Cisco Aironet 1810W Series Access Points

With their sleek design and small form factor, the Cisco Aironet 1810W Series Access Points bring a full slate of Cisco high-performance functionality to multi-dwelling-unit deployments.

Product Overview

The Cisco® Aironet® 1810W Series Access Points offer a compact, wall plate–mountable access point, ideal for hospitality, cruise ships, residential halls or other multi-dwelling-unit deployments. The Aironet 1810W Series combines Gigabit Ethernet wired and 802.11ac Wave 2 wireless connectivity into a sleek device, built to take advantage of existing cabling infrastructure. This combination reduces total cost of ownership with no compromise to the end user.

Features and Benefits

With 802.11ac Wave 2, the 1810W Series provides a data rate of up to 867 Mbps on the 5-GHz radio, exceeding the data rates offered by today's high-end 802.11n access points. It also enables wired devices to connect to the network without the need for additional investments in cabling infrastructure.

The 1810W Series delivers industry-leading performance for highly secure and reliable wired or wireless connections and provides a robust mobility experience. Table 1 lists the features and benefits of these access points.

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. 802.11ac Wave 2 with 2x2 MIMO technology with two spatial streams when operating in single-user or multiuser MIMO mode, offering 867-Mbps rates for more capacity and reliability than competing access points.
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.

Feature	Benefit
Integrated Bluetooth 4.1	Integrated Bluetooth low-energy (BLE) 4.1 radio for location and asset tracking (future availability).
Multiple mounting and security options	Multiple mounting options to standard junction boxes. You can vertically mount the access point directly on a wall or desk using the optional sleek desk cradle. Physical security is offered with the included Torx screw and the option to add a Kensington lock. Place your access point where you see fit, secure in the knowledge that it isn't going anywhere.

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

Prominent Feature/Differentiator/Capability

The Aironet 1810W 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, this access point can handle the increasing number of high-bandwidth devices that will soon become a normal part of the network.

The 1810W Series allows wired access via Power over Ethernet (PoE). This feature provides wired access with PoE out for other devices such as IP phones, security cameras, printers and copiers. In addition to standard PoE, the access point can be powered with an AC adapter. The 1810W Series 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.

These sleek access points with a small form factor are designed with flexible mounting options in mind. You can mount them directly on the wall or to numerous global wall junction standards or have them desk mounted. They are also easy to install.

Product Specifications

Table 2 lists the specifications for the Cisco Aironet 1810W Series Access Points.

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) • 802.11i
Software	• Cisco Unified Wireless Network Software with AireOS Wireless Controllers Release 8.2.111.0 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							
Bluetooth (future availability)	• Integrated Bluetooth 4.1 (including BLE) radio • Maximum transmit power: 5 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
	2	2	39	81	175.5	43.3	90	195
	3	2	52	108	234	57.8	120	260

Item	Specification							
	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 5.825 GHz; 5 channels **H (H regulatory domain):** • 2.412 to 2.472 GHz; 13 channels • 5.150 to 5.350 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 • 5.745 to 5.825 GHz; 5 channels **R (R regulatory domain):** • 2.412 to 2.472 GHz; 13 channels • 5.180 to 5.320 GHz; 8 channels • 5.660 to 5.805 GHz; 7 channels **S (S regulatory domain):** • 2.412 to 2.472 GHz; 13 channels • 5.180 to 5.320 GHz; 8 channels • 5.500 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.		

Receive sensitivity (combined sensitivity)	**802.11b** -99 dBm @ 1 Mbps -96 dBm @ 2 Mbps -93 dBm @ 5.5 Mbps -86 dBm @ 11 Mbps	**802.11g** -94 dBm @ 6 Mbps -93 dBm @ 9 Mbps -92 dBm @ 12 Mbps -90 dBm @ 18 Mbps -86 dBm @ 24 Mbps -83 dBm @ 36 Mbps -78 dBm @ 48 Mbps -77 dBm @ 54 Mbps	**802.11a** -94 dBm @ 6 Mbps -93 dBm @ 9 Mbps -91 dBm @ 12 Mbps -89 dBm @ 18 Mbps -86 dBm @ 24 Mbps -83 dBm @ 36 Mbps -78 dBm @ 48 Mbps -76 dBm @ 54 Mbps

