

Asanté EN/SC Adapter Family

Installation Guide



ASANTÉ

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Installation Guide

Asanté Technologies, Inc.
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Asking for assistance

To contact Asanté Technical Support:

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Asanté Technical Publications at (408) 894-0363

or

E-mail them through Internet:

techpubs@asante.com

Introducing the EN/SC Adapters

Thank you for purchasing an Asanté EN/SC™ SCSI-to-Ethernet Adapter.

An Asanté EN/SC adapter enables you to connect your desktop Macintosh or PowerBook to a 10BaseT or Thin Ethernet.

The Asanté EN/SC Adapter Family includes the Mini EN/SC Adapter group and the Micro EN/SC Adapter group:

Mini EN/SC Adapter group

- Mini EN/SC Adapter

- Mini EN/SC 10T Adapter

Micro EN/SC Adapter group for PowerBook

- Micro EN/SC Adapter

- Micro EN/SC 10T Adapter

An Asanté EN/SC Adapter passes Ethernet packets between the Macintosh and the Ethernet network using the Macintosh standard SCSI interface. The Mini EN/SC Adapter also enables you to attach additional SCSI devices to your Macintosh in a SCSI daisy chain (such as a hard drive, scanner, or CD-ROM). The Micro EN/SC Adapter attaches directly to the PowerBook's HDI-30 port and does not offer SCSI daisy-chaining.

Asanté EN/SC Adapters are compatible with Apple System Software 6.0.7 and higher. Asanté recommends you use them with slotless Macintosh computers and PowerBooks. Refer to Appendix B for compatibility information.

This chapter describes the features of the EN/SC Adapters.

EN/SC Adapter features

The adapters in the EN/SC Adapter Family have these features:

- Compliant with the IEEE 802.3 standard for 10Base2 (thin BNC) and 10BaseT (twisted-pair) Ethernet
- Compatible with Apple® System 7, EtherTalk Phase 1™ and Phase 2™, slotless Macintosh computers and PowerBooks—Mini EN/SC Adapter; compatibel with PowerBooks only—Micro EN/SC Adapter
- Provide support for AppleShare™, Novell NetWare™ for Macintosh, 3Com 3+Open™, 3 Com 3+Share™, Sitka TOPS™, DEC Pathworks™, and other popular network software. Support for AFP, TCP/IP, DecNet and LAT protocols
- Provide TroubleShooter diagnostic software for testing and identifying problems

The table below lists the Macintosh computers and Ethernet cabling each adapter supports:

Mini EN/SC Group	Macintosh	Ethernet cabling
Mini EN/SC	PowerBooks and slotless desktop Macintoshes with SCSI pass-thru	10BaseT and Thin
Mini EN/SC 10T	PowerBooks and slotless desktop Macintoshes with SCSI pass-thru	10BaseT only
Micro EN/SC Group	Macintosh	Ethernet cabling
Micro EN/SC	PowerBooks only	10BaseT and Thin
Micro EN/SC 10T	"	10BaseT only

Mini EN/SC Adapter features

The Mini EN/SC Adapter offers the following additional features:

- SCSI pass-through for all additional SCSI devices
- A compact and portable design
- A user selectable link disable switch for pre-10BaseT networks
- Auto-sensing circuitry for 10BaseT and BNC ports
- User selectable SCSI termination
- Unique SCSI T-connector cabling for SCSI pass-through
- Status LEDs showing connectivity status

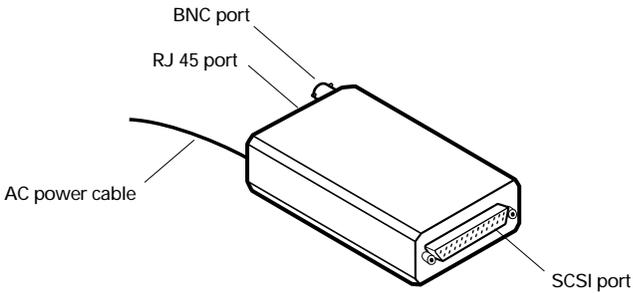


Figure 1-1 Asanté Mini EN/SC Adapter

Micro EN/SC Adapter features

The Micro EN/SC Adapter offers the following additional features:

- Compact and portable design specifically for the PowerBook
- Power drawn from the PowerBook's ADB port
- No SCSI cable or power adapter required
- Status LEDs showing connectivity status
- Auto-sensing circuitry for 10BaseT and BNC ports
- PowerBook Sleep Mode compatible

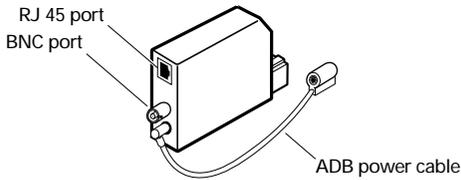


Figure 1-2 Asanté Micro EN/SC Adapter

Installing an EN/SC Adapter

This chapter provides instructions for installing the Mini EN/SC Adapter and the Micro EN/SC Adapter.

The installation procedure for each adapter has four parts:

- Preparing for the installation
- Installing the adapter
- Installing the Asanté EtherTalk software
- Accessing network services

Preparing for the installation

Before you install an Asanté EN/SC Adapter, you must:

- Know the safety rules
- Check the software and hardware
- Know about setting SCSI termination and link integrity on a 10BaseT network (for the Mini EN/SC Adapter)
- Know about setting the SCSI address on the Mini EN/SC Adapter

Observing the safety rules

Observe the following safety precautions during the installation:

- △ **Important!** Before you connect and configure an Asanté EN/SC adapter, turn off the Macintosh or PowerBook and all connected peripherals.

Follow Apple guidelines and always plug or unplug devices connected to the SCSI port with the power off!

- Consult your network administrator about the installation and its effect on the network; other users must be warned of the possible interruption of network operations.

Checking the software and hardware

To install an Asanté EN/SC Adapter, you need the following software:

- Apple System Software 6.0.7 or higher
- Asanté EtherTalk Installer or higher

Make sure you have:

- An Ethernet network with AppleTalk-compatible devices
- The appropriate EN/SC Adapter for your computer
- The appropriate SCSI cable with the Mini EN/SC Adapter

SCSI Cables provided with the Mini EN/SC Adapters

Two SCSI cables are provided with the Mini EN/SC Adapters:

The DB-25/DB-25 to DB-25 SCSI cable is used with desktop Macintosh computers.



Figure 2-1 DB-25/DB-25 to DB-25 SCSI cable

The DB-25/DB-25 to HDI-30 SCSI cable is used with PowerBooks.



Figure 2-2 DB-25/DB-25 to HDI-30 SCSI cable

Micro EN/SC Adapters

No SCSI cables are needed to install the Micro EN/SC Adapter.

Identifying Ethernet cable requirements

Before you install an Asanté EN/SC Adapter, you must know the connection and termination requirements for your Ethernet cable type. You must also know the IEEE Ethernet length specifications. Refer to Appendix B for information about Ethernet length specifications.

