

## Cisco Aironet 1850 Series Access Points



### Product Overview

Ideal for small and medium-sized networks, the Cisco® Aironet® 1850 Series delivers industry-leading performance for enterprise and service provider markets via enterprise-class 4x4 MIMO, four-spatial-stream access points that support the IEEE's new 802.11ac Wave 2 specification. The Aironet 1850 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.

### Features and Benefits

With 802.11ac Wave 2, the Aironet 1850 Series provides a data rate of up to 1.7 Gbps on the 5-GHz radio, more than triple the rates offered by today's high-end 802.11n access points. It also enables a total aggregate dual-radio data rate of 2.0 Gbps, providing the necessary foundation for enterprise and service provider networks to stay ahead of the performance and bandwidth expectations and needs of their wireless users.

Due to its convenience, wireless access is increasingly the preferred form of network connectivity for corporate users. 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 1850 Series delivers industry-leading performance for highly secure and reliable wireless connections and provides a robust mobility experience that includes:

- 802.11ac Wave 2 with 4x4 multiple-input multiple-output (MIMO) technology with four spatial streams when operating in single-user MIMO mode and three spatial streams while operating in multiuser MIMO mode, offering 1.7-Gbps rates for more capacity and reliability than competing access points.
- Multiuser MIMO, allowing transmission of data to multiple 802.11ac Wave 2 capable clients simultaneously to improve client experience. Prior to multiuser 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.
- Transmit beamforming technology to improve downlink performance to mobile devices, including one-, two-, and three-spatial-stream devices on 802.11ac, while improving battery life on mobile devices such as smartphones and tablets.

- Flexible deployment mode through the Cisco Mobility Express Solution is ideal for small to medium-sized deployments that that require 25 or fewer access points. Easy setup allows the 1850 Series to be deployed on networks without a physical controller.

All of these features help ensure the best possible end-user experience on the wireless network. Cisco also offers the industry’s broadest selection of 802.11n and 802.11ac antennas, delivering optimal coverage for a variety of deployment scenarios.