<table>
<tr><th>Item</th><th colspan="8">Specification</th></tr>
<tr><td></td><td colspan="2">2.4 GHz
802.11n (HT20)
-93 dBm @ MCS0
-90 dBm @ MCS1
-88 dBm @ MCS2
-84 dBm @ MCS3
-81 dBm @ MCS4
-76 dBm @ MCS5
-75 dBm @ MCS6
-74 dBm @ MCS7
-92 dBm @ MCS8
-89 dBm @ MCS9
-87 dBm @ MCS10
-83 dBm @ MCS11
-79 dBm @ MCS12
-76 dBm @ MCS13
-74 dBm @ MCS14
-73 dBm @ MCS15</td><td colspan="3">5 GHz
802.11n (HT20)
-93 dBm @ MCS0
-90 dBm @ MCS1
-88 dBm @ MCS2
-84 dBm @ MCS3
-81 dBm @ MCS4
-76 dBm @ MCS5
-75 dBm @ MCS6
-73 dBm @ MCS7
-92 dBm @ MCS8
-89 dBm @ MCS9
-86 dBm @ MCS10
-83 dBm @ MCS11
-80 dBm @ MCS12
-75 dBm @ MCS13
-74 dBm @ MCS14
-73 dBm @ MCS15</td><td colspan="3">5 GHz
802.11n (HT40)
-90 dBm @ MCS0
-87 dBm @ MCS1
-85 dBm @ MCS2
-81 dBm @ MCS3
-78 dBm @ MCS4
-74 dBm @ MCS5
-72 dBm @ MCS6
-71 dBm @ MCS7
-90 dBm @ MCS8
-86 dBm @ MCS9
-84 dBm @ MCS10
-81 dBm @ MCS11
-78 dBm @ MCS12
-73 dBm @ MCS13
-72 dBm @ MCS14
-70 dBm @ MCS15</td></tr>
<tr><td></td><td colspan="8">802.11ac (non HT80)
-88 dBm @ 6 Mbps
-70 dBm @ 54 Mbps</td></tr>
<tr><td></td><td colspan="8"><table>
<tr><th>MCS Index</th><th>Spatial Streams</th><th>VHT20</th><th>VHT40</th><th>VHT80</th><th>VHT20-STBC</th><th>VHT40-STBC</th><th>VHT80-STBC</th></tr>
<tr><td>0</td><td>1</td><td>-93 dBm</td><td>-90 dBm</td><td>-87 dBm</td><td>-95 dBm</td><td>-93 dBm</td><td>-90 dBm</td></tr>
<tr><td>8</td><td>1</td><td>-69 dBm</td><td></td><td></td><td>-72 dBm</td><td>-68 dBm</td><td>-65 dBm</td></tr>
<tr><td>9</td><td>1</td><td></td><td>-64 dBm</td><td>-61 dBm</td><td></td><td></td><td></td></tr>
<tr><td>0</td><td>2</td><td>-92 dBm</td><td>-89 dBm</td><td>-86 dBm</td><td></td><td></td><td></td></tr>
<tr><td>8</td><td>2</td><td>-68 dBm</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>9</td><td>2</td><td></td><td>-63 dBm</td><td>-60 dBm</td><td></td><td></td><td></td></tr>
</table></td></tr>
<tr><td>Maximum transmit power</td><td colspan="3">2.4 GHz
802.11b
17 dBm with 1 antenna
802.11g
20 dBm with 2 antennas
802.11n (HT20)
20 dBm with 2 antennas</td><td colspan="6">5 GHz
802.11a
17 dBm with 1 antenna
802.11n non-HT duplicate mode
20 dBm with 2 antennas
802.11n (HT20)
20 dBm with 2 antennas
802.11n (HT40)
20 dBm with 2 antennas
802.11ac
Non-HT80: 20 dBm with 2 antennas
VHT20: 20 dBm with 2 antennas
VHT40: 20 dBm with 2 antennas
VHT80: 20 dBm, 2 antennas
VHT20-STBC: 20 dBm with 2 antennas
VHT40-STBC: 20 dBm with 2 antennas
VHT80-STBC: 20 dBm with 2 antennas</td></tr>
<tr><td colspan="9">Note: The maximum power setting will vary by channel and according to individual country regulations. Refer to the product documentation for specific details.</td></tr>
</table>

