

External-Antenna Nortel Networks WLAN - Access Point Quick Installation Guide

System Release 2.0

This Guide contains several sections allowing you to install an AS-1200-BG-EXT or AS-1200-ABG-EXT Nortel Networks WLAN - Access Point or an AS-1200-ABG-EXT-RE Nortel Networks WLAN - Remote Edge Access Point (Remote Edge Access Point). These models contain internal 802.11a and 802.11b/g antennas and connectors for optional external 802.11a and 802.11b/g antennas.

If you are installing an AS-1200-BG-INT or AS-1200-ABG-INT Nortel Networks WLAN - Access Point with internal 802.11a and 802.11b/g antennas and no connectors for optional external antennas, please refer to the [Internal-Antenna Airespace Access Point Quick Installation Guide](#).

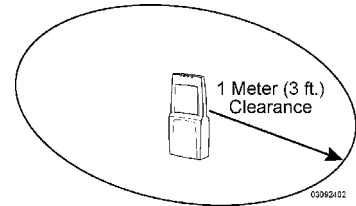
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ATTENTION!

While Nortel Networks WLAN - Access Points have been engineered for easy installation, there are some guidelines that are very important to the end users:

- PLACE Nortel Networks WLAN - Access Points NO MORE THAN 140 FEET APART FROM EACH OTHER. Placing Nortel Networks WLAN - Access Points further apart almost always results in poor coverage.
- DO NOT MOUNT Nortel Networks WLAN - Access Points OUTSIDE BUILDINGS.
- DO NOT MOUNT Nortel Networks WLAN - Access Points ON BUILDING PERIMETER WALLS UNLESS THE OPERATOR WANTS TO PROVIDE COVERAGE OUTSIDE THE BUILDING.
- MAKE SURE that plenum-mounted Nortel Networks WLAN - Access Points and Remote Edge Access Points are powered using Power Over Ethernet (POE) to comply with safety regulations.

- MAKE SURE THAT THE Nortel Networks WLAN - Access Points ARE INSTALLED VERTICALLY. Nortel Networks WLAN - Access Points ARE DESIGNED TO BE INSTALLED VERTICALLY, either standing up in a plenum or hanging from a ceiling, to create the largest coverage area per Nortel Networks WLAN - Access Point. Hanging the Nortel Networks WLAN - Access Point from the ceiling provides the best RF coverage.
- DO NOT MOUNT Nortel Networks WLAN - Access Point ANTENNAS WITHIN ONE METER (3 FT.) OF ANY METAL OBSTRUCTIONS. THE RF WAVES FROM Nortel Networks WLAN - Access Points ARE BLOCKED AND/OR REFLECTED BY METAL OBJECTS, such as metal HVAC ducts, conduit, pipes, bookcases, elevator shafts, stairwells, and metal walls. REFER TO THE Nortel Networks WLAN - Access Point Deployment Guide BEFORE MOUNTING Nortel Networks WLAN - Access Points NEAR METAL OBSTRUCTIONS.
- WHEN MOUNTING Nortel Networks WLAN - Access Points IN THE CORNER OF A RIGHT-ANGLE HALLWAY INTERSECTION, MOUNT THE Nortel Networks WLAN - Access Point AT A 45-DEGREE ANGLE TO THE TWO HALLWAYS. The Nortel Networks WLAN - Access Point internal antennas are not omnidirectional, and will cover a larger area if mounted this way.



Overview

This guide is designed to provide you with the information needed to mount AS-1200-BG-EXT and AS-1200-ABG-EXT Nortel Networks WLAN - Access Points and AS-1200-ABG-EXT-RE Nortel Networks WLAN - Remote Edge Access Points (Remote Edge Access Points). Nortel Networks WLAN - Access Points and Remote Edge Access Points are part of the innovative Nortel Networks 2200 series (Nortel Networks 2200 series), and require no manual configuration after they are mounted.

This document assumes that a site survey has been performed as described in the [Nortel Networks WLAN - Access Point Deployment Guide](#) section in the [Nortel Networks Product Documentation](#), that Nortel Networks WLAN - Access Point and Remote Edge Access Point locations and mounting options have been selected, and that you have one Nortel Networks WLAN - Access Point or Remote Edge Access Point per indicated location.

After the site survey is done, you should have a map indicating the following:

- AP and Remote Edge Access Point locations.
- AP and Remote Edge Access Point mounting options: in the middle of a ceiling/hallway, in the ceiling plenum, projecting away from the wall, or flat against the wall.
- AP and Remote Edge Access Point power options: power supplied by the AC-to-DC power supply orderable from the factory, or Power over Ethernet (PoE) from the (UNUSED PRODUCT), another network device, or a PoE injector/hub (usually located in a wiring closet).



Note: Plenum-mounted Nortel Networks WLAN - Access Points and Remote Edge Access Points MUST BE powered using Power Over Ethernet (POE) to comply with safety regulations.

If you do not have a map, make one so you can record the MAC addresses from each location and return them to the person who is planning or managing this wireless network.

Refer to the following sections to install the Nortel Networks WLAN - Access Points.



Note: When mounting Nortel Networks WLAN - Access Points and Remote Edge Access Points, make sure to maintain a 20 cm (8 in.) separation between the Nortel Networks WLAN - Access Points or Remote Edge Access Points and bystanders to comply with FCC RF exposure regulations. Refer to the [FCC Statements for Nortel Networks WLAN - Access Points](#) section for more information.

For more details about Nortel Networks WLAN - Access Point and Remote Edge Access Point installations, refer to the [Planning Notes](#) section at the end of this document.

Step 1: Collecting Required Tools and Supplies

- One Nortel Networks WLAN - Access Point or Remote Edge Access Point per location.
- Nortel Networks WLAN - Access Point and Remote Edge Access Point Mounting Kits, factory-supplied with each Nortel Networks WLAN - Access Point.
- Optional Nortel Networks WLAN - Access Point and Remote Edge Access Point Mounting Kits, factory-orderable.
- Optional external AC-to-DC power supplies, factory-orderable.
- Optional external 802.11b/g antennas.
- ▶ **Note:** Refer to the [Nortel Networks 2200 series Release Notes](#) for 802.11a external antenna information. Contact Nortel Networks for a list of approved 802.11a and 802.11b/g external antennas.
- Map showing Nortel Networks WLAN - Access Point and Remote Edge Access Point locations, and mounting and power options.
- Screwdrivers, drills, and ladder.
- An assortment of sheet metal and drywall screws and toggle bolts.
- CAT-5 (or higher) cables to connect the Nortel Networks WLAN - Access Point and Remote Edge Access Point locations and the (UNUSED PRODUCT) or other network device.
- Optional Kensington MicroSaver Security Cable to secure each Nortel Networks WLAN - Access Point and Remote Edge Access Point.

Continue with [Step 2: Configuring the Nortel Networks WLAN - Access Point or Remote Edge Access Point Before Installation](#).

Step 2: Configuring the Nortel Networks WLAN - Access Point or Remote Edge Access Point Before Installation

The following procedures are designed to make sure that your Nortel Networks WLAN - Access Point physical installation goes smoothly and that initial operation is as expected. If you are unable to prepare your Nortel Networks WLAN - Access Point for deployment, this Step also describes RMA (Return Material Authorization) procedures.