## Product Specifications

**Table 1.** Product Specifications

| Feature   | Specifications   |                        |                          |                    |             |             |  |                    |                    |                    |                    |   |     |      |     |    |   |    |    |      |    |   |      |      |      |    |   |    |    |      |    |   |    |    |      |    |   |    |     |      |     |   |      |       |    |     |
|---|--|------------------------|--------------------------|--------------------|-------------|-------------|--|--------------------|--------------------|--------------------|--------------------|---|-----|------|-----|----|---|----|----|------|----|---|------|------|------|----|---|----|----|------|----|---|----|----|------|----|---|----|-----|------|-----|---|------|-------|----|-----|
| <b>Software</b>                                       | Cisco Unified Wireless Network Software Release with AireOS wireless controllers: <ul style="list-style-type: none"> <li>• 8.1 MR1 or later for the Cisco Aironet 1850 Series Access Points</li> </ul>   |                        |                          |                    |             |             |  |                    |                    |                    |                    |   |     |      |     |    |   |    |    |      |    |   |      |      |      |    |   |    |    |      |    |   |    |    |      |    |   |    |     |      |     |   |      |       |    |     |
| <b>Deployment modes</b>                               | Centralized local, Standalone <sup>*</sup> , Sniffer, Cisco FlexConnect™, Monitor <sup>**</sup> , OfficeExtend <sup>**</sup> , Mesh <sup>**</sup>  |                        |                          |                    |             |             |  |                    |                    |                    |                    |   |     |      |     |    |   |    |    |      |    |   |      |      |      |    |   |    |    |      |    |   |    |    |      |    |   |    |     |      |     |   |      |       |    |     |
| <b>Supported wireless LAN controllers</b>             | <ul style="list-style-type: none"> <li>• 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<sup>†</sup>, Cisco 5760 Series Wireless Controllers<sup>†</sup>, Cisco Catalyst 3650/3850 Series switch with integrated controller<sup>**</sup></li> <li>• Cisco Mobility Express</li> </ul>  |                        |                          |                    |             |             |  |                    |                    |                    |                    |   |     |      |     |    |   |    |    |      |    |   |      |      |      |    |   |    |    |      |    |   |    |    |      |    |   |    |     |      |     |   |      |       |    |     |
| <b>802.11n version 2.0 (and related) capabilities</b> | <ul style="list-style-type: none"> <li>• 4x4 MIMO with four spatial streams</li> <li>• Maximal ratio combining (MRC)</li> <li>• 20- and 40-MHz channels</li> <li>• PHY data rates up to 600 Mbps (40 MHz with 5 GHz)</li> <li>• Packet aggregation: A-MPDU (Tx/Rx), A-MSDU (Tx/Rx)</li> <li>• 802.11 dynamic frequency selection (DFS)</li> <li>• Cyclic shift diversity (CSD) support</li> </ul>  |                        |                          |                    |             |             |  |                    |                    |                    |                    |   |     |      |     |    |   |    |    |      |    |   |      |      |      |    |   |    |    |      |    |   |    |    |      |    |   |    |     |      |     |   |      |       |    |     |
| <b>802.11ac Wave 1 and 2 capabilities</b>             | <ul style="list-style-type: none"> <li>• 4x4 MIMO with four spatial streams, single-user MIMO</li> <li>• 4x4 MIMO with three spatial streams, multiuser MIMO</li> <li>• MRC</li> <li>• 802.11ac beamforming (transmit beamforming)</li> <li>• 20-, 40-, and 80-MHz channels</li> <li>• PHY data rates up to 1.7 Gbps (80 MHz in 5 GHz)</li> <li>• Packet aggregation: A-MPDU (Tx/Rx), A-MSDU (Tx/Rx)</li> <li>• 802.11 DFS</li> <li>• CSD support</li> </ul>   |                        |                          |                    |             |             |  |                    |                    |                    |                    |   |     |      |     |    |   |    |    |      |    |   |      |      |      |    |   |    |    |      |    |   |    |    |      |    |   |    |     |      |     |   |      |       |    |     |
| <b>Data rates supported</b>                           | <p><b>802.11a: 6, 9, 12, 18, 24, 36, 48, and 54 Mbps</b></p> <p><b>802.11g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps</b></p> <p><b>802.11n data rates on 2.4 GHz (only 20 MHz and MCS 0 to MCS 23) and 5 GHz:</b></p> <table border="1"> <thead> <tr> <th>MCS Index<sup>1</sup></th> <th>GI<sup>2</sup> = 800 ns</th> <th>GI = 800 ns</th> <th>GI = 400 ns</th> <th>GI = 400 ns</th> </tr> <tr> <th></th> <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> </thead> <tbody> <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> </tbody> </table> | MCS Index <sup>1</sup> | GI <sup>2</sup> = 800 ns | GI = 800 ns        | GI = 400 ns | GI = 400 ns |  | 20-MHz Rate (Mbps) | 40-MHz Rate (Mbps) | 20-MHz Rate (Mbps) | 40-MHz Rate (Mbps) | 0 | 6.5 | 13.5 | 7.2 | 15 | 1 | 13 | 27 | 14.4 | 30 | 2 | 19.5 | 40.5 | 21.7 | 45 | 3 | 26 | 54 | 28.9 | 60 | 4 | 39 | 81 | 43.3 | 90 | 5 | 52 | 108 | 57.8 | 120 | 6 | 58.5 | 121.5 | 65 | 135 |
| MCS Index <sup>1</sup>                                | GI <sup>2</sup> = 800 ns   | GI = 800 ns            | GI = 400 ns              | GI = 400 ns        |             |             |  |                    |                    |                    |                    |   |     |      |     |    |   |    |    |      |    |   |      |      |      |    |   |    |    |      |    |   |    |    |      |    |   |    |     |      |     |   |      |       |    |     |
|   | 20-MHz Rate (Mbps)   | 40-MHz Rate (Mbps)     | 20-MHz Rate (Mbps)       | 40-MHz Rate (Mbps) |             |             |  |                    |                    |                    |                    |   |     |      |     |    |   |    |    |      |    |   |      |      |      |    |   |    |    |      |    |   |    |    |      |    |   |    |     |      |     |   |      |       |    |     |
| 0   | 6.5  | 13.5                   | 7.2                      | 15                 |             |             |  |                    |                    |                    |                    |   |     |      |     |    |   |    |    |      |    |   |      |      |      |    |   |    |    |      |    |   |    |    |      |    |   |    |     |      |     |   |      |       |    |     |
| 1   | 13   | 27                     | 14.4                     | 30                 |             |             |  |                    |                    |                    |                    |   |     |      |     |    |   |    |    |      |    |   |      |      |      |    |   |    |    |      |    |   |    |    |      |    |   |    |     |      |     |   |      |       |    |     |
| 2   | 19.5   | 40.5                   | 21.7                     | 45                 |             |             |  |                    |                    |                    |                    |   |     |      |     |    |   |    |    |      |    |   |      |      |      |    |   |    |    |      |    |   |    |    |      |    |   |    |     |      |     |   |      |       |    |     |
| 3   | 26   | 54                     | 28.9                     | 60                 |             |             |  |                    |                    |                    |                    |   |     |      |     |    |   |    |    |      |    |   |      |      |      |    |   |    |    |      |    |   |    |    |      |    |   |    |     |      |     |   |      |       |    |     |
| 4   | 39   | 81                     | 43.3                     | 90                 |             |             |  |                    |                    |                    |                    |   |     |      |     |    |   |    |    |      |    |   |      |      |      |    |   |    |    |      |    |   |    |    |      |    |   |    |     |      |     |   |      |       |    |     |
| 5   | 52   | 108                    | 57.8                     | 120                |             |             |  |                    |                    |                    |                    |   |     |      |     |    |   |    |    |      |    |   |      |      |      |    |   |    |    |      |    |   |    |    |      |    |   |    |     |      |     |   |      |       |    |     |
| 6   | 58.5   | 121.5                  | 65                       | 135                |             |             |  |                    |                    |                    |                    |   |     |      |     |    |   |    |    |      |    |   |      |      |      |    |   |    |    |      |    |   |    |    |      |    |   |    |     |      |     |   |      |       |    |     |

<sup>1</sup> MCS Index: The Modulation and Coding Scheme (MCS) index determines the number of spatial streams, the modulation, the coding rate, and data rate values

<sup>2</sup> GI: A guard interval (GI) between symbols helps receivers overcome the effects of multipath delay spreads.

