EtherWave Mac/PowerBook Adapter
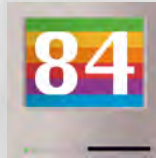
Farallon®

❖ Farallon® EtherWave® Macintosh and PowerBook Adapter User's Guide

Chapter 1 — Quick Start

## About the EtherWave Mac/PB Adapter

The EtherWave® Mac/PB Adapter is all you need to connect your Macintosh or PowerBook to a 10Base-T Ethernet network. The adapter's mini-DIN-8 connector attaches to any Macintosh printer port. LED indicators allow you to monitor network activity. A key to the LEDs is on the back of the adapter.

L'adaptateur EtherWave Mac/PB est le seul dispositif requis pour brancher votre Macintosh ou votre PowerBook à un réseau Ethernet 10Base-T. Le mini connecteur DIN à huit broches de l'adaptateur (mini-DIN-8 connector) est compatible avec tous les ports imprimante Macintosh. Les voyants à diodes électro-luminescentes (LED indicators) vous permettent de surveiller l'activité du réseau. Vous trouverez une note explicative concernant ces indicateurs sur la partie arrière de l'adaptateur.

Für den Anschluß Ihres Macintosh oder PowerBook an ein 10Base-T Ethernet-Netzwerk benötigen Sie lediglich den EtherWave Mac/PB Adapter. Der DIN-8-Ministecker des Adapters (mini-DIN-8 connector) paßt in jeden Macintosh-Druckeranschluß. LED-Anzeigen (LED indicators) erlauben die Überwachung der Netzwerkaktivität. Eine Erklärung der LED-Anzeigen finden Sie auf der Rückseite des Adapters.

El adaptador EtherWave Mac/PB es lo único que usted necesita para conectar su Macintosh o PowerBook a una red Ethernet 10Base-T. El conector mini-DIN-8 del adaptador (mini-DIN-8 connector) se puede conectar a cualquier puerto Macintosh para impresora. Los indicadores luminosos (LED indicators) permiten controlar la actividad de la red. El significado de cada uno de los indicadores luminosos se halla en la parte de atrás del adaptador.

10Base-T EthernetネットワークにMacintoshまたはPowerBookを接続するのに必要なのは、EtherWave Mac/PBアダプタだけです。このアダプタのミニDIN-8コネクタは、どのMacintoshプリンタポートにでも接続できるようになっています。また、LEDインジケータが装着されているので、ネットワークの動作モニターが可能です。LEDのキーはアダプタの裏面に付いています。

mini-DIN-8 connector

Mac/PowerBook icon
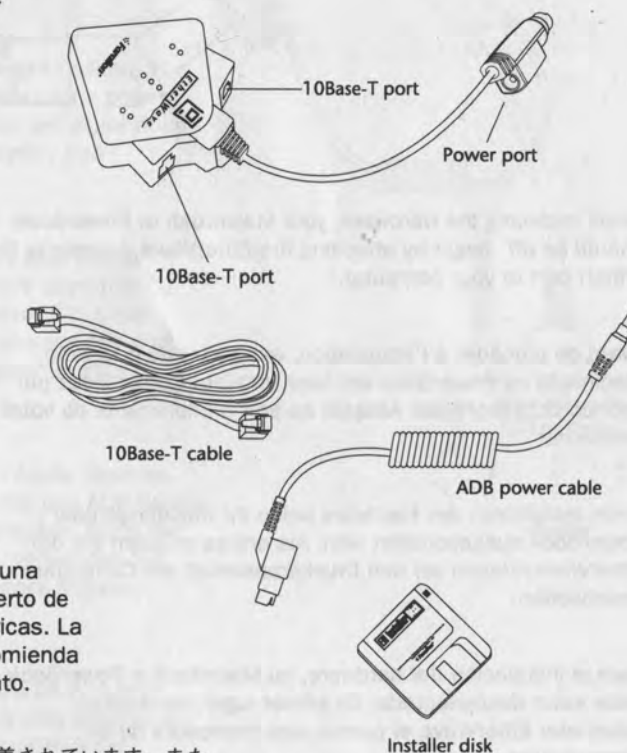
EtherWave

LED indicators

Farallon
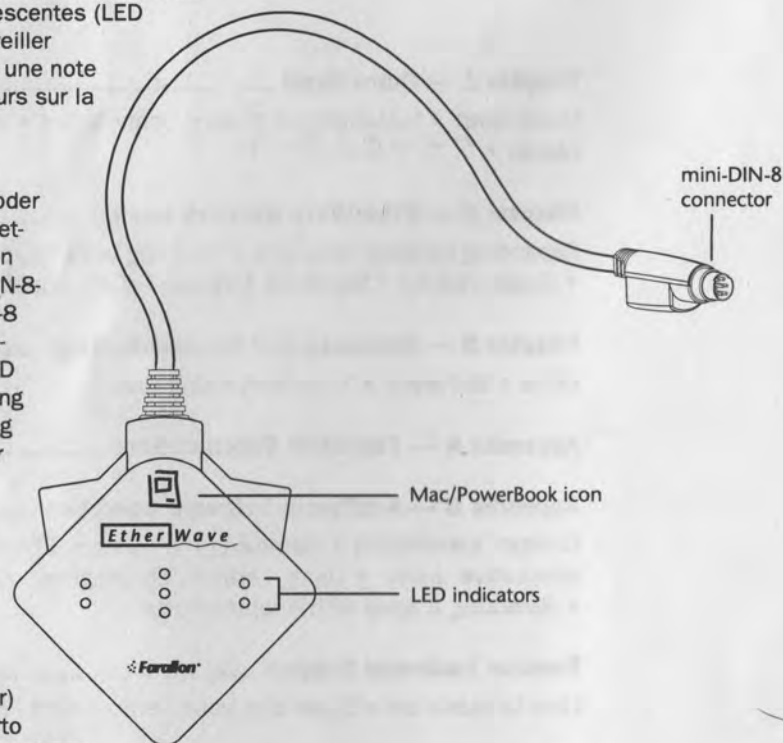
The EtherWave Adapter has two 10Base-T ports and comes with 10Base-T cable for connecting your computer at any point in an Ethernet network. The adapter also has a power port for electrical input. Software installation is optional, but recommended for maximum performance.

L'adaptateur EtherWave est équipé de deux ports 10Base-T (10Base-T ports) et d'un câble 10Base-T (10Base-T cable) pour brancher votre ordinateur n'importe où sur un réseau Ethernet. L'adaptateur est également pourvu d'un port pour le raccordement à la source d'alimentation (power port). Bien que l'installation du logiciel soit facultative, elle est vivement recommandée pour obtenir des résultats optimaux.

Der EtherWave-Adapter verfügt über zwei 10Base-T-Anschlüsse (10Base-T ports) und wird mit einem 10Base-T-Kabel (10Base-T cable) für den Anschluß Ihres Computers an einem beliebigen Punkt in einem Ethernet-Netzwerk geliefert. Darüber hinaus ist der Adapter mit einem Netzanschluß (power port) für die Stromversorgung versehen. Die Installation der Software ist optional, wird jedoch für optimale Leistung empfohlen.

El adaptador EtherWave tiene dos puertos 10Base-T (10Base-T ports) y se entrega con un cable 10Base-T (10Base-T cable) que permite conectar su computadora en cualquier punto de una red Ethernet. El adaptador posee también un puerto de alimentación (power port) para conexiones eléctricas. La instalación de software es optativa, pero se recomienda efectuarla sise desea obtener máximo rendimiento.

EtherWaveアダプタには2基の10Base-Tポートが装着されています。また、10Base-Tケーブルも同梱されているので、Ethernetネットワークのどの点にでもコンピュータを接続できるようになっています。アダプタには電源ポートも装着されています。ソフトウェアのインストールはオプショナルになっていますが、最高の性能を得るためにはインストールされることをお薦めします。

10Base-T port

Power port

10Base-T port

10Base-T cable

ADB power cable

Installer disk

Attaching the adapter
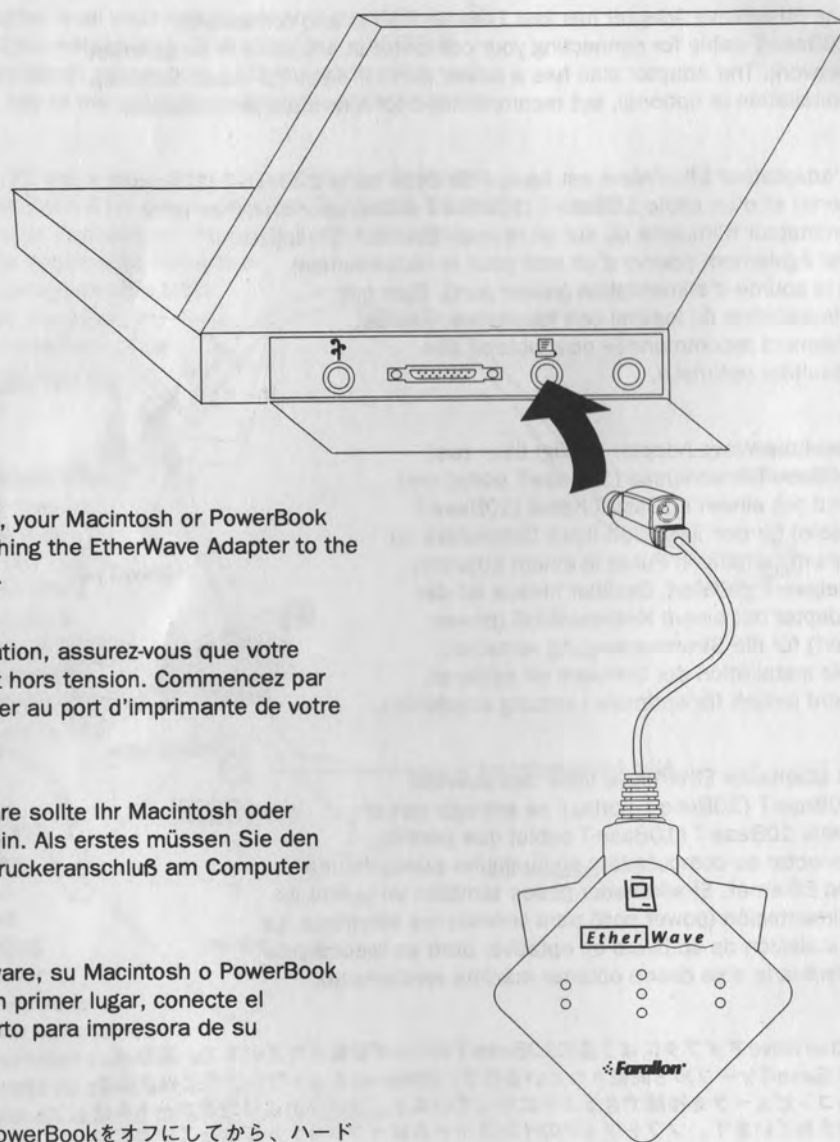
When installing the hardware, your Macintosh or PowerBook should be off. Begin by attaching the EtherWave Adapter to the printer port of your computer.

Avant de procéder à l'installation, assurez-vous que votre Macintosh ou PowerBook est hors tension. Commencez par connecter l'EtherWave Adapter au port d'imprimante de votre ordinateur.

Beim Installieren der Hardware sollte Ihr Macintosh oder PowerBook ausgeschaltet sein. Als erstes müssen Sie den EtherWave-Adapter an den Druckeranschluß am Computer anschließen.

Para la instalación del hardware, su Macintosh o PowerBook debe estar desconectada. En primer lugar, conecte el adaptador EtherWave al puerto para impresora de su computadora.

