Cisco Aironet 1250 Series Access Point

Performance with Investment Protection

- Up to nine times faster than 802.11a/g networks
- Backward-compatible with 802.11a/b/g clients
- M-Drive technology optimizes RF

Flexible Platform

- Versatile RF coverage with external antennas
- Supports both 2.4-GHZ and 5-GHz modules

Rugged Metal Housing and Extended Operating Temperature

- Ideal for factories, warehouses, and other industrial environments
- UL 2043 plenum rated for above ceiling installation options or suspended from drop ceilings

Secure Interoperability

- 802.11n compliant
- Intel Connect with Centrino Certified

Simplified Network Management

- Controller-based or standalone deployment options
- CleanAir* technology reduces troubleshooting and performance impacts

Secure Connections

- Supports rogue access point detection and denial of service attacks
- Management frame protection detects malicious users and alerts network administrators

Greater Network Capacity

- Dynamic frequency selection 2 (DFS-2) compliant

The Cisco® Aironet® 1250 Series is an enterprise-class 802.11n access point designed for challenging RF environments. A dual-band rugged indoor access point, the 1250 Series supports data rates of up to 600 Mbps to provide users with reliable and predictable coverage for high-bandwidth data, voice, and video applications.

As part of the Cisco Unified Wireless Network, the 1250 Series provides the industry's lowest total cost of ownership and investment protection by integrating seamlessly with the existing network.

RF Excellence

The Cisco Unified Wireless Network with M-Drive technology removes the mystery associated with design, implementation, and ongoing optimization of enterprise wireless networks. With Cisco M-Drive technology, IT has the tools needed to build and operate a high-performance wireless network without the need for extensive RF engineering skills. Cisco M-Drive technology is a systemwide approach that manages the corporate RF spectrum, improves wireless coverage, and increases system capacity and performance. Features include:

- Radio resource management (RRM): Automated self-healing optimizes RF to reduce unpredictability and dead spots and to help ensure high-availability client connections. RRM optimizes network capacity and mitigates interference by continuously monitoring and adjusting access point power and channel settings and then load balancing clients to enhance wireless coverage.

- CleanAir technology: Only Cisco offers a comprehensive solution to detect, classify, locate, and mitigate sources of interference, including non-Wi-Fi sources such as Bluetooth, microwave ovens, cordless phones, and more. With the ability to visualize performance-impacting interference directly from the Cisco Wireless Control System (WCS), you can proactively manage the challenges of a shared wireless spectrum and optimize network performance.

Power Options

With a Gigabit Ethernet (10/100/1000) interface, the Cisco Aironet 1250 Series offers the flexibility of inline as well as local power options. The Cisco Aironet 1250 Series Access Point can be powered by a Cisco Ethernet switch, a power injector, or a local power supply. The number of radio modules determines which Cisco Ethernet switch can power the Aironet 1250 Series Access Point.

Powering the Aironet 1250 Series Access Point with 802.3af Power over Ethernet

The Aironet 1250 Series Access Point with one RM1252 radio module installed requires 12.95W, which is within the 802.3af Power over Ethernet (PoE) standard. Any Cisco switch supporting 802.3af may be used to power the Aironet 1250 Series Access Point with one RM1252 radio module installed. This is ideal for businesses that chose to only deploy on a single frequency (2.4 GHz or 5 GHz). A single radio provides optimum performance with approximately 300 Mbps maximum PHY data rate. Customers who deploy dual-band, 802.11n radios and power the 1250 Series using standard 802.3af will have more reliable and predictable coverage than that provided by traditional 802.11a/g networks; however, operation will be limited to a single transmitter per radio with maximum PHY data rates of 150 Mbps instead of 300 Mbps per radio. Customers with a significant investment in 802.11 a/b/g client devices that have low-to-medium bandwidth needs but high-reliability requirements will benefit the most from this type of deployment scenario.

Powering the Aironet 1250 Series Access Point with Cisco Enhanced PoE

Cisco Enhanced PoE was designed for customers who want to install new PoE-enabled technologies that require greater than 15.4W per port to function at full capability, such as wireless technology based on the IEEE 802.11n standard. Cisco Enhanced PoE provides the full power requirements for dual-radio modules and eliminates the need to run an additional cabling drop or insert a separate power injector. Support for Enhanced PoE is currently available on a variety of Cisco Catalyst® switching platforms. For more information on Enhanced PoE, visit http://www.cisco.com/en/US/prod/switches/epoe.html.