Ethernet cable	Requires	Comments
10BaseT	Hub and RJ45 connector	10BaseT-compliant hub required
Thin	BNC T-connector and 50-ohm terminator at each cable end	Thin Ethernet cable requires terminator at each end

Setting link integrity on the Mini EN/SC Adapter

With a 10BaseT-compliant network, the Link Integrity switch must be set ON (default) on the Mini EN/SC Adapter. The switch is on the bottom of the adapter. See Figure 2-3.

If your Twisted Pair Ethernet network is not 10BaseT-compliant, the Link Integrity switch must be OFF.

- ❖ Note: When Link Integrity is OFF, the 10BaseT port is selected by default and auto-sensing for the 10BaseT and Thin ports on the Mini EN/SC Adapter is disabled. ❖

The Link Integrity switch is not provided on the Micro EN/SC Adapter.

Setting the SCSI address on the Mini EN/SC Adapter

When you connect a SCSI device to a Macintosh, the device must have a unique SCSI address between 1 and 6; 0 is usually reserved for the Macintosh internal hard drive.

The SCSI address on the Micro EN/SC Adapter is set to 6 and cannot be changed.

Use the rotary switch on the bottom of the Mini EN/SC Adapter to set the SCSI address. See Figure 2-3.

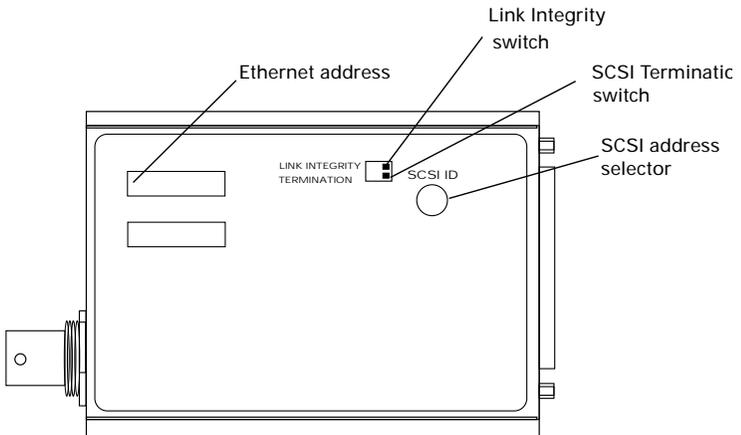


Figure 2-3 Mini EN/SC Adapter switches

Setting SCSI termination on the Mini EN/SC Adapter

The Asanté Mini EN/SC Adapter can be the only SCSI device you connect to the Macintosh or it can be one of several devices in a SCSI daisy chain.

The rules for setting SCSI termination on the Mini EN/SC are

- The first and last device in the SCSI chain must be terminated with no termination in between. The default setting is ON.
- Termination is either internal or external. The first device is always the Macintosh, which is internally terminated. An externally terminated device requires a termination block. (If you're not sure if the other SCSI device is internally terminated, check the documentation for the device.)

The location of the SCSI address selector is shown in Figure 2-3.

Follow the instructions in the table below for setting the SCSI termination switch on the EN/SC adapter:

Mini EN/SC Adapter	Set SCSI switch	Micro EN/SC Adapter
Last device in chain	ON Default	Always terminated—ON No pass-through capability
Only device	ON	
First device in chain	OFF	

Installing a Mini EN/SC Adapter

This section provides two installation procedures—one for installing a Mini EN/SC Adapter when it is the only SCSI device and the other when the adapter is part of a SCSI daisy chain.

Installing a Mini EN/SC Adapter as the only device

The Mini EN/SC Adapter has an RJ45 and a BNC port while the Mini EN/SC 10T Adapter has only the RJ45 port. If you are installing the Mini EN/SC 10T Adapter, disregard the instructions for Thin Ethernet cabling.

- 1** Make sure all devices are turned off.
- 2** Set the adapter's SCSI address using the rotary switch on the bottom of the adapter. See page 2-4 for information.
 - ❖ Note: Each SCSI address must be unique! ❖
- 3** If your network is not 10BaseT-compliant, the Link Integrity switch must be OFF. (The default is set to ON).
- 4** Use the provided SCSI cable to connect the adapter to the Macintosh. Refer to page 2-3 for information.

Plug one end of the cable into the adapter's SCSI port and the other end into the Macintosh SCSI port. See Figure 2-4.
- 5** Connect the adapter to the Ethernet cable.

Follow the guidelines given below for your cable type:

With 10BaseT cabling

Plug the RJ45 connector on one end of the Ethernet cable into the adapter's RJ45 jack and plug the other end into a 10BaseT network hub.

With Thin cabling



Caution!

- Check with your network administrator before connecting the Micro EN/SC adapter to the network.
- If the Ethernet cable does not have a T-connector or a BNC barrel connecting two cable segments, splice the cable with the appropriate BNC hardware.
- Connect the BNC T-connector on the Ethernet cable to the adapter's BNC port.
- If the Macintosh is at the end of a network segment, keep the T-connector and terminator on the segment cable and connect the T-connector to the adapter's BNC port. The connector slips on, twists, and locks in place.

6 Connect the adapter to the 12 VAC power adapter provided by Asanté. Do not use any other power adapter.

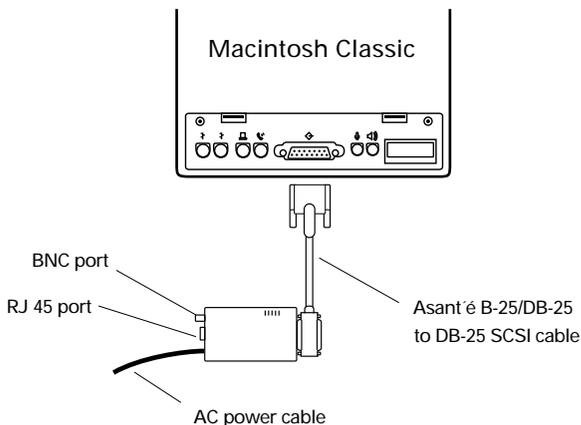


Figure 2-4 Connecting the Mini EN/SC as a single SCSI device

Installing a Mini EN/SC Adapter in a SCSI daisy chain

- 1** Make sure all devices are turned off.
- 2** Set the adapter's SCSI address using the rotary switch on the bottom of the adapter. (See page 2-4 for information.)

❖ Note: Each SCSI address must be unique! ❖

- 3** If your network is not 10BaseT-compliant, the Link Integrity switch must be OFF. (The default is set to ON).

- 4** Connect the Mini EN/SC Adapter to the computer.

If the adapter is the first device in the chain, use a DB-25/DB-25 cable (provided by Asanté). Plug one end of the cable into the computer's SCSI port and the other end into the adapter's SCSI port.

- Use the DB-25/DB-25 to DB-25 SCSI cable for the desktop Macintosh.
- Use the DB-25/DB-25 to HDI-30 cable for the PowerBook (with DB-25/DB-25 "T" side connected to Mini).

If the adapter is the last device in the chain, use the appropriate cable.

See Figure 2-5.

- 5** Set the SCSI Termination switch on the bottom of the adapter. Refer to the table on page 2-5.