ご使用中のMacintoshまたはPowerBookをオフにしてから、ハードウェアをインストールしてください。まず、EtherWave Adapterをコンピュータのプリンタポートに接続します。
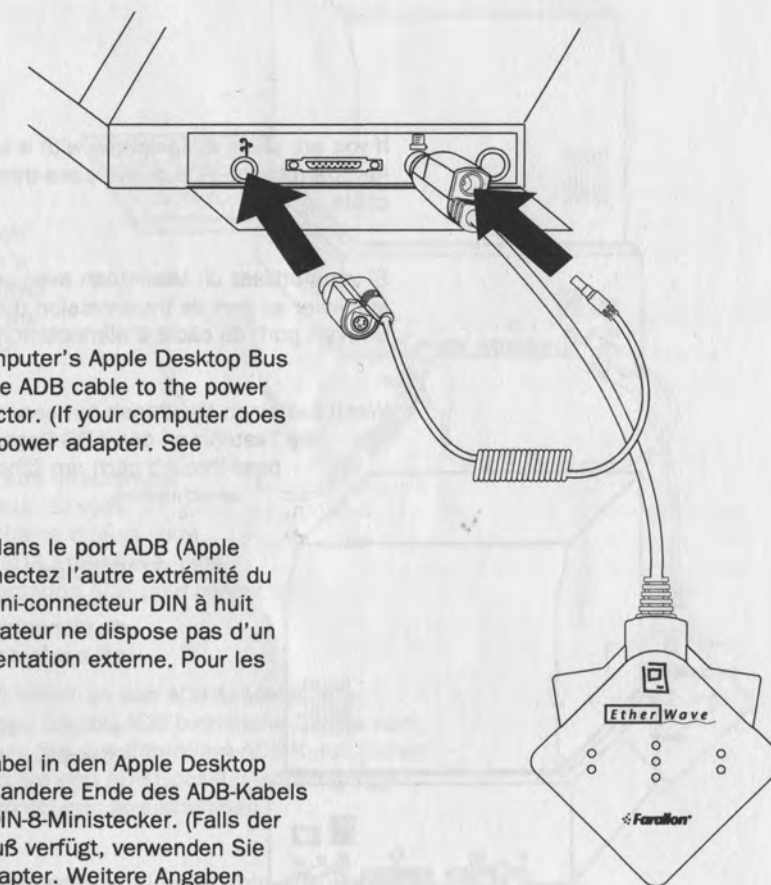
Connecting to power

Plug the ADB power cable into your computer's Apple Desktop Bus (ADB) port. Connect the other end of the ADB cable to the power port on the adapter's mini-DIN-8 connector. (If your computer does not have an ADB port, use an external power adapter. See Appendix A for specifications.)

Branchez le câble d'alimentation ADB dans le port ADB (Apple Desktop Bus) de votre ordinateur. Connectez l'autre extrémité du câble ADB au port d'alimentation du mini-connecteur DIN à huit broches de l'adaptateur. (Si votre ordinateur ne dispose pas d'un port ADB, utilisez un adaptateur d'alimentation externe. Pour les caractéristiques, consultez l'annexe A.)

Stecken Sie das ADB-Netzspannungskabel in den Apple Desktop Bus(ADB)-Anschluß. Verbinden Sie das andere Ende des ADB-Kabels mit dem Netzspannungsanschluß am DIN-8-Ministecker. (Falls der Computer nicht über einen ADB-Anschluß verfügt, verwenden Sie bitte einen externen Netzspannungs-Adapter. Weitere Angaben hierüber finden Sie in Anhang A.)

Conecte un extremo del cable de alimentación ADB en el puerto ADB (Apple Desktop Bus) de su computadora, y el otro extremo al puerto de alimentación situado en el conector mini-DIN-8 del adaptador. (Si su computadora no tiene un puerto ADB, emplee un adaptador de alimentación externo. En el apéndice A hallará las especificaciones.)

ADB電源ケーブルをコンピュータのApple Desktop Bus(ADB)ポートに差し込みます。ADBケーブルの他方の端をアダプタのミニDIN-8コネクタ上の電源ポートに接続します。（コンピュータにADBポートが付いていない場合は、外部電源アダプタを使ってください。規格については、付録Aをご覧ください。）

Connecting to power (cont'd.)

If you are using a Macintosh with a separate keyboard, you can connect the keyboard to the ADB power pass-through port on the EtherWave ADB power cable.

Si vous utilisez un Macintosh avec un clavier séparé, vous pouvez connecter le clavier au port de transmission d'alimentation ADB (ADB power pass-through port) du câble d'alimentation ADB EtherWave.

Wenn Sie einen Macintosh mit separater Tastatur verwenden, können Sie die Tastatur an den ADB-Spannungsdurchgangsanschluß (ADB power pass-through port) am EtherWave- ADB-Netzspannungskabel anschließen.

Si utiliza un Macintosh con teclado separado, puede conectar el teclado al puerto de transmisión de alimentación ADB (ADB power pass-through port) del cable de alimentación EtherWave ADB.

キーボード外付けのMacintoshをお使いの場合、
EtherWave ADB電源ケーブルのADB電源パススルー・
ポートにキーボードを接続できます。

ADB power
pass-through
port
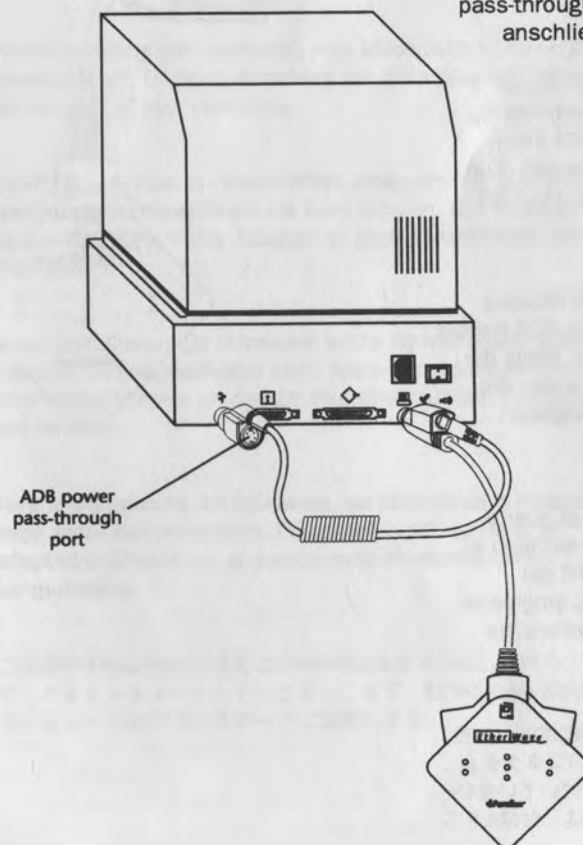
The EtherWave ADB cable should always be connected directly to your computer's ADB port. If you are chaining ADB-powered devices from your Macintosh, connect the EtherWave ADB cable first and then use the ADB power pass-through port to connect other devices.

Le câble ADB EtherWave doit toujours être directement connecté au port ADB de votre ordinateur. Si vous connectez des périphériques ADB en chaîne depuis votre Macintosh, branchez d'abord le câble ADB EtherWave, puis utilisez le port de transmission d'alimentation ADB pour connecter les autres périphériques.

Das EtherWave-ADB-Kabel sollte immer direkt an den ADB-Anschluß des Computers angeschlossen werden. Wenn Sie mit ADB betriebene Geräte vom Macintosh aus verketten wollen, müssen Sie das EtherWave-ADB-Kabel immer zuerst anschließen. Danach verwenden Sie den ADB-Spannungsdurchgangs-anschluß, um die anderen Geräte entsprechend anzuschließen.

El cable EtherWave ADB siempre debe conectarse directamente al puerto ADB de su computadora. Si está encadenando dispositivos alimentados por ADB desde su Macintosh, conecte primero el cable EtherWave ADB y luego emplee el puerto de transmisión de alimentación ADB para conectar otros dispositivos.

EtherWave ADBケーブルは、常時コンピュータのADBポートに直接接続されていなけ
ればなりません。MacintoshからADB駆動デバイスをチェーン接続するとき、まず
EtherWave ADBケーブルを接続してから、ADB電源パススルー・ポートを使って他の
デバイスを接続してください。
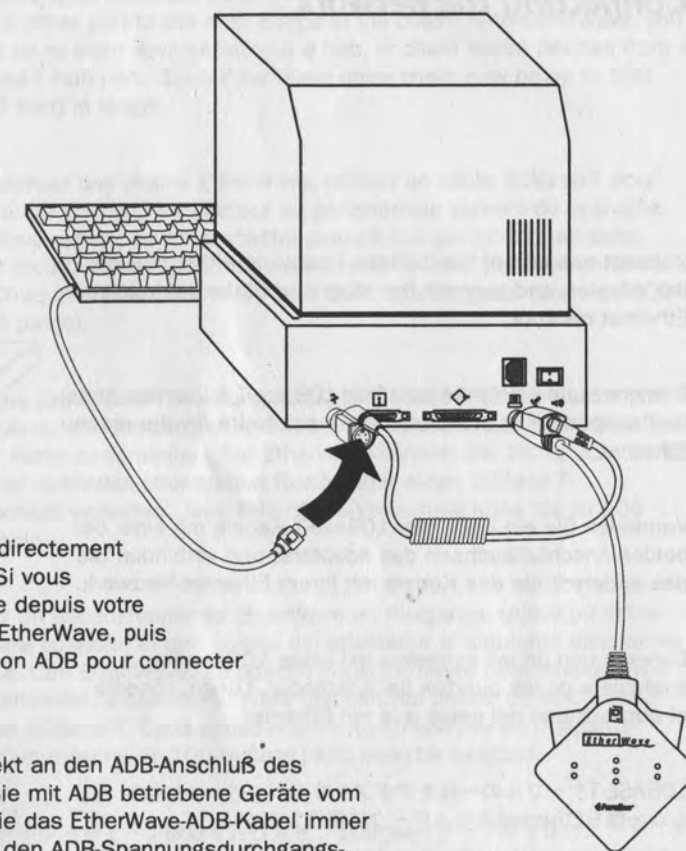
Connecting the network

Connect one end of the 10Base-T cable to either port on the adapter, and connect the other end of the cable to your Ethernet network.

Branchez une extrémité du câble 10Base-T à l'un des ports de l'adaptateur et branchez l'autre extrémité à votre réseau Ethernet.

Verbinden Sie ein Ende des 10Base-T-Kabels mit einer der beiden Anschlußbuchsen des Adapters, und verbinden Sie das andere Ende des Kabels mit Ihrem Ethernet-Netzwerk.

Conecte uno de los extremos del cable 10Base-T a cualquiera de los puertos del adaptador. Luego, conecte el otro extremo del cable a la red Ethernet.