▶ **Note:** Perform either of the following two procedures on each Nortel Networks WLAN - Access Point or Remote Edge Access Point BEFORE deploying the Nortel Networks WLAN - Access Point or Remote Edge Access Point in its final location.

- [Preparing a Version 1.2 Nortel Networks WLAN - Access Point](#) for installation in a Version 2.0 Nortel Networks 2200 series
- [Preparing a Version 2.0 Nortel Networks WLAN - Access Point or Remote Edge Access Point](#) or [Alternate Preparing a Version 2.0 Nortel Networks WLAN - Access Point or Remote Edge Access Point](#) for installation in a Version 2.0 Nortel Networks 2200 series

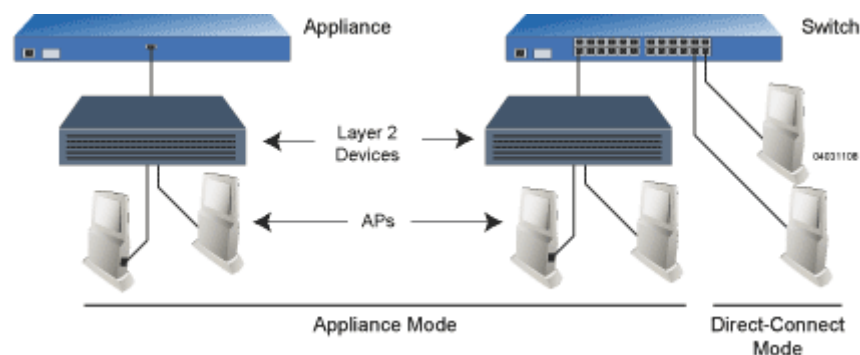
If you are unable to perform either of previous procedures, refer to the [RMA Procedures](#) section in the [Nortel Networks Product Documentation](#).

Preparing a Version 1.2 Nortel Networks WLAN - Access Point

If your Nortel Networks WLAN - Access Point has Operating System 1.2 or an earlier version loaded on it, or if you do not know what version the AP has loaded on it, use this procedure. If your AP is a Remote Edge Access Point or has Operating System 2.0 or later loaded on it, use the [Preparing a Version 2.0 Nortel Networks WLAN - Access Point or Remote Edge Access Point](#) procedure below.

▶ **Note:** This procedure assumes that you are preparing a version 1.2 Nortel Networks WLAN - Access Point to interoperate with a version 2.0 Nortel Networks WLAN - Wireless Security Switch. When you are preparing a version 1.2 Nortel Networks WLAN - Access Point to interoperate with a version 1.2 Nortel Networks WLAN - Wireless Security Switch, use the procedure found in the version 1.2 [Nortel Networks WLAN - Access Point Quick Installation Guide](#).

Configuration Setup



Does My Configuration Qualify for this Procedure?

- You must have a version 2.0 Nortel Networks WLAN - Wireless Security Switch on its own subnet that can be reconfigured back and forth between Layer 2 and Layer 3 LWAPP operation. If you do not have a spare or depot Nortel Networks WLAN - Wireless Security Switch that can

be reconfigured back and forth between Layer 2 and Layer 3 operation, refer to RMA Procedures later in this document to RMA your version 1.2 Nortel Networks WLAN - Access Points.

- Alternatively, you may have a version 2.0 Nortel Networks WLAN - Wireless Security Switch that is part of a mobility group that can be reconfigured back and forth between Layer 2 and Layer 3 operation. If you do not have a mobility group of Nortel Networks WLAN - Wireless Security Switches that can be reconfigured back and forth between Layer 2 and Layer 3 operation, refer to RMA Procedures later in this document to RMA your version 1.2 Nortel Networks WLAN - Access Points.
- If your version 1.2 Nortel Networks WLAN - Access Point(s) cannot be configured for any other reason using the following procedure, refer to [RMA Procedures](#) in the [Nortel Networks Product Documentation](#).

Configuration Steps for an Nortel Networks WLAN - Access Point

1. Configure the Nortel Networks WLAN - Wireless Security Switch in **LWAPP Layer 2 Mode** and make sure its DS Port is connected to the network. Use CLI, Web Browser and/or WLAN Control System procedures as described in the [Nortel Networks WLAN - Wireless Security Switch Quick Install Guide](#) and the [Nortel Networks Product Documentation](#).
 - Make sure AP ports are available (either [Direct-Connect Mode](#) or [Appliance Mode](#)).
 - Set the Nortel Networks WLAN - Wireless Security Switch as the Master, so new Nortel Networks WLAN - Access Points always associate with it.
 - Refer to the [Nortel Networks Product Documentation](#) for other settings.

(Note that Layer 3 and Layer 2 LWAPP operation can be switched back and forth as described in the Solutions section of the [Nortel Networks Product Documentation](#).)

2. Take the AP out of the box and plug it into a front-panel 10Base-T connector on the Master Switch ([Direct-Connect mode](#)), or through the same subnet that Nortel Networks WLAN - Wireless Security Switch is on ([Appliance Mode](#)).
3. Apply power to the AP:
 - Use 802.3af-compliant Power Over Ethernet (PoE) from the (UNUSED PRODUCT) or from an orderable inline power injector. If you do not have PoE available, use an orderable external AC-to-48 VDC Power Supply plugged into the side of the AP.
 - After powering up the AP, the RED Alarm LED comes on for a short period (about 15-20 seconds) and then all the LEDs blink sequentially back and forth, indicating that the AP is trying to find a Nortel Networks WLAN - Wireless Security Switch to connect to. This can continue for up to five minutes. If the AP remains in this mode for more than five minutes, the AP is unable to find the Master Nortel Networks WLAN - Wireless Security Switch. Check the connection between the AP and the Nortel Networks WLAN - Wireless Security Switch and make sure the AP and the Nortel Networks WLAN - Wireless Security Switch are on the same subnet.
 - If the power light does not come on, check the power (it can be powered either with Power over Ethernet or a from an orderable AP External Power Supply).
 - Make sure that a DHCP server is configured in the Nortel Networks WLAN - Wireless Security Switch for the Management Interface using the CLI, Web Browser, or WLAN Control System interface, and that the DHCP server is operating correctly.
 - Once the AP finds the Nortel Networks WLAN - Wireless Security Switch, it attempts to download the new Operating System code if the AP code version differs from the Nortel Networks WLAN - Wireless Security Switch code version. While this is happening, the LEDs on the top of the AP blink on and off together.