- 6** Connect the adapter to the Ethernet cable (see Figure 2-5).

With 10BaseT cabling

- Plug the RJ45 connector on one end of the Ethernet cable into the adapter's RJ45 jack and plug the other end into a 10BaseT network hub.
- Connect the other end of the cable into a 10BaseT network Hub or a block wired back to the hub.

With Thin cabling



Caution

- Check with your network administrator before connecting the Micro EN/SC adapter to the network.
- If the Ethernet cable does not have a T-connector or a BNC barrel connecting two cable segments, splice the cable with the appropriate BNC hardware.
- Connect the BNC T-connector on the Ethernet cable to the adapter's BNC port.
- If the Macintosh is at the end of a network segment, keep the T-connector and terminator on the segment cable and connect the T-connector to the adapter's BNC port. The connector slips on, twists, and locks in place.

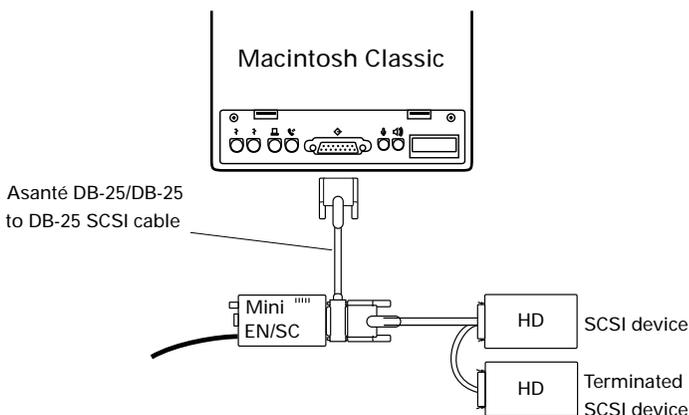


Figure 2-5 Connecting the Mini EN/SC to other SCSI devices

- 7** Connect the adapter to the 12 VAC power adapter provided by Asanté. Do not use any other power adapter.

Once you have connected the adapter to the network you are ready to install the EtherTalk software.

Disconnecting a Mini EN/SC Adapter



Caution!

Before you disconnect a Mini EN/SC Adapter from a Macintosh or PowerBook, you must turn the power OFF on the Macintosh or PowerBook.

The PowerBook must not be in Sleep mode!

The PowerBook's SCSI port will be damaged if you leave the PowerBook on or in Sleep mode when you disconnect or connect an Mini EN/SC Adapter.

Installing a Micro EN/SC Adapter

The Micro EN/SC Adapter has an RJ45 and a BNC port while the Micro EN/SC 10T Adapter has only the RJ45 port.

If you are installing the Micro EN/SC 10T Adapter, disregard the instructions for Thin Ethernet cabling.

To install the Asanté Micro EN/SC Adapter, perform the following steps:

- 1** Your PowerBook must be turned OFF.
- 2** Plug the Micro EN/SC Adapter into the HDI-30 SCSI port on the PowerBook. (You do not need to set the SCSI address; it is set in the hardware to 6.)
- 3** Plug the adapter's ADB power cable into the PowerBook's ADB port.

The ADB power cable supports pass-through for other ADB devices, such as keyboards.

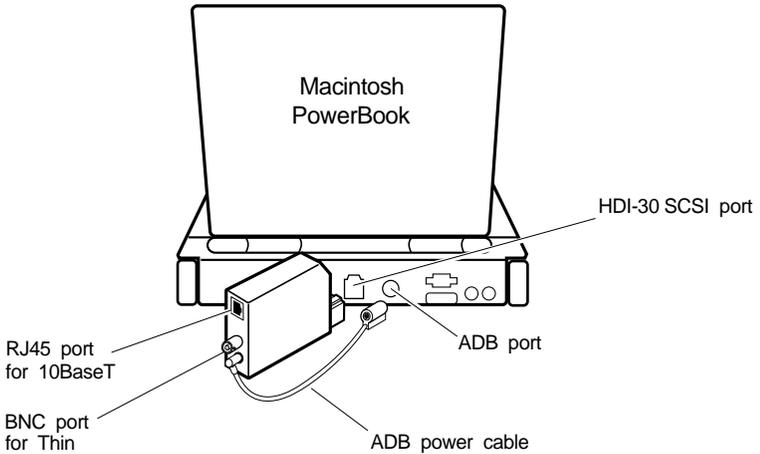


Figure 2-6 Connecting the Micro EN/SC to the PowerBook

4 Connect the adapter to the Ethernet cable.

With 10BaseT cabling

Plug the RJ45 connector on one end of the Ethernet cable into the adapter's RH45 port and plug the other end into a 10BaseT network hub.

With Thin cabling



Caution!

- Check with your network administrator before connecting the Micro EN/SC adapter to the network.
- If the Ethernet cable does not have a T-connector or a BNC barrel connecting two cable segments, splice the cable with the appropriate BNC hardware.
- Connect the BNC T-connector on the Ethernet cable to the adapter's BNC port.
- If the Macintosh is at the end of a network segment, keep the T-connector and terminator on the segment cable and connect the T-connector to the adapter's BNC port. The connector slips on, twists, and locks in place.

Disconnecting a Micro EN/SC Adapter



Caution!

Before you disconnect the PowerBook from a Micro EN/SC Adapter, you must turn the power OFF on the PowerBook.

The PowerBook must not be in Sleep mode!

The PowerBook's SCSI port will be damaged if you leave the PowerBook on or in Sleep mode when you disconnect the adapter.

Installing EtherTalk software

An EtherTalk Installer diskette is included with your Asanté EN/SC adapter. This diskette contains Asanté's EtherTalk driver, AppleTalk, and other Apple system extensions. Asanté's EtherTalk device driver allows AppleTalk to communicate with the EN/SC adapter.

Two types of software installations

Asanté provides two types of installations—an Easy Install and a Customize Install. To do the customize install, you should be experienced in network administration.

For detailed information about each installation, click the Help button to display a help screen. The following table explains which installation to choose:

Choose	When
Easy Install	<ul style="list-style-type: none">• You want to install the AppleTalk version on the diskette and the Asanté Ethernet driver.• Your network does not present any potential compatibility problems with the AppleTalk version on the diskette.• You want access to EtherTalk Phase 2 network services.
Customize Install	<ul style="list-style-type: none">• Your network has software that may conflict with the AppleTalk version on the diskette.• You want to install only specific parts of Apple network software or just the Asanté driver software. Read the <i>Read Me First</i> file for more information about special situations and installation options.• You need to install EtherTalk Phase 1 network services.

Before you install Asanté's EtherTalk software, disable all extensions and virus detection programs. Then restart your Macintosh.

 **Caution!**

1 Read the *Read Me First* file before you install the EtherTalk software.

It contains information about your installation and will help you determine if you need a customized installation.

The instructions assume that you normally boot from your hard disk.

2 Insert the Asanté EtherTalk Installer disk.

3 Double-click the Installer icon and click OK when the Installer banner appears.

(Be sure to double-click; do not drag the files from the diskette to the System Folder.)