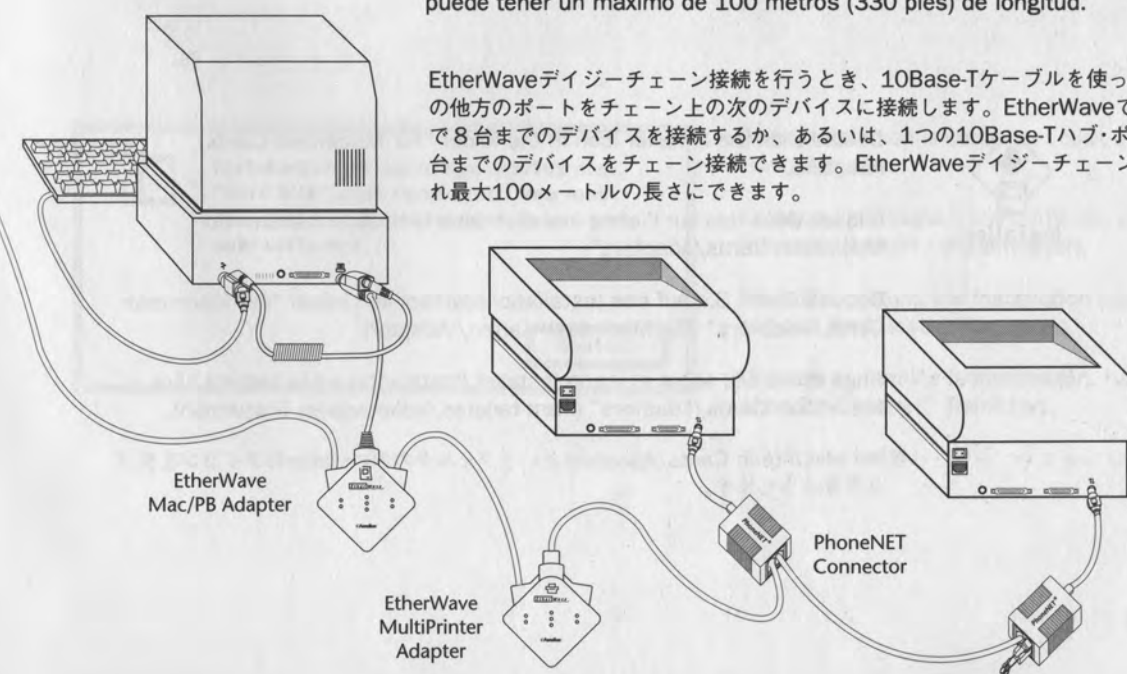10BASE-Tケーブルの一端をアダプタのポートの一つに接続 もう一端をEthernetネットワークに接続します。
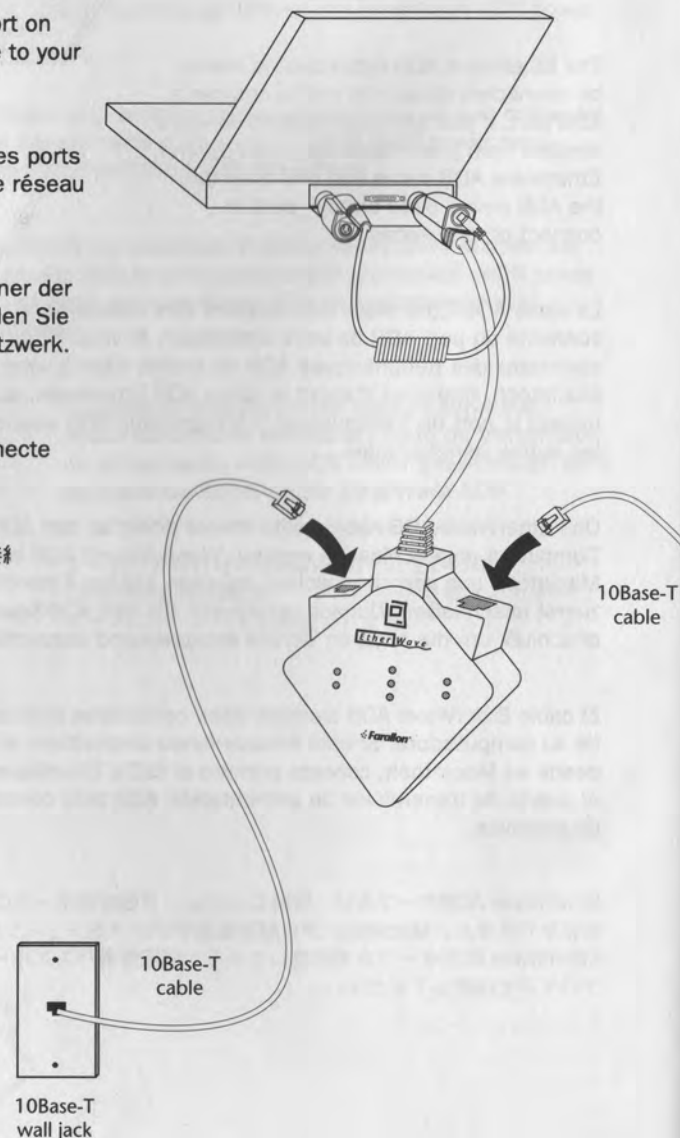
If you are creating an EtherWave daisy chain, use 10Base-T cable to connect the adapter's other port to the next device in the chain. With EtherWave, you can connect up to eight devices without a hub, or chain seven devices from a single 10Base-T hub port. Each EtherWave daisy chain may be up to 100 meters (330 feet) in length.

Si vous constituez une chaîne EtherWave, utilisez un câble 10Base-T pour connecter l'autre port de l'adaptateur au périphérique suivant de la chaîne. Avec EtherWave, vous pouvez connecter jusqu'à huit périphériques sans contrôleur d'étoile, ou sept périphériques depuis un seul port de contrôleur 10Base-T. Chaque chaîne EtherWave peut avoir une longueur totale de 100 mètres (330 pieds).

Wenn Sie eine EtherWave-Verkettung herstellen, verwenden Sie das 10Base-T -Kabel, um den zweiten Anschluß des Adapters mit dem nächsten Gerät in der Kette zu verbinden. Bei EtherWave können Sie bis zu acht Geräte ohne Verteiler verbinden oder sieben Geräte über einen 10Base-T- Verteileranschluß verketten. Jede EtherWave-Verkettung kann bis zu 100 Meter lang sein.

Si va a crear un encadenamiento EtherWave en margarita, utilice un cable 10Base-T para conectar el otro puerto del adaptador al siguiente dispositivo de la cadena. Con EtherWave, es posible conectar hasta ocho dispositivos sin un concentrador, o encadenar siete dispositivos desde un solo puerto concentrador 10Base-T. Cada encadenamiento EtherWave en margarita puede tener un máximo de 100 metros (330 pies) de longitud.

EtherWaveデイジーチェーン接続を行うとき、10Base-Tケーブルを使ってアダプタ の他方のポートをチェーン上の次のデバイスに接続します。EtherWaveではハブなし で8台までのデバイスを接続するか、あるいは、1つの10Base-Tハブ・ポートから7 台までのデバイスをチェーン接続できます。EtherWaveデイジーチェーンは、それぞ れ最大100メートルの長さにできます。

10Base-T
cable

10Base-T
cable

10Base-T
wall jack

EtherWave
Mac/PB Adapter

EtherWave
MultiPrinter
Adapter

PhoneNET
Connector

Installing the software

Begin by powering up your computer. Then insert the Farallon EN Installer Disk into the floppy drive.

Mettez votre ordinateur sous tension. Insérez ensuite la disquette Farallon EN Installer dans l'unité de disquettes.

Sie beginnen die Installation damit, daß Sie den Computer einschalten. Stecken Sie anschließend die deutsche Farallon-Installationsdiskette in das Diskettenlaufwerk.

Encienda su computadora e introduzca el disquete de instalación Farallon EN en la disquetera.

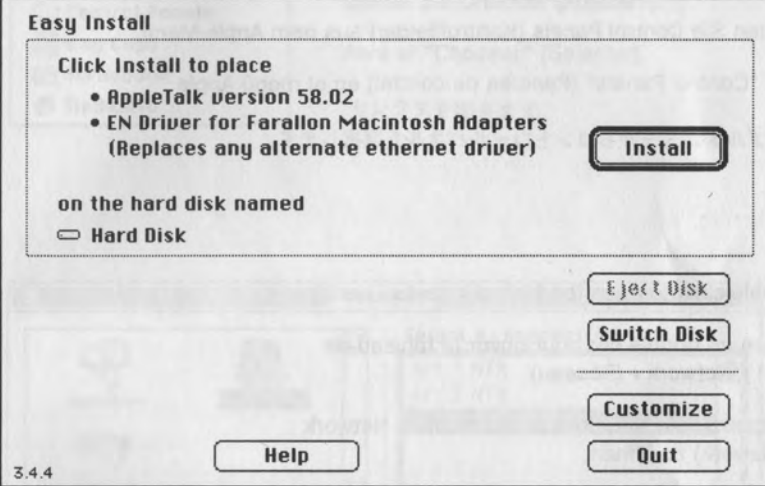コンピュータの電源を入れ、フロッピードライブにFarallon EN Installerディスクを挿入します。

Installer

Double-click the Installer icon in the folder "For Macintosh Cards/Adapters."

Cliquez deux fois sur l'icône Installer dans le dossier intitulé "For Macintosh Cards/Adapters".

Doppelklicken Sie auf das Installationssymbol im Ordner "For Macintosh Cards/Adapters" (Für Macintosh-Karten/-Adapter).

Haga doble clic sobre el icono Installer (Instalador) en la carpeta "For Macintosh Cards/Adapters" (Para tarjetas/adaptadores Macintosh).

For Macintosh Cards/Adaptersというフォルダ内のInstallerのアイコンをダブルクリックします。

Easy Install

Click Install to place
- AppleTalk version 58.02
- EN Driver for Farallon Macintosh Adapters (Replaces any alternate ethernet driver)

[Install]

on the hard disk named
▭ Hard Disk

[Eject Disk]

[Switch Disk]

[Customize]

3.4.4   [Help]   [Quit]

Click the Install button to begin installation.

Cliquez sur la case « Install » (Installer) pour procéder à l'installation.

Doppelklicken Sie auf das Feld Install (Installieren), um die Installation zu starten.

Para comenzar la instalación, haga clic en el botón "Install" (Instalar).

インストールボタンをクリックして、インストールを始めます。

Installation on the active startup disk "Hard Disk" was successful. You must now restart your Macintosh to use your new software.
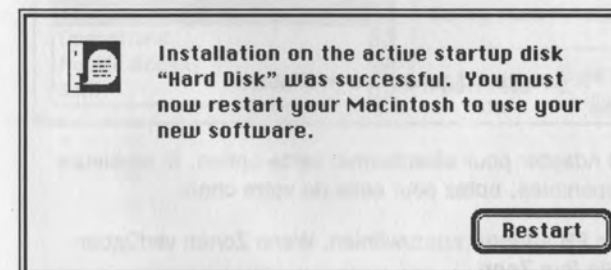
[Restart]

After installation is complete, click the Restart button.

Lorsque l'installation est terminée, cliquez sur la case « Restart » (Redémarrer).

Nach Beendigung der Installation klicken Sie auf das Feld Restart (Neustart).

Cuando se termine la instalación, haga clic en el botón "Restart" (Reiniciar).

インストールが終わったら、リスタートボタンをクリックします。

Configuring the software

About This Macintosh...

- Calculator
- Chooser
- **Control Panels**
- Key Caps
- Scrapbook
- Timbuktu

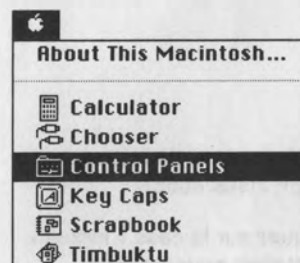Choose Control Panels from the Apple Menu.

Choisissez l'article Control Panels (Tableaux de bord) du menu Apple (menu Pomme).

Wählen Sie Control Panels (Kontrollfelder) aus dem Apple-Menü.