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4. Once the Operating System code download is successful, the AP reboots. The GREEN LED turns on and the two YELLOW/AMBER/ORANGE LEDs indicate the states of the 802.11a and 802.11b/g networks. If any part of the network is disabled in the Nortel Networks WLAN - Wireless Security Switch, the corresponding YELLOW/AMBER/ORANGE LED remains off.
 - Note that the Red LED can light for a short period (10-20 seconds) when the AP reboots. If the RED LED comes on AND STAYS ON for more than a minute, disconnect the AP and call Nortel Networks Technical Support.
 - From the CLI, Web Browser or WLAN Control System interface, configure the AP with its Primary Nortel Networks WLAN - Wireless Security Switch name as described in the [Nortel Networks Product Documentation](#).
 - If you will be using the AP in a mobility group, set the mobility group name using the CLI, Web Browser or WLAN Control System interface.
 - If required, use the CLI, Web Browser or WLAN Control System interface to customize the AP-specific 802.11a, 802.11b and 802.11g network settings. Once again, the two YELLOW/AMBER/ORANGE LEDs indicate the states of the 802.11a and 802.11b/g networks. If any part of the network is disabled, the corresponding YELLOW/AMBER/ORANGE LED remains off.
 5. If everything works (the GREEN LED is on and the RED LED is off), disconnect the AP and take it to its final destination and install it as described in this document. If your Nortel Networks WLAN - Access Point fails this visual test, refer to [RMA Procedures](#) in the [Nortel Networks Product Documentation](#) to return your Nortel Networks WLAN - Access Points.
 6. When you have installed and powered up the AP in its final destination, verify that the LEDs are in the same state they were in at the end of Step 4. If no LEDs are on, the AP is most likely not receiving power. If the LEDs blink sequentially back and forth for more than five minutes, the AP is unable to find its Primary Nortel Networks WLAN - Wireless Security Switch. Check the connection between the AP and the Nortel Networks WLAN - Wireless Security Switch, and make sure the AP and the Nortel Networks WLAN - Wireless Security Switch are either on the same subnet or that the AP has a route back to its Primary Nortel Networks WLAN - Wireless Security Switch. If the Nortel Networks WLAN - Access Point or Remote Edge Access Point is not on the same subnet as the Nortel Networks WLAN - Wireless Security Switch, make sure there is a DHCP server on the same subnet as the Nortel Networks WLAN - Access Point or Remote Edge Access Point. Also, make sure that the route between the Nortel Networks WLAN - Access Point or Remote Edge Access Point and the Nortel Networks WLAN - Wireless Security Switch can process IP fragmented packets.

After you have prepared all Nortel Networks WLAN - Access Points, reconfigure the Nortel Networks WLAN - Wireless Security Switch so it is not the Master. A Master Nortel Networks WLAN - Wireless Security Switch should only be used for configuring Nortel Networks WLAN - Access Points and not in a working network.

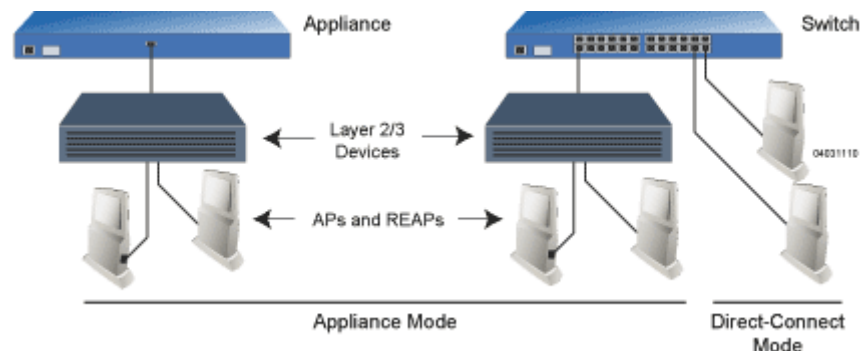
After completing [Step 2: Configuring the Nortel Networks WLAN - Access Point or Remote Edge Access Point Before Installation](#) for all Nortel Networks WLAN - Access Points and Remote Edge Access Points, continue with [Step 3: Preparing Mounting Locations](#).

Preparing a Version 2.0 Nortel Networks WLAN - Access Point or Remote Edge Access Point

If your Nortel Networks WLAN - Access Point has Operating System 2.0 or a later version (which includes all Remote Edge Access Points) loaded on it, continue with this procedure. If your AP has Operating System 1.2 or earlier loaded on it, or if you do not know what version the AP has loaded, use the [Preparing a Version 1.2 Nortel Networks WLAN - Access Point](#) procedure above.

► **Note:** This procedure assumes that you are preparing a version 2.0 Nortel Networks WLAN - Access Point or Remote Edge Access Point to interoperate with a version 2.0 Nortel Networks WLAN - Wireless Security Switch. When you are preparing a version 1.2 Nortel Networks WLAN - Access Point to interoperate with a version 1.2 Nortel Networks WLAN - Wireless Security Switch, use the procedure found in the version 1.2 [Nortel Networks WLAN - Access Point Quick Installation Guide](#).

Configuration Setup



Does My AP Qualify for this Procedure?


- If your 2.0 or later version later Nortel Networks WLAN - Access Point(s) or Remote Edge Access Point(s) cannot be configured for any reason using the following procedure, refer to [RMA Procedures](#) in the [Nortel Networks Product Documentation](#).

Configuration Steps for an Nortel Networks WLAN - Access Point or Remote Edge Access Point

1. Configure the Nortel Networks WLAN - Wireless Security Switch in **LWAPP Layer 3 Mode** and make sure its DS Port is connected to the network. Use CLI, Web Browser and/or WLAN Control System procedures as described in the [Nortel Networks WLAN - Wireless Security Switch Quick Install Guide](#) and the [Nortel Networks Product Documentation](#).

► **Note:** When you are installing a Remote Edge Access Point or a Nortel Networks WLAN - Access Point, a DHCP server must be accessible by the Remote Edge Access Point or a Nortel Networks WLAN - Access Point.

- Make sure AP ports are available (either [Direct-Connect Mode](#) through the Switch physical ports, or in [Appliance Mode](#) through the Nortel Networks WLAN - Wireless Security Switch Management/AP-Manager Interface).
 - Set the Nortel Networks WLAN - Wireless Security Switch as the Master, so new Nortel Networks WLAN - Access Points always associate with it.
 - Refer to the [Nortel Networks Product Documentation](#) for other settings.
2. Take the AP or Remote Edge Access Point out of the box and plug it into the front panel of the Master Switch ([Direct-Connect Mode](#)), or through the same subnet that Nortel Networks WLAN - Wireless Security Switch is on ([Appliance Mode](#)).
 3. Apply power to the AP:
 - Use 802.3af-compliant Power Over Ethernet (PoE) from the Nortel Networks WLAN - Wireless Security Switch or from an orderable inline power injector. If you do not have PoE available, use an orderable external AC-to-48 VDC Power Supply plugged into the side of the AP.