The Easy Install dialog box appears.



Figure 2-7 Easy Install dialog box

4 Click Install to perform an Easy Install.

The Installer program examines your Macintosh and installs the EN/SC EtherTalk driver and AppleTalk as needed.

5 Click **Restart** when the system informs you that the installation is successful and prompts you to click.

6 To perform a **Customize** install:

You should be an experienced Macintosh user, with experience in network administration.

Open the *Read Me First* file on the diskette for an explanation of each installation option. Consult your network administrator if you do not understand the file.

Click **Customize**.

A dialogue box appears showing a list of software options.

Select the appropriate option.

(To select multiple operations, use **Shift-click**.)

The system informs you when the installation is completed.

Click **Restart** when the system prompts.

- ❖ **Note:** If other Macintoshes on the network have Asanté EtherTalk drivers, we recommend you upgrade all drivers to the most recent version. ❖

Accessing network services

To connect to the Ethernet network you must meet the following requirements:

- Ethernet network with AppleTalk-compatible devices
- AppleTalk must be active in the Chooser dialog box
- EtherTalk must be active in the Control Panel

Asanté's EtherTalk driver software enables AppleTalk to interact with the EN/SC adapter and make a connection.

1 Open the Network control panel.

Three network icons appear.

The example below shows three icons—Built-in LocalTalk, EtherTalk Phase 1 and EtherTalk Alternate.

2 Select EtherTalk Alternate.

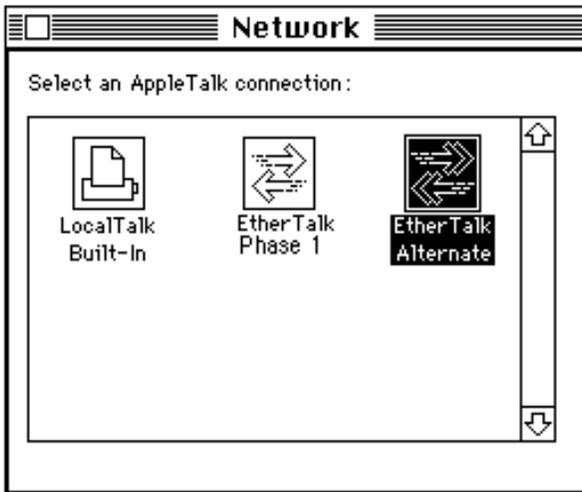


Figure 2-8 Network control panel

3 Close the Network control panel.

Your connection to the Ethernet remains active until you either switch to LocalTalk, disconnect the cable, or disconnect the Asanté EN/SC adapter.

4 Select Chooser and select a network resource such as AppleShare or another network service.

5 Select Chooser from the Apple menu.

The Chooser dialog box appears displaying all network devices available and the AppleTalk zones.

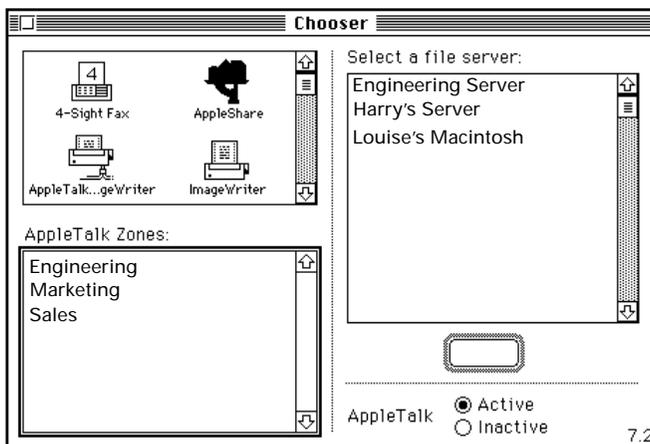


Figure 2-9 Sample Chooser dialog box

6 If AppleTalk is not active, click the Active button.

7 Reboot the Macintosh and open the Chooser to confirm that AppleTalk is active.

Using TroubleShooter Diagnostic Software

The TroubleShooter diagnostic program is included with the EtherTalk drivers on the Asanté EtherTalk Installer diskette. The program runs diagnostic tests on the adapter to help you identify problems on the adapter. It also provides configuration information about the Macintosh and the adapter, such as its Ethernet address.

Running TroubleShooter Diagnostics

The TroubleShooter diagnostic program reinitializes and reconfigures your Ethernet connection and sends out data through the Ethernet port. Therefore, before you run TroubleShooter, you must:

- Save all open files and close all active applications.
- Log out of any active network services.
- Change from EtherTalk to LocalTalk.
- Turn off virtual memory with System 7.
- Restart your Macintosh with virus software, extensions, and inits disabled.

The following sections provide instructions for these operations.

Changing from EtherTalk to LocalTalk

- 1** Drag any remote volumes into the Trash.
- 2** Change from EtherTalk to LocalTalk by clicking the LocalTalk icon in the network control panel.
- 3** Disable virus software, extensions, and inits.
- 4** Restart the Macintosh.

Starting Troubleshooter Diagnostics

- 1** Insert the EtherTalk Installer diskette and open the diskette's directory window.
- 2** Copy the Troubleshooter software to the desktop or a folder such as the Net Utils folder.
- 3** Double-click the Troubleshooter icon to start the program and click OK in the Troubleshooter window.

If you have not changed your EtherTalk connection to a LocalTalk connection, Troubleshooter warns you to do so.

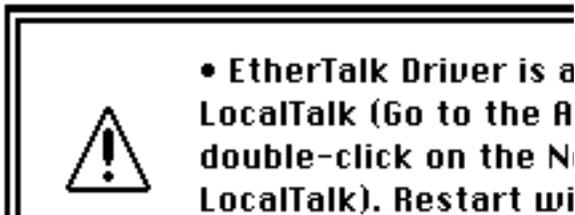


Figure 3-1 Troubleshooter warning box

Click Exit, make the change, restart the Macintosh.

- 4** Click OK in the Troubleshooter window.

Troubleshooter loads and automatically runs the following three default tests:

- **Memory buffer test**
Writes to and reads from the packet buffer RAM to verify its addressability and operation.
- **Network interface controller test**
Writes to and reads from the controller register to verify its operation. Also issues a transmit command to verify the network interface controller's integrity.
- **Ping-Pong test**
Transmits and receives special packets to verify communication with other systems on the network.

If the Ping-Pong test fails, check your connectors and cables.

5 Troubleshooter opens the Troubleshooter window and displays results from the following tests:

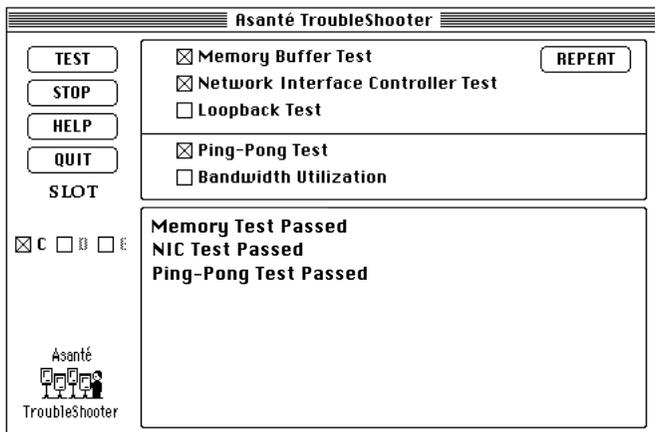


Figure 3-2 Troubleshooter window

Running other Troubleshooter tests

The Loopback and Bandwidth Utilization tests are available in addition to the three default tests for validating the EN/SC adapter.