Product Specifications

Table 1 lists the product specifications for Cisco Aironet 1250 Series Access Points.

Table 1. Product Specifications for Cisco Aironet 1250 Series Access Points

Item	Specification
Part Numbers	**Access point platform with pre-installed radio modules:** • AIR-AP1252AG-x-K9 802.11a/g/n 2.4/5-GHz Standalone AP; 6 RP-TNC • AIR-AP1252G-x-K9 802.11g/n 2.4-GHz Standalone AP; 3 RP-TNC • AIR-LAP1252AG-x-K9 802.11a/g/n 2.4/5-GHz Unified AP; 6 RP-TNC • AIR-LAP1252G-x-K9 802.11g/n 2.4-GHz Unified AP; 3 RP-TNC **Individual components:** • AIR-AP1250= Standalone AP Platform (no radio modules); Spare • AIR-LAP1250= Unified AP Platform (no radio modules); Spare • AIR-RM1252A-x-K9= 802.11a/n 5-GHz Radio Module; 3 RP-TNC • AIR-RM1252G-x-K9= 802.11g/n 2.4-GHz Radio Module; 3 RP-TNC • AIR-AP1250MNTGKIT= 1250 Series Ceiling, Wall Mount Bracket kit- Spare **Eco-pack:** • AIR-LAP1252-x-K9-5 Eco-pack 802.11a/g/n 2.4/5 GHz Unified AP-5 qty (A, E, N Reg domains only) • AIR-AP1252-N-K9-5 Eco-pack 802.11a/g/n 2.4/5 GHz Standalone AP-5 qty (N Reg domain only)

<table>
<tr><th>Item</th><th>Specification</th></tr>
<tr><td></td><td>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, please visit http://www.cisco.com/go/aironet/compliance.</td></tr>
<tr><td>Software</td><td>• Cisco IOS® Software Release 12.4(21a)JA or later (Standalone Mode).
• Cisco IOS Software Release 12.4(10b)JDD or later (Unified Mode).
• Cisco Unified Wireless Network Software Release 6.0 or later.</td></tr>
<tr><td>Draft 802.11n Version 2.0 (and Related) Capabilities</td><td>• 2x3 MIMO with two spatial streams
• Maximal Ratio Combining (MRC)
• 20-and 40-MHz channels
• PHY data rates up to 300 Mbps
• Packet aggregation: A-MPDU (Tx/Rx), A-MSDU (Tx/Rx)
• 802.11 DFS (Bin 5)
• Cyclic Shift Diversity (CSD) support</td></tr>
<tr><td>Data Rates Supported</td><td>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 (2.4 GHz and 5 GHz):
<table>
<tr><th rowspan="2">MCS Index[1]</th><th colspan="2">GI[2] = 800ns</th><th colspan="2">GI = 400ns</th></tr>
<tr><th>20-MHz Rate (Mbps)</th><th>40-MHz Rate (Mbps)</th><th>20-MHz Rate (Mbps)</th><th>40-MHz Rate (Mbps)</th></tr>
<tr><td>0</td><td>6.5</td><td>13.5</td><td>7.2</td><td>15</td></tr>
<tr><td>1</td><td>13</td><td>27</td><td>14.4</td><td>30</td></tr>
<tr><td>2</td><td>19.5</td><td>40.5</td><td>21.7</td><td>45</td></tr>
<tr><td>3</td><td>26</td><td>54</td><td>28.9</td><td>60</td></tr>
<tr><td>4</td><td>39</td><td>81</td><td>43.3</td><td>90</td></tr>
<tr><td>5</td><td>52</td><td>108</td><td>57.8</td><td>120</td></tr>
<tr><td>6</td><td>58.5</td><td>121.5</td><td>65</td><td>135</td></tr>
<tr><td>7</td><td>65</td><td>135</td><td>72.2</td><td>150</td></tr>
<tr><td>8</td><td>13</td><td>27</td><td>14.4</td><td>30</td></tr>
<tr><td>9</td><td>26</td><td>54</td><td>28.9</td><td>60</td></tr>
<tr><td>10</td><td>39</td><td>81</td><td>43.3</td><td>90</td></tr>
<tr><td>11</td><td>52</td><td>108</td><td>57.8</td><td>120</td></tr>
<tr><td>12</td><td>78</td><td>162</td><td>86.7</td><td>180</td></tr>
<tr><td>13</td><td>104</td><td>216</td><td>115.6</td><td>240</td></tr>
<tr><td>14</td><td>117</td><td>243</td><td>130</td><td>270</td></tr>
<tr><td>15</td><td>130</td><td>270</td><td>144.4</td><td>300</td></tr>
</table></td></tr>
<tr><td>Frequency Band and 20-MHz Operating Channels</td><td>-A (Americas (FCC)):
• 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 (China):
• 2.412 to 2.472 GHz; 13 channels
• 5.745 to 5.825 GHz; 5 channels
-E (ETSI):
• 2.412 to 2.472 GHz; 13 channels
• 5.180 to 5.320 GHz; 8 channels</td><td>-K (Korea):
• 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 (Non-FCC):
• 2.412 to 2.462 GHz; 11 channels
• 5.180 to 5.320 GHz; 8 channels
• 5.745 to 5.825 GHz; 5 channels
-P (Japan2):
• 2.412 to 2.472 GHz; 13 channels
• 5.180 to 5.320 GHz; 8 channels
-S (Singapore):
• 2.412 to 2.472 GHz; 13 channels</td></tr>
</table>