| Feature              | Specifications                      |                          |                    |                    |                    |                    |                    |                    |                    |
|----------------------|-------------------------------------|--------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Data rates supported | MCS Index <sup>3</sup>              | GI <sup>4</sup> = 800 ns | GI = 800 ns        |                    | GI = 400 ns        | GI = 400 ns        |                    |                    |                    |
|                      |                                     | 20-MHz Rate (Mbps)       | 40-MHz Rate (Mbps) |                    | 20-MHz Rate (Mbps) | 40-MHz Rate (Mbps) |                    |                    |                    |
|                      | 7                                   | 65                       | 135                |                    | 72.2               | 150                |                    |                    |                    |
|                      | 8                                   | 13                       | 27                 |                    | 14.4               | 30                 |                    |                    |                    |
|                      | 9                                   | 26                       | 54                 |                    | 28.9               | 60                 |                    |                    |                    |
|                      | 10                                  | 39                       | 81                 |                    | 43.3               | 90                 |                    |                    |                    |
|                      | 11                                  | 52                       | 108                |                    | 57.8               | 120                |                    |                    |                    |
|                      | 12                                  | 78                       | 162                |                    | 86.7               | 180                |                    |                    |                    |
|                      | 13                                  | 104                      | 216                |                    | 115.6              | 240                |                    |                    |                    |
|                      | 14                                  | 117                      | 243                |                    | 130                | 270                |                    |                    |                    |
|                      | 15                                  | 130                      | 270                |                    | 144.4              | 300                |                    |                    |                    |
|                      | 16                                  | 19.5                     | 40.5               |                    | 21.7               | 45                 |                    |                    |                    |
|                      | 17                                  | 39                       | 81                 |                    | 43.3               | 90                 |                    |                    |                    |
|                      | 18                                  | 58.5                     | 121.5              |                    | 65                 | 135                |                    |                    |                    |
|                      | 19                                  | 78                       | 162                |                    | 86.7               | 180                |                    |                    |                    |
|                      | 20                                  | 117                      | 243                |                    | 130                | 270                |                    |                    |                    |
|                      | 21                                  | 156                      | 324                |                    | 173.3              | 360                |                    |                    |                    |
|                      | 22                                  | 175.5                    | 364.5              |                    | 195                | 405                |                    |                    |                    |
|                      | 23                                  | 195                      | 405                |                    | 216.7              | 450                |                    |                    |                    |
|                      | 24                                  | 26                       | 54                 |                    | 28.9               | 60                 |                    |                    |                    |
|                      | 25                                  | 52                       | 108                |                    | 57.8               | 120                |                    |                    |                    |
|                      | 26                                  | 78                       | 162                |                    | 86.7               | 180                |                    |                    |                    |
|                      | 27                                  | 104                      | 216                |                    | 115.6              | 240                |                    |                    |                    |
|                      | 28                                  | 156                      | 324                |                    | 173.3              | 360                |                    |                    |                    |
|                      | 29                                  | 208                      | 432                |                    | 231.1              | 480                |                    |                    |                    |
|                      | 30                                  | 234                      | 486                |                    | 260                | 540                |                    |                    |                    |
|                      | 31                                  | 260                      | 540                |                    | 288.9              | 600                |                    |                    |                    |
|                      | <b>802.11ac data rates (5 GHz):</b> |                          |                    |                    |                    |                    |                    |                    |                    |
|                      |                                     | 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                |                    |

<sup>3</sup> MCS Index: The Modulation and Coding Scheme (MCS) index determines the number of spatial streams, the modulation, the coding rate, and data rate values.

<sup>4</sup> GI: A guard interval (GI) between symbols helps receivers overcome the effects of multipath delay spreads.

| Feature | Specifications |                 |                    |                    |                    |                    |                    |                    |
|---------|----------------|-----------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|         | 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) |
|         | 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                |
|         | 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              |
|         | 0              | 3               | 19.5               | 40.5               | 87.8               | 21.7               | 45                 | 97.5               |
|         | 1              | 3               | 39                 | 81                 | 175.5              | 43.3               | 90                 | 195                |
|         | 2              | 3               | 58.5               | 121.5              | 263.3              | 65                 | 135                | 292.5              |
|         | 3              | 3               | 78                 | 162                | 351                | 86.7               | 180                | 390                |
|         | 4              | 3               | 117                | 243                | 526.5              | 130                | 270                | 585                |
|         | 5              | 3               | 156                | 324                | 702                | 173.3              | 360                | 780                |
|         | 6              | 3               | 175.5              | 364.5              | -                  | 195                | 405                | -                  |
|         | 7              | 3               | 195                | 405                | 877.5              | 216.7              | 450                | 975                |
|         | 8              | 3               | 234                | 486                | 1053               | 260                | 540                | 1170               |
|         | 9              | 3               | 260                | 540                | 1170               | 288.9              | 600                | 1300               |
|         | 0              | 4               | 26                 | 54                 | 117                | 28.9               | 60                 | 130                |
|         | 1              | 4               | 52                 | 108                | 234                | 57.8               | 120                | 260                |
|         | 2              | 4               | 78                 | 162                | 351                | 86.7               | 180                | 390                |
|         | 3              | 4               | 104                | 216                | 468                | 115.6              | 240                | 520                |
|         | 4              | 4               | 156                | 324                | 702                | 173.3              | 360                | 780                |
|         | 5              | 4               | 208                | 432                | 936                | 231.1              | 480                | 1040               |
|         | 6              | 4               | 234                | 486                | 1053               | 260                | 540                | 1170               |
|         | 7              | 4               | 260                | 540                | 1170               | 288.9              | 600                | 1300               |
|         | 8              | 4               | 312                | 648                | 1404               | 346.7              | 720                | 1560               |
|         | 9              | 4               | -                  | 720                | 1560               | -                  | 800                | 1733.3             |

