



# Quick Installation Guide

## WavePOINT-II Access Point

You can find the latest software & documentation at:  
<http://www.wavelan.com/support>

011908/A September 1999

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### September 22, 1999

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If you find errors or omissions in this book, or if you can suggest ways to improve its usefulness, we would like to hear from you. Please contact us at:  
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Sincerely,  
William van der Moolen

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# Table of Contents

|                               |    |
|-------------------------------|----|
| <b>Table of Contents</b>      | i  |
| <b>Technical Support</b>      | v  |
| <b>Regulatory Information</b> | vi |

---

|          |  |      |
|----------|--|------|
| <b>1</b> | <b>Welcome</b>                             | 1-1  |
|          | Introducing WavePOINT-II                   | 1-1  |
|          | ■ About the WavePOINT-II                   | 1-1  |
|          | Finding Information                        | 1-5  |
|          | ■ The Quick Installation Guide             | 1-5  |
|          | ■ The WaveMANAGER User's Guide             | 1-6  |
|          | ■ The On-line Help Information             | 1-6  |
|          | ■ Conventions Used in This Document        | 1-7  |
|          | Kit Contents                               | 1-8  |
|          | Selecting the Right WaveLAN Card           | 1-9  |
|          | ■ WaveLAN IEEE Adapters                    | 1-9  |
|          | ■ Bronze, Silver & Gold Labels             | 1-12 |
|          | ■ Can I Use Different Card Types Together? | 1-13 |
|          | ■ WaveLAN Legacy Adapters                  | 1-14 |
|          | ■ WaveLAN IEEE versus Legacy WaveLAN       | 1-15 |
|          | Optionally Available Products              | 1-17 |

---

|          |                                    |     |
|----------|------------------------------------|-----|
| <b>2</b> | <b>Installing the WavePOINT-II</b> | 2-1 |
|          | Introduction                       | 2-1 |
|          | ■ WavePOINT-II Placement           | 2-1 |
|          | ■ Indoor Antenna Placement         | 2-2 |
|          | ■ Outdoor Antenna Placement        | 2-3 |

## Table of Contents

---

|          |   |      |
|----------|---|------|
|          | Hardware Installation                       | 2-4  |
|          | ■ Verifying Kit Contents                    | 2-4  |
|          | ■ Registering your WaveLAN Products         | 2-4  |
|          | ■ Placing Mounting Plate and Power Supply   | 2-6  |
|          | ■ Mounting the Processor Module             | 2-7  |
|          | ■ Connecting the Network Interfaces         | 2-8  |
|          | ■ Mounting the WavePOINT-II Cover Plate     | 2-10 |
|          | Powering-up WavePOINT-II                    | 2-12 |
| <hr/>    |   |      |
| <b>3</b> | <b>Beyond Quick-Start...</b>                | 3-1  |
|          | Introduction                                | 3-1  |
|          | ■ Connect Stations to your WavePOINT-II     | 3-1  |
|          | ■ Configure your WavePOINT-II               | 3-3  |
| <hr/>    |   |      |
| <b>A</b> | <b>WavePOINT-II Specifications</b>          | A-1  |
|          | Hardware                                    | A-1  |
|          | Software                                    | A-2  |
| <hr/>    |   |      |
| <b>B</b> | <b>WavePOINT-II Start-up Configuration</b>  | B-1  |
|          | Identify the Start-up Settings              | B-1  |
| <hr/>    |   |      |
| <b>C</b> | <b>Additional Installation Instructions</b> | C-1  |
|          | WaveLAN Legacy Radio Modules                | C-1  |
|          | ■ Mounting the WaveLAN/PCMCIA Radio         | C-2  |
|          | ■ Mounting the WaveLAN/EAM Radio            | C-3  |

## Table of Contents

---

Removing the Cover Plate C-7

---

|          |                             |       |
|----------|-----------------------------|-------|
| <b>W</b> | <b>Warranty Repair Card</b> | W-1   |
|          | About Warranty and Repair   | W-1   |
|          | Limited Warranty            | W-2   |
|          | <b>List of Figures</b>      | LOF-1 |
|          | <b>List of Tables</b>       | LOT-1 |
|          | <b>Index</b>                | IX-1  |



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## Technical Support

You can find the most recent software and user documentation for all WaveLAN products on our internet site.

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### Software and Documentation

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|                |   |
|----------------|---|
| World Wide Web | <a href="http://www.wavelan.com">http://www.wavelan.com</a>       |
| FTP Server     | <a href="ftp://ftp.wavelan.com/pub">ftp://ftp.wavelan.com/pub</a> |

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If you encounter problems when installing or using this product, or would like information about our other WaveLAN products, please contact your local **Authorized WaveLAN Reseller**, or **regional Lucent Technologies Sales Office**. You can find their address and phone numbers on the WaveLAN website.

In case no local or regional support is available, you can reach us at the addresses or telephone numbers listed below.

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### WaveLAN Regional Support

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|                             |  |
|-----------------------------|--|
| U.S.A / Canada              | <a href="mailto:usasupport@wavelan.com">usasupport@wavelan.com</a>   |
| Caribbean/ Latin America    | <a href="mailto:calasupport@wavelan.com">calasupport@wavelan.com</a> |
| Europe/ Middle-East/ Africa | <a href="mailto:emeasupport@wavelan.com">emeasupport@wavelan.com</a> |
| Asia/ Pacific               | <a href="mailto:apasupport@wavelan.com">apasupport@wavelan.com</a>   |
| WaveLAN Global Support      |  |
| U.S.A / Canada              | Voice: +1 800 WAVELAN-3  |
| Caribbean/ Latin America    |  |

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When contacting WaveLAN Support, please complete the WaveLAN Problem Report form and include it with your email.

The form (report.txt) is available on the WaveLAN Software CD-ROM, and on the WaveLAN Support pages of the WaveLAN website.

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## Regulatory Information

Lucent Technologies is not responsible for any radio or television interference caused by unauthorized modification of this device or the substitution or attachment of connecting cables and equipment other than specified by Lucent Technologies. The correction of interference caused by such unauthorized modification, substitution or attachment will be the responsibility of the user.

The device described in this document can be used in combination with other wireless products and/or antennas. Whenever applicable the user shall always consult the documentation that came with such devices for additional Regulatory Information and/or Safety and Installation Requirements that might apply to the wireless installation.

### USA - Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for Class B Digital Devices, 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 instruction, 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 to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

### Canada - Industry Canada (IC)

This class B digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations.

*Cet appareil numérique de la class B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.*

### EU Declaration of Conformity

Lucent Technologies declares, that the WavePOINT-II conforms to the specifications listed below, following the provisions of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC:

|               |                         |
|---------------|-------------------------|
| <b>Safety</b> | EN60950/IEC950          |
| <b>EMC</b>    | EN55022/CISPR22 Class B |
|               | EN61000-3-2/EN61000-3-3 |
|               | EN50082-1               |



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# Welcome

# 1

---

## **Introducing WavePOINT-II**

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Welcome to WaveLAN, the easy way to wireless computing. Building your own wireless network has never been easier.

This book introduces you to WavePOINT-II, and will help you to get your network “on the air” within a snap. It describes the most common configurations and a quick start set-up.

To install and manage WaveLAN products, it is assumed that you have a working knowledge of installation procedures for network operating systems under Microsoft Windows 95 and Windows NT.

## **About the WavePOINT-II**

---

The WavePOINT-II bridge is a modular unit with an integrated Ethernet interface and two PC Card slots, that enable you to use your WavePOINT-II with:

- WaveLAN IEEE 802.11 PC Cards.
- WaveLAN Legacy adapter cards.

The dual slot design allows you to configure the WavePOINT-II to operate with almost any combination of the wired and wireless network interfaces listed above. This way your WavePOINT-II device provides easy migration paths between various generations of WaveLAN products.

# Welcome

## Introducing WavePOINT-II

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The WavePOINT-II is a transparent Media Access Control (MAC) bridge that exists in two versions:

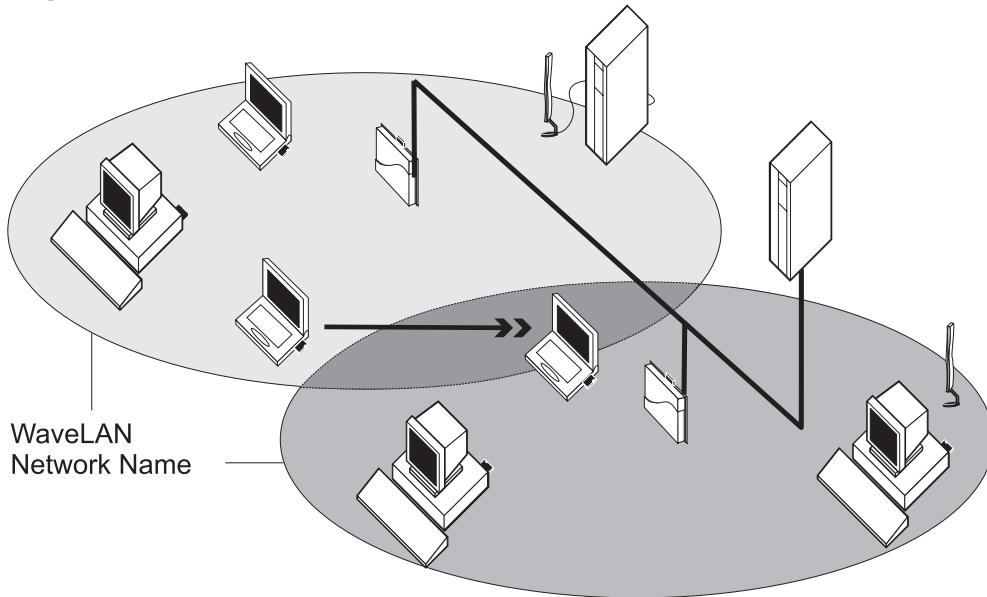
- WavePOINT-II Access Point.
- WaveACCESS LINK WP-II.

### WavePOINT-II Access Point

The Access Point is a wired to wireless bridge that you can use to connect wireless cells to one another or to a wired (Ethernet) Local Area Network. The Access Point can serve mobile wireless clients roaming between various locations within a network premises.

