

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
ми-мімо	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 8.3 MR1 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	n								
Ethernet ports	Dynamic	VLAN or pe	02.1X or MAC fi er port ed or tunneled ba		AN controller					
Bluetooth (future availability)	Maximum	 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	on						
	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 regula	tory domain 2.462 GHz; 5.320 GHz; 5.5600 to 5. 5.825 GHz; tory domain 2.462 GHz; 5.320 GHz; 5.720 GHz; 5.825 GHz; tory domain 2.472 GHz; 5.825 GHz; tory domain 2.462 GHz; 5.825 GHz; tory domain 2.472 GHz; 5.320 GHz; 5.320 GHz; 5.320 GHz; 5.320 GHz; 5.500 GHz; 5.500 to 5. tory domain 2.472 GHz; 5.600 to 5. tory domain 2.472 GHz; 5.805 GHz; tory domain 2.472 GHz; 5.805 GHz; tory domain 2.472 GHz; 5.805 GHz; tory domain 2.472 GHz; 5.865 GHz; tory domain	11 channels 8 channels 8 channels 8 channels 640 GHz) 5 channels 11 channels 12 channels 12 channels 5 channels 5 channels 13 channels 5 channels 13 channels 8 channels 14 channels 8 channels 15 channels 16 channels 17 channels 18 channels 18 channels 18 channels 19 channels 19 channels 10 channels 11 channels 12 channels 13 channels 13 channels 14 channels 15 channels 16 channels 17 channels 18 channels 19 channels 19 channels 19 channels 19 channels 19 channels	360	K (K regulator 2.412 to 2. 5.180 to 5. 5.500 to 5. 5.745 to 5. N (N regulator 2.412 to 2. 5.180 to 5. 5.745 to 5. Q (Q regulator 2.412 to 2. 5.180 to 5. 5.500 to 5. R (R regulator 2.412 to 2. 5.180 to 5. 5.660 to 5. 5.745 to 5. S (S regulator 2.412 to 2. 5.180 to 5. T (T regulator 2.412 to 2. 5.500 to 5. 5.500 to 5. 5.500 to 5. 6.5745 to 5. T (T regulator 2.412 to 2. 5.280 to 5. 5.280 to 5. 6.5200 to 5. 6.5200 to 5. 6.5200 to 5.	472 GHz; 13 ch 320 GHz; 8 cha 620 GHz; 7 cha 805 GHz; 7 cha 805 GHz; 4 cha ry domain): 462 GHz; 11 ch 320 GHz; 8 cha 825 GHz; 5 cha ry domain): 472 GHz; 13 ch 320 GHz; 8 cha 700 GHz; 11 ch 700 GHz; 13 cha 805 GHz; 4 cha ry domain): 472 GHz; 13 ch 320 GHz; 8 cha 700 GHz; 11 ch 825 GHz; 5 cha ry domain): 472 GHz; 13 ch 320 GHz; 3 cha 700 GHz; 11 ch 825 GHz; 5 cha ry domain): 462 GHz; 11 ch 320 GHz; 3 cha 700 GHz; 3 cha 700 GHz; 3 cha 700 GHz; 5 cha ry domain): 462 GHz; 11 ch 320 GHz; 8 cha 700 GHz; 5 cha 700 GHz; 8 cha	annels nnels nnels nnels nnels annels nnels annels	866.7
	 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 				2.412 to 2.5.180 to 5.5.500 to 5.(excludes 8)	462 GHz; 11 ch 320 GHz; 8 cha 700 GHz; 8 cha 5.600 to 5.640 C 825 GHz; 5 cha	nnels nnels GHz)	
Note: This varies by regu	latory domain	. Refer to the	product docum	entation for spe	cific details for e	ach 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 pow specific details.	er setting will vary by channel and according to individual coun	try regulations. Refer to the product documentation for			
Integrated antennas	2.4 GHz, gain 2 dBi5 GHz, gain 4 dBi				
Interfaces	1 x 10/100/1000BASE-T autosensing (RJ-45), Power over Management console port (RJ-45)	er Ethernet (PoE)			
Indicators	Status LED indicates boot loader status, association statuerrors	us, operating status, boot loader warnings, boot loader			
Dimensions (W x L x H)	Access point (without mounting bracket): 6 x 6 x 1.3 in (1)	50.8 x 150.8 x 33 mm)			
Weight	Access point without mounting bracket or any other acce	ssories: 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
	Olivinia (Canada) Olivinia (Canada)
	VCCI (Japan)
	 EN 301.489-1 and -17 (Europe)
	∘ EN 50385
	IEEE standards:
	∘ IEEE 802.11a/b/g, 802.11n, 802.11d
	∘ IEEE 802.11ac
	Security:
	。 802.11i, WPA2, WPA
	∘ 802.1X
	• AES
	Extensible Authentication Protocol (EAP) types: The Table Au
	• 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 FAR Fig. 114 A # # # # # # # # # # # # # # # # # #
	• EAP-Flexible Authentication via Secure Tunneling (FAST)
	PEAP v1 or EAP-Generic Token Card (GTC) FAP Cub and by a lideration Markets (CIM)
	EAP-Subscriber Identity Module (SIM) Multimodia:
	Multimedia: Multimedia (MMMM)
	Wi-Fi Multimedia (WMM)
	Other: FOO Bulletin OFT CFC
	• 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.

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	

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

		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		
302.11n HT20	<u>'</u>	20	-70	10	-10		
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		
MSC12	2	20	-72	16	-79		
802.11n HT40	2	20	-12	16	-12		
	4			00	00		
MSC0	1			20	-90		
MSC4	1			18	-79		
MSC7	1			16	-72		
MSC8	2			20	-87		
WSC12	2			18	-76		
MSC15	2			16	-69		
302.11ac 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		
302.11ac 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		
ASC9	2			15	-63		
802.11ac VHT80	-			.0			
MSC0	1			20	-87		
MSC4	1			18	-0 <i>1</i> -77		
MSC7	1			16	-69		
MSC8 MSC9	1			15 15	-65 -63		

Transmit Power an	d Receive Sensitivity (1815	ii)					
			2.4-GHz Radio	5-GHz Radio	5-GHz Radio		
	Spatial Streams	Total TX Power (dBm)	RX Sensitivity (dBm)	Total TX Power (dBm)	RX Sensitivity (dBm)		
/ISC0	2			20	-84		
ISC4	2			18	-74		
ISC7	2			16	-66		
MSC8	2			15	-62		
ISC9	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 <u>Cisco Ordering homepage</u>. To download software, visit the <u>Cisco Software Center</u>.

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

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- AS-WLAN-CNSLT: <u>Cisco Wireless LAN Performance and Security Assessment Service</u>

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 http://www.cisco.com/c/en/us/products/wireless/aironet-1815i-series-access-points/index.html.



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