

# **Harmony 802.11b Access Point**

*Model 8550  
User's Guide*

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This warranty does not cover and Proxim will not be liable for any damage or failure caused by misuse, abuse, acts of God, accidents, or other causes beyond Proxim's control, or claim by other than the original purchaser.

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Rev. A

## **Warranty Return Policy**

If you have a problem with the Harmony 802.11b Access Point Model 8550, please call Proxim Technical Support at 1-408-731-2640. Proxim Technical Support will assist with resolving any technical difficulties you may have with your Proxim product.

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## **FCC WARNING**

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 the receiver.
- Connect the equipment into an outlet on a circuit different from that which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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# 1. Introduction

Thank you for choosing Proxim's Harmony 802.11b Access Point Model 8550, a member of Proxim's Harmony Wirefree Infrastructure Family. The Harmony product line is the first wirefree networking solution to embrace all current and future wirefree LAN standards, including OpenAir, IEEE 802.11b, and future 10 Mbps frequency hopping and 5 GHz technologies, in a single, homogeneous architecture.

For enterprise customers implementing wirefree solutions, Harmony reduces equipment acquisition costs, installation complexity, and long-term operating costs by centralizing network management, communication, and security services.

Harmony protects current and future wirefree infrastructure investments by supporting all leading and forthcoming wireless LAN protocols. Existing RangeLAN2, OpenAir-compatible and IEEE 802.11b products are all fully compatible with Harmony. Customers may seamlessly transition to new LAN standards by adding low-cost access points without changing the management interface or disturbing existing users.

Harmony further reduces network costs through its SmartArchitecture, the first wirefree management system to provide one-click, system-wide security updates and remote office infrastructure management through a single interface. The system may be managed through a Web-based interface, which provides customizable network maps and traffic statistics, or through standard enterprise SNMP packages. Harmony's SmartArchitecture also greatly reduces the time and expense of installation by avoiding many of the hidden costs of a wirefree infrastructure.

Harmony Access Points may be connected to any portion of the Ethernet network, eliminating the need for special wirefree subnets common in other installations. Harmony clients also roam seamlessly anywhere there is wirefree coverage, without the need for extra client software. In addition, Harmony SmartAttach software auto-discovers and configures new access points upon connection to the Ethernet network, simplifying installation.

Proxim is the leading supplier of wirefree networking solutions. Proxim's unmatched expertise in spread spectrum radio networking technology, combined with the company's extensive experience serving the communication needs of the mobile computing user, have kept Proxim at the forefront of the wirefree LAN market.

## The Harmony Family

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The Harmony Wirefree Infrastructure Family includes the following products:

- ❑ The **Harmony 7560 Access Point Controller** centralizes the management, security, and filtering capabilities of a wirefree LAN. The Access Point Controller communicates with Harmony Access Points over the Ethernet network to provide wirefree network access for mobile clients. The Access Point Controller can support multiple Access Points, even if each Access Point follows a different wirefree standard.
- ❑ The **Harmony Access Point** is a networking bridge that operates at Layer 2 of the OSI networking model. Working in conjunction with a Harmony Access Point Controller, the Access Point forwards packets between its radio and the Ethernet network. Two models of the Harmony Access Point are available to support either the OpenAir or IEEE 802.11b wirefree standards: the model 7550 OpenAir Access Point and the model 8550 802.11b Access Point. Note that only the Harmony Power System operates only with the 802.11b Access Point.
- ❑ The **Harmony PC Card** is a wirefree LAN adapter that fits into a PCMCIA Type II slot in a laptop computer. Two models of the Harmony PC Cards are available to support either the OpenAir or IEEE 802.11b wirefree standards.
- ❑ The optional **Harmony Power System** provides remote DC power to Harmony 802.11b Access Points over the unused pins of a twisted pair Ethernet cable.

## **System Requirements**

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To begin using the Harmony 802.11b Access Point, you need the following minimum requirements:

- At least one Harmony Access Point Controller;
- An Ethernet (10Base-T) or Fast Ethernet (100Base-TX) LAN switch or hub;  
and
- At least one 802.11b PC Card.

## 2. Installation

This chapter describes the installation procedure for the Harmony 802.11b Access Point and the LEDs found on the unit.