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**Figure 1-1 WavePOINT-II Access Point**



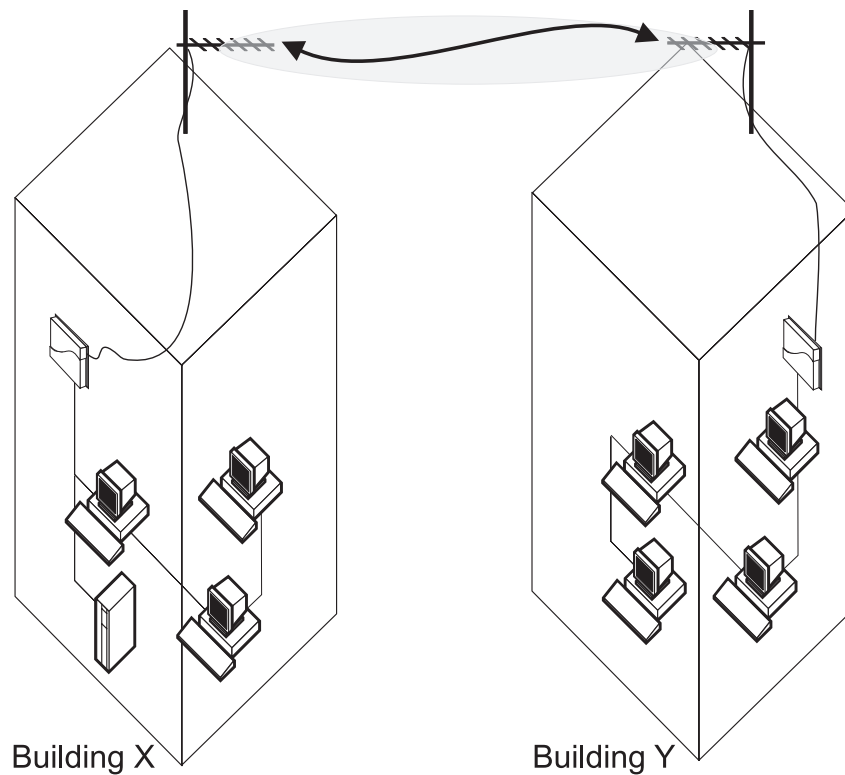
## **WaveACCESS LINK WP-II**

The WaveACCESS LINK WP-II bridge, previously known as the WavePOINT-II Point-to-Point (PTP) bridge, has been designed to serve a wireless backbone between wireless cells and/or wireless (outdoor) antenna link.

The WaveACCESS LINK WP-II device is based on the same hardware design as the WavePOINT-II Access Point. Besides its wireless point-to-point bridging functionality, the WaveACCESS LINK WP-II also supports the access point features as described on the previous page.

---

**Figure 1-2 WaveACCESS LINK WP-II**



## Welcome

### Introducing WavePOINT-II

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When you wish to use the WaveACCESS LINK WP-II in an outdoor antenna installation, you are advised to consult the information described in the “WaveLAN Outdoor Antenna Installation Guide, which can be downloaded from the document Library on the WaveLAN website at: <http://www.wavelan.com>



#### **NOTE:**

To install a WavePOINT-II device, you will need at least one WaveLAN interface card. This card is not included with your WavePOINT-II Kit, but must be ordered as an additional item. For more information about the various card types available please refer to the section “Selecting the Right WaveLAN Card” on page 1-9.

## **Finding Information**

---

WavePOINT-II, together with WaveLAN network adapter cards, enables you to build a variety of network configurations:

- A wireless LAN environment for mobile computers.
- A flexible network, that allows for adding and/or relocating workstations quickly and easily.
- A migration path between various generation WaveLAN infrastructures.
- An inexpensive alternative to leased lines for building-to-building links (WaveACCESS LINK WP-II only).

To design and install your wireless network, you can find the information you need in the following information products:

- The Quick Installation Guide
- The WaveMANAGER User's Guide
- The On-line Help Information

### **The Quick Installation Guide**

---

The Quick Installation Guide (this document) describes:

- The contents of your WavePOINT-II Kit (see page 1-8).
- How to install the WavePOINT-II hardware (see Chapter 2).
- How to power up the device using the default factory-set settings (see Chapter 3).
- The hardware specifications of your WavePOINT-II device (see Appendix A).

## **The WaveMANAGER User's Guide**

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The WaveMANAGER User's Guide describes:

- Examples of various configuration scenarios.
- How to setup an Administrator station to configure your WavePOINT-II devices.
- How to modify the WavePOINT-II Start-up Configuration.
- How to Monitor the performance of your wireless LAN.
- How to optimize the performance of your wireless LAN, using the advanced features of your WavePOINT-II bridge.
- How to enhance network security, using the various security options available to WavePOINT-II.
- Troubleshooting unexpected performance.

## **The On-line Help Information**

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You can configure your WavePOINT-II bridge, or monitor its performance using the WaveMANAGER/AP program, provided on the diskettes that came with your unit.

When you install the WaveMANAGER/AP program, you can display context-sensitive help with each screen by:

- Clicking the '  ' or '?' button on your screen, or
- Pressing the **F1** function key on your keyboard.



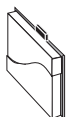
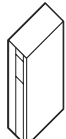


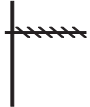

Alternatively, you can start the WaveMANAGER/AP Help directly from the Programs Menu and click one of the tabs in the menu bar of the help window:

- 'Contents' to display topics listed by subject.
- 'Index' to search for topics listed in alphabetical order.

## **Conventions Used in This Document**

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Throughout this document we use the icons listed below to picture the following network devices:

| <b>Icon</b>   | <b>Description</b>  |
|---|---|
|    | Wireless (mobile) Client Station equipped with: <ul style="list-style-type: none"><li>■ WaveLAN IEEE 802.11 PC Card, or</li><li>■ WaveLAN/PCMCIA.</li></ul>         |
|    | Wireless Client Station equipped with: <ul style="list-style-type: none"><li>■ WaveLAN IEEE 802.11 ISA Card, or</li><li>■ WaveLAN/ISA.</li></ul>                    |
|    | WavePOINT-II access point equipped with: <ul style="list-style-type: none"><li>■ WaveLAN IEEE 802.11 PC Card, or</li><li>■ WaveLAN/PCMCIA or WaveLAN/EAM.</li></ul> |
|   | Server Station.   |
|  | WaveLAN IEEE 802.11 Range Extender Antenna<br>This antenna for indoor use can be connected to IEEE 802.11 PC Cards only.  |
|  | Legacy WaveLAN omni-directional antenna.<br>This antenna for indoor use can be connected to WaveLAN/ISA or WaveLAN/EAM only.  |
|  | Outdoor (Directional) Antenna.  |
|  | Network Hub.  |

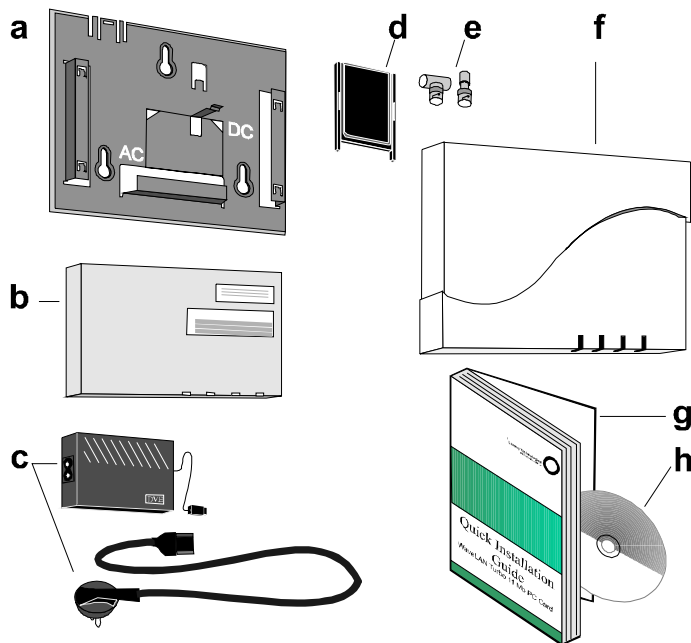
## Kit Contents

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- a. Mounting plate to mount the WavePOINT-II unit to a wall.
- b. WavePOINT-II Processor Module.
- c. Power Supply & AC Power Cord.
- d. Slot Protector Card.  
(to protect unused PC Card slots from dust).
- e. T-Connector and terminator for Ethernet 10Base2.
- f. WavePOINT-II cover plate.
- g. WavePOINT-II Quick Installation Guide (this document).
- h. WaveLAN Software CD-ROM containing:
  - WaveMANAGER/AP Management and Diagnostics software.
  - WavePOINT-II Software (also referred to as firmware).
  - WaveMANAGER User's Guide (a detailed reference guide for designing and managing your wireless LAN system).

---

**Figure 1-3 WavePOINT-II Kit Contents**





## **Selecting the Right WaveLAN Card**

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To install a WavePOINT-II device, you will need at least one WaveLAN interface card. This card is not included with your WavePOINT-II Kit, but must be ordered as an additional item.

Your WavePOINT-II device supports the following WaveLAN cards, allowing you to build the wireless network that suits your requirements:

- WaveLAN IEEE Adapters
- WaveLAN Legacy Adapters (see page 1-14).

### **WaveLAN IEEE Adapters**

---

WaveLAN IEEE Adapters are Type II extended PC-Cards with integrated radio module and antennas (2.4 GHz). You can use your WavePOINT-II device in combination with any of the following WaveLAN IEEE PC Cards:

- WaveLAN/IEEE Turbo 11 Mb PC Card.
- WaveLAN/IEEE Turbo PC Card.
- Standard WaveLAN/IEEE 802.11 PC Card.
- Fixed Wireless PC Card.

The difference between each of these card types is described on the following pages.

### **WaveLAN/IEEE Turbo 11 Mb PC Card**

The WaveLAN/IEEE 802.11 Turbo 11 Mb PC Card is a wireless network adapter card that complies with the IEEE 802.11 standard on wireless LANs Rev. B. This card that supports data rates up to 11 Mbit/s is available in two variants:

- WaveLAN IEEE 802.11 Silver Label, and
- WaveLAN IEEE 802.11 Gold Label.

## Welcome

### Selecting the Right WaveLAN Card

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#### WaveLAN/IEEE Turbo PC Card

The WaveLAN/IEEE Turbo PC Card is a wireless network adapter card that supports two proprietary (High & Medium) data rates, and two data rates (Standard & Low) that comply with the IEEE 802.11 standard on wireless LANs Rev. A.