Running the Loopback test

The Loopback test verifies the operation of the major components of the interface circuitry, the adapter, the serial network interface, and the thin port transceiver by transmitting and receiving special packets.

When using the Mini EN/SC Adapter, disconnect the thin Ethernet cable and attach a T-connector. Terminate each end of the T-connector with a 50 ohm terminator.

To run the Loopback test, perform the following steps:

- 1** Click the Loopback test checkbox to select the test.
- 2** Click TEST to start the loopback test.
- 3** If the first test fails, click REPEAT.

If the tests are “passed” successfully, everything is operating properly.

If you leave the Macintosh connected to the network during the Loopback test, the test may fail due to packet collisions. This does not indicate the equipment is faulty. Repeat the test by clicking REPEAT. You need only one successful test run to verify proper product operation.

If the Loopback test fails repeatedly, please call Technical Support.

Running the Bandwidth Utilization test

- 1** Reconnect the Ethernet cable.
 - 2** Click the Bandwidth Utilization checkbox to select the test.
 - 3** Click the TEST button to start the test.
 - 4** Data representing network activity is collected from the network during the test.
 - 5** To stop data acquisition, click STOP or press any key.
- The performance statistics are displayed in the Troubleshooter dialog box.

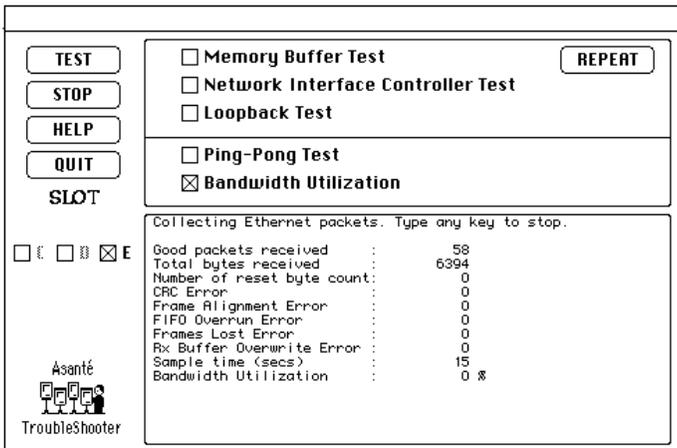


Figure 3-3 Bandwidth Utilization Test window

What the Bandwidth Utilization test displays

The Bandwidth Utilization test takes a “snap shot” of the network. The test can be used in conjunction with other network analysis tools to identify network problems. A number of network criteria are tested and displayed in the window. The criteria are described briefly below:

- **Good packets received**
Total number of good packets (error-free) received from the network by the adapter. This allows you to evaluate activity on the network. Activity level can be used as a benchmark to determine changes in network performance.
- **Total bytes received**
Total number of bytes received from the network by the adapter. Good Packets received displays the total number of packets, not the packet size. Total bytes received is more specific giving the actual byte count.
- **Number of reset byte count**
This number increments by (1) after each 10^9 byte received from the network by the adapter.
- **CRC Error**
Indicates the number of packets with CRC (Cyclic Redundancy Check) errors received from the network by the adapter. When a packet is transmitted, a mathematical calculation is done on the header and data and is appended to the end of the frame. The receiver of the packet performs the same computation. If the computations are not equal, the packet is discarded and a CRC error is issued.
- **Frame Alignment Error**
Number of misaligned packets received from the network by the adapter. An Ethernet frame is misaligned if it does not end in an 8 bit boundary.
- **FIFO Overrun Error**
This error occurs when FIFO (First In First Out) is disabled causing an overflow during reception. The reception of the packet is aborted.
- **Frame Lost Error**
This error represents the number of lost frames received from the network by the adapter.

- **Receive Buffer Overwrite Error**
This error occurs when the receive buffer is full due to heavy network traffic.
- **Sample Time**
The time in seconds from test start to test completion.
- **Bandwidth Utilization**
Total bandwidth utilization of the network. If it is over 2 percent, it will effect the FIFO Overrun Error and Frame Lost errors.

If a test fails

If a test fails, TroubleShooter displays an error message in the main dialog box. The message generally consists of three parts:

- The name of the diagnostic test
- “Failed”
- A possible reason for the failure

Check the connections from your Macintosh to the Ethernet cable, and repeat the tests.

If the test fails repeatedly, make a note of the error message, quit the TroubleShooter diagnostics, and call Technical Support.

Obtaining system configuration information

TroubleShooter provides configuration information about your Macintosh and your Asanté EN/SC Adapter.

The File menu provides the configuration information in two menu items—Get System Information and Get Adapter Information. The following information is displayed in the menus:

Menu	Displays
Get System Information	<ul style="list-style-type: none">• System software version number• Machine type• Memory size• ROM version number• Installed AppleTalk version
Get Adapter Information	<ul style="list-style-type: none">• Summary of the Ethernet interface hardware specifications:• Expansion slot used• Card type• Card's 6 byte Ethernet address• Card's buffer size• Asanté driver version: version 5.1 and higher

Quitting Troubleshooter Diagnostics and restarting network services

To quit Troubleshooter, click the QUIT button in the Troubleshooter dialog box or quit from the menu bar.

To restart network services, perform the following steps:

- 1** Activate AppleTalk in the Chooser.
- 2** Select EtherTalk in the Network control panel.
- 3** Restart the Macintosh.
- 4** Select Chooser and select a network resource such as AppleShare or another network service.

Troubleshooting

This chapter gives basic troubleshooting suggestions for dealing with problems you may have when installing or using an Asanté EN/SC Adapter. If you're unable to solve a problem after reading this chapter, please call Asanté Technical Support for assistance at 800-622-7464 or 408-435-0706.

Checking the basics

If you have a problem accessing a network node, check the basic requirements listed below:

-
- AppleTalk is active in the Chooser.
 - EtherTalk is selected in the Network Control Panel.
Make sure your are using the network EtherTalk version (Phase 1 or Phase 2).
 - AppleTalk zones are visible, when applicable.
 - The SCSI chain and EN/SC adapter are correctly terminated.
 - Cabling and connections are secure.
 - The LEDs on the EN/SC indicate no problems.
Refer to Appendix A for information about the LEDs.
 - The Asanté EtherTalk driver is installed on the start-up disk (the EN/SC EtherTalk icon appears at restart or the EtherTalk Alternate icon is visible in the Control Panel).
-

Running Asanté TroubleShooter Diagnostics

Run the Asanté TroubleShooter Diagnostics program to identify problems in the installation. Refer to Chapter 3 for more information.