### Installation Procedure

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Follow these steps to install the Harmony 802.11b Access Point Model 8550:

**Note:**

*You must install a Harmony Access Point Controller before installing a Harmony Access Point.*

1. Determine the best location for the Harmony 802.11b Access Point. Keep in mind the following considerations:
  - The length of the Ethernet cable that connects the Access Point to the network must not exceed 100 meters.
  - Try to place the Access Point on a flat, sturdy surface as far from the ground as possible, such as on top of a desk or bookcase, keeping clear of metal obstructions and away from direct sunlight.
  - Try to centrally locate the Access Point so that it will provide coverage to all of the mobile devices in the area.
  - If you are not using the Harmony Power System to supply power to the Access Point, the distance between the Access Point and a power outlet cannot exceed the length of the power adapter's cable.
2. Place the Access Point in the desired location. An optional wall mount is available for the Access Point. Refer to the section entitled "Mounting Option" later in this chapter for details.



3. Attach one end of an Ethernet cable to the Access Point and attach the other end to the 10Base-T port of a network hub, switch, router, or patch panel.

**Note:**

*The Harmony 8550 Access Point does not support 100Base-TX; it only supports 10Base-T.*

4. If you are not using the Harmony Power System to supply power to the Access Point or want to connect the Access Point to both the Power System and an AC power source, attach one end of the AC power adapter, included in the product package, to the back of the Access Point and the other end to a power outlet.

**Note:**

*Use the Access Point only with the power adapter supplied by Proxim in the product package. Using another power supply may damage the Access Point. If you want to use the Access Point in conjunction with the Harmony Power System, refer to the Harmony Power System manual for instructions.*

The Status LED, located on the top of the Access Point, will turn green to indicate that the unit is operational. Note that the Status LED will remain amber if the Access Point cannot find an AP Controller to partner with.

In addition, the green Link LED will turn on to indicate that the Access Point has a network connection.

5. The AP Controller will automatically detect and configure the Access Point over the network. Refer to Chapter 4 and the Harmony Access Point Controller Model 7560 User's Manual for more information on how to configure an Access Point.

## **Mounting Option**

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The Harmony 802.11b Access Point is designed to sit on a desktop. In addition, an optional hardware bracket is available for purchase so that the unit may be mounted to a wall or ceiling.

Follow these steps to attach the mounting bracket to the Access Point:

1. Remove the 2 rubber feet on the bottom of the Access Point. Note that the rubber feet are attached to the unit with an adhesive.
2. Underneath the rubber feet there are 3 unthreaded mounting holes that accept M5 thread forming screws. Align the holes of the mounting bracket with these holes.
3. Locate the screws provided with the mounting hardware.
4. Insert the screws into the 3 holes of the mounting bracket and Access Point (i.e., the holes aligned in Step #2 above).
5. Tighten the screws with a screwdriver to attach the mounting bracket to the Access Point.

## LED Indicators

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There are three LEDs on the top panel of the Harmony 8550 802.11b Access Point:

- ❑ **Status LED:** This LED, located on the right side (with the unit orientated so that you can read the Proxim logo), is green when the unit is powered up and operational. The LED is amber during initialization and when the Access Point is not partnered with a Harmony AP Controller. If there is an internal problem with the unit, the LED will turn red. If the Status LED turns red, try recycling power to the unit. If the LED remains red, contact Proxim Technical Support for assistance.
- ❑ **Radio LED:** This LED, located in the center of the three LEDs, blinks green when the Access Point is transmitting data packets over its radio.
- ❑ **Ethernet LED:** This LED, located on the left side, blinks green when the Access Point is transmitting data over the 10Base-T Ethernet port.

There is also one LED on the back panel of the Harmony 8550 802.11b Access Point:

- ❑ **Link LED:** This LED, located between the power connector and the 10Base-T port, will turn green when the Access Point has a physical connection to the Ethernet network.

## 3. Wirefree Operation

### Harmony Architecture

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The Harmony Wirefree Infrastructure Family provides network connectivity to mobile clients without the use of wires or cabling.

Each Harmony network must include at least one Access Point Controller. The AP Controller centralizes the management, security, and filtering capabilities of a wirefree LAN. In a traditional wirefree LAN, each Access Point duplicates this functionality adding additional, unnecessary cost to the network infrastructure. By consolidating these functions into a one or more AP Controllers, additional Access Points can easily be added to the network as it grows. Also, as new wirefree standards are introduced in the future, additional Access Points may be added at a lower cost than with a traditional Access Point infrastructure.

On a Harmony network, each Access Point acts as an intermediary between its mobile clients and the AP Controller, converting radio signals into Ethernet packets and vice versa.