| Feature  | Specifications   |  |  |  |
|--|--|--|--|--|
| <b>Maximum number of nonoverlapping channels</b>   | <b>A (A regulatory domain):</b> <ul style="list-style-type: none"> <li>● 2.412 to 2.462 GHz; 3 channels</li> <li>● 5.180 to 5.320 GHz; 8 channels</li> <li>● 5.500 to 5.700 GHz; 8 channels (excludes 5.600 to 5.640 GHz)</li> <li>● 5.745 to 5.825 GHz; 5 channels</li> </ul> <b>B (B regulatory domain):</b> <ul style="list-style-type: none"> <li>● 2.412 to 2.462 GHz; 3 channels</li> <li>● 5.180 to 5.320 GHz; 8 channels</li> <li>● 5.500 to 5.720 GHz; 12 channels</li> <li>● 5.745 to 5.825 GHz; 5 channels</li> </ul> <b>C (C regulatory domain):</b> <ul style="list-style-type: none"> <li>● 2.412 to 2.472 GHz; 3 channels</li> <li>● 5.745 to 5.825 GHz; 5 channels</li> </ul> <b>D (D regulatory domain):</b> <ul style="list-style-type: none"> <li>● 2.412 to 2.462 GHz; 3 channels</li> <li>● 5.180 to 5.320 GHz; 8 channels</li> <li>● 5.745 to 5.825 GHz; 5 channels</li> </ul> <b>E (E regulatory domain):</b> <ul style="list-style-type: none"> <li>● 2.412 to 2.472 GHz; 3 channels</li> <li>● 5.180 to 5.320 GHz; 8 channels</li> <li>● 5.500 to 5.700 GHz; 8 channels (excludes 5.600 to 5.640 GHz)</li> </ul> <b>F (F regulatory domain):</b> <ul style="list-style-type: none"> <li>● 2.412 to 2.472 GHz; 3 channels</li> <li>● 5.745 to 5.825 GHz; 4 channels</li> </ul> <b>H (H regulatory domain):</b> <ul style="list-style-type: none"> <li>● 2.412 to 2.472 GHz; 3 channels</li> <li>● 5.150 to 5.350 GHz; 8 channels</li> <li>● 5.745 to 5.825 GHz; 5 channels</li> </ul> <b>I (I regulatory domain):</b> <ul style="list-style-type: none"> <li>● 2.412 to 2.472 GHz; 3 channels</li> <li>● 5.180 to 5.320 GHz; 8 channels</li> </ul> |  | <b>K (K regulatory domain):</b> <ul style="list-style-type: none"> <li>● 2.412 to 2.472 GHz; 3 channels</li> <li>● 5.180 to 5.320 GHz; 8 channels</li> <li>● 5.500 to 5.620 GHz; 7 channels</li> <li>● 5.745 to 5.805 GHz; 4 channels</li> </ul> <b>N (N regulatory domain):</b> <ul style="list-style-type: none"> <li>● 2.412 to 2.462 GHz; 3 channels</li> <li>● 5.180 to 5.320 GHz; 8 channels</li> <li>● 5.745 to 5.825 GHz; 5 channels</li> </ul> <b>Q (Q regulatory domain):</b> <ul style="list-style-type: none"> <li>● 2.412 to 2.472 GHz; 3 channels</li> <li>● 5.180 to 5.320 GHz; 8 channels</li> <li>● 5.500 to 5.700 GHz; 11 channels</li> </ul> <b>R (R regulatory domain):</b> <ul style="list-style-type: none"> <li>● 2.412 to 2.472 GHz; 3 channels</li> <li>● 5.180 to 5.320 GHz; 8 channels</li> <li>● 5.660 to 5,805 GHz; 7 channels</li> </ul> <b>S (S regulatory domain):</b> <ul style="list-style-type: none"> <li>● 2.412 to 2.472 GHz; 3 channels</li> <li>● 5.180 to 5.320 GHz; 8 channels</li> <li>● 5.500 to 5.700 GHz; 11 channels</li> <li>● 5.745 to 5.825 GHz; 5 channels</li> </ul> <b>T (T regulatory domain):</b> <ul style="list-style-type: none"> <li>● 2.412 to 2.462 GHz; 3 channels</li> <li>● 5.280 to 5.320 GHz; 3 channels</li> <li>● 5.500 to 5.700 GHz; 8 channels (excludes 5.600 to 5.640 GHz)</li> <li>● 5.745 to 5.825 GHz; 5 channels</li> </ul> <b>Z (Z regulatory domain):</b> <ul style="list-style-type: none"> <li>● 2.412 to 2.462 GHz; 3 channels</li> <li>● 5.180 to 5.320 GHz; 8 channels</li> <li>● 5.500 to 5.700 GHz; 8 channels (excludes 5.600 to 5.640 GHz)</li> <li>● 5.745 to 5.825 GHz; 5 channels</li> </ul> |  |
| <p><b>Note:</b> Customers are responsible for verifying approval for use in their individual countries. To verify approval that corresponds to a particular country, visit <a href="http://www.cisco.com/go/aironet/compliance">http://www.cisco.com/go/aironet/compliance</a></p> |  |  |  |  |
| <b>Maximum number of nonoverlapping channels</b>   | <b>2.4 GHz</b> <ul style="list-style-type: none"> <li>● 802.11b/g: <ul style="list-style-type: none"> <li>○ 20 MHz: 3</li> </ul> </li> <li>● 802.11n: <ul style="list-style-type: none"> <li>○ 20 MHz: 3</li> </ul> </li> </ul>  |  | <b>5 GHz</b> <ul style="list-style-type: none"> <li>● 802.11a: <ul style="list-style-type: none"> <li>○ 20 MHz: 25</li> </ul> </li> <li>● 802.11n: <ul style="list-style-type: none"> <li>○ 20 MHz: 25</li> <li>○ 40 MHz: 12</li> </ul> </li> <li>● 802.11ac: <ul style="list-style-type: none"> <li>○ 20 MHz: 21</li> <li>○ 40 MHz: 12</li> <li>○ 80 MHz: 6</li> </ul> </li> </ul>  |  |
| <p><b>Note:</b> This varies by regulatory domain. Refer to the product documentation for specific details for each regulatory domain.</p>  |  |  |  |  |
| <b>Receive sensitivity</b>   | <ul style="list-style-type: none"> <li>● 802.11b (CCK) <ul style="list-style-type: none"> <li>○ -101 dBm @ 1 Mbps</li> <li>○ -98 dBm @ 2 Mbps</li> <li>○ -92 dBm @ 5.5 Mbps</li> <li>○ -89 dBm @ 11 Mbps</li> </ul> </li> </ul>  | <ul style="list-style-type: none"> <li>● 802.11g (non HT20) <ul style="list-style-type: none"> <li>○ -96 dBm @ 6 Mbps</li> <li>○ -95 dBm @ 9 Mbps</li> <li>○ -94 dBm @ 12 Mbps</li> <li>○ -92 dBm @ 18 Mbps</li> <li>○ -88 dBm @ 24 Mbps</li> <li>○ -85 dBm @ 36 Mbps</li> <li>○ -81 dBm @ 48 Mbps</li> <li>○ -79 dBm @ 54 Mbps</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>● 802.11a (non HT20) <ul style="list-style-type: none"> <li>○ -96 dBm @ 6 Mbps</li> <li>○ -95 dBm @ 9 Mbps</li> <li>○ -94 dBm @ 12 Mbps</li> <li>○ -92 dBm @ 18 Mbps</li> <li>○ -88 dBm @ 24 Mbps</li> <li>○ -85 dBm @ 36 Mbps</li> <li>○ -80 dBm @ 48 Mbps</li> <li>○ -79 dBm @ 54 Mbps</li> </ul> </li> </ul>   |  |

