Cisco Aironet 1700 Series Access Points

Product Overview

If you operate a small or medium-sized enterprise network, deploy the Cisco® Aironet® 1700 Access Point for the latest 802.11ac Wi-Fi technology at an attractive price. The Aironet 1700 Series meets the growing requirements of wireless networks by delivering better performance than 802.11n and providing key RF management features for improved wireless experiences.

The 1700 series supports 802.11ac Wave 1 standard capabilities. That includes a theoretical connection rate of up to 867 Mbps. The added throughput lets you stay ahead of growing bandwidth requirements as:

More wireless clients associate with the network

Users tap into bandwidth-heavy multimedia applications

Mobile workers increasingly use multiple Wi-Fi devices

Features and Benefits

Building on the Cisco Aironet heritage of RF excellence, the 1700 Series APs run on a purpose-built, innovative chipset with a best-in-   p, 802.11ac-enabled Aironet Series Access Points that deliver robust mobility experiences.

Table 1 describes several of the 1700 AP features and benefits.

Table 1.   Primary Capabilities and How You Benefit

Feature	Description/Benefit(s)
802.11ac Wave 1 support with 3x3 MIMO and two spatial streams	Delivers higher rates over a greater range for more capacity and reliability than competing APs. Provides bandwidth up to three times more than 802.11n networks
Cisco CleanAir® Express Spectrum Intelligence	Detects RF interference and provides basic spectrum analysis capabilities while simplifying ongoing operations across 20-, 40-, and 80-MHz-wide channels
Optimized AP Roaming	Directs client devices to associate with the AP in their coverage range offering the fastest data rate available
Multiple input, multiple output (MIMO) equalization	Boosts uplink performance and reliability by reducing the impact of signal fade

Product Specifications

Table 2 lists the specifications for the Cisco Aironet 1700 Series Access Points.

Table 2.   Product Specifications

Item	Specification
Part numbers	**Cisco Aironet 1700i Access Point: Indoor environments, with internal antennas** AIR-CAP1702I-**x**-K9: Dual-band, controller-based 802.11a/g/n/ac AIR-CAP1702I-**x**K910: Eco-pack (dual-band 802.11a/g/n/ac) 10 quantity access points **Cisco SMARTnet® Service for the Cisco Aironet 1700i Access Point with internal antennas** CON-SNT-C172Ix: SMARTnet 8x5xNBD for 1700i access point (dual-band 802.11a/g/n/ac) CON-SNT-C172Ix10: SMARTnet 8x5xNBD for 10-quantity eco-pack 1700i access point (dual-band 802.11a/g/n/ac) **Regulatory domains: (x = regulatory domain)** Customers are responsible for verifying approval for use in their individual countries. To verify approval and to identify the regulatory domain that corresponds to a particular 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** 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
Software	Cisco Unified Wireless Network Software Release 8.0 or later
Supported wireless LAN controllers	Cisco 2500 Series Wireless Controllers, Cisco Wireless Controller Module for ISR G2, Cisco Wireless Services Module 2 (WiSM2) for Catalyst® 6500 Series Switches, Cisco 5500 Series Wireless Controllers, Cisco Flex® 7500 Series Wireless Controllers, Cisco 8500 Series Wireless Controllers, Cisco Virtual Wireless Controller; Cisco 5760 Wireless LAN Controller, Cisco Catalyst 3850 Series Switches, Cisco Catalyst 3650 Series Switches
802.11n version 2.0 (and related) capabilities	3x3 MIMO with two spatial streams Maximal ratio combining (MRC) 802.11n and 802.11a/g beamforming 20- and 40-MHz channels PHY data rates up to 300 Mbps (40 MHz with 5 GHz) Packet aggregation: A-MPDU (Tx/Rx), A-MSDU (Tx/Rx) 802.11 Dynamic Frequency Selection (DFS) Cyclic shift diversity (CSD) support
802.11ac Wave 1 capabilities	3x3 MIMO with two spatial streams MRC 802.11ac-standard explicit beamforming 20-, 40-, and 80-MHz channels PHY data rates up to 867 Mbps (80 MHz in 5 GHz) Packet aggregation: A-MPDU (Tx/Rx), A-MSDU (Tx/Rx) 802.11 DFS CSD support