A single AP Controller can support up to ten Access Points. A network subnet can support up to ten AP Controllers to form a Harmony system that can be managed using a single user interface. The number of clients that can be supported by a one Access Point depends on the amount of information that each client exchanges with the network; this will vary based on the applications in use and how frequently network information is accessed.

When a Harmony 802.11b Access Point is connected to the network for the first time, the AP Controller automatically configures it with the AP AutoConfig default settings. In addition, a Harmony 802.11b Access Point may be manually configured via the AP Controller's Wireless Network Management interface. Refer to the Harmony Access Point Controller Model 7560 User's Manual for information on how to access the Wireless Network Management interface.

## **The IEEE 802.11b Specification**

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In 1997, the Institute of Electrical and Electronics Engineers (IEEE) adopted the 802.11 standard for wirefree devices operating in the 2.4 GHz frequency band. This standard includes provisions for three radio technologies: direct sequence spread spectrum, frequency hopping spread spectrum, and infrared. Devices that comply with the 802.11 standard operate at a data rate of either 1 or 2 Mbps.

In 1999, the IEEE created the 802.11b standard. 802.11b is essentially identical to the 802.11 standard except 802.11b provides for data rates of up to 11 Mbps for direct sequence spread spectrum devices. Under 802.11b, direct sequence devices can operate at 11 Mbps, 5.5 Mbps, 2 Mbps, or 1 Mbps. This provides interoperability with existing 802.11 direct sequence devices that operate only at 2 Mbps.

Direct sequence spread spectrum devices spread a radio signal over a range of frequencies. The IEEE 802.11b specification allocates the 2.4 GHz frequency band into 14 overlapping operating Channels. Each Channel corresponds to a different set of frequencies and each Channel is 25 MHz wide.

In the United States, the 802.11b standard allocates 11 operating Channels for direct sequence devices. Channels 1, 6, and 11 do not overlap with each other; these three Channels are known as *independent Channels*. To avoid interference between 802.11b Access Points, Proxim recommends that you configure the Access Points using only Channels 1, 6, and 11.

The 802.11b operating parameters are described in Chapter 4.

## **Roaming Between Harmony 802.11b Access Points**

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If there are multiple Harmony 802.11b Access Points on the network, then a mobile client may seamlessly roam from one Access Point to another.

Each Access Point creates its own wirefree coverage area or Basic Service Set (BSS). A mobile device can communicate with a particular Access Point if it is within the Access Point's coverage area.

If the cells of multiple Access Points overlap, then the mobile client may switch from one Access Point to another as it travels throughout the facility. During the hand-off from one Access Point to another, the mobile client maintains an uninterrupted connection to the network. This is known as **roaming**.

Multiple Access Points connected to a common Ethernet network form an Extended Service Set (ESS). All members of an Extended Service Set are configured with an ID, known as the **ESSID**. Mobile clients must be configured with the same ESSID as the Access Points on the network; a client can only roam between Access Points that share the same ESSID.

## **Roaming Guidelines**

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- A Harmony 802.11b PC Card can only roam between Harmony 802.11b Access Points. An 802.11b PC Card cannot communicate with Harmony OpenAir Access Points.
- All Harmony 802.11b Access Points must have the same ESSID.
- All workstations with Harmony 802.11b PC Cards must have the same ESSID as the Access Points that they will roam between.
- If WEP encryption is enabled, then all 802.11b Access Points and PC Cards must use the same Encryption Key to communicate.
- The Access Points' cells must overlap to ensure that there are no gaps in coverage and to ensure that the roaming client will always have a connection available.
- All Access Points in the same vicinity should use a unique, independent Channel. There are 3 independent Channels for 802.11b Access Points.
- Access Points that use the same Channel should be installed as far away from each other as possible to reduce potential interference.

- ❑ Proxim strongly recommends that you perform a site survey to determine the best location for each Access Point in the facility, as described in Proxim's free one-day technical training class. See Proxim's web site at **<http://www.proxim.com>** for more information on the technical training class.
- ❑ An 802.11b Access Point and an OpenAir Access Point installed in the same vicinity will interfere with each other. If you use both 802.11b and OpenAir Access Points on your network, Proxim recommends that you test for potential interference first before deploying the equipment.

## 4. Configuration Parameters

The first time that a Harmony 802.11b Access Point is connected to the network, the AP Controller will automatically configure it using the AP AutoConfig default settings.