The WaveLAN/IEEE Turbo PC Card is available in two variants:

- WaveLAN IEEE 802.11 Bronze Label, and
- WaveLAN IEEE 802.11 Silver Label.

The WaveLAN/IEEE Turbo PC Card was marketed prior to the release of Revision B of the IEEE 802.11 standard on wireless LANs, which defines the standard for high-speed wireless LANs.

With the release of Revision B of the 802.11 standard, the *Turbo PC Card* has been replaced with the *WaveLAN/IEEE Turbo 11 Mb PC Card*, described on the previous page<sup>1</sup>.

#### Standard WaveLAN/IEEE 802.11 PC Card

The standard WaveLAN IEEE 802.11 adapter is a wireless network adapter card that complies with the IEEE 802.11 standard on wireless LANs Rev. A. This card that supports data rates up to 2 Mbit/s is available in two variants:

- WaveLAN IEEE 802.11 Bronze Label, and
- WaveLAN IEEE 802.11 Silver Label.

Occasionally you may encounter WaveLAN/IEEE cards that are identified by a white label, which support the same features as Standard Bronze Label cards.

---

1 The data rates “High & Medium” of these two cards are coexistent, but not compatible: See page 1-13 for more information.

### **Fixed Wireless PC Card**

This card is a special WaveLAN PC Card for outdoor antenna installations that is marketed in Europe only. It is typically used in combination with WavePOINT-II access points and/or the WaveLAN Vehicle-Mount Antenna to connect a wireless LAN device to an outdoor antenna installation.

The Fixed Wireless PC Card can be recognized from the distinct red color of the extended part of the PC Card. It supports the same networking capabilities as the other WaveLAN cards, but has different radio specifications, to comply with radio regulations for outdoor antenna installations as defined by the European Telecommunications Standards Institute (ETSI).

Just like the cards described on the previous pages, the Fixed Wireless PC Card is available in the various Label variants.

For more details about this card, please consult Appendix A of the Quick Installation Guide that came with your WaveLAN PC Card and/or the “WaveLAN Outdoor Antenna Installation Guide” that can be downloaded from the WaveLAN website.

## Welcome

### Selecting the Right WaveLAN Card

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#### **Bronze, Silver & Gold Labels**

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As you have noticed the various types of WaveLAN PC Cards come in different variants identified by a specific label.

**Bronze Label cards** support the following features:

- Interoperability with other IEEE 802.11 compliant Direct Sequence radio devices.
- Auto Transmit Rate selection in the range of “High, Medium Standard and Low”<sup>1</sup>.
- Frequency Channel Selection (2.4 GHz).
- Roaming over multiple channels.
- Power Management.

WaveLAN/IEEE Bronze cards are fully inter-operable with the Silver & Gold cards and the WaveLAN cards with a white label.

**Silver Label cards** support the same functionality as the Bronze cards. Silver cards however also support “Wired Equivalent Privacy” (WEP) data encryption, based on the 64 bit RC4 encryption algorithm as defined in the IEEE 802.11 standard on wireless LANs.

**Gold Label cards**, which exist for the WaveLAN/IEEE Turbo 11 Mb PC Card only, support an enhanced type of data encryption, based on the 128 bit RC4 algorithm.



**NOTE:**

The WaveLAN/IEEE Turbo 11 Mb Gold PC Card may not be marketed in all parts of the world, subject to national legislation or local regulations. For availability in your country, please consult your local Lucent Technologies Sales Office.

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1 Standard WaveLAN/IEEE PC Cards only support “Standard & Low”.

## Welcome

### Selecting the Right WaveLAN Card

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## Can I Use Different Card Types Together?

The answer is yes, however since the PC Cards differ in design and features, you need to be aware of the constraints listed below.

### **Transmit Rate Compatibility**

When using different card types, the WaveLAN PC Cards will automatically synchronize their transmit rate to the highest compatible data rate as supported by both cards.

This means that WaveLAN/IEEE Turbo 11 Mb PC Cards will use:

- High or Medium data rate, when communicating with other WaveLAN/IEEE Turbo 11 Mb PC Cards.
- Standard or Low data rate, when communicating with:
  - WaveLAN/IEEE Turbo PC Cards.
  - Standard WaveLAN/IEEE 802.11 PC Cards.

WaveLAN/IEEE Turbo PC Cards will use:

- High or Medium data rate, when communicating with other WaveLAN/IEEE Turbo PC Cards.
- Standard or Low data rate, when communicating with:
  - WaveLAN/IEEE Turbo 11 Mb PC Cards.
  - Standard WaveLAN/IEEE 802.11 PC Cards.

Transmissions at high data rates do not cover the same distances as wireless data transmitted at Standard or Low data rates.

If you plan to upgrading an existing WaveLAN installation by replacing the WaveLAN cards in your WavePOINT-II devices with Turbo 11 Mb PC Cards, you are advised to perform a site survey again in order to verify that the entire coverage area allows for data transmissions at the highest transmit rates.

Consult the WaveMANAGER User's Guide for information about using the WaveMANAGER/CLIENT IEEE tool to perform such a site survey.

## Welcome

### Selecting the Right WaveLAN Card

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#### Data Encryption

When using WaveLAN data encryption in your network, you must ensure that all WaveLAN devices will be:

- Equipped with WaveLAN PC Cards that support encryption.
- Configured with a matching set of encryption keys.

This means that you should configure Turbo 11 MB Gold cards with 64-bit key values that match the values of the Silver cards.

#### WaveLAN Legacy Adapters

---

WaveLAN Legacy adapters exist in the following variants:

- WaveLAN/PCMCIA Kit
- WaveLAN/EAM Kit

These two types of WaveLAN adapters are no longer marketed by Lucent Technologies. However as you may still encounter these adapters in existing WaveLAN installations, they are briefly described in this document.

WaveLAN/PCMCIA and WaveLAN/EAM exist with or without a factory installed Security Feature (AES or DES) to encrypt all data transmitted via the WaveLAN interface(s) of the WavePOINT-II.

#### WaveLAN/PCMCIA Kit

The WaveLAN/PCMCIA kit consists of a Type II PC-Card and radio module (915 MHz or 2.4 GHz) that are connected via a small cable. Standard cable length is 45 cm, optionally available are kits that use a 100 cm cable.

## Welcome

### Selecting the Right WaveLAN Card

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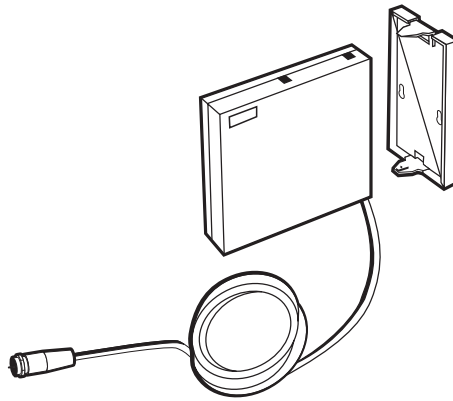
#### WaveLAN/EAM Kit

The External Antenna Module (EAM) is a type-II PC Card with special radio module (915 MHz or 2.4 GHz) that provides an interface to an external directional antenna.

- Legacy WaveLAN Omni-Directional Antenna for indoor use that, in combination with the WaveLAN/EAM, allows for more flexibility in placement of the antenna for the WavePOINT-II unit.
- Legacy WaveLAN Outdoor kit, that allow for connecting the WavePOINT-II to an outdoor antenna installation.

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**Figure 1-4 Legacy WaveLAN Omni-Directional Antenna**



#### WaveLAN IEEE versus Legacy WaveLAN

---

Both WaveLAN IEEE and Legacy WaveLAN products use Direct Sequence Spread spectrum modulation, to transmit and receive wireless communications via the license-free 2.4 GHz radio frequency band.

## Welcome

### Selecting the Right WaveLAN Card

---

Still, WaveLAN IEEE and Legacy WaveLAN should be considered co-existent rather than compatible with one another.

- Although the user can select the same radio channels for both types of WaveLAN products, different generation products can not communicate with one another directly.
- Not all features supported by WaveLAN IEEE systems are supported by Legacy WaveLAN systems and vice versa.

The main reason for the difference between WaveLAN IEEE and Legacy WaveLAN products, is the fact that WaveLAN IEEE was designed for interoperability with other wireless LAN devices that comply with *the* industry standard for LAN communications; The IEEE 802.11 Standard for Wireless LANs<sup>1</sup>.

However as WavePOINT-II allows you to use both Legacy WaveLAN and WaveLAN IEEE 802.11 adapter cards simultaneously, this should not prevent you from building the WaveLAN Infrastructure that allows for smooth migration from WaveLAN Legacy to WaveLAN IEEE network systems.

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1 Standard defined by the 802.11 committee of the Institute of Electrical and Electronics Engineers Inc. (IEEE).



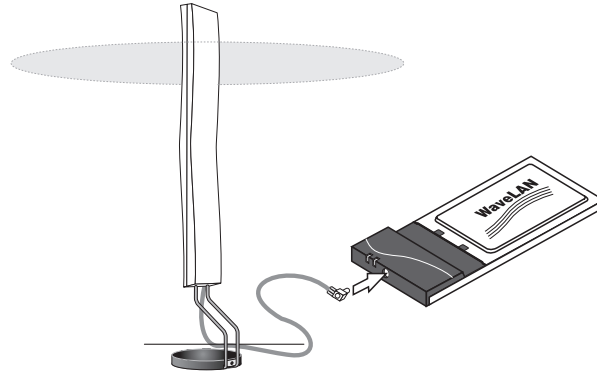
## **Optionally Available Products**

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- **WaveLAN IEEE 802.11 Range Extender Antenna**  
An omni-directional antenna for indoor use that enables you to extend the wireless range of the WavePOINT-II unit when connected to an WaveLAN IEEE 802.11 PC Card.
- **WaveLAN IEEE 802.11 Vehicle Mount Antenna**  
A more ruggedized omni-directional antenna for outdoor use that allows for mounting an external WaveLAN antenna in an industrial environment.
- **IEEE 802.11 Outdoor Antenna Kit**  
A complete outdoor antenna kit that includes a WaveACCESS LINK WP-II, Lightning Arrestor, Outdoor Antenna Cable and 14 dBi directional or 7 dBi omni-directional antenna.