| Feature  | Specifications  |                        |   |   |              |
|--|---|------------------------|---|---|--------------|
| Receive sensitivity  | <b>2.4 GHz</b> <ul style="list-style-type: none"> <li>● 802.11n (HT20) <ul style="list-style-type: none"> <li>○ -96 dBm @ MCS0</li> <li>○ -93 dBm @ MCS1</li> <li>○ -90 dBm @ MCS2</li> <li>○ -87 dBm @ MCS3</li> <li>○ -84 dBm @ MCS4</li> <li>○ -79 dBm @ MCS5</li> <li>○ -78 dBm @ MCS6</li> <li>○ -76 dBm @ MCS7</li> <li>○ -93 dBm @ MCS8</li> <li>○ -90 dBm @ MCS9</li> <li>○ -87 dBm @ MCS10</li> <li>○ -84 dBm @ MCS11</li> <li>○ -81 dBm @ MCS12</li> <li>○ -76 dBm @ MCS13</li> <li>○ -75 dBm @ MCS14</li> <li>○ -73 dBm @ MCS15</li> <li>○ -91 dBm @ MCS16</li> <li>○ -88 dBm @ MCS17</li> <li>○ -85 dBm @ MCS18</li> <li>○ -82 dBm @ MCS19</li> <li>○ -79 dBm @ MCS20</li> <li>○ -74 dBm @ MCS21</li> <li>○ -73 dBm @ MCS22</li> <li>○ -71 dBm @ MCS23</li> </ul> </li> </ul> |                        | <b>5 GHz</b> <ul style="list-style-type: none"> <li>● 802.11n (HT20) <ul style="list-style-type: none"> <li>○ -96 dBm @ MCS0</li> <li>○ -92 dBm @ MCS1</li> <li>○ -90 dBm @ MCS2</li> <li>○ -86 dBm @ MCS3</li> <li>○ -83 dBm @ MCS4</li> <li>○ -79 dBm @ MCS5</li> <li>○ -77 dBm @ MCS6</li> <li>○ -76 dBm @ MCS7</li> <li>○ -93 dBm @ MCS8</li> <li>○ -89 dBm @ MCS9</li> <li>○ -87 dBm @ MCS10</li> <li>○ -83 dBm @ MCS11</li> <li>○ -80 dBm @ MCS12</li> <li>○ -76 dBm @ MCS13</li> <li>○ -74 dBm @ MCS14</li> <li>○ -73 dBm @ MCS15</li> <li>○ -91 dBm @ MCS16</li> <li>○ -87 dBm @ MCS17</li> <li>○ -85 dBm @ MCS18</li> <li>○ -81 dBm @ MCS19</li> <li>○ -78 dBm @ MCS20</li> <li>○ -74 dBm @ MCS21</li> <li>○ -72 dBm @ MCS22</li> <li>○ -71 dBm @ MCS23</li> <li>○ -89 dBm @ MCS24</li> <li>○ -85 dBm @ MCS25</li> <li>○ -83 dBm @ MCS26</li> <li>○ -79 dBm @ MCS27</li> <li>○ -76 dBm @ MCS28</li> <li>○ -72 dBm @ MCS29</li> <li>○ -70 dBm @ MCS30</li> <li>○ -69 dBm @ MCS31</li> </ul> </li> </ul> | <b>5 GHz</b> <ul style="list-style-type: none"> <li>● 802.11n (HT40) <ul style="list-style-type: none"> <li>○ -93 dBm @ MCS0</li> <li>○ -90 dBm @ MCS1</li> <li>○ -87 dBm @ MCS2</li> <li>○ -84 dBm @ MCS3</li> <li>○ -80 dBm @ MCS4</li> <li>○ -76 dBm @ MCS5</li> <li>○ -75 dBm @ MCS6</li> <li>○ -73 dBm @ MCS7</li> <li>○ -90 dBm @ MCS8</li> <li>○ -87 dBm @ MCS9</li> <li>○ -84 dBm @ MCS10</li> <li>○ -81 dBm @ MCS11</li> <li>○ -77 dBm @ MCS12</li> <li>○ -73 dBm @ MCS13</li> <li>○ -72 dBm @ MCS14</li> <li>○ -70 dBm @ MCS15</li> <li>○ -88 dBm @ MCS16</li> <li>○ -85 dBm @ MCS17</li> <li>○ -82 dBm @ MCS18</li> <li>○ -79 dBm @ MCS19</li> <li>○ -75 dBm @ MCS20</li> <li>○ -71 dBm @ MCS21</li> <li>○ -70 dBm @ MCS22</li> <li>○ -68 dBm @ MCS23</li> <li>○ -86 dBm @ MCS24</li> <li>○ -83 dBm @ MCS25</li> <li>○ -80 dBm @ MCS26</li> <li>○ -77 dBm @ MCS27</li> <li>○ -73 dBm @ MCS28</li> <li>○ -69 dBm @ MCS29</li> <li>○ -68 dBm @ MCS30</li> <li>○ -66 dBm @ MCS31</li> </ul> </li> </ul> |              |
|  | <b>802.11ac Receive Sensitivity</b>   |                        |   |   |              |
| <b>802.11ac (non HT80)</b> <ul style="list-style-type: none"> <li>● -89 dBm @ 6 Mbps</li> <li>● -73 dBm @ 54 Mbps</li> </ul> |   |                        |   |   |              |
| <b>MCS Index</b>   |   | <b>Spatial Streams</b> | <b>VHT20</b>  | <b>VHT40</b>  | <b>VHT80</b> |
| 0  |   | 1                      | -96 dBm   | -93 dBm   | -89 dBm      |
| 7  |   | 1                      | -76 dBm   | -73 dBm   | -70 dBm      |
| 8  |   | 1                      | -71 dBm   | -69 dBm   | -66 dBm      |
| 9  |   | 1                      | NA  | -67 dBm   | -64 dBm      |
| 0  |   | 2                      | -93 dBm   | -90 dBm   | -86 dBm      |
| 7  |   | 2                      | -73 dBm   | -70 dBm   | -67 dBm      |
| 8  |   | 2                      | -68 dBm   | -66 dBm   | -63 dBm      |
| 9  |   | 2                      | NA  | -64 dBm   | -61 dBm      |
| 0  |   | 3                      | -91 dBm   | -88 dBm   | -84 dBm      |
| 7  |   | 3                      | -71 dBm   | -68 dBm   | -65 dBm      |
| 8  |   | 3                      | -66 dBm   | -64 dBm   | -61 dBm      |
| 9  |   | 3                      | -64 dBm   | -62 dBm   | -59 dBm      |

