AP 200
802.11a/b Access Port
Accessories Addendum

symbol ®

www.symbol.com

Introduction

The AP 200 Access Port provides 802.11a/b coverage to wireless network devices. The AP 200 allows the use of internal or external antenna options.

Three base models of the AP 200 are available. Accessory options are available for each configuration (when applicable) and include:

802.11a Internal Antenna

802.11b Internal Antenna with Radio

802.11b External Antenna with Radio

Technical Specifications

Specifications only apply to the AP 200 Access Port assembly.

Operating Voltage	48VDC (typical); 36VDC to 57VDC (range)
Operating Current	10mA to 150mA
Peak Current	250mA
Operating Temperature	-20°C to 50°C (-4°F to 122°F)
Operating Humidity	5% to 85% non-condensing
Storage Temperature	-40°C to 70°C (-40°F to 158°F)
Storage Humidity	85%
Altitude	2438m (8,000ft.) (operating max) 4572m (15,000ft.) (storage max)
Drop: No antenna modules)	91cm (36in.) to concrete
With antenna modules	76cm (30in.) to concrete
Electrostatic Discharge	+/-15KV (air discharge); +/-8KV (contact discharge); +/-2KV (pin discharge)

Radio Characteristics

The AP 200 is an IEEE 802.11a/b compliant device when configured with the appropriate radio option.

As an IEEE 802.11a device it supports 6, 9, 12, 18, 24, 36, 48 and 54Mbps data rates, utilizing transmit-only diversity, in the 5.15GHz to 5.825GHz range.

As an IEEE 802.11b device it supports 1.0, 2.0, 5.5 and 11.0Mbps data rates, utilizing transmit and receive diversity, in the 2.4GHz to 2.5GHz ISM radio band.

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is necessary, so the AP 200 can sense that an internal Antenna is in use.

4. Ensure the coaxial cables cross over each other before connecting to the external connectors. This allows the internal antenna cables to tuck neatly inside the antenna housing

Integral Antenna Micro Switch

when secured to the AP 200.

5. Connect the internal antenna to the 802.11a AP 200 using the two coaxial reverse SMA connector plugs.

Note: Ensure the 802.11a antenna cables are crossed over each other before connecting to the AP 200 external antenna connectors and securing the antenna housing to the AP 200.

6. Holding the internal antenna unit level to the AP 200 carefully mount the antenna onto the AP 200 (ensure the antenna cables stay tucked into the housing) until it is flush with the main housing.

7. Using the torx tool and screws (2) secure the antenna to the AP 200.

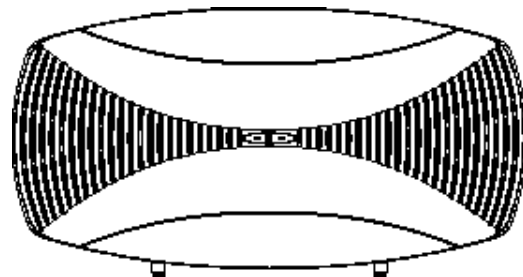8. Verify the unit has power by observing the Amber LED.

Installation of Optional Accessory Hardware

The available radio/antenna options vary depending on the AP 200 configuration purchased.

Note: A tamper resistant #10 Torx driver is required to remove and install antenna modules (internal/external). This tool is not included with the AP 200 or antenna/radio options, but, is available in the open market.

Caution! This equipment contains components that can be damaged by electrostatic discharge. When handling radio/antenna options use proper electrostatic safety handling procedures. Ensure all power and data cables are removed before installing any radio options.