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- After powering up the AP, the RED Alarm LED comes on for a short period (about 15-20 seconds) and then all the LEDs blink sequentially back and forth, indicating that the AP is trying to find a Nortel Networks WLAN - Wireless Security Switch to connect to. This can continue for up to five minutes. If the AP remains in this mode for more than five minutes, the AP is unable to find the Master Nortel Networks WLAN - Wireless Security Switch. Check the connection between the AP and the Nortel Networks WLAN - Wireless Security Switch and make sure the AP and the Nortel Networks WLAN - Wireless Security Switch are on the same subnet.
 - If the power light does not come on, check the power (it can be powered either with Power over Ethernet or a from an orderable AP External Power Supply).
 - Make sure that a DHCP server is configured in the Nortel Networks WLAN - Wireless Security Switch for both the Management Interface and AP-Manager Interface using the CLI, Web Browser, or WLAN Control System interface, and that the DHCP server is operating correctly.
 - Once the AP finds the Nortel Networks WLAN - Wireless Security Switch, it attempts to download the new Operating System code if the AP code version differs from the Nortel Networks WLAN - Wireless Security Switch code version. While this is happening, the LEDs on the top of the AP blink on and off together.
4. Once the Operating System code download is successful, the AP reboots. The GREEN LED turns on and the two YELLOW/AMBER/ORANGE LEDs indicate the states of the 802.11a and 802.11b/g networks. If any part of the network is disabled in the Nortel Networks WLAN - Wireless Security Switch, the corresponding YELLOW/AMBER/ORANGE LED remains off.
- Note that the Red LED can light for a short period (10-20 seconds) when the AP reboots. If the RED LED comes on AND STAYS ON for more than a minute, disconnect the AP and call Nortel Networks Technical Support.
 - From the CLI, Web Browser or WLAN Control System interface, configure the AP with its Primary Nortel Networks WLAN - Wireless Security Switch name as described in the [Nortel Networks Product Documentation](#).
 - If required, use the CLI, Web Browser or WLAN Control System interface to customize the AP-specific 802.11a, 802.11b and 802.11g network settings. Once again, the two YELLOW/AMBER/ORANGE LEDs indicate the states of the 802.11a and 802.11b/g networks. If any part of the network is disabled, the corresponding YELLOW/AMBER/ORANGE LED remains off.
5. If everything works (the GREEN LED is on and the RED LED is off), disconnect the AP and take it to its final destination and install it as described in this document. If your Nortel Networks WLAN - Access Point fails this visual test, refer to [RMA Procedures](#) in the [Nortel Networks Product Documentation](#) to return your Nortel Networks WLAN - Access Points.
-  **Note:** When you are installing a Remote Edge Access Point or a Layer 3 Nortel Networks WLAN - Access Point on a different subnet than the Nortel Networks WLAN - Wireless Security Switch, MAKE SURE that a DHCP server is available on the subnet where you will be installing the AP or Remote Edge Access Point, and that the subnet has a route back to the Nortel Networks WLAN - Wireless Security Switch. Also make sure that the route back to the Nortel Networks WLAN - Wireless Security Switch has destination UDP ports 12222 and 12223 open for LWAPP communications. Ensure the route back to the Primary Nortel Networks WLAN - Wireless Security Switch allows IP packet fragments. Finally, make sure that if address translation is used, that the Access Point and the Nortel Networks WLAN - Wireless Security Switch have a static 1-to-1 NAT to an outside address. (Port Address Translation is not supported.)
6. When you have installed and powered up the AP or Remote Edge Access Point in its final destination, verify that the LEDs are in the same state they were in at the end of Step 4. If no LEDs are on, the AP or Remote Edge Access Point is most likely not receiving power. If all the LEDs

blink sequentially back and forth for more than five minutes, the AP is unable to find its Primary Nortel Networks WLAN - Wireless Security Switch. Check the connection between the AP and the Nortel Networks WLAN - Wireless Security Switch, and make sure the AP and the Nortel Networks WLAN - Wireless Security Switch are either on the same subnet or that the AP has a route back to its Primary Nortel Networks WLAN - Wireless Security Switch. Note that the Remote Edge Access Points at each remote location must be on the same subnet to allow client roaming. Also, if the Nortel Networks WLAN - Access Point or Remote Edge Access Point is not on the same subnet as the Nortel Networks WLAN - Wireless Security Switch, make sure there is a DHCP server on the same subnet as the Nortel Networks WLAN - Access Point or Remote Edge Access Point.

After you have prepared all Nortel Networks WLAN - Access Points, reconfigure the Nortel Networks WLAN - Wireless Security Switch so it is not the Master. A Master Nortel Networks WLAN - Wireless Security Switch should only be used for configuring Nortel Networks WLAN - Access Points and not in a working network.

After completing [Step 2: Configuring the Nortel Networks WLAN - Access Point or Remote Edge Access Point Before Installation](#) for all Nortel Networks WLAN - Access Points and Remote Edge Access Points, continue with [Step 3: Preparing Mounting Locations](#).

Alternate Preparing a Version 2.0 Nortel Networks WLAN - Access Point or Remote Edge Access Point

If your Nortel Networks WLAN - Access Point has Operating System 2.0 or a later version (which includes all Remote Edge Access Points) loaded on it, you may choose to use this procedure. If your AP has Operating System 1.2 or earlier loaded on it, or if you do not know what version the AP has loaded, use the [Preparing a Version 1.2 Nortel Networks WLAN - Access Point](#) procedure above.

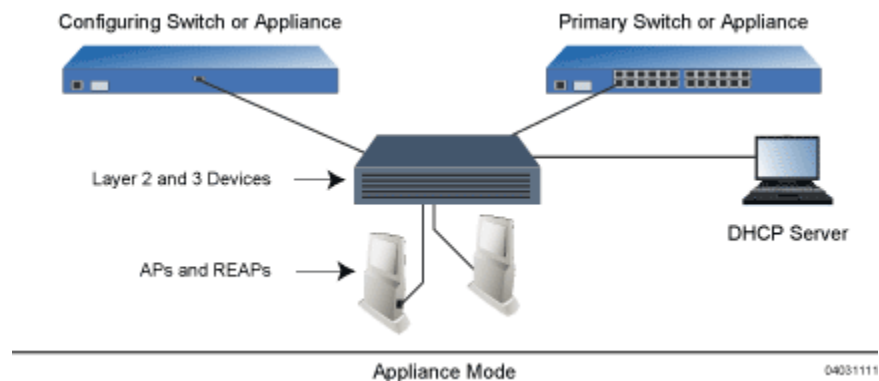


Note: This procedure assumes that you are preparing a version 2.0 Nortel Networks WLAN - Access Point or Remote Edge Access Point to interoperate with a version 2.0 Nortel Networks WLAN - Wireless Security Switch. It also assumes that your Nortel Networks WLAN - Wireless Security Switch is already operating in **LWAPP Layer 3 Mode**. It also assumes that you are using the Internet Software Consortium (ISC) DHCP Server V3.0pl1. Finally, it assumes that if you have deployed multiple Nortel Networks WLAN - Wireless Security Switches, that the Nortel Networks WLAN - Wireless Security Switch you use to initialize the Nortel Networks WLAN - Access Point is in an [Airespace Mobility Group](#) with the [Primary Airespace Switch or Appliance](#) you want to assign to the new Nortel Networks WLAN - Access Point or Remote

Edge Access Point.

When you are preparing a version 1.2 Nortel Networks WLAN - Access Point to interoperate with a version 1.2 Nortel Networks WLAN - Wireless Security Switch, use the procedure found in the version 1.2 [Nortel Networks WLAN - Access Point Quick Installation Guide](#).

Configuration Setup



Does My AP Qualify for this Procedure?