Other tips

About EtherTalk Phase 1 and Phase 2

If you have installed EtherTalk Phase 1 and Phase 2, selecting Phase 1 may make Phase 2 network resources invisible and unavailable. The reverse is true for Phase 2. To see if this is the case, switch from one EtherTalk icon to the other.

Phase 1 networks are limited to 254 nodes and one zone. In a Phase 2 network up to 16 million nodes can be addressed on an Ethernet network. Phase 2 networks support multiple zones sharing the same physical cable. A great majority of network installations now use only Phase 2.

Installing the SNMP MacAgent

The Asanté SNMP MacAgent works in conjunction with MacTCP to provide hardware and software information about the Macintosh to an Asanté network management station or to a generic network management console.

It is a system extension under System 7 and an INIT under System 6 and can be installed on any Macintosh on the network.

The Asanté SNMP MacAgent is on the EtherTalk Installer diskette which includes the following items:

- EtherTalk Installer software
- Asanté SNMP MacAgent
- MacTCP
 - ❖ Note: MacTCP is Apple Computer's TCP/IP software. It provides the transport mechanism for accessing the information provided by the Asanté SNMP MacAgent.
 - ❖

This chapter describes how to install the Asanté SNMP MacAgent and describes how it works.

Installing the SNMP MacAgent on a Macintosh

To install the SNMP MacAgent you will first prepare for the installation and then you will perform the following three procedures:

- Installing and the SNMP MacAgent software
- Configuring MacTCP
- Configuring the SNMP MacAgent

Preparing for the installation

Before you install the Asanté SNMP MacAgent, you must:

- Have an IP address for your Macintosh.
- Tell your network administrator that you are configuring MacTCP on your Macintosh.
- Make sure that your Network Management Station has AsantéView In-Band or a generic SNMP management console using Asanté SNMP MacAgent MIB.

❖ Note: Asanté SNMP MacAgent MIB is available on Asanté On-Line Service or through Technical Support. ❖

Installing the SNMP MacAgent software

MacTCP is bundled with the Asanté SNMP MacAgent software and is automatically installed when you install the SNMP MacAgent.

If you have a newer version of MacTCP on your Macintosh, you can install only the Asanté SNMP MacAgent. Otherwise, MacTCP should be installed automatically with the SNMP MacAgent

To install the SNMP MacAgent software:

- 1** Quit any applications running on your Macintosh.
- 2** Insert the EtherTalk Installer diskette and double-click the Installer icon in the Asanté EtherTalk Installer window.
- 3** Click OK in the “About” window.
- 4** To install the SNMP MacAgent and the MacTCP version 1.1.1, click Customize in the Customize Install dialog box.

- 5 Select the SNMP MacAgent appropriate for your operating system in the Customize dialog box (see Figure 5-1).
- 6 Click Install and restart the Macintosh.

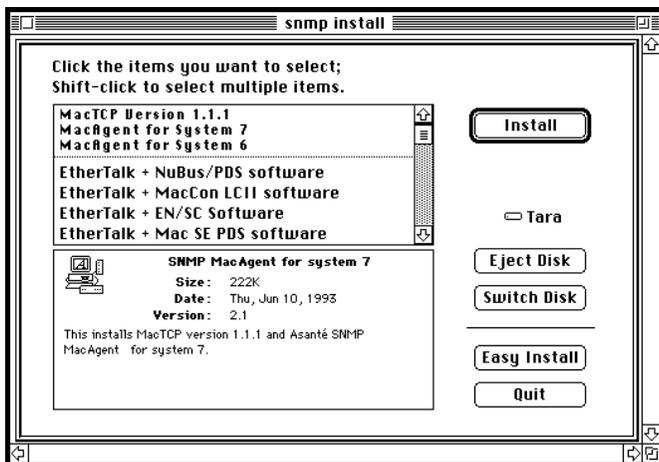


Figure 5-1 Customize Install dialog box

Configuring MacTCP

- 1** Before you do it, tell your network administrator that you are configuring MacTCP on your Macintosh.
- 2** Select Control Panels from the Apple menu.
- 3** Double-click the MacTCP icon to open MacTCP control panel.
The Ethernet icon must be selected in the MacTCP configuration window.
- 4** Note: To configure MacTCP, refer to the MacTCP Administrator's Guide which is included with AsantéView documentation or is available through your Macintosh dealer. v
- 5** Type in your IP address in the IP address text box as shown in the example in Figure 5-2.

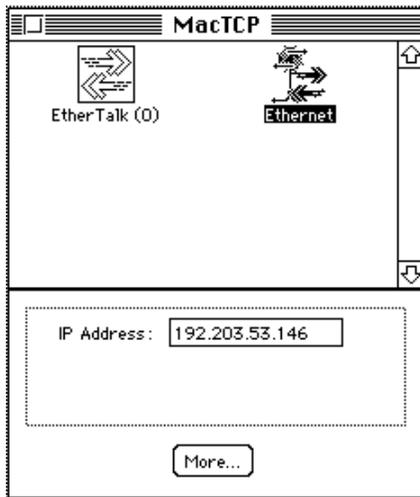


Figure 5-2 MacTCP configuration window

Configuring the SNMP MacAgent

1 Select Control Panels from the Apple menu.

2 Double-click the SNMP MacAgent control panel.

The SNMP MacAgent configuration window appears.



Figure 5-3 Asanté SNMP MacAgent configuration window

3 Enter the configuration parameters.

The information in this window will allow the Asanté network management station to access the Macintosh. The parameters are described below.

4 Restart the Macintosh.

SNMP configuration parameters

System Contact

The person to be contacted regarding this Macintosh.

System Location

The physical location of the Macintosh.

System Name

A local alias describing this station.

Read-community

Enter **public** (default). This allows the Asanté network management station to query SNMP MacAgent and get information about the station.

Write-community

Enter **private** (default). This allows the Asanté network management station to query SNMP MacAgent remotely.

❖ Note: The defaults for Read-community and Write-community should not be used unless you are notified by your network administrator. ❖

Trap-community (Trap the SNMP term for alarm or alert)

Enter **public** (usually the default). If there is any question, please contact your network administrator. SNMP MacAgent sends traps to the Asanté network management station for two events: cold start (station restart) and authentication violation.

Trap IP Address

The IP address of the system to which the traps will be sent (usually the Asanté management station).

Authentication Trap (On/Off)

ON by default. The SNMP agent sends a trap to the Asanté management station if an Asanté management station with the wrong read or write community string accesses it.

SNMP Agent (On/Off)

ON by default. When OFF, the SNMP agent does not send information to the Asanté management station.

How the SNMP MacAgent works

When the Macintosh is polled by a network management station or a generic network management console, the Asanté SNMP MacAgent sends information about the Macintosh's network connection and other vital statistics. The SNMP MacAgent uses the TCP/IP protocol, made available by MacTCP.