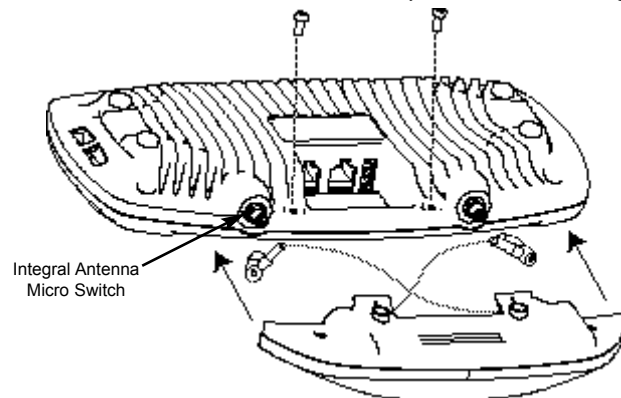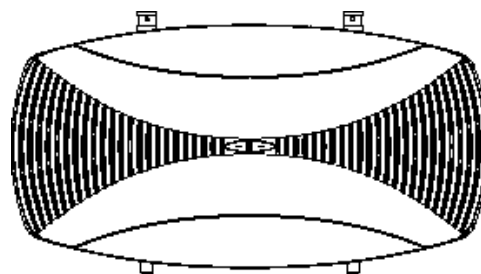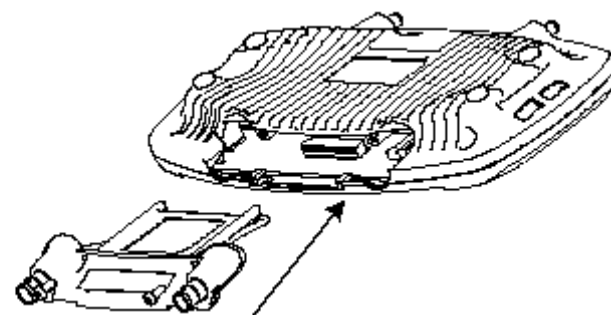### 802.11a Internal Antenna Option

Note: Removing and installing antenna option with the AP 200 upside down (ribbed side up) is recommended.

1. Ensure the AP 200 is on a level work area such as a table and not mounted to any surface.

2. Remove the internal antenna and tamper resistant screws from the shipping container and remove any packaging material.

3. The Internal 802.11a antenna contains two coaxial cables with reverse SMA connectors that connect to the external antenna connectors on the main unit. The internal antenna housing has a pin, that mates to a micro switch, on the main housing, near the external antenna connectors. Properly seating the internal antenna so the pin makes good contact

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802.11b External Antenna Radio Option

Caution! This equipment contains components that can be damaged by electrostatic discharge. When handling radio/antenna options use proper electrostatic safety handling procedures. Ensure all power and data cables are removed before installing any radio options.

Note: Removing and installing antenna option with the AP 200 upside down (ribbed side up) is recommended.

1. Ensure the AP 200 is not mounted to any surface and is on a level work area such as a table.

2. Remove the 802.11b external antenna radio option and tamper resistant screws from the shipping container and remove any packaging material.

3. Using the torx tool remove the access panel (if the internal antenna option is installed, remove it) covering the 802.11b side of the AP 200. Discard the access panel.

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4. Carefully hold and align the 802.11b external antenna radio option slide rails with the AP 200 card slot (if the AP 200 is upside down, place the antenna/radio PCI card face down as it is aligned and inserted).

5. Insert into the AP 200 until it is flush with the main housing.

6. Using the Torx tool and screws, secure the external antenna radio option to the AP 200.

7. Verify the unit has power by observing the Amber LED.

Note: Refer to the WS 5000 Wireless Switch Online System Reference guide included with the switch hardware for configuration of the AP 200.

802.11b Internal Antenna Radio Option

Caution! This equipment contains components that can be damaged by electrostatic discharge. When handling radio/antenna options use proper electrostatic safety handling procedures. Ensure all power and data cables are removed before installing any radio options.

Note: Removing and installing antenna option with the AP 200 upside down (ribbed side up) is recommended.
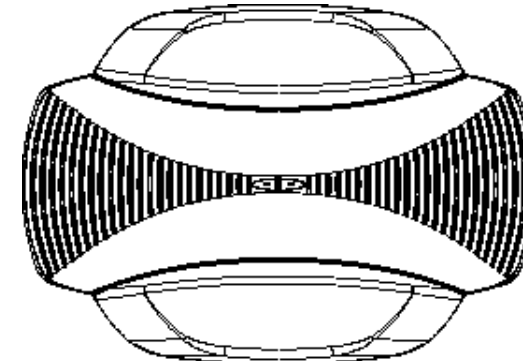
1. Ensure the AP 200 is not mounted to any surface and is on a level work area such as a table.

2. Remove the 802.11b internal antenna radio option and tamper resistant screws from the shipping container and remove any packaging material.