In addition, a Harmony 802.11b Access Point may be manually configured via the AP Controller's Wireless Network Management interface. Refer to the Harmony Access Point Controller Model 7560 User's Manual for information on how to access the Wireless Network Management interface.

This chapter describes the configuration parameters for a Harmony 802.11b Access Point.

You may configure the following parameters for a Harmony 802.11b Access Point:

- Basic Settings
- WEP Settings
- Advanced Settings

Each of these options is discussed in detail below.

### **Basic Settings**

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The Basic Settings tab allows you to configure the following parameters:

#### **AP Name**

You may assign a name to the Harmony 802.11b Access Point in the field provided. The AP Name cannot exceed 63 characters.

#### **Physical Address**

A Harmony 802.11b Access Point's physical address is assigned at the factory and cannot be changed by the end user. The physical address or MAC address is a 48-bit unique identifier assigned to each networking device. The physical address is commonly written as 6 pairs of two hexadecimal digits separated by colons; for example, **00:60:b3:6e:00:77**.

## **Partnered AP Controller**

Each Access Point is partnered with one of the AP Controllers on the network.

If you do not wish to specify which AP Controller the Access Point should partner with, then select the “Any” option. Otherwise, you can select an AP Controller from the drop-down list and the Access Point will partner with it.

## **Channel**

By default, an AP Controller will automatically provide a Channel assignment to a Harmony 802.11b Access Point. The Harmony system will assign Channel 6 to the first 802.11b Access Point, Channel 1 to the second 802.11b Access Point, Channel 11 to the third 802.11b Access Point, Channel 6 to the fourth 802.11b Access Point, and so on.

If necessary, you may manually configure the Channel assignment of an 802.11b Access Point. To minimize interference, use only Channels 1, 6, and 11. If you have more than three Access Points on the network, make sure that units that share the same Channel are as far away from each other as possible, based on the results of your site survey of the facility.



### **Note:**

*Proxim recommends that you manually assign Channels if you have more than three Harmony 802.11b Access Points on one network.*

## **Supported Clients**

802.11b products can operate at 11 Mbps, 5.5 Mbps, 2 Mbps or 1 Mbps. This allows 802.11b devices to communicate with any existing 802.11 direct sequence devices that operate only at 1 or 2 Mbps.

By default, the Harmony 802.11b Access Point will support both 802.11b and 2 Mbps 802.11 direct sequence clients. If you want the Harmony 802.11b Access Point to only support 11 Mbps 802.11b clients, select the option labeled “11 Mbps clients only.”



Note that allowing 2 Mbps clients to communicate with 802.11b products may significantly reduce the 802.11 products' data rate.

## **ESSID**

The ESSID is a string of up to 32 ASCII characters that must match on all communicating 802.11b devices within the same network. ESSID stands for Extended Service Set ID.

All Harmony 802.11b Access Points and Harmony 802.11b PC Cards must have the same ESSID to allow a mobile client to roam between Access Points.

By default, the ESSID is set to "proxim."

## **IP Addressing**

An Access Point can receive an IP address assignment in one of three ways:

1. From a DHCP server on the network;
2. From an AP Controller if there is no DHCP server on your network; and
3. Manually via the Wireless Network Management interface.

If you do not have a DHCP server on the network and the AP Controller has not been assigned a static IP address, then it will assign IP addresses in the 169.254.0.0 network to the Harmony Access Points.

If you want the Access Point to receive an IP address using method 1 or 2 above, then choose the option labeled "DHCP."

Otherwise, select "Specify IP" to assign a static IP address, subnet mask, and default gateway for the Access Point.

## **WEP Settings**

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The Harmony 802.11b products support both 40 and 128-bit encryption using the Wired Equivalent Privacy (WEP) algorithm.

You may configure the Harmony 802.11b Access Point to use encryption only during authentication (the “Authentication” option), during authentication and when sending data (the “All Traffic” option), or to not use encryption at all (the “Off” option).

In addition, each Access Point can store four 40-bit and four 128-bit Encryption Keys.

All 802.11 Access Points and 802.11b PC Cards within an ESS must have the same Encryption Level and use the same Encryption Key to communicate.

## **Advanced Settings**

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The Advanced Settings tab allows you to configure the parameters described below.