AsantéView is a powerful network management software package used to manage Asanté intelligent Ethernet hubs and bridges. It uses the SNMP protocol to provide detailed information about Macintoshes with Asanté's SNMP MacAgent and other SNMP devices on the network.

If you don't have AsantéView, you can use Asanté's SNMP MacAgent MIB to manage the SNMP MacAgent. The MIB is a text file available on Asanté's FTP server via the Internet. The file can be obtained using "anonymous" FTP to: <ftp.asante.com> in the /pub directory

Type of information sent about a Macintosh

The Asanté SNMP MacAgent forwards four types of information about the Macintosh:

- Station Profile, including station hardware components, system and memory.
 - Station Slot Table, identifying the network interface cards installed.
 - Station Activity, transmission statistics for the network interface card.
 - Station Applications, a listing of resident applications for software resource management.
 - When the Macintosh is restarted, the network management system is alerted.
- ❖ Note: You must have the Asanté EtherTalk driver installed to receive Station Activity information. ❖

About IP addresses

Before you install SNMP MacAgent and MacTCP you must have an IP address.

If you are connected to or plan to connect to an IP network, your Macintosh must have an IP address. IP addresses identify individual nodes in a TCP/IP network and are officially assigned by the Internet committee or by your network administrator. It is your network administrator's responsibility to assign the IP address for your Macintosh.

TCP/IP refers to a collection of network protocols that support host to host communication.

About the AsantéView Network Management Station

The Asanté Network Management Station should be running AsantéView or a generic SNMP management console. Figure 5-4 shows a network map generated by AsantéView.

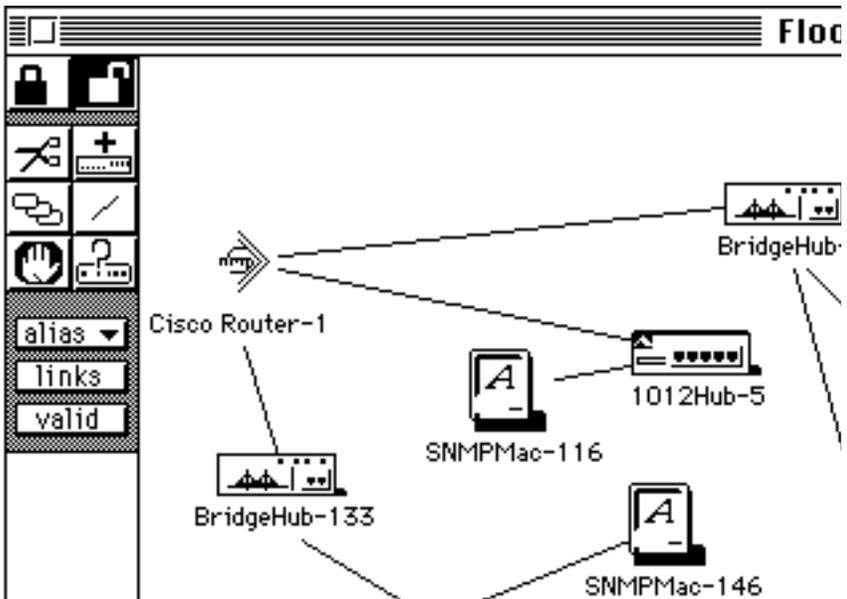


Figure 5-4 AsantéView sample network map

A Macintosh displayed with an “A” indicates the Asanté SNMP MacAgent is installed.

If a Macintosh has Asanté's SNMP MacAgent installed, the Asanté network management station running AsantéView displays the following information (see Figure 5-5).

- General Information about the Macintosh with Asanté SNMP MacAgent installed
- Slot Configuration of Macintosh
- Statistics
- Applications installed on Macintosh

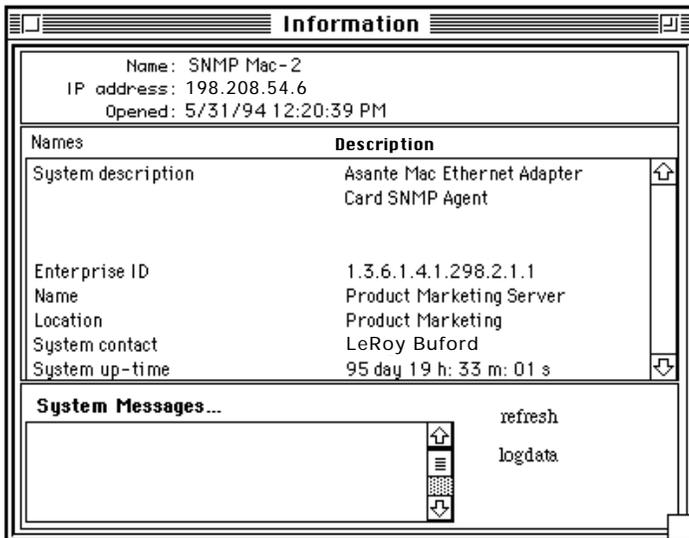


Figure 5-5 Station Information on SNMP MacAgent Macintosh

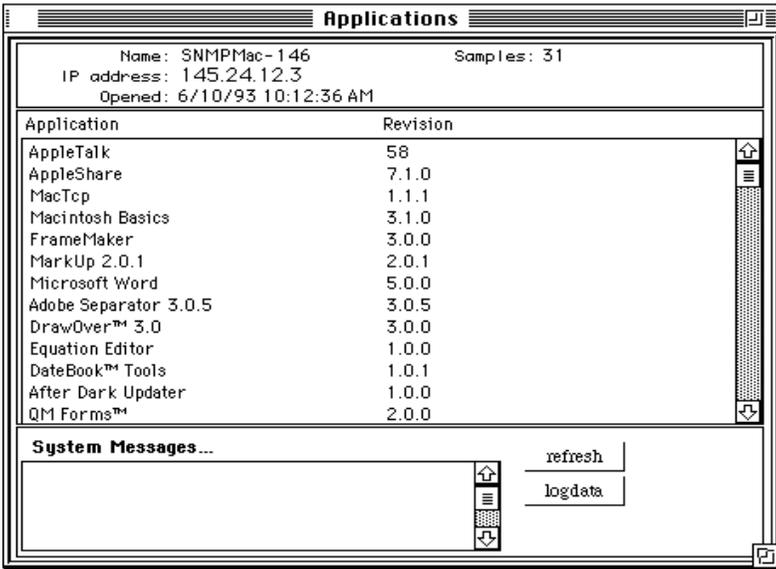


Figure 5-6 Applications installed on SNMP MacAgent

Other network management software

If you are using network management software other than Asanté-View (for example, HP OpenView or SunNet Manager), use the Asanté MacAgent MIB and follow directions in your network management software documentation to load and browse a MIB file.