- If your 2.0 or later version later Nortel Networks WLAN - Access Point(s) or Remote Edge Access Point(s) cannot be configured for any reason using the following procedure, refer to [RMA Procedures](#) in the [Nortel Networks Product Documentation](#).

Configuration Steps for an Nortel Networks WLAN - Access Point or Remote Edge Access Point

1. Configure the Internet Software Consortium (ISC) V3.0pl1 DHCP Server to provide the vendor-specific Option 43 using the following entries:

```
option controller code 43 = text;  
option controller "<Switch IP Address>;"
```

in which <Switch IP Address> is the IP address of the Nortel Networks WLAN - Wireless Security Switch you are going to use to prepare the Nortel Networks WLAN - Access Point or Remote Edge Access Point, or which can be a comma-delimited string of Nortel Networks WLAN - Wireless Security Switch IP addresses.


(These commands direct all unconfigured Nortel Networks WLAN - Access Points and Remote Edge Access Points discovery messages to the configuring Nortel Networks WLAN - Wireless Security Switch.)

2. Make sure the configuring Nortel Networks WLAN - Wireless Security Switch is in **LWAPP Layer 3 Mode**, that if the configuring Nortel Networks WLAN - Wireless Security Switch is in the same mobility group as the planned [Primary Airespace Switch or Appliance](#), and that the configuring Nortel Networks WLAN - Wireless Security Switch's DS Port is connected to the network. Use CLI, Web Browser and/or WLAN Control System procedures as described in the [Nortel Networks WLAN - Wireless Security Switch Quick Install Guide](#) and the [Nortel Networks Product Documentation](#).
3. Also make sure that the DHCP server is configured in the Nortel Networks WLAN - Wireless Security Switch for both the Management Interface and AP-Manager Interface using the CLI, Web Browser, or WLAN Control System user interface.

▶ **Note:** When you are installing a Remote Edge Access Point or a Nortel Networks WLAN - Access Point, a DHCP server must be accessible by the Remote Edge Access Point or a Nortel Networks WLAN - Access Point.

4. Take the AP or Remote Edge Access Point out of the box and plug it into the network so that it can request an IP address from the DHCP server.
5. Apply power to the AP:

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- Use 802.3af-compliant Power Over Ethernet (PoE) from the Nortel Networks WLAN - Wireless Security Switch or from an orderable inline power injector. If you do not have PoE available, use an orderable external AC-to-48 VDC Power Supply plugged into the side of the AP.
 - After powering up the AP, the RED Alarm LED comes on for a short period (about 15-20 seconds) and then all the LEDs blink sequentially back and forth, indicating that the AP is trying to find a Nortel Networks WLAN - Wireless Security Switch to connect to. This can continue for up to five minutes. If the AP remains in this mode for more than five minutes, the AP is unable to find the Master Nortel Networks WLAN - Wireless Security Switch. Check the connection between the AP and the Nortel Networks WLAN - Wireless Security Switch and make sure the AP and the Nortel Networks WLAN - Wireless Security Switch are on the same subnet.
 - If the power light does not come on, check the power (it can be powered either with Power over Ethernet or a from an orderable AP External Power Supply).
6. The AP or Remote Edge Access Point requests an IP address from the DHCP server, and the DHCP server returns an IP address for the AP or Remote Edge Access Point, and also returns the `<switch IP address>` of the configuring Nortel Networks WLAN - Wireless Security Switch. Once the AP or Remote Edge Access Point finds the configuring Nortel Networks WLAN - Wireless Security Switch, it attempts to download the new Operating System code if the AP code version differs from the configuring Nortel Networks WLAN - Wireless Security Switch code version. While this is happening, the LEDs on the top of the AP or Remote Edge Access Point blink on and off together.
7. Once the Operating System code download is successful, the AP or Remote Edge Access Point reboots. The GREEN LED turns on and the two YELLOW/AMBER/ORANGE LEDs indicate the states of the 802.11a and 802.11b/g networks. If any part of the network is disabled in the configuring Nortel Networks WLAN - Wireless Security Switch, the corresponding YELLOW/AMBER/ORANGE LED remains off.
- Note that the Red LED can light for a short period (10-20 seconds) when the AP or Remote Edge Access Point reboots. If the RED LED comes on AND STAYS ON for more than a minute, disconnect the AP or Remote Edge Access Point and call Nortel Networks Technical Support.
 - From the CLI, Web Browser or WLAN Control System interface, configure the AP with its Primary Nortel Networks WLAN - Wireless Security Switch name (which can be the name of the configuring Nortel Networks WLAN - Wireless Security Switch) as described in the [Nortel Networks Product Documentation](#).
 - If required, use the CLI, Web Browser or WLAN Control System interface to customize the AP- or Remote Edge Access Point-specific 802.11a, 802.11b and 802.11g network settings. Once again, the two YELLOW/AMBER/ORANGE LEDs indicate the states of the 802.11a and 802.11b/g networks. If any part of the network is disabled, the corresponding YELLOW/AMBER/ORANGE LED remains off.
8. If everything works (the GREEN LED is on and the RED LED is off), reboot the AP or Remote Edge Access Point and install it as described in this document. If your Nortel Networks WLAN - Access Point or Remote Edge Access Point fails this visual test, refer to [RMA Procedures](#) in the [Nortel Networks Product Documentation](#) to return your Nortel Networks WLAN - Access Points.

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-  **Note:** When you are installing a Remote Edge Access Point or a Layer 3 Nortel Networks WLAN - Access Point on a different subnet than the Nortel Networks WLAN - Wireless Security Switch, MAKE SURE that a DHCP server is available on the subnet where you will be installing the AP or Remote Edge Access Point, and that the subnet has a route back to the Primary Nortel Networks WLAN - Wireless Security Switch. Also make sure that the route back to the Nortel Networks WLAN - Wireless Security Switch has destination UDP ports 12222 and 12223 open for LWAPP communications. Ensure the route back to the Primary Nortel Networks WLAN - Wireless Security Switch allows IP packet fragments. Finally, make sure that if address translation is used, that the Access Point and the Nortel Networks WLAN - Wireless Security Switch have a static 1-to-1 NAT to an outside address. (Port Address Translation is not supported.)
9. When you have installed and powered up the AP or Remote Edge Access Point in its final destination, verify that the LEDs are in the same state they were in at the end of Step 7. If no LEDs are on, the AP or Remote Edge Access Point is most likely not receiving power. If all the LEDs blink sequentially back and forth for more than five minutes, the AP is unable to find its Primary Nortel Networks WLAN - Wireless Security Switch. Check the connection between the AP and the Nortel Networks WLAN - Wireless Security Switch, and make sure the AP and the Nortel Networks WLAN - Wireless Security Switch are either on the same subnet or that the AP has a route back to its Primary Nortel Networks WLAN - Wireless Security Switch. Note that the Remote Edge Access Points at each remote location must be on the same subnet to allow client roaming. Also, if the Nortel Networks WLAN - Access Point or Remote Edge Access Point is not on the same subnet as the Nortel Networks WLAN - Wireless Security Switch, make sure that a DHCP server is accessible on the same subnet as the Nortel Networks WLAN - Access Point or Remote Edge Access Point.