Elija "Control Panels" (Paneles de control) en el menú Apple.
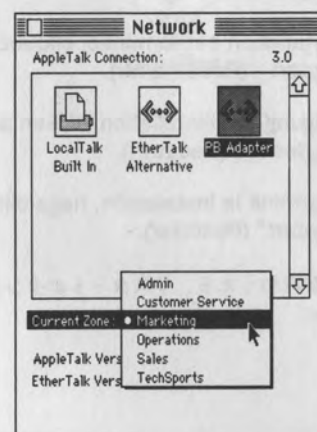
アップルメニューからコントロールパネルを選択します。

Network

Double-click to open the Network control panel.

Faites un double clic pour ouvrir le tableau de bord « Network » (Réseau).

Doppelklicken Sie, um das Kontrollfeld Network (Netzwerk) zu öffnen.

Haga doble clic para abrir el panel de control "Network" (Red).

ネットワークコントロールパネルをダブルクリックして開きます。

Network — AppleTalk Connection: 3.0

- LocalTalk Built In
- EtherTalk Alternative
- PB Adapter

Current Zone: • Marketing
- Admin
- Customer Service
- Operations
- Sales
- TechSports

AppleTalk Vers
EtherTalk Vers

Click to select PB Adapter. If zones are available, select your zone.

Cliquez sur PB Adapter pour sélectionner cette option. Si plusieurs zones sont disponibles, optez pour celle de votre choix.

Klicken Sie, um PB Adapter auszuwählen. Wenn Zonen verfügbar sind, wählen Sie Ihre Zone.

Haga clic para seleccionar "PB Adapter". Si hay zonas disponibles, seleccione su zona.

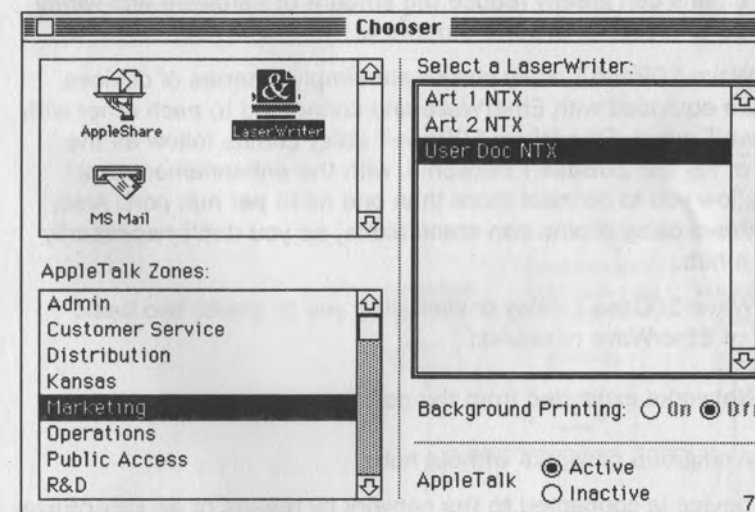PB Adapterをクリックして選択します。ゾーンが使用できるときは、ゾーンを選択します。

Connecting to network services

About This Macintosh...

- Calculator
- **Chooser**
- Control Panels
- Key Caps
- Scrapbook
- Timbuktu
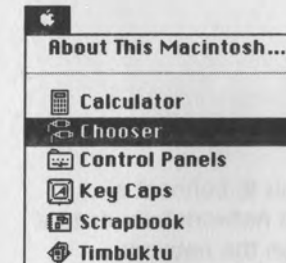
Open the Chooser.

Ouvrez le « Chooser » (Sélecteur).

Öffnen Sie Chooser (Auswahl).

Abra el "Chooser" (Selector).

セレクタを開きます。

Chooser

AppleShare   LaserWriter

MS Mail

AppleTalk Zones:
- Admin
- Customer Service
- Distribution
- Kansas
- Marketing
- Operations
- Public Access
- R&D

Select a LaserWriter:
- Art 1 NTX
- Art 2 NTX
- User Doc NTX

Background Printing: ○ On ● Off

AppleTalk   ● Active
             ○ Inactive

7.2

Select the network services you want. Confirm that AppleTalk is active.

Sélectionnez les services de réseau. Confirmez qu'AppleTalk est actif.

Wählen Sie Network Services (Netzwerkdienste). Stellen Sie sicher, daß AppleTalk aktiv ist.

Seleccione los servicios de red. Confirme que AppleTalk esté activada.

ネットワークサービスを選択します。AppleTalkが使用中になっていることを確認します。

Happy networking!

Le réseau est à vous, bon amusement !

Viel Spaß beim Netzwerken!

¡Bienvenido al mundo de las redes de comunicación!

ネットワーキングをお楽しみください！

Chapter 2 — EtherWave Network Design

Ordinary 10Base-T Ethernet adapters allow you to connect a computer, printer, or other device directly to a network hub, or to a wall jack that is wired to a hub. Each device on the network requires its own port on a hub. Expanding this type of network often requires expensive hardware and additional wiring installation.

The EtherWave Adapter's two 10Base-T ports allow you to connect Ethernet devices in a daisy chain, with or without a hub. The use of daisy chains can greatly reduce the amount of hardware and wiring required to create or expand a network.

EtherWave 10Base-T daisy chains are simply a series of devices that are equipped with EtherWave and connected to each other with 10Base-T cable. EtherWave 10Base-T daisy chains follow all the rules of regular 10Base-T networks, with the enhancement that they allow you to connect more than one node per hub port. Also, EtherWave daisy chains can stand alone, so you don't necessarily need a hub.

EtherWave 10Base-T daisy chains allow you to create two basic types of EtherWave networks:

- Networks expanded from the ports of a hub

- Workgroup networks without hubs

Each device is connected to the network by means of an EtherWave Adapter, an EtherWave Card, or an EtherWave Transceiver. See "Expanding Your Network with Farallon" in the Farallon Technical Support section at the back of this manual for more information about these and other EtherWave products.
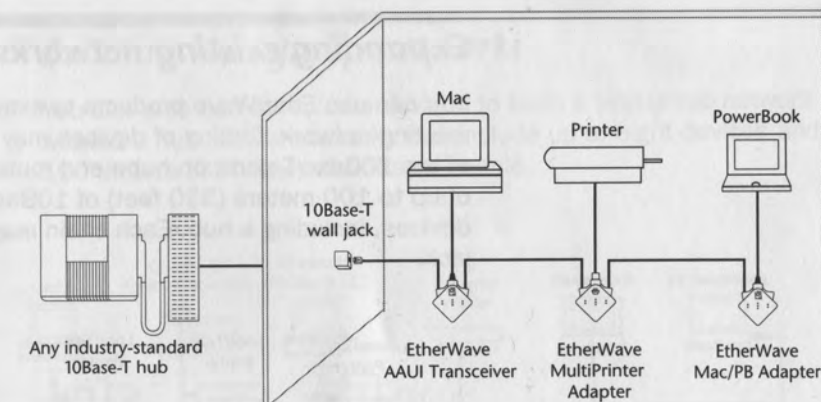
EtherWave 10Base-T daisy chain connected to a hub
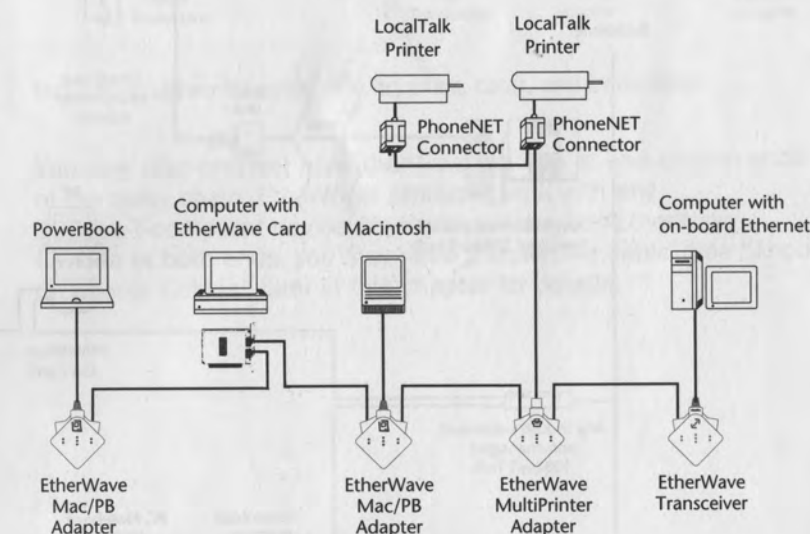
EtherWave workgroup network without a hub

10Base-T daisy chains are a convenient way to create a small network, or to expand an existing network without adding more hubs or new wiring. Both types of networks follow the same guidelines, which are explained later in this chapter.

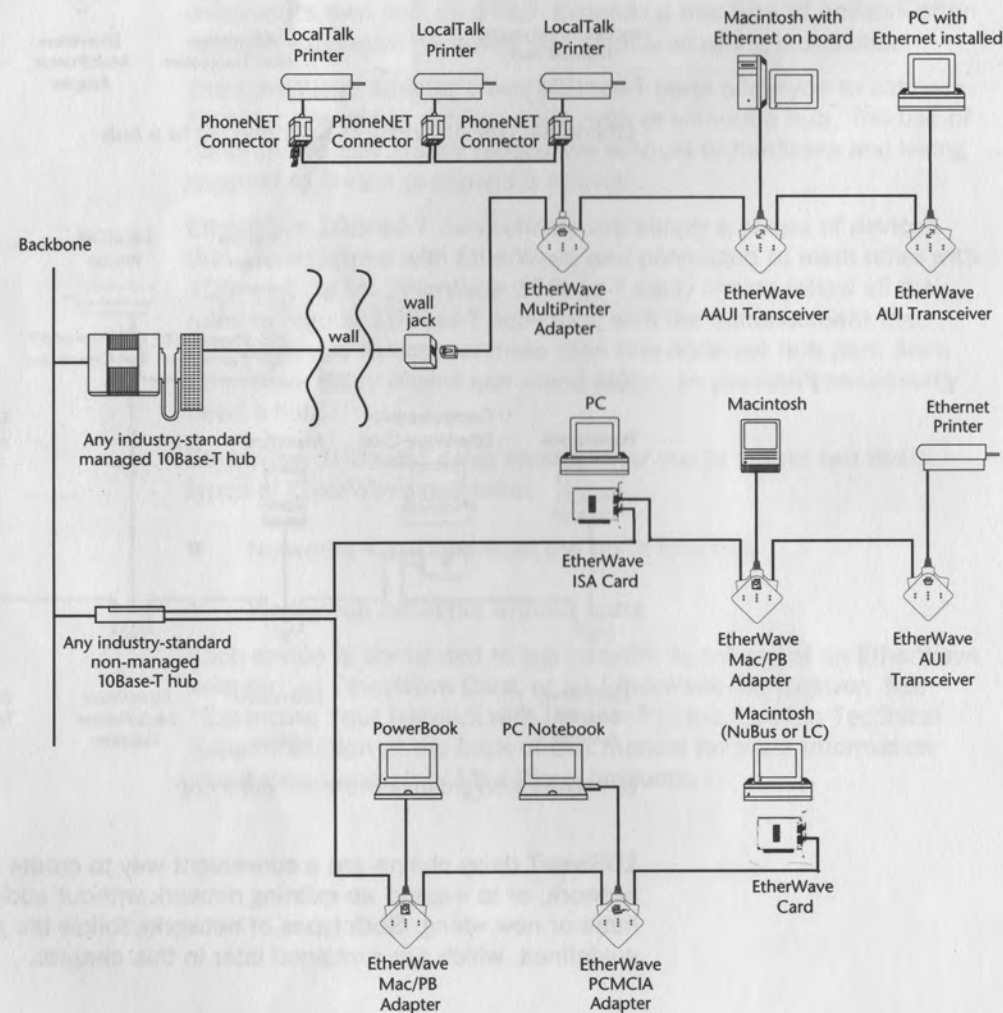## Expanding existing networks

You can use EtherWave products to extend the branches of an existing network. Chains of devices may be connected to any or all of the 10Base-T ports on hubs and routers. Each chain can consist of up to 100 meters (330 feet) of 10Base-T cable and up to eight devices, including a hub. Each chain may pass through one wall jack.