Item	Specification						
Data rates supported	**802.11a: 6, 9, 12, 18, 24, 36, 48, and 54 Mbps**						
	802.11g: 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 (5 GHz):						
	MCS Index[3]	**Spatial Streams**	**GI[4] = 800ns**			**GI = 400ns**		
			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

[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] GI: A guard interval (GI) between symbols helps receivers overcome the effects of multipath delays.
[3] MCS Index: The Modulation and Coding Scheme (MCS) index determines the number of spatial streams, the modulation, the coding rate, and data rate values.
[4] GI: A guard interval (GI) between symbols helps receivers overcome the effects of multipath delays.

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

| Frequency band and 20-MHz operating 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 **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 **H (H regulatory domain):** 2.412 to 2.472 GHz; 13 channels; 5.180 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; 5.500 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 5.805 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: Customers are responsible for verifying approval for use in their individual countries. To verify approval and to identify the regulatory domain that corresponds to a particular country, visit http://www.cisco.com/go/aironet/compliance.

| Maximum number of nonoverlapping channels | **2.4 GHz** 802.11b/g: ◦ 20 MHz: 3 802.11n: ◦ 20 MHz: 3 | **5 GHz** 802.11a: ◦ 20 MHz: 24 802.11n: ◦ 20 MHz: 24 ◦ 40 MHz: 11 802.11ac: ◦ 20 MHz: 24 ◦ 40 MHz: 11 ◦ 80 MHz: 5 |

Note: This varies by regulatory domain. Refer to the product documentation for specific details for each regulatory domain.

Item	Specification		
Receive sensitivity	802.11b (CCK) ◦ -101 dBm @ 1 Mbps ◦ -99 dBm @ 2 Mbps ◦ -93 dBm @ 5.5 Mbps ◦ -90 dBm @ 11 Mbps	802.11g (non HT20) ◦ -93 dBm @ 6 Mbps ◦ -92 dBm @ 9 Mbps ◦ -92 dBm @ 12 Mbps ◦ -91 dBm @ 18 Mbps ◦ -88 dBm @ 24 Mbps ◦ -85 dBm @ 36 Mbps ◦ -80 dBm @ 48 Mbps ◦ -79 dBm @ 54 Mbps	802.11a (non HT20) ◦ -93 dBm @ 6 Mbps ◦ -92 dBm @ 9 Mbps ◦ -92 dBm @ 12 Mbps ◦ -91 dBm @ 18 Mbps ◦ -88 dBm @ 24 Mbps ◦ -85 dBm @ 36 Mbps ◦ -80 dBm @ 48 Mbps ◦ -79 dBm @ 54 Mbps
	2.4 GHz 802.11n (HT20) ◦ -93 dBm @ MCS0 ◦ -92 dBm @ MCS1 ◦ -90 dBm @ MCS2 ◦ -87 dBm @ MCS3 ◦ -84 dBm @ MCS4 ◦ -79 dBm @ MCS5 ◦ -78 dBm @ MCS6 ◦ -77 dBm @ MCS7 ◦ -92 dBm @ MCS8 ◦ -90 dBm @ MCS9 ◦ -88 dBm @ MCS10 ◦ -85 dBm @ MCS11 ◦ -82 dBm @ MCS12 ◦ -78 dBm @ MCS13 ◦ -76 dBm @ MCS14 ◦ -75 dBm @ MCS15		5 GHz 802.11n (HT20) ◦ -93 dBm @ MCS0 ◦ -92 dBm @ MCS1 ◦ -90 dBm @ MCS2 ◦ -87 dBm @ MCS3 ◦ -84 dBm @ MCS4 ◦ -80 dBm @ MCS5 ◦ -78 dBm @ MCS6 ◦ -77 dBm @ MCS7 ◦ -92 dBm @ MCS8 ◦ -90 dBm @ MCS9 ◦ -88 dBm @ MCS10 ◦ -85 dBm @ MCS11 ◦ -82 dBm @ MCS12 ◦ -77 dBm @ MCS13 ◦ -76 dBm @ MCS14 ◦ -74 dBm @ MCS15	5 GHz 802.11n (HT40) ◦ -90 dBm @ MCS0 ◦ -88 dBm @ MCS1 ◦ -87 dBm @ MCS2 ◦ -84 dBm @ MCS3 ◦ -81 dBm @ MCS4 ◦ -76 dBm @ MCS5 ◦ -75 dBm @ MCS6 ◦ -74 dBm @ MCS7 ◦ -89 dBm @ MCS8 ◦ -87 dBm @ MCS9 ◦ -85 dBm @ MCS10 ◦ -82 dBm @ MCS11 ◦ -78 dBm @ MCS12 ◦ -74 dBm @ MCS13 ◦ -73 dBm @ MCS14 ◦ -71 dBm @ MCS15