After completing [Step 2: Configuring the Nortel Networks WLAN - Access Point or Remote Edge Access Point Before Installation](#) for all Nortel Networks WLAN - Access Points and Remote Edge Access Points, continue with [Step 3: Preparing Mounting Locations](#).

Step 3: Preparing Mounting Locations

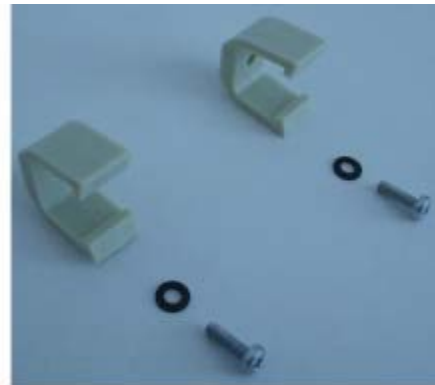
On your map, you should have the Nortel Networks WLAN - Access Point locations, mounting options, and power options.

- Find the required mounting locations.
- Use the ceiling-mount base to mark the wall or ceiling locations for sheet metal, drywall, or other screws. Make sure you leave enough space around the Nortel Networks WLAN - Access Point and base to plug the CAT-5 cable, optional external antenna cable(s), optional power supply cable, and optional Kensington MicroSaver Security Cable into the sides of the Nortel Networks WLAN - Access Point.

Figure - Factory-Supplied Mounting Options



A. Ceiling-Mount Base



B. Hanging-Ceiling Clips

03120302

- Alternatively, attach the hanging ceiling clips to the Nortel Networks WLAN - Access Point. Make sure you leave enough space around the Nortel Networks WLAN - Access Point to plug the CAT-5 cable, optional external antenna cable(s), optional power supply cable, and optional Kensington MicroSaver Security Cable into the sides of the Nortel Networks WLAN - Access Point.
- Alternatively, use the optional mounting bases and/or brackets to mark the wall or ceiling locations for sheet metal, drywall, or other screws. Make sure you leave enough space around the Nortel Networks WLAN - Access Point and brackets to plug the CAT-5 cable, optional

external antenna cable(s), optional power supply cable, and optional Kensington MicroSaver Security Cable into the sides of the Nortel Networks WLAN - Access Point.

Figure - Factory-Orderable Mounting Brackets



A. Projection-Mount Bracket



B. Flush-Mount Bracket

03120303

- If necessary, drill holes for the various cables where they can be mostly hidden from casual view. When you are mounting the Nortel Networks WLAN - Access Point using an optional separately-orderable projection-mount L-bracket (the one with two long legs), the cables can be routed through the 5/8-inch (15.9 mm) holes in the bracket.
- Route the CAT-5, optional power supply, optional external antenna cable(s), and optional Kensington MicroSaver Security cables to where they can plug into the Nortel Networks WLAN - Access Point. Make sure to leave about 6 inches (15 cm) of slack in the cables for future modifications.
- Attach the brackets to the wall or ceiling, or install screws for ceiling-mount base:
 - Where you are going to use the projection-mount or flush-mount bracket, use customer-supplied sheet metal, drywall, or other screws to attach the bracket to the ceiling or wall.
 - Where you are going to use the ceiling-mount base, install customer-supplied sheet metal, drywall, or other screws with 1/4 inch (6.35 mm) or smaller heads protruding from the ceiling about 0.1 inch (2.5 mm).

You are now ready to install the Nortel Networks WLAN - Access Points. Continue with [Step 4: Mounting the Nortel Networks WLAN - Access Points](#).

Step 4: Mounting the Nortel Networks WLAN - Access Points

Using the supplied or optional separately-orderable Nortel Networks WLAN - Access Point mounting kits, mount each Nortel Networks WLAN - Access Point in its indicated location, oriented as shown on the map. Note that you can mount the Nortel Networks WLAN - Access Points in the ceiling plenum or below the ceiling, but the Nortel Networks WLAN - Access Points perform best when mounted below the ceiling.

Note that the Nortel Networks 2200 series supports Antenna Sectorization, which can be used to increase the number of clients and/or client throughput in a given air space. Installers can mount two Nortel Networks WLAN - Access Points back-to-back and the Nortel Networks 2200 series operator can disable the second antenna in both Nortel Networks WLAN - Access Points to create a 360-degree coverage area with two sectors.

The Nortel Networks WLAN - Access Points can be mounted in one of three configurations:

- [Ceiling Mount Base](#)
- [Ceiling-Mount Clips](#)
- [Projection Wall Mount](#)
- [Flush Wall Mount](#)

Ceiling Mount Base

When you are mounting the Nortel Networks WLAN - Access Point in the middle of a ceiling (flat sides toward the room or hallway), use the ceiling-mount base to mount the Nortel Networks WLAN - Access Point as shown in the following figure and as described below:

Figure - Assembling the Nortel Networks WLAN - Access Point and Ceiling-Mount Base



03032002

- Copy the MAC address(es) from the label(s) on the Nortel Networks WLAN - Access Point onto the corresponding location on the map. MAC addresses have the format 00B85xxxxx.
- Attach the ceiling-mount base to the bottom of the Nortel Networks WLAN - Access Point using the factory-supplied machine screws and washers.
- Position the ceiling-mount base so its keyhole slots are partly on the drywall, sheet metal, or other screw heads installed in [Step 3: Preparing Mounting Locations](#).
- ▶ **Note:** If the screws do not securely hold the ceiling-mount base, remove the Nortel Networks WLAN - Access Point and adjust the screws until they hold the ceiling-mount base securely.
- Attach the cables to the sides of the Nortel Networks WLAN - Access Point.

-
- ▶ **Note:** When the Nortel Networks WLAN - Access Point is powered up and is associated with an Nortel Networks WLAN - Wireless Security Switch (Green/Power and Yellow/802.11b/g and/or Yellow or Amber/802.11a LEDs lit), the Nortel Networks WLAN - Access Point is broadcasting its beacon signal(s). When this happens, complete the installation as quickly as possible to remove yourself from within 8 inches (20 cm) of the Nortel Networks WLAN - Access Point to comply with FCC RF radiation exposure guidelines.
- Slide the ceiling-mount base onto the drywall, sheet metal, or other screw heads until it snugs into place.

You have installed the Nortel Networks WLAN - Access Point. Repeat [Step 4: Mounting the Nortel Networks WLAN - Access Points](#) for each Nortel Networks WLAN - Access Point location, and then continue with [Step 5: Returning MAC Information](#).

Ceiling-Mount Clips

When you are mounting the Nortel Networks WLAN - Access Point on the extruded aluminium rails of a hanging ceiling, use the ceiling-mount clips to mount the Nortel Networks WLAN - Access Point as shown in the following figure and as described below:

Figure - Assembling the Nortel Networks WLAN - Access Point and Ceiling-Mount Clips



-
- Copy the MAC address(es) from the label(s) on the Nortel Networks WLAN - Access Point onto the corresponding location on the map. MAC addresses have the format 000B85xxxxxx.
 - Attach the ceiling-mount clips to the bottom of the Nortel Networks WLAN - Access Point using the factory-supplied machine screws and washers.
 - Snap the ceiling-mount clips onto a hanging ceiling rail.