[1] MCS Index: The **M**odulation and **C**oding **S**cheme (MCS) index determines the number of spatial streams, the modulation, the coding rate**,** and data rate values.
[2] GI: A **G**uard **I**nterval **(GI)** between symbols helps receivers overcome the effects of multipath delays.

<table>
<tr><th>Item</th><th colspan="5">Specification</th></tr>
<tr><td></td><td colspan="2">• 5.500 to 5.700 GHz, 11 channels
-I (Middle East)
• 2.412 to 2.472 GHz, 13 channels
• 5.180 to 5.320 GHz; 8 channels</td><td colspan="3">• 5.180 to 5.320 GHz; 8 channels
• 5.745 to 5.825 GHz; 5 channels
-T (Taiwan):
• 2.412 to 2.462 GHz; 11 channels
• 5.280 to 5.320 GHz; 3 channels
• 5.500 to 5.700 GHz, 11 channels
• 5.745 to 5.825 GHz; 5 channels</td></tr>
<tr><td colspan="6">Note: This varies by regulatory domain. Refer to the product documentation for specific details for each regulatory domain.</td></tr>
<tr><td>Maximum Number of Non-Overlapping Channels</td><td colspan="2">2.4 GHz
• 802.11b/g:
◦ 20 MHz: 3
• 802.11n:
◦ 20 MHz: 3
◦ 40 MHz: 1</td><td colspan="3">5 GHz
• 802.11a:
◦ 20 MHz: 21
• 802.11n:
◦ 20 MHz: 21
◦ 40 MHz: 9</td></tr>
<tr><td colspan="6">Note: This varies by regulatory domain. Refer to the product documentation for specific details for each regulatory domain.</td></tr>
<tr><td rowspan="2">Receive Sensitivity</td><td>802.11b
–90 dBm @ 1 Mb/s
–89 dBm @ 2 Mb/s
–87 dBm @ 5.5 Mb/s
–85 dBm @ 11 Mb/s</td><td>802.11g
–87 dBm @ 6 Mb/s
–86 dBm @ 9 Mb/s
–83 dBm @ 12 Mb/s
–82 dBm @ 18 Mb/s
–81 dBm @ 24 Mb/s
–80 dBm @ 36 Mb/s
–75 dBm @ 48 Mb/s
–74 dBm @ 54 Mb/s</td><td colspan="3">802.11a
–86 dBm @ 6 Mb/s
–85 dBm @ 9 Mb/s
–82 dBm @ 12 Mb/s
–81 dBm @ 18 Mb/s
–80 dBm @ 24 Mb/s
–79 dBm @ 36 Mb/s
–74 dBm @ 48 Mb/s
–73 dBm @ 54 Mb/s</td></tr>
<tr><td>2.4-GHz
802.11n (HT20)
–86 dBm @ MC0
–85 dBm @ MC1
–84 dBm @ MC2
–83 dBm @ MC3
–80 dBm @ MC4
–75 dBm @ MC5
–74 dBm @ MC6
–73 dBm @ MC7
–86 dBm @ MC8
–85 dBm @ MC9
–84 dBm @ MC10
–83 dBm @ MC11
–80 dBm @ MC12
–75 dBm @ MC13
–74 dBm @ MC14
–73 dBm @ MC15</td><td>2.4-GHz
802.11n (HT40)
–86 dBm @ MC0
–85 dBm @ MC1
–84 dBm @ MC2
–80 dBm @ MC3
–77 dBm @ MC4
–72 dBm @ MC5
–71 dBm @ MC6
–70 dBm @ MC7
–86 dBm @ MC8
–85 dBm @ MC9
–84 dBm @ MC10
–80 dBm @ MC11
–77 dBm @ MC12
–72 dBm @ MC13
–71 dBm @ MC14
–70 dBm @ MC15</td><td>5-GHz
802.11n (HT20)
–85 dBm @ MC0
–84 dBm @ MC1
–83 dBm @ MC2
–82 dBm @ MC3
–79 dBm @ MC4
–74 dBm @ MC5
–73 dBm @ MC6
–72 dBm @ MC7
–85 dBm @ MC8
–84 dBm @ MC9
–83 dBm @ MC10
–82 dBm @ MC11
–79 dBm @ MC12
–74 dBm @ MC13
–73 dBm @ MC14
–72 dBm @ MC15</td><td>5-GHz
802.11n (HT40)
–85 dBm @ MC0
–84 dBm @ MC1
–83 dBm @ MC2
–79 dBm @ MC3
–76 dBm @ MC4
–71 dBm @ MC5
–70 dBm @ MC6
–69 dBm @ MC7
–85 dBm @ MC8
–84 dBm @ MC9
–83 dBm @ MC10
–79 dBm @ MC11
–76 dBm @ MC12
–71 dBm @ MC13
–70 dBm @ MC14
–69 dBm @ MC15</td></tr>
<tr><td>Maximum Transmit Power</td><td colspan="2">2.4GHz
• 802.11b
◦ 23 dBm with 1 antenna
• 802.11g
◦ 20 dBm with 1 antenna
• 802.11n (HT20)
◦ 17 dBm with 1 antenna
◦ 20 dBm with 2 antennas
• 802.11n (HT40)
◦ 17 dBm with 1 antenna
◦ 20 dBm with 2 antennas</td><td colspan="3">5GHz
• 802.11a
◦ 17 dBm with 1 antenna
• 802.11n non-HT duplicate (802.11a duplicate) mode
◦ 17 dBm with 1 antenna
• 802.11n (HT20)
◦ 17 dBm with 1 antenna
◦ 20 dBm with 2 antennas
• 802.11n (HT40)
◦ 17 dBm with 1 antenna
◦ 20 dBm with 2 antennas</td></tr>
<tr><td colspan="6">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>