| Feature   | Specifications   |                        |   |              |              |
|---|--|------------------------|---|--------------|--------------|
|   | <b>MCS Index</b>   | <b>Spatial Streams</b> |   |              |              |
|   |  |                        | <b>VHT20</b>  | <b>VHT40</b> | <b>VHT80</b> |
|   | 0  | 4                      | -89 dBm   | -86 dBm      | -82 dBm      |
|   | 7  | 4                      | -69 dBm   | -66 dBm      | -63 dBm      |
|   | 8  | 4                      | -64 dBm   | -62 dBm      | -59 dBm      |
|   | 9  | 4                      | NA  | -60 dBm      | -57 dBm      |
| <b>Maximum transmit power</b>   | <b>2.4 GHz</b> <ul style="list-style-type: none"> <li>802.11b <ul style="list-style-type: none"> <li>22 dBm, 3 antennas</li> </ul> </li> <li>802.11g <ul style="list-style-type: none"> <li>22 dBm, 3 antennas</li> </ul> </li> <li>802.11n (HT20) <ul style="list-style-type: none"> <li>22 dBm, 3 antennas</li> </ul> </li> </ul>  |                        | <b>5 GHz</b> <ul style="list-style-type: none"> <li>802.11a <ul style="list-style-type: none"> <li>23 dBm, 4 antennas</li> </ul> </li> <li>802.11n (HT20) <ul style="list-style-type: none"> <li>23 dBm, 4 antennas</li> </ul> </li> <li>802.11n (HT40) <ul style="list-style-type: none"> <li>23 dBm, 4 antennas</li> </ul> </li> <li>802.11ac <ul style="list-style-type: none"> <li>non-HT80: 23 dBm, 4 antennas</li> <li>VHT20: 23 dBm, 4 antennas</li> <li>VHT40: 23 dBm, 4 antennas</li> <li>VHT80: 23 dBm, 4 antennas</li> </ul> </li> </ul> |              |              |
| <b>Note:</b> The maximum power setting will vary by channel and according to individual country regulations. Refer to the product documentation for specific details. |  |                        |   |              |              |
| <b>Available transmit power settings</b>  | <b>2.4 GHz</b> <ul style="list-style-type: none"> <li>22 dBm</li> <li>19 dBm</li> <li>16 dBm</li> <li>13 dBm</li> <li>10 dBm</li> <li>7 dBm</li> <li>4 dBm</li> <li>1 dBm</li> </ul>   |                        | <b>5 GHz</b> <ul style="list-style-type: none"> <li>23 dBm</li> <li>20 dBm</li> <li>17 dBm</li> <li>14 dBm</li> <li>11 dBm</li> <li>8 dBm</li> <li>5 dBm</li> <li>2 dBm</li> </ul>  |              |              |
| <b>Note:</b> The maximum power setting will vary by channel and according to individual country regulations. Refer to the product documentation for specific details. |  |                        |   |              |              |
| <b>Integrated antenna</b>   | <ul style="list-style-type: none"> <li>2.4 GHz, gain 3 dBi, internal omni, horizontal beamwidth 360°</li> <li>5 GHz, gain 5 dBi, internal omni, horizontal beamwidth 360°</li> </ul>   |                        |   |              |              |
| <b>External antenna (sold separately)</b>   | <ul style="list-style-type: none"> <li>Certified for use with antenna gains up to 6 dBi (2.4 GHz and 5 GHz)</li> <li>Cisco offers the industry's broadest selection of <a href="#">antennas</a>, delivering optimal coverage for a variety of deployment scenarios</li> </ul>  |                        |   |              |              |
| <b>Interfaces</b>   | <ul style="list-style-type: none"> <li>1 x 10/100/1000BASE-T autosensing (RJ-45), Power over Ethernet (PoE)</li> <li>1 x 10/100/1000BASE-T autosensing (RJ-45), AUX (used for Link Aggregation)</li> <li>Management console port (RJ-45)</li> <li>USB 2.0 (enabled via future software)</li> </ul>   |                        |   |              |              |
| <b>Indicators</b>   | <ul style="list-style-type: none"> <li>Status LED indicates boot loader status, association status, operating status, boot loader warnings, boot loader errors</li> </ul>  |                        |   |              |              |
| <b>Dimensions (W x L x H)</b>   | <ul style="list-style-type: none"> <li>Access point (without mounting bracket): 8.3 x 8.3 x 2 in. (210.8 x 210.8 x 50.8 mm)</li> </ul>   |                        |   |              |              |
| <b>Weight</b>   | <ul style="list-style-type: none"> <li>3.12 lb (1.41 kg)</li> </ul>  |                        |   |              |              |
| <b>Environmental</b>  | <b>Cisco Aironet 1850i</b> <ul style="list-style-type: none"> <li>Nonoperating (storage) temperature: -22° to 158°F (-30° to 70°C)</li> <li>Nonoperating (storage) altitude test: 25°C, 15,000 ft.</li> <li>Operating temperature: 32° to 104°F (0° to 40°C)</li> <li>Operating humidity: 10% to 90% (noncondensing)</li> <li>Operating altitude test: 40°C, 9843 ft.</li> </ul> <b>Cisco Aironet 1850e</b> <ul style="list-style-type: none"> <li>Nonoperating (storage) temperature: -22° to 158°F (-30° to 70°C)</li> </ul> |                        |   |              |              |

