



APPENDIX **C**

Access Point Specifications

This appendix provides technical specifications for the 1200 series access point (see [Table C-1](#)).



Note

The lightweight access points (models: AIR-LAP1231G and AIR-LAP1232AG) do not support the 802.11b radio or the RM20A radio module.

Table C-1 **Access Point Specifications**

Category	Access Point with 802.11b or 802.11g Radio	Access Point with 802.11a Radio Module
Size	6.56 in. W x 7.23 in. D x 1.66 in. H 16.67 cm W x 18.36 cm D x 4.22 cm H	With the antenna in the patch position (RM20A or RM21A): 6.56 in. W x 8.04 in. D x 2.21 in. H 16.67 cm W x 20.42 cm D x 5.61 H With the RM22A radio module: 6.56 in. W x 8.76 in. D x 1.66 in. H 16.67 cm W x 22.25 cm D x 4.22 cm H
Status Indicators	Three indicators on the top panel: Ethernet traffic, status, and radio traffic.	
Connectors	Base unit: Back panel (left to right): Left RP-TNC antenna connector; power connector (for plug-in AC power module); RJ-45 connector for 10BASE-T or 100BASE-T Ethernet connections; upside down RJ-45 connector for serial connections; right RP-TNC antenna connector. Front Panel: Card Bus connector used for an 802.11a radio module. RM22A radio module: Left and right RP-TNC antenna connectors	
Input Voltage	48 VDC nominal. Operational up to 60 VDC. Voltage higher than 60 VDC can damage the unit.	

Table C-1 Access Point Specifications (continued)

Category	Access Point with 802.11b or 802.11g Radio	Access Point with 802.11a Radio Module
Input Power	With 802.11b radio: 6.0 W (typical) With 802.11g radio: 6.2 W (typical)	With RM20A radio module: 8.0 W (typical) With 802.11b radio and RM20A radio module: 10.0 W (typical) With 802.11g radio and RM20A radio module: 10.2 W (typical) With RM21A or RM22A radio module: 9.5 W (typical) With 802.11b radio and (RM21A or RM22A) radio module: 11.2 W (typical) With 802.11g radio and (RM21A or RM22A) radio module: 11.4 W (typical)
Operating Temperature	Base unit with 802.11b or 802.11g radio: –4 to 131°F (–20 to 55°C) 1200 series power injector: 32 to 104°F (0 to 40°C)	Access point (with two radios): –4 to 122°F (–20 to 50°C) 1200 series power injector: 32 to 104°F (0 to 40°C)
Storage Temperature	–13 to 158°F (–25 to 70°C)	
Weight	Without mounting bracket: 1.6 lbs (0.73 kg) with 802.11b or 802.11g radio 1.87 lbs (0.85 kg) with RM20A or RM21A radio module 1.97 lbs (0.89 kg) with RM20A or RM21A radio module and 802.11b or 802.11g radio 1.83 lbs (0.83 kg) with RM22A radio module 1.93 lbs (0.88 kg) with RM22A radio module and 802.11b or 802.11g radio	

Table C-1 Access Point Specifications (continued)