<table>
<tr><th>Item</th><th colspan="3">Specification</th></tr>
<tr><td>Available Transmit Power Settings</td><td>2.4GHz
23 dBm (200 mW)
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)</td><td colspan="2">5GHz
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)</td></tr>
<tr><td colspan="4">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>
<tr><td>Antenna Connectors</td><td colspan="3">• 2.4-GHz: 3 RP-TNC connectors
• 5-GHz: 3 RP-TNC connectors</td></tr>
<tr><td>Interfaces</td><td colspan="3">• 10/100/1000BASE-T autosensing (RJ-45)
• Management console port (RJ45)</td></tr>
<tr><td>Indicators</td><td colspan="3">• Status LED indicates operating state, association status, error/warning condition, boot sequence, and maintenance status.
• Ethernet LED indicates activity over the Ethernet, status.
• Radio LED indicates activity over the radio, status.</td></tr>
<tr><td>Modularity</td><td colspan="3">• Number of radio module slots: 2
• Available radio modules
<table><tr><th>Part Number</th><th>Description</th><th>Maximum per AP1250 platform</th></tr><tr><td>AIR-RM1252A-x-K9</td><td>2.4 802.11a/n-d2.0 5-GHz Radio Module; 3 RP-TNC</td><td>1</td></tr><tr><td>AIR-RM1252G-x-K9</td><td>802.11g/n-d2.0 2.4-GHz Radio Module; 3 RP-TNC</td><td>1</td></tr></table></td></tr>
<tr><td>Dimensions (W x L x H)</td><td colspan="3">• AP (without mounting bracket): 8.12 x 9.52 x 2.35 in. (20.62 x 24.18 x 5.97 cm)
• AP (with mounting bracket): 8.12 x 9.52 x 2.75 in. (20.62 x 24.18 x 6.99 cm)</td></tr>
<tr><td>Weight</td><td colspan="3">• AP with 2 radios installed: 5.1 lbs (2.31 kg)
• AP chassis: 2.1 lbs (0.95 kg)
• 2.4 GHz radio: 1.5 lbs (0.68 kg)
• 5 GHz radio: 1.5 lbs (0.68 kg)</td></tr>
<tr><td>Environmental</td><td colspan="3">Nonoperating (storage) temperature: –40 to 185°F (–40 to 85°C)
Operating temperature: –4 to +131°F (–20 to +55°C)
Operating humidity: 10 to 90 percent (noncondensing)</td></tr>
<tr><td>System Memory</td><td colspan="3">• 64 MB DRAM
• 32 MB flash</td></tr>
<tr><td>Input Power Requirements</td><td colspan="3">• AP1250: 36 to 57 VDC
• Power Supply and Power Injector: 100 to 240 VAC; 50 to 60 Hz</td></tr>
<tr><td>Powering Options</td><td colspan="3">• Cisco Catalyst switch port capable of sourcing 20W or greater
• Cisco AP1250 Power Injector (AIR-PWRINJ4)
• Cisco AP1250 Local Power Supply (AIR-PWR-SPLY1)
• 802.3af switch (AP1250 with single radio only)</td></tr>
<tr><td>Power Draw</td><td colspan="3">• AP1250 with two RM1252 radio modules installed: 18.5W
• AP1250 with one RM1252 radio module installed: 12.95W
Note: For a 1250 Series Access Point with two radios, 18.5W is the maximum power required at the access point (powered device). When deployed using PoE, the power drawn from the power sourcing equipment will be higher by some amount dependent on the length of the interconnecting cable. This additional power may be as high as 1.5W, bringing the total system power draw (access point + cabling) to 20W. A similar consideration applies for a 1250 Series Access Point with one radio.</td></tr>
<tr><td>Warranty</td><td colspan="3">90 days</td></tr>
</table>