| Feature                         | Specifications  |
|---------------------------------|---|
| <b>Environmental</b>            | <ul style="list-style-type: none"> <li>• Nonoperating (storage) altitude test: 25°C, 15,000 ft.</li> <li>• Operating temperature: -4° to 122°F (-20° to 50°C)</li> <li>• Operating humidity: 10% to 90% (noncondensing)</li> <li>• Operating altitude test: 40°C, 9843 ft.</li> </ul>   |
| <b>System memory</b>            | <ul style="list-style-type: none"> <li>• 1 GB DRAM</li> <li>• 256 MB flash</li> </ul>   |
| <b>Input power requirements</b> | <ul style="list-style-type: none"> <li>• AP1850: 44 to 57 VDC</li> <li>• Power supply and power injector: 100 to 240 VAC; 50 to 60 Hz</li> </ul>  |
| <b>Power draw</b>               | <ul style="list-style-type: none"> <li>• 20.9W</li> </ul> <p><b>Note:</b> When deployed using a Power over Ethernet (PoE) specification, the power drawn from the power sourcing equipment will be higher by some amount, depending on the length of the interconnecting cable.</p>   |
| <b>Powering options</b>         | <ul style="list-style-type: none"> <li>• 802.3at</li> <li>• Enhanced PoE</li> <li>• Cisco power injector, AIR-PWRINJ4=</li> <li>• Cisco local power supply, AIR-PWR-C=</li> <li>• Cisco power injector, AIR-PWRINJ5= (<b>Note:</b> this injector supports 802.3af only)</li> <li>• 802.3af</li> </ul> <p><b>Note:</b> If 802.3af PoE is the source of power, (1) the 1852e 2.4-GHz radio will shift to 2x3 from 3x4, (2) The USB port and AUX Ethernet port are disabled on both the 1852i and 1852e.</p>   |
| <b>Warranty</b>                 | Limited lifetime hardware warranty  |
| <b>Compliance standards</b>     | <ul style="list-style-type: none"> <li>◦ UL 60950-1</li> <li>◦ CAN/CSA-C22.2 No. 60950-1</li> <li>◦ UL 2043</li> <li>◦ IEC 60950-1</li> <li>◦ EN 60950-1</li> <li>◦ EN 50155</li> <li>• Radio approvals: <ul style="list-style-type: none"> <li>◦ FCC Part 15.247, 15.407</li> <li>◦ RSS-210 (Canada)</li> <li>◦ EN 300.328, EN 301.893 (Europe)</li> <li>◦ ARIB-STD 66 (Japan)</li> <li>◦ ARIB-STD T71 (Japan)</li> <li>◦ EMI and susceptibility (Class B)</li> <li>◦ FCC Part 15.107 and 15.109</li> <li>◦ ICES-003 (Canada)</li> <li>◦ VCCI (Japan)</li> <li>◦ EN 301.489-1 and -17 (Europe)</li> <li>◦ EN 60601-1-2 EMC requirements for the Medical Directive 93/42/EEC</li> </ul> </li> <li>• IEEE standards: <ul style="list-style-type: none"> <li>◦ IEEE 802.11a/b/g, 802.11n, 802.11h, 802.11d</li> <li>◦ IEEE 802.11ac Draft 5</li> </ul> </li> <li>• Security: <ul style="list-style-type: none"> <li>◦ 802.11i, Wi-Fi Protected Access 2 (WPA2), WPA</li> <li>◦ 802.1X</li> <li>◦ Advanced Encryption Standard (AES)</li> </ul> </li> <li>• Extensible Authentication Protocol (EAP) types: <ul style="list-style-type: none"> <li>◦ EAP-Transport Layer Security (TLS)</li> <li>◦ EAP-Tunneled TLS (TTLS) or Microsoft Challenge Handshake Authentication Protocol Version 2 (MSCHAPv2)</li> <li>◦ Protected EAP (PEAP) v0 or EAP-MSCHAPv2</li> <li>◦ EAP-Flexible Authentication via Secure Tunneling (FAST)</li> <li>◦ PEAP v1 or EAP-Generic Token Card (GTC)</li> <li>◦ EAP-Subscriber Identity Module (SIM)</li> </ul> </li> <li>• Multimedia: <ul style="list-style-type: none"> <li>◦ Wi-Fi Multimedia (WMM)</li> </ul> </li> <li>• Other: <ul style="list-style-type: none"> <li>◦ FCC Bulletin OET-65C</li> <li>◦ RSS-102</li> </ul> </li> </ul> |