Category	Access Point with 802.11b or 802.11g Radio	Access Point with 802.11a Radio Module
Power Output	<p>Autonomous access points:</p> <ul style="list-style-type: none"> With 802.11b radio: 100, 50, 30, 20, 5, or 1 mW With 802.11g radio: 100, 50, 30, 20, 5, or 1 mW (at 1, 2, 5.5, and 11 Mbps) 30, 20, 10, 5, or 1 mW (at 6, 9, 12, 18, 24, 48, and 54 Mbps) <p>Lightweight access points:</p> <ul style="list-style-type: none"> At 1, 2, 5.5, and 11 Mbps 100 mW (20 dBm) 50 mW (17 dBm) 25 mW (14 dBm) 10 mW (11 dBm) 5 mW (8 dBm) 3 mW (5 dBm) 1 mW (2 dBm) 0.5 mW (-1 dBm) At 6, 9, 12, 18, 24, 48, and 54 Mbps 30 mW (15 dBm) 15 mW (12 dBm) 8 mW (9 dBm) 4 mW (6 dBm) 2 mW (2 dBm) 1 mW (-1 dBm) <p>(Depending on the regulatory domain in which the access point is installed)</p>	<p>Autonomous access points:</p> <ul style="list-style-type: none"> RM20A radio module: 16 dBm 13 dBm 10 dBm 7 dBm RM21A radio module or RM22A radio module: 17 dBm 15 dBm 14 dBm 11 dBm 10 dBm 8 dBm 5 dBm 2 dBm -1 dBm <p>Lightweight access points:</p> <ul style="list-style-type: none"> RM21A radio module or RM22A radio module: 17 dBm 14 dBm 11 dBm 8 dBm 5 dBm 2 dBm -1 dBm <p>Note These values are based on the FCC peak measurement method as defined in FCC 15.407 (A)(4)</p> <p>(Depending on the regulatory domain in which the access point is installed)</p>


Table C-1 Access Point Specifications (continued)

Category	Access Point with 802.11b or 802.11g Radio	Access Point with 802.11a Radio Module
Antenna	A diversity system with two RP-TNC connectors for external antennas (Cisco antennas are sold separately).	<p>RM20A radio module:</p> <p>A diversity system consisting of two integrated 4.5 dBi omnidirectional gain antennas or two integrated 6 dBi directional gain antennas depending on the positioning of the antenna assembly.</p> <p>RM21A radio module:</p> <p>A diversity system consisting of a dipole array providing 5 dBi omnidirectional gain or 9 dBi directional gain depending on the positioning of the antenna assembly.</p> <p>RM22A radio module:</p> <p>A diversity system with two RP-TNC antenna connectors for external antennas (Cisco antennas are sold separately).</p>
Frequency	2.400 to 2.497 GHz (Depending on the regulatory domain in which the access point is installed)	<p>RM20A radio module:</p> <p>UNII 1—5.15 to 5.25 GHz UNII 2—5.25 to 5.35 GHz</p> <p>RM21A radio module or RM22A radio module:</p> <p>UNII 1—5.15 to 5.25 GHz UNII 2—5.25 to 5.35 GHz UNII 3—5.725 to 5.850 GHz</p> <p>(Depending on the regulatory domain in which the access point is installed)</p>
Modulation	<p>802.11b radio:</p> <p>Complementary Code Keying (CCK)</p> <p>802.11g radio:</p> <p>CCK OFDM</p>	Orthogonal Frequency Division Multiplex (OFDM)
Subcarrier modulation	<p>CCK (5.5 Mbps and 11 Mbps)</p> <p>BPSK (1 Mbps, 6 Mbps and 9 Mbps)</p> <p>QPSK (2 Mbps, 12 Mbps and 18 Mbps)</p> <p>16-QAM (24 Mbps and 36 Mbps)</p> <p>64-QAM (48 Mbps and 54 Mbps)</p>	<p>BPSK (6 Mbps and 9 Mbps)</p> <p>QPSK (12 Mbps, 12 Mbps and 18 Mbps)</p> <p>16-QAM (24 Mbps and 36 Mbps)</p> <p>64-QAM (48 Mbps and 54 Mbps)</p>
Data rates	<p>802.11b radio:</p> <p>1, 2, 5.5, and 11 Mbps</p> <p>802.11g radio:</p> <p>1, 2, 5.5, and 11 Mbps 6, 9, 12, 18, 24, 36, 48, and 54 Mbps</p>	6, 9, 12, 18, 24, 36, 48, and 54 Mbps

Table C-1 Access Point Specifications (continued)