3. Using the torx tool to remove the access panel (if the external antenna/radio option is installed, remove it) covering the 802.11b side of the AP 200.

4. Carefully hold and align the 802.11b internal antenna/radio option slide rails with the AP 200 card slot (if the AP 200 is upside down, place the antenna/radio PCI card face down as it is aligned and inserted).

5. Insert into the AP 200 until it is flush with the main housing.

6. Using the Torx tool and screws, secure the external antenna radio option to the AP 200.

7. Verify the unit has power by observing the Amber LED.

Note: Refer to the WS 5000 Wireless Switch Online System Reference guide included with the switch hardware for configuration of the AP 200.
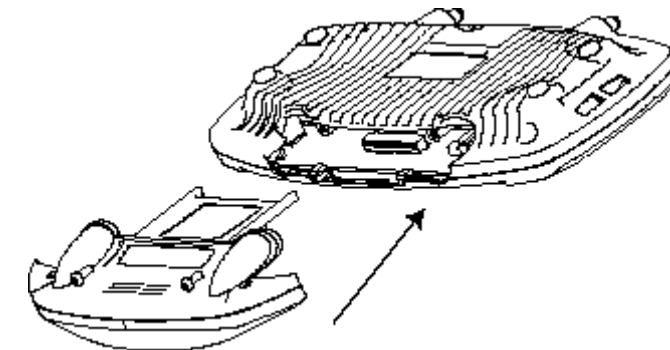
Available Options

Contact a Symbol sales associate for available AP 200 radio and antenna options.

Radio or Antenna Option	Part number	Notes
.11a Internal antenna	WSM-5040-110-WW	Requires a special removal/installation tool available in the open market. Not supplied by Symbol Technologies.
.11a External RSMA Dipole antenna	ML-5299-APA1-01	
.11b radio with external antenna connectors	WSM-5030-200-WW	Requires a special removal/installation tool available in the open market. Not supplied by Symbol Technologies.
.11b radio with internal antenna	WSM-5030-210-WW	Requires a special removal/installation tool available in the open market. Not supplied by Symbol Technologies.
.11b External RBNC dipole antenna	ML 2499-APA1-00	
.11b External RBNC high performance single antenna	ML 2499-HPA1-00	
.11b Twin high performance diversity antennas	ML 2499-DVA1-00	
.11b Mountable F-plane antenna	48-450115-01	

Note: A tamper resistant #10 Torx driver is required to remove and install antenna modules (internal/external). This tool is not included with the AP 200 or antenna/radio options, but, is available in the open market.

Customer Support

Symbol Technologies provides its customers with prompt and accurate customer support. Use the Symbol Support Center as the primary contact for any technical problem, question or support issue involving Symbol products.

If the Symbol Customer Support specialists cannot solve a problem, access to all technical disciplines within Symbol becomes available for further assistance and support. Symbol Customer Support responds to calls by email, telephone or fax within the time limits set forth in individual contractual agreements.

When contacting Symbol Customer Support, please provide the following information:

- Device serial number
- Product name or model number
- Software type and version number.

North American Contacts

Inside North America, contact Symbol at:

Symbol Technologies, Inc.

One Symbol Plaza

Holtsville, New York 11742-1300

Telephone: 1-631-738-2400/1-800-SCAN 234

Fax: 1-631-738-5990

Symbol Support Center (for warranty and service information):

Telephone: 1-631-738-6213/1-800-653-5350

Fax: (631) 563-5410

Email: support@symbol.com

International Contacts

Outside North America, contact Symbol at:

Symbol Technologies, Inc.

Symbol Place

Winnersh Triangle, Berkshire, RG41 5TP

United Kingdom

0800-328-2424 (Inside UK)

+44 118 945 7529 (Outside UK)

Web Support sites

MySymbolCare

http://www.symbol.com/services/msc

Symbol Services Homepage

http://www.symbol.com/services

Symbol Software Updates

http://www.symbol.com/services/downloads

Symbol Developer Program

http://devzone.symbol.com

Symbol Knowledge Base

http://kb.symbol.com/register.asp

Additional Information

Obtain additional information by contacting Symbol at:

- 1-800-722-6234, inside North America
- +1-631-738-5200, in/outside North America
- http://www.symbol.com/

Legal Information

Regulatory Information

All Symbol devices are designed to be compliant with rules and regulations in locations they are sold and will be labeled as required.