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**Figure 1-5 IEEE 802.11 Range Extender Antenna**





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# Installing the WavePOINT-II

# 2

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## Introduction

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This chapter describes how to:

- Install the WavePOINT-II hardware.
- Install the WaveLAN interface(s).
- Power up the device to start operation in Basic Access mode.

What You Need to install the WavePOINT-II kit is:

- One WavePOINT-II unit.
- One or more WaveLAN network interface cards.
- (Optional) An Ethernet backbone (either 10Base-T or 10Base2).

## WavePOINT-II Placement

---

You can mount the WavePOINT-II on a vertical surface like a wall or place the unit on a flat surface such as a table or cabinet.

Prior to mounting it to a fixed location, you may consider performing a site survey to determine optimal placement for your WavePOINT-II unit(s).



### **CAUTION:**

*Placement of the WavePOINT-II must satisfy the following installation requirements:*

- a. Connect the unit to a grounding type AC wall outlet (100-240 VAC) using the standard power cord as supplied with the unit.*
- b. Placement must allow for easily disconnecting the WavePOINT-II unit from the AC wall-outlet.*
- c. Do not cover the unit, or block the airflow to the unit with any other objects. Keep the unit away from excessive heat and humidity and keep the unit free from vibration and dust.*
- d. Installation must at all times conform to local regulations.*
- e. When the WavePOINT-II unit will be connected to an outdoor antenna system, consult the documentation that came with the outdoor antenna kit for additional regulatory information, safety instructions and installation requirements.*

### **Indoor Antenna Placement**

---

The integrated antennas of your WaveLAN card perform best in an open environment with as few obstructions as possible. In most situations mounting the WaveLAN radio module as pictured in Figure 2-4 on page 2-8 or Figure C-1 on page C-1, will provide satisfactory performance results. To ensure the best performance:

- Place the WavePOINT-II as high and as centrally as possible (relative to the WaveLAN stations in the vicinity).
- Do not conceal the antenna.
- (Optional) Use the WaveLAN card in combination with an external antenna.

**NOTE:**

If you plan to use your WavePOINT-II device in combination with two WaveLAN cards, you are advised to connect at an external antenna to at least one of the two WaveLAN cards. This external antenna should be mounted as far away as possible from the other WaveLAN card to allow maximum performance (see also “Optionally Available Products” on page 1-17).

### **Outdoor Antenna Placement**

---

The WavePOINT-II device has been designed for indoor placement. Optionally you can connect the device to an outdoor antenna installation using the Lucent Technologies Outdoor Antenna Kit solution, according the instructions described in the WaveLAN IEEE Outdoor Antena Installation Guide. You can download this document from the WaveLAN website at <http://www.wavelan.com>.

## Hardware Installation

---

The hardware installation of the WavePOINT-II access point is summarized as follows:

1. Verifying Kit Contents.
2. Registering your WaveLAN Products.
3. Placing Mounting Plate and Power Supply.
4. Connecting the Network Interfaces.
5. Mounting the WavePOINT-II Cover Plate.

### Verifying Kit Contents

---

1. Unpack the WavePOINT-II and verify that all items are present as described in “Kit Contents” on page 1-8.
2. Unpack the WaveLAN network interface card(s) and verify that all items are present as described in the User’s Guide that came with your WaveLAN Kit(s).

### Registering your WaveLAN Products

---

Before you proceed, write down the following values of the following components that you are about to install:

- Serial Number and MAC Address of the WavePOINT-II unit.
- Serial Number and MAC Address of the WaveLAN network interface cards.

You will need these numbers later to identify the unit when running the WaveMANAGER/AP (Access Point) program.

A form for recording this information is provided in Appendix B “WavePOINT-II Start-up Configuration”.

**Figure 2-1 WavePOINT-II Identification Label**



The Serial Number and MAC Address of the WavePOINT-II are printed on a small label at the top right side of the processor module as pictured in Figure 2-1.

For WaveLAN IEEE cards, this information is printed on a small label at the back side of the PC Card.

- The Ethernet MAC Address is used to identify the WavePOINT-II device on the network.
- When using the WavePOINT-II unit in combination with WaveLAN Legacy cards, the last three digits of the unit's Serial Number (S/N) are important as well: These three digits preceded by the letter 'A' or 'B' will identify the initial Network ID (NWID) of the WaveLAN Legacy interface, where 'A' or 'B' will represent the slot of the processor module into which you inserted the WaveLAN Legacy card.

### Placing Mounting Plate and Power Supply

---

1. Use the screws and plugs provided to fix the mounting plate of the WavePOINT-II in the chosen position.  
Note that the mounting plate is positioned correctly as pictured in Figure 2-2, (the marked arrow pointing upwards).

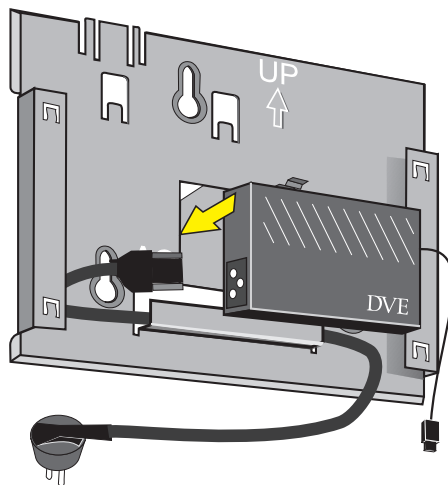


#### **WARNING:**

*The Mounting Plate of the WavePOINT-II access point has not been designed for ceiling mounting. In environments where the unit will be exposed to vibrations, ceiling mounting might cause the processor module to slide off the mounting plate, causing severe personal injury and/or damage to your WaveLAN equipment.*

---

**Figure 2-2 Mounting the Power Supply**



2. Connect the AC power cord to the power supply unit and mount the power supply unit at the mid section of the mounting plate as pictured in Figure 2-2.

Depending on the actual location of the AC wall outlet, you may choose to route the power cord differently to suit your installation requirements.



## Installing the WavePOINT-II Hardware Installation

---

3. Use the tie-wraps provided to secure the power cord to the small loops on the mounting plate at the position where the cords will leave the unit.

According to the type of WaveLAN adapter that you plan to install, the next steps and illustrations may differ:

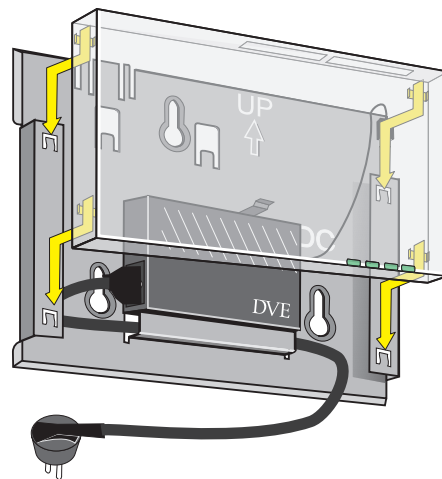
- For WaveLAN IEEE PC Cards proceed as described under “Mounting the Processor Module” on page 2-7 .
- For WaveLAN Legacy network interface cards, please refer to Appendix C “Additional Installation Instructions” prior to mounting the Processor Module.

### Mounting the Processor Module

---

1. Connect the DC power cable to the DC power inlet of the processor module.
2. Bring the rear side of the processor module on to the mounting plate, sliding the four recesses of the module over the corresponding tabs on the mounting plate.
3. Press firmly to assure the unit is properly attached.

**Figure 2-3 Attaching the Processor Module**





### CAUTION:

*Before you proceed:  
Verify that all four recesses are fitted correctly onto the corresponding tabs of the mounting plate. If the processor module is not properly seated, it may drop causing severe personal injury and/or causing serious damage to the WavePOINT-II unit.*

## Connecting the Network Interfaces

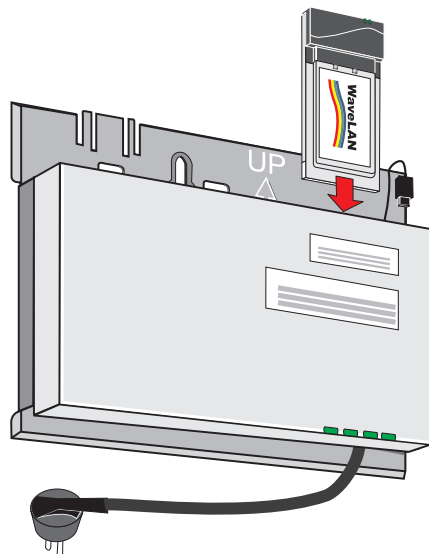
---

One PC Card slot of the WavePOINT-II access point is equipped with a plastic Slot Protector Card. The purpose of this card is to protect the WavePOINT-II unit from dust when the access point is used with a single WaveLAN interface only.

When you intend to install two WaveLAN interfaces into your WavePOINT-II access point, first take out the Slot Protector Card. You are advised to keep the Slot Protector Card for situations when you would like to change the WavePOINT-II hardware configuration in the future.

---

**Figure 2-4** Inserting the WaveLAN Card



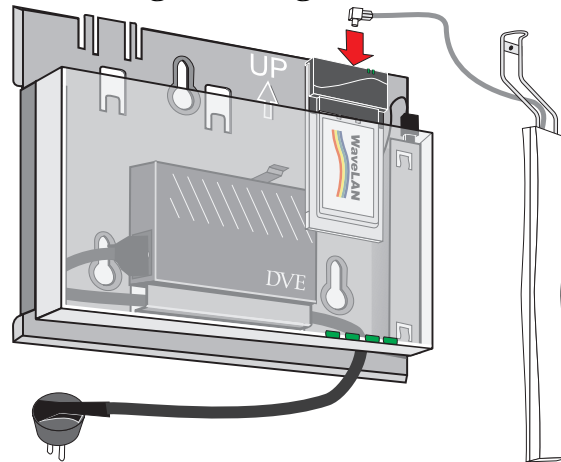
## Installing the WavePOINT-II Hardware Installation

---

1. Insert your WaveLAN PC Card(s) into the processor module.
2. (Optional) When you intend to use the WavePOINT-II access point with the WaveLAN Range Extender Antenna (not included):
  - a. Remove the protective cap from the external antenna connector on your WaveLAN IEEE PC Card.
  - b. Insert the cable connector into the external antenna connector on your WaveLAN IEEE PC Card.
  - c. Press gently until the connector 'clicks' into place.  
If you do not feel or hear a click, carefully maneuver the connector until it clicks into position.
  - d. Mount or place the Range Extender Antenna into a vertical position to ensure optimal performance.If you are installing the WavePOINT-II with two WaveLAN cards, mount the external antenna(s) away from one another as far as possible to allow maximum performance.