Daisy chains used to expand an existing network

Building workgroup networks

You can also use EtherWave devices to build a workgroup network without a hub. These networks can include up to eight devices and 100 meters (330 feet) of 10Base-T cable.
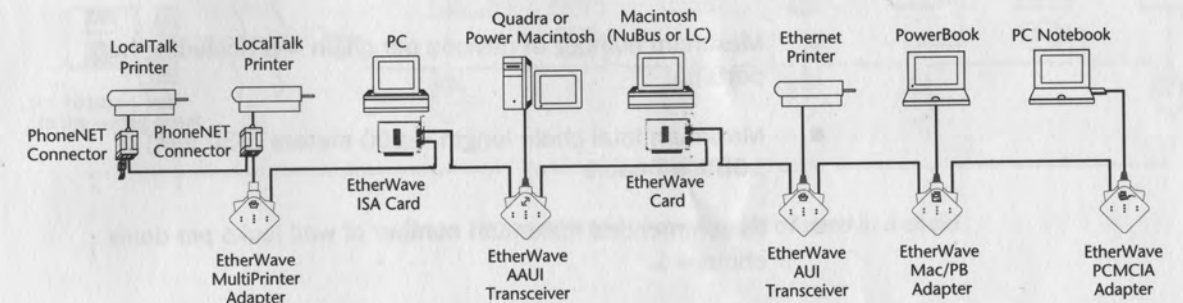
Workgroup network created with adapters, cards, and transceivers

You may also connect *non*-EtherWave devices at one or both ends of the daisy chain. EtherWave products work with any 10Base-T-compliant device. If your chain has *non*-EtherWave devices at both ends, you may need a crossover cable. See "About Crossover Cables" later in this chapter for details.

Guidelines for EtherWave 10Base-T daisy chains

EtherWave 10Base-T daisy chains follow the same rules as regular 10Base-T networks, with one exception: EtherWave 10Base-T daisy chains allow you to attach multiple devices to a single hub port, or create small workgroup networks without a hub. The rules for daisy chains are the following:

- Maximum number of devices per chain = 8 (including hub ports)

- Maximum total chain length = 100 meters (330 feet) of 10Base-T cable

- Recommended maximum number of wall jacks per daisy chain = 1

- Recommended cable type = EIA/TIA Category 3 (NEMA standard) or higher

Maximum number of nodes per chain

A daisy chain can include up to eight devices. When there is a hub at one end of the chain, it counts as one of the eight devices.
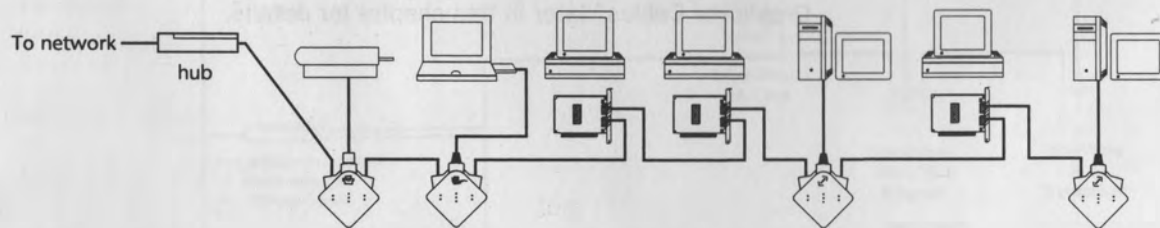
An EtherWave daisy chain may include up to eight nodes

Maximum total chain length

A daisy chain can be up to 100 meters (330 feet) long. If the chain includes a hub, any wiring between the hub and wall jack is part of the 100-meter limit.
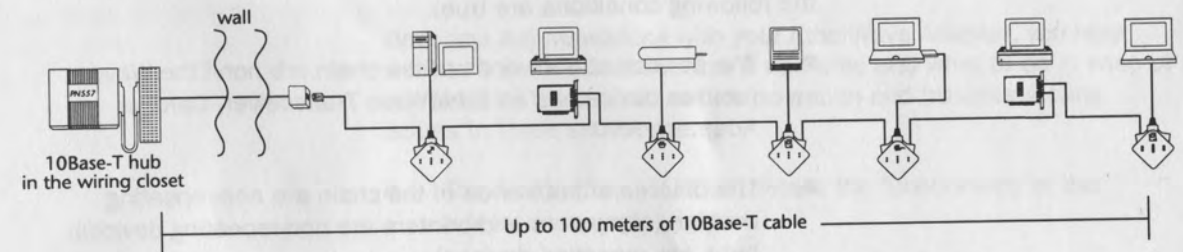
Up to 100 meters of 10Base-T cable allowed in a chain

Additional EtherWave features

In addition to daisy-chaining, all EtherWave products include the following features.

With the **auto-crossover** feature, you can connect to any device, including a hub, without worrying about crossover cables.

EtherWave devices are **self-terminating**; they do not require an external terminating resistor. This feature allows you to add nodes without affecting the rest of the network. If a cable breaks, it won't bring down the network.

With the **power-off pass-through** capability, EtherWave products can receive and pass on network signals whether or not they are receiving power. EtherWave networks continue to function properly even when one or more computers are shut down.

About crossover cables

When all of the EtherWave devices in a daisy chain are powered off, the chain works like a regular 10Base-T segment. As in a regular 10Base-T network, certain connections require a crossover cable. A 10Base-T daisy chain requires a crossover cable whenever both of the following conditions are true:

■ The devices at both ends of the chain are non-EtherWave (neither device has an EtherWave Transceiver, Card, or Adapter), **AND**

■ The devices at both ends of the chain are non-repeating devices (computers and printers are non-repeating devices; hubs are repeating devices)

If a crossover cable is required, connect one of the non-EtherWave devices to the chain with a crossover cable. Then connect the other non-EtherWave device with a standard 10Base-T cable (supplied with the adapter). Crossover cables are available from Farallon.
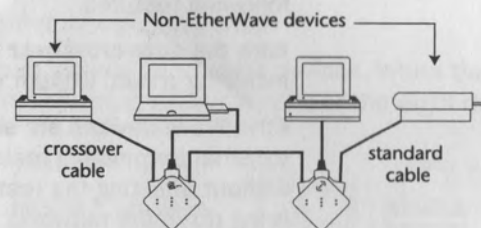
A crossover cable is required when both non-EtherWave devices are non-repeating devices
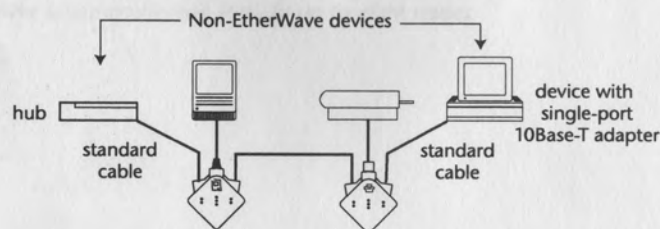
A crossover cable is not required when a hub is at one end of the chain

Chapter 3 — Operation and Troubleshooting

Once you are networking with your EtherWave Adapter, you may want to know more about how it operates and what to do in case of a problem. This chapter covers operation and troubleshooting issues in three sections:

■ The first section, "LEDs," details the functionality of the adapter's indicator lights.

■ The "Software" section includes information about PB Adapter and the Network control panel, how to switch drivers, and notes on other software issues.

■ The "Troubleshooting Tips" section is a set of checklists that you can use to help identify and correct problems.

LEDs

Once you've installed the EtherWave Adapter, you may want to check the LEDs. The EtherWave Adapter has seven LEDs. These indicator lights give you network information, such as when data packets are sent or received, or when a data collision occurs. As you plug in the power cable, all of the LEDs will flash. Then the Test/Power LED will remain lit.
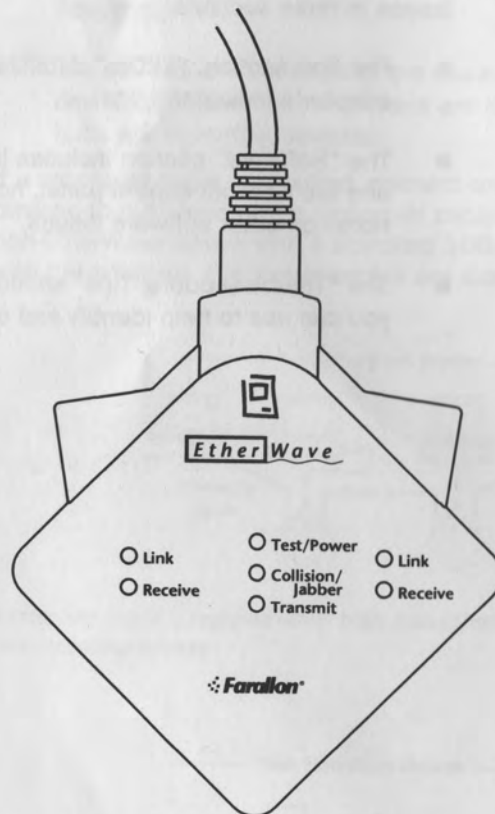
EtherWave Adapter LEDs

The three LEDs in the center give you general information about the EtherWave Adapter.

Test/Power (orange/green): When the EtherWave Adapter first receives power, it runs a short self-test sequence. During the sequence, the Test/Power LED is orange. After a successful self-test, the LED turns a steady green, indicating that the EtherWave Adapter is receiving power.

Collision/Jabber (orange): A blinking light indicates simultaneous packet reception (collision), or reception of invalid packets (jabber). In normal operation, this light will blink occasionally. If the light stays on or blinks continuously, consult the "Troubleshooting Tips" section below.

Transmit (yellow): A blinking light indicates packet transmission from your computer. The light is off when there's no traffic.

The 10Base-T ports of the EtherWave Adapter have two LEDs each. The green LED indicates link status. The yellow LED tells you about port traffic.

Link (green): A steady light indicates that the EtherWave Adapter is properly connected and receiving a link signal from the next device in the chain. The light is off when the EtherWave Adapter is not connected. If the LED flickers at regular intervals, it may indicate that the EtherWave Adapter is connected to a pre-10Base-T device and will not function properly. If the LED flickers irregularly, it may indicate a bad connection.

Receive (yellow): A blinking light indicates packet reception on the port. The light is off when there's no traffic.

For your convenience, LED functions are also listed on the back of the adapter.

Software

Installing the EN Driver for Farallon Macintosh Adapters adds two icons to the Network control panel, "EtherTalk Alternative" and "PB Adapter." EtherTalk Alternative is the Farallon Ethernet Driver, and PB Adapter is a utility specially designed for computers on the move, such as PowerBooks, which may often change network connections. To ensure that your computer always accesses the appropriate networking software, PB Adapter should be used with all Macintosh and PowerBook computers.

PB Adapter works by checking for your EtherWave Adapter and selecting the right driver for the conditions. If the EtherWave Adapter is connected to your computer, PB Adapter will enable the Ethernet driver. If the EtherWave Adapter is not connected, PB Adapter will automatically switch to the LocalTalk driver, avoiding the System error message, "An error occurred while trying to start up your AppleTalk connection. The built-in LocalTalk port will be used instead."