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	• One 10/100/1000BASE-T PoE uplink port • Management console port (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-C=, AIR-PWR-D=), or ~6.5W when powered by 802.3at, or no output when powered by 802.3af • One passive pass-through port RJ-45 (back to bottom) • DC power connector	
Indicators	• Status LED indicates boot loader status, association status, operating status, boot loader warnings, boot loader errors • Per-port status for local Ethernet ports • For privacy, LEDs are automatically turned off when the access point joins a controller. LEDs may be enabled to be administratively - see configuration guide.	
Dimensions (W x L x H)	• Access point (without mounting bracket): 6.5 x 4.5 x 1.6 in. (165 x 114 x 41 mm)	
Weight	• Access point without mounting bracket or any other accessories: 1.2 lb (560 g)	
Environmental	• Nonoperating (storage) temperature: -22° to 158°F (-30° to 70°C) • Nonoperating (storage) maximum altitude: 25°C, 15,000 ft (4,500m) • Operating temperature: 32° to 104°F (0° to 40°C) • Operating humidity: 10% to 90% percent (noncondensing) • Operating maximum altitude: 40°C, 9843 ft (3,000m)	
System	• 512 MB DRAM • 256 MB flash • 1.4 GHz system dual-core CPU	
Input power requirements	• 44 to 57V DC • Optional power supply and power injector: 100 to 240V AC; 49 to 60 Hz	
Powering options	• 802.3af/at Ethernet switch • Optional Cisco power injectors (AIR-PWRINJ5=, AIR-PWRINJ6=) • Optional Cisco local power supply (AIR-PWR-C= or AIR-PWR-D=)	
Power draw	• Maximum values: 12.95W (15.4W with 100m of cable) with no PoE out, 20.7W (22W with 100m of cable) with 6.49W PoE out and 27.65W with 12.95W PoE out (when powered using AIR-PWR-C or AIR-PWR-D) **Note:** When deployed using PoE, the power draw numbers listed above include the power loss in 100m of cabling on the uplink port and 100m of cabling on the PoE out port.	
Physical security	• Torx security screw, included with the access point • Kensington security slot	
Mounting	• Included with the access point: mounting bracket AIR-AP-BRACKET-W2, compatible to install to single gang junction box or multiple international standards • Optional: ◦ AIR-AP1810W-KIT=, spacer kit to mount the access point directly on a wall where standard junction boxes are not available ◦ AIR-OEAP1810-CRD=, cradle kit to mount the access point on a desk	

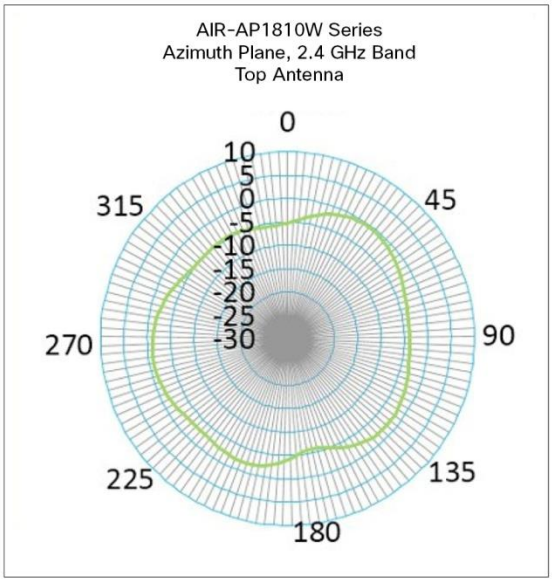
Item	Specification
Accessories	• Mounting bracket: AIR-AP-BRACKET-W2= (available as spare) • Spacer kit: AIR-AP1810W-KIT= (sold separately), includes spacer and RJ-45 jumper cable • Cradle kit: AIR-OEAP1810-CRD= (sold separately), includes back cover and RJ-45 jumper cable • Physical security kit: AIR-SEC-50= (sold separately), with 50 pcs. security screws used to secure the access point onto wall-mounting bracket, 50 pcs. RJ-45 caps and 2 pcs. unlock keys used to block physical access to Ethernet ports • Cisco local power supply: AIR-PWR-D= (sold separately)
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) • IEEE standards: ◦ IEEE 802.11a/b/g, 802.11n, 802.11h, 802.11d ◦ IEEE 802.11ac Draft 5 • 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