---

**Figure 2-5 Connecting the Range Extender Antenna**



3. (Optional) Connect the Ethernet cable to the Ethernet interface:
  - 10Base-T (RJ 45 Connector) or
  - 10Base2 (BNC Connectors, T- Connector provided)

## Installing the WavePOINT-II

### Hardware Installation

---

The WavePOINT-II will automatically select the type of the connected Ethernet interface, so you will not need to set any switches.



**NOTE:**

You are advised to apply the 10Base2 Ethernet terminator (included with your WavePOINT-II Kit) to the Processor Module in any of the situations described on the following page.

- This is the last unit on a 10Base2 cable.
  - You intend to use the unit with two WaveLAN interfaces only, not using the Ethernet interface at all.
4. (Optional) Use the tie-wraps provided to secure the Ethernet cable to the small loops on the mounting plate at the position where the cable will leave the unit.

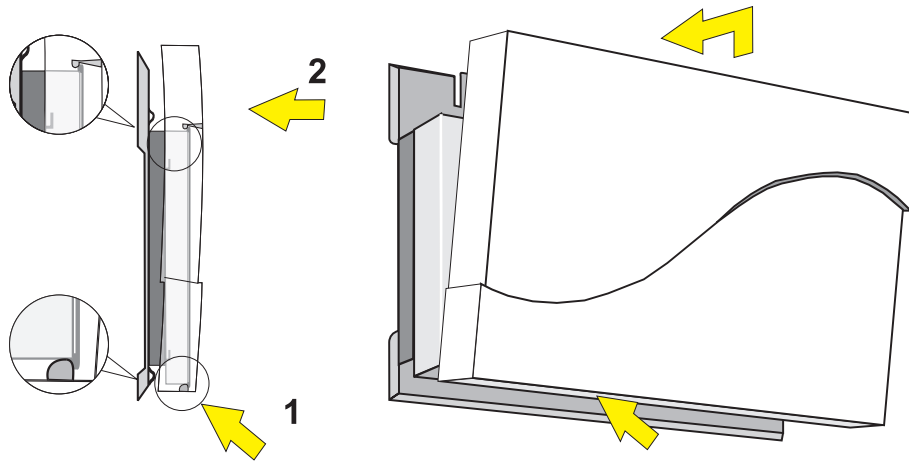
### Mounting the WavePOINT-II Cover Plate

1. Mount the WavePOINT-II cover, (the LED windows at the lower right-hand side).  
Position the latches at the inside of the cover underneath the rim at the bottom of the processor module (see arrow 1 in Figure 2-6).

## Installing the WavePOINT-II Hardware Installation

---

**Figure 2-6 Mounting the WavePOINT-II Cover Plate**



2. Gently press the top of the cover plate towards the unit until it clicks (see arrow 2 in Figure 2-6).
3. Verify the unit is properly seated and power up the unit as described on “Powering-up WavePOINT-II” on page 2-12.

### Powering-up WavePOINT-II

---

The WavePOINT-II power supply accepts any input AC voltage in the range of 100-240 VAC.







#### **WARNING:**

*For your own safety, use only the power cord supplied with the unit. Insert it in a **grounded** AC wall outlet. When using the unit in combination with outdoor antennas, the grounding of the AC wall outlet must be connected to the safety grounding system of the outdoor antenna system and the WaveLAN Lightning Protector.*

When powered on, the WavePOINT-II unit will perform start-up diagnostics characterized by a LED sequence. The WavePOINT-II LEDs will change color in the range Amber, Red and Green. When finished (after approximately 60 seconds) the WavePOINT-II unit will start bridging operation characterized by the LED activity as listed in Table 2-1 below.

**Table 2-1 LED Activity Table:**

| LED Definition  | Activity <sup>1</sup> | Description                  |
|---|-----------------------|------------------------------|
|  Power     | Green                 | Power enabled                |
|  Ethernet  | Flicker Green         | Ethernet LAN activity        |
|  WaveLAN A | Flicker Green         | WaveLAN activity on socket A |
|  WaveLAN B | Flicker Green         | WaveLAN activity on socket B |

<sup>1</sup> LED activity will only occur when there is network activity on the corresponding WavePOINT-II interface.

If the WavePOINT-II does not switch to normal operation within two minutes, please consult the troubleshooting section of the WaveMANAGER IEEE User's Guide.

---

# Beyond Quick-Start...

# 3

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## Introduction

---

Once you have powered up your WavePOINT-II hardware, you will have completed the WavePOINT-II 'Quick Start'. This chapter will take you 'Beyond Quick Start' and briefly explain how to:

- Connect Stations to your WavePOINT-II
- Configure your WavePOINT-II

For more details, consult the WaveMANAGER IEEE User's Guide<sup>1</sup> or the on-line help system of the WaveMANAGER/AP program.

## Connect Stations to your WavePOINT-II

---

When powering up WavePOINT-II for the first time, the unit will start bridging operation in Access Point mode, using the WaveLAN parameters as listed in Appendix B "WavePOINT-II Start-up Configuration".

The Access Point mode enables you to connect wireless stations to the WavePOINT-II, provided that these stations have been configured to use WaveLAN parameter values that match the configuration of your WavePOINT-II.

---

<sup>1</sup> A special edition of this document for WaveLAN Legacy systems can be downloaded from the WaveLAN website.

### WaveLAN IEEE Systems

In WaveLAN IEEE infrastructures, all WavePOINT-II devices and wireless stations must use the same WaveLAN Network Name<sup>1</sup>. Alternatively you can (re-)configure the stations to use the value “ANY” (all upper-case) to allow a station to connect to the first WavePOINT-II it can find.

Once the WaveLAN IEEE stations has the correct WaveLAN Network Name, it will automatically select the correct radio channel and establish the connection with the WavePOINT-II.

### WaveLAN Legacy Systems

For WaveLAN Legacy systems, all WavePOINT-II devices and wireless stations must use identical values for the following parameters:

- Domain ID.
- Frequency Channel.
- Beacon Key.



#### **CAUTION:**

*The start-up configuration of WavePOINT-II works fine for testing the equipment and/or performing site surveys. To avoid unintended interference with neighboring networks, or unauthorized access to your network you are advised always to modify this configuration to define unique values for your WaveLAN Network.*

*Consult the WaveMANAGER IEEE User's Guide for more information and instructions.*

---

1 This parameter corresponds to the “ESSID” (Extended Service Set ID) as defined in the IEEE 802.11 Standard for Wireless LANs.



## **Configure your WavePOINT-II**

---

To view or modify the Start-up Configuration of your WavePOINT-II unit, you will need to install the WaveMANAGER/AP software that came with your WavePOINT-II unit.

The WaveMANAGER/AP program enables you to:

- Configure your WavePOINT-II access points and/or WaveACCESS LINK WP-II device(s).
- Monitor the performance of the WavePOINT-II access points and/or WaveACCESS LINK WP-II device(s).

The WaveMANAGER/AP program requires a TCP/IP networking protocol to communicate with the WavePOINT-II devices. To allow proper addressing via TCP/IP:

- You must assign a unique IP Address to each WavePOINT-II device in your network.
- The computer that you will use to run the WaveMANAGER/AP program must have the TCP/IP protocol installed and an IP Address (assigned manually or via BootP or DHCP server).

## **WaveMANAGER Station Requirements**

To install the WaveMANAGER/AP software, select a networked computer that satisfies the following requirements:

- A 80486 or later processor.
- Free disk space of 4 Mb.
- 8 Mb RAM (16 Mb or more recommended).
- Microsoft Windows 95, Windows 98 or Windows NT (v.4.0) operating system.
- An Ethernet or WaveLAN network adapter card.
- A TCP/IP protocol installed.

The computer you select would typically be the computer used by the LAN Administrator. This computer can be any wired or wireless desktop and/or laptop computer.

You may install the WaveMANAGER/AP software on multiple computers, allowing you to use a combination of both wired and wireless stations to administer your WaveLAN network.

The choice for a wireless or wired WaveMANAGER Station will depend on your preferences and abilities to administer your WaveLAN network, but for “out-of-the-box” WavePOINT-II devices, your best bet is probably a wired Ethernet station.

Once the unit has been assigned a unique IP Address, you can use any of the wired and/or wireless configuration scenarios as described in the WaveMANAGER/IEEE User’s Guide.

### **Install the WaveMANAGER/AP Software**

1. Insert the WaveLAN Software CD-ROM into the CD-ROM drive of the computer that will be used as the ‘WaveMANAGER/AP Station’
2. Use your Windows Explorer to open the folder "**software\bridge\accesspt**" and locate the file "**setup.exe**"
3. Run the **SETUP.EXE** file to start the installation utility, and follow the instructions as they appear on the screen.

The Setup Utility will create a special WaveLAN group in the Windows Programs menu, providing you with the key to configure your WaveLAN network to fit your requirements.

Previously installed versions of the WaveMANAGER/AP program will automatically be replaced, without affecting any other file that you might have saved into the program’s directory. For example if you saved back-ups of WavePOINT-II configuration files which you created with the previous version in the WaveMANAGER/AP program folders, these files will not be deleted or overwritten.

### Access the WavePOINT-II Configuration

The easiest way to access the Start-up configuration of your WavePOINT-II devices, is to configure the devices one-by-one at your desk via one of the following wired connections:

- Connect Directly to the WaveMANAGER Station.
- Connect via a Network Hub.

### Connect Directly to the WaveMANAGER Station

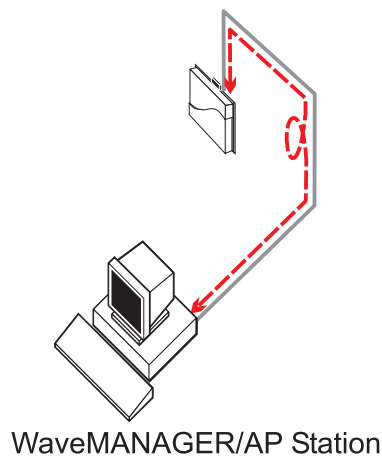
The WavePOINT-II supports two types of Ethernet cabling:

- 10Base-T, also referred to as UTP (Unshielded Twisted Pair).
- 10Base2, also referred to as Thin-coax with BNC connectors.