Any changes or modifications to Symbol Technologies equipment, not expressly approved by Symbol Technologies, could void the user's authority to operate the equipment.

Use only the supplied or an approved replacement antenna. Unauthorized antennas, modifications, or attachments could cause damage and may violate regulations.

This Device is to be used only with Symbol Technologies Wireless Switch.

Applying the Regulatory Country Stamp

Regulatory labels are applied to the device signifying the radio(s) are approved for use in the following countries: United States, Canada, Australia, Japan & Europe 1,2.

Note 1: For 2.4GHz Products: Europe includes, Austria, Belgium, Croatia, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Liechtenstein, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

Note 2: The use of 5GHz RLAN's has varying restrictions of use; please refer to the Symbol Declaration of Conformity (DoC) for details at http://www2.symbol.com/doc/

In addition to the list above other countries may require a regulatory stamp to be affixed to the product.

Please refer to www.symbol.com/ for the list of countries where mandatory stamps are required.

For countries that require regulatory label, a sheet of stamps may be enclosed within the package.

If the appropriate stamps are not provided, please contact your supplier.

To apply the country stamp:

1. Peel the stamp appropriate to the country where this device is to be used.
2. Apply the country stamp in the space provided on the regulatory label.

⚠ Operation of the device without a regulatory label or the correct country Stamp is illegal.

FCC RF Exposure Guidelines

Safety Information

⚠ The device complies with internationally recognized standards covering Specific Absorption Rate (SAR) related to human exposure to electromagnetic fields from radio devices.

It is advisable to use the device only in the normal operating position.

Remote and Standalone Antenna Configurations

To comply with FCC RF exposure requirements, antennas that are mounted externally at remote locations or operating near users at stand-alone desktops of similar configurations must operate with a minimum separation distance of 20 cm from all persons.

Power Supply

Use only Symbol approved power supplies 50-24000-049 output rated 48VDC and minimum 1.1amp or 50-24000-050 output rated 48VDC and minimum .25amp. The power supply is certified to EN60950 with SELV outputs. Use of alternative power supply will invalidate any approval given to this device and may be dangerous.

Hinweis: Benutzen Sie nur eine Symbol Technologies genehmigt Stromversorgung 50-24000-049 in den Ausgabe: 48Vdc und minimum 1.1A. oder 50-24000-050 in den Ausgabe: 48VDC und minimum .25A. Die Stromversorgung ist bescheinigt nach EN60950 mit SELV Ausgaben

- Model 50-24000-049 48VDC power supply
- Model 50-24000-050 48VDC power supply
- Model AP-PSBIAS-T-12-AF Power Injector-12 Port

Radio Frequency Interference Requirements

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help.

Radio Transmitters (Part 15)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Radio Frequency Interference Requirements - Canada

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Radio Transmitters

This device complies with RSS 210 of Industry & Science Canada. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesirable operation.

Label Marking: The Term "IC:" before the radio certification only signifies that Industry Canada technical specifications were met.

($C \in$ Marking and European Economic Area (EEA)

The use of 2.4GHz RLAN's, for use through the EEA, have the following restrictions:

- Maximum radiated transmit power of 100 mW EIRP in the frequency range 2.400GHz -2.4835GHz
- France, equipment is restricted to 2.4465GHz -2.4835GHz frequency range
- Belgium outside usage, the equipment is restricted to 2.460GHz -2.4835GHz frequency range
- Italy requires a user license for outside usage.

The use of 5GHz RLAN's has varying restrictions for use within the EEA; please refer to the Symbol Declaration of Conformity (DoC) for details at http://www2.symbol.com/doc/

Statement of Compliance

Symbol Technologies, Inc., hereby, declares that this device is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. A Declaration of Conformity may be obtained from http://www2.symbol.com/doc/

Other Countries

Mexico -   Restrict Frequency Range to: 2.450GHz - 2.4835GHz.

Israel -   Restrict Frequency Range to: 2.418GHz - 2.457GHz.

Sri Lanka -   Restrict Frequency Range to: 2.400GHz - 2.430GHz.