Figure - Clipping the Nortel Networks WLAN - Access Point and Ceiling-Mount Clips to a Hanging-Ceiling Rail



- Attach the cables to the sides of the Nortel Networks WLAN - Access Point.
 - ▶ **Note:** Make sure the cables are routed away from the Nortel Networks WLAN - Access Point antennas.
 - ▶ **Note:** When the Nortel Networks WLAN - Access Point is powered up and is associated with an Nortel Networks WLAN - Wireless Security Switch (Green/Power and Yellow/802.11b/g and/or Yellow or Amber/802.11a LEDs lit), the Nortel Networks WLAN - Access Point is broadcasting its beacon signal(s). When this happens, complete the installation as quickly as possible to remove yourself from within 8 inches (20 cm) of the Nortel Networks WLAN - Access Point to comply with FCC RF radiation exposure guidelines.

You have installed the Nortel Networks WLAN - Access Point. Repeat [Step 4: Mounting the Nortel Networks WLAN - Access Points](#) for each Nortel Networks WLAN - Access Point location, and then continue with [Step 5: Returning MAC Information](#).

Projection Wall Mount

When you are mounting the Nortel Networks WLAN - Access Point out from a wall (flat sides along the wall or hallway), use an optional separately-orderable factory-orderable projection-mount L-bracket.

- Before proceeding, gently screw the two factory-supplied screws and spring washers into the bottom of the Nortel Networks WLAN - Access Point. Make sure the spring washers have their convex (high center sections) pointing toward the screw heads.

▶ **Note:** The Nortel Networks WLAN - Access Point threaded holes have precision-depth threads. Do not overtighten the screws, or the bracket will not fit under the screw heads.

Figure - Assembling the Mounting Screws and Spring Washers to the Nortel Networks WLAN - Access Point



A. Screws and Spring Washers



B. Completed Assembly

04022105

- Copy the MAC address(es) from the label(s) on the Nortel Networks WLAN - Access Point onto the corresponding location on the map. MAC addresses have the format 000B85xxxxxx.
- You have already attached the projection-mount L-bracket to the wall in [Step 3: Preparing Mounting Locations](#).
- Slide the screws into the keyhole slots on the mounting bracket as shown in the following figure.

-
- ▶ **Note:** If the screws do not securely hold the bracket, remove the Nortel Networks WLAN - Access Point and adjust the screws until they securely hold the bracket.

Figure - Assembling the Nortel Networks WLAN - Access Point to the Projection-Mount Bracket



03032004

- Attach the cables to the sides of the Nortel Networks WLAN - Access Point.
- ▶ **Note:** Make sure the cables are routed away from the Nortel Networks WLAN - Access Point antennas.
- ▶ **Note:** When the Nortel Networks WLAN - Access Point is powered up and is associated with an Nortel Networks WLAN - Wireless Security Switch (Green/Power and Yellow/802.11b/g and/or Yellow or Amber/802.11a LEDs lit), the Nortel Networks WLAN - Access Point begins broadcasting its beacon signal(s). When this happens, complete the installation as quickly as possible to remove yourself from within 8 inches (20 cm) of the Nortel Networks WLAN - Access Point to comply with FCC RF radiation exposure guidelines.

You have installed the Nortel Networks WLAN - Access Point. Repeat [Step 4: Mounting the Nortel Networks WLAN - Access Points](#) for each Nortel Networks WLAN - Access Point location, and then continue with [Step 5: Returning MAC Information](#).

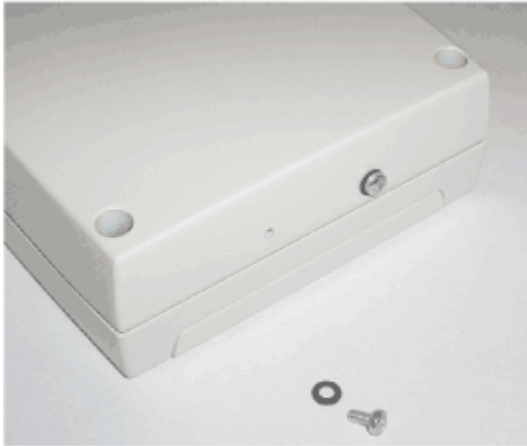
Flush Wall Mount

When you are mounting the Nortel Networks WLAN - Access Point against a wall (flat side toward the inside of the building), use an optional separately-orderable factory-orderable flush-mount bracket.

- Before proceeding, gently screw the two factory-supplied screws and spring washers into the bottom of the Nortel Networks WLAN - Access Point. Make sure the spring washers have their convex (high center sections) pointing toward the screw heads.

-
- ▶ **Note:** The Nortel Networks WLAN - Access Point threaded holes have precision-depth threads. Do not overtighten the screws, or the bracket will not fit under the screw heads.

Figure - Assembling the Mounting Screws and Spring Washers to the Nortel Networks WLAN - Access Point



A. Screws and Spring Washers



B. Completed Assembly

04022105

- Copy the MAC address(es) from the label(s) on the Nortel Networks WLAN - Access Point onto the corresponding location on the map. MAC addresses have the format 000B85xxxxxx.
- You have already attached the flush-mount bracket to the wall in [Step 3: Preparing Mounting Locations](#).
- Slide the screws into the keyhole slots on the mounting bracket as shown in the following figure.

- ▶ **Note:** Make sure the side of the Nortel Networks WLAN - Access Point with the door is facing away from the wall. This ensures that the correct antenna is facing the building, and makes future upgrades easier.

-
- ▶ **Note:** If the screws do not securely hold the bracket, remove the Nortel Networks WLAN - Access Point and adjust the screws until they securely hold the bracket.

Figure - Assembling the Nortel Networks WLAN - Access Point to the Flush-Mount Bracket



03032005

- Attach the cables to the sides of the Nortel Networks WLAN - Access Point.
- ▶ **Note:** Make sure the cables are routed away from the Nortel Networks WLAN - Access Point antennas.
- ▶ **Note:** When the Nortel Networks WLAN - Access Point is powered up and is associated with an Nortel Networks WLAN - Wireless Security Switch (Green/Power and Yellow/802.11b/g and/or Yellow or Amber/802.11a LEDs lit), the Nortel Networks WLAN - Access Point begins broadcasting its beacon signal(s). When this happens, complete the installation as quickly as possible to remove yourself from within 8 inches (20 cm) of the Nortel Networks WLAN - Access Point to comply with FCC RF radiation exposure guidelines.

You have installed the Nortel Networks WLAN - Access Point. Repeat [Step 4: Mounting the Nortel Networks WLAN - Access Points](#) for each Nortel Networks WLAN - Access Point location, and then continue with [Step 5: Returning MAC Information](#).

Step 5: Returning MAC Information

When you have completed the installations as outlined in [Step 4: Mounting the Nortel Networks WLAN - Access Points](#), return the MAC addresses and their locations on the maps or floor plans to the network planner or manager. The Nortel Networks WLAN - Solution Management System Software (Solution Management System Software) operators will use the MAC address and location information to create maps for precise wireless Operating System management.