If you are using 10Base-T cables, you can only establish a “direct connection” if you use a dedicated “crossover” cable as pictured in Figure 3-1 (also referred to as “cross-wired” or “cross-connect”).

---

**Figure 3-1 Connect via a 10Base-T Crossover Cable**



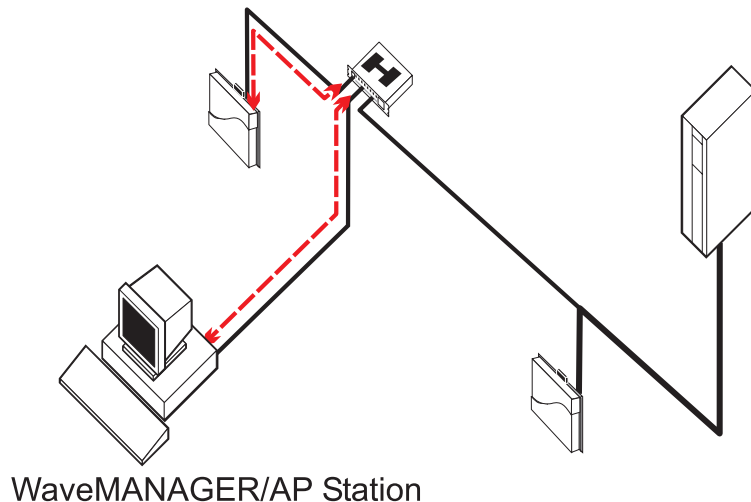
If you are using 10Base2 cables, you must connect the cables using standard BNC T-connectors, and apply terminators at the open ends of the T-connectors.

### **Connect via a Network Hub**

An alternative way to connect the WavePOINT-II device to your WaveMANAGER station is via a network hub, or patch panel as pictured in Figure 3-2.

---

**Figure 3-2 Connect via a Hub**



This method is similar to most standard Ethernet 10Base-T cabling systems. For “out-of-the-box” installations, the easiest way to access the unit, is by connecting your WaveMANAGER station and the WavePOINT-II device to the same hub, to ensure that both devices are located on the same subnet.

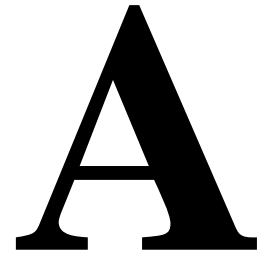
### **Start WaveMANAGER/AP and Go....**

Congratulations! Having completed the steps in this Quick Installation Guide you are ready to power up your wireless installation.

Proceed with the instructions as described in the WaveMANAGER User’s Guide to customize the configuration to meet your networking requirements, monitor wireless performance and/or optimize bridge performance.

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# WavePOINT-II Specifications



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## Hardware

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### Physical Specifications

---

Dimensions (HxWxL) 5x18.5x26 cm

Weight 1.75 Kg.

Power Cord Length 2.5 meter

### Electrical Specifications

Voltage 100-240 V AC (50-60 Hz)

Current 0.2 Amp

Power Consumption 20 Watt

### Environmental Specifications

|           | Temperature   | Humidity                            |
|-----------|---------------|-------------------------------------|
| Operating | 0° to 40° C   | 20 to 80% (relative humidity)       |
| Transit   | -40° to 60° C | 15 to 95% (no condensation allowed) |
| Storage   | -10° to 60° C | 10 to 90% (no condensation allowed) |

### Ethernet Interface

|          |  |
|----------|--|
| 10Base2  | BNC female connector socket<br>(Terminator and T-connector provided) |
| 10Base-T | RJ 45 female socket  |

### WaveLAN Interface

- PC Card Type II socket that can be used for:
- IEEE 802.11 WaveLAN PC Card
  - WaveLAN/PCMCIA
  - WaveLAN/EAM
-

## **Software**

---

### **WavePOINT-II Operating Software**

---

wpntxxx.bin

Factory installed operating software for the WavePOINT-II access point. This software that is loaded into the FlashROM of the WavePOINT-II device controls the features and functions of the WavePOINT-II access point.

The 'xxx' in the file name refer to the version level of the software.

When new features and functionality become available for the WavePOINT-II, you can upgrade the WavePOINT-II by uploading the latest software to your access points as described in the WaveMANAGER IEEE User's Guide.

### **WaveMANAGER/AP**

wman\_ap.exe

Configuration and management software for WavePOINT-II access points. This software runs on Windows 95 and Windows NT (v4.0) platforms only.

---

---

# WavePOINT-II Start-up Configuration

# B

---

## Identify the Start-up Settings

---

Your WavePOINT-II access point comes with the WavePOINT-II operating software factory installed. Together with this software, the WavePOINT-II has also been loaded with a factory set configuration, that allows for 'out-of-the box' operation.



**NOTE:**

The factory set configuration should not be confused with a 'default' configuration. For example when performing a 'Reboot' or 'Forced Reload' (described in the WaveMANAGER User's Guide provided on the CD-ROM), the unit will NOT return to the 'factory-set' configuration.

To connect to a WavePOINT-II, the WaveLAN parameters of each wireless station should be configured to match the values as identified for the WavePOINT-II unit.

- When powering up WavePOINT-II for the very first time, these values should match the values listed in Table B-1.
- For normal operation these values should match the ones you identified when configuring the WavePOINT-II unit. You are advised to record this information this information on the WavePOINT-II Configuration Record in this appendix.
- When you set the WavePOINT-II device to 'forced reload mode' these values should match the settings listed in the WaveMANAGER IEEE User's Guide.

**Table B-1 Factory-set Start-up Configuration**

|                                       |   |
|---------------------------------------|---|
| <b>WavePOINT-II Identifiers</b>       |   |
| IP Address                            | 153.69.254.254 <sup>1</sup>             |
| Subnet Mask                           | 255.255.0.0                             |
| Read Password                         | 'public'                                |
| Read/Write Password                   | 'public'                                |
| <b>IEEE 802.11 WaveLAN Interface</b>  |   |
| RF-Channel                            | 2.4 GHz                                 |
|                                       | 2.462 MHz France                        |
|                                       | 2.484 MHz Japan                         |
|                                       | 2.422 GHz All other countries           |
| WaveLAN Network Name                  | 'WaveLAN Network'                       |
| Wireless Cell ID                      | MAC Address of the IEEE 802.11 PC Card. |
| Medium Reservation                    | Disabled                                |
| Transmit Rate                         | Auto Rate Select                        |
| Encryption (Silver & Gold cards only) | Disabled                                |
| <b>WaveLAN Legacy Interface</b>       |   |
| RF-Channel                            | 2.4 GHz <sup>2</sup>                    |
|                                       | 2.460 MHz France                        |
|                                       | 2.484 MHz Japan                         |
|                                       | 2.422 GHz All other countries           |
|                                       | 915 MHz Americas only                   |
| WaveLAN Network Name                  | Domain ID 0001                          |
|                                       | Roaming enabled                         |
|                                       | Beacon Key 0000                         |
|                                       | Key is disabled                         |
| Wireless Cell ID                      | NWID SXXX <sup>3</sup>                  |
|                                       | Must be unique for each cell.           |
| Encryption Key                        | 0 <sup>4</sup>                          |
|                                       | Encryption disabled                     |

- 1 When using IP networks, change this IP address to a unique address in the range assigned to your organization.
- 2 These values apply to new WaveLAN/PCMCIA Kits. When you use a previously installed kit, verify or correct the current operating frequency using the WaveMANAGER/AP program.
- 3 **S** identifies the PC Card Socket of the WavePOINT-II unit (A or B), containing the WaveLAN card. **xxx** represents the last three digits of the unit's Serial number (see WaveLAN Legacy).
- 4 Only when the WaveLAN/PCMCIA Kit has a factory installed Security Feature.



# WavePOINT-II Start-up Configuration

## Identify the Start-up Settings

| WavePOINT-II Configuration Record |             |   |           |                |   |                 |   |                    |  |
|-----------------------------------|-------------|---|-----------|----------------|---|-----------------|---|--------------------|--|
| IEEE 802.11 WaveLAN               |             | WaveLAN(-I)   |           |                | Access Control  |                 | SNMP  |                    |  |
| WaveLAN Network Name: _____       |             | Roaming <input type="checkbox"/> Enabled<br>Domain ID: _____<br>Beacon Key: _____ |           |                | Access Control <input type="checkbox"/> Enabled<br>Table File Name: _____ |                 | System Location: _____<br>IP Subnet Mask: _____<br>Read Password: _____<br>Read/Write Password: _____ |                    |  |
| Common Parameters                 |             | WaveLAN(-I)   |           | Access Control |   | SNMP            |   | Configuration File |  |
| Serial Number                     | MAC Address | IP Address  | Cell ID * | IF             | Frequency   | Device Location | Date Installed  | Configuration File |  |
|                                   |             |   |           | 0E             |   |                 |   |                    |  |
|                                   |             |   |           | 0A             |   |                 |   |                    |  |
|                                   |             |   |           | 0B             |   |                 |   |                    |  |
|                                   |             |   |           | 0E             |   |                 |   |                    |  |
|                                   |             |   |           | 0A             |   |                 |   |                    |  |
|                                   |             |   |           | 0B             |   |                 |   |                    |  |
|                                   |             |   |           | 0E             |   |                 |   |                    |  |
|                                   |             |   |           | 0A             |   |                 |   |                    |  |
|                                   |             |   |           | 0B             |   |                 |   |                    |  |
|                                   |             |   |           | 0E             |   |                 |   |                    |  |
|                                   |             |   |           | 0A             |   |                 |   |                    |  |
|                                   |             |   |           | 0B             |   |                 |   |                    |  |
|                                   |             |   |           | 0E             |   |                 |   |                    |  |
|                                   |             |   |           | 0A             |   |                 |   |                    |  |
|                                   |             |   |           | 0B             |   |                 |   |                    |  |
|                                   |             |   |           | 0E             |   |                 |   |                    |  |
|                                   |             |   |           | 0A             |   |                 |   |                    |  |
|                                   |             |   |           | 0B             |   |                 |   |                    |  |

\* The Cell ID refers to the unique identifier of the wireless WaveLAN cells serviced by the WaveLAN interfaces. For Ethernet the cell id is always n/a (not applicable). For IEEE 802.11 WaveLAN cards, the Cell ID is always a fixed value that matches the MAC Address of the WaveLAN PC Card.