- ❖ **Note:** The SNMP MacAgent MIB is available by accessing Asanté's FTP server over the Internet. See page 5-7 for more information. ❖

EN/SC Adapter Family Specifications

	Mini EN/SC	Micro EN/SC
Systems supported	Mini EN/SC—all Macintosh Plus, Classic, Classic II, Color Classic, LC, LCII, LCIII, SE, SE/30, II, IIx, IIcx, IIsi, IICI, IIvx, Performa 200, 400, and 600 computers, all PowerBooks including Duo Docking Stations Micro EN/SC—only PowerBooks and Duo Docking stations with HDI-30 SCSI ports	
Standards supported	IEEE 802.3 Ethernet specifications for Thin coaxial (10Base2), and Unshielded Twisted-Pair (10BaseT) media. Phase 1 and Phase 2 EtherTalk, register-level compatible with Apple Computer's Ethernet cards, AppleTalk Filing Protocol and MacTCP	
Software supported	AppleShare™, Novell NetWare™ for Macintosh, 3Com 3+Open™, 3Com 3+Share™, Sitka TOPS™, DEC Pathworks™, AFP, TCP/IP, DecNet and LAT protocols, 100% System 7 compatible	
Protocols supported	AFP, TCP/IP, DECnet and LAT protocols	
SCSI address selection	SCSI rotary switch	Fixed at 6
Power requirements	12VAC @ 1.25A	5VDC @ 250mA
Operating temperature	0° to 50° C Relative humidity: 10% - 90%, non-condensing	0° to 50°
Physical dimensions	Mini EN/SC Length = 4.25" Width = 3" Height = 1" Weight = 6.1 oz	Micro EN/SC Length = 3" Width = 2.4" Height = 1" weight = 3.9 oz
Ethernet address	Asanté Ethernet ID is 000094 xx xx xx Mini and Micro EN/SC: on bottom of unit	

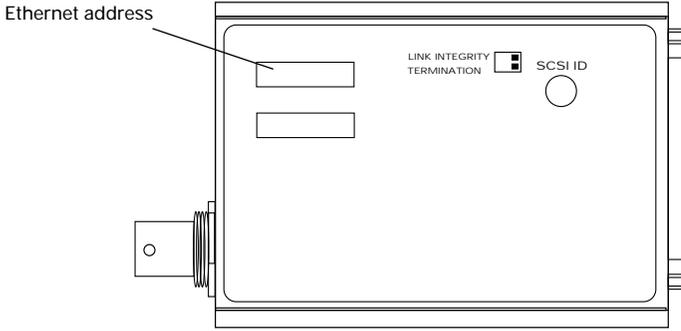


Figure A-1 Mini EN/SC Ethernet address

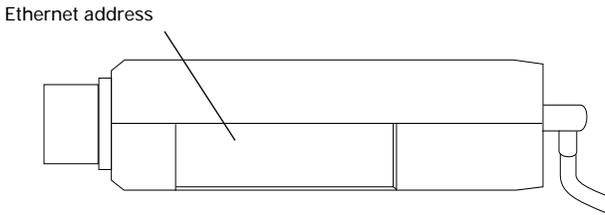


Figure A-2 Micro EN/SC Ethernet address

Mini EN/SC Adapter LEDs

Light	ON	OFF	BLINKING
Power	ON	OFF Inoperable	Not applicable
Network Activity	Network activity	No network activity	Network activity
Link Integrity	10BaseT link integrity enabled. Link is OK when Link Disabled is also OFF	No 10BaseT link integrity	Not applicable
Link Disabled	10BaseT link disabled. (when Link Disabled is ON Link Integrity is OFF)	10BaseT link integrity enabled. Link is down when both Link Integrity and Link Disabled LEDs are OFF	Not applicable
SCSI termination	SCSI termination ON	SCSI termination OFF	Not applicable

Micro EN/SC Adapter LEDs

Light	ON	OFF	BLINKING
Power	ON	OFF Inoperable	Not applicable
TX			Transmitting data
RX			Receiving data
Link Integrity	10BaseT link integrity OK	No 10BaseT link integrity	Not applicable

Ethernet Specifications

When you connect your Macintosh to the Ethernet using the EN/SC Adapter, you must meet the following Ethernet specifications:

Parameter	10Base2	10BaseT
Cable	Thin	UTP
Impedance	50 ohms	100 ohms
Connector on cable	BNC	RJ45
Data transfer rate	10 Mbps	10 Mbps
Topology	Bus	Star
Segment length (maximum)	185 meters	100 meters
Distance between nodes (minimum)	0.5 meter	n/a
Nodes per segment (maximum)	30	n/a

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A few tips

For 10BaseT cabling

- The wiring normally specified for 10BaseT is 26 to 22 AWG, which corresponds to the wire gauge of telephone unshielded twisted-pair cables. You need two pairs of wiring for each node.
- When wiring 10BaseT connections, take precautions against splitting pairs. Be sure you maintain the same color mates for each pair used within the cable. If you don't follow a common color pairing, you can mix up the wires preventing the Ethernet signal from being transmitted.
- Be sure to check the cabling you plan to use. Older cabling may not be of adequate quality to support 100 meters between a device and the hub.
- You may want to install a wiring system in your building, or you may already have one, that allows you to run a 10BaseT cable to a wall jack.

For Thin cabling

- When subdividing cable segments, do not randomly pick any cable length. The IEEE recommends that Ethernet coaxial cable be subdivided at lengths of 23.4 meters (76.8 feet), or multiples of that length, in order to minimize internal signal reflections. Using less than 10 ft. of cable between devices causes reflections. These reflections reduce the signal strength for large networks. On small networks, such as those covering a single floor of a building, these reflections probably won't cause problems.

RJ45 connector pin-outs

The RJ45 connector pin numbers are for an Asanté 10BaseT card or Media Adapter positioned correctly with the notch on the 8 pin modular jack oriented down. Pin 1 is the left-most pin, and Pin 8 is the right-most pin.

Pin	Circuit	Signal name
1	TD+	Data Transmit +
2	TD-	Data Transmit -
3	RD+	Data Receive +
4		Not used
5		Not used
6	RD-	Data Receive -
7		Not used
8		Not used

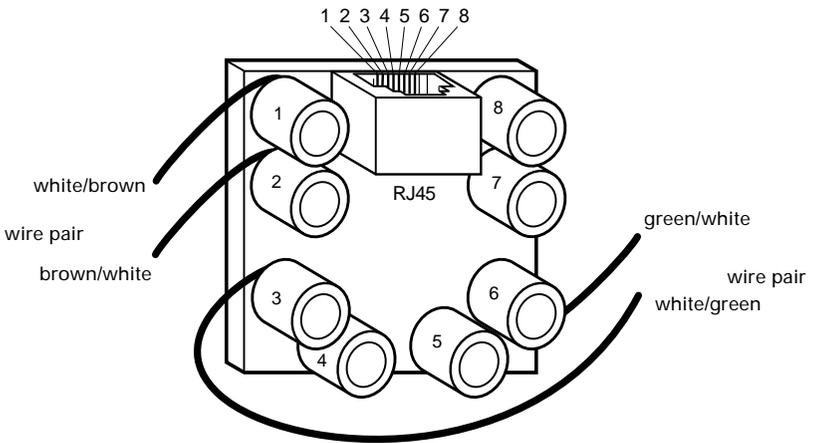


Figure B-1 RJ45 connector and biscuit block pin-outs