dBm)	RX Sensitivity (dBm)	Total TX Power (dBm)	RX Sensitivity (dBm)
802.11ac VHT20					
MCS0	1			24	–92
MCS4	1			24	–81
MCS7	1			21	–74
MCS8	1			20	–70
MCS0	2			24	–91
MCS4	2			24	–79
MCS7	2			21	–72
MCS8	2			20	–68
802.11ac VHT40					
MCS0	1			24	–89
MCS4	1			24	–78
MCS7	1			21	–71
MCS8	1			20	–67
MCS9	1			20	–65
MCS0	2			24	–88
MCS4	2			24	–76
MCS7	2			21	–69
MCS8	2			20	–65
MCS9	2			20	–63
802.11ac VHT80					
MCS0	1			24	–86
MCS4	1			23	–75
MCS7	1			21	–68
MCS8	1			20	–64
MCS9	1			20	–61
MCS0	2			24	–85
MCS4	2			23	–73
MCS7	2			21	–66
MCS8	2			20	–62
MCS9	2			20	–59
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 1815m Series Access Points. To place an order, visit the Cisco Ordering Home Page. To download software, visit the Cisco Software Center.

Table 4. Ordering Information

Product Name	Part Number
Cisco Aironet 1815m Series	• AIR-AP1815m-x-K9: Cisco Aironet 1815M Series, Reg Domain x • AIR-AP1815m-x-K9C: Cisco Aironet 1815M Series with Mobility Express, Reg Dom. x ◦ Regulatory domains: (x = regulatory domain) ◦ For Mobility Express, part number AIR-AP1815m-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.

Cisco Wireless LAN Services

Realize the full business value of your technology investments faster with intelligent, customized services from Cisco. Backed by deep networking expertise, 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. We offer expert advisory, implementation and optimization services to accelerate your transition to advanced mobility services while continuously optimizing the performance, reliability, and security of that architecture after it is deployed. In addition, Smart Net Total Care service helps you protect your investment and derive maximum value from your Cisco products. Delivered by Cisco and backed by your trusted partner, this comprehensive service includes access to the Cisco Technical Assistance Center 24 hours a day, 365 days a year, IOS software updates, online resources, and expedited hardware replacement when needed. The Smart Net Total Care service helps you solve problems faster, improve operational efficiency, and reduce the risk of downtime. For more details, visit: http://www.cisco.com/c/en/us/products/wireless/service-listing.html.

Warranty Information

The Cisco Aironet 1815m 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 helps ensure that software media is defect-free for 90 days. For more details, visit: http://www.cisco.com/go/warranty.

Find warranty information on Cisco.com at the Product Warranties page.

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Cisco Capital® can help you acquire the technology you need to achieve your objectives and stay competitive. We can help you reduce CapEx. Accelerate your growth. Optimize your investment dollars and ROI. Cisco Capital financing gives you flexibility in acquiring hardware, software, services, and complementary third-party equipment. And there's just one predictable payment. Cisco Capital is available in more than 100 countries. Learn more.

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

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Cisco Aironet 1815t Series Access Points

Perfect for the teleworker or for a micro-branch deployment, this easy-to-install series of Office Extend access points provides secure wired and wireless access for organizations with employees who work from home.

Product Overview

The Cisco® Aironet® 1815t Series Access Points (Figure 1) offer a highly secure enterprise wired and wireless connection to the home, micro-branch, or any type of remote sites. No longer will geography or the elements play a role in delaying productivity, as the 1815t Series extends the corporate network to teleworkers, mobile workers, and even micro-sites. The access points connect to the home or on-site broadband Internet access and establish a highly secure tunnel to the corporate network. This tunnel allows remote employees access to data, voice, video, and cloud services for a network experience consistent with that at the corporate office. The 1815t Series supports highly secure access to corporate data and personal connectivity for teleworkers' home devices, with segmented home traffic.