Also return any unused mounting kit hardware and external power supplies to the network planner or manager for use in future deployments.

- ▶ **Note:** Please remind the Network Planner or Manager that now is a good time to register the Nortel Networks WLAN - Access Points at <http://www.nortelnetworks.com/>.

Planning Notes

About Cables

- You will run one CAT-5 Ethernet cable from the Nortel Networks WLAN - Access Point to the (UNUSED PRODUCT), another network device, or a PoE injector/hub.

When the Nortel Networks WLAN - Access Point will be mounted below the ceiling using the ceiling mount or wall mount brackets, you may have to drill a hole into the ceiling plenum to run the CAT-5 cable to the wiring closet. When the CAT-5 cable cannot be run through the ceiling plenum, find another path to route the cable from the Nortel Networks WLAN - Access Point to the wiring closet.

When the Nortel Networks WLAN - Access Point will be mounted above the ceiling using the ceiling mount or wall mount brackets, run the CAT-5 cable to the wiring closet through the ceiling plenum. When the CAT-5 cable cannot be run through the ceiling plenum, find another path to route the cable from the Nortel Networks WLAN - Access Point to the wiring closet.

- When you are powering the Nortel Networks WLAN - Access Point from AC power, route the power supply cable from the AC convenience outlet to the Nortel Networks WLAN - Access Point. Make sure you secure the AC power plug so it will be difficult for people to pull on the power cord or unplug the power supply from the AC power outlet.
- When you are powering the Nortel Networks WLAN - Access Point from a PoE source ((UNUSED PRODUCT), another network device, or a PoE injector/hub), you do not need to route a separate power cable to the Nortel Networks WLAN - Access Point, because the Nortel Networks WLAN - Access Point will receive its power across the CAT-5 Ethernet cable. Return the power supply to the wireless network planner/manager.

About External Antennas

- Refer to the [Nortel Networks WLAN - Access Point External and Internal Antennas](#) section in the [Nortel Networks Product Documentation](#) for an overview of the external 802.11a and 802.11b/g external antennas available for use with the Nortel Networks WLAN - Access Points.
 - ▶ **Note:** As described in the [Internal-Antenna Airespace Access Point Quick Installation Guide](#), the AS-1200-BG-INT and AS-1200-ABG-INT Nortel Networks WLAN - Access Points are designed to be used exclusively with the internal high-gain antennas, and have no jacks for external antennas.
 - ▶ **Note:** Refer to the [Nortel Networks 2200 series Release Notes](#) for 802.11a external antenna information. Contact Nortel Networks for a list of FCC-approved 802.11a and 802.11b/g external antennas.
- When you are attaching external antennas to the AS-1200-A-EXT, AS-1200-BG-EXT, or AS-1200-ABG-EXT Nortel Networks WLAN - Access Point, use cables with female reverse-TNC

connectors to connect antennas to the ports on the side of the Nortel Networks WLAN - Access Point. See the following figure for antenna port markings.

Figure - Nortel Networks WLAN - Access Point External Antenna Port Markings



A. 2.4 GHz/802.11b Left External Antenna Port



B. 5 GHz/802.11a and 2.4 GHz/802.11b Right External Antenna Ports

03032006

About Mounting Options

- ▶ **Note:** Because the Nortel Networks WLAN - Access Point internal antennas have been designed to reduce inter-floor interference, it is strongly recommended that you mount the Nortel Networks WLAN - Access Point standing or hanging straight up or down.
- ▶ **Note:** You can mount the Nortel Networks WLAN - Access Points in the ceiling plenum or below the ceiling using the ceiling mount base or wall mount brackets, but the Nortel Networks WLAN - Access Points perform best when mounted below the ceiling.
- ⊘ **Note:** Plenum-mounted Nortel Networks WLAN - Access Points and Remote Edge Access Points **MUST BE** powered using Power Over Ethernet (POE) to comply with safety regulations.
 - When you are mounting the Nortel Networks WLAN - Access Point in the middle of a ceiling, ceiling plenum, or hallway, you will typically use the color-coordinated ceiling-mount base to stabilize the Nortel Networks WLAN - Access Point after it is mounted. Use the mounting base to mark the sheet metal, drywall, or other screw locations.

The mounting base attaches to the bottom of the Nortel Networks WLAN - Access Point with two supplied screws, and then the assembly slides and locks onto two sheet metal, drywall, or other screws.

- When you are mounting the Nortel Networks WLAN - Access Point out from a wall (flat sides along the room or hallway), use the projection-mount L-bracket supplied with the Nortel Networks WLAN - Access Point. Use the L-bracket to mark the sheet metal, drywall, or other screw locations.
- When you are mounting the Nortel Networks WLAN - Access Point against a wall (flat Side A toward the inside of the building), use the flush-mount bracket supplied with the Nortel Networks WLAN - Access Point. The flush-mount L-bracket is the one with one long and one short leg. Use the L-bracket to mark the sheet metal, drywall, or other screw locations.

About Physical Security

Regardless of mounting, the Nortel Networks WLAN - Access Point can be secured with a Kensington MicroSaver Security Cable. If required, use any MicroSaver Security Cable to attach either side of your Nortel Networks WLAN - Access Point to a solid beam, pipe, or support.

FCC Statements for Nortel Networks WLAN - Access Points

This section includes the following FCC statements for the Nortel Networks WLAN - Access Point:

- [Class A Statement](#)
- [RF Radiation Hazard Warning](#)
- [Non-Modification Statement](#)
- [Deployment Statement](#)

Class A Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

RF Radiation Hazard Warning

To ensure compliance with FCC RF exposure requirements, this device must be installed in a location such that the antenna of the device will be greater than 20 cm (8 in.) from all persons. Using higher gain antennas and types of antennas not covered under the FCC certification of this product is not allowed.

Installers of the radio and end users of the Nortel Networks 2200 series must adhere to the installation instructions provided in this manual.

Non-Modification Statement

Use only the supplied internal antenna, or external antennas supplied by the manufacturer. Unauthorized antennas, modifications, or attachments could damage the badge and could violate FCC regulations and void the user's authority to operate the equipment.

Deployment Statement

This product is certified for indoor deployment only. Do not install or use this product outdoors.

Safety Considerations

- The 2230 Nortel Networks WLAN - Access Points with or without external antenna ports are only intended for installation in Environment A as defined in IEEE 802.3af. All interconnected equipment must be contained within the same building including the interconnected equipment's associated LAN connections.
- For AS-1200-ABG-EXT, AS-1200-BG-EXT, and AS-1200-ABG-EXT-RE Nortel Networks WLAN - Access Points and Nortel Networks WLAN - Remote Edge Access Points (Remote Edge Access Points) provided with optional external antenna ports, make sure that all external antennas and their associated wiring are located entirely indoors. The Nortel Networks WLAN - Access Points and Remote Edge Access Points and their optional external antennas are not suitable for outdoor use.
- MAKE SURE that plenum-mounted Nortel Networks WLAN - Access Points and Remote Edge Access Points are powered using Power Over Ethernet (POE) to comply with safety regulations.