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# Additional Installation Instructions

# C

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## WaveLAN Legacy Radio Modules

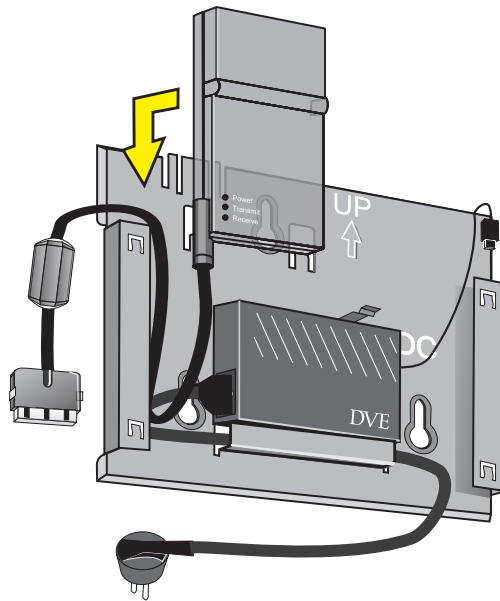
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This Appendix describes additional instructions for:

- Mounting the WaveLAN Legacy radio modules of the WaveLAN/PCMCIA Kit and the WaveLAN/EAM Kit.
- Removing the WavePOINT-II Cover Plate.

---

**Figure C-1 Mounting the Legacy PCMCIA Radio**



## Additional Installation Instructions

### WaveLAN Legacy Radio Modules

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#### Mounting the WaveLAN/PCMCIA Radio

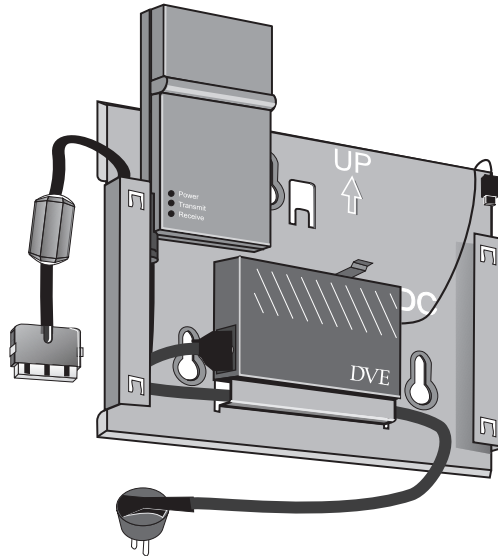
---

When you use your WavePOINT-II in combination with a WaveLAN/PCMCIA Kit, you must mount the radio module prior to mounting the WavePOINT-II Processor Module.

1. Mount the WaveLAN radio module to the mounting plate as pictured in Figure C-1 on page C-1.
2. Guide the cable and connector of the radio module through the vertical recess as pictured in Figure C-2, to allow the cable and connector to run 'free' outside the mounting plate.

---

**Figure C-2 Connecting the WaveLAN/PCMCIA Card**



3. Connect the PC card to the cable of the radio module. (Note that the tabs in both connectors will be properly aligned).
4. Proceed with WaveLAN Legacy .

When you would like to use the WavePOINT-II unit in combination with a second WaveLAN Legacy interface:

- Mount the second radio module outside the WavePOINT-II device, separating the two radios as much as possible.

## Additional Installation Instructions

### WaveLAN Legacy Radio Modules

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- Use the bracket with the adhesive pads that came with your WaveLAN/PCMCIA Kit to stick the module to a flat surface such as a wall or post.
5. Proceed as described in Chapter 2, “Mounting the Processor Module” on page 2-7

### Mounting the WaveLAN/EAM Radio

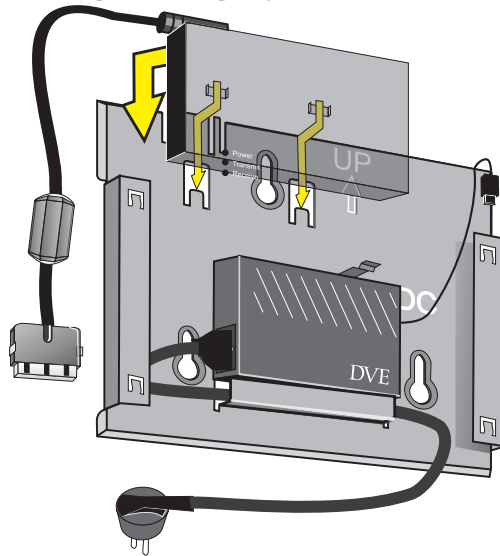
---

When you intend to use WavePOINT-II in combination with a WaveLAN/EAM Kit, you must mount the EAM radio module prior to mounting the WavePOINT-II Processor Module.

1. Mount the WaveLAN radio module to the mounting plate as pictured in Figure C-3 on page C-3.
2. Guide the cable and connector of the radio module through the vertical recess as pictured in Figure C-4, to allow the cable and connector to run ‘free’ outside the mounting plate.

---

**Figure C-3 Mounting the Legacy EAM Radio**



3. When using the standard WaveLAN Legacy omni-directional antenna for indoor use (see WaveLAN Legacy ), connect the antenna cable to the WaveLAN/EAM radio module.

## Additional Installation Instructions

### WaveLAN Legacy Radio Modules

---

4. Use the tie-wraps provided to secure the antenna cable to the WavePOINT-II mounting plate.
5. Connect the PC card to the cable of the radio module. The tabs in both connectors must be properly aligned.
6. Proceed as described in Chapter 2, "Mounting the Processor Module" on page 2-7.

If you intend to connect the WavePOINT-II to an outdoor antenna system proceed as described below.

### Connecting to an Outdoor Antenna System

When installing an outdoor antenna system, like for example the WaveLAN Outdoor Kit, you will need to apply the WaveLAN Lightning Protector between your WaveLAN/EAM and the outdoor antenna.

The WaveLAN Lightning Protector is a surge arrester to protect your sensitive WaveLAN equipment from static discharge and transients that occur at your outdoor antenna.



#### **DANGER:**

*Do not work on 'Outdoor Antenna Installations' during thunderstorms or lightning activity. The outdoor antenna and antenna cables are electrical conductors. In case lightning would strike the antenna during your installation activities you might receive an electric shock resulting in severe personal injury and/or damage to your WaveLAN equipment.*

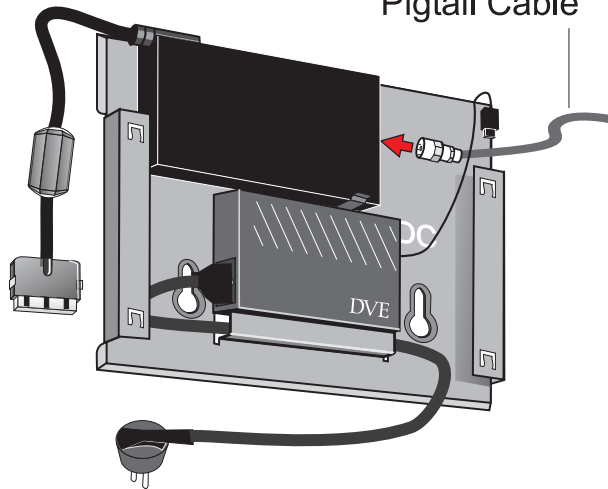
1. Once the WaveLAN/EAM radio is properly seated, according the instructions as described on page C-3, connect the pigtail cable to the WaveLAN/EAM radio as pictured in Figure C-4.

## Additional Installation Instructions

### WaveLAN Legacy Radio Modules

---

**Figure C-4 Connecting the Pigtail and PCMCIA Card**  
Pigtail Cable



2. Mount the WaveLAN Lightning Protector close to the WavePOINT-II device.  
The distance between the two items should allow sufficient clearance to mount the WavePOINT-II cover plate, but should not exceed the length of the pigtail cable.
3. Connect the WaveLAN Lightning Protector to the same grounding system as the WavePOINT-II device and the outdoor antenna system.



#### **WARNING:**

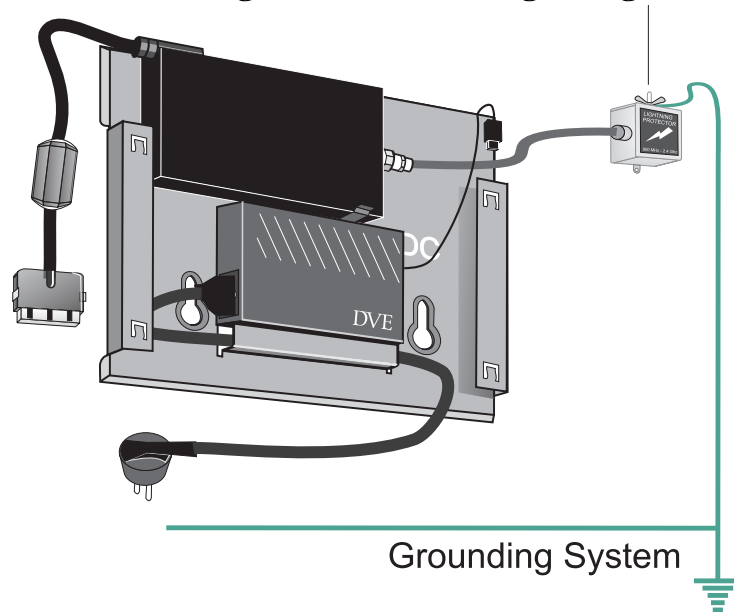
*The WaveLAN Lightning Protector, the outdoor antenna system and the WavePOINT-II unit must be connected to the same ground, using an equipotential bonding conductor. Always consult a qualified electrician if you are in doubt as to whether your WaveLAN outdoor antenna system is properly grounded.*

## Additional Installation Instructions

### WaveLAN Legacy Radio Modules

---

**Figure C-5 Connecting the WaveLAN Lightning Protector**



4. Connect the other end of the pigtail cable to the WaveLAN Lightning Protector.
5. Use the tie-wraps provided to secure the pigtail cable to the WavePOINT-II mounting plate.
6. Connect the PC Card to the cable connector of the EAM radio module and proceed as described in Chapter 2, "Mounting the Processor Module" on page 2-7 .