### **Supported Rates**

The IEEE 802.11b specification supports four data rates: 11 Mbps, 5.5 Mbps, 2 Mbps, and 1 Mbps. As a mobile client travels further and further away from an 802.11b Access Point, the data rate automatically decreases in order to maintain a usable radio connection. Therefore, a client that is close to an Access Point may operate at 11 Mbps, but a client that is far away from the Access Point may operate at 2 Mbps.

By default, the Harmony 802.11b Access Point supports all four data rates. However, you can prevent the Access Point from using a specified data rate by unchecking the appropriate box.

For example, if your application requires that the Harmony PC Card maintains an 11 Mbps data rate, you can uncheck the 5.5 Mbps, 2 Mbps, and 1 Mbps options. The Access Point and PC Card will always attempt to operate at 11 Mbps but this may greatly reduce the size of the coverage area provided by the Access Point. Once the PC Card moves outside the range that provides 11 Mbps operation, the PC Card will lose connectivity with the network.

## **RTS/CTS Threshold**

The 802.11b specification supports optional RTS/CTS communication based on packet size.

Without RTS/CTS, a sending radio listens to see if another radio is already using the medium before transmitting a data packet. If the medium is free, the sending radio transmits its packets. However, there is no guarantee that another radio is not transmitting a packet at the same time, causing a collision.

When RTS/CTS occurs, the sending radio first transmits a Request to Send (RTS) packet to confirm that the medium is clear. When the receiving radio successfully receives the RTS packet, it transmits back a Clear to Send (CTS) packet to the sending radio. When the sending radio receives the CTS packet, it sends the data packet to the receiving radio. The RTS and CTS packets contain a reservation time to notify other radios that the medium is in use for a specified period of time. This helps to minimize collisions.

While RTS/CTS adds overhead to the radio network, RTS/CTS is particularly useful for large packets which take time to resend if a collision occurs during an attempt to send.

You may configure a Harmony 802.11b Access Point to always use RTS/CTS, never use RTS/CTS, or use RTS/CTS for packets over a certain size.

For example, if the RTS/CTS Threshold is set to 1000 Bytes, then a sending radio will use RTS/CTS before transmitting any packet 1000 Bytes or larger.

The RTS/CTS Threshold parameter supports a range between 0 and 1513 Bytes (which is the largest Ethernet packet).

If set to 0, then a sending radio will use RTS/CTS before sending any packet. If set to 1513, then a sending radio will not use RTS/CTS for any packets except those that are 1513 Bytes.

## 5. Performance Hints

This section provides the user with ideas for how to increase performance and network satisfaction on a Harmony 802.11b network.

### **Microwave Ovens**

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Microwave ovens operate in the same frequency band as the Harmony 802.11b Access Point. Therefore, if you use a microwave within range of the Access Point you may notice network performance degradation. However, both your microwave and your Access Point will continue to function.

### **Range**

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Every environment is unique with different obstacles, barriers, materials, etc. and therefore, it is difficult to determine the exact range that will be achieved without testing. However, Proxim has developed some guidelines to estimate the range that users will see when the product is installed in their facility, but there are no hard and fast specifications.

Radio signals may reflect off of some obstacles or be absorbed by others depending on their construction. For example, with two 802.11b radios, you may achieve up to 1000' in open space outdoors where the two antennas are line of sight, meaning they see each other with no obstacles. However, the same two units may only achieve up to 300' of range when used indoors.

The IEEE 802.11b specification supports four data rates: 11 Mbps, 5.5 Mbps, 2 Mbps, and 1 Mbps. Operation at 1 Mbps provides greater range than operation at 11 Mbps. The Harmony 802.11b Access Point will automatically adjust the data rate to maintain a usable radio connection. Therefore, a client that is close to the Access Point may operate at 11 Mbps while a client that is on the fringe of coverage may operate at 1 Mbps. As described in Chapter 4, you may configure the data rates that the Access Point will use. Note that if you limit the range of data rates available to the Access Point, you may reduce the effective range of the Harmony 802.11b products.

Proper antenna placement can help improve range. Here are some guidelines:

- The antenna should be placed so that it emits its signal in the appropriate direction. The Harmony 802.11b Access Point comes with an integral diversity antenna. For best results, place the antenna in the up or vertical position.
- Place the antenna as high as possible. In an office environment, try to place it above cubicle walls.
- Do not place a sheet of metal (like a filing cabinet) between two antennas.