Figure 1. Cisco Aironet 1815t Series Access Points

Features and Benefits

The Cisco Aironet 1815t Series helps improve workforce productivity, business resiliency, and job flexibility while reducing travel costs and carbon emissions. The 1815t Series targets commercial, enterprise, and service provider networks across all industries. Employees who need reliable and consistent access to networked business services at home, and micro-branches where remote workers require the same network connectivity as at the corporate site, are both excellent candidates for the 1815t Series.

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 work, but should enable a high-performance experience. The 1815t Series 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).
Real-time service extender	Extends real-time services such as voice, wireless, video, and data to remote locations that have no IT staff. No longer will geography or climate be the reason for lost work hours. Working at home is now like being at the office.
Robust security	Using the same profile as at the corporate office, the Aironet 1815t Series establishes a secure Datagram Transport Layer Security (DTLS) connection between the access point and the controller to offer remote WLAN connectivity.
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.

Increased Wireless Performance

The Aironet 1815t Series 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 1815t Series allows wired access via a single RJ-45 10/100/1000 auto detection port. The access points come with three local Gigabit Ethernet ports and one uplink Gigabit Ethernet port, allowing for a variety of connections.

Mounting

The 1815t Series can be configured at the corporate office and shipped, for a simple install at the remote office. The integrated antennas optimize wireless coverage when resting on a desk.

Product Specifications

Table 1 lists the specifications for the Cisco Aironet 1815t Series Access Points. 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 8.5 or later
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
Ethernet ports	• Authentication with 802.1X or MAC filtered • Dynamic VLAN or per port • Traffic locally switched or tunneled back to wireless LAN controller

Item	Specification							
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
	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

Item	Specification							
	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.								
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							

Item	Specification
Interfaces	• 1 x 10/100/1000BASE-T autosensing (RJ-45) • Three 10/100/1000BASE-T ports (local Ethernet ports), including one PoE out port: ◦ PoE out provides 802.3af when access point is powered by Cisco local power supply (AIR-PWR-D=)
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): 6 x 4 x 1.5 in (152.4 x 101.6 x 37.7mm)
Weight	• Access point without mounting bracket or any other accessories: 13 oz (365 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	• 512 MB DRAM • 128 MB flash • 710 MHz quad-core
Input power requirements	• 44 to 52V DC
Power draw	• 8.5W (no PoE out and no USB)
PoE output	• 802.3af: 15.4W at port
Physical security	• Kensington lock slot
Accessories	• Physical security kit: AIR-SEC-50= (sold separately), with 50 pcs. security screws used to secure the access point onto wall-mounting bracket, 50 pcs. RJ-45 caps and 2 pcs. unlock keys used to block physical access to Ethernet ports
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 ◦ 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

Item	Specification
	• 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 (1815t)					
		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
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

Transmit Power and Receive Sensitivity (1815t)					
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 1815t Series Access Points. 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 1815t Series	• AIR-AP1815t-x-K9: Dual-band, controller-based 802.11a/g/n/ac, Wave 2 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 1815t 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 is defect-free for 90 days. For more details, visit: http://www.cisco.com/go/warranty.

Find warranty information on Cisco.com at the Product Warranties page.

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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

Item	Specification							
	1	2	26	54	117	28.9	60	130
	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 • Physical security kit: AIR-SEC-50= (sold separately), with 50 pcs. security screws used to secure the access point onto wall-mounting bracket, 20 pcs. RJ-45 caps and 2 pcs. unlock keys used to block physical access to Ethernet ports	
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	

Item	Specification
	• Radio approvals: ◦ FCC Part 15.247, 15.407 ◦ 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

Transmit Power and Receive Sensitivity (1815w)					
MSC7	1	20	-75	16	-75
MSC8	2	20	-90	20	-90
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.

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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 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.

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For more details, visit: https://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: https://www.cisco.com/go/warranty.

Find warranty information on Cisco.com at the Product Warranties page.

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