You may select the EtherTalk Alternative icon, but if you start up your computer without the EtherWave Adapter connected, you will receive the System error message. To avoid the message, select the PB Adpater icon when configuring the software.

▶ **IMPORTANT NOTE**: Once PB Adapter has switched to LocalTalk, in order to switch back to Ethernet, PB Adapter requires that you reconnect the EtherWave Adapter and restart your computer.

Switching between the Ethernet and LocalTalk drivers

The EtherWave Mac/PB Adapter runs with the LocalTalk Built In driver as well as with the high-speed Farallon EtherTalk Alternative driver. There are a variety of reasons that you may want to use the LocalTalk driver, including testing and troubleshooting. But keep in mind that the LocalTalk driver is slower; the adapter runs up to five times faster with the Farallon driver.

You can switch between the LocalTalk driver and the Farallon driver in the Network control panel.

▶ **Note:** If you are running network protocol stacks other than AppleTalk, such as MacTCP, you should use the Etnernet driver. Switching to LocalTalk may cause conflicts.

1. Open the Network control panel.

Network
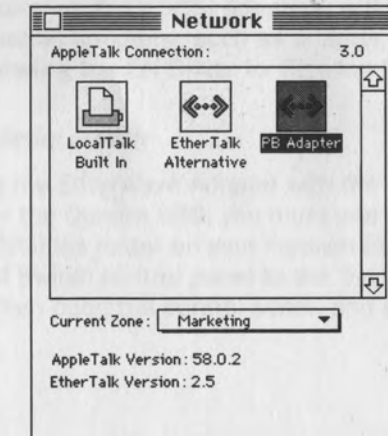
2. Click the LocalTalk Built In icon. The following box will appear.

LocalTalk
Built In

> ⚠ Changing your AppleTalk connection will interrupt current network services and they will have to be reestablished.
>
> Are you sure you want to change from EtherTalk to LocalTalk?
>
> [Cancel]   [OK]

3. Click the OK button.

4. Close the control panel.

To switch back to the Farallon driver, just repeat the process above, but click the PB Adapter icon instead. If you ever have trouble switching from EtherTalk to LocalTalk and back, restart your computer and try again.

A note on AppleTalk 58

The Farallon EN Installer normally installs AppleTalk 58 along with the Farallon driver. If you discover that one of your applications is incompatible with AppleTalk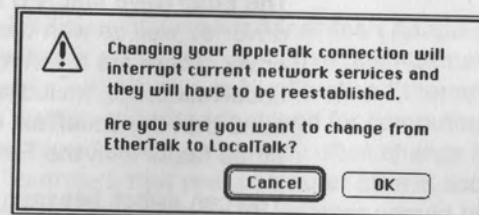 58, you have two options. You can either upgrade your application to a version that is compatible with AppleTalk 58, or reinstall the older version of AppleTalk from your Macintosh System disks.

If you know beforehand that you do not want to install AppleTalk 58, use the Customize option during installation. The Farallon driver works with AppleTalk 56 and higher, however, Apple's Macintosh SNMP support requires AppleTalk 58.

A note on alternate Ethernet drivers

The EN Driver for Farallon Macintosh Adapters is an EtherTalk Alternative driver. Because the Macintosh System allows only one EtherTalk Alternative driver at a time, each new alternate driver that you install replaces the old one. In general, drivers for external Ethernet adapters, such as SCSI adapters, will be replaced. Drivers for internal Ethernet adapters, such as adapter cards, will not be affected by installing the EN Driver for Farallon Macintosh Adapters.

A note on the Serial Switch

Serial Switch

In order to use the EtherWave Adapter with the Macintosh IIfx, the Quadra 900, or the Quadra 950, you must use the Serial Switch located in the Utilities folder on your Farallon EN Installer Disk. Copy the Serial Switch control panel to the System folder on your startup disk. Then open the control panel, and set the switch to "Compatible."

Troubleshooting tips

This section addresses problems you may encounter when installing and using the EtherWave Adapter. If you cannot correct the problem after consulting these troubleshooting tips, call Farallon Technical Support.

Checking the adapter

- Check the EtherWave Adapter's serial and 10Base-T cable connections. Confirm that the adapter is plugged into your computer's printer port. (You may also plug the adapter into the modem port, but only if you are using the Farallon Ethernet driver.)

- Make sure that the ADB power cable is securely connected. The EtherWave ADB cable should be connected directly to your Macintosh's ADB port. If you are chaining ADB-powered devices from your Macintosh, such as a keyboard and a mouse, connect the EtherWave ADB cable first and then use the ADB power pass-through port to connect the other devices.

- Some configurations may require an external power adapter instead of the ADB cable. If too many ADB-powered devices are connected to your ADB port, exceeding its power output capability, you can power your EtherWave Adapter with an external power adapter. Also, when running a PowerBook from its battery, the EtherWave Adapter should be the only ADB-powered device drawing power from the ADB port. If you use additional ADB-powered devices with your PowerBook, power either the EtherWave Adapter or the PowerBook with an external power adapter.

See Appendix A for EtherWave Adapter power specifications. External power adapters that are available from Farallon are listed on page 47 of this manual.

- Check the LEDs to verify that the EtherWave Adapter is functioning properly. If two cables are connected to the adapter, check for link signals at both ports. As a guide, use the description of LED functionality earlier in this chapter.

- Make sure that the adapter is connected to the network with 10Base-T cable, as included in the EtherWave package. 10Base-T cable should be EIA/TIA category 3 (NEMA standard) or higher. Please note that 10Base-T cable with RJ-45 connectors is different from the 4-pin wire with RJ-11 connectors that is used for telephone wiring and some local area networks.

- Run the Farallon EN Diagnostics utility described in Appendix B.

Checking the software

- Make sure that AppleTalk is active in the Chooser.

- Make sure that the PB Adapter icon is selected in the Network control panel. If the icon is missing, reinstall the EN Driver for Farallon Macintosh Adapters.

- Make sure that Printer Compatibility Mode is disabled in the Adapter Setup dialog box. The Adapter Setup utility is on the Farallon EN Installer Disk, in the folder called "For Adapters Only."

If you are unsure which driver is running with your adapter, try selecting the EtherTalk Alternative icon in the Network control panel. Then, if your computer does not allow the EtherTalk selection, run the Adapter Setup utility and verify that Printer Compatibility Mode is disabled.

■ If you have another serial device connected to your Macintosh, make sure that you have selected the modem port as its connection using the software that was included with that other device. The EtherWave Adapter must be connected to the printer port, and there will be a conflict if the other serial device is also set to use the printer port.

■ If you had the EtherTalk Alternative icon selected in your Network control panel, but your Macintosh reverts to the LocalTalk Built In connection on startup, one of the following conditions may exist:

  □ The EtherWave Adapter may not be properly connected, or may not be receiving power. When your Macintosh does not detect the adapter, the computer reverts to LocalTalk. Check the connections, then open the Network control panel and reselect EtherTalk Alternative. Or, select PB Adapter in the Network control panel to avoid the problem in the future.

  □ You may have started your computer from a disk that does not have the Farallon driver on it. Restart from your startup hard disk. Then select PB Adapter in the Network control panel.

  □ The networking software on your startup hard disk may be damaged, moved from the proper folders, or missing. Reinstall the software using the Farallon EN Installer Disk and/or the Macintosh System disks.

■ If you are using MacTCP, select PB Adapter in the Network control panel and Ethernet in the MacTCP control panel. If you do select Built In LocalTalk in the Network control panel and you experience problems, restart your computer with MacTCP disabled, and then switch network connections.

Checking the network

■ Check the physical connections to make sure that all the network cables are secure.

■ Make sure all network wiring is 10Base-T cable (EIA/TIA category 3, NEMA standard, or higher) with RJ-45 connectors.

■ Make sure that the daisy chain is no longer than 100 meters (330 feet). If you have a hub in a wiring closet, the length of your chain includes the distance from the hub to the wall jack in your office and on to the end of the daisy chain.

■ Count the number of devices on each branch of the network. Each daisy chain can have a maximum of eight devices, including hubs.

■ Make sure that your daisy chain does not form a loop. If you try to transmit while a loop exists, the Collision LED will light up and remain on.

■ Make sure there are no more than four hubs in the path between any two devices (as per the IEEE Standard 802.3 10Base-T compliance specifications).

■ If a daisy chain contains two non-EtherWave devices, check that the chain is wired correctly. The two non-EtherWave devices (at the ends of the chain) should be able to communicate when all of the EtherWave devices between them are powered off. If not, you may need to add or remove a crossover cable. See "About Crossover Cables" in Chapter 2.

Appendix A — Technical Specifications

System requirements

To run the EtherWave Mac/PB Adapter with the Farallon driver, your Macintosh needs at least 1 MB of RAM and should be operating under System 6.0.5 or higher.

Environmental characteristics

Operating temperature: 0° to 40° Centigrade
32° to 104° Fahrenheit

Storage temperature: -40° to 70° Centigrade
-40° to 158° Fahrenheit

Operating humidity: 10% to 80% (noncondensing)

Storage humidity: 5% to 90% (noncondensing)

Compatibility with Ethernet standards

Designed in accordance with the IEEE Standard 802.3 10Base-T.

Single connection: 10Base-T-compliant

Daisy-chain connection: 10Base-T-compatible

Encoding: Manchester

Data rate: 10 Mbps ± 100 ppm

Bit error rate: Better than 1 in 10^8

Serial data rate

With the EN Driver for Farallon Macintosh Adapters: 625-1250 kbps
(Data rate is dependent on the Macintosh CPU.)

With the built-in LocalTalk driver: 230 kbps

Power

Consumption: 350 mA
Voltage input: 5 VDC

Connectors and cables

Macintosh connection: Serial cable with mini-DIN-8 connector for connecting to Macintosh printer port

Ethernet connection: 10Base-T cable (EIA/TIA Category 3, NEMA standard, or higher) with RJ-45 connectors

Power: ADB power cable for connecting to Macintosh ADB (Apple Desktop Bus) port

Alternate power for the EtherWave Adapter

The EtherWave Adapter may also be powered by an external power adapter with these specifications:

Amperage: 500 mA or greater
Voltage: 8-16 VDC
Connector dimensions: 2.5 mm inside barrel
5.5 mm outside barrel
Polarity: Center conductor positive

Power adapters are available from Farallon.
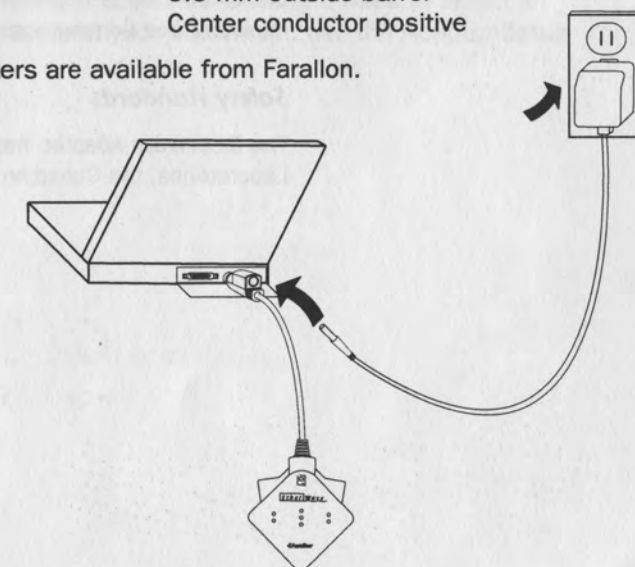
Regulatory notice—United States

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commerical environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residental area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Regulatory notice—Canada

This digital appartus does not exceed the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

Safety standards

The EtherWave Adapter has met the safety standards of Underwriters Laboratories, the Canadian Safety Agency, and the TUV of Germany.