802.11ac Receive Sensitivity

802.11ac (non HT80)
-86 dBm @ 6 Mbps
-74 dBm @ 54 Mbps

MCS Index[5]	Spatial Streams	VHT20	VHT40	VHT80	VTH20-STBC	VHT40-STBC	VHT80-STBC
0	1	-92 dBm	-89 dBm	-85 dBm	-92 dBm	-89 dBm	-85 dBm
8	1	-73 dBm			-73 dBm		
9	1		-68 dBm	-65 dBm		-68 dBm	-65 dBm
0	2	-91 dBm	-87 dBm	-84 dBm			
8	2	-71 dBm					
9	2		-66 dBm	-62 dBm			

Item	Specification	
Maximum transmit power	2.4 GHz 802.11b ◦ 22 dBm, 3 antennas 802.11g ◦ 22 dBm, 3 antennas 802.11n (HT20) ◦ 22 dBm, 3 antennas	5 GHz 802.11a ◦ 22 dBm, 3 antennas 802.11n (HT20) ◦ 22 dBm, 3 antennas 802.11n (HT40) ◦ 22 dBm, 3 antennas 802.11ac ◦ non-HT80: 22 dBm, 3 antennas ◦ VHT20 22 dBm, 3 antennas ◦ VHT40: 22 dBm, 3 antennas

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

Item

Item	Specification
	◦ 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 60601-1-2 EMC requirements for the Medical Directive 93/42/EEC
	IEEE standards:
	◦ IEEE 802.11a/b/g, 802.11n, 802.11h, 802.11d
	◦ IEEE 802.11ac Draft 5
	Security:
	◦ 802.11i, Wi-Fi Protected Access 2 (WPA2), WPA
	◦ 802.1X
	◦ Advanced Encryption Standards (AES), Temporal Key Integrity Protocol (TKIP)
	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

Limited Lifetime Hardware Warranty

The Cisco Aironet 1700 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 makes sure that software media are defect-free for 90 days. For more details, visit http://www.cisco.com/go/warranty.

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 fosters rich media collaboration. At the same time, you can improve 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. Then, we help you continuously optimize the performance, reliability, and security of that architecture after deployment. For more details, visit http://www.cisco.com/go/wirelesslanservices.

Ordering Information

To place an order, visit the Cisco Ordering Home Page. To download software, visit the Cisco Software Center.

Table 3. Ordering Information

Product Name/Description	Part Number
Cisco Aironet 1702i access point; dual-band, controller-based 802.11a/g/n/ac (individual)	AIR-CAP1702I-x-K9
Cisco Aironet 1702i access point; dual-band, controller-based 802.11a/g/n/ac ecopack (10-quantity)	AIR-CAP1702I-xK910