## Removing the Cover Plate

---

Removing the cover plate of the WavePOINT-II unit may be required in one of the following situations:

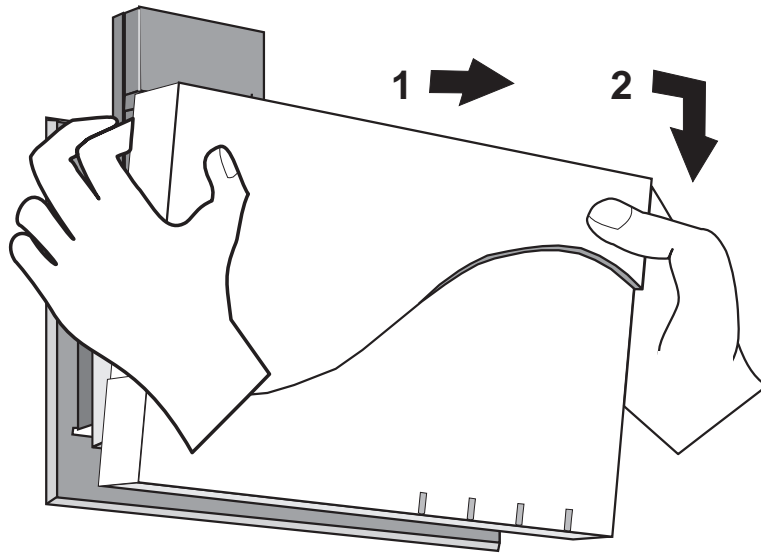
- You would like to change or replace the network interface(s) of your WavePOINT-II access point, or
- You would like to access the 'Reboot' and/or 'Forced Reload' buttons on the WavePOINT-II Processor Module.

To remove the WavePOINT-II cover plate, proceed as follows:

1. To remove the cover of WavePOINT-II, place your hands on the cover as pictured Figure C-6 on page C-7.
2. Gently pull the top of the cover towards you to release the latches (located inside the cover).

---

**Figure C-6 Removing the WavePOINT-II Cover Plate**



3. Lower the cover to remove it from the processor module.



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# Warranty Repair Card



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## About Warranty and Repair

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In case your IEEE 802.11 WaveLAN product is not working properly, you are advised to consult the Troubleshooting hints, prior to contacting WaveLAN Technical Support.

In case your IEEE 802.11 WaveLAN product is defective, return it to your Dealer/Distributor in the original packaging.

### Warranty Repairs:

When returning a defective product for Warranty, always include the following documents:

- The Warranty Repair card, and
- A copy of the invoice/proof of purchase

### All other Repairs:

When returning a defective product for Repair, always include the the Warranty Repair card

You are advised to read the Information about “Limited Warranty” as described on the following page.

## Limited Warranty

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Lucent Technologies extends a limited warranty from date of purchase of:

- Thirty-six (36) months for WaveLAN hardware products
- Twelve (12) months for WavePOINT access points
- Twelve (12) months for for the media on which the software is furnished and the reproduction of the software on the media.

Upon proof-of-purchase Lucent Technologies shall at its option, repair or replace the defective item at no cost to the buyer.

Defective items shall be returned to the dealer/distributor:

- Freight prepaid.
- Accompanied by a copy of proof-of-purchase.
- Accompanied by a filled out Warranty/Repair card.

This warranty is contingent upon proper use in the application for which the products are intended and does not cover products which have been modified without the seller's approval or which have been subjected to unusual physical or electrical demands or damaged in any way.

**This Warranty constitutes the sole and exclusive remedy of any buyer or seller's equipment and the sole and exclusive liability of Lucent Technologies in connection with the products and is in lieu of all other warranties, express, implied or statutory, including, but not limited to, any implied warranty of merchantability of fitness for a particular use and all other obligations or liabilities of Lucent Technologies.**

**In no event will Lucent Technologies Inc. or any other party or person be liable to you or anyone else for any damages, including lost profits, lost savings or other incidental or consequential damages, or inability to use the software provided on the software media even if Lucent Technologies or the other party person has been advised of the possibility of such damages.**

**To be filled out by the User**

|                               |              |
|-------------------------------|--------------|
| <b>Product Description</b> :  |              |
| <b>COMCODE (Product ID)</b> : |              |
| <b>Serial Number:</b>         |              |
| <b>Invoice Date:</b>          | (dd/mm/yyyy) |
| Name:                         |              |
| Title:                        |              |
| Company:                      |              |
| Address:                      |              |
| City/State/Zipcode:           |              |
| Country:                      |              |
| Telephone:                    |              |
| Fax:                          |              |
| Email:                        |              |

**To be filled out by the Dealer/Distributor**

|                              |                 |
|------------------------------|-----------------|
| Dealer Name:                 |                 |
| Address:                     |                 |
| City/State/Zipcode:          |                 |
| Country:                     |                 |
| Telephone:                   |                 |
| Fax:                         |                 |
| <b>Warranty?</b>             | <b>Comment:</b> |
| <input type="checkbox"/> Yes |                 |
| <input type="checkbox"/> No  |                 |
| RMA Reference                |                 |

|   |                             |
|---|-----------------------------|
| <b>Reported Problem:</b>                    | <b>Problem Description:</b> |
| <input type="checkbox"/> Out-of-Box Failure |                             |
| <input type="checkbox"/> Other              |                             |
|   |                             |
|   |                             |
|   |                             |
|   |                             |



---

## List of Figures

|            |  |      |
|------------|--|------|
| Figure 1-1 | WavePOINT-II Access Point                  | 1-2  |
| Figure 1-2 | WaveACCESS LINK WP-II                      | 1-3  |
| Figure 1-3 | WavePOINT-II Kit Contents                  | 1-8  |
| Figure 1-4 | Legacy WaveLAN Omni-Directional Antenna    | 1-15 |
| Figure 1-5 | IEEE 802.11 Range Extender Antenna         | 1-17 |
| Figure 2-1 | WavePOINT-II Identification Label          | 2-5  |
| Figure 2-2 | Mounting the Power Supply                  | 2-6  |
| Figure 2-3 | Attaching the Processor Module             | 2-7  |
| Figure 2-4 | Inserting the WaveLAN Card                 | 2-8  |
| Figure 2-5 | Connecting the Range Extender Antenna      | 2-9  |
| Figure 2-6 | Mounting the WavePOINT-II Cover Plate      | 2-11 |
| Figure 3-1 | Connect via a 10Base-T Crossover Cable     | 3-5  |
| Figure 3-2 | Connect via a Hub                          | 3-6  |
| Figure C-1 | Mounting the Legacy PCMCIA Radio           | C-1  |
| Figure C-2 | Connecting the WaveLAN/PCMCIA Card         | C-2  |
| Figure C-3 | Mounting the Legacy EAM Radio              | C-3  |
| Figure C-4 | Connecting the Pigtail and PCMCIA Card     | C-5  |
| Figure C-5 | Connecting the WaveLAN Lightning Protector | C-6  |
| Figure C-6 | Removing the WavePOINT-II Cover Plate      | C-7  |





---

## List of Tables

|           |                                    |      |
|-----------|------------------------------------|------|
| Table 2-1 | LED Activity Table:                | 2-12 |
| Table B-1 | Factory-set Start-up Configuration | B-2  |



---

# Index

---

## A

AC Power Cord 1-8

Antenna

IEEE 802.11 WaveLAN 1-17

Legacy WaveLAN 1-15

---

## B

Beacon Key B-2

BNC

connector 2-9

terminator 2-10

---

## C

Conventions

illustrations 1-7

naming 1-7

Cover Plate 1-8

installation 2-10

removing C-7

---

## D

Documentation Updates v

Domain ID B-2

---

## E

Encryption Key B-2

Ethernet

10Base2 2-9, 2-10

10Base2 connectors 1-8

10Base-T 2-9

interface 1-1

---

## F

Finding Information 1-9

---

## H

Humidity A-1

operating A-1

storage A-1

transit A-1

---

## I

Identification

WavePOINT-II 2-5

IEEE 802.11

Range Extender Antenna 1-17

Information

finding 1-5

World Wide Web v

Installation

Cover Plate 2-10

Hardware 2-4

Mounting Plate 2-6

Power Supply 2-6

Processor Module 2-7

WaveLAN Lightning Protector C-5

WaveLAN/PCMCIA C-1

IP Address

WavePOINT-II B-2

---

## K

Kit

contents 1-8

WaveLAN/EAM 1-15

WaveLAN/PCMCIA 1-14

WavePOINT-II 1-8

---

## L

LED

activity 2-12

---

## M

MAC Address

Ethernet 2-5

Medium Reservation B-2

Mounting plate 1-8

---

## N

NWID 2-5, B-2

---

## O

Omni-Directional Antenna 1-15

Outdoor Antenna System

connecting WavePOINT-II C-4

---

## P

Pigtail Cable C-5

Placement

Indoor Antenna 2-2

WavePOINT-II 2-1

Power Cord

Length A-1

Power Supply 1-8

Processor Module 1-8

---

## R

Range Extender Antenna 1-17

Read Password B-2

Read/Write Password B-2

RF-Channel B-2

RJ 45 2-9

connector 2-9

Roaming B-2

---

## S

Serial Number 2-4

Slot Protector Card 1-8

Software Updates v

---

## T

T- Connector 2-9

T-Connector 1-8

Technical Support v

Temperature A-1

operating A-1

storage A-1

transit A-1

---

## Index

---

Terminator 1-8  
    applying 2-10  
Transmit Rate B-2

---

### U

Updates v

---

### W

WaveACCESS LINK WP-II 1-3  
WaveLAN Legacy 1-15  
WaveLAN Lightning Protector  
    mounting C-5  
WaveLAN Network Name B-2  
WaveLAN(-I) 1-16  
WaveLAN/EAM 1-14  
    mounting the radio module C-3  
WaveLAN/EAM Kit 1-15  
WaveLAN/PCMCIA 1-14  
    connecting the card C-2  
    mounting the radio module C-2  
WaveMANAGER station  
    requirements 3-3  
WaveMANAGER/AP A-2  
WavePOINT-II  
    about 1-1  
    connecting the antenna C-3  
    dimensions A-1  
    electrical specifications A-1  
    environmental specifications A-1  
    kit contents 1-8  
    physical specifications A-1  
    powering-up 2-12  
    removing the cover C-7  
    WaveLAN Interface 1-1

weight A-1  
WavePOINT-II Point-to-Point Bridge  
    1-3  
WavePOINT-II Software A-2  
Wireless Cell ID B-2