Category	Access Point with 802.11b or 802.11g Radio	Access Point with 802.11a Radio Module
Typical Range	<p>Indoor (across office cubicle walls):</p> <ul style="list-style-type: none"> • 802.11b radio: (100 mW output power) 350 ft at 1 Mbps 150 ft at 11 Mbps • 802.11g radio: (100 mW output power) 410 ft (125.0 m) at 1 Mbps 270 ft (82.3 m) at 2 Mbps 220 ft (67.1 m) at 5.5 Mbps 160 ft (48.8 m) at 11 Mbps <p>(30 mW output power)</p> <p>300 ft (91.4 m) at 6 Mbps 210 ft (67.1 m) at 12 Mbps 180 ft (54.9 m) at 18 Mbps 90 ft (27.4 m) at 54 Mbps</p> <p>Outdoor:</p> <ul style="list-style-type: none"> • 802.11b radio (100 mW output power): 2000 ft at 1 Mbps 800 ft at 11 Mbps • 802.11g radio (100 mW output power): 2000 ft (609.6 m) at 1 Mbps 1000 ft (304.8 m) at 11 Mbps <p>(30 mW output power)</p> <p>1300 ft (396.2 m) at 6 Mbps 600 ft (182.9 m) at 18 Mbps 250 ft (76.2 m) at 54 Mbps</p> <p>Note Using 2.2dBi antennas at the access point and the client adapter.</p>	<p>Indoor (across office cubicle walls):</p> <ul style="list-style-type: none"> • RM20A radio modules: 165 ft (50.3 m) at 6 Mbps 130 ft (39.6 m) at 12 Mbps 110 ft (33.5 m) at 18 Mbps 45 ft (13.7 m) at 54 Mbps <p>Note Using 40mW output power with 6 dBi antennas at the access point and client adapter.</p> <p>Outdoor:</p> <ul style="list-style-type: none"> • RM20A radio modules: 1000 ft (304.8 m) at 6 Mbps 100 ft (30.5 m) at 54 Mbps <p>Note Using 40mW output power with 6 dBi antennas at the access point and client adapter.</p>

Table C-1 Access Point Specifications (continued)

Category	Access Point with 802.11b or 802.11g Radio	Access Point with 802.11a Radio Module
Compliance	<p>The 1200 series access point complies with UL 2043 for products installed in a building's environmental air handling spaces, such as above suspended ceilings.</p> <p> Caution Only the fiber-optic power injector (AIR-PWRINJ-FIB) has been tested to UL 2043 for operation in a building's environmental air space; no other power injectors or power modules have been tested to UL 2043 and they should not be placed in a building's environmental air space, such as above suspended ceilings.</p> <p>Note If you plan to mount the access point in environmental air space using a 802.11a radio, Cisco recommends that you mount the access point horizontally with its antennas pointing down. Doing so results in the access point complying with regulatory requirements for environmental air space with an 802.11a radio installed.</p>	
Safety	<p>Designed to meet:</p> <ul style="list-style-type: none"> • UL 1950 Third Edition • CSA 22.2 No. 950-95 • IEC 60950 Second Edition, including Amendments 1-4 with all deviations • EN 60950 Second Edition, including Amendments 1-4 	<p>Designed to meet:</p> <ul style="list-style-type: none"> • UL 1950 Third Edition • CSA 22.2 No. 950-95 • IEC 60950 Second Edition, including Amendments 1-4 with all deviations • EN 60950 Second Edition, including Amendments 1-4
Radio Approvals	<p>802.11b radio:</p> <p>FCC Part 15.247 Canada RSS-210 Japan ARIB-STD-33B EN 300.328 ARIB STD-66</p> <p>802.11g radio:</p> <p>FCC Parts 15.247, 15.205, 15.209 Canada RSS-210 Japan ARIB-STD-33B Japan ARIB-STD-66 Europe EN-300.328</p>	<p>FCC Part 15.407 Canada RSS-210 Japan ARIB STD-T71 EN 301.893</p>
EMI and Susceptibility	<p>FCC Part 15.107 and 15.109 Class B ICES-003 Class B (Canada) EN 55022 B EN 60601-1-2:2001 AS/NZS 3548 Class B VCCI Class B EN 55024 EN 301.489-1 EN 301.489-17</p>	
RF Exposure	<p>OET-65C RSS-102 ANSI C95.1</p>	