Appendix B — Additional Software Operation

This appendix contains instructions for using the optional software that is included with the EtherWave Adapter. It covers the following procedures:

■ Custom installation. The Installer's Customize option allows you to select the item(s) that you want to install.

■ Removing the Farallon EtherTalk Alternative driver. If you need to remove the Farallon driver from your startup disk, for testing or other purposes, use the second procedure below.

■ Using Farallon EN Diagnostics. This section explains how to use the Farallon EN Diagnostics utility to view information about your EtherWave Adapter.

■ Selecting a zone with Adapter Setup. If you are running your adapter with the LocalTalk driver and need to select an Ethernet zone for your Macintosh, use the Adapter Setup utility.

Custom installation

1. Insert your Farallon EN Installer Disk.

2. Open the "For Macintosh Cards/Adapters" folder.

3. Double-click the Installer icon.

4. In the Easy Install dialog box, click the Customize button. The Installer displays a list of items that may be installed.

Installer

```
Click the items you want to select;
Shift-click to select multiple items.
┌─────────────────────────────────────────┐ ⇧
│ AppleTalk v58.02 for System 6            │
│ AppleTalk v58.02 for System 7            │
│                                          │
│ EtherTalk for Farallon Macintosh Cards   │
│ EtherTalk for Farallon Macintosh SE      │
│ EtherTalk for Farallon Macintosh Adapters│
└─────────────────────────────────────────┘ ⇩
```
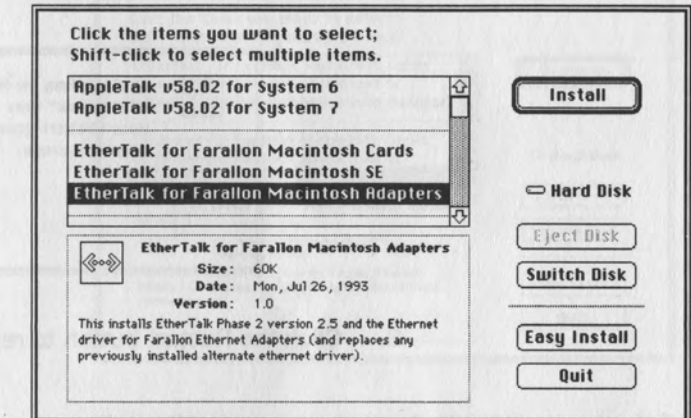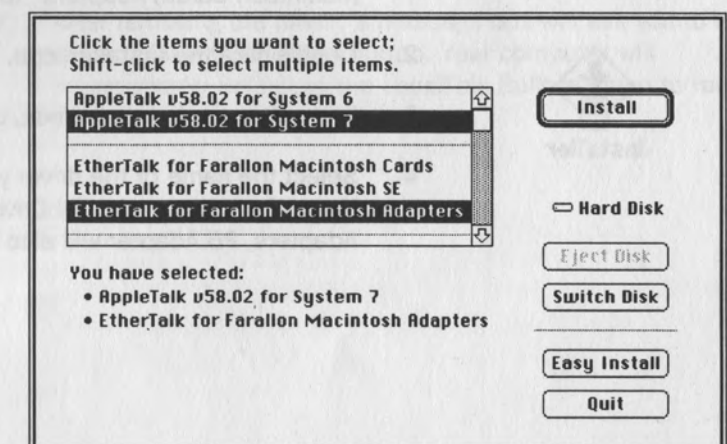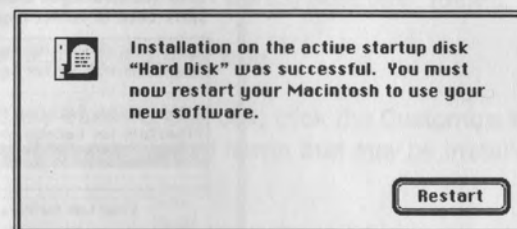   [Install]

                                    ⊂⊃ Hard Disk

                                    [Eject Disk]

                                    [Switch Disk]

                                    [Easy Install]

                                    [Quit]
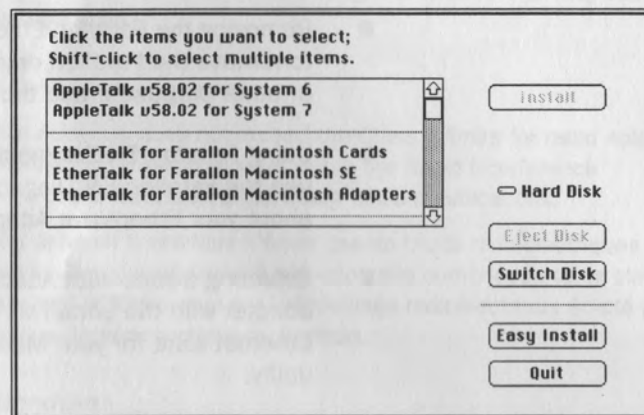
5. Click the name of the item you want to install. The dialog box displays information about the selected item.

```
Click the items you want to select;
Shift-click to select multiple items.
┌─────────────────────────────────────────┐ ⇧
│ AppleTalk v58.02 for System 6            │
│ AppleTalk v58.02 for System 7            │
│                                          │
│ EtherTalk for Farallon Macintosh Cards   │
│ EtherTalk for Farallon Macintosh SE      │
│ EtherTalk for Farallon Macintosh Adapters│
└─────────────────────────────────────────┘ ⇩
```
                                    [Install]
```
┌──────────────────────────────────────────┐
│ ⟨•⟩  EtherTalk for Farallon Macintosh Adapters│
│          Size:  60K                       │
│          Date:  Mon, Jul 26, 1993         │
│       Version:  1.0                       │
│ This installs EtherTalk Phase 2 version 2.5 and the Ethernet│
│ driver for Farallon Ethernet Adapters (and replaces any│
│ previously installed alternate ethernet driver).│
└──────────────────────────────────────────┘
```
                                    ⊂⊃ Hard Disk

                                    [Eject Disk]

                                    [Switch Disk]

                                    [Easy Install]

                                    [Quit]

6. To select more than one item, hold down the Shift key as you click the name of each item you want.

```
Click the items you want to select;
Shift-click to select multiple items.
┌─────────────────────────────────────────┐ ⇧
│ AppleTalk v58.02 for System 6            │
│ AppleTalk v58.02 for System 7            │
│                                          │
│ EtherTalk for Farallon Macintosh Cards   │
│ EtherTalk for Farallon Macintosh SE      │
│ EtherTalk for Farallon Macintosh Adapters│
└─────────────────────────────────────────┘ ⇩
```
                                    [Install]
```
You have selected:
 • AppleTalk v58.02 for System 7
 • EtherTalk for Farallon Macintosh Adapters
```
                                    ⊂⊃ Hard Disk

                                    [Eject Disk]

                                    [Switch Disk]

                                    [Easy Install]

                                    [Quit]

7. Click the Install button. The Installer places the selected item(s) in the correct folder(s) on the selected disk. When the installation is complete, the following box appears on your screen.
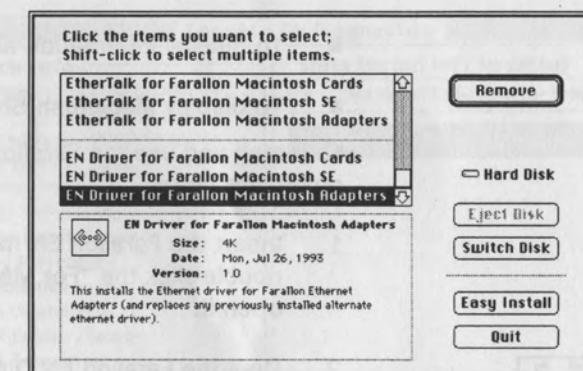
> Installation on the active startup disk "Hard Disk" was successful. You must now restart your Macintosh to use your new software.
>
> **Restart**

8. Click the Restart button to restart your computer.

Removing the Farallon EtherTalk Alternative driver

1. Insert your Farallon EN Installer Disk, and open the "For Macintosh Cards/Adapters" folder.

2. Double-click the Installer icon.

3. In the Easy Install dialog box, click the Customize button.

4. Select the name of the driver you want to remove.
Note: If you select the EN Driver for Farallon Macintosh Adapters, PB Adapter will also be removed.

Installer

5. Hold down the Option key. Notice that the Install button becomes a Remove button.

Click the items you want to select; Shift-click to select multiple items.

EtherTalk for Farallon Macintosh Cards
EtherTalk for Farallon Macintosh SE
EtherTalk for Farallon Macintosh Adapters
EN Driver for Farallon Macintosh Cards
EN Driver for Farallon Macintosh SE
EN Driver for Farallon Macintosh Adapters

EN Driver for Farallon Macintosh Adapters
Size: 4K
Date: Mon, Jul 26, 1993
Version: 1.0
This installs the Ethernet driver for Farallon Ethernet Adapters (and replaces any previously installed alternate ethernet driver).

Remove
Hard Disk
Eject Disk
Switch Disk
Easy Install
Quit

> **Note:** When you press the Option key, the AppleTalk 58 driver names are grayed out. To remove the AppleTalk software, you must use your Macintosh System disks.

6. While you hold down the Option key, click the Remove button to remove the selected driver.

7. After removing the driver, a message box will ask you to to restart. Click the Restart button. Your computer will automatically default to the LocalTalk Built In driver to run with your EtherWave Adapter.

Using Farallon EN Diagnostics

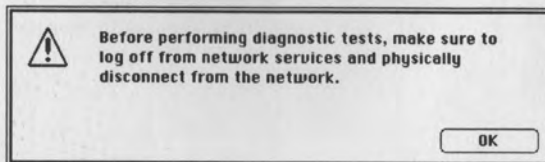The Farallon EN Diagnostics utility has two functions:

- To display information about the adapter

- To display Macintosh SNMP statistics

To install and use the Farallon EN Diagnostics utility, follow the procedure below.

1. Insert the Farallon EN Installer Disk into your Macintosh, and double-click the "For Macintosh Cards/Adapters" folder to open it.

2. Drag the Farallon EN Diagnostics icon from the Farallon EN Installer Disk to the startup disk of your Macintosh. Then eject the Farallon EN Installer Disk.

Farallon EN Diagnostics

3. Double-click the Farallon EN Diagnostics icon on your startup disk. The diagnostic utility will search for your EtherWave Adapter. If the utility finds the adapter, the Farallon EN Diagnostics dialog box appears.

▶ **Note:** If the utility does not find an adapter, the utility will post a message box describing the problem, quit, and return you to the desktop. If this happens, make sure that the mini-DIN-8 connector is securely plugged into the printer port and that the adapter is receiving power.

When EN Diagnostics finds the adapter, it displays a warning box in front of the Diagnostics dialog box.

⚠ Before performing diagnostic tests, make sure to log off from network services and physically disconnect from the network.

[OK]

4. Click the OK button to dismiss the warning. You do not need to follow the instructions in the warning because it does not apply to EtherWave Adapters.