\* Supported via Cisco Mobility Express with controller function running on the access point - not Cisco IOS® Software Autonomous based.

\*\* Future.

## Warranty Information

The Cisco Aironet 1850 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 are defect-free for 90 days. For more details, visit <http://www.cisco.com/go/warranty>.

## Ordering Information

To place an order, visit the [Cisco How to Buy page](#). To download software, visit the [Cisco Software Center](#).

**Table 2.** Ordering Information

| Product Name        | Part Number  |
|---------------------|--|
| Aironet 1850 Series | <b>Cisco Aironet 1852i Access Point: Indoor environments, with internal antennas</b> <ul style="list-style-type: none"><li>• AIR-AP1852I-x-K9: Dual-band, controller-based 802.11a/g/n/ac, Wave 2</li><li>• AIR-AP1852I-x-K9C: Dual-band, controller-based 802.11a/g/n/ac, Wave 2, configurable</li><li>• Regulatory domains: (x = regulatory domain)</li></ul>  |
|                     | <b>Cisco Aironet 1852e Access Point: Indoor, challenging environments, with external antennas</b> <ul style="list-style-type: none"><li>• AIR-AP1852E-x-K9: Dual-band, controller-based 802.11a/g/n/ac, Wave 2</li><li>• AIR-AP1852E-x-K9C: Dual-band, controller-based 802.11a/g/n/ac, Wave 2, configurable</li><li>• Regulatory domains: (x = regulatory domain)</li></ul> <p>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 <a href="http://www.cisco.com/go/aironet/compliance">http://www.cisco.com/go/aironet/compliance</a>.</p> <p>Not all regulatory domains have been approved. As they are approved, the part numbers will be available on the Global Price List.</p> |

## Cisco 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 help you 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](#)

---

## 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 1850 Series, visit <http://www.cisco.com/go/wireless> or contact your local account representative.



---

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](http://www.cisco.com/go/offices).

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: [www.cisco.com/go/trademarks](http://www.cisco.com/go/trademarks). Third party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1110R)