Item	Specification
Compliance	**Standards** • **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-210 (Canada) ◦ EN 300.328, EN 301.893 (Europe) ◦ ARIB-STD 33 (Japan) ◦ ARIB-STD 66 (Japan) ◦ ARIB-STD T71 (Japan) ◦ AS/NZS 4268.2003 (Australia and New Zealand) ◦ 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 Standard** ◦ IEEE 802.11a/b/g, IEEE 802.11n draft 2.0, IEEE 802.11h, IEEE 802.11d • **Security:** ◦ 802.11i, Wi-Fi Protected Access 2 (WPA2), WPA ◦ 802.1X ◦ Advanced Encryption Standards (AES), Temporal Key Integrity Protocol (TKIP) • **EAP Type(s):** ◦ Extensible Authentication Protocol-Transport Layer Security (EAP-TLS) ◦ EAP-Tunneled TLS (TTLS) or Microsoft Challenge Handshake Authentication Protocol Version 2 (MSCHAPv2) ◦ Protected EAP (PEAP) v0 or EAP-MSCHAPv2 ◦ Extensible Authentication Protocol-Flexible Authentication via Secure Tunneling (EAP-FAST) ◦ PEAPv1 or EAP-Generic Token Card (GTC) ◦ EAP-Subscriber Identity Module (SIM) • **Multimedia:** ◦ Wi-Fi Multimedia (WMM™) • **Other:** ◦ FCC Bulletin OET-65C ◦ RSS-102

Service and Support

Cisco and Cisco Wireless LAN Specialized Partners offer a broad portfolio of end-to-end services based on proven methodologies for planning, designing, implementing, operating, and optimizing the performance of your wireless network.

Cisco recommends the following services for the Cisco Aironet 1250 Series Access Points implementation:

Cisco Wireless LAN 802.11n Readiness Assessment Service

Prevent common challenges and reduce deployment costs by determining the readiness of your wired and wireless infrastructure.

Cisco Wireless LAN 802.11n Migration Service

Simplify the migration to high-performance, next generation 802.11n.

Cisco Wireless LAN Optimization Service

Evolve your 802.11n network to meet ever-changing network demands through planning and assessments, design, performance tuning, and ongoing support for system changes.

For more information about Cisco 802.11n planning and deployment services, visit http://www.cisco.com/go/wirelesslanservices.

For More Information

For more information about the Cisco Aironet 1250 Series, visit http://www.cisco.com/go/wireless or contact your local account representative.

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Printed in USA C78-423375-06 09/09