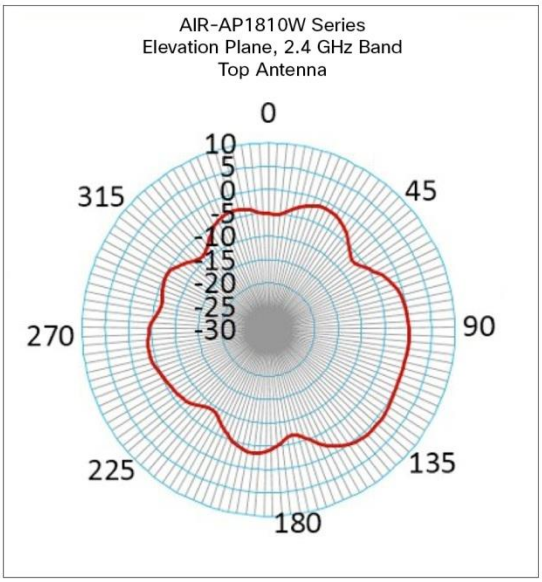
[1] MCS Index: The Modulation and Coding Scheme (MCS) index determines the number of spatial streams, the modulation, the coding rate and data rate values.

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

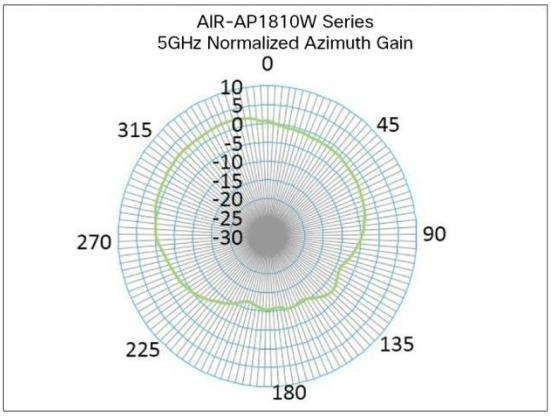
Antenna Radiation Patterns

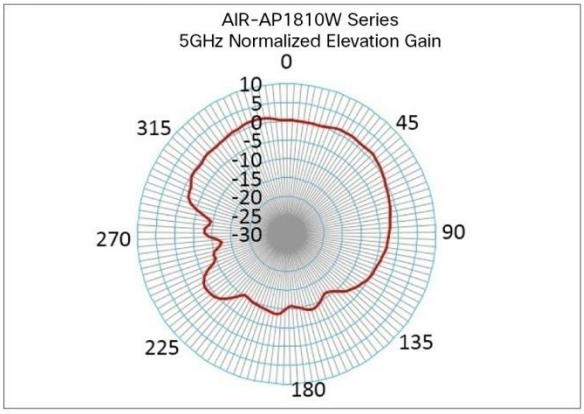
2.4 GHz Normalized Antenna Radiation Pattern for Both Antennas





5 GHz Normalized Antenna Radiation Pattern for Both Antennas





Ordering Information

Table 3 provides ordering information for the Cisco Aironet 1800W 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 1810W Series	• AIR-AP1810W-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.

Cisco Wireless LAN Services

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

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 1810W 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.

Cisco Capital

Financing to Help You Achieve Your Objectives

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.

For More Information

For more information about the Cisco Aironet 1810W Series Access Point, visit http://www.cisco.com/c/en/us/products/wireless/aironet-1810w-series-access-points/index.html.

Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV Amsterdam,
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

Printed in USA C78-736869-02 08/16