## 6. Troubleshooting

The Harmony 802.11b Access Point is designed to be very easy to install and operate. However, if you experience difficulties, use the information in this chapter to help diagnose and solve problems. Also, refer to the Harmony Access Point Controller Model 7560 User's Manual for additional troubleshooting suggestions. If you cannot resolve a problem, contact Proxim, as described in Appendix A, "How to Reach Technical Support."

### **How to Obtain Help with Your LAN Installation**

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If you require assistance to install your LAN, Proxim can put you in contact with a Harmony reseller in your area. The reseller is an expert in the design, installation, and maintenance of LANs and will be able to examine your needs and recommend the most cost-effective solution for your LAN whether you are installing a new LAN or adding on to an existing one. For the location of the Harmony reseller nearest you, contact Proxim at 800-229-1630 and ask for the Sales Department.

### **Common Problems and Solutions**

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#### **Problem 1:**

The Harmony 802.11b Access Point is not automatically recognized by the AP Controller.

#### **Solution 1:**

Follow these steps if a Harmony 802.11b Access Point is not automatically recognized and configured by the AP Controller:

1. Confirm that the Link LED is on; this means that the Access Point has a network connection. If the LED is not on, try another Ethernet cable.

2. Try recycling power to the unit. The Access Point will try to contact an AP Controller during boot-up. Therefore, if you are using the external AC power supply, you should connect the Access Point to the Ethernet network before turning on the unit.
3. If neither of the above solves the problem, try to manually add the Access Point as described in the Harmony Access Point Controller Model 7560 User's Manual.

**Problem 2:**

My Harmony 802.11 PC Card will not associate with the Harmony 802.11b Access Point.

**Solution 2:**

Follow these steps if a PC Card cannot associate with the Access Point:

1. Try to bring the devices closer together; the PC Card may be out of range of the Access Point.
2. Confirm that the Access Point and PC Card have the same ESSID.
3. Confirm that the Access Point and PC Card have the same Encryption settings, if enabled.
4. Confirm that the Access Point's Status LED is on or use the Wireless Network Management interface to confirm that it is partnered with an AP Controller. A PC Card cannot associate with an Access Point unless the Access Point is partnered with an AP Controller.

**Problem 3:**

The Status LED is amber.

**Solution 3:**

The Status LED will turn amber under two conditions:

1. The unit is initializing;
2. The unit has successfully initialized but could not find an AP Controller to partner with.

Confirm that the Access Point has successfully partnered with the AP Controller via the Wireless Network Management interface.



## A. How to Reach Technical Support

If you're having a problem using the Harmony 802.11b Access Point, gather the following information and contact Proxim Technical Support:

- What Harmony products are installed on the network?
- What were you doing when the error occurred?
- What error indication did you see?
- Can you reproduce the problem?

You can reach Proxim Technical Support by voice, fax, e-mail, or mail:

Tel: 800-477-6946 or 408-731-2640

Fax: 408-731-3676

Web: **<http://www.proxim.com>**

E-mail: [support@proxim.com](mailto:support@proxim.com)

Mail: Proxim, Inc.  
Attn: Technical Support  
510 DeGuigne Drive  
Sunnyvale, CA 94085

## B. Harmony 802.11b Access Point Specifications

The following technical specification is for reference purposes only. Actual product's performance and compliance with local telecommunications regulations may vary from country to country. Proxim, Inc. will only ship products that are type approved in the destination country.

<b>Network Interfaces</b>	Ethernet 10Base-T (Twisted-Pair)
<b>Data Rate</b>	11, 5.5, 2, and 1 Mbps —IEEE 802.11b 10 Mbps — Ethernet
<b>Media Access Protocol</b>	IEEE 802.11b
<b>Ethernet compatibility</b>	IEEE 802.3
<b>Frequency Band</b>	2.4-2.5 GHz Worldwide (Depends on country) (spread spectrum direct sequence)
<b>Channels</b>	2 to 14 (Depends on country) 11 for the United States; 3 independent Channels
<b>Output Power</b>	13 dBm or 20 mW
<b>Operating Temperature</b>	0°C to +50°C
<b>UL Listed Power Supply</b>	The 802.11b Access Point requires power from either a Harmony Power System or from an external power supply. The Harmony 802.11b Access Point includes a UL listed, Class 2 power supply.

### **Warning!**

*It is the responsibility of the users of the Harmony 802.11b Access Point Model 8550 to guarantee that the antenna is operated at least 20 centimeters from any person. This is necessary to insure that the product is operated in accordance with the RF Guidelines for Human Exposure which have been adopted by the Federal Communications Commission.*