Farallon EN Diagnostics

Device Info
Device Type -   Ethernet Adapter
Slot -   external device
Ethernet Address - 0000c513003a
On Board RAM -   32KB

Slots (listed left to right)
e   Macintosh SE/30 Internal Video

Farallon External EN Adapter

Tests
Controller Register Access -
On-Board RAM check -
Cable Connection -
Loopback:Controller -
Loopback:Encoder/Decoder -
Loopback:Transceiver -

⚡ Farallon

[SNMP]   [Help]   [Test]

The Farallon EN Diagnostics dialog box contains three information areas: Device Info, Slots, and Tests. Notice that the EtherWave Adapter is selected in the Slots area of the dialog box. This means that all of the other information displayed in the box pertains to the EtherWave Adapter. If another Farallon card or adapter appears in the Slots area, you can select it by clicking its name.

Device Info

The Device Info area contains general information about the item that is highlighted in the Slots area. This includes its name, location, Ethernet hardware address, and amount of memory.

Slots

In addition to listing the adapter, the Slots area of the dialog box displays the name and slot address (in hexadecimal notation) of each option card in your computer, if any.

Tests

This area is for testing option cards. The EtherWave Adapter has its own self-test sequence that runs each time the adapter is powered on. When the adapter is selected in the Slots Information area, the Test button in the lower right-hand corner of the dialog box is grayed out.

The EN Diagnostics utility can display SNMP statistics for any Farallon device that supports an SNMP agent. To see SNMP statistics for the EtherWave Adapter, first confirm that the adapter is selected in the Slots area. Then click the SNMP button. The SNMP message box appears.

Description	EtherWave 1.0, FwRev: 1.0		
Type	ethernet-csmacd	OutErrors	0
MaxMTU	1500 Bytes	OutQLen	0
Speed	10000000 Bits/Sec	AlignmentErrors	0
PhysicalAddress	00:00:c5:34:00:60	CRCErrors	0
AdminStatus	Up	SingleCollisionFrames	0
OperationalStatus	Up	MultiCollisionFrames	0
LastChange	14818.01 Sec	SQETestErrors	0
InOctets	21607	DeferredTransmissions	0
InUnicastPkts	5	LateCollisions	0
InNonUnicastPkts	216	ExcessCollisions	0
InDiscards	10	InternalMACXmitErrs	0
InErrors	3	CarrierSenseErrors	0
InUnknownProtos	0	ExcessiveDeferrals	0
OutOctets	2456	FrameTooLongs	0
OutUnicastPkts	23	InRangeLengthErrors	0
OutNonUnicastPkts	11	OutOfRangeLengthFields	0
OutDiscards	0	InternalMACRcvErrs	0

OK

The first five fields in this message box show general information about the adapter, including the version of the driver and the adapter's firmware.

The next three fields (AdminStatus, OperationalStatus, LastChange) describe the status of the adapter.

The last ten fields on the left side of the message box (beginning with InOctets) are statistical counters. All the items on the right side of the window are statistical counters for packets and errors. These counters let you see if the adapter is transmitting and receiving, and if error counters are incrementing. Certain errors are normal and do not indicate any sort of significant disruption. If there is a problem with the network, however, these counters can help you locate the source.

For more details about the items in the SNMP message box, see the following MIBs: RFC 1213, RFC 1284. These technical documents can be obtained from the IEEE (Institute of Electrical and Electronic Engineers).

Selecting a zone with Adapter Setup

If you are running the adapter with the LocalTalk driver, and you have more than one zone on your local cable, you may want to select the Ethernet zone in which your Macintosh will appear. To do this, you need to use the Adapter Setup utility. Adapter Setup is in the folder called "For Adapters Only" on the Farallon EN Installer Disk.
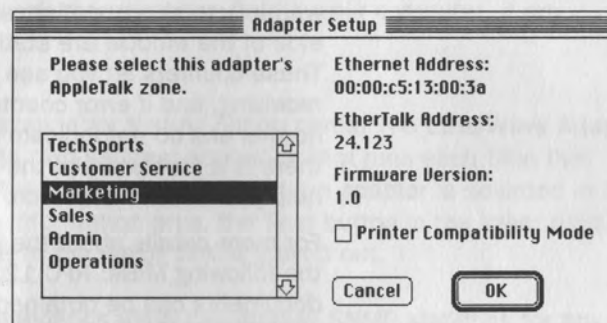
▶ **Note:** The Adapter Setup utility is used only when running the adapter with the LocalTalk Built In driver on a network with a router.

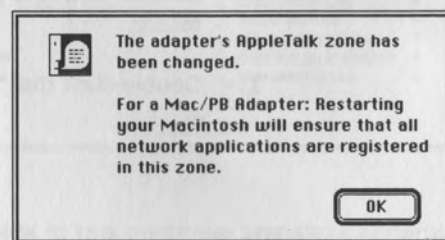1.   Double-click the "For Adapters Only" folder to open it.

Adapter Setup

2. Double-click the Adapter Setup icon. The following dialog box will appear.

```
═══════════════ Adapter Setup ═══════════════

Please select this adapter's      Ethernet Address:
AppleTalk zone.                    00:00:c5:13:00:3a

                                   EtherTalk Address:
┌─────────────────────────┐ ▲     24.123
│ TechSports              │ ⬆
│ Customer Service        │       Firmware Version:
│ Marketing               │       1.0
│ Sales                   │
│ Admin                   │       ☐ Printer Compatibility Mode
│ Operations              │
└─────────────────────────┘ ▼     ┌────────┐  ┌──────────┐
                                  │ Cancel │  │    OK    │
                                  └────────┘  └──────────┘
```

The names in the list box are the zones on your local cable. The highlighted name is either the default zone or the last zone that was selected. If the network does not have a router, the list box will show only an asterisk (*). Printer Compatibility Mode should be off (i.e., its checkbox should be empty).

3. Click the name of the zone that you want to select, then click the OK button.

4. A message box will appear to remind you that applications which are currently open may need the new zone information.

```
┌──────────────────────────────────────┐
│ 🖳  The adapter's AppleTalk zone has  │
│     been changed.                     │
│                                       │
│     For a Mac/PB Adapter: Restarting  │
│     your Macintosh will ensure that all│
│     network applications are registered│
│     in this zone.                     │
│                        ┌────────┐     │
│                        │   OK   │     │
│                        └────────┘     │
└──────────────────────────────────────┘
```

Click the OK button. The zone setting is now saved in your EtherWave Adapter's memory.

Farallon Technical Support

Farallon Computing is committed to providing its customers with reliable products and excellent technical support. Please take a moment now to fill out the registration card enclosed in your EtherWave package so that we can notify you about any relevant updated product information.

Before contacting Farallon Customer Service, please look in this user's guide for answers to your questions and possible solutions to a problem. Check the index for a reference to the topic of concern. Also, be sure to read any paper release notes or electronic "Read Me" files that you receive from Farallon.

If you contact us by telephone, please be at the site of the problem, prepared to reproduce it and to try some troubleshooting steps.

How to reach us

If you have any questions, concerns, or suggestions, please contact us by telephone, fax, or mail:

> Phone: (510) 814-5000
> Fax: (510) 814-5023
>
> Farallon Computing
> Customer Service
> 2470 Mariner Square Loop
> Alameda, California 94501-1010
> USA

Farallon BBS

Farallon Bulletin Board Service: (510) 865-1321

FAX-Back

This service provides technical notes which answer the most commonly asked questions, and offer solutions for many common problems encountered with Farallon products.

FAX-Back: (510) 814-5040

World Wide Web

Farallon World Wide Web server: http://www.farallon.com

Other online addresses

You can also send us electronic mail via the following network services:

America Online (ID: FARALLON)
AppleLink (ID: FARALLON)
CompuServe (ID: 75410,2702)
Internet (ID: info@farallon.com)

In addition to our World Wide Web server, product information can be found on the following bulletin boards:

America Online (keyword: FARALLON)
AppleLink (Third Parties A-G)
CompuServe (keywords: FARAMAC and FARAPC)
Internet via anonymous FTP to ftp.farallon.com/pub

Outside of the United States and Canada

If you are not located in the United States or Canada, you can get service locally by contacting your nearest Farallon reseller or distributor. For a worldwide list of our distributors, see our AppleLink bulletin board or contact Farallon directly.

Expanding your network with Farallon

Farallon has a variety of EtherWave products that allow you to add PC and Macintosh computers, notebooks, personal digital assistants, printers, and hubs to your Ethernet 10Base-T network:

EtherWave Cards are Ethernet adapter cards for adding Macintosh and IBM PC-compatible computers to 10Base-T networks.

EtherWave Transceivers allow you to connect any device with Ethernet installed to a 10Base-T network.

EtherWave Printer Adapters allow you to add LocalTalk printers to 10Base-T networks.

EtherWave MultiPrinter Adapters allow you to add several LocalTalk printers to 10Base-T networks.

An **RJ-45 Crossover Cable** (Farallon part number TE471) allows you to connect two similar, non-EtherWave devices to the two ends of an EtherWave daisy chain.

An **RJ-45 Modular Cable Extender** (Farallon part number TE464) connects two 10Base-T cables, so you can join two parts of a chain after moving or removing nodes.

The following external **power adapters** are available from Farallon:

TE801	Power supply, 110V
TE811	Power supply, 110V-10 pack
TE802	Power supply, 220V
TE812	Power supply, 220V-10 pack
TE803	Power supply, 100V
TE813	Power supply, 100V-10 pack
TE804	Power supply, 220V (UK)
TE814	Power supply, 220V-10 pack (UK)
TE805	Power supply, 240V (Australia)
TE815	Power supply, 240V-10 pack (Australia)
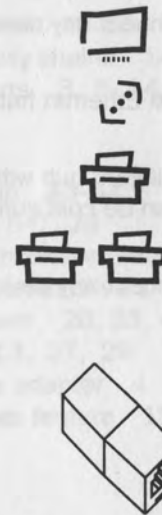
Other Farallon Ethernet Products

Farallon also offers the following 10Base-T and thinnet Ethernet networking products:

EtherMac™ Cards are Ethernet adapter cards for adding Macintosh computers to 10Base-T and thinnet Ethernet networks.

Ether10-T™ Transceivers allow you to connect any device with on-board Ethernet to a 10Base-T network.

The **Ether10-T Starlet®** series of hubs are Ethernet hubs with four, eight, or sixteen 10Base-T ports.

The **Ether10-T StarController™** is an intelligent hub with twelve 10Base-T ports and an uplink port that can be configured for a thinnet, AUI, or twisted-pair connection.

EtherThin® Transceivers allow you to connect any device with on-board Ethernet to a thinnet network.

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Limited Hardware Warranty and Limitation of Remedies

Farallon warrants to you, the end user, that the enclosed Farallon hardware product (the "Product") will be free from defects in materials and workmanship under normal use. This warranty will expire one (1) year from date of purchase on the Farallon™ Concentrator, StarController® hubs, StarRouter™, InterRoute/5™, Repeater and all other hardware products not listed below. The following products carry a lifetime warranty: PhoneNET® Connectors; EtherMac™ cards; EtherWave® cards, adapters and transceivers; EtherThin® adapters and transceivers; Starlet® hubs; and Ether10-T™ transceivers.

Farallon's entire liability and your sole remedy under this warranty during the warranty period is that Farallon shall, at its sole and exclusive option, either replace the Product with a functionally equivalent product at no charge to you or refund the original purchase price of the Product. Any replacement Product will be warranted for the remainder of the original warranty period or ninety (90) days, whichever is longer.

In order to make a claim under this warranty you must comply with the following procedure:

1. Contact Farallon Customer Service within the warranty period to obtain a Return Materials Authorization ("RMA") number.

2. Return the defective Product and proof of purchase, shipping prepaid, to Farallon with the RMA number prominently displayed on the outside of the package.

If you are located outside of the United States or Canada, please contact your dealer in order to arrange for warranty service.

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U.S. and foreign patents are pending on the EtherWave technology.

Credits

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